Chapter 1. Introduction

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This Final Environmental Impact Statement (FEIS) for the Delta Wetlands Project has been prepared under the direction of the U.S. Army Corps of Engineers (USACE, or Corps) in accordance with the requirements of the National Environmental Policy Act (NEPA). The environmental impacts of the Delta Wetlands Project (also referred to as the "DW project") were analyzed in the 1995 Delta Wetlands Project Draft Environmental Impact Report and Environmental Impact Statement (1995 DEIR/EIS) (Jones & Stokes Associates 1995) and the 2000 Revised Draft Environmental Impact Report and Environmental Impact Statement for the Delta Wetlands Project (2000 REIR/EIS) (Jones & Stokes 2000). These documents were prepared jointly by the California State Water Resources Control Board (SWRCB) and USACE in compliance with the California Environmental Quality Act (CEQA) and NEPA, respectively. The SWRCB prepared a separate Final Environmental Impact Report (FEIR) in January 2001 to respond to public and agency comments on these documents. USACE has prepared this FEIS to respond to agency and public comments received on the 1995 DEIR/EIS and the 2000 REIR/EIS and to provide a rewritten version of the EIS as required by NEPA. This FEIS includes the analysis of project effects presented in the 1995 DEIR/EIS and 2000 REIR/EIS and reflects information that has changed or been updated since those documents were published.

PROJECT OVERVIEW

Description of the Proposed Project

Delta Wetlands proposes a water storage project on four islands in the Sacramento-San Joaquin Delta (Delta) (Figure 1-1). The project would involve diverting and storing water on two of the islands (Bacon Island and Webb Tract, or "reservoir islands") for later discharge for export or to meet outflow or environmental requirements for the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) estuary. In addition, the project would involve diverting water seasonally to create and enhance wetlands and to manage wildlife habitat on the other two islands (Bouldin Island and most of Holland Tract, or "habitat islands") (Figure 1-2).

The description of the proposed project as revised includes construction and operation of recreation facilities on all four project islands. In May 2001, however, Delta Wetlands removed construction of these facilities from its CWA and Rivers and Harbors Act permit applications. The conceptual descriptions of the recreation facilities remain largely unchanged from those included in the 1995 DEIR/EIS; they are presented in this FEIS for informational purposes. Also included are the analyses of the environmental effects of facility construction and operation, and responses to comments on the 1995 DEIR/EIS and 2000 REIR/EIS about the recreation facilities.

The project islands are owned either wholly or partially by Delta Wetlands. To operate its project, Delta Wetlands would improve and strengthen levees on all four islands and would install additional siphons and water pumps on the perimeters of the reservoir islands. Delta Wetlands would operate the habitat islands under a habitat management plan (HMP) to compensate for impacts on, and promote the recovery of, state-listed threatened or endangered wildlife species and other special-status species, and to provide additional wetlands and wildlife habitat in the Delta.

In this document, as in the 1995 DEIR/EIS and 2000 REIR/EIS, the Delta Wetlands Project is analyzed as a stand-alone water storage facility, operated independently of the State Water Project (SWP) and the Central Valley Project (CVP), and without regard to the specific entities to which the water could be sold. Environmental effects that may be associated with the delivery of purchased Delta Wetlands water or the storage of water under a third party's water rights are not analyzed because the identity of the end user of the Delta Wetlands water remains speculative.

The Delta Wetlands Project islands could also be used for interim storage of water being transferred

through the Delta from sellers upstream to buyers served by Delta exports or to meet Bay-Delta estuary outflow requirements (water transfers). In addition, it could be used for interim storage of water owned by parties other than Delta Wetlands for use to meet scheduled Bay-Delta estuary outflow requirements or for export (water banking). This analysis considers the environmental impacts and water supply yield of the Delta Wetlands Project based only on water stored under Delta Wetlands' own appropriative permits and subsequently conveyed to Delta channels.

A separate entity purchasing Delta Wetlands water could divert that water from Delta channels to storage on the Delta Wetlands islands and discharge it, probably through CVP or SWP facilities, for direct use or to increase groundwater or surface storage; or it could use water for estuarine or Delta beneficial uses (increased outflow). The purchasing entity would affect SWP or CVP operations to the same extent as would any entity that diverts, stores, and discharges water under California Water Code provisions and contracts authorized by those provisions.

This document also does not analyze how state or federal facilities may be operated in the future in coordination with the Delta Wetlands Project, although the impact analysis does estimate the effects of project operations on operation of the SWP and CVP pumping facilities. Several potential opportunities exist to operate the Delta Wetlands Project in conjunction with the CVP and the SWP or in coordination with the CALFED Bay-Delta Program (CALFED); however, no proposals have been made for which USACE and the SWRCB could reasonably assess the environmental effects, and discussion of such arrangements remains speculative.

Project Permit Requirements

Department of the Army Permit Application

Section 404 of the Clean Water Act (CWA) prohibits the discharge of dredged or fill material into waters of the United States, including wetlands, unless a permit is obtained from USACE. Section 10 of the Rivers and Harbors Act of 1899 prohibits work affecting the course, location, conditions or capacity of navigable waters of the United States without a permit from USACE.

Delta Wetlands is required to obtain a permit from USACE under Section 404 because Delta Wetlands Project fill activities associated with perimeter and interior levee work on the reservoir islands; habitat enhancement activities on the habitat islands; and construction of boat docks, pumps, and siphons in Delta channels involve discharges of dredged or fill material into waters of the United States. As part of the review process for issuance of a permit for the Delta Wetlands Project's fill and discharge activities, USACE is using the information in this FEIS to comply with the requirements of the U.S. Environmental Protection Agency's (EPA's) Section 404(b)(1) guidelines. Before Delta Wetlands can be issued a permit under Section 404, it must obtain a water quality certification from the SWRCB under Section 401 of the CWA. Section 401 certification ensures that discharge of dredged or fill material into waters of the United States will not violate state water quality standards. The Section 401 certification would be appended to the Section 404 permit and incorporated by reference.

In addition to the Section 404 requirements, Delta Wetlands would be required to comply with Section 10 of the Rivers and Harbors Act because it proposes to construct docks and install siphons and pumps in navigable waters. Activities conducted below the ordinary high-water mark in navigable waters are authorized under Section 10 through issuance of a Department of the Army permit. Section 10 and Section 404 requirements are considered concurrently in Department of the Army permit applications (U.S. Army Corps of Engineers 1977).

Delta Wetlands has applied to USACE for a permit under Section 404 of the CWA for the discharge of dredged or fill materials into waters of the United States and under Section 10 of the Rivers and Harbors Act of 1899 for other project activities in navigable waters.

Water Right Applications

The State of California recognizes riparian and appropriative surface water rights. Riparian rights are correlative entitlements to water that are held by owners of land that borders natural watercourses. California requires a statement of diversion and use of natural flows on adjacent riparian land under a riparian right.

Water is currently being used for agriculture on the Delta Wetlands Project islands under riparian and existing appropriative water rights. However, because water obtained under riparian rights cannot be stored and cannot be sold, Delta Wetlands must apply for new appropriative water rights to divert and store water for later sale on the reservoir and habitat islands. A distinct appropriative water right permit would apply to each island.

The SWRCB has authority to issue permits to grant appropriative water rights. Appropriative water rights allow the diversion of a specified amount of water from a source for reasonable and beneficial use during all or a portion of the year. In California, previously issued appropriative water rights are superior to and take precedence over newly granted rights.

When an appropriative water right application is filed with the SWRCB, the application is given a number and priority date. Applications determined by the SWRCB to be complete are published to inform the public about them and to allow for protests to be filed against them. Most protests are based on suspected interference with existing water rights or harm to the environment. After a 40-to-60-day protest period, the applicant may negotiate with those filing protests to attempt to reach agreements for protest dismissal. If the SWRCB issues permits, the permittee must subsequently establish that the water is being put to a reasonable and beneficial use before the right is made permanent through licensing.

Delta Wetlands applied to the SWRCB, Division of Water Rights, for new appropriative water rights to divert water and store it on the project islands for later discharge to Delta channels for export or to meet Bay-Delta estuary outflow or environmental requirements. The SWRCB issued Water Right Decision 1643 for the Delta Wetlands Project on February 15, 2001.

When the holder of a post-1914 appropriative water right proposes to park water (transferred or intended for banking) on Delta Wetlands' reservoir islands, the SWRCB would have to separately authorize the diversion of the water to Delta Wetlands storage. The SWRCB's authorization for diversions would change the transfer right holder's place of use or point of diversion and could require further environmental documentation.

REGULATORY COMPLIANCE HISTORY

Because the Delta Wetlands Project requires discretionary approvals from USACE and the SWRCB, the project must comply with both NEPA and CEQA, with USACE serving as the lead agency for NEPA compliance and the SWRCB as the lead agency for CEQA compliance. Compliance with Section 7 of the federal Endangered Species Act (ESA), Section 106 of the National Historic Preservation Act, and other regulations is also required before USACE may issue a permit. Compliance with the California ESA is a required part of the SWRCB permitting process. Various other permits and consultations are also required, as discussed in Chapter 4, "Permit and Environmental Review and Consultation Requirements". See Chapter 4 for more information on the USACE permitting process and Appendix 1 of the 1995 DEIR/EIS for details on Delta Wetlands' water right applications and the SWRCB water right process.

Table 1-1 shows an overview of the steps in the Delta Wetlands Project's regulatory compliance history, which are described below in roughly chronological order.

Delta Wetlands' 1987 Project Proposal

Delta Wetlands applied to the SWRCB in 1987 for water rights to store water seasonally on all four of its project islands. Delta Wetlands also applied to USACE for a permit under Section 404 of the CWA for the discharge of dredged or fill materials into waters of the United States and under Section 10 of the Rivers and Harbors Act of 1899 for other project activities in navigable waters. The SWRCB originally issued the notice of applications prepared by Delta Wetlands to appropriate water on December 4, 1987 (Application Nos. 29061, 29062, 29063, and 29066) (see Appendix 1 of the 1995 DEIR/EIS).

After Delta Wetlands submitted its applications, USACE and the SWRCB determined that the project could have significant environmental impacts. A notice of intent (NOI) for the preparation of an environmental impact report/environmental impact statement (EIR/EIS) for the project was published in the Federal Register on January 6, 1988. A notice of preparation (NOP) for an EIR/EIS was distributed in February 1988; 40 days were allowed for submission of comments.

A scoping meeting was held on February 11, 1988. Thirty-five scoping comment letters were received by USACE and the SWRCB. A scoping report on the project was published on September 20, 1988. The report summarized the comments received during the scoping period and the issues raised in water right protests, and described the kind and extent of analyses to be performed for the EIR/EIS (Jones & Stokes Associates 1988).

In December 1990, the lead agencies released a draft EIR/EIS analyzing the Delta Wetlands Project as it was originally proposed (Jones & Stokes Associates 1990). The 1990 EIR/EIS was never finalized because the project changed substantially as described below.

Delta Wetlands' 1993 Project Proposal and the 1995 Draft EIR/EIS

In 1993, Delta Wetlands submitted new water right applications based on a revised project description that proposed two reservoir islands and two habitat islands. Delta Wetlands' new water right applications requested new appropriative water rights for direct diversion to and storage on the project reservoir islands. The SWRCB issued the notice for Delta Wetlands' revised water right applications and new applications on August 6, 1993 (new Application Nos. 30267, 30268, 30269, and 30270) (see Appendix 1 of the 1995 DEIR/EIS).

The SWRCB and USACE, acting as the lead agencies under CEQA and NEPA, determined that Delta Wetlands' revised water right applications in 1993 did not trigger the need to issue an additional NOP/NOI. The information submitted in response to the original NOP/NOI and the comments received on the 1990 draft EIR/EIS assisted the lead agencies in defining the kind and extent of analyses to be performed for a new EIR/EIS. The lead agencies directed that the 1995 DEIR/EIS be prepared to assess the environmental effects of the Delta Wetlands Project based on the 1993 project description.

Based on the initial scoping process, public and agency comments received on the December 1990 draft EIR/EIS, and other correspondence with state and federal agencies, the lead agencies determined that the following issue areas would be addressed in the 1995 DEIR/EIS:

- water supply,
- hydrodynamics,
- water quality,
- flood control,
- utilities and highways,
- fishery resources,
- vegetation and wetlands,
- wildlife,
- land use and agriculture,
- recreation and visual resources,
- economic issues,
- traffic,
- cultural resources,
- mosquitos and public health, and
- air quality.

The USACE and SWRCB distributed the 1995 DEIR/EIS for public review and comment in September 1995. They also held a public meeting on October 11, 1995, to receive comments on the document; a court reporter was in attendance and a transcript was prepared for the administrative record.

The lead agencies received numerous comment letters during the public review period, which ended on December 21, 1995. Many commenters expressed concerns about levee stability and seepage potential and project effects on fisheries and water quality.

Consultation on Listed Fish Species and the Federal and State 1997 and 1998 Biological Opinions

At the same time that the 1995 DEIR/EIS was being prepared, the SWRCB and USACE prepared biological assessments that evaluated potential effects of the Delta Wetlands Project on fish and wildlife species listed or proposed for listing under the California and federal ESAs. The biological assessment for fish species concluded that the project could adversely affect several fish species that were listed or proposed for listing.

Pursuant to the federal ESA, USACE began formal consultation with the U.S. Fish and Wildlife Service (USFWS) about project effects on delta smelt and Sacramento splittail, and with the National Marine Fisheries Service (NMFS) about project effects on winter-run chinook salmon and steelhead. The SWRCB began consultation with the California Department of Fish and Game (DFG) pursuant to the

California ESA about project effects on delta smelt and winter-run chinook salmon.

As part of the consultation process, the SWRCB, USACE, USFWS, NMFS, DFG, and Delta Wetlands held a series of meetings to cooperatively develop operating parameters for the Delta Wetlands Project that would protect these species. The outcome of the meetings was agreement on a set of "final operations criteria" (FOC) for the project.

In 1997, the USFWS and NMFS issued no-jeopardy biological opinions regarding effects of the Delta Wetlands Project on federally listed fish species. DFG issued a no-jeopardy opinion in 1998 on project effects on state-listed fish, wildlife, and plant species. The findings of no jeopardy were based on the incorporation of the FOC into the proposed project. The biological opinions all included "reasonable and prudent measures" (RPMs) to be implemented by Delta Wetlands to minimize the effects of incidental take of listed species. Copies of the final biological opinions are included in Appendices C, D, and E of the 2000 REIR/EIS.

The State Water Resources Control Board's 1997 Water Right Hearing

Also in 1997, the SWRCB convened a water right hearing to consider Delta Wetlands' petitions for new water rights and changes to existing water rights. Eighteen parties filed protests with the SWRCB against Delta Wetlands' water right applications. Delta Wetlands entered into stipulated agreements with five of these protestants. Four of the stipulated agreements affirm the seniority of the protesting parties' water rights; to preclude interference with those senior water rights, they outline general conditions under which the Delta Wetlands Project would operate. The fifth precludes Delta Wetlands' interference with the protesting party's ability to meet water quality criteria for salinity. These agreements are described in Appendix A of the 2000 REIR/EIS.

A substantial amount of testimony was presented at the 1997 water right hearing. Much of the testimony concerned the stability of the levees under the proposed design and project operations, seepage from the project reservoir islands to neighboring islands, and the effects of the project on salinity and concentrations of dissolved organic carbon (DOC) in Delta exports and the resulting effects of this increased salinity and DOC loading on treatment plant operations.

Additionally, Pacific Gas and Electric Company (PG&E) presented evidence to show that the Delta Wetlands Project could affect PG&E's ability to maintain its gas line across Bacon Island. The East Bay Municipal Utility District (EBMUD) and DFG raised questions about potential project effects on Mokelumne River salmon and predation of protected fish species at Delta Wetlands Project boat docks and other project facilities. (Other issues raised by DFG were subsequently addressed in DFG's biological opinion, which was included as Appendix C of the 2000 REIR/EIS.) A broad range of assumptions and conclusions on these issues is reflected in the SWRCB's and USACE's administrative record.

2000 Revised Draft EIR/EIS

Substantial controversy remained regarding some of the potential effects of the project following the 1997 water right hearing; as a result, the SWRCB and USACE believed that it would be prudent to identify available new information on certain issues and to consider the relevance of this information to the analysis of potential project effects. The 2000 REIR/EIS was prepared, therefore, to allow for recirculation of parts of the environmental analysis and to provide for additional public review of, and comment on, this information.

The Council of Environmental Quality's (CEQ's) NEPA Regulations (40 CFR 1502.9[c]) direct that agencies "[s]hall prepare supplements to either draft or final environmental impact statements if . . . [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts". They further direct that agencies "[m]ay also prepare supplements when the agency determines that the purposes of [NEPA] will be furthered by doing so".

The CEQA Guidelines (Section 15088.5) include the following guidance on recirculation of a draft EIR or portions of a draft EIR:

> [A] lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public

> review under Section 15087 but before certification. ... [T]he term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. ... Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR. ... If the revision is limited to a few chapters or portions of the EIR, the lead agency need only recirculate the chapters or portions that have been modified.

Pursuant to Section 1502.9 of the CEQ NEPA Regulations (33 CFR 230) and Section 15088.5 of the CEQA Guidelines, USACE and the SWRCB recirculated those parts of the CEQA/NEPA analysis for the project for which significant information had been developed since the 1995 DEIR/EIS was published. These parts are the analyses of levee stability, seepage, water quality, and natural gas facilities and transmission pipelines.

The two lead agencies directed that a revised, quantitative analysis of geotechnical (levee stability and seepage) issues be developed to provide information to supplement the discussion of flood control features included in the 1995 DEIR/EIS. The evaluation of water quality effects is based in part on the estimated timing and volumes of Delta Wetlands Project diversions and discharges. Therefore, the modeling of water supply and operations was also updated for the 2000 REIR/EIS, and the results of the modeling were presented for comparison with those of the 1995 DEIR/EIS. In addition, the fisheries assessment was updated with the most recent information available to address issues raised after the 1995 DEIR/EIS was published.

The 2000 REIR/EIS therefore included information on the following subjects to supplement the evaluations presented in the 1995 DEIR/EIS:

- water supply and operations,
- water quality,
- fisheries,
- levee stability and seepage, and
- natural gas facilities and pipelines.

The 2000 REIR/EIS was issued for public review on May 31, 2000. Several comment letters were received during the public review period, which ended on July 31, 2000.

Listings of Fish Species Since 1997

After the issuance of the biological opinions discussed above, splittail, steelhead (Central Valley Evolutionarily Significant Unit [ESU]), and spring-run chinook salmon were listed as threatened under the federal ESA, and spring-run chinook salmon was also listed as threatened under the California ESA. In addition, the Delta has been designated critical habitat for steelhead and spring-run chinook salmon under the federal ESA. Also, the requirements of Section 2090 of the California ESA have expired, resulting in the need to convert DFG's biological opinion to a take permit under the current requirements of the California ESA.

Splittail and Steelhead

The USFWS and NMFS biological opinions included conference opinions on splittail and steelhead, respectively, because these species were proposed for listing at the time when the opinions were issued. The conference opinions found that the Delta Wetlands Project, as modified by the FOC, would not jeopardize the continued existence of these species. USFWS formally adopted the conference opinion as its biological opinion on splittail for the Delta Wetlands Project in April 2000. USFWS's letter notifying USACE of the adoption was included in Appendix E of the 2000 REIR/EIS. NMFS formally adopted the conference opinion as its biological opinion on steelhead for the project in May 2000. NMFS's letter notifying USACE of the adoption is included in the Appendix to the Responses to Comments volume of this FEIS.

Spring-Run Chinook Salmon

As stated above, spring-run chinook salmon was listed as threatened under the federal and California ESAs in 1999. To address potential project effects on

Central Valley spring-run chinook salmon ESU, USACE requested consultation with NMFS in accordance with Section 7 of the federal ESA in 1999. USACE noted that the protective measures included in the biological opinions for previously listed species cover the period when spring-run chinook salmon occur in the Delta; USACE concluded that these measures therefore would also minimize adverse effects of the project on spring-run chinook salmon.

NMFS concurred with this conclusion; in August 2000, NMFS issued a biological opinion that states that the project is not likely to jeopardize the continued existence of spring-run chinook salmon or result in the adverse modification of its critical habitat or that of Central Valley steelhead ESU. NMFS's biological opinion on spring-run chinook salmon is included in the Appendix to Volume 2 of this FEIS.

DFG's biological opinion on project effects on delta smelt and winter-run chinook salmon also assessed Delta Wetlands' impacts on spring-run chinook salmon, but it made no conclusions about effects on this species because the species was not listed at the time. The RPMs were indicated as minimizing adverse impacts of the incidental taking of spring-run chinook salmon and of the fish species that were then listed. In accordance with Section 2081 of the California Fish and Game Code, Delta Wetlands has requested concurrence directly from DFG that the protective measures in the existing biological opinion adequately address potential project effects on spring-run chinook salmon.

Resumption of the Water Right Hearing and Completion of the Final EIR and Final EIS

The SWRCB's hearing on Delta Wetlands' water right applications was resumed and completed in October 2000. Delta Wetlands and California Urban Water Agencies (CUWA) submitted to the SWRCB an agreement that Delta Wetlands would operate according to the terms of the Delta Wetlands Project Water Quality Management Plan (WQMP) negotiated by Delta Wetlands and CUWA. During the October 2000 hearing, CUWA stated that it will withdraw its opposition to the Delta Wetlands water right permits based on the inclusion of the WQMP as a permit term or condition.

EBMUD and Contra Costa Water District (CCWD) also entered into protest dismissal agreements with Delta Wetlands and submitted these to the SWRCB. The agreements include programs to ensure the stability of project island levees, protections against seepage from the reservoir islands to neighboring islands, and limits on the project's water quality effects. Copies of these agreements are included in the Appendix to Volume 2 of this FEIS.

In January 2001, the SWRCB issued a FEIR to respond to comments on the 1995 DEIR/EIS and the 2000 REIR/EIS. The SWRCB certified the FEIR and approved Delta Wetlands' water right permit applications on February 15, 2001.

This FEIS has been prepared to respond to agency and public comments received on the 1995 DEIR/EIS and 2000 REIR/EIS. The NEPA requirements for a FEIS are described in the next section.

PURPOSE OF THE FINAL EIS AND REQUIREMENTS FOR ADOPTION

The FEIS analyzes and discloses the environmental effects of the Delta Wetlands Project, identifies ways to reduce or avoid potential adverse environmental effects of the project, and identifies and assesses alternatives to the proposed action. Under NEPA, after a lead agency has completed a draft EIS, it must consult with and obtain comments from public agencies that have legal jurisdiction with respect to the proposed project, and must provide the general public with opportunities to comment on the draft document (40 CFR 1503.1). An FEIS is prepared to respond to those comments and to present the text of the EIS with revisions and updates incorporated.

Information presented in this FEIS will be used by USACE in its evaluation of Delta Wetlands' permit applications. The FEIS may be used by other agencies for compliance with NEPA and CEQA for other approvals needed for project implementation. Chapter 4, "Permit and Environmental Review and Consultation Requirements", describes the other approvals that may be needed.

USACE will circulate this FEIS for public review before making a decision on the proposal. If USACE determines that the FEIS meets NEPA requirements, it will adopt the document. When it decides on Delta Wetlands' Section 404 and Section 10 permit

applications, USACE will prepare a record of decision regarding its determination, the alternatives analyzed, the mitigation measures required as a condition of permit approval, mitigation measures presented but not required, and monitoring and enforcement of the required mitigation measures.

ORGANIZATION AND FORMAT OF THE FINAL EIS

According to the CEQ NEPA Regulations, an FEIS must include:

- comments and recommendations received on the draft EIS, either verbatim or in summary;
- the responses of the lead agency to significant environmental points raised in the review and consultation process (40 CFR 1503.4[b]);
- a rewritten version of the draft EIS that reflects changes to the text resulting from the responses to comments as well as information that has been changed or updated since the original publication of the document; and
- a list of persons, organizations, and public agencies commenting on the draft EIS.

The FEIS is divided into two volumes. Volume 1 consists of a combined rewritten version of the 1995 DEIR/EIS and the 2000 REIR/EIS. The organization of chapters in this volume is the same as that of the 1995 DEIR/EIS. As described above, the 2000 REIR/EIS updated the analyses for only some of the subjects covered by the 1995 DEIR/EIS. Therefore, for those subject areas of the 1995 DEIR/EIS that were addressed again in the 2000 REIR/EIS, the chapter of this FEIS includes the text of the 1995 DEIR/EIS followed by the text of the corresponding 2000 REIR/EIS chapter. The other chapters in this volume (those that cover subject areas that were not updated in the 2000 REIR/EIS) include only the 1995 DEIR/EIS analysis as revised in response to comments.

All the chapters have been revised to reflect changes made in response to comments received on the 1995 DEIR/EIS and the 2000 REIR/EIS and to incorporate updates of other information contained in those chapters. The chapters that include material from the 1995 DEIR/EIS and the 2000 REIR/EIS also have been modified to enhance readability; for example, cross-referencing has been added between the 1995 DEIR/EIS and 2000 REIR/EIS sections.

Volume 1 is organized as follows:

- "Summary" provides a comparison of environmental effects between the alternatives and a summary of impact determinations, as required by CEQA and NEPA. Unavoidable impacts are identified, as are irreversible commitments of resources and cumulative impacts of this project in combination with other actions in the region.
- Chapter 2, "Delta Wetlands Project Alternatives", identifies the purpose of and need for the project and describes the features of the Delta Wetlands Project alternatives considered in this FEIS.
- Chapter 3, "Affected Environment and Environmental Consequences", is presented as a series of chapters (3A through 3O), each devoted to an issue area listed under "Delta Wetlands' 1993 Project Proposal and the 1995 Draft EIR/EIS" above. Each of these chapters describes the affected environment and environmental impacts of the Delta Wetlands Project alternatives, and methods of mitigating significant impacts.
- Chapter 4, "Permit and Environmental Review and Consultation Requirements", summarizes the environmental review, consultation, and permitting requirements that must be satisfied before the Delta Wetlands Project can proceed.
- Chapter 5, "List of Preparers", lists the individuals involved in preparing the FEIS.
- Chapter 6, "Glossary of Technical Terms", provides definitions of technical terms used in this report.
- Chapter 7, "Distribution List", lists all the agencies, organizations, and individuals that have received copies of the FEIS.

References are listed at the end of each chapter in which they are cited.

Volume 2 consists of responses to comments.

Chapter 1 of Volume 2, "Introduction to the Responses to Comments", describes the organization of that volume.

The technical appendices to the 1995 DEIR/EIS and the 2000 REIR/EIS contain background information for the resource chapters and data compiled for the impact assessments. Table 1-2 lists the appendices from both documents. These appendices are hereby incorporated by reference.

Volumes 1 and 2 of this document and the technical appendices incorporated by reference constitute the FEIS. Copies of the 1995 DEIR/EIS, the 2000 REIR/EIS, the FEIR, and this FEIS are available for public review at public libraries located in the following cities in California:

- Antioch,
- Concord,
- Vallejo,
- Lodi,
- Martinez,
- Oakland,
- Rio Vista,
- Fairfield,
- Stockton,
- Tracy, and
- Sacramento (the main public library and the California State Library).

Additional copies of the NEPA and CEQA documents for the Delta Wetlands Project are available for review during normal business hours Monday through Friday, excluding holidays, at the following locations:

U.S. Army Corps of Engineers
Regulatory Branch, Sacramento District
1325 J Street, Room 1480
Sacramento, CA 95814

California State Water Resources Control Board
Division of Water Rights
1001 I Street
Sacramento, CA 95814

CITATIONS

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_____. 1995. Environmental impact report and environmental impact statement for the Delta Wetlands Project. Draft. September 11, 1995. (JSA 87-119.) Sacramento, CA. Prepared for California State Water Resources Control Board, Division of Water Rights, and U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.

Jones & Stokes. 2000. Revised draft environmental impact report and environmental impact statement for the Delta Wetlands Project. May. (J&S 99-162.) Sacramento, CA. Prepared for the California State Water Resources Control Board and the U.S. Army Corps of Engineers, Sacramento, CA.

U.S. Army Corps of Engineers. 1977. Regulatory program applicant information. (EP-1145-2-1.) Washington, DC.

Table 1-1. Timeline of the Delta Wetlands Project

Year	CEQA/NEPA Process	Water Right Process	Section 404/Section 10 Process	Endangered Species Act (ESA) Process
1987		Water right applications filed with the SWRCB for storage of water on four islands		
1988			Department of Army application filed with USACE for discharge of dredged or fill material into waters of the United States and for effects on navigable waters of the United States	
1990	Draft EIR/EIS released (December)			
1993		New water right applications submitted for storage of water on two islands and creation of habitat on two islands		
1995	1995 DEIR/EIS released (September)			Biological assessment of project effects on state-listed and federally listed fish and wildlife species prepared California ESA consultation initiated by the SWRCB with DFG Federal ESA consultation initiated by USACE with USFWS and NMFS
1996	Comments received on 1995 DEIR/EIS			State and federal ESA consultation continues
1997		SWRCB water right hearing conducted to receive input on water right applications		No-jeopardy biological opinions issued by USFWS and NMFS
1998			SWRCB denies Section 401 certification without prejudice	Final no-jeopardy biological opinion issued by DFG

Table 1-1. Continued

Year	CEQA/NEPA Process	Water Right Process	Section 404/Section 10 Process	Endangered Species Act (ESA) Process
1999	The SWRCB and USACE determine that an REIR/EIS is required to present new information and to describe changes to the project resulting from the water right hearing and ESA consultations	Parties to the water right hearing invited to attend status meetings conducted by the SWRCB	USACE suspends processing of application due to the SWRCB's denial of Section 401 certification USACE resumes processing application with commencement of preparation of FEIS	USACE consults with USFWS and NMFS about newly listed species; Delta Wetlands coordinates with DFG about newly listed species and changes to California ESA
2000	2000 REIR/EIS issued for public review and comment (May)	After comments are received on the 2000 REIR/EIS, water right hearing proceedings concluded by the SWRCB (October)		USFWS adopts conference opinion on splittail as biological opinion. NMFS adopts conference opinion on steelhead as biological opinion; NMFS confirms that its authorization applies to spring-run chinook salmon
2001	FEIR prepared, responding to comments received on the 2000 REIR/EIS and 1995 DEIR/EIS (January) The SWRCB certifies the FEIR and adopts findings of fact and statement of overriding considerations for all significant and unavoidable impacts (February) USACE circulates FEIS for public review (July) *USACE issues a record of decision (ROD)*	After FEIR is prepared, the SWRCB releases a draft water right decision and receives comments on draft decision (January) The SWRCB approves the water right permits under Water Right Decision 1643 (February)	*After FEIS is adopted, USACE confirms compliance with ESA, the National Historic Preservation Act, and Section 401* *After issuing a ROD, USACE decides whether to issue Department of Army permit*	*DFG converts biological opinion to a 2081 agreement, and confirms that its authorization applies to spring-run chinook salmon.*

Note: *Italic type* indicates anticipated future actions.

Table 1-2. Appendices in the 1995 Draft EIR/EIS and 2000 Revised Draft EIR/EIS

Appendix	Title
	1995 DEIR/EIS
1	SWRCB Public Notice for the Delta Wetlands Water Right Applications
2	Supplemental Description of the Delta Wetlands Project Alternatives
A1	Delta Monthly Water Budgets for Operations Modeling of the Delta Wetlands Project
A2	DeltaSOS: Delta Standards and Operations Simulation Model
A3	DeltaSOS Simulations of the Delta Wetlands Project
A4	Possible Effects of Daily Delta Conditions on Delta Wetlands Project Operations and Impact Assessments
B1	Hydrodynamic Modeling Methods and Results for the Delta Wetlands Project
B2	Salt Transport Modeling Methods and Results for the Delta Wetlands Project
C1	Analysis of Delta Inflow and Export Water Quality Data
C2	Analysis of Delta Agricultural Drainage Water Quality Data
C3	Water Quality Experiments on Potential Sources of Dissolved Organics and Trihalomethane Precursors for the Delta Wetlands Project
C4	DeltaDWQ: Delta Drainage Water Quality Model
C5	Modeling of Trihalomethane Concentrations at a Typical Water Treatment Plant Using Delta Export Water
C6	Assessment of Potential Water Contaminants on the Delta Wetlands Project Islands
D1	Annotated List of Geotechnical Reports Prepared for the Delta Wetlands Project
E1	Design and Construction of Wilkerson Dam South of SR 12 on Bouldin Island
F1	Supplemental Information on the Affected Environment for Fisheries
F2	Biological Assessment: Impacts of the Delta Wetlands Project on Fish Species
G1	Plant Species Nomenclature
G2	Prediction of Vegetation on the Delta Wetlands Reservoir Islands
G3	Habitat Management Plan for the Delta Wetlands Habitat Islands
G4	Simulated End-of-Month Water Storage on Reservoir Islands for the Delta Wetlands Project Alternatives

Table 1-2. Continued

Appendix	Title
G5	Summary of Jurisdictional Wetland Impacts and Mitigation
H1	Wildlife Species Nomenclature
H2	Wildlife Inventory Methods and Results
H3	Federal Endangered Species Act Biological Assessment: Impacts of the Delta Wetlands Project on Wildlife Species
H4	California Endangered Species Act Biological Assessment: Impacts of the Delta Wetlands Project on Swainson's Hawk and Greater Sandhill Crane
H5	Agency Correspondence regarding the Federal and California Endangered Species Acts
L1	Estimated Trip Generation
M1	Cultural Context of the Delta Wetlands Project Islands
M2	Cultural Resource Survey Information for the Delta Wetlands Project Islands
M3	Programmatic Agreement
O1	Air Quality Monitoring Data and Pollutant Emissions under Existing Conditions and the Delta Wetlands Project Alternatives
4	Section 404(b)(1) Alternatives Analysis for the Delta Wetlands Project
	2000 REIR/EIS
A	Summary of Stipulated Agreements between Delta Wetlands and Parties to the Hearing on Delta Wetlands' Water Rights Applications
B	Delta Wetlands Project Final Operations Criteria
C	California Department of Fish and Game Biological Opinion
D	National Marine Fisheries Service Biological Opinion
E	U.S. Fish and Wildlife Service Biological Opinion
F	Daily Simulations of Delta Wetlands Project Operations
G	Water Quality Assessment Methods
H	Levee Stability and Seepage Technical Report
I	Distribution List for the Revised Draft EIR/EIS

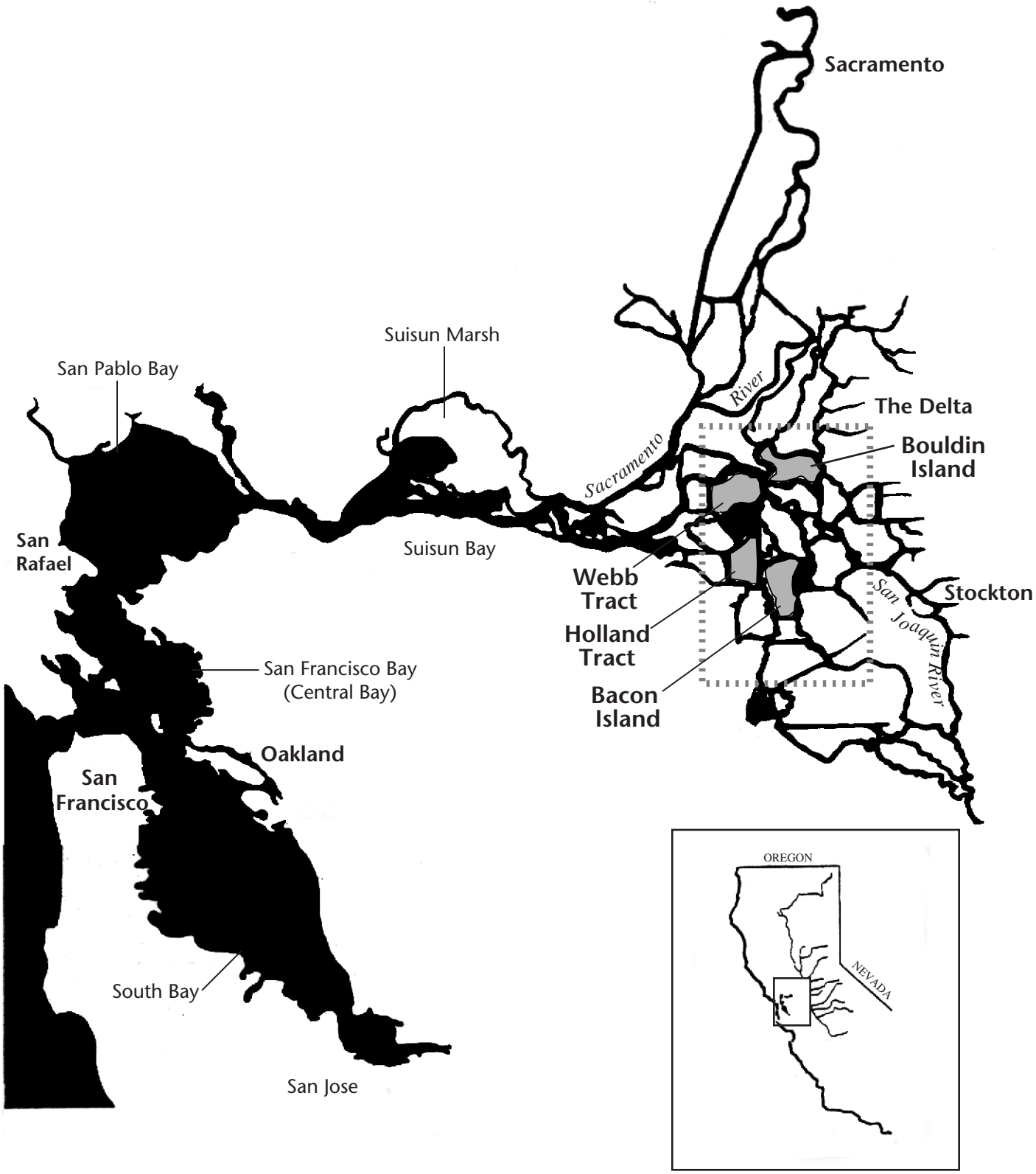

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Figure 1-1
Delta Wetlands Project Location

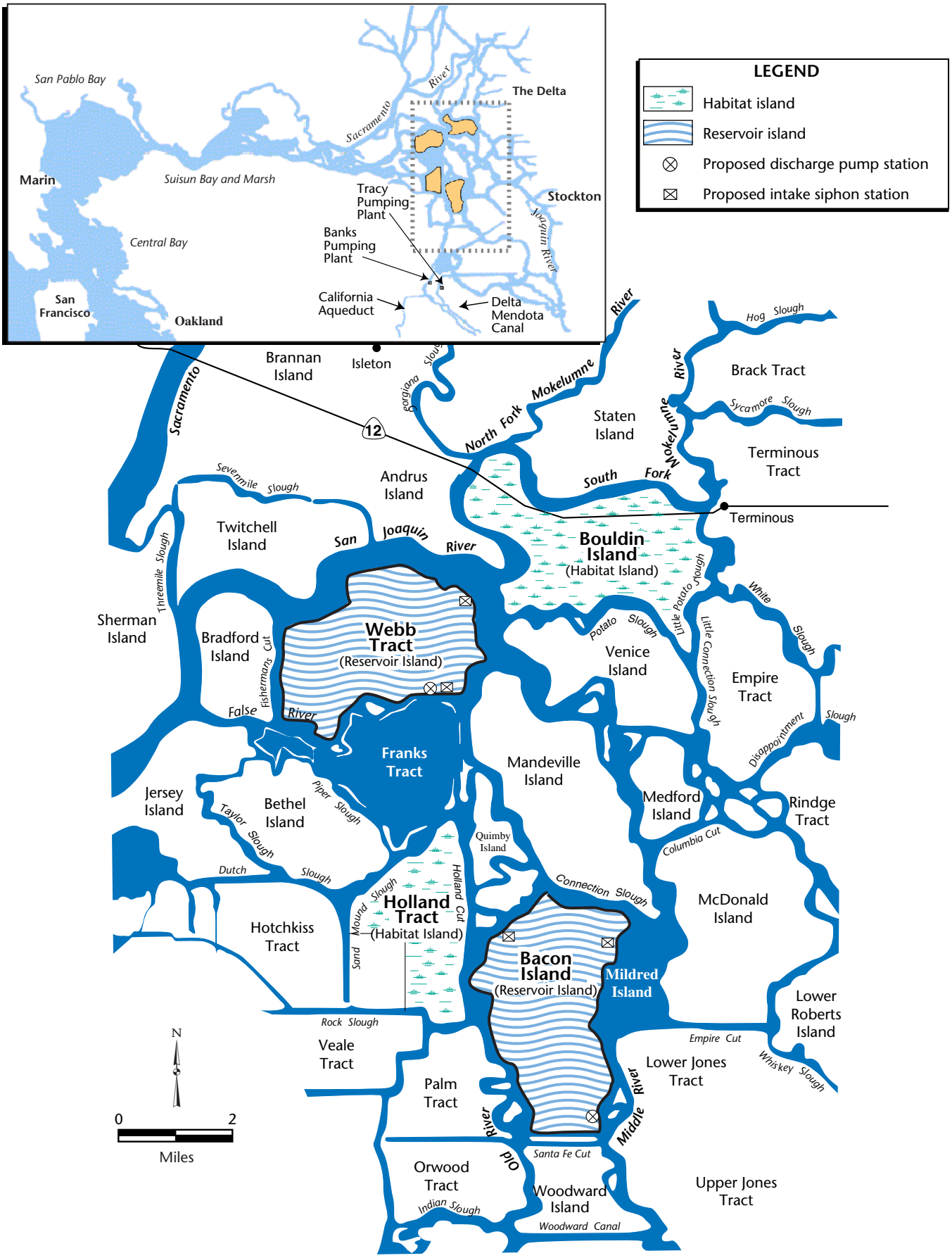

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Figure 1-2
Delta Wetlands Project Islands