

Chapter 2. Changes to the Project Description, Alternatives Analyzed, and Future Conditions Considered

Some differences exist between the Delta Wetlands Project as analyzed in this REIR/EIS and as analyzed in the 1995 DEIR/EIS. This chapter explains and summarizes those differences. The following are described below:

- the revisions to the project description since publication of the 1995 DEIR/EIS,
- the treatment of project alternatives in this REIR/EIS, and
- future conditions as analyzed in this REIR/EIS.

The latter discussion also describes the potential future relationship between the Delta Wetlands Project and CALFED, as requested by several parties in comments on the 1995 DEIR/EIS and at the SWRCB hearing on Delta Wetlands' water right applications.

REVISIONS TO THE PROJECT DESCRIPTION

An overview of the proposed project can be found under "Project Description" in Chapter 1, "Introduction and Project Background". Table 2-1 provides a summary comparison of the proposed project as evaluated in the 1995 DEIR/EIS and as evaluated in this REIR/EIS. As shown in Table 2-1, the major elements of the proposed project have not changed.

Two types of modifications to the Delta Wetlands Project as described in the 1995 DEIR/EIS have been incorporated into the proposed project description:

- Project operations would be restricted to ensure the protection of endangered and threatened fish species as described in terms set forth in the following, which were developed as a result of consultation pursuant to the California and federal ESAs:
 - Delta Wetlands FOC, also referred to as the Delta Wetlands Operating Criteria and Plan (OCAP); and
 - RPMs in the DFG, NMFS, and UFSWS biological opinions for the protection of fish species listed as threatened or endangered.

- Operations also would be restricted as specified in the stipulated agreements entered into by Delta Wetlands and the following parties to the SWRCB's water right hearing for the Delta Wetlands Project:

- the U.S. Bureau of Reclamation (Reclamation),
- the California Department of Water Resources (DWR),
- Amador County,
- the City of Stockton, and
- North Delta Water Agency.

The terms of the FOC, biological opinions, and stipulated agreements limit potential project operations to increase protection of fisheries, affirm the senior water rights of other parties, or protect another party's ability to meet specific water quality criteria. These changes are generally considered to reduce environmental impacts, primarily because they may limit the timing and amounts of diversions and discharges to export. They therefore are considered beneficial and do not trigger the need to recirculate the EIR/EIS analysis. They have been included in the discussions in this REIR/EIS, however, to present reviewers with an updated assessment of the possible range of allowable project operations.

Other changes in conditions and assessment methods that have emerged since publication of the 1995 DEIR/EIS and that pertain to the evaluation of Delta Wetlands Project effects are described in the resource evaluation chapters rather than in this chapter. Examples of such changes include new listings of fish species under the California and federal ESAs, and updated assumptions about the Delta water budget that pertain to water supply and water quality modeling. These changes represent modifications to existing conditions rather than changes to the proposed project; they are presented as revisions to the affected environment, the setting within which the potential impacts of the project are analyzed.

Restrictions on Project Operations to Ensure the Protection of Fish

The FOC and biological opinion measures were developed in response to anticipated impacts of the proposed project, as analyzed in the 1995 DEIR/EIS, on fish species protected under the California and federal ESAs. Therefore, as described in Chapter 5, "Fisheries", some of these measures supersede mitigation measures proposed in the 1995 DEIR/EIS.

As discussed under "Endangered Species Act Consultation" in Chapter 1, Delta Wetlands, the SWRCB, USACE, DFG, NMFS, and USFWS, as part of the formal consultation process on the Delta Wetlands Project's effects on protected fish species, cooperatively developed operating parameters (referred to as the FOC) for the project to ensure the protection of these species. The FOC terms include many specific measures that define the flow and water quality conditions under which project diversions and discharges would be allowed, and describe mitigation that Delta Wetlands has agreed to incorporate into the proposed project. Table 2-2 summarizes the timing of restrictions on diversions and discharges specified in the FOC. Chapter 3, "Water Supply and

Operations”, describes the incorporation of FOC and biological opinion terms into the modeling of Delta Wetlands Project operations. All the restrictions and mitigation measures included in the FOC and the biological opinions have been considered in the updated analysis of impacts on fisheries presented in Chapter 5, “Fisheries”.

The full text of the FOC is provided in Appendix B. The biological opinions are included in Appendices C, D, and E.

Stipulated Agreements

As noted in Chapter 1, Delta Wetlands entered into stipulated agreements with Reclamation, DWR, Amador County, the City of Stockton, and North Delta Water Agency. The agreements affirm the seniority of these parties’ water rights; they also outline general conditions under which the Delta Wetlands Project would operate to preclude interference with those water rights or with a party’s ability to meet particular water quality criteria. For example, the agreement between Delta Wetlands and DWR includes three terms:

- Term 1, generally speaking, prohibits Delta Wetlands diversions when the Delta is determined to be in “balanced conditions”—that is, when all Delta inflow is required to meet Delta objectives and satisfy diversions by Contra Costa Water District (CCWD), the CVP, the SWP, and Delta riparian and senior appropriative water users.
- Term 2 limits the amount of water Delta Wetlands can take under “excess Delta conditions” to the amount by which the Delta is in excess as reasonably determined by DWR and Reclamation. This will be the amount of water that Delta Wetlands may divert “without putting the Delta back into balanced conditions”.
- Term 3 requires Delta Wetlands to stop or reduce any reservoir releases if, as a result of these releases, the SWP or the CVP would have to modify operations to meet a legal requirement (e.g., ESA requirements, water rights terms and conditions such as export limits and salinity standards for exported water, or USACE requirements).

The terms of the stipulated agreements explicitly confirm the assumption of Delta Wetlands and the lead agencies that the Delta Wetlands Project would not be allowed to interfere with other parties’ senior water rights and with SWP and CVP operations. Because this assumption has been part of the description of the proposed project, the agreements do not substantially change the project description or affect the analysis of project effects.

Appendix A summarizes the terms of the stipulated agreements entered into by Delta Wetlands and other parties to the water right hearing.

PROJECT ALTERNATIVES

The proposed project evaluated in this REIR/EIS is Alternative 2 described in the 1995 DEIR/EIS, as modified by the changes to the project description summarized above.

The 1995 DEIR/EIS analyzed three project alternatives and a No-Project Alternative in an equal level of detail. Alternatives 1 and 2 both represent Delta Wetlands' proposed project, consisting of water storage on two reservoir islands and implementation of an HMP on two habitat islands, but these alternatives offer two different scenarios for the discharge of stored water. Under Alternative 3, all four Delta Wetlands Project islands would be used as reservoirs and limited compensation wetland habitat would be provided on Bouldin Island.

Alternative 2, with the highest amount of discharge pumping, would have the maximum effect on fisheries associated with project discharges. Alternative 2 was therefore used to represent the proposed project in the biological assessment for fish species (see Appendix F2 of the 1995 DEIR/EIS). The terms and conditions of the DFG, USFWS, and NMFS biological opinions are based on this alternative.

Alternatives 1 and 2 feature identical project components and operations for diversion onto the reservoir islands; however, they have different operating criteria for discharge of stored water (i.e., frequency and volume of discharges) from the reservoir islands. The two alternatives' operating criteria differently interpret the method of applying the export limits specified in the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (WQCP) to discharges of water from the Delta Wetlands Project islands. The export limits specify percentages of total Delta inflow that are allowed to be exported from the Delta. Delta Wetlands Project discharges to export may:

- count toward the percentage of inflow that is allowed to be exported (i.e., may be subject to strict interpretation of the export limits) or
- be in addition to the percentage allowed under the export limits (i.e., may not be subject to strict interpretation of the export limits).

Under Alternative 1, it was assumed that project discharges would be exported in any month when the SWP and CVP pumps have unused capacity within the permitted pumping rate and use of this capacity is limited by strict interpretation of the export limits. In other words, Delta Wetlands would be allowed to discharge water for export only if the amount of non-Delta Wetlands Project water being exported did not already constitute the percentage of inflow allowed under the export limits. Under Alternative 2, it was assumed that releases of water from the project islands would not be subject to strict interpretation of the export limits. Under this alternative, the SWP and CVP pumps would export Delta Wetlands discharges during any month when the pumps have unused capacity within the permitted pumping rate, even if the non-Delta Wetlands Project exports already constitute the allowable percentage. Both alternatives were assumed to operate in the context of current Delta facilities, demand for export, and operating constraints.

This REIR/EIS analysis is being performed to confirm the results of the 1995 DEIR/EIS analysis and to provide revised impact assessments and new or revised mitigation measures where necessary. Generally, the REIR/EIS evaluates the proposed project as represented by Alternative 2 (as modified) and describes any changes in the evaluation of the other alternatives from the 1995 DEIR/EIS.

FUTURE CONDITIONS AND RELATIONSHIP OF THE DELTA WETLANDS PROJECT TO OTHER PROJECTS

As noted in Chapter 1, for purposes of the 1995 DEIR/EIS and this REIR/EIS, the Delta Wetlands Project is analyzed as a stand-alone water storage facility, operated independently of the SWP and the CVP and without regard to the specific entities to which the water could be sold. Several potential opportunities exist to operate the Delta Wetlands Project in conjunction with the CVP and the SWP or in coordination with CALFED; however, no proposals have been made for which the SWRCB and USACE could reasonably assess the environmental effects, so discussion of such arrangements would be speculative.

The cumulative future scenario assumed in the REIR/EIS analysis of water supply and operations is based on the same assumptions as the cumulative future analysis presented in the 1995 DEIR/EIS. Full pumping capacity at Harvey O. Banks Pumping Plant (10,300 cubic feet per second [cfs]), although not presently permitted by USACE, is assumed to represent reasonably foreseeable future conditions. Demand for CVP/SWP water, however, is assumed to remain at the 1995 level.

The provision of new surface and groundwater storage has been identified as a possible action to be included in CALFED (CALFED Bay-Delta Program 1996, 1998). CALFED has identified the possibility of using in-Delta storage for diversions and to manage Delta flows; water would be stored or diverted at times when fish would not be adversely affected and pumping would be shifted to less sensitive periods. CALFED has identified 230 thousand acre-feet (TAF) of in-Delta storage on Delta islands as one of 14 possibilities for providing water supply, flood control, water quality, and ecosystem benefits (CALFED Bay-Delta Program 1998). The Delta Wetlands Project could be included as part of the CALFED in-Delta storage element.

As part of its water management strategy, CALFED has undertaken an Integrated Storage Investigation (ISI) to evaluate various types of water storage projects and the possible role in overall water management that may be fulfilled by in-Delta, onstream, and offstream water storage projects. The Delta Wetlands Project may be one option for in-Delta storage and is a candidate for consideration by the ISI. The ISI anticipates identifying by June 2000 those projects that warrant further study and conducting feasibility studies for 1 to 2 years after it identifies these projects for possible inclusion in CALFED's program. Some of the information presented in the 1995 DEIR/EIS and this REIR/EIS may be used by the ISI to determine whether the Delta Wetlands Project could be included in this program. However, assumed project operations under this program would differ from the independent operations analyzed in the 1995 DEIR/EIS and the REIR/EIS; therefore, CALFED would need to analyze the project separately.

In 1999, CALFED completed a draft programmatic environmental impact statement/environmental impact report (CALFED Bay-Delta Program 1999a), which provides a broad overview of the potential actions that the CALFED program could take. The document does not specifically address in-Delta storage in any detail. It broadly describes the environmental consequences of proposed actions and enables decision making regarding program direction and content. Subsequent actions, including implementation of in-Delta storage projects, will be subject to alternative analysis, environmental review, and permitting decisions before they can be implemented.

Table 2-1. Comparison of the Proposed Delta Wetlands Project Features as Evaluated in the 1995 DEIR/EIS and in the 2000 REIR/EIS

Project Feature	Proposed Project, as Evaluated in the 1995 DEIR/EIS	Proposed Project, as Evaluated in the 2000 REIR/EIS
Purpose	Potential year-round diversion and storage of water on Bacon Island and Webb Tract (reservoir islands) and wetland and wildlife habitat creation and management on Bouldin Island and most of Holland Tract (habitat islands). During periods of availability throughout the year, water would be diverted onto the reservoir islands to be stored for later sale or release. Incidental shallow-water management on reservoir islands to enhance forage and cover for waterfowl during nonstorage periods.	Same as in 1995 DEIR/EIS.
Diversion and discharge timing	1995 Water Quality Control Plan outflow requirements and objectives, permitted combined SWP and CVP pumping rate, and endangered species protection measures.	Same as in 1995 DEIR/EIS, plus terms of the Delta Wetlands final operations criteria (FOC) (see Table 2-2), biological opinions, and stipulated agreements between Delta Wetlands and other parties to the SWRCB's water right hearing.
Reservoir storage capacity ^a	Bacon Island: 118 thousand acre-feet (TAF). Webb Tract: 120 TAF.	Same as in 1995 DEIR/EIS.
Multiple storage utilized (multiple fillings and drawdown in one year, if possible)?	Yes.	Yes.
Pump station design	One discharge pump station on each reservoir island, with 40 new pumps (on Bacon Island) or 32 new pumps (on Webb Tract) with 36-inch-diameter pipes discharging to adjacent Delta channels. Typical spacing would be 25 feet on center. An assortment of axial-flow and mixed-flow pumps would be used.	Same as in 1995 DEIR/EIS.
Siphon station design	Two new stations for diversions installed along the perimeter of each reservoir island, each with 16 siphon pipes 36 inches in diameter and with fish screens to prevent entrainment of fish in diversions. Stations would be spaced at least 40 feet apart.	Same as in 1995 DEIR/EIS, with fish screen measures included in the FOC and biological opinions.

Project Feature	Proposed Project, as Evaluated in the 1995 DEIR/EIS	Proposed Project, as Evaluated in the 2000 REIR/EIS
Diversion rate	<p>Either reservoir island: maximum of 4,500 cubic feet per second (cfs) (9 TAF per day).</p> <p>Either habitat island: maximum of 200 cfs.</p> <p>Combined maximum daily average (all islands): 9,000 cfs.</p> <p>Combined maximum monthly average: 4,000 cfs (allowing for filling of both reservoir islands in one month).</p>	<p>Same as in 1995 DEIR/EIS, with restrictions specified in the FOC (see Table 2-2), biological opinions, and stipulated agreements.</p>
Discharge rate	<p>Either habitat island: maximum of 200 cfs.</p> <p>Combined maximum daily average (all islands): 6,000 cfs.</p> <p>Combined maximum monthly average: 4,000 cfs (allowing for emptying of both reservoir islands in one month).</p>	<p>Same as in 1995 DEIR/EIS, with restrictions specified in the FOC (see Table 2-2), biological opinions, and stipulated agreements.</p>
Levee improvements	<p>Perimeter levees raised and widened on reservoir islands to hold water at a maximum elevation of 6 feet above mean sea level. Levee improvements on all four Delta Wetlands Project islands designed to meet or exceed recommended standards for levees outlined in DWR Bulletin 192-82. Weekly inspections and ongoing maintenance.</p>	<p>Same as in 1995 DEIR/EIS.</p>
Wetlands management	<p>Wetlands and wildlife habitat created and managed year round on Bouldin Island and Holland Tract under a habitat management plan to offset the effects of water storage operations on wetlands and wildlife habitat.</p>	<p>Same as in 1995 DEIR/EIS.</p>
Maximum number of recreation facilities ^b	<p>Bacon Island: 11. Webb Tract: 11. Bouldin Island: 10. Holland Tract: 6.</p>	<p>Same as in 1995 DEIR/EIS.</p>

Notes:

^a Assuming a maximum pool elevation of 6 feet above mean sea level (based on National Geodetic Vertical Datum data).

^b Each recreation facility would be constructed on approximately 5 acres along a perimeter levee and would include vehicle and boat access.

Table 2-2. Summary of Final Operations Criteria for the Delta Wetlands Project

Final Operations Criteria	Applicable Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Annual export of Delta Wetlands stored water will not exceed 250,000 acre-feet (<i>Applies on an annual basis</i>)												
Diversion Measures												
Maximum X2 value limits start of diversions												
Maximum X2 value limits magnitude of diversions												
Diversions limited by a maximum allowable change in X2												
Diversions to storage limited by QWEST (California Endangered Species Act)												
No diversion												
No diversion if delta smelt fall midwater trawl index <239												
Diversions limited to a percentage of Delta surplus												
Diversions limited to a percentage of Delta outflow												
Diversions limited to a percentage of San Joaquin River inflow												
Diversions reduced when monitoring detects presence of delta smelt												
Diversions limited if Delta Cross Channel is closed for fish protection												
Topping-off diversions for evaporation limited												
Discharge Measures												
Bacon Island discharges for export limited to 50% of San Joaquin River inflow												
No Webb Tract discharges for export allowed												
No discharges for export or redirection from habitat islands (Bouldin Island, Holland Tract) allowed												
Discharges limited to a percentage of available unused export capacity												
Environmental water set aside and provided as a percentage of discharge												
Discharges reduced when monitoring detects presence of delta smelt												

Notes: QWEST = a calculated flow parameter representing net flow between the central and western Delta.
 Shading represents periods when criterion applies.