Chapter 8
Growth-Inducing Impacts

Introduction

NEPA and CEQA require that an EIS and EIR discuss how a project, if implemented, could induce growth. This chapter presents an analysis of the potential growth-inducing impacts of the proposed project and alternatives, including:

- summary of the conclusions of the chapter's analysis,
- background information related growth inducement,
- the methodology used to analyze growth-inducing impacts, and
- the impact conclusions.

CEQA and NEPA Requirements

Section 21100(b)(5) of CEQA requires an EIR to discuss how a proposed project, if implemented, may induce growth and the impacts of that induced growth (see also State CEQA Guidelines Section 15126). CEQA requires the EIR to discuss specifically "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (State CEQA Guidelines Section 15126.2[d]).

In addition, under authority of NEPA, CEQ regulations require EISs to consider the potential indirect impacts of a proposed action. The indirect effects of an action are those that occur later in time or farther away in distance, but are still reasonably foreseeable, and "may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate" (40 CFR Section 1508.8[b]).

Assessment Methods

Level of Analysis Needed

Construction-Related Effects

The assessment of construction-related effects involves analyzing whether the relative magnitude of temporary and permanent jobs that would be created by the plan would be large enough to require additional housing, or otherwise spur economic growth in the area surrounding the plan area, and determining whether that growth would have environmental impacts.

Permanent Effects

The assessment of growth involves determining whether the creation of permanent jobs and economic stimulation resulting from additional recreational opportunities would have environmental impacts. Such impacts would occur if the permanent jobs would draw additional population that would require additional housing, or if recreational demand would result in local, tourist-oriented land development with associated environmental impacts.

Impact Conclusions

No Action Alternative

As discussed in Chapter 2, the amount of restoration in the Marsh under the No Action Alternative would be limited. The type of managed wetland activities generally would continue to be similar to the existing conditions, although the frequency of these activities may be substantially reduced. Nevertheless, development of the Marsh is limited by several regulations as described in Chapter 1, and potential changes in land management would not result in the removal of any obstacles to growth. Therefore, the No Action Alternative would have no growth-inducing effects.

Alternative A, Proposed Project: Restore 5,000–7,000 Acres

The construction required for the SMP, specifically the restoration activities, would cause an increase in temporary employment in the plan area. Depending on the particular activity, construction could last several months. Over the 30-year span of the plan implementation, funding also could determine the number of construction workers needed through timing and overlap considerations.

Examples of these varying scenarios include time constraints on a particular project that may require a larger number of workers for a shorter duration, or overlapping projects that could require a greater number of workers than if the projects proceeded separately. It is assumed that the vast majority of workers would originate from the local area and therefore would not require additional accommodations. Even if labor were drawn from outside the local area, the temporary nature of construction employment would not require permanent housing or accommodations for this intermittent increase in population. Therefore, construction-related employment resulting from the implementation of the SMP would not induce unplanned growth.

Over the 30-year span of the SMP implementation, ongoing maintenance and operation of the wetlands and recreation areas would provide some new permanent jobs. However, only a few new work activities for managed wetlands are proposed beyond the existing maintenance and operation occurring in the plan area. Restoration activities also are not expected to create a substantial number of new jobs because maintenance is expected to be minimal, and most of the jobs would be performed by agencies' current staff.

In addition to restoration and managed wetland activities, the SMP proposes to enhance public recreation opportunities by increasing access to public lands and, where appropriate, increasing hunting opportunities for upland and other game species. However, because the plan area currently supports a variety of recreational uses, including hunting and fishing, the enhancement of these recreational opportunities is not likely to cause significant growth through economic stimulation. Furthermore, while jobs may be created in order to support and maintain these new areas, funding ultimately would determine the extent of recreational expansion, and these jobs would be limited.

Because job creation under the SMP would be limited, it is likely that the vast majority of workers would originate from the local area. However, even if labor originates from beyond the surrounding communities, this slight increase in population created by workers and their dependents would be accommodated from available local housing. No significant housing or infrastructure demand would result from recreational expansion or job creation. Therefore, permanent employment and expanded recreational opportunities would not cause significant or adverse growth impacts.

Alternative B: Restore 2,000–4,000 Acres

Overall construction activity for Alternative B would be similar to that described for Alternative A despite less tidal wetland restoration. This is attributable to less restoration construction and more construction related to managed wetland activities. This alternative also would be subject to similar funding and timing considerations, which may influence the total number of temporary construction laborers needed over the 30-year span of the SMP implementation. As with the proposed project, construction-related activities resulting from this alternative

would not be expected to induce unplanned growth because workers are expected to be drawn from the local area, and there would be no permanent creation of jobs or need for housing or other accommodations.

Recreation enhancement activities would remain similar to those described for the proposed project. The wetland restoration would not be likely to have an effect on current staffing; however, a slightly increased number of permanent jobs created may result from an increase in total managed wetland activities. Job creation under this alternative would not be expected to be substantial, and the growth-related impacts would be less than significant.

Alternative C: Restore 7,000–9,000 Acres

This alternative differs from Alternative A in that more tidal wetlands would be restored. However, overall construction activity would remain similar to that of the proposed project (Alternative A). This is attributable to less managed wetland activities construction and more construction related to restoration activities. This alternative also would be subject to similar funding and timing considerations, which may influence the total amount of temporary construction labor needed over the 30-year span of the SMP. As with the proposed project, construction-related activities resulting from this alternative would not be expected to induce unplanned growth because workers are expected to be drawn from the local area, and there would be no permanent creation of jobs or need for housing or other accommodations.

This alternative may result in the creation of slightly fewer permanent jobs than described for the proposed project because of fewer managed wetland activities. However, compared to the No Action Alternative, some permanent jobs may be created. The amount of wetland restoration would not be likely to translate into substantial job growth because maintenance for restoration is expected to be minimal, and most of the jobs would be performed by agencies' current staff. Recreation enhancement would be similar to that described for the proposed project. The growth-related impact would be less than significant.

Chapter 9
Cumulative Impacts

Introduction

This chapter evaluates the cumulative impacts and the potential contribution of the SMP to those impacts. The impact assessment discusses each resource topic evaluated in this EIS/EIR.

State CEQA Guidelines and NEPA regulations require that the cumulative impacts of a proposed project be addressed in an EIS/EIR. The cumulative impact analysis determines the combined effect of the SMP and other closely related, past, present, and reasonably foreseeable projects. This chapter introduces the methods used to evaluate cumulative effects, lists related projects and describes their relationship to the SMP, identifies cumulative impacts by resource area, and recommends mitigation for considerable contributions to significant cumulative effects.

Approach to Impact Analysis

Legal Requirements

State CEQA Guidelines and NEPA regulations require that the cumulative impacts of a proposed project be addressed in an EIS/EIR when the cumulative impacts are expected to be significant and, under CEQA, when the project's incremental effect is cumulatively considerable (Guidelines 15130[a], 40 CFR 1508.25[a][2]). Cumulative impacts are impacts on the environment that result from the incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions (Guidelines 15355[b], 40 CFR 1508.7). Such impacts can result from individually minor but collectively significant actions taking place over time.

Section 15130 of the State CEQA Guidelines states that the discussion of cumulative impacts need not provide as much detail as the discussion of effects attributable to the project alone. The level of detail should be guided by what is practical and reasonable.

Methods

A list of past, current and probable future projects was compiled for the cumulative setting. These projects (cumulative projects) include:

- other tidal restoration projects in the San Francisco Bay Area that could result in impacts and benefits similar to those of the SMP.
- related projects discussed in Chapter 1, "Introduction," including CALFED, BDCP, Delta Vision, DRERIP, SF Bay LTMS, DRMS, SF Bay Ecosystems Goals, the Delta Plan, and the various USFWS Recovery Plans for species that use Suisun Marsh;
- city and county development projects (e.g., new or expanded residential, commercial, or industrial development projects); and
- regional and local agency infrastructure projects (e.g., water and wastewater facilities construction and/or improvements and flood protection projects).

In addition, regional plans were reviewed to characterize development trends and growth projections in Solano County over the long-term 30-year implementation period. These projects are considered with the SMP to determine whether the combined effects of all of the projects would be cumulatively considerable and thus would result in significant cumulative impacts.

Cumulative Setting

Wetland Restoration and Enhancement Projects

Several tidal restoration projects have been completed, are underway, or are proposed throughout the San Francisco Bay Area. Table 9-1 lists restoration projects, the county in which they are located, and the status of each project. Each of these restoration projects is expected to result in increased natural habitats for species that historically have occupied these areas. Because they all require a shift in habitat types, these projects all have some level of habitat loss associated with conversion. Additionally, managed wetland activities have been proposed through the North American Waterfowl Conservation Act. Activities associated with this are expected to improve management capabilities and habitat functions and values. The BDCP and Delta Plan, as described below, also could result in substantial restoration of tidal wetlands in the Bay-Delta area.

Table 9-1. Cumulative Restoration Projects

Project	Status	County	Total Acres
12th Street Reconstruction Project	Planned	Alameda	0.7
Adobe Creek Upper Reach 5 Restoration Project	Planned	Santa Clara	0.8
Albany Bulb Lagoon	Planned	Alameda	6.7
Albany Salt Marsh Expansion	Planned	Alameda	3.6
American Canyon Creek Restoration	Planned	Napa	1.1

Project	Status	County	Total Acres
American Canyon Ecosystem Enhancement Project	Completed	Napa	610.0
Bahia Lagoon	Completed	Marin	30.1
Bailey Estates	Planned	Contra Costa	5.7
Bair Island Restoration Project	In progress	San Mateo	1,385.5
Bair Island SFO Mitigation	Completed	San Mateo	220.2
Barron Creek at 1018 Los Robles Avenue	Planned	Santa Clara	<0.1
Bayside Business Park—December 2002	In progress	Alameda	17.0
Bayside Business Park—Phase I	Completed	Alameda	271.0
Bayside Business Park—Phase II	Completed	Alameda	88.0
Bel Marin Keys Unit V	In progress	Marin	1,564.4
Belden's Landing	Completed	Solano	15.2
Blacklock Tidal Marsh Restoration	Completed	Solano	70.0
Bothin Marsh	Completed	Marin	0.5
Breuners Mitigation Bank	Planned	Contra Costa	109.1
Brisbane Baylands	In progress	San Mateo, San Francisco	32.0
Burlingame Lagoon	Completed	San Mateo	0.3
Caltrans Mitigation Site	Completed	Solano	21.6
Camp 2 Wingo Unit Marsh Restoration	In progress	Napa, Sonoma	608.0
Can Duck Club	Planned	Napa	unknown
Canalways	Planned	Marin	101.8
Cargill Mitigation Marsh	Completed	Alameda, San Mateo	49.2
Carquinez Bridge Seismic Retrofit Project	In progress	Solano	0.7
Carriger Creek Enhancement	Planned	Sonoma	1.0
Castro Cove	In progress	Contra Costa	20.0
Castro Valley Creek Daylighting Project	Planned	Alameda	0.8
Central Avenue Marsh	Completed	Contra Costa	2.9
Central Avenue Marsh—Albany Sequel	Completed	Contra Costa, Alameda	unknown
Cerrito Creek at Albany Hills	Completed	Alameda	1.1
Charleston Slough Tidal Marsh Restoration Project	Completed	Santa Clara	101.3
Chipps Island East*	Completed	Solano	270.0
Chipps Island West*	Completed	Solano	148.0
Citation Marsh	Completed	Alameda	95.4
City of Calistoga Bank Stabilization	Planned	Napa	0.1
Codornices Creek Restoration—Nagai Property	Planned	Alameda	<0.1
Cogswell Marsh	Completed	Alameda	229.1
Colma Creek Mitigation	Completed	San Francisco, San Mateo	1.6
Color Spot	Completed	Contra Costa	1.5
Cooley Landing	Completed	San Mateo	118.4
Corte Madera Ecological Reserve Expansion	Completed	Marin	8.3
Coyote Creek Flood Control Project	Completed	Santa Clara	66.6
Coyote Creek Lagoon	Completed	Alameda	8.0
Crissy Field	Completed	San Francisco	13.5

Project	Status	County	Total Acres
Cullinan Ranch	Planned	Solano, Napa	1,564.1
Damon Slough Seasonal Wetland Mitigation	Completed	Alameda	9.8
Dan Wilson Creek Bridge Project	Planned	Solano	1.1
Deak Marsh	Completed	Marin	0.6
Deer Valley Wetland Restoration	Planned	Santa Clara	2.2
Downtown Sewer, Water, and Storm Drain Improvements	Planned	Contra Costa	unknown
Dunphy Park	Completed	Marin	0.8
DUST Marsh	Completed	Alameda	15.0
East San Rafael Wetlands	Completed	Marin	13.0
East Shore Park—Berkeley Meadows	Planned	Alameda	55.2
East Shore Park—Schoolhouse Creek	Planned	Alameda	2.3
East Shore Park—Strawberry Creek	Planned	Alameda	1.7
Eden Ecological Preserve Restoration Project	Planned	Alameda	767.6
Eden Ecological Preserve Restoration Project—Dixon Landing Road Project	In progress	Alameda, Santa Clara	17.5
Edgerley Island Marina	Completed	Napa	9.4
Elsie Gridley Mitigation Bank—North Suisun Mitigation Bank	Planned	Solano	1.4
Elsie Roemer Enhancement Project	Planned	Alameda	0.6
Emeryville Crescent	Completed	Alameda	50.3
Emily Renzel Marsh	Completed	Santa Clara	36.0
Faber Tract Marsh	Completed	San Mateo	87.3
Fairfield Corporate Commons Project	Planned	Solano	2.3
Figueras Tract	Planned	Solano	72.7
Foster City Mitigation Sites	In progress	San Mateo	29.2
Galbraith Golf Course Wetland Mitigation Project	Completed	Alameda	8.0
Gallinas Creek Restoration Project (Phase1, 2, and 3)	Completed	Marin	19.5
Gasser, Vernice/FHK Investment—Gasser Estate Wetland Mitigation	Planned	Napa	1.0
Ghisletta Project Site	Planned	Napa	1.6
Gianulius Property	Completed	Solano	2.1
Green Point/Toy Marsh	Completed	Marin	57.4
Guadalcanal Village Restoration Project	Completed	Solano	55.5
Hamilton Wetlands Restoration Project	In progress	Marin	1,451.2
Harvey Marsh	Completed	Santa Clara	52.0
Hayward Marsh Brackish	Completed	Alameda	60.0
Hayward Marsh Fresh	Completed	Alameda	85.9
Hayward Shoreline Enhancement Project	Completed	Alameda	80.3
Hayward Shoreline Enhancement Project-Oliver Salt Ponds	Planned	Alameda	134.0
Hill Slough West Restoration Project	Planned	Solano	223.0
Hoffman Marsh Wetland Mitigation Project	Completed	Contra Costa	6.0
Huichica Creek Enhancement	Completed	Napa, Sonoma	105.5
Huichica Creek Unit	In progress	Sonoma	51.0
I-80 Improvements/HOV Land Project	Completed	Alameda	2.8
Ideal Marsh	Completed	Alameda	129.4
Inverness Ridge	Planned	Alameda	0.7
Island Slough Unit	Completed	Solano	354.0

Project	Status	County	Total Acres
John F. Kennedy Park Wetland Enhancement Project	Planned	Napa	17.0
Kennedy Park Master Plan	Planned	Napa	0.1
KGO Towers	Completed	Alameda	1.3
Kingdom Hall of Jehovah's Witnesses	Planned	Napa	0.2
Knapp Tract	Planned	Santa Clara	381.8
La Riviere Marsh	Completed	Alameda	117.6
Lake Merritt Restoration	Planned	Alameda	153.3
Lakeside Drive & Mariner's Island Extension Mitigation	Completed	San Mateo	1.9
Las Gallinas Ponds	Planned	Marin	68.4
Leonard Ranch Wetlands Restoration Project	Completed	Sonoma	334.8
Lower Walnut Creek Emergency Interim Protection	Planned	Contra Costa	8.2
Madera Bay Park	Completed	Marin	4.9
Madera del Presidio Project (Phase I and II)	Completed	Marin	100.0
Mare Island Navy Conservation Areas	Planned	Solano	106.3
Mare Island Navy Mitigation Marsh	Planned	Solano	62.7
Mare Island Refuge	Planned	Solano	169.9
Marin Flood Control—Seasonal	Completed	Marin	343.4
Marin Flood Control/CDFG—Perennial	Completed	Marin	309.2
Marta's Marsh	Completed	Marin	20.7
Martinez Regional Shoreline Salt Marsh Enhancement Project	Completed	Contra Costa	11.0
Mayhew's Landing	Planned	Alameda	110.4
McGarvey Gulch Salmonid Barrier Improvements Project	Planned	San Mateo	0.6
Mill Valley Marsh	Completed	Marin	6.5
Miller Creek	Completed	Marin	12.0
MLK Jr. Regional Shoreline Wetlands Project	Completed	Alameda	70.6
Montezuma Wetlands Project	In progress	Solano	2,229.0
Moseley Tract	Planned	San Mateo	61.0
Mountain View Tidal Marsh	Completed	Santa Clara	28.9
Muzzi Marsh	Completed	Marin	147.9
Napa Air Center Wetland Preserve	Planned	Napa	0.6
Napa Meadows Development	Planned	Napa	9.9
Napa River Bank Stabilization—Carpy-Connolly Ranch	Planned	Napa	0.7
Napa River Flood Control	Planned	Napa	940.1
Napa River Oxbow Preserve	Planned	Napa	37.3
Napa River, Gasser Wetland Relocation	Planned	Napa	9.5
Napa Sonoma Marsh Restoration Project	In progress	Napa, Sonoma	7,322.4
Napa Urban Waterfront Restoration	Planned	Napa	unknown
Napa Valley Gateway Business Park and Sheehy Creek Realignment and Enhancement Project	Planned	Napa	5.4
Napa Valley Unified School District Site	Planned	Napa	314.1
Nevada Parcel	Completed	Contra Costa	109.0
New Chicago Marsh	Completed	Santa Clara	387.0
Nordstrom/Shorebird Marsh	Completed	Marin	48.2
North Basin Wetlands	Completed	Alameda	5.0
North Bothin Marsh Enhancement Project	Completed	Marin	0.4

Project	Status	County	Total Acres
Northern Outer Bair Island	Completed	San Mateo	551.7
Novato Creek Antenna Field	Planned	Marin	134.2
Novato Flood Control Project Mitigation	Completed	Marin	8.0
Novato Sanitary District Reclamation Project	Completed	Marin	65.0
Oakland Middle Harbor Enhancement Project	In progress	Alameda	4.9
Oro Loma Marsh Enhancement Project	In progress	Alameda	315.3
Oro Loma Marsh Mitigation Project	Completed	Alameda	21.0
Pacheco Pond	Completed	Marin	110.9
Pacific Commons Development	Completed	Alameda	492.0
Pacific Shores Center	Completed	San Mateo	146.2
Palmaz Vineyards Creek Restoration	Planned	Napa	unknown
Palo Alto Harbor Improvements	Completed	Santa Clara	14.3
Perry Gun Club Mitigation Project	In progress	Alameda	16.8
Petaluma Marsh Expansion Project	In progress	Marin	108.3
Petaluma River Marsh	Completed	Sonoma	45.8
Pier 94	In progress	San Francisco	7.7
Pier 98	Completed	San Francisco	8.8
Pioneer Bank Stabilization Project	Planned	Napa	0.1
Plummer Creek Wetlands Restoration Mitigation Project	Completed	Alameda	26.0
Point Buckler*	Completed	Solano	49.5
Polhemus Creek Restoration Project	Planned	San Mateo	0.2
Pond 3	Completed	Alameda	110.2
Pond A18	Planned	Santa Clara	855.6
Pond A4	Planned	Santa Clara	306.4
Port Sonoma Marina Perimeter	Completed	Sonoma	8.9
Ravenswood Triangle	Completed	San Mateo	3.0
Reconstruction of Bollinger Road Bridge over Calabazas Creek	Planned	Santa Clara	0.2
Redwood-San Andreas High School Marsh	Completed	Marin	15.0
Refugio Creek Bridge Project	Planned	Contra Costa	0.2
Richardson Bay Bridge Marshes	Completed	Marin	6.6
Richmond Parkway	Completed	Contra Costa	3.3
Ringstorm Bay Unit Marsh Restoration	In progress	Napa	50.0
River Park	Planned	Solano	38.8
Route 101/Ralston Ave. Interchange	In progress	San Mateo	1.9
Rush Creek/Cemetery Marsh Enhancement Project	Completed	Marin	272.1
Ryer Island*	Completed	Solano	929.2
San Carlos Airport North Clear Zone	Completed	San Mateo	0.6
San Leandro Shoreline Marshlands Enhancement Project	Completed	Alameda	171.9
San Mateo's Master Shoreline Parks Masterplan	In progress	San Mateo	13.1
Sanchez Creek Marsh	Completed	San Mateo	3.1
Schellville	Planned	Sonoma	386.7
Scottsdale Marsh Enhancement Project	Completed	Marin	46.4
Seabreeze Marina	In progress	Alameda	0.3
Seal Slough	Completed	San Mateo	47.2
Shell Marsh Restoration Project at Peyton Slough	In progress	Contra Costa	200.0

Project	Status	County	Total Acres
Simmons Slough Wildlife Corridor	Planned	Marin	186.2
Skaggs Island	Planned	Sonoma	4,166.8
Sky Ranch Stock Pond Rehabilitation	Planned	Contra Costa	0.2
Slaughterhouse Point	Completed	Solano	275.5
Sonoma Baylands Salt Marsh Restoration	Completed	Sonoma	350.0
South Basin Wetlands	Completed	Alameda	3.7
South Bay Salt Pond Restoration Project	In progress	Alameda, San Mateo, Santa Clara	13,681.9
St. Helena Comprehensive Flood Protection Project	Planned	Napa	7.8
Stevens Creek Tidal Marsh	Completed	Santa Clara	30.6
Sulphur Creek Restoration Project	Planned	Napa	0.8
Sunnyvale Baylands Park	Completed	Santa Clara	12.4
Tasman Corridor Light Rail Transit Mitigation Project	In progress	Santa Clara	3.6
Tolay Creek	Completed	Sonoma	305.5
Trancas Road—State 29 Interchange	Planned	Napa	0.2
Treasure Island	Planned	San Francisco	16.7
Triangle Marsh at Hayward Shoreline	Completed	Alameda	8.7
Triangle Marsh at Larkspur	In progress	Marin	1.0
Triangle Marsh Restoration Project	Completed	Marin	15.9
Triangle Marsh, Refuge Entry	In progress	Alameda	9.4
Tubbs Island Marsh Restoration Project	Completed	Sonoma	68.4
U.S. Maritime Administration Marsh	Completed	Solano	69.6
Upper York Creek Dam Sediment Removal Project	Planned	Napa	2.0
Vallejo Mitigation Sites	Completed	Solano	137.4
Viansa Winery	Completed	Sonoma	94.3
Warm Springs Pasture	Planned	Alameda	276.0
Webb Ranch Mitigation Site	Planned	San Mateo	1.8
West End Duck Club	Completed	Napa, Solano	355.2
West Navy Marsh	Completed	Contra Costa	64.4
Western Stege Marsh Restoration	In progress	Contra Costa	9.4
Whales Tail	Completed	Alameda	254.0
Wheeler Island	Completed	Solano	98.0
Whipple Ave Mitigation	Completed	San Mateo	7.7
White Slough	Completed	Solano	94.1
Wildcat Creek Marsh Restoration Project	Completed	Contra Costa	279.7
Zanker Road Landfill Mitigation Site	Completed	Santa Clara	25.0
Zone 12 Lines H, J, and K Sediment Removal Project	Planned	Alameda	3.2

* These properties were restored as a result of unrepaired levee failures, not as restoration projects.

Bay-Delta Conservation Plan

As described in Chapter 1, one of the objectives of the BDCP is to restore natural habitat communities in the legal Delta and adjacent areas, including Suisun Marsh. The BDCP currently anticipates that at least 7,000 acres could be restored in Suisun Marsh within 40 years. An additional 58,000 acres could be restored in other areas of the Delta that could provide similar habitat and species benefits. In total, 65,000 acres of restoration could occur under the BDCP, 14,000 acres of which could be restored in the next 10 years. The remainder of the restoration is expected to be implemented over the next 50 years and could contribute to cumulative impacts related to fish and other species benefits, changes in land uses, shifts in recreation and agriculture, water quality, and infrastructure.

Delta Plan

As described in Chapter 1, recent state legislation established the Delta Stewardship Council, effective in February 2010, and charged it with developing a comprehensive management plan for the Delta by January 1, 2012. It also requires the implementation of an interim plan that includes early actions, projects, and programs. These early actions are expected to include restoration in Suisun and the Delta. The final Delta Plan also is expected to include habitat restoration activities throughout the Delta. With the co-equal goals of water supply and ecosystem restoration, the Delta Plan is expected to include changes in how the Delta functions for water supply, restoration of fish and other sensitive-species habitat, improvements in salvage at the CVP and SWP export facilities, changes in water quality, and changes in other resources as adjustments are made to meet the co-equal goals.

CVP and SWP Coordinated Operations Biological Opinions

In December 2008, USFWS issued a BO, and in June 2009 NMFS issued a BO (CVP/SWP Operations BOs). Both BOs included reasonable and prudent alternatives (RPAs) with several operational and physical requirements, including 8,000 acres of tidal restoration in Suisun Marsh and the north Delta. This restoration is required to be implemented by 2019 and would contribute to cumulative impacts related to fish and other species benefits, changes in land uses, shifts in recreation and agriculture, water quality, and infrastructure. In addition to restoration requirements, the BOs and RPAs identify flow requirements, SMSCG operations, salvage improvements, monitoring, and other measures intended to benefit listed fish in the Delta and Suisun Marsh.

Sacramento Deep Water Ship Channel Dredging

The Sacramento River Deep Water Ship Channel (SRDWSC) dredging project involves both deepening the SRDWSC to a depth of 35 feet mean lower low water and widening the channel in selected areas from river miles (RMs) 0.00 to 35.0. The proposed project would also include maintenance dredging from RMs 35.0 to 43.4 to return that portion of the channel to its 35-foot depth. The total volume of dredged material associated with deepening and widening the SRDWSC would be approximately 8.1 million cubic yards (cy) including a 1-foot overdepth, and just less than 10 million cy including a 2-foot overdepth. This dredged material would be placed at ten different upland sites adjacent to the SRDWSC along its entire reach. These sites would either permanently accommodate dredged material or temporarily stockpile dredged sediment for future beneficial use.

Construction of the project would require 2 to 6 years, depending on the approved work window. Dredging would occur during project-specific work windows designed to reduce potential impacts to sensitive aquatic species including salmonids, delta smelt, and longfin smelt. The Corps and the Port of Sacramento are pursuing a 6-month work window (June 1 to December 31) through an ongoing consultation with USFWS and NMFS. If this annual work window is permitted, the proposed project would be constructed in approximately 4 years. Implementation of the SRDWSC project could contribute to regional cumulative impacts on noise, air quality, navigation, traffic, land use, levee stability, wetlands, aquatic species and habitat, and wildlife species and habitat.

Other Related Delta-Suisun Marsh Projects

Many projects have been proposed or are being developed in a regional effort to better improve management of Delta resources. These projects are intended to address a wide range of issues, including fish and wildlife habitat, flood control and levee stability, drinking water supply, infrastructure, land use, and water quality. Each of these projects is described in Chapter 1, and the list includes CALFED, Long-Term Management Strategy, GOALS, and Delta Vision. Many of these projects could result in additional restoration in the Bay Area, including in Suisun Marsh, while others may contribute to habitat loss as described above.

Development Projects

Development projects occurring in the Suisun Marsh area were determined based on the Solano County General Plan Update, which addresses land uses through 2030 and other resources. No changes to the Marsh boundaries are proposed or expected ever to occur; however, development within the secondary management area may occur as described in this section and below under Infrastructure Projects. Potential development projects are listed and described below.

Potrero Hills Landfill Expansion Project

The Potrero Hills Landfill is located in the secondary management area, and the project proposes to expand the landfill by approximately 250 acres. This is a Class III Landfill and accepts only nonhazardous wastes. The proposed expansion also includes relocating Spring Branch Creek, modifying restrictions on night lighting, and developing and conveying a new water supply, among other things. It could contribute to cumulative traffic, noise, air quality, and wildlife habitat impacts.

Industrial Development

The area south of SR 12 and north of Cordelia Road is considered industrial in the Solano General Plan. As such, it is expected that over the SMP 30-year implementation timeframe, development related to industrial uses may occur in this area. No specific proposals are known at this time. However, development could contribute to cumulative traffic, noise, air quality, and wildlife habitat impacts.

Infrastructure Projects

Because development in the Marsh generally is prohibited through the SMPP, few infrastructure projects are expected to occur in or around the periphery of the Marsh. However, the Collinsville-Montezuma Wind Resource Area is located just east of the Marsh, and Collinsville and Solano County General Plans allow for wind energy development in this area. Currently, two such projects are identified for this area. Additionally, a natural gas storage facility is being constructed in the secondary management area in the Montezuma Hills, and there is potential for additional natural gas facilities throughout the Marsh given the importance of this resource to the county and its availability in the Marsh. These projects could contribute to cumulative traffic, noise, air quality, and wildlife habitat impacts. In addition to these resources, infrastructure projects occurring in the Marsh also could contribute to cumulative impacts on wetlands, aquatic species and habitats, levee stability, and water quality.

Montezuma Wind Project

The Montezuma Wind Project (MWP) would occur approximately 4.5 miles from the eastern boundary of the secondary management area and includes the construction, operation, and eventual decommissioning of 23 windmills. This project is expected to occur in the short term. However, it could contribute to regional cumulative impacts on traffic, noise, air quality, and wildlife habitat.

PG&E Reconductoring Project

This project is related to the MWP, occurs in the same general area, and is intended to serve the MWP and other projects that would create a need for increased transmission capacity along the 11-mile Vaca Dixon–Contra Costa switchyard transmission circuits. PG&E would be the project proponent, although this project is not expected to occur in the short term. However, it could contribute to regional cumulative impacts on traffic, noise, air quality, and wildlife habitat.

Kirby Hills Natural Gas Storage Facility

This project would use a depleted natural gas well, located in the Montezuma Hills east of the Marsh but partially within the secondary management area, as a storage facility for natural gas. Gas would be transported to and from the storage facility by a connection to existing PG&E pipes. The project likely will be operational before the SMP begins implementation. However, it could contribute to regional cumulative impacts on traffic, noise, air quality, and wildlife habitat.

Regional Plans

Bay Area Regional Rail Plan

This plan includes the expansion of the Capitol Corridor train, which could affect resources in and around Suisun Marsh. The rail plan has a 50-year implementation horizon, and no specific detail about this proposal is available. This could contribute to impacts on air quality, noise, wetlands, aquatic species and habitat, wildlife, and wildlife habitat.

Bay Delta Conservation Plan

In addition to the restoration described above, the proposed BDCP would include infrastructure such as an isolated conveyance facility/peripheral canal and other facilities related to water supply and conservation. The construction of these facilities would have both construction and operational impacts that could contribute to cumulative impacts on air quality, noise, wetlands, aquatic species and habitat, wildlife, and wildlife habitat when combined with the SMP.

Cumulative Effects by Resource

Implementation of the SMP with other projects occurring at the same time has the potential to create and contribute to cumulative impacts on the environment. The following discussion presents these impacts by resource.

Water Supply, Hydrology, and Delta Water Management

The SMP water supply impacts are restricted to areas within the Marsh. No other projects are proposed in the Marsh that would affect water supply. As such, there are no cumulative impacts on water supply. The SMP could contribute to muted tidal stages although the potential for this to occur is minimal given that restoration will occur over time and would not be concentrated in any one area of the March. Additionally, sea level rise is expected to offset any muting that may occur. The SMP includes design criteria to minimize changes associated with restoration and mitigation to ensure that if restoration design cannot ensure continued diversions, pumps would be installed to offset the change. No other projects are anticipated to occur in the Marsh that would change hydrodynamics. There would be no cumulative impacts.

Water Quality

The primary SMP water quality impacts are related to release of hazardous materials such as fuel during construction, and mercury or other contaminants as a result of restoration. Additionally there could be slight changes in salinity and temporary increases in turbidity. Although some infrastructure projects could occur in the Marsh, there would be no cumulative impacts related to turbidity or accidental fuel spills because these impacts are isolated to the area of construction, and it is not expected that infrastructure projects would be occurring in the same place and at the same time as SMP activities.

However, salinity changes could occur outside the Marsh as a result of the SMP and therefore could contribute to cumulative salinity impacts. The SMP's contribution to cumulative salinity impacts is expected to be minimal given the various regulations in place to control salinity in the Marsh and throughout the Delta. Under some restoration scenarios, the salinity would increase in restored areas and decrease as far away as the Banks and Jones Pumping Plants in the south Delta. Other restoration scenarios would result in small increases in salinity outside the Marsh. Overall, the SMP's contribution to changes in salinity is not considerable and would be mitigated through design of the restoration sites as described in Section 5.2, Water Quality.

Mobilization and transport of mercury-contaminated sediments is a regional issue proposed to be regulated by the Bay TMDL requirement to reduce the inventory of mercury in the actively resuspended sediment layer. Of all the Regional TMDLs, the Bay Mercury TMDL is farthest along in the regulatory process, having been adopted by the San Francisco Bay RWQCB in August 2006. The Bay Mercury TMDL includes an implementation plan with provisions to avoid exceedance of water quality objectives and TMDL allocations. However, it does not yet apply to restoration actions.

The risk factors for mobilization and transport of mercury-contaminated sediments are projects that would involve substantial earthmoving and dredging activities or that would enhance tidal scour and that are located near known or suspected sources of mercury-contaminated sediments. Many of the cumulative projects, including the SMP, would have little or no impact when considering the long-term cumulative impacts of mobilization and transport of mercury-contaminated sediments because they do not involve earthmoving, dredging, or scour exposure in areas known or suspected to contain mercury-contaminated sediments. However, many of the restoration projects would pose at least some risk for mercury mobilization and transport. Although there could be a cumulative impact, the SMP's contribution is not considerable. Monitoring efforts for the SMP and other restoration actions could help to further minimize this impact by improving the understanding of where mercury-contaminated soils exist, how changes in land use affect their mobilization, and how activities could be modified to minimize the mobilization.

Geology and Groundwater

The following significant cumulative regional impacts have been identified with respect to geology, soils, geologic hazards, and mineral resources.

- Progressive loss and unavailability of topsoil resources as a result of development.
- Increased exposure of persons and structures to seismic hazards as a result of development.

The proposed project would not make a cumulatively considerable contribution to either of these impacts.

Topsoil loss would be minimized to the extent feasible, and would be further offset by sidecasting removed topsoil for reuse on site where this can be achieved. In light of the comparatively small loss and the overall outcome of restoring, enhancing, and preserving marshland ecology over a large area, impacts were evaluated as less than significant in the plan context and are also considered less than cumulatively considerable.

The proposed project would not construct structures for human occupancy as defined by the State of California (i.e., structures occupied 2,000 or more person-hours per year). The only structures built under the proposed project would be small pump stations occupied only a few hours per month for operations and maintenance and duck blinds. Seismic and landslide risks to these facilities and their users would be minimized to the extent feasible through mitigation requiring geologic studies during the design process and meeting or exceeding the current engineering standard of care. With this mitigation in place, impacts were evaluated as less than significant in the plan context and also are considered less than cumulatively considerable.

Some of Solano County's agricultural areas have been subject to groundwater overdraft in the past (Solano County Water Agency 2005). Although increased surface water deliveries largely have alleviated this concern, groundwater overdraft still may rise to the level of a significant cumulative impact in some areas. However, the proposed project would not create or contribute to any changes expected to increase groundwater use, decrease groundwater recharge, or decrease surface water deliveries; there would be no contribution to any remaining regional groundwater overdraft impacts.

Flood Control and Levee Stability

Managed wetland activities would improve levee stability. Restoration actions would include improvements to levees that would be exposed to tidal influence, and the restoration areas would increase flood storage, reducing the risk of flooding. As such, the SMP would not contribute to any cumulative impacts related to flood control and levee stability.

Sediment Transport

All of the sediment transport impacts associated with the SMP are confined to the Marsh and occur primarily in and around restoration and dredging areas, and none of them are significant (see Section 5.5). No other projects would occur within the primary zone of the Marsh, but projects in the secondary zone and others that could increase discharges into the Marsh have a potential to change sedimentation patterns. Although there could be a cumulative impact, the SMP's contribution is not considerable. This cumulative impact is less than significant.

Transportation and Navigation

The SMP would result in sporadic increases in traffic in the Marsh associated with restoration, and some temporary change in the navigation in the Marsh. No other projects are proposed in the Marsh, and, therefore, there would be no cumulative impacts in the Marsh. However, projects in the secondary management area and beyond combined with the SMP could contribute to regional, temporary increases in traffic. The SMP activities would not result in any substantial increases in traffic, and it is assumed that major roadways on the periphery of the Marsh can accommodate the slight increase in traffic that may result from the SMP. Additionally, the SMP would be implemented over the entire 30-year period and throughout the Marsh, avoiding the potential for traffic or navigation impacts to be concentrated in any one area of the Marsh. Therefore, the SMP's contribution to this cumulative impact is not considerable.

Air Quality

The SMP contributes to a significant cumulative impact on air quality from increased emissions of NO_X and PM10 associated with construction activities for restoration and managed wetland activities. Other projects in the BAAQMD that result in emissions of these pollutants combined with the SMP would result in a significant cumulative impact. The SMP incorporates environmental commitments and mitigation measures to minimize these emissions to the extent possible. As such, the contribution of the SMP to this cumulative impact is not considerable.

Noise

Noise associated with construction activities, dredging, and pumping operations would be highly localized. Because noise-sensitive land uses are sparsely located throughout the plan area, it is unlikely that noise from these activities would have a substantial cumulative impact in association with other noise sources at any given area. Accordingly, no significant cumulative noise impacts are predicted to occur as a result of construction, dredging, and pumping activities.

Noise from trucks would not be localized and would occur on roads throughout the plan area and on roads used to access plan sites. Plan-related trucking could occur on roadways where the cumulative noise from traffic exceeds local noise standards. This is expected to occur on major roads on the periphery of the Marsh, as it is assumed that during SMP activities there would not be other increases in traffic in the same area. However, noise from plan-related trucking may contribute to traffic noise in these situations. This contribution is not considerable given the small number of construction vehicles that would be used and the sporadic nature of the plan implementation.

Fish

The SMP contributes both beneficially and adversely to cumulative impacts on fish. The primary projects that contribute to these cumulative impacts are other restoration projects throughout the Bay Area that would increase the quantity and improve the quality of fish habitat. However, other projects, including those upstream of Suisun Marsh, could adversely affect fish and fish habitat. The primary impact on fish associated with the SMP is temporary impacts related to increased turbidity or other disturbances during levee breaching and dredging. Other impacts could contribute to losses of habitat through riprap placement, dredging, and other levee improvements. However, overall the SMP includes substantial increases in quantity of fish habitat in Suisun Marsh and also improves the quality of habitat for fish by improving water quality and increasing primary and secondary pelagic production in restored tidal marsh areas. As such, the SMP's contribution to cumulative impacts on fish is not considerable.

Vegetation and Wetlands

The SMP would result in a conversion of managed wetlands to tidal wetlands, thus shifting some of the functions and values of the Marsh. There would be no reduction in number of acres of wetlands in the Marsh, and in some instances, there could be increases as a result of flooding areas that previously were upland. The SMP conversion of some managed wetlands to tidal wetlands could contribute to a cumulative reduction in the tidal elevation range (i.e., tidal muting) in the Marsh channels and existing tidal wetlands, as well as contribute to the tidal muting in upstream Delta channels and tidal wetlands. This will shift the inter-tidal vegetation zones of existing wetlands but would not cause a reduction in the cumulative acreage of tidal wetlands in the Marsh, Suisun Bay, or the Delta. In fact, it is expected that because restoration would occur gradually and spread throughout the Marsh, and sea level rise would increase tidal levels, there would be minimal, if any, tidal muting. Although wetland loss is a significant cumulative impact, the SMP would not contribute to this impact.

Restoration and other construction activities associated with the SMP could result in temporary loss of vegetation or suitable habitat. However, the SMP includes measures to offset potential losses through restoration designs. Although vegetation loss is a significant cumulative impact, the SMP would not contribute to this impact.

Wildlife

One of the major goals of the SMP is to contribute to the recovery of species that rely on tidal marsh habitats. Those species, such as the salt marsh harvest mouse, Clapper rail, and migratory birds, would benefit from the SMP. Other restoration projects have similar goals, some for the same species. However, many development projects throughout these species' ranges have contributed to their listing and will continue to threaten them. As such, there is a potential significant impact, but the SMP does not contribute to it. Rather, it contributes to offsetting adverse effects on these species. Additionally, many of the other cumulative projects would provide benefits for these species.

Land and Water Use

The SMP includes a shift in habitat from managed to tidal wetlands, but the overall land use, marsh, would remain the same. No other projects are expected to affect land use in the Marsh, and, therefore, no cumulative land use impacts would occur.

Social Issues and Economics

The socioeconomic effects associated with the SMP are not expected to result in any substantial changes in income or employment in the Marsh or within Solano County. Other projects, especially those that include or induce development, would result in substantial changes to income and employment. However, the SMP's contribution to this cumulative impact is not considerable.

Utilities and Public Services

The primary SMP impact on utilities and public services is related to restoration activities that could cause failures during construction or change how existing utilities are maintained. Other projects that include ground-disturbing activities near pipelines could result in a cumulative increased risk of service disruption. The SMP includes mitigation to ensure that prior to construction or inundation, these utilities are relocated or updated to minimize the potential for damage that would disrupt utility services. It is assumed that other projects would include similar measures. As such, this cumulative impact would be less than significant.

Recreation Resources

The SMP does not propose the construction or change of any recreational facilities. It would result in an overall increase in non-consumptive recreation, such as hiking and wildlife viewing, and a potential increase in fishing. Suisun Marsh is the primary duck hunting area for the Solano County region and is one of the few remaining areas in and around the San Francisco Bay Area that provides duck hunting opportunities. Land restored to tidal wetland would be purchased only from willing sellers and could continue to provide public hunting opportunities, and tidal marsh areas would be open to public hunting. Overall, recreation in the Marsh is expected to increase as a result of an increase in area accessible to the public. As such, there would be no cumulative effect.

Power Production and Energy

Over the life of the SMP, fossil fuel consumption and related emissions would increase temporarily but not in a wasteful or substantial manner. The SMP would not make any considerable contribution to increased use of power or energy.

Visual and Aesthetic Resources

The SMP would not change the overall visual character of the Marsh. No other projects would occur in the same area. As such, there would be no cumulative visual or aesthetic impacts.

Cultural Resources

Section 7.7, Cultural Resources, identifies that the proposed project would result in significant impacts on numerous cultural resources, including the Montezuma Hills Rural Historic Landscape. Impacts on the latter resource are especially consequential, as several constituent features—some of which are likely to have individual significance—would be affected by the proposed project. Taken together with other related projects, the proposed project's impacts on cultural resources would contribute to cumulative impacts on cultural resources. Implementation of the mitigation measures described in Section 7.7, however, would reduce the proposed project's contribution to these cumulative impacts, although not necessarily to below the cumulatively considerable threshold. As such, this is a significant cumulative impact and the plan's contribution is considerable.

Public Health and Environmental Hazards

The SMP has the potential to increase mosquito-breeding habitat, increase risk of exposure to hazardous materials such as fuel during construction, and increase environmental exposure to petroleum and natural gas if pipelines exist in areas that would be restored. The SMP could contribute to a cumulative impact related to mosquitoes as other restoration projects could create mosquito-breeding habitat and/or include development and other features that attract people to these areas. As such, there could be an increase in the number of people exposed to mosquito-borne diseases. Mosquito abatement districts throughout the Bay Area are responsible for assessing a project's contribution to this issue and adjusting their abatement practices to offset any potential increases. The SMP includes many measures to offset changes in mosquito production as a result of restoration and it is expected that the land use change from managed wetland to tidal wetland would reduce the potential for mosquito breeding areas to occur in the Marsh. As such, there would be no contribution to this cumulative effect.

The risk of exposure to fuels, petroleum, and/or natural gas is not considered cumulatively significant because most restoration projects do not occur where they could affect pipelines, BMPs are always incorporated into projects for both construction and operation, and petroleum and natural gas companies have the technology and ability to respond to leakages in a timely and effective manner. As such, no significant cumulative impact is expected.

Similarly, the SMP is not expected to result in substantial mobilization of mercury, and it is possible that restoration in the Marsh can reduce the bioaccumulation of mercury. As such, the SMP does not have a considerable contribution to this cumulative impact.

Environmental Justice

Implementation of the proposed project would not result in a disproportionate impact on minority or low-income communities; therefore, there would be no cumulative impact.

Indian Trust Assets

There would be no impacts on ITAs resulting from implementation of the SMP. Therefore, there would be no cumulative impacts.

Chapter 10

Compliance with Applicable Laws, Policies, and Plans and Regulatory Framework

This chapter provides preliminary information on the major requirements for permitting and environmental review and consultation for implementation of the SMP. Certain local, state, and federal regulations require issuance of permits before project implementation; other regulations require agency consultation but may not require issuance of any entitlements before project implementation. The SMP's requirements for permits and environmental review and consultation may change during the EIS/EIR review process as discussions with involved agencies proceed.

Regulatory Framework

Setting

Suisun Marsh is a diverse mix of multiple uses, functions, and values and includes agricultural lands, water conveyance networks, wildlife habitats, recreation opportunities, and recreation-based businesses. Because of the diverse nature of the region, proposed actions in this region are often subject to compliance and conformity with multiple laws, regulations, policies, plans, and agency requirements. Agencies responsible for the management and health of specific Delta functions and values, and for corresponding regulations, often have jurisdictions that overlap geographically. Thus, some agencies have collaborated with other agencies to create focused Delta region oversight agencies with goals and responsibilities guided and governed by plans, policies, and guidance documents.

Prior to the establishment of the CVP and later the SWP, resulting in increased exports from the Central Valley rivers and Delta, the managed wetlands within Suisun Marsh were effectively managed to provide high quality habitat for the wintering waterfowl and other migratory birds of the Pacific Flyway. As the CVP and the SWP increased the export of fresh water from the Delta, salinity levels increased in the Marsh, making it difficult to manage the lands for the above-mentioned uses. These increases in the channel water salinity affected wetland management practices, making it difficult to manage the soil salinity of the managed wetlands. As a result, and as described in Chapter 1, the SMPA was developed to mitigate the impacts of the CVP and SWP on the managed

wetlands. The SMP addresses a portion of the SMPA obligations, the PAI Fund, as well as the need to comply with many other regulations.

Below are regulations listed chronologically that apply specifically to Suisun Marsh. General federal and state requirements are discussed following the more specific regulations.

Suisun Marsh

Formation of Suisun Resource Conservation District

In 1963, the SRCD was formed by private landowners in Suisun Marsh. SRCD was developed to perform administrative, regulatory, and technical functions that include representing landowner interests, both individually and collectively; obtaining environmental permits for routine maintenance activities; preparing wetland management plans for all private lands in the district; and providing technical expertise on issues related to Suisun Marsh management. The district includes 52,000 acres of managed wetlands, 6,300 acres of unmanaged tidal wetlands, 30,000 acres of bays and sloughs, and 27,700 acres of upland grasslands. There are 158 privately owned duck clubs in Suisun Marsh, and DFG manages about 15,000 acres of the managed and tidal wetlands. SRCD is an SMP Principal Agency and is a CEQA responsible agency. It will implement a substantial portion of the managed wetland activities.

1970 Memorandum of Agreement

On July 13, 1970, a Memorandum of Agreement was signed by Reclamation, USFWS, DWR, and DFG. One of the goals of this agreement was to select a water supply and Suisun Marsh management plan that would protect and enhance waterfowl habitat.

1974 Suisun Marsh Preservation Act

The California Legislature, recognizing the threat of urbanization to Suisun Marsh, enacted the Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974 (Senate Bill 1981). The act required DFG and the BCDC to develop a plan to protect Suisun Marsh. In December 1975, DFG released the Fish and Wildlife Element of the SMPP (San Francisco Bay Conservation and Development Commission 1976), which contains an inventory of fish and wildlife species found in and around Suisun Marsh, an interpretation of how Suisun Marsh functions, and recommendations for protection of Suisun Marsh.

1976 Suisun Marsh Protection Plan

In 1976, the BCDC submitted the SMPP to the California Governor and Legislature (San Francisco Bay Conservation and Development Commission 1976). The SMPP divided Suisun Marsh into primary and secondary management zones based on land use. Tidal wetlands and diked lands managed as wetlands were placed in the primary management zone; uplands and lands adjacent to Suisun Marsh were classified as the secondary management zone. The purpose of the secondary management zone is to provide a buffer between urban development and wetland areas of Suisun Marsh. Under the SMPP, the BCDC serves as the permitting agency for all major projects within the primary management zone and as an appellate body with limited functions in the secondary management area. The SMPP recommended that local agencies develop a plan of compliance, recommended and prioritized the acquisition of properties, proposed a tax assessment plan based on land use, and identified both state and federal sources of funding to achieve its objectives.

Assembly Bill 1717

In 1977, the California Legislature passed Assembly Bill 1717, which added the Suisun Marsh Preservation Act of 1974 to the Public Resources Code and implemented the recommended protection measures outlined in the SMPP. This act emphasized the importance of Suisun Marsh as a unique and irreplaceable resource, particularly because of the habitat available for wintering waterfowl.

1978 Water Right Decision 1485

In August 1978, the State Water Board issued Water Right Decision 1485 (D-1485), which set channel water salinity standards for Suisun Marsh from October through May to preserve the area as a brackish water tidal marsh and to provide optimum waterfowl food plant production (State Water Resources Control Board 1978). D-1485 placed operational conditions on water right permits for the CVP and SWP. Order 7(a) of D-1485 required the permittees to develop and fully implement a plan, in cooperation with other agencies, to ensure that the salinity standards are met.

In D-1485 Order 7(b), the State Water Board directed Reclamation and DWR to develop and implement a plan by 1 October, 1984, to protect Suisun Marsh. In February 1984, DWR submitted the Plan of Protection, but was not able to implement the plan by the 1984 deadline. In the meantime, DWR and Reclamation provided partial mitigation through Initial Facilities constructed pursuant to Order 7(c) of D-1485 and through the December 1978 contract (discussed below) among SRCD, DFG, and DWR.

1978 Agreement for the Initial Facilities

In December 1978, DWR, DFG, and SRCD signed an agreement defining responsibility for construction, operation, and maintenance of the Initial Facilities. The purpose of the Initial Facilities was to partially restore and maintain Suisun Marsh as a brackish water marsh capable of producing high-quality food and habitat conditions for waterfowl and other marsh wildlife. The Initial Facilities were intended to partially mitigate the adverse effects on Suisun Marsh of operations of the SWP and CVP.

The agreement states, among other things, that DWR shall design, construct, operate, and maintain the Initial Facilities solely at its expense (or in cooperation with Reclamation) and in compliance with applicable laws.

1984 Plan of Protection for Suisun Marsh

In 1984, DWR published the Plan of Protection for Suisun Marsh including an Environmental Impact Report, prepared in cooperation with DFG, SRCD, and Reclamation in response to D-1485 Order 7. The USFWS also provided significant input. The Plan of Protection was a proposal for staged implementation of a combination of activities, including monitoring, a wetlands management program for Suisun Marsh landowners, physical facilities, and supplemental releases of water from CVP and SWP reservoirs. With staged implementation, each action would be evaluated to determine the need for subsequent actions.

The Initial Facilities and the SMSCG have been constructed and are being operated. Planning and environmental documentation for Phases III and IV (western Suisun Marsh) were also conducted from 1990 to 1995. However, the four parties agreed that the additional large-scale facilities described in the Plan of Protection and the Suisun Marsh Preservation Agreement are not necessary for salinity control in Suisun Marsh because of the effective operation of the SMSCG and the increased outflows provided under the 1994 Principles of Agreement and the 1995 WQCP (described in the following sections). Instead, the parties are developing an Amendment to the SMPA (discussed in the following sections). Initial Facilities consist of Roaring River Distribution System, Morrow Island Distribution System, and Goodyear Slough Outfall.

1985 Amendment to D-1485

In 1985, the State Water Board modified Table II of D-1485 to extend the effective dates and location criteria of the channel water standards. The revised effective dates for the standards, beginning 1 October of each specified year, follow:

- 1988 at C-2, S-64, S-49.

- 1991 at S-35 or 1993 at S-753.
- 1993 at S-21 and S-97.
- 1997 at S-42.

The 1985 implementation schedule recognized the planned phased construction described in DWR's 1984 Plan of Protection (discussed in the previous section).

1987 Suisun Marsh Preservation Agreement

On March 2, 1987, DWR, DFG, Reclamation, and SRCD signed the SMPA to mitigate effects on Suisun Marsh salinity from the CVP, SWP, and other upstream diversions (Suisun Marsh Preservation Agreement 2005). The objectives of the original SMPA remain the same today as in 1987.

These objectives are to:

- ensure that Reclamation and DWR maintain a dependable water supply of adequate quantity and quality within the Marsh to mitigate the adverse effects on the Marsh of the CVP and SWP and a portion of the adverse effects of other upstream diversions;
- improve Marsh wildlife habitat to the extent that such improvement is compatible with other CVP and SWP purposes;
- define the scope of the obligations of Reclamation and DWR to provide the water supply, distribution, redistribution, and management facilities and supplemental actions necessary to accomplish the objectives above; and
- ensure that Reclamation and DWR recognize that water users within the Marsh have been diverting and will continue to divert water for wildlife habitat management in the Marsh.

To meet these objectives, the original SMPA established channel water salinity standards similar to those in D-1485 and a schedule for construction of large-scale facilities in Suisun Marsh that would enable the salinity standards to be met, as described above.

Since its signing in 1987, the SMPA has been amended three times. The first amendment in 1988 authorized a minor modification of a proposed salinity monitoring site location and extended the construction timing of the Cygnus and Lower Joice Island Units. The second amendment in 1994 modified the private landowner cost share contribution from a 50/50 cost share to 75/25 cost share for authorized activities under the agreement.

The third amendment resulted from the signing of the Bay Delta Accord in December 1995 and the establishment of the CALFED effort. The Bay-Delta Accord and State Water Board WQCP 95-6 resulted in new flow objectives for the Delta and constituted a change in conditions that triggered DWR and Reclamation to request consideration of amending the SMPA. These amendment

negotiations resulted in the proposed "Amendment 3 to the SMPA," which included numerous actions to improve operation and management capabilities on diked managed wetlands and eliminated compliance water quality objectives in the western Marsh at S-97 and S-35. The SMPA agencies agreed that this negotiated suite of actions would provide equivalent or better protection of the Suisun Marsh wetland resources without the need for the construction of additional large-scale salinity control facilities in the Marsh.

In 1998, the SMPA Agencies began environmental review of the proposed actions, and in June 2005, the SMPA Agencies signed the Revised SMPA, which was the third amendment of the SMPA. The Revised SMPA included some of the actions proposed in the original Amendment 3 of the SMPA, but other elements were withheld because of increasing concerns about the effects of managed wetland operations on the sustainability of the Marsh for providing habitat for terrestrial species managed by USFWS. As such, the SMPA Agencies agreed to include these activities in the SMP, which also includes restoration actions to alleviate some of USFWS's concerns for terrestrial marsh species. These remaining actions are included as the Preservation Agreement Implementation Fund, described in Chapter 2 and analyzed throughout this EIS/EIR.

Suisun Marsh Monitoring Agreement and Mitigation Agreement

DWR, Reclamation, and DFG also signed two companion agreements on March 2, 1987, the Suisun Marsh Mitigation Agreement and the Suisun Marsh Monitoring Agreement (California Department of Water Resources et al. 1987a, 1987b). The Mitigation Agreement requires acquisition, development, operation, and maintenance of mitigation lands to offset loss and degradation of wildlife habitat resulting from construction of SMPA facilities and effects of the CVP, SWP, and other upstream diverters on the channel islands. The Monitoring Agreement requires implementation of the monitoring program described under the Plan of Protection for Suisun Marsh. The SMPA references the Mitigation Agreement and Monitoring Agreement and incorporates their requirements.

1995 Water Quality Control Plan

In May 1995, the State Water Board adopted the WQCP for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (State Water Resources Control Board 1995). The purpose of this plan is to establish water quality control measures that contribute to protection of beneficial uses in the Bay-Delta Estuary. The plan consists of the following:

- beneficial uses to be protected,
- water quality objectives for reasonable protection of beneficial uses, and

- a program of implementation for achieving the water quality objectives.

Together, the beneficial uses and the water quality objectives established to protect them are called *water quality standards* in the terminology of the federal CWA. This plan supersedes both the WQCP for the Sacramento-San Joaquin Delta and Suisun Marsh adopted in August 1978 and the WQCP for Salinity for the San Francisco Bay/Sacramento-San Joaquin Delta adopted in May 1991. The State Water Board is to review this plan every 3 years to ensure that it adequately protects beneficial uses. The State Water Board will implement this plan principally through adoption of a water right decision.

1995 Water Rights Order WR 95-6

On 28 February 1995, DWR and Reclamation filed a joint petition requesting changes in the water rights that authorize diversion and use of waters affecting the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. In April 1995, the State Water Board held a public hearing and received evidence on the key issues listed in the notice. It was decided that Order 95-6 would be an interim order. Its amendments are to expire upon adoption of a comprehensive water right decision that allocates final responsibilities for meeting the 1995 Bay-Delta objective or on 31 December 1998, whichever comes first. Order 95-6 replaced the water quality standards for fish and wildlife set forth in D-1485. All other provisions of D-1485 remain in full force and effect.

In June 1995, upon adoption of Order 95-6, the State Water Board modified some of the terms and conditions imposed by D-1485 so they conform with new fish and wildlife standards for the estuary set forth in the December 1994 Accord and the 1995 WQCP. Order 95-6 modified the D-1485 Suisun Marsh channel water salinity standards, as revised in 1985, to allow for more saline conditions in the western Suisun Marsh during dry conditions, defined as the *Deficiency Period*. The order also changed the effective compliance date for two western Suisun Marsh compliance stations to 1 October 1997 (Attachment B of Order 95-6, 8 June 1995). Compliance dates for other Suisun Marsh stations did not change.

In September 1997, DWR and Reclamation petitioned the State Water Board for an extension of the effective compliance date for the two western Suisun Marsh compliance stations. In support of the extension, DWR prepared the Demonstration Document (California Department of Water Resources et al. 1998), which demonstrates how management actions in SMPA Amendment Three will provide equivalent or better protection than channel water salinity standards for western Suisun Marsh stations. The State Water Board issued an order approving a temporary change of effective date of compliance through April 1998. In March 1998, DWR petitioned for a second extension, which was granted by the State Water Board through April 1999.

Suisun Ecological Workgroup

The Suisun Ecological Workgroup (SEW) was an ad hoc multi-agency and multi-organizational technical work group convened at the request of the State Water Board as a component of the Program of Implementation in the 1995 WQCP. SEW was convened to address the uncertainty of the effectiveness of the 1995 WQCP Delta outflow objectives on tidal wetlands. The workgroup provided a final report to the State Water Board in August 2001.

According to the Program of Implementation, SEW was charged with the following objectives:

1. Evaluate the beneficial uses and water quality objectives for the Suisun Bay and Suisun Marsh ecosystem.
2. Assess the effects on Suisun Bay and Suisun Marsh of the water quality objectives in the Draft WQCP and the federal Endangered Species Act BOs.
3. Identify specific measures to implement the narrative objective for tidal brackish marshes of Suisun Bay and make recommendations to the State Water Board regarding achievement of the objective and development of numeric objectives to replace it.
4. Identify and analyze specific public interest values and water quality needs to preserve and protect the Suisun Bay/Suisun Marsh ecosystem.
5. Identify studies to be conducted that will help determine the types of actions necessary to protect the Suisun Bay area, including Suisun Marsh.
6. Perform studies to evaluate the effect of deep water channel dredging on Suisun Marsh channel water salinity.
7. Perform studies to evaluate the effects of urbanization in Suisun Marsh on the Suisun Marsh ecosystem.
8. Develop a sliding scale between the normal and deficiency objectives for the western Suisun Marsh.

The SMPA Amendment Three and SEW were parallel processes that focused on different aspects of Suisun Marsh protection. The SMPA focused on protection of managed wetlands, while the SEW developed recommendations for the State Water Board for comprehensive water quality standards protective of tidal marsh, aquatic, and managed marsh habitats. The considerations in the SEW were used to develop the SMP alternatives as described in Chapter 2.

1998 Water Rights Order WR 98-9

In December 1998, the State Water Board adopted Order WR 98-9 to extend the provisions of Order WR 95-6, with minor modifications, through 31 December 1999. The following changes were made regarding Suisun Marsh:

- Authorization of a time extension until 1 June 1999 for submittal of the final SEW report.
- Exceedances of objectives at Suisun Marsh compliance stations during the SMSCG salmon passage experiment will not be considered a violation of water right permit conditions. The experiment will be conducted from October 1998 through May 2001.
- Notes the State Water Board order allowing a temporary extension of the effective compliance dates at western Suisun Marsh compliance stations from 1 October 1998 to 1 April 1999 and the option for additional extensions.

San Francisco Bay Conservation and Development Commission

The 27-member BCDC was created by the California Legislature in 1965 in response to broad public concern over the future of San Francisco Bay. The Commission is made up of appointees from various local governments and state and federal agencies. The commission is charged with:

- Regulating all filling and dredging in San Francisco Bay (which includes San Pablo and Suisun Bays, sloughs and certain creeks and tributaries that are part of the Bay system, salt ponds and certain other areas that have been diked off from the Bay).
- Protecting Suisun Marsh, the largest remaining wetland in California, by administering the Suisun Marsh Preservation Act in cooperation with local governments.
- Regulating new development within the first 100 feet inland from the Bay to ensure that maximum feasible public access to the Bay is provided.
- Minimizing pressures to fill the Bay by ensuring that the limited amounts of shoreline area suitable for high priority water-oriented uses are reserved for ports, water-related industries, water-oriented recreation, airports and wildlife areas.
- Pursuing an active planning program to study Bay issues so that Commission plans and policies are based upon the best available current information.
- Administering the federal Coastal Zone Management Act within the San Francisco Bay segment of the California coastal zone to ensure that federal activities reflect Commission policies (e.g., BCDC must certify that a project requiring a Corps permit is consistent with the local coastal plan, in this case the Bay Plan, before a Section 404 permit or Section 10 permit issued by the U.S. Army Corps of Engineers is valid).
- Participating in the region-wide state and federal program to prepare a Long Term Management Strategy (LTMS) for dredging and dredge material disposal in San Francisco Bay.

- Participating in California's oil spill prevention and response planning program.

BCDC's jurisdiction includes:

- The open waters, marshes and mudflats of greater San Francisco Bay, including Suisun, San Pablo, Honker, Richardson, San Rafael, San Leandro and Grizzly Bays and the Carquinez Strait.
- The first 100 feet inland from the shoreline around San Francisco Bay.
- The portion of Suisun Marsh—including levees, waterways, marshes and grasslands—below the 10-foot contour line.
- Portions of most creeks, rivers, sloughs and other tributaries that flow into San Francisco Bay.
- Salt ponds, duck hunting preserves, game refuges and other managed wetlands that have been diked off from San Francisco Bay.

The BCDC will issue permits for restoration activities in the Marsh. Additionally, they will issue a consistency determination stating the SMPs consistency with the Suisun Marsh Plan of Protection.

CALFED Bay-Delta Program

The CALFED Bay-Delta Program (CALFED) is a cooperative effort of more than 24 state and federal agencies with regulatory and management responsibilities in the Bay-Delta to develop and implement a long-term comprehensive plan to restore ecological health and improve water management for beneficial uses of the Bay-Delta system. In 2000, the CALFED Bay-Delta Program was signed, which included the Environmental Restoration Program (ERP) calling for the restoration of 5,000 to 7,000 acres of tidal wetlands and the protection and enhancement of 40,000 to 50,000 acres of managed wetlands. The SMP is consistent with the ERP, and the alternatives development for the SMP is directly related to the directive from CALFED.

Laws, regulations, policies, plans, and agency requirements for the SMP are discussed further below and are organized by federal and state requirements collectively, federal and state requirements separately, state and regional plan consistency, and by local plan consistency and regulatory requirements.

Local Plan Consistency and Regulatory Requirements

In addition to the federal, state regulatory, and local plan requirements, the SMP may be subject to certain zoning or other ordinances and general plans of the Solano County. Such regulatory requirements may include compliance with

general plan elements, grading permits, and compliance with Williamson Act land programs. For more discussion on local plans and requirements applicable to the SMP, refer to the Regulatory Setting part of the specific resource sections of interest in this document. Below is a discussion of the Solano County multi-species habitat conservation program.

Solano Multi-Species Habitat Conservation Plan

In March 1999, the USFWS, in accordance with Section 7 of the ESA of 1973 (as amended), issued a BO regarding the Solano Project Water Service Contract Renewal between the Bureau of Reclamation and the Solano County Water Agency (SCWA). This 25-year contract provides for continued delivery of Solano Project water for agricultural, municipal, and industrial purposes throughout the SCWA contract service area. The contract also provides for continued operations and maintenance of the Solano Project based on current operating parameters. Solano Project facilities include Lake Berryessa, Monticello Dam, Putah Diversion Dam, and Putah South Canal.

Reclamation, SCWA, and its eight Member Agency contracts, including the City of Vacaville, the City of Fairfield, Suisun City, the City of Vallejo, the Solano Irrigation District (SID), and the Maine Prairie Water District (MPWD), have agreed to implement conservation measures to ensure the protection of threatened and endangered species and their habitat within the SCWA contract service area. Full implementation of the Conservation Measures outlined in the Solano Project Water Service Contract Renewal BO is key to the survival and recovery of listed species. As such, the SCWA and the member agencies have developed an HCP for the Solano Project contract service area. The Solano Multi-Species HCP is intended to support the issuance of a Section 10(a)1(B) incidental take permit under the ESA for activities associated with future water use in the Solano Project contract service area. The Plan Participants also intend to secure incidental take authorization from DFG for state-listed species (Fish and Game Code §2080.1). The Plan is not complete and has not yet been issued state or federal permits.

The Solano HCP addresses compliance with the Terms and Conditions of the Solano Project BO for the following Plan Participants:

- SCWA
- City of Vacaville
- City of Fairfield
- Suisun City
- City of Vallejo
- SID
- MPWD

The following agencies have chosen to voluntarily participate in the HCP:

- City of Rio Vista
- City of Dixon
- Reclamation District No. 2068
- Vallejo Sanitation and Flood Control District (VSFCD)
- Fairfield-Suisun Sewer District (FSSD)

The expanded scope of the HCP includes take coverage for additional species. These additional species include federally listed fish species under the jurisdiction of NMFS and species listed as threatened or endangered under CESA. The HCP further addresses other species of concern (i.e., species recognized by groups such as the DFG and the California Native Plant Society [CNPS] as having declining or vulnerable populations, but not officially listed as threatened or endangered species). Seventy-seven species are proposed to be covered under the Solano HCP.

The Solano HCP establishes a framework for complying with state and federal endangered species regulations while accommodating future urban growth, development of infrastructure, and ongoing operations and maintenance activities associated with flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority and control of the Plan Participants within the Plan Area. Covered Activities under the HCP include Development; Irrigation District Service Area Inclusions, Expansions and Annexations; Operation and Maintenance Activities of Public Facilities; Recreation Facilities and Management; Management, Enhancement, Habitat Restoration/Construction, Monitoring, Scientific Collection, and Associated Compatible Activities on Designated Reserves, Mitigation Sites/Banks, and Open Space Lands and Adjacent Lands and Relocation of Covered Species.

Although the HCP does not address the Marsh, many of the goals are similar and would enhance habitat for the same species.

Federal and State Requirements

Federal and State Compliance Integration

National Environmental Policy Act and California Environmental Quality Act

The preparation of this joint EIS/EIR for the SMP requires close coordination and cooperation among federal, state, and local agencies. Most agency involvement with the SMP is limited to specific permitting and approvals related to each agency's authority and responsibility. As the federal and state lead

agencies, Reclamation, USFWS, and DFG are responsible for the preparation of this EIS/EIR in accordance with NEPA and CEQA.

Federal and state guidelines, statutes, and regulations developed by the Council on Environmental Quality (CEQ) and the Office of Planning and Research (OPR) encourage and provide frameworks for agencies to comply with the requirements of CEQA and NEPA concurrently. Such frameworks are summarized below.

Sections 15222 and 15226 of Chapter 3, Guidelines for Implementation of the CEQA, Title 14, CCR, state:

> If a lead agency finds that an EIS or finding of no significant impact would not be prepared by the federal agency by the time when a lead agency will need to consider an EIR or negative declaration, the lead agency should try to prepare a combined EIR-EIS or negative declaration–finding of no significant impact. To avoid the need for the federal agency to prepare a separate document for the same project, the lead agency must involve the federal agency in preparation of the joint document. This involvement is necessary because federal law generally prohibits a federal agency from using an EIR prepared by a state agency unless the federal agency was involved in the preparation of the document and State and local agencies should cooperate with federal agencies to the fullest extent possible to reduce duplication between the California Environmental Quality Act and the National Environmental Policy Act. Such cooperation should, to the fullest extent possible, include: (a) Joint planning processes, (b) Joint environmental research and studies, (c) Joint public hearings, (d) Joint environmental documents.

Under 40 CFR 1506.2, the NEPA CEQ regulations similarly encourage federal agencies to cooperate with local agencies:

> (a) Agencies authorized by law to cooperate with State agencies of statewide jurisdiction pursuant to section 102(2)(D) of the Act may do so.
>
> (b) Agencies shall cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements, unless the agencies are specifically barred from doing so by some other law. Except for cases covered by paragraph (a) of this section, such cooperation shall to the fullest extent possible include: (1) Joint planning processes. (2) Joint environmental research and studies. (3) Joint public hearings (except where otherwise provided by statute). (4) Joint environmental assessments.
>
> (c) Agencies shall cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and comparable State and local requirements, unless the agencies are specifically barred from doing so by some other law. Except for cases covered by paragraph (a) of this section, such cooperation shall to the fullest extent possible include joint environmental impact statements. In such cases one or more Federal agencies and one or more State or local agencies shall be joint lead agencies. Where State laws or local ordinances have environmental impact statement requirements in addition to but not in conflict with those in NEPA, Federal agencies shall cooperate in fulfilling these requirements as well as those of Federal laws so that one document will comply with all applicable laws.

In California, environmental review for this size and scope of project or plan requires an EIR. The EIR records the scope of the applicant's proposal and analyzes all its known environmental impacts. Project information is used by state and local permitting agencies in their evaluation of the proposed project. (Governor's Office of Planning and Research no date)

Because this plan requires federal involvement, it is also subject to the requirements of NEPA. Under NEPA, the federal equivalent of the EIR is the EIS. The processes of preparation, review, and acceptance of the EIR and EIS share many similarities but differ in the following ways: oversight agencies, level of detail in discussion of alternatives, mitigation requirements, terminology, and more. Additional details about NEPA and CEQA and the compliance requirements of SMP are discussed further under Federal Requirements and State Requirements in this chapter.

Bay-Delta Framework Agreement

In June 1994, state-federal cooperation for the management and regulatory responsibility in the Bay-Delta Estuary was formalized with the signing of a framework agreement by the state and federal agencies involved. The framework agreement pledged that the state and federal agencies would work together in three areas of Bay-Delta management:

- formulating water quality standards,
- coordinating SWP and CVP operations with regulatory requirements, and
- solving long-term problems in the Bay-Delta Estuary (CALFED Bay-Delta Program 2007).

Bay-Delta Accord and Water Quality Standards

In December 1994, state and federal agencies reached agreement on water quality standards and related provisions that would remain in effect for 3 years. This agreement, known as the Bay-Delta Accord, was based on a proposal developed by the stakeholders. Elements of the agreement include:

- springtime water export limits expressed as a percentage of Delta inflow,
- regulation of the salinity gradient in the estuary so that a salt concentration of two parts per thousand (X2) is positioned where it may be more beneficial to aquatic life,
- specified springtime flows on the lower San Joaquin River to benefit Chinook salmon, and
- intermittent closure of the Delta cross-channel gates to reduce entrainment of fish into the Delta.

A second category of provisions is intended to reconcile operational flexibility and compliance with the ESA. Compliance with provisions of the ESA is intended to result in no reduction in water supply from what would be available for export under other operational requirements of the agreement. This will be accomplished in part by better monitoring for the presence of aquatic organisms of concern, faster interpretation of monitoring information, and immediate response in the operation of export facilities. This is known as real-time monitoring.

A third category of provisions (Category III) is intended to improve conditions in the Bay-Delta Estuary that are not directly related to Delta outflow. Category III measures may include screening water diversions, waste discharge control, and habitat restoration. Parties to the agreement committed to implementation and financing of such measures and estimated that a financial commitment of $60 million would be required in each of the 3 years of the agreement.

The 1994 Accord is reflected in the State Water Board's *Draft Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* dated December 1994 and the *Final Water Quality Plan*, which was adopted May 22, 1995.

The Accord was extended in 1997 for 1 year, and again in 1998, to allow the CALFED Program to continue working with stakeholders to develop a long-term solution for problems in the Bay-Delta system.

The CALFED ROD expressly replaced the provisions of the Accord in their entirety. The SMP is intended to implement the portion of the CALFED ERP that calls for the restoration and enhancement of wetlands in Suisun Marsh.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) in general requires federal agencies to coordinate with USFWS and state fish and game agencies whenever streams or bodies of water are controlled or modified. This coordination is intended both to promote the conservation of wildlife resources by providing equal consideration for fish and wildlife in water project planning, and to provide for the development and improvement of wildlife resources in connection with water projects. Federal agencies undertaking water projects are required to include recommendations made by USFWS and state fish and game agencies in project reports, and give full consideration to these recommendations.

For the SMP, which is a component of the CALFED ERP as described in Chapter 1, the USFWS will provide a letter that outlines how the Coordination Act Report issued for the CALFED ERP applies to the SMP.

Federal Requirements

National Environmental Policy Act

NEPA is the nation's broadest environmental law, applying to all federal agencies and most of the activities they manage, regulate, or fund that affect the environment. It requires federal agencies to disclose and consider the environmental implications of their proposed actions. NEPA establishes environmental policies for the nation, provides an interdisciplinary framework for federal agencies to prevent environmental damage, and contains action-forcing procedures to ensure that federal agency decision makers take environmental factors into account.

NEPA requires the preparation of an appropriate document to ensure that federal agencies accomplish the law's purposes. The President's CEQ has adopted regulations and other guidance that provide detailed procedures that federal agencies must follow to implement NEPA. Reclamation and FWS will use this EIS/EIR to comply with CEQ's regulations and document NEPA compliance.

Federal Endangered Species Act

The ESA protects fish and wildlife species that have been identified by the USFWS as threatened or endangered; the ESA also protects their designated habitats. *Endangered* refers to species, subspecies, or DPSs that are in danger of extinction through all or a significant portion of their range. *Threatened* refers to species likely to become endangered in the near future.

ESA is administered by USFWS and NMFS. In general, NMFS is responsible for protecting ESA-listed marine species and anadromous fishes, whereas other listed species are under USFWS jurisdiction. Section 7of the ESA is relevant to this plan and is summarized below.

Section 7: Consultation with Federal Agencies

Section 7 of the ESA requires federal agencies, in consultation with USFWS and/or NMFS, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of these species. The required steps in the Section 7 consultation process are as follows:

- Agencies must request information from USFWS and/or NMFS on the existence in a project area of special-status species or species proposed for listing.
- Following receipt of the USFWS/NMFS response to this request, agencies generally prepare a biological assessment to determine whether any special-

status species or species proposed for listing are likely to be affected by a proposed action.

- Agencies must initiate formal consultation with USFWS and/or NMFS if the proposed action would or may adversely affect special-status species.
- USFWS and/or NFMS must prepare a BO to determine whether the action would jeopardize the continued existence of special-status species or adversely modify their critical habitat.
- If a finding of jeopardy or adverse modifications is made in the BO, USFWS and/or NMFS must recommend reasonable and prudent alternatives that would avoid jeopardy, and the federal agency must modify project approval to ensure that special-status species are not jeopardized and that their critical habitat is not adversely modified (unless an exemption from this requirement is granted).

In conjunction with this EIS/EIR, Reclamation and USFWS are preparing BAs for formal consultation for listed species. Information on these species is provided in Chapter 6.

Clean Water Act

Section 404, 404(b)(1) Guidelines: Regulation of Dredge and Fill

Section 404 of the CWA requires that a permit be obtained from the Corps for the discharge of dredged or fill material into "waters of the United States, including wetlands."

Waters of the United States include wetlands and lakes, rivers, streams, and their tributaries. Wetlands are defined for regulatory purposes, at 33 CFR 328.3 as:

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide; (2) All interstate waters, including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) All impoundments of waters otherwise defined as waters of the United States under the definition; (5) Tributaries of waters identified in paragraphs 1–4 in this section; (6) The territorial seas; and (7) Wetlands adjacent to waters identified in paragraphs 1–6 in this section.

CWA Section 404(b) requires that the Corps process permits in compliance with guidelines developed by EPA. These guidelines (404[b][1] Guidelines) require an analysis of alternatives available to meet the project purpose and need, including those that avoid and minimize discharges of dredged or fill materials into waters. Once this first test has been satisfied, the project that is permitted

must be the least environmentally damaging practical alternative before the Corps may issue a permit for the proposed activity.

CWA Section 404(c) authorizes the EPA to veto the Corps' 404 permit decision if the EPA determines, after notice and opportunity for public hearing, that the discharge of dredged or fill materials will have an "unacceptable adverse effect" on one or more of various resources, including fisheries, wildlife, municipal water supplies, or recreational areas.

Actions typically subject to Section 404 requirements are those that would take place in wetlands or stream channels, including intermittent streams, even if they have been realigned. Within stream channels, a permit under Section 404 would be needed for any discharge activity below the OHWM, which is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, or the presence of litter or debris.

The CALFED ROD for the Final Programmatic EIS/EIR includes a CWA Section 404 memorandum of understanding (MOU) signed by Reclamation, EPA, the Corps, and DWR. Under the terms of the MOU, when a project proponent applies for a Section 404 individual permit for CALFED projects, the proponent is not required to re-examine program alternatives already analyzed in the Programmatic EIS/EIR. The Corps and EPA will focus on project-level alternatives that are consistent with the Programmatic EIS/EIR when they select the least environmentally damaging practicable alternative at the time of a Section 404 permit decision.

Specific project proponents will seek Corps permits as restoration is proposed. Marsh management activities will be permitted in a manner similar to existing conditions—under an RGP. The SMP Principals have convened a regulatory working group that includes the Corps to coordinate permitting needs for the managed wetland activities. Restoration activities will likely be permitted under an Individual Permit, unless activities occur within the limits for a Nationwide Permit. Section 404 does not apply to authorities under the Rivers and Harbors Appropriation Act of 1899 (discussed below) except that some of the same waters may be regulated under both statutes; the Corps typically combines the permit requirements of Section 10 and Section 404 into one permitting process.

Section 401: Certification and Wetlands

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval [such

as issuance of a Section 404 permit]) also must comply with CWA Section 401. In California, the authority to grant water quality certification has been delegated to the State Water Board, and applications for water quality certification under CWA Section 401 typically are processed by the RWQCB with local jurisdiction. Water quality certification requires evaluation of potential impacts in light of water quality standards and CWA Section 404 criteria governing discharge of dredged and fill materials into waters of the United States.

For purposes of this plan, Reclamation, DFG, DWR, and SRCD will obtain certification from the San Francisco Bay RWQCB under Section 401 of the CWA for implementation of the managed wetland activities whereas specific project proponents will obtain certification for restoration activities.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) establishes a management system for national marine and estuarine fishery resources. This legislation requires all federal agencies to consult with NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH). EFH is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The legislation states that migratory routes to and from anadromous fish spawning grounds should also be considered EFH. The phrase "adversely affect" refers to the creation of any effects that reduce the quality or quantity of EFH. Federal activities that occur outside an EFH but that may, nonetheless, have an effect on EFH waters and substrate must also be considered in the consultation process. Under the Magnuson-Stevens Act, effects on habitat managed under the Pacific Salmon Fishery Management Plan must also be considered. The BA submitted to NMFS for the SMP also includes an analysis of effects to EFH. As such, the BO will also include conservation measures for EFH effects.

River and Harbors Appropriation Act of 1899

The River and Harbors Appropriation Act of 1899 states that activities that involve constructing dams, bridges, dikes, or similar structures across any navigable water, or placing obstructions to navigation outside established federal lines and excavating from or depositing material in such waters, require permits from the Corps. Navigable waters are defined in Section 329.4 as:

> Those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity.

In the Corps Sacramento District, navigable waters of the United States in the plan area that are subject to the requirements of the River and Harbors Appropriation Act include all *waterways in the Sacramento–San Joaquin drainage basin affected by tidal action. Sections of the* River and Harbors *Act applicable to the SMP are summarized below.*

Section 9: Dam or Dike Construction

Section 9 (33 USC 401) prohibits the construction of any dam or dike across any navigable water of the United States in the absence of Congressional consent and approval of the plans by the Chief of Engineers and the Secretary of the Army. Where the navigable portions of the water body lie wholly within the limits of a single state, the structure may be built under authority of the legislature of that state, if the location and plans or any modification thereof are approved by the Chief of Engineers and by the Secretary of the Army.

Section 10: Obstruction or Alteration

Section 10 (33 USC 403) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. This section provides that the construction of any structure in or over any navigable water of the United States, or the accomplishment of any other work affecting the course, location, condition, or physical capacity of such waters, is unlawful unless the work has been authorized by the Chief of Engineers.

Section 13: Discharge of Refuse

Section 13 (33 USC 407) provides that the Secretary of the Army, whenever the Chief of Engineers determines that anchorage and navigation will not be injured thereby, may permit the discharge of refuse into navigable waters. In the absence of a permit, such discharge of refuse is prohibited. While this prohibition, known as the Refuse Act, is still in effect, the permit authority of the Secretary of the Army has been superseded by the permit authority provided the Administrator, EPA, and the states under Sections 402 and 405 of the CWA, respectively.

National Historic Preservation Act

Section 106 of the NHPA requires federal agencies to evaluate the effects of their undertakings on historic properties, which are those properties eligible for listing on, or listed on, the NRHP. Implementing regulations at 36 CFR Part 800 requires that federal agencies, in consultation with the SHPO, identify historic properties within the APE of the proposed project and assess adverse effects if any are identified. If a project is determined to have an adverse effect on historic properties, the agency is required to consult further with the SHPO and the

Advisory Council on Historic Preservation (ACHP) to develop methods to resolve the adverse effects. The Section 106 process has four basic steps:

- Initiation of the Section 106 process (define APE and scope of identification efforts).
- Evaluation of historic properties.
- Determination of adverse effects to historic properties.
- Resolution of adverse effects to historic properties.

This EIS/EIR (Section 7.7, Cultural Resources) identifies the need for additional historic property identification efforts to satisfy the requirements of Section 106 of the NHPA. These efforts have not yet been completed. Processes and timeframes for the completion of adequate historic property identification, assessment of effects, and resolution of adverse effects will be described in a PA and HPTP.

Executive Order 11990: Protection of Wetlands

Executive Order 11990 (May 24, 1977) requires federal agencies to prepare wetland assessments for proposed actions located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands. Section 6.2, Vegetation and Wetlands, of this EIS/EIR, describes impacts on wetlands and mitigation measures for reducing significant impacts.

Executive Order 12898: Environmental Justice

Executive Order 12898 (February 11, 1994) requires federal agencies to identify and address adverse human health or environmental effects of federal programs, policies, and activities that could be disproportionately high on minority and low-income populations. Federal agencies must ensure that federal programs or activities do not directly or indirectly result in discrimination on the basis of race, color, or national origin. Federal agencies must provide opportunities for input into the NEPA process by affected communities and must evaluate the potentially significant and adverse environmental effects of proposed actions on minority and low-income communities during environmental document preparation. Even if a proposed federal project would not result in significant adverse impacts on minority and low-income populations, the environmental document must describe how Executive Order 12898 was addressed during the NEPA process. Environmental Justice issues are addressed in Section 7.9 of this EIS/EIR.

Executive Order 13007: Indian Sacred Sites; April 29, 1994, Executive Memorandum

Executive Order 13007 (May 24, 1996) requires federal agencies with land management responsibilities to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies are to maintain the confidentiality of sacred sites. Among other things, federal agencies must provide reasonable notice of proposed actions or land management policies that may restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites. The agencies must comply with the April 29, 1994, Executive Memorandum, Government-to-Government Relations with Native American Tribal Governments.

Federal Clean Air Act

The federal Clean Air Act (CAA) was enacted to protect and enhance the nation's air quality in order to promote public health and welfare and the productive capacity of the nation's population. The CAA requires an evaluation of any federal action to determine its potential impact on air quality in the project region. California has a corresponding law, which also must be considered during the EIR process.

For specific projects, federal agencies must coordinate with the appropriate air quality management district as well as with EPA. This coordination determines whether the project conforms to the CAA and the SIP.

Section 176 of the CAA prohibits federal agencies from engaging in or supporting in any way an action or activity that does not conform to an applicable SIP. Actions and activities must conform to a SIP's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and in attaining those standards expeditiously. EPA promulgated conformity regulations (40 CFR 93.150.).

The potential air quality impacts of the SMP are discussed in Section 5.7, Air Quality, of this EIS/EIR.

Federal Water Project Recreation Act

The Federal Water Project Recreation Act requires federal agencies with authority to approve water projects to include recreation development as a condition of approving permits. Recreation development must be considered along with any navigation, flood control, reclamation, hydroelectric, or multipurpose water resource project. The Act states that "consideration should be given to opportunities for outdoor recreation and fish and wildlife

enhancement whenever any such project can reasonably serve either or both purposes consistently."

Compliance with the Act is achieved by documenting the consideration of recreation opportunities in Corps reports and NEPA documents. Within this joint CEQA/NEPA EIS/EIR document, DFG has taken into consideration, and addressed, outdoor recreation and fish and wildlife enhancement in the plan area.

The SMP addresses outdoor recreation and fish and wildlife enhancement through the implementation of restoration activities which may benefit fish and wildlife species. The proposed restoration activities will increase tidal marsh acreage and enhance managed wetlands. These increases in habitat will enhance both fish and wildlife, and recreational fishing.

State Requirements

California Environmental Quality Act

CEQA requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. The environmental review required imposes both procedural and substantive requirements. At a minimum, an initial review of the project and its environmental effects must be conducted. CEQA's primary objectives are to:

- disclose to decision makers and the public the significant environmental effects of proposed activities,
- identify ways to avoid or reduce environmental damage,
- prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures,
- disclose to the public reasons for agency approval of projects with significant environmental effects,
- foster interagency coordination in the review of projects, and
- enhance public participation in the planning process.

CEQA applies to all discretionary activities proposed to be carried out or approved by California public agencies, including state, regional, county, and local agencies, unless an exemption applies. It requires that public agencies comply with both procedural and substantive requirements. Procedural requirements include the preparation of the appropriate public notices (including notices of preparation), scoping documents, alternatives, environmental documents (including mitigation measures, mitigation monitoring plans, responses to comments, findings, and statements of overriding considerations); completion of agency consultation and State Clearinghouse review; and provisions for legal enforcement and citizen access to the courts.

CEQA's substantive provisions require agencies to address environmental impacts disclosed in an appropriate document. When avoiding or minimizing environmental damage is not feasible, CEQA requires agencies to prepare a written statement of overriding considerations when they decide to approve a project that will cause one or more significant effects on the environment that cannot be mitigated. CEQA establishes a series of action-forcing procedures to ensure that agencies accomplish the purposes of the law. In addition, under the direction of CEQA, the California Resources Agency has adopted regulations, the State CEQA Guidelines, that provide detailed procedures that agencies must follow to implement the law. DFG, and the other responsible agencies such as DWR and SRCD, would use this EIS/EIR to comply with CEQA requirements.

California Endangered Species Act

The CESA requires take authorization from DFG when a proposed action may take state-listed endangered, threatened, or candidate species. DFG may provide an incidental take permit as authorization for otherwise lawful projects when measures to avoid, minimize, and fully mitigate, and assurance of adequate funding, are provided. State and local agencies (except DFG) implementing the SMP would be subject to CESA. When CESA take authorization can be provided, this could be accomplished through a consistency determination with BOs issued by USFWS or NMFS for species that are both state and federally listed or through issuance of an Incidental Take Permit.

Section 1600 of the California Fish and Game Code

DFG regulates work that will affect resources resulting from a substantial alteration of rivers, streams, and lakes in California, pursuant to Fish and Game Code Sections 1600–1616. Any action from a project that substantially diverts or obstructs the natural flow or changes the bed, channel, or bank of any river, stream, or lake, or uses material from a streambed must be previously authorized by DFG in a Lake or Streambed Alteration Agreement under Section 1600 of the Fish and Game Code.

Activities associated with SMP that require 1600 authorization and a Streambed Alteration Agreement include the modification of the existing levees, dredging, placement of fish gates, and other activities within a river, stream or lake. These actions would result in the alteration of the flow or change the bed, channel, or bank of a river, stream, or lake and may affect fish or wildlife resources or riparian vegetation.

Porter-Cologne Water Quality Control Act of 1969

In 1969, the Porter-Cologne Act established the State Water Board and nine RWQCBs as the primary state agencies with regulatory authority over California

water quality and appropriative surface water rights allocations. Under this act (and the CWA), the state is required to adopt a water quality control policy and WDRs to be implemented by the State Water Board and nine RWQCBs. The State Water Board also establishes WQCPs and statewide plans. The RWQCBs carry out State Water Board policies and procedures throughout the state.

WQCPs, also known as basin plans, designate beneficial uses for specific surface water and groundwater resources and establish water quality objectives to protect those uses. WQCPs and water resource management plans relevant to SMP include the WQCP for the Sacramento and San Joaquin River Basins, the San Francisco Bay Basin WQCP, the WQCP for the Tulare Lake Basin, the Inland Surface Waters Plan, the Enclosed Bays and Estuaries Plan, and the Delta Plan. Delta-specific beneficial uses protected through water quality objectives are municipal and domestic water supply, agricultural supply, industrial supply (process and service), recreation (water contact and non-contact), freshwater habitat (warm- and coldwater), fish migration (warm- and coldwater), fish spawning (warmwater fish), wildlife habitat, and navigation. The basin plans define surface water quality objectives for several parameters, including suspended material, turbidity, pH, dissolved oxygen, bacteria, temperature, salinity, toxicity, ammonia, and sulfides.

The SMP has the potential to affect surface water quality in the Central Valley region and the San Francisco Bay region, which are governed by the Central Valley RWQCB and the San Francisco Bay RWQCB, respectively. Each SMP alternative considered in this EIS/EIR was analyzed for compliance with the water quality objectives set forth in the applicable WQCPs.

Public Trust Doctrine

When planning and allocating water resources, the State of California is required to consider the public trust and preserve for the public interest the uses protected by the trust. The public trust doctrine embodies the principle that certain resources, including water, belong to all and, thus, are held in trust by the state for future generations.

In common law, the public trust doctrine protects navigation, commerce, and fisheries uses in navigable waterways. However, the courts have expanded the doctrine's application to include protecting tideland, wildlife, recreation, and other public trust resources in their natural state for recreational, ecological, and habitat purposes as they affect birds and marine life in navigable waters. *The National Audubon Society v. Superior Court of Alpine County* (1983) 33 Cal 3d 419 decision extended the public trust doctrine's limits on private rights to appropriative water rights, and also ruled that longstanding water rights could be subject to reconsideration and could possibly be curtailed. The doctrine, however, generally requires the court and the State Water Board to perform a balancing test to weigh the potential value to society of a proposed or existing diversion against its impact on trust resources.

The 1986 Rancanelli decision applied the public trust doctrine to decisions by the State Water Board and held that this doctrine must be applied by the State Water Board in balancing all the competing interests in the uses of Bay-Delta waters (*United States v. State Water Resources Control Board* (1986) 182 Cal. App. 3d 82).

The SMP is consistent with the public trust doctrine as its primary goals include a balance between fisheries, ecosystem restoration, and recreation.

State and Regional Plan Consistency

San Francisco Estuary Project's Comprehensive Conservation and Management Plan

The San Francisco Estuary Project (SFEP) was established by EPA in 1987 because of growing public concern related to the health of the bay and the Delta. SFEP is jointly sponsored by EPA and the State of California and is part of the National Estuary Program. The National Estuary Program was created by Congress in response to growing public concern over the decline of the nation's estuaries. The program's purpose is to protect and improve the water quality and natural resources of estuaries throughout the country by addressing the environmental problems specific to each. As directed by Section 320 of the CWA, representatives of each estuary in the National Estuary Program must develop a Comprehensive Conservation and Management Plan (CCMP).

The primary focus of the SFEP CCMP is to "restore and maintain the chemical, physical, and biological integrity of the bay and Delta." The CCMP provides a thorough implementation strategy describing 145 actions to protect the Bay-Delta Estuary. Ten program areas are identified in the CCMP. For each program area, the CCMP presents a problem statement, discusses existing management, identifies program area goals, recommends approaches, and states objectives and actions specific to the program. With regard to wetlands, the CCMP focuses on the restoration and ultimate enhancement of ecological productivity and habitat value. SFEP defines the estuary as the waters of San Francisco Bay, San Pablo Bay, Suisun Bay, and the Sacramento–San Joaquin River Delta. The proposed project boundaries include these waters, their watersheds, and lands in the Delta as delineated by Section 12220 of the State Water Code. Implementation of the SMP would be consistent with this program as it would assist Principal Agencies in improving water quality in Suisun Marsh.

Delta Protection Act of 1959

The Delta Protection Act, enacted in 1959 (not to be confused with the Delta Protection Act of 1992, which relates to land use), declares that the maintenance of an adequate water supply in the Delta—to maintain and expand agriculture, industry, urban, and recreational development in the Delta area and provide a

common source of fresh water for export to areas of water deficiency—is necessary for the peace, health, safety, and welfare of the people of the state, subject to the County of Origin and Watershed Protection laws. The Act requires the SWP and the CVP to provide an adequate water supply for water users in the Delta through salinity control or through substitute supplies in lieu of salinity control. In 1984, additional area of origin protections were enacted to prohibit the export of groundwater from the Sacramento River and the Delta basins unless export is in compliance with local ground water plans. Water Code Section 1245 also holds municipalities liable for economic damages resulting from their diversion of water from a watershed. (Bulletin 160-93.) The SMPA helps ensure that water users in the Marsh have an adequate water supply.

Water Right Decision D-1485 and the 1978 Water Quality Control Plan

In 1978, the State Water Board adopted the WQCP for the Delta and Suisun Marsh (1978 Delta Plan). At the same time, the State Water Board adopted Water Right Decision D-1485, which required compliance with water quality objectives in the 1978 Delta Plan that were designed to protect natural resources by maintaining Delta conditions as they would exist in the absence of the CVP and SWP. This decision also mandated an extensive monitoring program and required special studies of the Delta and Suisun Marsh areas. D-1485 standards require that the SWP and CVP make operational decisions to maintain Delta water quality and to meet Delta freshwater outflow within specified limits.

Various interests challenged D-1485, and it was overturned in 1984. In 1986, the State Water Board was required by the Appellate Court to separate its water quality planning and water rights functions and maintain a "global perspective" in identifying beneficial uses and in allocating responsibility for implementing water quality objectives. Thus, the State Water Board revised its water quality standards and issued revised water quality objectives in the 1991 Delta WQCP for Salinity, Temperature and Dissolved Oxygen (1991 Delta Plan).

In response to D-1485, DWR and Reclamation signed the Coordinated Operation Agreement in 1986, which specified the respective responsibilities of each project. The agreement sets a formula for sharing the obligation of meeting water quality standards and other in-basin uses. The sharing formula provides for CVP/SWP proportionate splits of 75/25 responsibility for meeting in-basin use from stored water releases and 55/45 for capture and export of excess flow.

In 1992, interim standards were proposed in Water Right Decision 1630 (D-1630). EPA, however, rejected D-1630 and then announced its own proposed standards to replace those proposed by the State Water Board. Debate over the management of Delta waters resulted in the signing of the Joint Federal and State Delta Agreement between EPA and the State of California. Implementation of the SMP would improve dissolved oxygen concentrations in Suisun Marsh tidal channels.

1995 Water Quality Control Plan

The 1995 WQCP was written to replace/update both the 1991 and 1978 WQCPs. The State Water Board reviews the WQCP every 3 years. The differences between the 1995 plan and the 1991 and 1978 plans is that it revised the existing standards for flow and salinity in the Delta's channels and ordered Reclamation and DWR to meet these standards by reducing pumping or releasing water stored in upstream reservoirs or both. It also includes objectives for flow and water project operations that the other plans did not.

In 1994, the State Water Board initiated development of new water quality objectives and released a draft version, the same day the Bay-Delta Accord was signed. The State Water Board subsequently released an environmental report that documented the effects of implementing the plan. The WQCP was adopted in May 1995 (1995 WQCP) and incorporated several elements of EPA, NMFS, and USFWS regulatory objectives for salinity and endangered species protection.

Clean Water Act—Section 303(d)

Under CWA Section 303(d), the RWQCB and the State Water Board list water bodies as impaired when not in compliance with designated water quality objectives and standards. A TMDL program must be prepared for waters identified by the state as impaired. A TMDL is a quantitative assessment of a problem that affects water quality. The problem can include the presence of a pollutant, such as a heavy metal or a pesticide, or a change in the physical property of the water, such as dissolved oxygen or temperature. A TMDL specifies the allowable load of pollutants from individual sources to ensure compliance with water quality standards. Once the allowable load and existing source loads have been determined, reductions in allowable loads are allocated to individual pollutant sources.

The 303(d) list is reviewed and updated periodically. The State Water Board approved the 2010 Integrated Report for California's revised 303(d) list and submitted the report for approval to the EPA (State Water Resources Control Board 2010). The Integrated Report provides details on the current listings that apply specifically to Suisun Marsh Wetlands and Suisun Bay. Suisun Marsh is listed as impaired (requiring more information and a TMDL) for metals, nutrients, low DO, and salinity.

Water Rights

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 bordering natural watercourses. California requires a statement of diversion and use of natural flows on adjacent riparian land under a riparian right. 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. The State Water Board has authority to issue permits to grant appropriative water rights. The SMP protects Marsh and CVP and SWP water rights through implementation of the PAI Fund. It protects Marsh rights by providing a funding mechanism to implement activities that allow managed wetland operators to manage wetlands for Marsh beneficial uses. It protects SWP and CVP water rights by providing Reclamation and DWR the ability to meet their mitigation obligations per the SMPA and D-1641.

Chapter 11
Public and Agency Involvement

Summary

Development of the SMP has been a multi-agency, collaborative process in an effort to design a plan to balance the various resources in the Marsh. Throughout the process, Principal Agencies (DFG, Reclamation, USFWS, NMFS, SRCD, DWR, and CALFED) have cooperated to develop the various components of the plan. Additionally, landowners in the Marsh and other agencies that have a jurisdictional or other stake in the outcome of the SMP have been engaged. These agencies include the Corps, BCDC, State Water Board, RWQCB, and Solano County. This Chapter describes the major outreach and coordination efforts that have been made to develop this EIS/EIR and the final steps in public involvement and making a decision on the SMP.

Development and Implementation of Suisun Marsh Charter

In 2001, the Principal Agencies developed a Charter with a goal to "Develop a regional plan that balances implementation of the CALFED Program, Suisun Marsh Preservation Agreement, and other management and restoration programs within Suisun Marsh in a manner responsive to the concerns of stakeholders and based upon voluntary participation by private land owners."

The Charter included various objectives and actions, including:

- Improve coordination and collaboration among agencies on management decisions and activities within the Marsh.
- Coordinate with other regulatory agencies and Marsh stakeholders, including private property owners, and
- Develop a Public Outreach Strategy.

Through various meetings, newsletters, and other outreach as described below, the first two objectives above are being met. The third objective was met with the development of a Public Outreach Strategy that has been implemented

through the development of the website and newsletter that help the public and interested parties understand the process and progress for development of the SMP, streamline regulatory needs, and facilitate collaboration. The website for the SMP is located at:

<http://www.dfg.ca.gov/delta/SuisunMarsh>.

CEQA and NEPA Public Outreach

Both CEQA and NEPA are intended to facilitate public awareness and involvement in the decision-making process. The following sections describe how the development of the SMP has met or will meet the requirements of CEQA and NEPA.

EIS/EIR Scoping

Per CEQA and NEPA requirements, lead agencies must conduct scoping to determine the scope of the analysis in an EIR or EIS. Scoping for the SMP was conducted between November 7, 2003 and February 9, 2004.

Reclamation and FWS jointly filed an NOI on November 10, 2003, and DFG filed an NOP on November 7, 2003. Both the NOI and the NOP invited the public and agencies to provide comments during the scoping period. Three scoping meetings were held, one each on November 25, 2003 in Fairfield, CA; December 4, 2003 in Benicia, California; and December 10, 2003 in Fairfield, California. The November 25 meeting was during business hours, while the other two began at 6 p.m. In total, over 150 people attended these meetings.

The Issues and Known Controversies section of Chapter 1 summarizes agency and public concern. All of these issues and concerns were considered in the development of the plan, alternatives, and/or analysis of resource impacts.

Public Review of Draft Environmental Impact Statement/Environmental Impact Report

The Draft EIS/EIR was available for review and comment for 60 days (October 29, 2010 through December 28, 2010) following filing of the Notice of Availability (NOA) of the EIS with the EPA and the Notice of Completion (NOC) of the EIR with the California State Clearinghouse.

This Final EIS/EIR was prepared and includes responses to public and agency comments. DFG will issue a notice of determination (NOD) and USFWS and Reclamation will issue a record of decision for the decision regarding which alternative will be implemented.

Suisun Marsh Plan Development Outreach

Agency Coordination

Through development of the SMP and this EIS/EIR, much progress has been made in identifying and addressing the various concerns of Principal and other agencies. Multiple informational meetings were held that included regulatory and other interested agencies to inform them of the process and current status of the SMP, solicit input, and provide a forum to begin resolution of resource management issues.

In addition to these far-reaching agency meetings, the Principals also met routinely, often once a month for the entire 6-year development period of this EIS/EIR to collaborate on development of alternatives, public outreach, plan implementation, resource impact issues, permitting and other regulatory hurdles, and other topics. These meetings have resulted in a plan that provides a framework for balancing managed wetlands operations and tidal wetlands restoration, with an understanding of each agency's concerns, goals, and constraints. This collaborative process has resulted in an implementable and acceptable plan for the Marsh.

Landowner Coordination

SRCD distributes a quarterly newsletter to its members which periodically has included information regarding the status of the EIS/EIR and other aspects of the development of the SMP. Additionally, a workshop is held each spring to provide information and support to the Marsh landowners, and for the past several years it has included specific information about the status of the SMP and the process of alternatives development. In 2005, all of the SMP Principals attended the workshop to participate in a panel discussion, and at each workshop after that the SMP has been presented as an agenda item.

Outreach Coordination with other Plans and Programs

The SMP has also been presented to various groups interested in the Marsh. SRCD and DWR have presented the SMP to the annual Water Education Foundation Tour for the Delta for the past 5 years. Additionally, the SMP was presented at the Biannual State of the Estuary Conference and the CALFED Science Symposiums. DWR, DFG, and SRCD also have presented the SMP to the Solano County Board of Supervisors and BCDC. SRCD was appointed to the Delta Vision Stakeholders Coordination Group and informed the Delta Vision Blue Ribbon panel about the SMP and other Marsh activities and concerns.

SMP Newsletter

A total of seven newsletters were developed and distributed to the public and interested parties, including over 1,000 names and addresses on the SMP contact list. The newsletters provided information about various aspects of plan development, information about the Marsh, and ongoing projects such as Blacklock restoration. The newsletters provided the public and interested parties with information necessary to track the progress of the plan, understand when and how their input would be considered as part of the process, and to understand regional Marsh issues.

Next Steps

As described above, the Draft EIS/EIR was circulated for public review and comment for 60 days, and DFG, Reclamation, and FWS prepared responses to all comments received in this Final EIS/EIR. This Final EIS/EIR is being circulated for the NEPA 30-day 'cooling-off' period prior to Reclamation or FWS making any decisions by issuing a Record of Decision. DFG may choose to certify the EIR, adopt a project, and file a NOD at anytime after the Final EIS/EIR is distributed to the public. Once a ROD and NOD have been issued for the Final EIS/EIR, the SMP can be implemented.

Reclamation and USFWS require that all consultation related to the SMP be completed prior to issuing a ROD. As such, a decision on the SMP will not be made until consultation with SHPO, USFWS, and NMFS are completed under the NHPA, ESA, and Magnusson-Stevens Act, respectively. The Principals are currently conducting that consultation.

Once DFG files an NOD, other CEQA Responsible Agencies, such as DWR, SRCD, RWQCB, BCDC, and others may use this EIS/EIR to prepare findings and make a decision on the SMP or components of it, including issuance of permits or other approvals and implementation of components of the SMP.

Chapter 12
List of Preparers

Following is a list of persons who contributed to preparation of this EIS/EIR. This list is consistent with the requirements set forth in NEPA and CEQA (40 CFR 1502.17 and Section 15129 of the State CEQA Guidelines).

U.S. Fish and Wildlife Service

Name	Qualifications	Participation
Cay Goude	Endangered Species, Aquatic Biology	Principal
Andy Raabe	Wildlife Biology	Conceptual model development; adaptive management plan development; reviewer
Valary Bloom	Wildlife Biology	Salt marsh harvest mouse monitoring development; reviewer
Ryan Olah	Aquatic Biology	Reviewer
Tom Maurer	Contaminants	Reviewer
Janice Engle	Wildlife Biology	Conceptual model development
Cecilia Brown	Wildlife Biology	Reviewer
James Browning	Wildlife Biology	Reviewer
Virginia Parks	Anthropologist	Reviewer
Jorie Clark	Anthropologist	Reviewer
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California Department of Fish and Game

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Suisun Resource Conservation District

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Jim Waters	Board Member, SRCD	Reviewer

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California Bay-Delta Authority

Name	Qualifications	Participation
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ICF International

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