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**Defining Existing Conditions, No Action Alternative, No
Project Alternative, and Cumulative Impact Conditions**

Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions

3D.1 Introduction

The preferred alternative and other action alternatives are compared in the Bay Delta Conservation Plan (BDCP)/California WaterFix Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) to the Existing Conditions, No Action Alternatives, and conditions under the Cumulative Impact Analysis. The EIR/EIS also evaluates impacts of the No Project Alternative. This appendix presents the definitions and assumptions of these conditions.

3D.2 Definitions

Definitions were developed for Existing Conditions and No Project Alternative based upon the California Environmental Quality Act (CEQA), for the No Action Alternative based upon the National Environmental Policy Act (NEPA), and Cumulative Impact Analysis conditions based upon both CEQA and NEPA. Because CEQA and NEPA have different directives related to using a baseline for determining the impacts of the action, this EIR/EIS uses two baselines: one for determining the impacts of state and local agency actions under CEQA (Existing Conditions) and one for determining the impacts of federal actions under NEPA (No Action Alternative).

3D.2.1 Existing Conditions

The CEQA baseline for assessing significance of impacts of any proposed project is normally the environmental setting, or existing conditions, at the time a Notice of Preparation (NOP) is issued (State CEQA Guidelines Section 15125[a]). This directive was recently interpreted and applied by the California Supreme Court in *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439 (*Neighbors for Smart Rail*). There, the court reiterated that “[t]he CEQA Guidelines establish the default of an existing conditions baseline even for projects expected to be in operation for many years or decades.” (Id. at 455.) According to the Court, for such a project, “existing conditions constitute the norm from which a departure must be justified—not only because the CEQA Guidelines so state, but because using existing conditions serves CEQA’s goals in important ways.” (*Ibid.*) For example, “[e]ven when a project is intended and expected to improve conditions in the long term—20 or 30 years after an EIR is prepared—decision makers and members of the public are entitled under CEQA to know the short- and medium-term environmental costs of achieving that desirable improvement.” (*Ibid.*) Further, “[a]n EIR stating that in 20 or 30 years the project will improve the environment, but neglecting, without justification, to provide any evaluation of the project’s impacts in the meantime does not ‘giv[e] due consideration to both the short-term and long-term effects’ of the project ... and does not serve CEQA’s informational purpose well.” (*Ibid.*, quoting State CEQA Guidelines Section 15126.2, subd. (a).) Although the Supreme Court did not adopt a strict prohibition against the exclusive use of a future baseline consisting of anticipated conditions at the commencement or mid-point of project implementation, any sole

1 reliance on such a future baseline is only permissible where a CEQA lead agency can show, based on
2 substantial evidence, that an existing conditions analysis would be “misleading or without
3 informational value.” (*Neighbors for Smart Rail, supra*, 57 Cal.App.4th at 457.)

4 Although originally formulated prior to the issuance of the *Neighbors for Smart Rail* decision, the
5 CEQA baseline employed in this EIR/EIS is consistent with the principles outlined above. Following
6 CEQA Guidelines Section 15125(a), the CEQA baseline has been developed to assess the significance
7 of impacts of the alternatives in relation to the existing conditions at the time of the NOP. The
8 Existing Conditions assumptions for the EIR/EIS include facilities and ongoing programs that
9 existed as of February 13, 2009 (publication date of the most recent NOP and Notice of Intent [NOI]
10 to prepare this EIS/EIR), that could affect or could be affected by implementation of the alternatives
11 (refer to Appendix 1D, *Final Scoping Report*, for copies of the NOP and NOI).

12 In some instances, though, certain assumptions were updated within the CEQA lead agency’s
13 reasonable discretion. For example, the June 2009 Biological Opinion (BiOp) for salmonid species
14 from National Marine Fisheries Service (NMFS) was included within the CEQA baseline even though
15 it had not been issued in its final form as of February 2009. Because the December 2008 BiOp for the
16 delta smelt from the United States Fish and Wildlife Service (USFWS) was in place as of February
17 2009, it made sense to also include the NFMS BiOp, which had been released in draft form prior to
18 February 2009. The California Department of Water Resources (DWR) decided that it would have
19 been anomalous to rely on the most current USFWS BiOp with respect to delta smelt issues, but to
20 ignore the soon to be adopted NFMS BiOp with respect to salmonid issues.

21 Even so, because of the importance of focusing on existing conditions, DWR as CEQA lead agency did
22 not assume implementation of *all* aspects of either BiOp. In particular, DWR did not assume full
23 implementation of a particular requirement of the delta smelt BiOp, known as the “Fall X2” salinity
24 standard, which in certain water year types can require large upstream reservoir releases in fall
25 months of wet and above normal years to maintain the location of “X2” at approximately 74 or 81
26 river kilometers inland from the Golden Gate Bridge. As of spring 2011, when a lead agency
27 technical team began a new set of very complex computer model runs in support of this EIR/EIS,
28 DWR determined that full implementation of the Fall X2 salinity standard was not certain to occur
29 within a reasonable near-term timeframe because of a recent court decision and reasonably
30 foreseeable near-term hydrological conditions. As of that date, in litigation challenging the delta
31 smelt BiOp filed by various water users, which DWR intervened, the United States District Court
32 found that USFWS failed to fully explain the specific rationale used to determine the locations for
33 Fall X2 included in the Reasonable and Prudent Alternative (RPA) and remanded to the USFWS.
34 DWR determined that implementation of Fall X2 was uncertain due to several factors. This
35 uncertainty, together with CEQA’s focus on existing conditions, led to the decision to use a CEQA
36 baseline without the implementation of the Fall X2 action in the EIR/EIS. However, for NEPA
37 purposes, which uses a different method for assessing environmental effects of the action
38 alternatives, the Fall X2 action is included in the NEPA baseline as discussed below.

39 Consistent with these considerations of the CEQA baseline, Existing Conditions for the EIR/EIS
40 include continuation of operations of the State Water Project (SWP) and Central Valley Project (CVP)
41 by DWR and the Bureau of Reclamation (Reclamation), respectively. Assumptions for the Existing
42 Conditions related to operations of the SWP and CVP are described in the *Biological Assessment on*
43 *the Continued Long-term Operations of the Central Valley Project and the State Water Project* (August
44 2008) prepared by Reclamation (2008) as modified by the June 2009 NMFS BiOp and the December
45 2008 USFWS BiOp. Detailed assumptions for the SWP and CVP operations are represented in

1 hydrological and water quality analytical models, as described in Appendix 5A, *BDCP/California*
2 *WaterFix FEIR/FEIS Modeling Technical Appendix*. Appendix 3A, *Identification of Water Conveyance*
3 *Alternatives, Conservation Measure 1*, provides additional information on assumptions made for
4 Existing Conditions.

5 **3D.2.2 No Action Alternative**

6 Neither NEPA nor the Council on Environmental Quality (CEQ) Regulations for implementing NEPA
7 contain a specific directive for using a baseline for determining an action’s significant effects on the
8 quality of the human environment. CEQ’s *Forty Most Asked Questions Concerning CEQ’s NEPA*
9 *Regulations* provides that the no-action alternative may be used as a “benchmark, enabling decision
10 makers to compare the magnitude of environmental effects of the action alternatives.” Under NEPA,
11 federal agencies have the discretion to define the baseline for assessing environmental effects of the
12 alternatives as the no action alternative. Accordingly, this EIR/EIS uses the No Action Alternative as
13 the baseline for determining impacts of the federal action under NEPA. As the NEPA baseline, the No
14 Action Alternative, sometimes referred to as the *future no action condition*, considers no action
15 conditions to include continuation of operations of the SWP and CVP as described in the 2008
16 USFWS and 2009 NMFS BiOps and other relevant plans and projects that would likely occur in the
17 absence of BDCP actions and which are well-defined enough to allow for meaningful analysis. NEPA
18 requires the evaluation of the potential effects of alternatives in comparison with the likely future
19 No Action condition from the time that proposed actions are implemented and/or become
20 operational. Because nothing in NEPA or NEPA case law precludes NEPA lead agencies when using
21 No Action scenarios as a benchmark from including anticipated future conditions in the impact
22 assessment, the No Action Alternative, unlike the CEQA baseline, assumes implementation of the Fall
23 X2 salinity standard, implementation of other requirements of the 2008 USFWS and 2009 NMFS
24 BiOps, as well as the effects of climate change and sea level rise as of the year 2060. For purposes of
25 analyzing Alternatives 4A, 2D, and 5A, which are evaluated under an early long-term (ELT) time
26 period, the No Action Alternative assumes implementation of the Fall X2 salinity standard, other
27 requirements in the BiOps, and effects of climate change and sea level rise as of 2025.

28 In addition to relevant, well-defined, plans and projects that would likely occur by the year 2025 and
29 2060, in the absence of the project, the No Action Alternative for the EIR/EIS entails programs,
30 projects, and policies included in Existing Conditions assumptions. These assumptions also
31 encompass programs, projects, and policies with clearly defined management and/or operational
32 plans, as well as facilities under construction as of February 13, 2009, because such actions and
33 facilities are consistent with the continuation of existing management direction or level of
34 management for plans, policies, and operations. The No Action Alternative assumptions also include
35 facilities and programs that received approvals and permits in 2009 because those programs were
36 consistent with existing management direction as of the NOI.

37 **3D.2.3 No Project Alternative**

38 The No Project Alternative allows decision makers to use the EIR to compare the impacts of
39 approving the preferred alternative with the future conditions of not approving the project in the
40 year 2025 and 2060. Under CEQA generally, the No Project Alternative may not be used as the sole
41 baseline for assessing the significance of impacts unless the No Project Alternative is identical to
42 existing conditions (State CEQA Guidelines Section 15126.6(e)(1)). CEQA does allow lead agencies,
43 however, to consider multiple baselines in assessing the significance of impacts, as long as one of

1 these baselines reflects existing conditions, consistent with CEQA Guidelines Section 15125(a). In
2 fact, in *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal. 4th
3 439, 454, the California Supreme Court, after noting that the discussion of “the no project
4 alternative” addressed “a project’s effects on future conditions,” held that “nothing in CEQA law
5 precludes an agency . . . from considering both types of baseline—existing and future conditions—in
6 its primary analysis of the project’s significant adverse effects[.]” (Italics added.) As explained in
7 Chapter 4, *Approach to Environmental Analysis*, Section 4.2.1.1, DWR has sometimes pointed to the
8 results of the NEPA analysis using a No Action baseline in order to explain the results of analyses
9 based on a CEQA “existing conditions” baseline. CEQA Guidelines Section 15126.6, subdivision
10 (e)(2), indicates that No Project conditions include some reasonably foreseeable changes in Existing
11 Conditions and changes that would be reasonably expected to occur in the foreseeable future if the
12 project were not approved, based on current plans and consistent with available infrastructure and
13 community services. The key limiting language here is the phrase “based on current plans and
14 consistent with available infrastructure and community services.” This qualifying language limits
15 the number of assumptions a CEQA Lead agency can make about potential future actions. The
16 inherent challenge in envisioning No Project conditions nearly half a century away (2060) for some
17 of the alternatives has required the lead agencies to make some informed judgments about what
18 might happen outside the immediate SWP/CVP context during such an extended time period.
19 However, since the effects of climate change and sea level rise are reasonably foreseeable, they are
20 included within the No Project Alternative. Additionally, the implementation of the Fall X2 salinity
21 standard in a No Project situation was deemed to be likely, and is therefore also included in the No
22 Project Alternative analysis.

23 **3D.2.4 Cumulative Impact Analysis**

24 Under CEQA, Cumulative Impacts are defined as two or more individual effects on environmental
25 resources, that when considered together, are considerable or compound or increase other
26 environmental impacts. (CEQA Guidelines Section 15355.) Cumulative Impacts consist of impacts
27 which are created as a result of the combination of the Proposed Project with other projects that
28 would cause related impacts (CEQA Guidelines Section 15130, subdivision (a)(1).) The focus under
29 CEQA Cumulative Impacts is on whether the Proposed Project’s incremental contribution to any
30 significant cumulative impact is cumulatively considerable and thus significant in and of itself.
31 (CEQA Guidelines Section 15065(a)(3).) The related past, present, and reasonably foreseeable
32 probable future projects and programs to be considered in the Cumulative Impacts generally
33 (though not always) are not components of, or outgrowths from, the individual identified projects or
34 programs. Rather, the identified projects and programs are usually separate and distinct, often with
35 different lead entities that may cause impacts similar to, or related to, those of the Proposed Project
36 or alternatives.

37 Under NEPA, the CEQ regulations defines Cumulative Impacts as the impact on environment, human,
38 and community resources that results from the incremental impact of the Proposed Project when
39 added to other past, present, and reasonably foreseeable future actions regardless of what agency
40 (federal or non-federal) or persons undertakes such actions. Cumulative Impacts can result from
41 individually minor but collectively significant actions taking place over time (40 Code of Federal
42 Regulations 1508.7, 1508.25.)

3D.3 Descriptions for the EIR/EIS

Descriptions were developed for the BDCP/California WaterFix EIR/EIS related to Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Analysis conditions based upon definitions summarized above and information for related and potentially related projects, as summarized in Attachment 3D-A. Due to the fact that several years have elapsed between the time of the publication of the NOP/NOI and release of this EIR/EIS, the status of projects may have changed during the course of preparation of this document.

3D.3.1 Existing Conditions

The Existing Conditions assumptions includes the basic description of Existing Conditions, assumptions related to the SWP and CVP, ongoing programs and policies by governmental and non-profit entities, and assumptions related to annual actions that vary every year.

3D.3.1.1 Basic Description of Existing Conditions for the EIR/EIS

The Existing Conditions assumptions for the EIR/EIS will include existing facilities and ongoing programs that existed as of February 13, 2009 (publication date of the NOP and NOI) that could affect or could be effected by implementation of the Proposed Project and alternatives.

As described above, CEQA Lead Agencies have the discretion to update the baseline conditions beyond the date of the issuance of the NOP to include a program that is implemented during preparation of the EIR. For the purposes of the EIR/EIS, the Existing Conditions also includes the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Biological Opinion (NMFS BiOp) on the Long-Term Operations of the Central Valley Project and State Water Project (Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, Southern Distinct Population Segment of North American green sturgeon, and Southern Resident killer whales.) The NMFS BiOp was issued on June 4, 2009 in response to a request issued in 2006 by Reclamation for reinitiated consultation with NMFS due to new species listings after the 2004 BiOp. Reclamation issued a revised biological assessment in August 2008, and a draft NMFS BiOp was issued for peer review on December 11, 2008. Although the NMFS BiOp was issued following the NOP, most of the provisions were being discussed prior to the NOP. Therefore, the NMFS BiOp is included in the Existing Conditions.

3D.3.1.2 Existing Conditions Assumptions for State Water Project and Central Valley Project

Existing Conditions for the EIR/EIS includes continuation of operations of the SWP and CVP by the DWR and Reclamation, respectively. Assumptions for the Existing Conditions related to operations of the SWP and CVP are described in the "Biological Assessment on the Continued Long-term Operations of the Central Valley Project and the State Water Project," August 2008, prepared by Reclamation (2008 BA) as modified by the NMFS BiOp and U.S. Fish and Wildlife Service BiOp (USFWS BiOp). Detailed assumptions for the SWP and CVP operations are represented in hydrological and water quality analytical models, as described in Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*, and summarized in Table 3D-1.

1 **Table 3D-1. Summary of SWP and CVP Operations Included In Existing Conditions and No Action Alternative for the EIR/EIS**

Actions	Existing Conditions	Early Long-Term (2025)	No Action Alternative (2060)
Inflow Supplies	Historical	Historical with Climate Change	Historical with Climate Change
Level of Development	2005 Level	Projected 2030 Level	Projected 2030 Level
SWP Water Demands	<ul style="list-style-type: none"> Land-use based, limited by contract amounts Based on full/variable Table A amounts including transfers through 2008 Article 56 based on 2001-08 contractor requests Article 21: Metropolitan Water District (MWD) demand limited only by conveyance from December to March, Kern County Water Agency (KCWA) demand up to 180 thousand acre feet (TAF)/ month and other contractor demands up to 34 TAF/month in all months, subject to capacity to convey and deliver North Bay Aqueduct: 71 TAF/yr demand under SWP contracts, up to 43.7 cubic feet per second (cfs) of excess flow under Fairfield, Vacaville and Benecia Settlement Agreement 	Land-use based, limited by contract amounts	Land-use based, limited by contract amounts
CVP Water Demands	Land-use based, limited by contract amounts	Land-use based, limited by full build out contract amounts per 2008 BA as modified by the BiOps and limited by existing facilities and facilities that will be under construction in 2010.	Land-use based, limited by full build out contract amounts per 2008 BA as modified by the BiOps and limited by existing facilities and facilities that will be under construction in 2010.
Non-SWP and CVP Project: Water Rights	Per water rights and SWRCB Decisions for Existing Facilities	Per water rights and SWRCB Decision for Existing Facilities	Per water rights and SWRCB Decision for Existing Facilities
Federal and State Refuges with Level 2 Water Supplies	Recent historical Level 2 water needs	Firm Level 2 water need	Firm Level 2 water need

Actions	Existing Conditions	Early Long-Term (2025)	No Action Alternative (2060)
Operations of SWP Facilities	Existing Facilities with NMFS BiOp and USFWS BiOp conditions (See Appendix 5A)	Existing Facilities with NMFS BiOp and USFWS BiOp conditions (See Appendix 5A) <ul style="list-style-type: none"> • FERC License Renewal for Oroville Project • South Bay Aqueduct Improvement and Enlargement Project 	Existing Facilities with NMFS BiOp and USFWS BiOp conditions (See Appendix 5A) <ul style="list-style-type: none"> • FERC License Renewal for Oroville Project • South Bay Aqueduct Improvement and Enlargement Project
Operations of CVP Facilities	<ul style="list-style-type: none"> • Existing Facilities with NMFS BiOp and USFWS BiOp conditions (See Appendix 5A) • Red Bluff Diversion Dam with temporary facilities per NMFS BiOp 	<ul style="list-style-type: none"> • Existing Facilities with NMFS BiOp and USFWS BiOp conditions (See Appendix 5A) • New Red Bluff Fish Passage Facilities • Interim implementation for San Joaquin River Restoration Plan • Freeport Regional Water Project • Contra Costa Canal Fish Screen Project • Delta Mendota Canal-California Aqueduct Intertie 	<ul style="list-style-type: none"> • Existing Facilities with NMFS BiOp and USFWS BiOp conditions (See Appendix 5A) • New Red Bluff Fish Passage Facilities • Interim implementation for San Joaquin River Restoration Plan • Freeport Regional Water Project • Contra Costa Canal Fish Screen Project • Delta Mendota Canal-California Aqueduct Intertie
Operation of non-CVP Facilities	<ul style="list-style-type: none"> • Existing Facilities • Partial implementation of Grassland Bypass Project 	<ul style="list-style-type: none"> • Stockton Delta Water Supply • Full implementation of Grassland Bypass Project 	<ul style="list-style-type: none"> • Stockton Delta Water Supply • Full implementation of Grassland Bypass Project

The operational assumptions include continued delivery of water to SWP and CVP contractors up to the adopted water contract amounts based upon water availability and operational constraints, and continued operations under the Coordinated Operations Agreement; State Water Resources Control Board (SWRCB) Decision 1641 (D-1641); use of Joint Points of Diversion to allow DWR and Reclamation to use both the SWP and CVP diversion capacity capabilities in accordance with D-1641; SWRCB Water Quality Control Plan adopted in 2006; and implementation of Central Valley Project Improvement Act including environmental water actions in accordance with Section 3406(b)(2).

3D.3.1.3 Existing Conditions Assumptions for Ongoing Programs and Policies

The Existing Conditions assumes continued implementation of operations, maintenance, enforcement, and protection programs by federal, state, and local agencies and non-profit groups that affect or could be affected by the Proposed Project and alternatives, as summarized in Table 3D-2. A more comprehensive table is included at the end of this appendix in Attachment 3D-A.

Table 3D-2. Sample of Ongoing Programs, Projects, and Policies Included in Existing Conditions for the BDCP EIR/EIS

Agency	Program	Comments
Department of Boating and Waterways	Egeria Densa Control Programs	Ongoing program.
Department of Boating and Waterways	Water Hyacinth Control Programs	Ongoing program that is currently being evaluated in a Draft Programmatic EIR.
Department of Fish and Wildlife	Invasive Species Program	Ongoing program.
Department of Fish and Wildlife	California Aquatic Invasive Species Management Plan	Ongoing program.
Department of Fish and Wildlife	Zebra Mussel Rapid Watch Program and Response Plan for California	Ongoing program (includes Quagga mussels.)
Department of Fish and Wildlife	Fish Screen Passage Program	Ongoing program – site-specific projects will require future technical and environmental analyses.
Department of Fish and Wildlife	Delta-Bay Enhanced Enforcement Program	Ongoing program.
Department of Fish and Wildlife	Ecosystem Restoration Program Conservation Strategy	Ongoing program – site-specific projects will require future technical and environmental analyses.
Department of Fish and Wildlife	Lower Sherman Island Wildlife Area Land Management Plan	Ongoing program – site-specific projects will require future technical and environmental analyses.
Department of Fish and Wildlife	Yolo Bypass Wildlife Area Land Management Plan	Ongoing program – site-specific projects will require future technical and environmental analyses.
Department of Fish and Wildlife	Staten Island Wildlife-Friendly Farming Demonstration	Ongoing program.

Agency	Program	Comments
Department of Fish and Wildlife	Restoring Ecosystem Integrity in the Northwest Delta	Ongoing program.
Department of Fish and Wildlife	Population Biology, Life History, Distribution, and Environmental Optima of Green Sturgeon	Ongoing program.
California Fish and Wildlife Commission	Operations as for Listing of Longfin Smelt under CESA	Despite the fact that OAL has not “finalized” its proposed changes in regulations in code, DFW operates in accordance with the longfin being listed as threatened. In fact, DFW has issued DWR a 2081 permit authorizing take of this threatened species. Therefore, the listing should be included in Existing Conditions, the No Action/No Project, and the Cumulative impacts analyses.
Department of Fish and Wildlife and U.S. Fish and Wildlife Service	Hatchery and Stocking Program	Ongoing program – site-specific projects will require future technical and environmental analyses.
Department of Fish and Wildlife, Department of Food and Agriculture, and California State Parks	Watercraft Inspection Programs	Ongoing program.
Department of Water Resources	Delta Levees Flood Protection Program	Ongoing program – site-specific projects will require future technical and environmental analyses.
Department of Water Resources	Levee Repair-Levee Evaluation Program	Ongoing program – site-specific projects will require future technical and environmental analyses.
Department of Water Resources	Interagency Ecological Program	Ongoing program – site-specific projects will require future technical and environmental analyses.
Department of Water Resources	South Delta Temporary Barriers Program	Ongoing program.
Department of Water Resources	Stockton Deep Water Ship Channel Demonstration Dissolved Oxygen Project	Ongoing program.
Department of Water Resources	Zebra Mussel Watch Program	Ongoing program.
Department of Water Resources and Department of Fish and Wildlife	Delta Fish Agreement (Four Pumps Project)	Ongoing program – site-specific projects or changes to the program will require future technical and environmental analyses.
Department of Water Resources and Yuba County Water Agency	Lower Yuba River Accord	Ongoing program.
State Lands Commission	Marine Invasive Species Program	Ongoing program.
Central Valley Regional Water Quality Control Board	Cache Creek, Bear Creek, Sulfur Creek, Harley Gulch Mercury total maximum daily load (TMDL)	Ongoing program – site-specific projects will require future technical and environmental analyses.

Agency	Program	Comments
Central Valley Regional Water Quality Control Board	Irrigated Lands Regulatory Program	Ongoing program – site-specific projects will require future technical and environmental analyses.
California Partners in Flight	Riparian Habitat Joint Venture	Ongoing program – site-specific projects will require future technical and environmental analyses.
Central Valley Joint Venture Program	Central Valley Joint Venture	Ongoing program – site-specific projects will require future technical and environmental analyses.
Contra Costa County and East Contra Costa County Habitat Conservancy	East Contra Costa County HCP/NCCP	Ongoing program.
East Bay Municipal Utility District (EBMUD)	Lower Mokelumne River Spawning Habitat Improvement Project	Ongoing program - site-specific projects may require future technical and environmental analyses.
National Marine Fisheries Service, U.S. Bureau of Reclamation, and Department of Water Resources	Biological Opinion (BiOp) on the Long-Term Operations of the Central Valley Project and State Water Project (Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, Southern Distinct Population Segment of North American green sturgeon, and Southern Resident killer whales)	Ongoing program.
Placer County Water Agency	Placer County Water Agency American River Pump Station	Pump Station dedicated for operations in May 2008
Sacramento County	Sacramento International Airport Master Plan	Ongoing program – site-specific projects may require future technical and environmental analyses.
Sacramento Area Flood Control Agency, Central Valley Flood Protection Board, and U.S. Army Corps of Engineers	Flood Management Program	Ongoing program – site-specific projects may require future technical and environmental analyses.
Sacramento County, Sacramento, Citrus Heights, Elk Grove, Folsom, Galt, and Rancho Cordova	Sacramento Stormwater Quality Partnership	Ongoing program – site-specific projects may require future technical and environmental analyses.
San Francisco Bay Regional Water Quality Control Board	San Francisco Bay Mercury TMDL	Ongoing program.
San Joaquin Council of Governments	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan	Ongoing program.
San Joaquin County, Stockton, Tracy, and the State Water Resources Control Board	San Joaquin County, Stockton, and Tracy Stormwater Management Programs	Ongoing program.

Agency	Program	Comments
Bay Area Stormwater Management Association agencies	Bay Area Stormwater Management Programs	Ongoing program.
U.S. Army Corps of Engineers	Delta Dredged Sediment Long-Term Management Strategy	Ongoing program – site-specific projects may require future technical and environmental analyses.
U.S. Army Corps of Engineers	Suisun Bay Channel Operations and Maintenance	Ongoing program.
U.S. Army Corps of Engineers	Suisun Channel (Slough) Operation and Maintenance	Ongoing program.
U.S. Bureau of Reclamation and Department of Water Resources	Water Year 2010 Interim Flows Project (San Joaquin River)	Ongoing program. Interim Operations.
U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service	Anadromous Fish Screen Program	Ongoing program – site-specific projects may require future technical and environmental analyses.
U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Department of Water Resources and Department of Fish and Wildlife	San Joaquin River Restoration Program	Ongoing program – site-specific projects may require future technical and environmental analyses.
U.S. Coast Guard	Ballast Water Management Program	Ongoing program.
U.S. Fish and Wildlife Service	Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan	Ongoing program – site-specific projects may require future technical and environmental analyses.
U.S. Fish and Wildlife Service	North American Waterfowl Management Plan	Ongoing program – site-specific projects may require future technical and environmental analyses.
U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, and Department of Water Resources	Biological Opinion (BiOp) on the Long-Term Operations of the Central Valley Project and State Water Project (Delta smelt)	Ongoing program.
U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, and Department of Fish and Wildlife	San Joaquin Basin Action Plan	Ongoing program – site-specific projects may require future technical and environmental analyses.
University of California, Davis, California Department of Water Resources, and U.S. Bureau of Reclamation	UCD Fish Conservation and Cultural Lab	Ongoing program - Spawns and rears delta smelt for scientific studies, and develops and improves cultural methods for delta and longfin smelt.
University of California, Davis, California Department of Water Resources, Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and U.S. Bureau of Reclamation	Delta Smelt Refuge Population and Delta Smelt Interim Refuge	Temporary Delta Smelt refuge at DWR's Fish Facility at Byron
Yolo County	Yolo County Stormwater Management Program	Ongoing program.

1 Many of the ongoing programs that include continued operations, maintenance, or enforcement
 2 activities also include development of future projects that would require separate environmental
 3 documentation. The future projects are not included in the Existing Conditions assumptions. Most of
 4 these future projects have not been identified at this time, and therefore, are not included in Existing
 5 Conditions assumptions.

6 For example, the NMFS BiOp and the USFWS BiOp identify facilities or changes in operations that
 7 would require further study and subsequent implementation, including actions that are projected
 8 for completion prior to the completion of the EIR/EIS. These future actions would require further
 9 engineering, environmental, and institutional evaluation and documentation; and therefore, are not
 10 included in the Existing Conditions assumptions. The actions in the NFMS BiOp and USFWS BiOp
 11 that are not included in the Existing Conditions are summarized in Table 3D-3. It is recognized that
 12 it is the intent of SWP and CVP to comply with the NMFS BiOp and USFWS BiOp, although, the
 13 specific actions for new facilities have not been identified or evaluated at this time and therefore too
 14 speculative in nature to be included in the analysis.

15 **3D.3.1.4 Existing Conditions Assumptions for Annual Actions**

16 The Existing Conditions assumptions used in the EIR/EIS quantitative analyses focus on long-term
 17 operations. It is recognized that many actions are implemented on an annual basis, such as one-year
 18 water transfers. The annual operations vary substantially each year; and therefore, inclusion of
 19 these activities in quantitative analyses may be misleading or provide an inaccurate baseline.
 20 Historical annual actions are described for each resource in the EIR/EIS in a qualitative manner with
 21 available specific numerical information.

22 **Table 3D-3. Actions Identified under U.S. Fish and Wildlife Service and National Marine Fisheries**
 23 **Service Biological Opinions That Would Require Additional Environmental Documentation prior to**
 24 **Implementation and not included in the Existing Conditions Assumptions**

Biological Opinion	Program
U.S. Fish and Wildlife Service	Component 4: Habitat Restoration – Action 6: A program to create or restore a minimum of 8,000 acres of intertidal and associated subtidal habitat in the Delta and Suisun Marsh shall be implemented. A monitoring program shall be developed to focus on the effectiveness of the restoration program.
National Marine Fisheries Service	Action I.3.5. Measures to Compensate for Adverse Effects of Interim Operations on Spring-Run Reclamation shall provide \$500,000 for implementation of spring- run passage improvement projects in the Sacramento River.
National Marine Fisheries Service	Action I.5. Funding for Central Valley Project Improvement Act (CVPIA) Anadromous Fish Screen Program (AFSP) Reclamation shall screen priority diversions as identified in the CVPIA AFSP.
National Marine Fisheries Service	Action I.6.1. Restoration of Floodplain Rearing Habitat In cooperation with Department of Fish and Wildlife (DFW), USFWS, NMFS, and the U.S. Army Corps of Engineers (USACE), Reclamation and DWR shall, to the maximum extent of their authorities (excluding condemnation authority), provide significantly increased acreage of seasonal floodplain rearing habitat, with biologically appropriate durations and magnitudes, from December through April, in the lower Sacramento River basin, on a return rate of approximately one to three years, depending on water year type.

Biological Opinion	Program
National Marine Fisheries Service	<p>Action I.7. Reduce Migratory Delays and Loss of Salmon, Steelhead, and Sturgeon at Fremont Weir and Other Structures in the Yolo Bypass By December 31, 2011, as part of the plan described in Action I.6.1, Reclamation and/or DWR shall submit a plan to NMFS to provide for high quality, reliable migratory passage for Sacramento Basin adult and juvenile anadromous fishes through the Yolo Bypass. By June 30, 2011, Reclamation and/or DWR shall obtain NMFS concurrence and, to the maximum extent of their authorities, and in cooperation with other agencies and funding sources, begin implementation of the plan, including any physical modifications. By September 30, 2009, Reclamation shall request in writing that the USACE take necessary steps to alter Fremont Weir and/or any other facilities or operations requirements of the Sacramento River Flood Control Project or Yolo Bypass facility in order to provide fish passage and shall offer to enter into a Memorandum of Understanding, interagency agreement, or other similar mechanism, to provide technical assistance and funding for the necessary work.</p>
National Marine Fisheries Service	<p>Action II.3. Structural Improvements Reclamation shall evaluate physical and structural modifications that may improve temperature management capability [Folsom Dam Temperature Control Device, Cold Water Transport through Lake Natoma, El Dorado Irrigation District Temperature Control Device].</p>
National Marine Fisheries Service	<p>Action II.6.1. Preparation of Hatchery Genetic Management Plan (HGMP) for Steelhead Reclamation shall fund DFW to prepare a complete draft HGMP for steelhead production at Nimbus Fish Hatchery, in accordance with current NMFS guidelines, and submit that draft for NMFS review by June 2011.</p> <p>Action II.6.3: Develop and Implement Fall-run Chinook Salmon Hatchery Management Plans for Nimbus and Trinity River Fish Hatcheries By June 2014, develop and begin implementation of Hatchery Management Plans for fall-run production at Nimbus Fish Hatchery and spring-run and fall-run at Trinity River Fish Hatchery.</p>
National Marine Fisheries Service	<p>Action IV.4.1. Tracy Fish Collection Facility (TFCF) Improvements to Reduce Pre-Screen Loss and Improve Screening Efficiency Reclamation shall undertake the following actions at the TFCF to reduce pre-screen loss and improve screening efficiency:</p> <ol style="list-style-type: none"> 1) By December 31, 2012, improve the whole facility efficiency for the salvage of Chinook salmon, CV steelhead, and Southern DPS of green sturgeon so that overall survival is greater than 75 percent for each species. <ol style="list-style-type: none"> a) By December 31, 2011, Reclamation shall complete studies to determine methods for removal of predators in the primary channel, using physical and non-physical removal methods... By December 31, 2012, Reclamation shall implement measures to reduce pre-screen predation in the primary channel to less than ten percent of exposed salmonids. b) By March 31, 2011, Reclamation shall complete studies for the re-design of the secondary channel to enhance the efficiency of screening, fish survival, and reduction of predation within the secondary channel structure and report study findings to NMFS...Reclamation shall initiate the implementation of the study findings by January 31, 2012...
National Marine Fisheries Service	<p>Action IV.4.2. Skinner Fish Collection Facility Improvements to Reduce Pre-Screen Loss and Improve Screening Efficiency DWR shall undertake the following actions at the Skinner Fish Collection Facility:</p> <ol style="list-style-type: none"> a) On or before March 31, 2011, improved predator control methods. Full compliance shall be achieved by March 31, 2014.

Biological Opinion	Program
National Marine Fisheries Service	<p>Action IV.4.3. Tracy Fish Collection Facility and the Skinner Fish Collection Facility Actions to Improve Salvage Monitoring, Reporting and Release Survival Rates Reclamation and DWR shall undertake the following actions at the TFCF and the Skinner Fish Collection Facility, respectively. Actions shall commence by October 1, 2009, unless stated otherwise...</p> <p>3) Release Site Studies shall be conducted to develop methods to reduce predation at the “end of the pipe” following release of salvaged fish...</p> <p>4) By June 15, 2011, predation reduction methods shall be implemented according to analysis in 3.</p>
National Marine Fisheries Service	NF 4.1. Adult Fish Collection and Handling Facilities Beginning in 2012, Reclamation...shall design, construct, install, operate and maintain new or rebuilt adult fish collection, handling and transport facilities at the sites listed below. The objective is to provide interim facilities to pass fish above project facilities and reservoirs.
National Marine Fisheries Service	NF 4.2. Adult Fish Release Sites above Dams and Juvenile Fish Sites Below Dams Reclamation shall provide for the safe, effective, and timely release of adult fish above dams and juvenile fish below dams. The Fish Passage Plan must identify and release sites. Fish transport and release locations and methods shall follow existing State and Federal protocols. With assistance from the Steering Committee, and in coordination with applicable landowners and stakeholders, Reclamation shall complete construction of all selected sites by March 2012.
National Marine Fisheries Service	NF 4.3. Capture, Trapping, and Relocation of Adults By March 2012, Reclamation shall implement upstream fish passage for adults via “trap and transport” facilities while it conducts studies to develop and assess long-term upstream and downstream volitional fish passage alternatives. At least one fish facility must be in place at terminal upstream passage points for each river that is subject to this measure. Facilities to capture adults currently exist at or below Keswick and Nimbus Dams, though these may need to be upgraded.
National Marine Fisheries Service	NF 4.4. Interim Downstream Fish Passage through Reservoirs and Dams Beginning in 2012, following the emergence of the first year class of reintroduced fish, and until permanent downstream passage facilities are constructed or operations are established at Project dams, Reclamation shall carry out interim operational measures to pass downstream migrants...
National Marine Fisheries Service	NF 4.5. Juvenile Fish Collection Prototype Beginning in January, 2010, with input from the CVP/SWP operations Fish Passage Steering Committee, Reclamation shall plan, design, build, and evaluate a prototype head-of-reservoir juvenile collection facility above Shasta Dam. Construction shall be complete by September 2013.
National Marine Fisheries Service	LF 2.1. Long-term Adult and Juvenile Fish Passage Facilities...Reclamation shall construct long-term fish passage facilities necessary to successfully allow upstream and downstream migration of fish around or through project dams and reservoirs on the Sacramento and American Rivers by 2020, and Stanislaus River depending on results of study provided for in Action NF 4.7.
National Marine Fisheries Service	LF 2.2. Supplementation and Management Plan...Reclamation shall develop and implement a long-term population supplementation plan for each species and fish passage location identified in V. Fish Passage Program, with adult recruitment and collection criteria...The plan shall be developed by 2020.
National Marine Fisheries Service	LF 2.2. Supplementation and Management Plan...Reclamation shall develop and implement a long-term population supplementation plan for each species and fish passage location identified in V. Fish Passage Program, with adult recruitment and collection criteria...The plan shall be developed by 2020.

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3D.3.2 No Action Alternative Conditions

The No Action Alternative assumptions includes the basic description of No Action Alternative (Section 3D.2.2), assumptions related to the SWP and CVP, ongoing programs and policies by governmental and non-profit entities, projections related to climate change, and assumptions related to annual actions that vary every year.

3D.3.2.1 Basic Description of No Action Alternatives for the EIR/EIS

The No Action Alternatives in the EIR/EIS includes descriptions of conditions 15 and 50 years following approval of the project (approximately Year 2025 and 2060, respectively).

The No Action Alternatives for the EIR/EIS includes programs, projects, and policies included in Existing Conditions assumptions (Tables 3D-1 and 3D-2) and those with clearly defined management and/or operational plans, including facilities under construction as of February 13, 2009 because those actions were consistent with the continuation of existing management direction or level of management for plans, policies, and operations by the NEPA Lead Agencies and other agencies, as summarized in Table 3D-4. The No Action Alternatives assumptions also includes facilities and programs that have received approvals and permits or foreseeably will be approved and permitted by 2025 and 2060, because those programs were consistent with existing management direction as of the NOP, as summarized in Table 3D-4. Because the effects of climate change and sea level rise will foreseeably have a sizeable effect the Delta environment by 2025 and 2060, they are also included in the No Action Alternative analysis. A more comprehensive table is included at the end of this appendix in Attachment 3D-A.

As summarized above, the Final EIR/EIS includes a No Action Alternative for purposes of analyzing Alternatives 1A-C, 2A-C, 3, 4 5, 6A-C, and 79 which are identified as BDCP alternatives analyzed at a late longterm (LLT) time period ending in approximately 2060. An additional No Action Alternative is presented for the purposes of analyzing Alternatives 4A, 2D and 5A at an ELT time period, ending in approximately 2025. This additional No Action Alternative (ELT) is required to adequately present NEPA analyses for the new alternatives (4A, 2D and 5A), which are defined as being implemented in the ELT time period. Assumptions for the No Action Alternative ELT are similar to those presented for the No Action Alternative (LLT) although assumptions about climate change and sea level rise assume less effect during the shorter ELT time period.

Table 3D-4. Sample of Programs, Projects, and Policies Included In No Action Alternative for the BDCP EIR/EIS

Agency	Program	Comments
Department of Water Resources	Mayberry Farms Subsidence Reversal and Carbon Sequestration Project	Completed in 2010.
Department of Water Resources	Clifton Court Forebay Fishing Facility	Initial Study/Proposed Mitigated Negative Declaration Completed in 2013.
Contra Costa Water District	Contra Costa Canal Fish Screen Project	Completed in 2011.

Agency	Program	Comments
Contra Costa Water District, U.S. Bureau of Reclamation, and Department of Water Resources	Alternative Intake Project	Completed in 2011.
Department of Water Resources	FERC License Renewal for Oroville Project	Final EIR in 2008. FERC license will be issued and operations will be in accordance with NMFS BiOp and final FERC license.
Freeport Regional Water Authority and U.S. Bureau of Reclamation	Freeport Regional Water Project	Completed in 2010.
Reclamation District 2093	Liberty Island Conservation Bank	Completed in 2011.
City of Stockton	Delta Water Supply Project	Completed in 2012.
U.S. Bureau of Reclamation and State Water Resources Control Board	Battle Creek Salmon and Steelhead Restoration Project	Under construction in 2009. Construction is being implemented in three phases; the final phase is estimated to occur between 2013 and 2015.
Tehama Colusa Canal Authority and U.S. Bureau of Reclamation	Red Bluff Diversion Dam Fish Passage Project	Completed in 2012.
U.S. Bureau of Reclamation, Department of Fish and Wildlife, and Natomas Central Mutual Water Company	American Basin Fish Screen and Habitat Improvement Project	Under construction as of January 2010. Estimated completion in 2014.
U.S. Bureau of Reclamation, U.S. Army Corps of Engineers, Sacramento Area Flood Control Agency, and Central Valley Flood Protection Board	Folsom Dam Safety and Flood Damage Reduction Project	Under construction. Estimated completion in 2015.
Yolo County	General Plan Update	Adopted in November 2009.
Zone 7 Water Agency and Department of Water Resources	South Bay Aqueduct Improvement and Enlargement Project	Under construction. Estimated completion in 2012.
Department of Fish and Wildlife, Department of Water Resources, U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, and Suisun Marsh Charter Group	Suisun Marsh Habitat Management, Preservation, and Restoration Plan	Final EIS/EIR in 2011.
Department of Water Resources	Cache Slough Area Restoration	Program considered in previous studies
Central Valley Regional Water Quality Control Board	Sacramento-San Joaquin Delta Estuary TMDL for Methylmercury	Effective October 20, 2011. In the process of implementation.

3D.3.2.2 No Action Alternatives Assumptions for State Water Project and Central Valley Project

The No Action Alternatives for the EIR/EIS include continuation of operations of the SWP and CVP as described in the 2008 BA with operational assumptions modified by the NMFS BiOp and USFWS BiOp. The operational assumptions for the No Action Alternative do not include “Near Term Future Projects” or “Other Future Projects” included in the 2008 BA that do not comply with the No Action Alternative definition presented above. The Sacramento River Reliability Project is not included in the No Action Alternative because the environmental documentation is not complete, and, therefore, specific construction and operational criteria are not defined. South Delta Improvement Program is not included in the No Action Alternative because DWR is developing alternative plans at this time. Detailed assumptions for the CVP and SWP operations are represented in hydrological and water quality analytical models, as described in Appendix 5A, *BDCP/California WaterFix FEIR/FEIS Modeling Technical Appendix*.

3D.3.2.3 No Action Alternatives Assumptions for Ongoing Programs and Policies

The No Action Alternatives assume continued implementation of operations, maintenance, enforcement, and protection programs by federal, state, and local agencies and non-profit groups that affect or could be affected by the Proposed Project and alternatives, as summarized in Table 3D-2. As described above for Existing Conditions assumptions, many of the ongoing programs include development of future projects that would require separate environmental documentation. The future projects are not included in the No Action Alternatives assumptions unless they meet the definition of No Action Alternative.

In addition to the ongoing programs, the No Action Alternatives consider future actions under the NMFS BiOp and USFWS BiOp which are defined well enough to allow for an informed analysis, water rights, flood management, and compliance with endangered species acts.

3D.3.2.3.1 No Action Alternatives Assumptions for Biological Opinions

The future actions not in the No Action Alternatives include facilities or changes in operations under implementation of the NMFS BiOp and the USFWS BiOp, as summarized in Table 3D-3, that would require further study and subsequent implementation as well as future actions required by the Biological Opinions which cannot be analyzed (such as convening a working group to make certain findings). Many of these actions are projected for completion prior to the completion of the EIR/EIS. It is recognized that it is the intent of SWP and CVP to comply with the NMFS BiOp and USFWS BiOp, although, the specific actions for new facilities have not been identified or evaluated at this time.

However, as discussed above in Section 3D.2.2, certain RPAs required under the 2008 and 2009 NMFS and USFWS BiOps were included in the No Action Alternatives analysis if they were found to be well-defined enough to allow for a meaningful analysis. However, where the details of these actions do not lend themselves to quantitative analysis, discussion is done at a qualitative level. Table 3D-5 summarizes the RPAs which will be considered in the No Action Alternatives analysis.

1 **Table 3D-5. Actions Identified under U.S. Fish and Wildlife Service and National Marine Fisheries**
 2 **Service Biological Opinions that are included in the No Action Assumptions**

Biological Opinion	Program	Qualitative/ Quantitative
National Marine Fisheries Service	Action I.6.3. Lower Putah Creek enhancements. By December 31, 2015, Reclamation and/or DWR shall develop and implement Lower Putah Creek enhancements as described in Appendix 2-C, including stream realignment and floodplain restoration for fish passage improvement and multi-species habitat development on existing public lands. This action shall not result in stranding or migration barriers for juvenile salmon.	Quantitative (other than via CALSIM II, DSM2)
National Marine Fisheries Service	Action I.6.4. Lisbon Weir improvements. By December 31, 2015, Reclamation and/or DWR shall, to the maximum extent of their authorities, assure that improvements to the Lisbon Weir are made that are likely to achieve the fish and wildlife benefits described in Appendix 2-C. Improvements will include modification or replacement of Lisbon Weir, if necessary to achieve the desired benefits for fish. If neither Reclamation nor DWR has authority to make structural or operational modifications to the weir, they shall work with the owners and operators of the weir to make the desired improvements, including providing funding and technical assistance. Reclamation and DWR must assure that this action does not result in migration barriers or stranding of juvenile salmon	Qualitative (goals of action known but unknown how much benefit will be achieved)
National Marine Fisheries Service	<p>Action IV.1.1. Monitoring and Alerts to Trigger Changes in DCC Operations. Monitoring of Chinook salmon migration in the Sacramento River Basin and the Delta currently occurs at the RBDD, in spring-run tributaries to the Sacramento River, on the Sacramento River at Knights Landing and Sacramento, and sites within the Delta. Reclamation and DWR shall continue to fund these ongoing monitoring programs, as well as the monitoring of salvage and loss of Chinook salmon juveniles at the Delta fish collection facilities operated by the CVP and SWP. Funding shall continue for the duration of the proposed action (2030). Reclamation and DWR may use their own fishery biologists to conduct these monitoring programs, or they may provide funds to other agencies to do the required monitoring.</p> <p>Monitoring protocols shall follow established procedures utilized by the USFWS, DFW, Reclamation, and DWR. Information collected from the monitoring programs will be used to make real-time decisions regarding DCC gate operation and export pumping.</p> <p>The DOSS group (Action IV.5) and WOMT will use information from monitoring to make decisions regarding DCC closures consistent with procedures below.</p> <p>The DCC gate operations in the fall are initiated through a series of alerts. These alerts are signals that gate operations may need to be altered in the near future to avoid diversion of juvenile Chinook salmon migrating down the Sacramento River.</p>	Quantitative (CALSIM II/DSM2)

Biological Opinion	Program	Qualitative/ Quantitative
National Marine Fisheries Service	Action IV.1.2. DCC Gate Operation. During the period between November 1 and June 15, DCC gate operations will be modified from the proposed action to reduce loss of emigrating salmonids and green sturgeon. The operating criteria provide for longer periods of gate closures during the emigration season to reduce direct and indirect mortality of yearling spring-run, winter-run, and CV steelhead. From December 1 to January 31, the gates will remain closed, except as operations are allowed using the implementation procedures/modified Salmon Decision Tree.	Quantitative (CALSIM II/DSM2)
National Marine Fisheries Service	Action IV.2.1. San Joaquin River Inflow to Export Ratio. Imposes minimum San Joaquin River inflow requirements in conjunction with maximum permissible exports (i.e., a 4 to 1 ratio between inflow and exports) and is effective April 1 to May 31.	Quantitative (CALSIM II/DSM2)
National Marine Fisheries Service	Action IV.2.3. Old and Middle River Flow Management. Limits Old and Middle river flows to no more negative than -2,500 to -5,000 cfs, depending on juvenile entrainment levels, and is effective January 1 to June 15 or until a temperature trigger is hit at Mossdale.	Quantitative (CALSIM II/DSM2)
National Marine Fisheries Service	Action IV.3. Reduce Likelihood of Entrainment of Salvage at the Export Facilities. From November 1 through April 30, operations of the Tracy and Skinner Fish Collection Facilities shall be modified according to monitoring data from upstream of the Delta. In conjunction with the two alerts for closure of the DCC (Action IV.1.1), the Third Alert shall be used to signal that export operations may need to be altered in the near future due to large numbers of juvenile Chinook salmon migrating into the upper Delta region, increasing their risk of entrainment into the central and south Delta and then to the export pumps. <i>Third Alert:</i> The catch index is greater than 10 fish captured per day from November 1 to February 28, or greater than 15 fish captured per day from March 1 to April 30, from either the Knights Landing catch index or the Sacramento catch index.	Quantitative (CALSIM II/DSM2)
National Marine Fisheries Service	Action IV.4.1. Tracy Fish Collection Facility (TFCF) Improvements to Reduce Pre-Screen Loss and Improve Screening Efficiency Reclamation shall undertake the following actions at the TFCF to reduce pre-screen loss and improve screening efficiency: 1) By December 31, 2012, improve the whole facility efficiency for the salvage of Chinook salmon, CV steelhead, and Southern DPS of green sturgeon so that overall survival is greater than 75 percent for each species. a) By December 31, 2011, Reclamation shall complete studies to determine methods for removal of predators in the primary channel, using physical and non-physical removal methods... By December 31, 2012, Reclamation shall implement measures to reduce pre-screen predation in the primary channel to less than ten percent of exposed salmonids. b) By March 31, 2011, Reclamation shall complete studies for the re-design of the secondary channel to enhance the efficiency of screening, fish survival, and reduction of predation within the secondary channel structure and report study findings to NMFS...Reclamation shall initiate the implementation of the study findings by January 31, 2012...	Qualitative

Biological Opinion	Program	Qualitative/ Quantitative
National Marine Fisheries Service	<p>Action IV.4.2. Skinner Fish Collection Facility Improvements to Reduce Pre-Screen Loss and Improve Screening Efficiency DWR shall undertake the following actions at the Skinner Fish Collection Facility:...</p> <p>a) On or before March 31, 2011, improved predator control methods. Full compliance shall be achieved by March 31, 2014.</p>	Qualitative
National Marine Fisheries Service	<p>Action IV.4.3. Tracy Fish Collection Facility and the Skinner Fish Collection Facility Actions to Improve Salvage Monitoring, Reporting and Release Survival Rates Reclamation and DWR shall undertake the following actions at the TFCF and the Skinner Fish Collection Facility, respectively. Actions shall commence by October 1, 2009, unless stated otherwise...</p> <p>3) Release Site Studies shall be conducted to develop methods to reduce predation at the “end of the pipe” following release of salvaged fish...</p> <p>4) By June 15, 2011, predation reduction methods shall be implemented according to analysis in 3.</p>	Qualitative
National Marine Fisheries Service	Action IV.5. Formation of Delta Operations for Salmon and Sturgeon Technical Working Group.	Qualitative
National Marine Fisheries Service	Action IV.6. South Delta Improvement Program—Phase I (Permanent Operable Gates). DWR shall not implement the South Delta Improvement Program, which is a proposal to replace temporary barriers with permanent operable gates.	Quantitative
US Fish and Wildlife Service	<p>RPA Component 1. Protection of the Adult Delta Smelt Life Stage.</p> <p>1) Action 1: Limit exports so that the average daily OMR flow is no more negative than -2,000 cfs for a total duration of 14 days, with a 5-day running average no more negative than -2,500 cfs (within 25 percent).</p> <ul style="list-style-type: none"> • December 1 to December 20 – Based upon an examination of turbidity data from Prisoner’s Point, Holland Cut, and Victoria Canal and salvage data from CVP/SWP, and other parameters important to the protection of delta smelt including, but not limited to, preceding conditions of X2, FMWT, and river flows. • After December 20 – The action will begin if the 3 day average turbidity at Prisoner’s Point, Holland Cut, and Victoria Canal exceeds 12 NTU <p>2) Action 2: The range of net daily OMR flows will be no more negative than -1,250 to -5,000 cfs.</p> <ul style="list-style-type: none"> • Beginning immediately after Action 1. If Action 1 is not implemented, the SWG may recommend a start date for the implementation of Action 2 to protect adult delta smelt. • OMR flow requirements do not apply whenever a three day flow average is greater than or equal to 90,000 cfs in Sacramento River at Rio Vista and 10,000 cfs in San Joaquin River at Vernalis. Once such flows have abated, the OMR flow requirements of the Action are again in place. 	Quantitative (CALSIM II/DSM2)

Biological Opinion	Program	Qualitative/ Quantitative
US Fish and Wildlife Service	<p>RPA Component 2. Protection of Larval and Juvenile Delta Smelt.</p> <p>1) Action 3: Net daily OMR flow will be no more negative than -1,250 to -5,000 cfs based on a 14-day running average with a simultaneous 5-day running average within 25 percent of the applicable requirement for OMR.</p> <ul style="list-style-type: none"> • Initiate the action after reaching the triggers below, which are indicative of spawning activity and the probable presence of larval delta smelt in the South and Central Delta. • Triggers: When temperature reaches 12oC based on a three station average at Mossdale, Antioch, and Rio Vista; or Onset of spawning. <p>2) Action 5: Temporary Spring Head of Old River Barrier (HORB) and the Temporary Barrier Project (TBP): Install to minimize entrainment of larval and juvenile delta smelt at Banks and Jones or from being transported into the South and Central Delta, where they could later become entrained. Do not install the HORB if delta smelt entrainment is a concern. If installation of the HORB is not allowed, the agricultural barriers would be installed as described in the Project Description. If installation of the HORB is allowed, the TBP flap gates would be tied in the open position until May 15.</p>	Quantitative (CALSIM II/DSM2)
US Fish and Wildlife Service	<p>RPA Component 3. Improve Habitat for Delta Smelt Growth and Rearing.</p> <p>1) Action 4: During September and October in years when the preceding precipitation and runoff period was wet or above normal as defined by the Sacramento Basin 40-30-30 index, Reclamation and DWR shall provide sufficient Delta outflow to maintain monthly average X2 no greater (more eastward) than 74 km (from the Golden Gate) in Wet WYs and 81 km in Above Normal WYs. The monthly X2 target will be separately achieved for the months of September and October. During any November when the preceding water year was wet or above normal as defined by the Sacramento Basin 40-30-30 index, all inflow into CVP/SWP reservoirs in the Sacramento Basin shall be added to reservoir releases in November to provide an additional increment of outflow from the Delta to augment Delta outflow up to the fall X2 of 74 km for Wet WYs or 81 km for Above Normal WYs, respectively. In the event there is an increase in storage during any November this action applies, the increase in reservoir storage shall be released in December to augment the December outflow requirements in SWRCB D-1641.</p>	Quantitative (CALSIM II/DSM2)
US Fish and Wildlife Service	RPM 1. Minimize adverse effects of the operations of the Permanent Operable Gates.	Quantitative (CALSIM II/DSM2)
US Fish and Wildlife Service	RPM 2. Minimize adverse effects of operations of the North Bay Aqueduct.	Quantitative (CALSIM II/DSM2)
US Fish and Wildlife Service	RPM 4. Minimize adverse effects of Banks and Jones on delta smelt.	Quantitative (CALSIM II/DSM2)

1 **Table 3D-6. Actions Identified under U.S. Fish and Wildlife Service and National Marine Fisheries**
 2 **Service Biological Opinions that are subsumed in the BDCP**

Biological Opinion	Program	How Analyzed
National Marine Fisheries Service	Action I.5. Funding for Central Valley Project Improvement Act (CVPIA) Anadromous Fish Screen Program (AFSP) Reclamation shall screen priority diversions as identified in the CVPIA AFSP.	Modified by <i>CM21 Nonproject Diversions</i> , which supports the program in the Plan Area, and extends it to include consideration of potential benefits to other covered fishes.
National Marine Fisheries Service	Action I.6.1. Restoration of Floodplain Rearing Habitat In cooperation with Department of Fish and Wildlife (DFW), USFWS, NMFS, and the U.S. Army Corps of Engineers (USACE), Reclamation and DWR shall, to the maximum extent of their authorities (excluding condemnation authority), provide significantly increased acreage of seasonal floodplain rearing habitat, with biologically appropriate durations and magnitudes, from December through April, in the lower Sacramento River basin, on a return rate of approximately one to three years, depending on water year type.	This action is one of the many actions proposed under CM2. Accordingly it was not considered as part of the No Action Alternative, but was evaluated as a component of the effects analysis.
National Marine Fisheries Service	Action I.6.2. Near-Term Actions at Liberty Island/Lower Cache Slough and Lower Yolo Bypass. Reclamation and/or DWR shall take all necessary steps to ensure that an enhancement plan is completed and implemented for Liberty Island/Lower Cache Slough, as described in Appendix 2-C. This action shall be monitored for the subsequent five years, at a minimum, to evaluate the use of the area by juvenile salmonids and to measure changes in growth rates. This action shall be designed to avoid stranding or migration barriers for juvenile salmon.	These actions are underway already but are also part of the larger suite of actions proposed under CM2 and CM4. Their completion and maintenance would be covered under BDCP. They were not treated as part of the No Action Alternative, and their effects were evaluated within the analysis of the effects of CM2 and CM4.
National Marine Fisheries Service	Action I.7. Reduce Migratory Delays and Loss of Salmon, Steelhead, and Sturgeon at Fremont Weir and Other Structures in the Yolo Bypass By December 31, 2011, as part of the plan described in Action I.6.1, Reclamation and/or DWR shall submit a plan to NMFS to provide for high quality, reliable migratory passage for Sacramento Basin adult and juvenile anadromous fishes through the Yolo Bypass. By June 30, 2011, Reclamation and/or DWR shall obtain NMFS concurrence and, to the maximum extent of their authorities, and in cooperation with other agencies and funding sources, begin implementation of the plan, including any physical modifications. By September 30, 2009, Reclamation shall request in writing that the USACE take necessary steps to alter Fremont Weir and/or any other facilities or operations requirements of the Sacramento River Flood Control Project or Yolo Bypass facility in order to provide fish passage and shall offer to enter into a Memorandum of Understanding, interagency agreement, or other similar mechanism, to provide technical assistance and funding for the necessary work.	This action is one of the many actions proposed under CM2. Accordingly it was not considered as part of the No Action Alternative, but was evaluated as a component of the effects analysis.

Biological Opinion	Program	How Analyzed
National Marine Fisheries Service	Action IV. 1.3. Consider Engineering Solutions to Further Reduce Diversion of Emigrating Juvenile Salmonids to the Interior and Southern Delta, and Reduce Exposure to CVP and SWP Export Facilities	This planning action may contribute to cumulative changes in the No Action Alternative, but the extent of the change cannot be predicted. Thus most effects of this Action were not evaluated in the effects analysis. However, one engineered solution, non-physical fish barriers (CM16) is considered within the Plan and evaluated within the effects analysis.
US Fish and Wildlife Service	RPA Component 4. Habitat Restoration. 1) Action 6: A program to create or restore a minimum of 8,000 acres of intertidal and associated subtidal habitat in the Delta and Suisun Marsh shall be implemented. A monitoring program shall be developed to focus on the effectiveness of the restoration program.	This action is one of the many actions proposed under CM4. Accordingly it was not considered as part of the No Action Alternative, but was evaluated as a component of the effects analysis.

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3D.3.2.3.2 No Action Alternatives Assumptions for Water Rights

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The No Action Alternatives assume utilization of senior water rights in the Sacramento and San Joaquin river watersheds by Year 2025 utilizing facilities currently available or under construction.

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3D.3.2.3.3 No Action Alternatives Assumptions for Flood Management

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The No Action Alternatives assume continued operations of flood management facilities by the federal, state, and local agencies. In addition, the No Action Alternatives assume that without future engineering and environmental analyses, levee failures due to flooding, erosion, subsidence, wave action, seismic events, burrowing animals, physical encroachment (such as barge collisions), or other causes would be repaired under ongoing programs. The No Action Alternatives assume that these repairs also would occur on privately-owned levees that are integral to the main waterways in the Delta, such as repairs that occurred to privately-owned levees following the floods in 1996 and 1997.

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3D.3.2.3.4 No Action Alternatives Assumptions for Compliance with Endangered Species Acts

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The No Action Alternatives assumptions include continued compliance by non-federal agencies with the California Endangered Species Act (CESA) and the federal Endangered Species Act (ESA) on a case-by-case basis for future programs and projects that have a potential to take listed species under each act. The No Action Alternatives do not include additional comprehensive strategies to avoid, minimize, or mitigate effects of programs or projects that are not currently implemented under Existing Conditions. Under the ESA, federal agencies have the responsibility to utilize their authorities to carry out programs for the conservation of endangered species and threatened species. However, since these programs are too conceptual at this time to analyze in an informative manner, they are not included in the No Action Alternative assumptions.

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1 **3D.3.2.4 No Action Alternatives Assumptions related to Climate**
2 **Change**

3 The No Action Alternatives also include assumptions for climate change related to sea level rise and
4 changes in precipitation patterns, including changes in ratios between snow and rainfall. Detailed
5 assumptions for climate change as it relates to CVP and SWP operations are represented in
6 hydrological and water quality analytical models, as described in Appendix 5A, *BDCP/California*
7 *WaterFix FEIR/FEIS Modeling Technical Appendix*. The No Action Alternatives do not include future
8 changes in facilities operations, land use, or policies by agencies in response to climate change.

9 **3D.3.2.5 No Action Alternatives Assumptions for Annual Actions**

10 The No Action Alternatives assumptions focus on longer-term operations and do not include specific
11 annual operations, such as one-year water transfers. It is recognized that annual operational water
12 transfers will continue to occur, although specific information cannot be reasonably forecasted.

13 **3D.3.3 No Project Alternative Conditions**

14 For the EIR/EIS, the No Action Alternatives assumptions are limited to Existing Conditions,
15 programs adopted during the early stages of development of the EIR/EIS, facilities that are
16 permitted or under construction, and changes, including those due to climate change, that would
17 occur with or without the Proposed Project or alternatives. These assumptions do represent
18 continuation of the existing plans, policies, and operations; or conditions that represent
19 continuation of trends in nature. Therefore, the No Project Alternative assumptions are consistent
20 with the No Action Alternative assumptions for the EIR/EIS.

21 **3D.3.4 Cumulative Impact Assumptions**

22 For the most part, cumulative impact assumptions for the EIR/EIS include programs, projects, and
23 policies included in Existing Conditions, No Action Alternative, and No Project Alternative
24 assumptions; and reasonably foreseeable probable future programs and projects. However, this is
25 not always the case, as there are projects and programs that are currently in the planning stage
26 which would be subsumed under the proposed BDCP alternatives and would not move forward in
27 the case of implementation of the BDCP. For the EIR/EIS, programs with specific plans identified in
28 draft environmental and engineering documents without subsequent approvals were included in the
29 cumulative impact assumptions as reasonably foreseeable, as shown in Table 3D-7. A more
30 comprehensive table is included at the end of this Appendix in Attachment 3D-A.

31 Most of the programs, projects, and policies included in the cumulative impact assumptions are
32 defined in adequate detail to estimate potential adverse and beneficial impacts, including projects
33 with draft environmental documentation but without selection of a proposed project. The
34 cumulative impact analysis consider the preliminary determinations of beneficial and adverse
35 impacts for these actions in conjunction with the Proposed Project and alternatives.

1 **Table 3D-7. Sample of Programs, Projects, and Policies Included in Cumulative Impact Assessment for**
 2 **the BDCP EIR/EIS**

Agency	Programs, Projects, and Policies	Comments
Department of Fish and Wildlife	California Aquatic Invasive Species Draft Rapid Response Plan	Program under development. Draft Plan issued in 2007.
Department of Fish and Wildlife	Fremont Landing Conservation Bank	Project completed.
Department of Fish and Wildlife	Fish Screen Project at Sherman and Twitchell Islands	Program included in Delta Initiatives List.
Department of Parks and Recreation	Central Valley Vision	Implementation Plan completed in 2009.
Department of Water Resources	North Delta Flood Control and Ecosystem Restoration Project	Completed in 2012.
Department of Water Resources	Dutch Slough Tidal Marsh Restoration Project	Project implementation began in 2012. Estimated completion in 2016.
Department of Water Resources	Water Supply Contract Extension Program	Program negotiations began in 2013
Department of Water Resources	Clifton Court Forebay Fishing Facility	Initial Study/Proposed Mitigated Negative Declaration Completed in 2013.
Contra Costa Water District, U.S. Bureau of Reclamation, and Department of Water Resources	Los Vaqueros Reservoir Expansion Project	Project completed in 2012.
Davis, Woodland, and University of California, Davis	Davis-Woodland Water Supply Project	Project under development. Final EIR in 2009. Specific design and operations criteria not identified.
Northeastern San Joaquin County Groundwater Banking Authority	Eastern San Joaquin Integrated Conjunctive Use Program	Final Programmatic EIR in 2011.
University of California, Davis, California Department of Water Resources, Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and U.S. Bureau of Reclamation	Delta Smelt Permanent Refuge	Program under development to develop a permanent facility, possibly at the proposed FWS Science Center at Rio Vista.
U.S. Bureau of Reclamation	Delta-Mendota Canal/California Aqueduct Intertie	Project completed in 2012.
U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Services, Department of Water Resources, and Department of Fish and Wildlife	San Joaquin River Restoration Program	Final Programmatic EIS/EIS completed in 2012.
U.S. Bureau of Reclamation and San Luis & Delta Mendota Water Authority	Grassland Bypass Project, 2010 -2019	Final EIS/EIR in 2009.
U.S. Bureau of Reclamation and San Luis & Delta Mendota Water Authority	Agricultural Drainage Selenium Management Program	Program under development. Draft EIS/EIR in 2008.
Water Forum and U.S. Bureau of Reclamation	Lower American River Flow Management Standard	Program under development. Draft EIR in 2010. Recommendations included in NMFS Biological Opinion.
West Sacramento Area Flood Control Agency and U.S. Army Corps of Engineers	West Sacramento Levee Improvements Program	Program under development. Construction initiated in several areas. Further environmental and engineering documentation required for future projects.

1 **Attachment 3D-A. Descriptions of Programs, Projects, and Policies considered for Existing Conditions, No Action Alternative, No Project**
 2 **Alternative, and Cumulative Impact Analysis for the BDCP EIR/EIS**

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
East Alameda County Conservation Strategy	Alameda County	The East Alameda County Conservation Strategy (EACCS) is intended to preserve endangered species with a plan for long term habitat protection. The EACCS will assess the conservation value of East Alameda County to establish biological principles for conservation in that area. The EACCS will provide a framework for regional conservation of biological species, streamline the environmental permitting process, provide guidance to project proponents, and facilitate ongoing conservation programs. The EACCS will identify land suitable for voluntary mitigation or conservation, mitigation ratios, standards for habitat restorations, best management and maintenance practices for conservation sites, monitoring standards, and guidelines for adaptive management.	No	No	Yes	East Alameda County web site. Site accessed March 30, 2015. URL = http://www.eastalco-conservation.org/about.html
Bay Area Water Quality and Supply Reliability Program	Bay Area Integrated Regional Water Management Plan participants representing Bay Area agencies	The Bay Area Integrated Regional Management Plan (IRWMP) will be adopted by the involved agencies and organizations that have taken the lead in funding and preparing the Bay Area IRWMP. The partners envision it to be an evolving plan, recognizing that as projects, information and understanding progress, so too should the Bay Area IRWMP. State agencies such as the State Water Control Board and the Department of Water Resources are also being apprised of the planning process as it proceeds, and will receive the plan. The plan will be used to prioritize projects and provide information for projects to be funded by state and federal agencies, such as the Proposition 50 projects.	Yes	Yes	Yes	Bay Area IRWMP web site. Site accessed November 26, 2012. URL = http://bairwmp.org/
Bay Area Stormwater Management Programs	Bay Area Stormwater Management Association member agencies (BASMAA)	BASMAA was started in response to the National Pollutant Discharge Elimination System (NPDES) permitting program for storm water in an effort to promote regional consistency and to facilitate efficient use of public resources to implement stormwater regulations. The seven member programs of BASMAA have all agreed to the terms of a memorandum of understanding. The focus of the association is implementing stormwater regulations in a way that cuts across typical departmental boundaries, programs, and lines of communication. To do so, these programs have used essentially a watershed approach involving as many stakeholders as possible and building consensus.	Yes	Yes	Yes	Bay Area Stormwater Management Association's Website. Site accessed January 14, 2013. URL = http://www.basmaa.org/AboutBASMAA/tabid/55/Default.aspx

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>Stormwater management programs within the Bay Area include:</p> <ul style="list-style-type: none"> • Alameda Countywide Clean Water Program, • Contra Costa Clean Water Program, • Fairfield-Suisun Urban Runoff Management Program, • Marin County Stormwater Pollution Prevention Program, • San Mateo Countywide Water Pollution Prevention Program, • Santa Clara Valley Urban Runoff Pollution Prevention Program, and • Programs implemented by Sonoma County Water Agency and Vallejo Sanitation and Flood Control District. 				
Egeria Densa Control Program	California Department of Boating and Waterways	<p>The Egeria Densa Control Program (EDCP) is part of the Department of Boating and Waterway's (DBW) Aquatic Pest Control Program. Cal Boating has operated the EDCP in the Sacramento-San Joaquin Delta, and its tributaries, since program inception in 2001. The program was developed in order to respond to 1997 State legislation (Rainey, AB 2193), authorizing the program. A Final EIR was published for the program in 2001. A second addendum to the 2001 EIR was published in January 2006, with 5-year program review and future operations plan. In June 2007, the National Marine Fisheries Services analyzed the potential effects of continued implementation of the EDCP on listed salmonids and green sturgeon and issued a Biological Opinion continuation of the program for 5 years (2007 through 2011). The program includes treatment with herbicides, environmental monitoring, regulatory compliance, and surveillance.</p>	Yes	Yes	Yes	<p>DBW. 2008. Egeria densa Control Program. Second Addendum to 2001 Environmental Impact Report with Five-Year Program Review and Future Operations Plan (December 8, 2006). Department of Boating and Waterways web site. Aquatic Pest Control. Site accessed January 14, 2013. URL = http://www.dbw.ca.gov/Environmental/Aquatic.aspx</p> <p>NMFS. 2007. Biological Opinion on the Egeria densa Control Program (2007 to 2011).</p>
Water Hyacinth Control Program	California Department of Boating and Waterways	<p>The Water Hyacinth Control Program is part of the California Department of Boating and Waterways' (DBW) Aquatic Pest Control Program. DBW has operated the Water Hyacinth Control Program in the Sacramento-San Joaquin Delta, and its tributaries, since program inception. In 1982, state legislation made DBW the lead agency for the control of water hyacinth in the Sacramento-San Joaquin Delta, its</p>	Yes	Yes	Yes	<p>Department of Boating and Waterways web site. Aquatic Pest Control. Site accessed January 14, 2013. URL = http://www.dbw.ca.gov/Environmental/Aquatic.aspx</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>tributaries and the Suisun Marsh. The initial control plan used both short- and-long term methods that involved chemical, mechanical, and biological control measures. The primary and most successful control measure is chemical spraying. Permits for the program were obtained in 2001.</p> <p>DWB published a Draft Programmatic Environmental Impact Report on September 10, 2009. The proposed selected alternative is continuation of the program.</p>				<p>nvironmental/Aquatic.aspx Department of Boating and Waterways web site. Water Hyacinth Control Program Fact Sheet. Site accessed January 14, 2013. URL = http://www.dbw.ca.gov/PDF/Egeria/WHTalkPoints.pdf NMFS. 2006. Biological Opinion on the Water Hyacinth Control Program. April 4, 2006. DBW. 2009. Water Hyacinth Control Program Draft Programmatic Environmental Impact Report. September 10, 2009</p>
Private Lands Incentive Programs	California Department of Fish and Wildlife	<p>DFW manages the California Waterfowl Habitat Program (Presley Program), a multi-faceted wetland incentive program designed to improve habitat for waterfowl on private lands. Consistent with its primary waterfowl habitat objectives, the program also endeavors to enhance habitat for shorebirds, wading birds, and other wetland-dependent species. The program pays private landowners \$20/acre (\$30/acre in the Tulare Basin) annually for a 10-year duration to implement habitat practices in accordance with a detailed management plan. In cooperation with Wildlife Conservation Board's Inland Wetland Conservation Program, DFW also administers the Permanent Wetland Easement Program that pays willing landowners approximately 50-70% of their property's fair market value to purchase the farming and development rights in perpetuity. Landowner retains many rights including: trespass rights, the right to hunt and/or operate a hunting club, and the ability to pursue other types of undeveloped recreation (fishing, hiking, etc.). Easement landowners are required to follow a</p>	Yes	Yes	Yes	<p>California Department of Fish and Wildlife Website. Site accessed January 20, 2015 URL= https://www.dfg.ca.gov/lands/wetland/private.html</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		cooperatively developed wetland management plan. DFW also administers the Landowner Incentive Program funded by USFWS to annual incentive payments to landowners to enhance and manage their lands to protect wetlands, native grasslands, and riparian habitat.				
Grizzly Island Wildlife Area Land Management Plan	California Department of Fish and Wildlife	The Grizzly Island Wildlife Area Land Management Plan was released in January 1989. The plans purpose was to guide efforts over 1988 – 1993 to guide the Department of Fish and Wildlife budget preparation and operation of the area.	Yes	Yes	Yes	California Department of Fish and Wildlife web site. Accessed March 30, 2015. URL = https://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=Lands-LandManagementPlanning
Invasive Species Program	California Department of Fish and Wildlife	The Invasive Species Program participates on efforts to prevent the introduction of non-native invasive species in California, detect and respond to introductions when they occur, and prevent the spread of non-native invasive species that have become established. Program activities include development of the California Aquatic Invasive Species Management Plan, the Marine Invasive Species Monitoring Program, and informational and education activities for quagga/zebra mussels, New Zealand mudsnails, northern pike (in Lake Davis), and dwarf eelgrass.	Yes	Yes	Yes	DFW web site. Invasive Species Program. Sites accessed January 14, 2013. Invasive Species Program, homepage: URL = http://www.dfg.ca.gov/invasives/ Invasive Species Program, Quagga and Zebra Mussels: URL = http://www.dfg.ca.gov/invasives/quaggamussel/ Invasive Species Program, New Zealand Mudsnail: URL = http://www.dfg.ca.gov/invasives/mudsnail/ Invasive Species Program, Northern Pike in Lake Davis: URL = http://www.dfg.ca.gov/lakedavis/ Invasive Species Program,

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
						Dwarf Eelgrass in California: URL = http://www.dfg.ca.gov/invasives/dwarfeelgrass/
California Aquatic Invasive Species Management Plan	California Department of Fish and Wildlife	The California Aquatic Invasive Species Management Plan (CAISMP) was released in January 2008. The plan's overall goal is to identify the steps that need to be taken to minimize the harmful ecological, economic, and human health impacts of aquatic invasive species in California. This plan provides the state's first comprehensive, coordinated effort to prevent new invasions, minimize impacts from established aquatic invasive species and establish priorities for action statewide. In addition, it proposes a process for annual plan evaluation and improvement so that aquatic invasive species can continue to be managed in the most efficient manner in the future. Eight major objectives and 163 actions were identified in the CAISMP.	Yes	Yes	Yes	DFW. California Aquatic Invasive Species Management Plan. January 2008. Site accessed January 14, 2013. URL = http://www.nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3868
Aquatic Invasive Species Draft California Rapid Response Plan	California Department of Fish and Wildlife	The California Aquatic Invasive Species Management (described above) proposes an Aquatic Invasive Species Rapid Response Plan for the State of California. The Rapid Response Plan establishes a draft general procedure for rapid response following detection of new aquatic invasive species infestation. It provides a framework for developing and implementing a rapid response plan. It is preliminary in that it describes types of information, resources and decisions necessary to finalize the plan. In order to finalize, fund, and implement the draft Rapid Response Plan, DFW expects that cooperating agencies will assign staff to participate. DFW Invasive Species Program staff will provide coordination for the interagency activities called for in the agreement(s).	No	Yes	Yes	DFW. 2007. Draft Aquatic Invasive Species Rapid Response Plan. August 2007.
Zebra Mussel Rapid Watch Program and Response Plan for California	California Department of Fish and Wildlife, California Department of Water Resources, and California State Lands	As part of the Zebra Mussel Early-Detection Monitoring and Outreach Program and the California Zebra Mussel Watch Program, this rapid response plan was developed to outline necessary actions and resources needed to respond to confirmed introductions of zebra mussels into the state. The plan outlines available options for eradication and/or control of zebra mussels (and quagga mussels) and provides guidance for resource managers and agency personnel. The plan includes a list of potential zebra mussel infestation scenarios with	Yes	Yes	Yes	DFW web site. Quagga and Zebra Mussels. Site accessed January 14, 2013. URL = http://www.dfg.ca.gov/invasives/quaggamussel/ . Bay Delta Rapid Response Plan for Dreissenid

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
	Commission	possible treatment and post-treatment monitoring techniques. The Zebra Mussel Rapid Response Plan for California is a working document that requires additional information (which will be incorporated as it becomes available) regarding funding sources, permitting requirements, specific roles of agency personnel, legal information, and infestation site specific information. The draft plan will serve as the template for a statewide plan that staff from the California Department of Water Resources will continue to develop.				Mussels. July 2011.
Fish Screen and Passage Program	California Department of Fish and Wildlife	Under the Fish Screen and Fish Passage Program, DFW conducts inventories of all screened and unscreened diversions and fish passage problems via site visits, and gathers information on the size and number of diversions at each site and presence of existing fish protective facilities. DFW performs the following activities: 1) inventory of water diversion and fish passage problems; 2) evaluation and prioritization of fish screening and fish passage problems; 3) implementation and coordination of fish protection activities; 4) evaluation of existing and proposed fish protective installations; and 5) review of fish screening and fish passage literature. In addition, it maintains a database that is fairly comprehensive for the Central Valley streams (Sacramento and San Joaquin Rivers systems).	Yes	Yes	Yes	CALFED. June 2005. Bulletin 250 Fish Passage Improvement 2005.
Delta-Bay Enhanced Enforcement Program	California Department of Fish and Wildlife	The Delta-Bay Enhanced Enforcement was initiated in 1991 through the Four Pumps Agreement between the California Department of Fish and Wildlife and California Department of Water Resources (funded by the State Water Project Contractors). In 1994, the U.S. Bureau of Reclamation began funding additional warden positions. The program provides increased enforcement to reduce illegal harvest of species in the San Francisco Bay and Delta, upstream into the Sacramento and San Joaquin basins. In 2008, the program had 10 wardens that focused enforcement efforts to protect steelhead and salmon, as well as other anadromous species of concern. In the Sacramento Basin, the program targets enforcement during the spring-run Chinook salmon migration and summer holding period.	Yes	Yes	Yes	Reclamation. Biological Assessment on the Continued Long-term Operations of the CVP and SWP. August 2008.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Ecosystem Restoration Program Conservation Strategy	California Department of Fish and Wildlife	<p>The Ecosystem Restoration Program (ERP) is a multi-agency effort aimed at improving and increasing aquatic and terrestrial habitats and ecological function in the Delta and its tributaries. The ERP Focus Area (JPG) includes the Sacramento-San Joaquin Delta, Suisun Bay, the Sacramento River below Shasta Dam, the San Joaquin River below the confluence with the Merced River, and their major tributary watersheds directly connected to the Bay-Delta system below major dams and reservoirs. Principal participants overseeing the ERP are CDFW, the United States Fish and Wildlife Service (USFWS), and the NOAA's National Marine Fisheries Service (NMFS), collectively known as the ERP Implementing Agencies. The ERP implements restoration projects through grants administered by the ERP Grants Program. The vast majority of these projects focus on fish passage issues, species assessment, ecological processes, environmental water quality, or habitat restoration. The ERP is guided by the following six strategic goals:</p> <ul style="list-style-type: none"> • Recover endangered and other at-risk species and native biotic communities; • Rehabilitate ecological processes; • Maintain or enhance harvested species populations; • Protect and restore habitats; • Prevent the establishment of and reduce impacts from non-native invasive species; and • Improve or maintain water and sediment quality. 	Yes	Yes	Yes	<p>DFW. 2008. Administrative Staff Draft Ecosystem Restoration Program Conservation Strategy for Stage 2 Implementation: Sacramento-San Joaquin Delta and Suisun Marsh and Bay Planning Area. August 18, 2008.</p> <p>Department of Fish and Wildlife. Stage 2 Conservation Strategy Memo. August 19, 2008. Site accessed July 27, 2009. URL = http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=6502</p> <p>Department of Fish and Wildlife. Ecosystem Restoration Program website. Site accessed September 2, 2013. URL = http://www.dfg.ca.gov/ERP/</p>
Fremont Landing Conservation Bank	California Department of Fish and Wildlife	<p>The project is the restoration, enhancement, and preservation of 100 acres of habitat for the federally and state listed Chinook salmon and Central Valley steelhead at Fremont Landing Conservation Bank site. The project would preserve and enhance 40 acres of existing riparian and wetland habitat, and restore/create 60 acres of riparian woodland and wetland sloughs within the floodplain of the Sacramento River. Three borrow pits would be connected to the Sacramento River in order to reduce or eliminate fish stranding. The project also includes preservation and restoration of shaded riverine aquatic habitat and placement of large woody debris along the Sacramento River.</p>	No	Yes	Yes	<p>Site accessed November 26, 2012. URL = http://www.mitigationbanking.org/pdfs/fremontlandingcb.pdf. Construction final and operational in 2012.</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Fish Screen Project at Sherman and Twitchell Islands	California Department of Fish and Wildlife and California Department of Water Resources	The project would install fish screens on up to 10 currently unscreened agricultural intakes used to irrigate state-owned lands on Sherman and Twitchell Islands in the Delta. The project is intended to contribute to the protection of delta smelt and other sensitive aquatic species and the restoration of habitat in the Delta.	No	Yes	Yes	Office of the Governor web site. Press release - Gov. Schwarzenegger Directs Immediate Actions to Improve the Deteriorating Delta, California's Water Supply. Site accessed June 30, 2009. URL= http://gov.ca.gov/index.php?/print-version/press-release/6972/ DWR web site. Delta Initiatives List. Site accessed November 26, 2012. URL = http://www.water.ca.gov/deltainit/action.cfm
Lower Sherman Island Wildlife Area (LSIWA) Land Management Plan (LMP)	California Department of Fish and Wildlife	<p>The Lower Sherman Island Wildlife Area occupies roughly 3,100 acres, primarily marsh and open water, at the confluence of the Sacramento and San Joaquin Rivers in the western Sacramento-San Joaquin River Delta (Delta). This extensive tract of natural vegetation and Delta waters provides diverse and valuable wildlife habitats and related recreational opportunities and is integral to the functioning and human use of the Delta.</p> <p>The mission of the California Department of Fish and Wildlife (DFW) is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. The land management plan (LMP) is consistent with that mission.</p> <p>The purpose of the LMP is to: (1) guide management of habitats, species, and programs described in the LMP to achieve the DFW's mission to protect and enhance wildlife values; (2) serve as a guide for appropriate public uses of the LSIWA; (3) serve as descriptive inventory of fish, wildlife, and native plant habitats that occur on or use the LSIWA; (4) provide an overview of the property's operation and</p>	Yes	Yes	Yes	DFW. 2007. Lower Sherman Island Wildlife Area Land Management Plan. California Department of Fish and Wildlife, Rancho Cordova.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Yolo Bypass Wildlife Area Land Management Plan	California Department of Fish and Wildlife	<p>maintenance and of the personnel requirements associated with implementing management goals (this LMP also serves as a budget planning aid for annual regional budget preparation); and (5) present the environmental documentation necessary for compliance with state and federal statutes and regulations, provide a description of potential and actual environmental impacts that may occur during plan management, and identify mitigation measures to avoid or lessen these impacts.</p> <p>The Yolo Bypass Wildlife Area comprises approximately 16,770 acres of managed wildlife habitat and agricultural land within the Yolo Bypass. The bypass conveys seasonal high flows from the Sacramento River to help control river stage and protect the cities of Sacramento, West Sacramento, and Davis and other local communities, farms, and lands from flooding. Substantial environmental, social and economic benefits are provided by the Yolo Bypass, benefiting the people of the State of California.</p> <p>The stated purposes of the Yolo Bypass Wildlife Area Land Management Plan are to: (1) guide the management of habitats, species, appropriate public use, and programs to achieve California Department of Fish and Wildlife's mission; (2) direct an ecosystem approach to managing the Yolo Bypass Wildlife Area in coordination with the objectives of the CALFED ERP; (3) identify and guide appropriate, compatible public-use opportunities within the Yolo Bypass Wildlife Area; (4) direct the management of the Yolo Bypass Wildlife Area in a manner that promotes cooperative relationships with adjoining private-property owners; (5) establish a descriptive inventory of the sites and the wildlife and plant resources that occur in the Yolo Bypass Wildlife Area; (6) provide an overview of the Yolo Bypass Wildlife Area's operation, maintenance, and personnel requirements to implement management goals, and serve as a planning aid for preparation of the annual budget for the Bay-Delta Region (Region 3); and (7) present the environmental documentation necessary for compliance with state and federal statutes and regulations, provide a description of potential and actual environmental impacts that may occur during plan management, and</p>	Yes	Yes	Yes	DFW. 2008. Yolo Bypass Wildlife Area Land Management Plan. California Department of Fish and Wildlife, Rancho Cordova.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		identify mitigation measures to avoid or lessen these impacts.				
Staten Island Wildlife-Friendly Farming Demonstration	California Department of Fish and Wildlife	Acquisition and restoration of Staten Island (9,269 acres) to protect critical agricultural wetlands used by waterfowl and Sandhill cranes. Phase II of this project to improve wildlife-friendly agriculture to foster recovery of at-risk species and to investigate effects of agriculture on water quality. Demonstration project for wildlife friendly agriculture practices. Will increase habitat availability by allowing 2,500-5,000 acres of corn to be flooded for a longer duration than is presently possible. Also, determine the effect of winter flooding strategies on target bird species, namely greater sandhill crane and northern pintail (Delta EMZ).	Yes	Yes	Yes	Staten Island Wildlife-Friendly Farming Demonstration www.nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=10220
Restoring Ecosystem Integrity in the Northwest Delta	California Department of Fish and Wildlife	This project proposes to acquire conservation easements within the Cache Slough complex, along the Barker, Lindsey and Calhoun Sloughs, north Delta tidal channels located west of the Yolo Bypass. Acquisition of conservation easements will be on 1,100 acres of existing riparian, wetland and/or agricultural lands. Currently in the process of acquiring an agricultural easement on 292 acres. Manage and restore up to 1,300 acres of perennial grassland/vernal pool complex in Solano County, CA, and develop a management plan for the Pembco property or other acquisition within the Jepson Prairie Preserve Island Corridor.	Yes	Yes	Yes	Restoring Ecosystem Integrity in the Northwest Delta www.nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=10429
Population Biology, Life History, Distribution, and Environmental Optima of Green Sturgeon	California Department of Fish and Wildlife	This project is conducting telemetric, physiological, reproductive, and genetic studies to provide state and federal agencies such as NMFS and the California Department of Fish and Wildlife (DFW) with information on the size of the population and its critical habitat within the Sacramento-San Joaquin watershed to inform the development of a recovery plan for the species. The distribution of spawning adults and juveniles will be continuously monitored using automated listening stations situated throughout the Sacramento River, Delta, and San Francisco Bay Estuary. The project will also characterize the environment where adult green sturgeon are found to spawn.	Yes	Yes	Yes	Sacramento/San Joaquin Watershed. Population Biology, Life History, Distribution, and Environmental Optima of Green Sturgeon. DFG-ERP-07D-S03.
Operations as for Listing of Longfin Smelt under CESA	California Fish and Wildlife Commission	Despite the fact that OAL has not "finalized" its proposed changes in regulations in code, DFW operates in accordance with the longfin being listed as threatened. In fact, DFW has issued DWR a 2081 permit authorizing take of this threatened species.	Yes	Yes	Yes	DWR. January 2009. Ongoing California State Water Project Operations in the Sacramento-San Joaquin Delta for the

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Hatchery and Stocking Program	California Department of Fish and Wildlife and U.S. Fish and Wildlife Service	<p>DFW operates a statewide system of fish hatchery facilities that rear and subsequently release millions of trout, salmon, and steelhead of various age and size classes into state waters. These fish are reared and released for recreational and commercial fishing, for conservation and restoration of fish species that are native to California waters, for mitigation of habitat losses caused by construction of dams on the state’s major rivers, and for mitigation of fish lost at state-operated pumping facilities in the Sacramento–San Joaquin River Delta.</p> <p>DFW’s Hatchery Program includes:</p> <ul style="list-style-type: none"> • operation of 14 trout hatchery facilities owned by DFW and the related stocking of fish, • operation of eight salmon and steelhead hatchery facilities owned by others and the related stocking of fish, • operation of two salmon and steelhead hatchery facilities owned by DFW and the related stocking of fish, • providing education staff and fish for stocking under the Fishing in the City program, • issuing authorizations and providing fish eggs for the Classroom Aquarium Education Project (CAEP) • issuing permits for stocking public and private waters with fish reared at private aquaculture facilities, and • implementing the fish production and native trout conservation requirements contained in California Fish and Game Code Section 13007. <p>The fundamental objectives of DFW’s Hatchery Program are to continue the rearing and stocking of fish from its existing hatchery facilities for the recreational use of anglers, for mitigation of habitat loss due to dam construction and blocked access to upstream spawning areas, for mitigation of fish losses caused by operation of the state-operated Sacramento-San Joaquin Delta pumps, and for conservation and species restoration.</p>	Yes	Yes	Yes	<p>Protection of Longfin Smelt. Initial Study and Draft Negative Declaration.</p> <p>DFW web site. Site accessed January 14, 2013. URL = http://www.dfg.ca.gov/fish/hatcheries/fishplanting/Evaluation.asp</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Hatchery and Stocking Program Proposed Changes	California Department of Fish and Wildlife and U.S. Fish and Wildlife Service	<p>The California Department of Fish and Wildlife (DFW) has been rearing and stocking fish in the inland waters of California since the late 1800s. DFW currently stocks trout in high mountain lakes, low elevation reservoirs, and various streams and creeks throughout California. Salmon have been planted mostly in rivers and direct tributaries to the Pacific Ocean, with the exception of inland kokanee, coho, and Chinook salmon populations that have been planted in reservoirs for recreational fishing.</p> <p>In 2006, a lawsuit was filed against DFW claiming that DFW's fish stocking operation did not comply with the California Environmental Quality Act (CEQA). In July, 2007, DFW was ordered by the Sacramento Superior Court to comply with CEQA regarding its fish stocking operations. DFW completed a Draft Environmental Impact Report (EIR) to comply with the court order. The comment period closed in November 2009. The U.S. Fish and Wildlife Service served as the co-lead for the joint EIR/Environmental Impact Statement (EIS).</p>	No	Yes	Yes	DFW and USFWS. September 2009. Draft Hatchery and Stocking Program Environmental Impact Report/Environmental Impact Statement.
Watercraft Inspection Programs	California Department of Fish and Wildlife, California Department of Food and Agriculture, California State Parks	<p>Several local boat and watercraft inspection programs have been initiated to prevent the spread of invasive species such as quagga mussels. Since early 2007, more than 150,000 watercraft have been inspected at CDFA's Border Protection Stations. Pests have been detected on nearly 200 occasions. Another 14,000 watercraft were cleaned and/or drained of all water that could harbor the mussels. The inspections are ongoing. After quagga mussels were detected in 2007 in the Colorado River, funding was granted to enable the California Department of Food and Agriculture (CDFA) to inspect watercraft at six border stations along the Nevada and Arizona borders: Truckee, Needles, Winterhaven, Blythe, Yermo and Vidal. When exotic mussels are detected by CDFA inspectors, the watercraft are cleaned and the owners issued a quarantine notice prohibiting the craft from entering California waters until a final inspection is conducted by the California Department of Fish and Wildlife (DFW).</p> <p>DFW conducts boat inspection training and activities around the state, and has initiated inspections at several water bodies.</p>	Yes	Yes	Yes	<p>California Department of Food and Agriculture. California Border Protection Stations website. Site accessed January 14, 2013. URL = www.cdfa.ca.gov/phpps/PE/ExteriorExclusion/borders.html</p> <p>California Department of Food and Agriculture. Public Affairs. News Release #08-055. "CDFA Border Protection Stations to Continue Fight Against". January 14, 2013. Site accessed July 28, 2009. URL = http://www.cdfa.ca.gov/eg</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Suisun Marsh Habitat Management, Preservation, and Restoration Plan	California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, and Suisun Marsh Charter Group	<p>The Suisun Marsh Charter Group, a collaboration of federal, state, and local agencies with primary responsibility in Suisun Marsh, is preparing the Suisun Marsh Habitat Management, Preservation, and Restoration Plan. The plan balances implementation of the CALFED Program, the Suisun Marsh Preservation Agreement, and other management and restoration programs within the Suisun Marsh in a manner that is based upon voluntary participation by private landowners and that responds to the concerns of stakeholders. Charter agencies include Reclamation, DWR, USFWS, Suisun Resource Conservation District, and other agencies.</p> <p>The Charter Group is charged with developing a regional plan that would outline the actions needed in Suisun Marsh to preserve and enhance managed seasonal wetlands, restore tidal marsh habitat, implement a comprehensive levee protection/improvement program, and protect ecosystem and drinking water quality. The proposed plan would be consistent with the goals and objectives of the Bay-Delta Program, and would balance those goals and objectives with the Suisun Marsh Preservation Agreement and federal and state endangered species programs within the Suisun Marsh. The Suisun Marsh Plan also would provide for simultaneous protections and enhancement of: 1) existing wildlife values in managed wetlands, 2) endangered species, 3) tidal marshes and other ecosystems, and 4) water quality, including, but not limited to, the maintenance and improvement of levees.</p>	No	Yes	Yes	<p>ov/Press_Releases/Press_Release.asp?PRnum=08-055</p> <p>Lake Tahoe Regional Planning Agency. Lake Tahoe Aquatic Invasive Species Information Page. Site accessed January 14, 2013. URL = http://www.protecttahoe.org/</p> <p>Suisun Marsh Charter Group Principal Agencies. 2004. Scoping Report for the Management, Preservation, and Restoration Plan for the Suisun Marsh Programmatic EIS/EIR. May.</p>

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Central Valley Vision	California State Parks	<p>In 2003, California State Parks began work on a long-term Central Valley Vision to develop a strategic plan for State Parks expansion in the Central Valley. The plan will provide a 20-year road map for State Park actions to focus on increasing service to Valley residents and visitors. Within the Great Central Valley (San Joaquin Valley, Sacramento Valley and the Delta region), California State Parks operates and maintains 32 state park units representing 7% of the total state park system acreage. Plans include: Delta Meadows River Park, Brannon Island SRA, Franks Track SRA, Locke Boarding House, and San Joaquin and Sacramento Rivers.</p> <p>In 2008, California State Parks published a Draft Central Valley Vision Implementation Plan that focuses on meeting the public's recreation needs in the Central Valley 20 years into the future. It outlines planning options to develop new and improved recreation opportunities, acquire new park lands, and build economic and volunteer partnerships.</p>	Yes	Yes	Yes	<p>California State Parks. 2009. Central Valley Vision Implementation Plan.</p> <p>California State Parks. 2007. Central Valley Vision Summary Report, Findings and Recommendations. January 1, 2007.</p>
California Water Plan Update 2013	California Department of Water Resources	<p>The California Water Plan provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The Plan, which is updated every five years, presents basic data and information on California's water resources (including water supply evaluations and assessments of agricultural, urban, and environmental water uses) to quantify the gap between water supplies and uses. The Plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the State's water needs. The California Water Plan Update 2013 is to be published in December 2013.</p>	No	No	No	<p>DWR. October 2011. California Water Plan Update 2013: Brochure.</p>
Central Valley Flood Protection Plan	California Department of Water Resources	<p>Legislation passed in 2007 directs the California Department of Water Resources to develop three documents that will guide improvement of integrated flood management:</p> <ul style="list-style-type: none"> • State Plan of Flood Control (SPFC) Descriptive Document to inventory and describe the flood management facilities, land, programs, conditions, and mode of operations and maintenance for the State-federal flood protection system in the Central Valley. • Flood Control System Status Report to assess the status of the 	No	Yes	Yes	<p>DWR web site. Central Valley Flood Management Planning Program. Site accessed on November 12, 2009. URL = http://www.water.ca.gov/pubs/flood/central_valley_flood_management_plannin</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>facilities included in the SPFC Descriptive Document, identify deficiencies, and make recommendations.</p> <ul style="list-style-type: none"> Central Valley Flood Protection Plan (CVFPP) to describe a sustainable, integrated flood management plan that reflects a system-wide approach for protecting areas of the Central Valley currently receiving protection from flooding by existing facilities of the SPFC. The plan will incorporate the SPFC and Flood Control System Status Update. The plan must be prepared by January 1, 2012, and it is scheduled for adoption by the Central Valley Flood Control Board by July 1, 2012. <p>The CVFPP will be a sustainable, integrated flood management plan describing the existing flood risk in the Central Valley and recommending actions to reduce the probability and consequences of flooding. Produced in partnership with federal, tribal, local, and regional partners and other interested parties, the CVFPP will also identify the mutual goals, objectives, and constraints important in the planning process; distinguish plan elements that address mutual flood risks; and, finally, recommend improvements to the state-federal flood protection system.</p>				<p>g_program/central_valley_flood_management_plannin g_program_final.pdf Site accessed on January 14, 2013. URL = http://www.water.ca.gov/cvfmp/docs/2012_CVFPP_FullDocumentLowRes_2011230.pdf</p>
Clifton Court Forebay Fishing Facility	California Department of Water Resources	The Clifton Court Forebay Fishing Facility consists of installing a fishing pier into Clifton Court Forebay, a staging area, concrete pad and retaining wall, security fencing, and gates, ADA compliant public restroom, bicycle rack, equipment shed, ADA compliant boat dock and road section on West Canal, two ADA compliant parking spaces next to the public entrance gate, and lighting and signage. The IS/MND was circulated for public review starting June 18, 2013.	No	Yes	Yes	Clifton Court Forebay Fishing Facility Initial Study/Proposed Mitigated Negative Declaration. 2013. URL = http://baydeltaoffice.water.ca.gov/announcement/CCF_Public_IS-MND_2013_0613.pdf
Delta Levees Flood Protection Program	California Department of Water Resources	The Bay-Delta Levees Branch of DWR administers the Delta Levees Flood Protection Program as authorized by the California Water Code, Sections 12300 thru 12318 and 12980 thru 12995. This is a grants program that works with more than 60 reclamation districts in the Delta and Suisun Marsh to maintain and improve the flood control system and provide protection to public and private investments in the Delta including water supply, habitat, and wildlife. The program,	Yes	Yes	Yes	DWR web site. Bay-Delta Levees. Accessed January 14, 2013. URL = http://www.water.ca.gov/floodmgmt/dsmo/bdlb/ DWR web site. Delta Levees Special Flood Control

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		<p>through its two major components (Delta Levees Maintenance Subventions Program and Delta Levees Special Flood Control Projects), works with the local agencies to maintain, plan, and complete levee rehabilitation projects.</p> <p>The Delta Levees Maintenance Subventions Program provides financial assistance to local levee maintaining agencies for the maintenance and rehabilitation of non-project levees in the Delta. It has been in effect since passage of the Way Bill in 1973, which has been modified periodically by legislation. The program is under the authority of the Central Valley Flood Protection Board (Board) and is managed by DWR. Water Code Section 12987 calls on DWR to prioritize the islands for receipt of grant funds through the program and recommend the prioritization to the Board. The Board reviews and approves the Department's recommendation and enters into an agreement with reclamation districts to reimburse eligible costs.</p> <p>The Delta Levees Special Flood Control Projects provides financial assistance to local levee maintaining agencies for rehabilitation of levees in the Delta. The program was established by the California Legislature under SB 34, SB 1065, and AB 360. Since the inception of the program, more than \$100 million have been provided to local agencies in the Delta for flood control and related habitat projects. The program presently focuses on flood control projects and related habitat projects for eight western Delta Islands (Bethel, Bradford, Holland, Hotchkiss, Jersey, Sherman, Twitchell and Webb Islands) and for the towns of Thornton and Walnut Grove.</p>				<p>Projects. Accessed January 14, 2013. URL = http://www.water.ca.gov/floodmgmt/dsmo/bdlb/spp/</p> <p>DWR web site. Delta Levee Maintenance Subventions. Accessed January 14, 2013. URL = http://www.water.ca.gov/floodmgmt/dsmo/bdlb/sp/</p>
Delta Risk Management Strategy	California Department of Water Resources	<p>The 2000 CALFED Record of Decision presented a Preferred Program Alternative that described actions, studies, and conditional decisions to help the Delta. The Preferred Program Alternative for Stage 1 implementation included the completion of a Delta Risk Management Strategy (DRMS) that would examine the sustainability of the Delta, and would assess major risks to Delta resources for projections ranging from 50 to 200 years.</p> <p>The first phase of DRMS analyzes the risks and consequences of levee failure in the Delta region. The analysis considers current and future risks of levee failures from earthquakes, high water conditions (storms</p>	Yes	Yes	Yes	<p>DWR. Delta Risk Management Strategy Phase 1 Executive Summary. Site accessed July 23, 2009. URL = http://www.water.ca.gov/floodmgmt/dsmo/sab/drm_sp/docs/drms_execsum_ph1_final_low.pdf</p> <p>DWR web site. Delta Risk</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>and tides), climate change, subsidence, dry-weather events, and a combination of these factors. The analysis also estimates the consequences of levee failures to the local and state economy, public health and safety and the environment. The DRMS Phase 1 report findings will be used to help develop a set of strategies to manage levee failure risks in the Delta and to improve the management of state funding that supports levee maintenance and improvement. Various scenarios to reduce the risks and consequences of levee failure are considered in Phase 2 of the DRMS Project.</p>				<p>Management Strategy. Site accessed July 23, 2009. URL = http://www.water.ca.gov/floodmgmt/dsmo/sab/drm sp/</p>
FloodSAFE California	California Department of Water Resources	<p>In 2006, DWR initiated FloodSAFE California, which is a multi-faceted program to improve public safety through integrated flood management. Under the FloodSAFE Program, DWR provides leadership and works with local, regional, state, tribal and federal officials to improve flood management and emergency response systems throughout California, primarily by investing funds provided by Propositions 1E and 84. Although DWR is leading FloodSAFE, successful implementation of the program depends on active participation from many key partners and substantial federal and local cost participation.</p> <p>The FloodSAFE vision is a sustainable integrated flood management and emergency response system throughout California that improves public safety, protects and enhances environmental and cultural resources, and supports economic growth by reducing the probability of destructive floods, promoting beneficial floodplain processes, and lowering the damages caused by flooding.</p> <p>The FloodSAFE Program is designed to help improve integrated flood management statewide with a significant emphasis on the Central Valley and Delta where communities and resources face high risk of catastrophic damage. Integrated Flood Management includes recognition of: the interconnection of flood management actions within broader water resources management and land use planning, the value of coordinating across geographic and agency boundaries, the need to evaluate opportunities and potential impacts from a system perspective, and the importance of environmental stewardship and sustainability.</p>	Yes	Yes	Yes	<p>DWR. 2008. Draft FloodSAFE Strategic Plan. May 28, 2008 DWR. 2008. Bond Expenditure and Addendum, FY 2008/09. August 2008. DWR. 2007. Bond Expenditure and Addendum, FY 2007/08. February 2007.</p>

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		<p>FloodSAFE will guide the development of regional flood management plans that encourage regional cooperation in identifying and addressing flood hazards. The plans will emphasize multiple objectives, system resiliency, and compatibility with state goals and Integrated Regional Water Management Plans.</p>				
<p>Levee Repair-Levee Evaluation Program</p>	<p>California Department of Water Resources</p>	<p>On February 24, 2006, Governor Arnold Schwarzenegger declared a State of Emergency for California’s levee system, commissioning up to \$500 million of state funds to repair and evaluate state/federal project levees. Following the emergency declaration, the Governor directed DWR to secure the necessary means to fast-track repairs of critical erosion sites.</p> <p>Hundreds of levee sites have been identified for immediate repair throughout the Central Valley. These repairs are necessary to maintain the functionality of flood control systems that have deteriorated over time and/or do not meet current design standards. While many of the most urgent repairs have been completed or are near completion, other sites of lower priority are still in progress, and still more are in the process of being identified, planned, and prioritized.</p> <p>In general, repairs to state/federal project levees are being conducted under three main programs: the Critical Erosion Repairs Program, the Sacramento River Bank Protection Project, and the PL84-99 Rehabilitation Program. A fourth program to repair critically damaged levees on the San Joaquin Flood Control System is under development by DWR.</p> <p>DWR is conducting geotechnical exploration, testing, and analysis of state and federal levees that protect the highly populated urban areas of greater Sacramento, Stockton/Lathrop, and Marysville/Yuba City. This program is being implemented simultaneously with the various urgent levee repairs.</p> <p>To expedite efforts to protect these communities, levee evaluations are being conducted in a fast-track manner over a two- to three-year period. During this time, technical specialists are reviewing existing levee historical data; mapping near-surface geology; conducting field explorations; performing engineering, stability and seepage analyses; and preparing preliminary design and construction estimates for</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>DWR web site. Levee Repair. Site accessed January 14, 2013. URL = http://www.water.ca.gov/levees/</p> <p>DWR web site. Levee Evaluation Program. Site accessed January 14, 2013. URL = http://www.water.ca.gov/levees/evaluation/</p> <p>DWR web site. Levee Evaluation Program fact sheet. Site accessed January 14, 2013. URL = http://www.water.ca.gov/levees/evaluation/docs/factsheet-levee-eval-prog.pdf</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		repairing and upgrading the levees, where needed.				
Lower Yolo Restoration Project	State and Federal Contractors Water Agency, California Department of Water Resources and MOA Partners	The project is located in the lower Yolo Bypass and is a tidal and seasonal salmon habitat project restoring tidal flux to about 1,100 acres of existing pasture land. The project site includes the Yolo Ranch, also known as McCormack Ranch, which was purchased in 2007 by the Wetlands Water District (WWD). The goal of this project is to provide important new sources of food and shelter for a variety of native fish species at the appropriate scale in strategic locations in addition to ensuring continued or enhanced flood protection. The Lower Yolo wetlands restoration project is part of an adaptive management approach in the Delta to learn the relative benefits of different fish habitats, quantify the production and transport of food and understand how fish species take advantage of new habitat	No	Yes	Yes	State and Federal Contractors Water Agency web site. Accessed March 30, 2015. URL = http://www.sfcwa.org/2011/06/09/lower-yolo-restoration-project/ California Department of Water Resources web site. Accessed March 30, 2015. URL = http://deltaconservancy.ca.gov/restoration-projects-delta-and-suisun-marsh
Meins Landing Restoration	California Department of Water Resources, Suisun Marsh Preservation Agreement agencies, and State Coastal	The 666-acre property is currently a mosaic of managed wetlands and upland habitats. The area long used as a managed wetlands for a duck club will be restored to tidal marsh and to provide meet wetlands restoration goals of other projects, including levee improvements on Van Sickle Island.	Yes	Yes	Yes	URL = http://www.water.ca.gov/deltainit/docs/6-16-08Meins.pdf Site accessed March 27, 2015

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Interagency Ecological Program (IEP)	California Department of Water Resources, Department of Fish and Wildlife, State Water Resources Control Board, Fish and Wildlife Service, Bureau of Reclamation, Geological Survey, Army Corps of Engineers, National Marine Fisheries Service, and Environmental Protection Agency	The mission of the IEP is to provide information on the factors that affect ecological resources in the Sacramento - San Joaquin Estuary as a means to support more efficient management of the estuary. The program consists of 10 member agencies, three state (Department of Water Resources, Department of Fish and Wildlife, and State Water Resources Control Board), six federal (Fish and Wildlife Service, Bureau of Reclamation, Geological Survey, Army Corps of Engineers, National Marine Fisheries Service, and Environmental Protection Agency), and one non-government organization (the San Francisco Estuarine Institute). Program partners work together to develop a better understanding of the estuary's ecology and the effects of the State Water Project (SWP) and federal Central Valley Project (CVP) operations on the physical, chemical, and biological conditions of the San Francisco Bay-Delta estuary. Activities include data collection and analysis, evaluation of the impacts of human activities on fish and wildlife, interpretation of information and development of measures to avoid or offset impacts of water project operation and other human activities on the estuary, and assistance with planning, coordination and integration of estuarine studies by other agencies. The IEP Science Advisory Group also conducts independent scientific reviews of modeling activities and study programs in the Delta when requested. Current efforts focus on evaluation of the decline of pelagic species in the upper San Francisco Estuary. These efforts emphasize modeling and integration of results, and respond to management interests by including temperature modeling, wastewater impacts, contaminants, salvage efficiency, 3-dimensional particle tracking and individual based modeling for striped bass and longfin smelt. The ammonia work includes source, fate, and transport modeling, field studies, and a review and syntheses of data and studies on the effects of ammonia on aquatic species. The temperature work is closely coordinated with the CALFED-funded Computational Assessments of Scenarios of Change for the Delta Ecosystem (CASCaDE) project, and will analyze the trends of water temperature stress zones and refugia in the Delta.	Yes	Yes	Yes	DWR web site. Interagency Ecological Program: mission and goals. Site accessed January 15, 2013. URL = http://www.water.ca.gov/iep/about/mission.cfm Department of Water Resources. Interagency Ecological Program members. Site accessed January 15, 2013. URL = http://www.water.ca.gov/iep/about/members.cfm Baxter, R., R. Breuer, L. Brown, M. Chotkowski, F. Feyrer, B. Herbold, P. Hrodey, K. Larsen, A. Mueller-Solger, T. Sommer, and K. Souza. 2009. Addendum to the Interagency Ecological Program's 2008 Work Plan to Evaluate the Decline of Pelagic Species in the Upper San Francisco Estuary. February 24.

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Mayberry Farms Subsidence Reversal and Carbon Sequestration Project	California Department of Water Resources	<p>The Mayberry Farms Subsidence Reversal and Carbon Sequestration Project would create permanently flooded wetlands on a 307-acre parcel on Sherman Island that is owned by DWR. The project would restore approximately 192 acres of emergent wetlands and enhance approximately 115 acres of seasonally flooded wetlands.</p> <p>The Mayberry Farms project was conceived as a demonstration project that would provide subsidence reversal benefits and develop knowledge that could be used by operators of private wetlands (including duck clubs) that manage lands for waterfowl-based recreation. By maintaining permanent water, the growth and subsequent decomposition of emergent vegetation is expected to control and reverse subsidence. The project is also anticipated to provide climate benefits by sequestering atmospheric CO₂. The project is expected to provide year-round wetland habitat for waterfowl and other wildlife.</p>	No	Yes	Yes	<p>DWR web site. Delta Initiatives List. Site accessed June 30, 2009. URL = http://www.water.ca.gov/deltainit/action.cfm</p> <p>DWR web site. Mayberry Farms. Site accessed November 26, 2012. URL = http://www.water.ca.gov/floodsafe/fessro/environmental/dee/mayberry.cfm. Constructed in 2010.</p>
North Delta Flood Control and Ecosystem Restoration Project	California Department of Water Resources	<p>Consistent with objectives contained in the CALFED Record of Decision, the North Delta Flood Control and Ecosystem Restoration Project is intended to improve flood management and provide ecosystem benefits in the North Delta area through actions such as construction of setback levees and configuration of flood bypass areas to create quality habitat for species of concern. These actions are focused on McCormack-Williamson Tract and Staten Island. The purpose of the Project is to implement flood control improvements in a manner that benefits aquatic and terrestrial habitats, species, and ecological processes. Flood control improvements are needed to reduce damage to land uses, infrastructure, and the Bay-Delta ecosystem resulting from overflows caused by insufficient channel capacities and catastrophic levee failures in the Project study area. The Project area encompasses approximately 197 square miles.</p>	No	Yes	Yes	<p>DWR. November 2007. North Delta Flood Control and Ecosystem Restoration Project Draft EIR.</p> <p>DWR. October 2010. North Delta Flood Control and Ecosystem Restoration Project Draft EIR.</p> <p>DWR web site. Delta Initiatives List. Site accessed June 30, 2009. URL = http://www.water.ca.gov/deltainit/action.cfm</p>
Oroville Facilities Relicensing	California Department of Water Resources	<p>The Oroville Facilities, as part of State Water Project, are also operated for flood management, power generation, water quality improvement in the Sacramento-San Joaquin Delta, recreation, and fish and wildlife enhancement. The objective of the relicensing process was to continue operation and maintenance of the Oroville Facilities for electric power generation, along with implementation of any terms and conditions to</p>	No	Yes	Yes	<p>DWR. 2008. Oroville Facilities Relicensing FERC Project No. 2100 Final Environmental Impact Report.</p>

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South Delta Temporary Barriers Project	California Department of Water Resources	<p>be considered for inclusion in a new FERC hydroelectric license. The initial FERC license for the Oroville Facilities, issued on February 11, 1957, expired on January 31, 2007. DWR published the Final Environmental Report in June 2008.</p> <p>The South Delta Temporary Barriers Project, initiated as a test project in 1991, was developed partially in response to a 1982 lawsuit filed by the South Delta Water Agency.</p> <p>The South Delta Temporary Barriers Project consists of four rock barriers across South Delta channels. The objectives of the project are to increase water levels, improve water circulation patterns and water quality in the southern Delta for local agricultural diversions, and improve operational flexibility of the State Water Project to help reduce fishery impacts and improve fishery conditions. Of the four rock barriers, the barrier at the head of Old River serves as a fish barrier (intended to primarily benefit migrating San Joaquin River Chinook salmon) and is installed and operated in April-May and again in September-November. The remaining three barriers (Old River at Tracy, Grant Line Canal, Middle River) serve as agricultural barriers (intended to primarily benefit agricultural water users in the south Delta) and are installed and operated between April 15 and November 30 of each season. In 2008, a court order designed to protect delta smelt prohibited the installation of the spring Head of Old River (HOR) barrier pending fishery agency actions or further order of the court. The remaining three barriers serve as agricultural barriers and are installed between April 15 and September 30 of each season.</p> <p>An experimental underwater, non-physical barrier was installed in 2009. The channel will be open to navigation.</p>	Yes	Yes	Yes	<p>DWR web site. CALFED Bay-Delta Office, Delta Overview. Site accessed January 15, 2013. URL = http://baydeltaoffice.water.ca.gov/sdb/tbp/deltaoverview/delta_overview.pdf</p> <p>DWR web site. CALFED Bay-Delta Office, South Delta Branch, Temporary Barriers Project Information. Sites accessed January 15, 2013. URL = http://baydeltaoffice.water.ca.gov/sdb/tbp/web_pg/temppbar.cfm</p> <p>DWR web site. CALFED Bay-Delta Office, South Delta Branch, Temporary Barriers Operating Schedule (2009). Sites accessed November 18, 2009. URL = http://baydeltaoffice.water.ca.gov/sdb/tbp/web_pg/temppbar/proposed2008.cfm</p>

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Water Supply Contract Extension Program	Department of Water Resources	The State of California entered into long-term water supply contracts (Contracts) with water agencies in the 1960's. Under terms of the contracts, the Department of Water Resources provides a water service to these agencies, known as State Water Project Contractors, from the State Water Project (SWP) in exchange for payments that will recoup all costs associated with providing this water service over the life of the SWP. The majority of the capital costs associated with the development and maintenance of the SWP is financed using revenue bonds. These bonds have historically been sold with 30 year terms that extend to the year 2035, the year in which most of the Contracts expire. The program mission is to extend the term and amend the State Water Project contracts by conducting negotiations between DWR and the SWP Contractors which will occur in a public forum to ensure continued water supply affordability while complying with obligations under the California Environmental Quality Act, and the Monterey Settlement Agreement.	Yes	Yes	Yes	California Department of Water Resources web site. Accessed March 30, 2015. URL = http://www.water.ca.gov/swpao/watercontractextension/
Stockton Deep Water Ship Channel Demonstration Dissolved Oxygen Project	California Department of Water Resources	The Stockton Deep Water Ship Channel Demonstration Dissolved Oxygen Project is a multiple-year study of the effectiveness of elevating dissolved oxygen (DO) concentrations in the channel. DO concentrations drop as low as 2 to 3 milligrams per liter (mg/L) during warmer and lower water flow periods in the San Joaquin River. The low DO levels can adversely affect aquatic life including the health and migration behavior of anadromous fish (e.g., salmon). The objective of the study is to maintain DO levels above the minimum recommended levels specified in the State of California Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River basins. The Basin Plan water quality objectives for DO are 6.0 mg/l in the San Joaquin River (between Turner Cut and Stockton, 1 September through 30 November) and 5.0 mg/l the remainder of the year. The project's full-scale aeration system includes two 200-foot-deep u-tube aeration tubes; two vertical turbine pumps capable of pumping over 11,000 gallons of water each; a liquid-to-gas oxygen supply system; and numerous pieces of ancillary equipment and control systems. The system has been sized to deliver approximately 10,000 pounds of oxygen per day into the Deep Water Ship Channel. The	Yes	Yes	Yes	DWR web site. CALFED Bay-Delta Office, Stockton Deep Water Ship Channel Demonstration Dissolved Oxygen Project. Site accessed November 11, 2009. URL = http://baydeltaoffice.water.ca.gov/sdb/af/index_af.cfm San Joaquin River Dissolved Oxygen TMDL Technical Working Group web site. Site accessed July 28, 2009. URL = http://www.sjrdotmdl.org/aeration.html

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		aeration system is anticipated to be operated only when channel DO levels are below the Basin Plan DO water quality objectives (approximately 100 days per year). The project study includes an ongoing assessment of DO levels in the channel and vicinity and a study of potential adverse effects of low DO on salmon.				
System Reoperation Program	California Department of Water Resources	The Department of Water Resources is conducting a system reoperation study (SRS) to identify potential reoperation strategies for the statewide flood protection and water supply systems. The SRS includes four phases. Phase 1, Plan of Study, was completed in 2011. Phase 2, Strategy Formulation and Refinements, was completed in 2014. Phase 3, Preliminary Assessments of Strategies, is scheduled to be completed in 2015. Phase 4, Reconnaissance Level Assessments of Strategies, is scheduled to be completed in 2016.	Yes	Yes	Yes	California Department of Water Resources website. Site accessed January 20, 2015 URL = http://www.water.ca.gov/system_reop/ California Department of Water Resources. Draft Phase 2 Report, System Reoperation Study, Strategy Formulation and Refinement, February 2014. California Department of Water Resources. System Reoperation Program, Phase 1 – Plan of Study, June, 2011.
Zebra Mussel Watch Program	California Department of Water Resources	The Zebra Mussel Watch Program is composed of several elements: a risk assessment, an early detection monitoring program, a centralized reporting system “How to Report a Zebra Mussel Sighting,” a rapid response plan, and public outreach and education. The risk assessment involves identifying water bodies in California that have a high probability of zebra mussel establishment. High risk areas have suitable zebra mussel habitat (based on substrate type, pH, and mineral availability), appropriate water temperatures for spawning, adequate food supplies, and high levels of boating activity. Early detection monitoring is conducted at high risk rivers and reservoirs in the Central Valley watershed. Sampling consists of suspending artificial	Yes	Yes	Yes	DWR web site. Environmental Services Division. Overview of Zebra Mussel Watch Program. Site accessed January 15, 2013. URL = http://www.water.ca.gov/environmentalservices/invasive_program_overview.cfm

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Cache Slough Area Restoration	California Department of Water Resources and California Department of Fish and Wildlife	<p>substrates in the water column to provide attachment sites for zebra mussels. The artificial substrates checked for the presence of zebra mussels every month. The monitoring is conducted by private citizens, marina staff, DWR staff, and staff from other agencies. Information is managed in a centralized system created for reporting zebra mussel sightings.</p> <p>The Cache Slough Complex is located in the northern Delta where Cache Slough and the southern Yolo Bypass meet. It currently includes Liberty Island, Little Holland Tract, Prospect Island, Little Egbert Tract and the surrounding waterways. Levee height on these tracts is restricted and designed to allow overtopping in large flow events to convey water from the upper Yolo Bypass. Since 1983 and 1998 respectively, Little Holland Tract and Liberty Island have remained breached. Restoration is occurring naturally on the islands.</p> <p>Restoration in the Cache Slough Complex was identified as an Interim Delta Action by Governor Schwarzenegger in July 2007 and is being evaluated through the Bay Delta Conservation Plan process. Other planning processes such as Delta Vision and the Delta Risk Management Strategy have also identified the Cache Slough Area as a potential priority restoration site.</p> <p>The Cache Slough Complex has potential for restoration success because of its relatively high tidal range, historic dendritic channel network, minimal subsidence, and remnant riparian and vernal pool habitat. Restoration efforts would support native species, including delta smelt, longfin smelt, Sacramento splittail, and Chinook salmon, by creating or enhancing natural habitats and improving the food web fish require.</p> <p>Surrounding lands that are at elevations that would function as floodplain or marsh if not separated by levees could also be included in the Cache Slough Area. This broader area includes roughly 45,000 acres of existing and potential open water, marsh, floodplain and riparian habitat.</p> <p>The goals of restoration in the Cache Slough Complex are to: 1) re-establish natural ecological processes and habitats to benefit native species, 2) contribute to scientific understanding of restoration</p>	No	Yes	Yes	<p>DWR. 2007. Interim Delta Actions fact sheet. July 17.</p> <p>DWR. 2008. Interim Delta Actions fact sheet. Cache Slough Area Restoration. DWR web site. Interim Delta Actions. Site accessed November 26, 2012. URL = http://www.water.ca.gov/deltainit/action.cfm</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>ecology, and 3) maintain or improve flood safety. Three restoration actions are currently contemplated in the Cache Slough Complex, including restoration actions at Calhoun Cut, Little Holland Tract, and Prospect Island. These are briefly described in the following.</p> <p>Calhoun Cut</p> <p>Calhoun Cut is a manmade, excavated, east-west running channel that was originally created to improve navigation in the area. The channel initiates at the confluence of Lindsey and Barker sloughs, and runs west in a straight line until it intersects the terminal portion of Lindsey Slough. Calhoun Cut adversely influences tidal action in the historic arms of Lindsey Slough. Restoration of tidal action would entail removal of features that restrict flow through the slough, excavating starter channels to initiate channel evolution and promote tidal flow, and potentially blocking Calhoun Cut to restore the tidal channel system in Lindsey Slough.</p> <p>Little Holland Tract</p> <p>Little Holland Tract encompasses about 1,640 acres within the Cache Slough Complex. Similar to Prospect Island, Little Holland Tract was acquired by the federal government (USACE) in anticipation of transferring ownership to the U.S. Fish and Wildlife Service as a component of a North Delta National Wildlife Refuge. The tract has been subject to tidal influence since 1983, when levees separating Little Holland Tract and the Toe Drain failed. Since that time, the site has naturally returned to a mixture of tidally influenced emergent wetlands, mudflats, and riparian habitat. Restoration actions would complement what has occurred naturally by increasing wetland values at the site.</p>				

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Delta Fish Agreement (Four Pumps Project)	California Department of Water Resources and California Department of Fish and Wildlife	<p>The 1986 Delta Pumping Plant Fish Protection (Delta Fish) Agreement between the Department of Water Resources and the Department of Fish and Wildlife provides a mechanism for offsetting adverse fishery impacts caused by the diversion of water at the Harvey O. Banks Delta Pumping Plant, a part of the State Water Project located at the head of the California Aqueduct. Direct losses of Chinook salmon, steelhead, and striped bass are offset or mitigated through the funding and implementation of fish mitigation projects. DWR and DFW work closely with the Fish Advisory Committee to implement the agreement and projects funded under the agreement. The Fish Advisory Committee is made up of representatives of the State Water Contractors, sport and commercial fishing groups, and environmental groups.</p> <p>The agreement was signed by the Directors of DWR and DFW on December 30, 1986, and has been amended twice since that time.</p> <p>The Delta Fish Agreement is also commonly known as the Four Pumps Agreement because it was subsequently identified as mitigation for the enlargement of the Banks Pumping Plant, including four additional pumps.</p>	Yes	Yes	Yes	DWR web site. Environmental Services, Delta Fish Agreement, Four Pumps. Site accessed January 15, 2013. URL = http://www.water.ca.gov/environmentalservices/fourpumps.cfm
North Bay Aqueduct Alternative Intake Project	California Department of Water Resources and Solano County Water Agency	<p>The California Department of Water Resources issued a Notice of Preparation on December 2, 2009 to construct and operate an alternative intake on the Sacramento River, generally upstream of the Sacramento Regional Wastewater Treatment Plant, and connect it to the existing North Bay Aqueduct system by a new segment of pipe. The proposed alternative intake would be operated in conjunction with the existing North Bay Aqueduct intake at Barker Slough. The proposed project would be designed to improve water quality and to provide reliable deliveries of State Water Project supplies to its contractors, the Solano County Water Agency and the Napa County Flood Control and Water Conservation District.</p>	No	Yes	Yes	Solano County Water Agency web site. Site accessed April 25, 2016. URL = http://www.scwa2.com/water-supply/north-bay-aqueduct

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Dutch Slough Tidal Marsh Restoration Project	California Department of Water Resources and California State Coastal Conservancy	<p>The Dutch Slough Tidal Marsh Restoration Project, located near Oakley in Eastern Contra Costa County, would restore wetland and uplands, and provide public access to the 1,166-acre Dutch Slough property owned by the Department of Water Resources (DWR). The property is composed of three parcels separated by narrow man-made sloughs. The project would provide ecosystem benefits, including habitat for sensitive aquatic species. It also would be designed and implemented to maximize opportunities to assess the development of those habitats and measure ecosystem responses so that future Delta restoration projects will be more successful.</p> <p>Two neighboring projects proposed by other agencies that are related to the Dutch Slough Restoration Project collectively contribute to meeting project objectives. These include the City of Oakley's proposed Community Park and Public Access Conceptual Master Plan for 55 acres adjacent to the wetland restoration project and four miles of levee trails on the perimeter of the DWR lands. The City Community Park will provide parking and trailheads for the public access components of the Dutch Slough Restoration Project. The Ironhouse Sanitary District is proposing the West Marsh Creek Delta Restoration Project, a restoration of a portion of the Marsh Creek delta on an adjacent 100-acre parcel it owns west of Marsh Creek. The Ironhouse Project could provide fill material for, and be linked to, the Dutch Slough Restoration lands.</p>	No	Yes	Yes	<p>DWR and CSCC. November 2008. Dutch Slough Tidal Marsh Restoration Project Draft Environmental Impact Report.</p> <p>DWR and CSCC. March 2010. Dutch Slough Tidal Marsh Restoration Project Final Environmental Impact Report.</p> <p>DWR web site. Interim Delta Actions. Site accessed November 26, 2012. URL = http://www.water.ca.gov/deltainit/action.cfm</p>
Franks Tract Project	California Department of Water Resources and U.S. Bureau of Reclamation	<p>The California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Reclamation) are conducting studies to evaluate the feasibility of modifying the hydrodynamic conditions near Franks Tract to improve Delta water quality and enhance the aquatic ecosystem. The results of these studies have indicated that modifying the hydrodynamic conditions near Franks Tract may substantially reduce salinity in the Delta and protect fishery resources, including populations of delta smelt, a federally listed and state-listed species that is endemic to the Delta. As a result, DWR and Reclamation propose to implement the Franks Tract Project to improve water quality and fisheries conditions in the Delta. DWR and Reclamation are evaluating installing operable gates to control the flow of water at key locations</p>	No	Yes	Yes	<p>DWR web site. Franks Tract Project. Accessed July 23, 2009. URL = http://www.water.ca.gov/frankstract/</p> <p>DWR web site. Interim Delta Actions. Site accessed November 26, 2012. URL = http://www.water.ca.gov/deltainit/action.cfm</p>

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In-Delta Storage Project	California Department of Water Resources and U.S. Bureau of Reclamation	<p>(Threemile Slough and/or West False River) to reduce sea water intrusion, and to positively influence movement of fish species of concern to areas that provide favorable habitat conditions. The project gates would be operated seasonally and during certain hours of the day, depending on fisheries and tidal conditions. Boat passage facilities would be included to allow for passing of watercraft when the gates are in operation. The Franks Tract Project is consistent with ongoing planning efforts for the Delta to help balance competing uses and create a more sustainable system for the future. By protecting fish resources, this project also could improve operational reliability of the State Water Project and Central Valley Project because curtailments in water exports (pumping restrictions) are likely to be less frequent. Franks Tract was previously evaluated as part of DWR's Flooded Island Pre-Feasibility Study Report (2006).</p> <p>The In-Delta Storage Project, described in the 2004 Draft State Feasibility Study, would store about 217,000 acre-feet of water in the south Delta for a wide array of water supply, water quality, and ecosystem benefits. The project would consist of two reservoir islands (Webb Tract and Bacon Island), two habitat islands (Holland Tract and Bouldin Island) and four integrated facilities (two facilities on each of the storage islands). Water storage would be created on the islands by strengthening existing levees and building new embankments inside the existing levees. The integrated facilities would control water diversions and releases into and out of the reservoir islands. The facilities control structures would be consolidated to combine all operational components needed to make diversions and releases. The components of each facility would include a fish screen, a transition pool, three inlet/outlet structures, a midbay, a pumping plant and associated conduit, a bypass channel and engineered embankments. This project has been re-defined under the Delta Wetlands Project.</p>	No	No	Yes	DWR. January 2006. Draft Supplemental Report to 2004 Draft State Feasibility Study In-Delta Storage Project.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Lower Yuba River Accord	California Department of Water Resources and Yuba County Water Agency	<p>The Lower Yuba River Accord is a collaborative effort among environmental interests, fisheries agencies, and water agencies intended to resolve instream flow issues associated with operation of the Yuba Project in a way that would protect and enhance lower Yuba River fisheries and local water supply reliability. It also provides revenues for local flood control and water supply projects, improves statewide water supply reliability and provides water for protection and restoration purposes in the Delta. Local water supply reliability is achieved through implementation of a conjunctive use program. The Lower Yuba River Accord includes three separate but interrelated agreements intended to meet program objectives.</p> <p>The Fisheries Agreement would modify the instream flow requirements contained in SWRCB Revised Decision 1644 to provide increased flows in most months of most water years. These changes would primarily serve to improve habitat conditions for salmonids by reducing water temperatures during sensitive lifestage periods. Implementation of the Yuba Accord requires appropriate SWRCB amendments of Yuba County Water Agency’s (YCWA) water-right permits and RD-1644.</p> <p>To assure that local water supply reliability would not be reduced by the higher minimum instream flows, YCWA and its participating local water districts would implement agreements that would establish a comprehensive conjunctive use program that would integrate the surface water and groundwater supplies of the local irrigation districts and mutual water companies that YCWA serves in Yuba County. Integration of surface water and groundwater would allow YCWA to increase the efficiency of its water management.</p> <p>Under the Water Purchase Agreement, the California Department of Water Resources would enter into an agreement with YCWA to purchase water from YCWA for use in the Environmental Water Account (EWA) Program or an equivalent program as long as operational and hydrological conditions allow. Additional water purchased by DWR would be available for the SWP in drier years. The EWA Program would take delivery of water in every year; the SWP would receive additional water in the drier years.</p>	Yes	Yes	Yes	Reclamation and YCWA. October 2007. Final Environmental Impact Report/ Environmental Impact Statement for the Proposed Lower Yuba River Accord.

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Upper Yuba River Studies Program	California Department of Water Resources, CALFED, and National Marine Fisheries Service	<p>In 2002, CALFED formed a stakeholder work group and initiated investigations of the feasibility of providing anadromous fish passage at Englebright Dam on the Yuba River, a dam that blocks all upstream passage of fish. A comprehensive study program, developed with the assistance of the work group, included studies to examine the availability of upstream fish habitat and the effects of a potential fish passage project on sediment storage and transport, water quality, flood risk, water supply and hydropower, and socio-economics. Initial studies focused on sediment transport and storage in the upper watershed and Englebright Lake, and habitat quality in the Middle and South Yuba rivers, particularly for spring-run Chinook salmon and steelhead. The analyses included temperature modeling and mapping of holding pools, instream barriers, and potential spawning and rearing areas. The results of the preliminary investigations suggested that anadromous salmonids could be supported in the river upstream of Englebright Dam.</p> <p>In 2008, the National Marine Fisheries Service (NMFS) began a watershed-based habitat suitability assessment and the development of conceptual plans for engineered fish passage design alternatives to accommodate safe and timely movement of anadromous fish through or around Englebright Dam.</p>	No	No	Yes	DWR. October 2003. Interim Report, Summary of Current Conditions in the Yuba River Watershed. NMFS. May 22, 2008. Yuba River Passage Investigation and Report Contract Statement of Work.
CALFED Levee System Integrity Program	California Department of Water Resources, California Department of Fish and Wildlife, U.S. Army Corps of Engineers	<p>The CALFED Record of Decision requires that the Levee System Integrity Program be managed to provide for long-term protection for Delta resources through maintenance and improvement of the Delta levee system. Goals are to protect life, infrastructure, and properties; and reduce the risk to land use and associated economic activities, water supply, infrastructure, and ecosystem from catastrophic breaching of Delta levees. The primary focus is on the legal Delta as defined in Section 12220 of the California water Code. Protection and maintenance of a total of 1,300 miles of project and non-project levees has taken place since the inception of the CALFED Program in 2000. Other major undertakings include restoration of native vegetation and reuse of dredge material to bolster levee stability.</p> <p>Major activities include levee maintenance, levee improvement, environmental mitigation, emergency response functions, and other</p>	No	No	No	<p>CALFED Bay-Delta Program web site. Levee System Integrity Program. Site accessed July 24, 2009. URL = http://calwater.ca.gov/calfed/objectives/Levee_System_Integrity.html</p> <p>CALFED Bay-Delta Program web site. Levee System Integrity Program Plan Year 9 (State FY 2008-2009) May 2008. Site accessed July 24, 2009. URL</p>

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		components carried out using local funds, with additional funds provided by the state and federal governments. However, uncertainty in program funding has required that some goals be revised and schedules be extended. Proposition 50 provided \$70 million for Delta Levees.				= http://calwater.ca.gov/content/Documents/library/ProgramPlans/2008/Levee_Program_Plan_Year_9.pdf
Element 2: Release Site Predation Study (Collection Handling, transport, and release [CHTR] New Technologies Proposal: Phase 1 Baseline Conditions)	California Department of Water Resources, California Department of Fish and Wildlife, U.S. Bureau of Reclamation	The California Department of Water Resources, in collaboration with others, is developing quantitative and qualitative information for the purpose of assessing the potential magnitude of predation mortality within the receiving waters at the state salvaged fish release sites (specifically the State Water Project's Horseshoe Bend release site). The Element 2 study also provides information on the geographic distribution and behavioral patterns of predatory fish at release sites in addition to comparative investigations of predator behavior and distribution during releases of salvaged fish. The field studies included in Element 2 are intended to provide the necessary scientific and technical information for assessing the importance of predation as a factor affecting survival of salvaged fish and, in the event that predation mortality is identified as a significant factor, the studies in Element 2 will provide a foundation of information useful in identifying and evaluating potential alternative new technologies designed to reduce or avoid predation mortality of released fish. Study techniques include DIDSON camera monitoring, hydroacoustics, acoustic telemetry, avian predation monitoring, and electrofishing.	No	No	No	DWR. Bay-Delta web site. Site accessed July 17, 2009. URL = http://baydeltaoffice.water.ca.gov/ndelta/fishery/element2/index.cfm DWR. 2005. Collection Handling, transport, and release (CHTR) New Technologies Proposal: Phase 1 Baseline Conditions.
Los Vaqueros Reservoir Expansion	California Department of Water Resources, U.S. Bureau of Reclamation, Contra Costa Water District	The Los Vaqueros Reservoir Expansion Project consists of enlarging the existing Los Vaqueros Reservoir and constructing related reservoir system facilities to develop water supplies for environmental water management that supports fish protection, habitat management, and other environmental needs in the Delta and tributary river systems, and to improve water supply reliability and water quality for urban users in the San Francisco Bay Area	Yes	Yes	Yes	U.S. Bureau of Reclamation, Contra Costa Water District, Los Vaqueros Reservoir Expansion Project, Final Environmental Impact Statement/Environmental Impact Report, March, 2010.

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Altamont Corridor Rail Project	California High Speed Rail Authority and Federal Railroad Administration	The project would incrementally upgrade the Altamont Commuter Express System as part of the statewide High Speed Rail Initiative on a separate, dedicated passenger track and may ultimately be fully grade-separated, electrified, and compatible with the high speed train equipment.	Yes	Yes	Yes	CHSRA. 2009. California High-Speed Train Program Summary Report, July 2009. CHSRA. 2009. Notice of Preparation (filed October 22, 2009).
California High-Speed Rail System Fresno to Merced Section	California High Speed Rail Authority and Federal Railroad Administration	The project would construct a new rail corridor between Merced and Fresno, with various alignments under study including alignments adjacent to the existing Union Pacific Railroad and Burlington Northern Santa Fe (BNSF) railroad routes. The new corridor would be fully grade-separated and electrified.	Yes	Yes	Yes	California High-Speed Train Program Summary Report, July 2009. Available at: http://www.cahighspeedrail.ca.gov/library.asp?p=8200 . CHSRA and FRA. 2005. Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System. August. Bay Area to Central Valley Program EIR/EIS, available at: http://www.cahighspeedrail.ca.gov/library/Default.aspx?ItemID=6113 .

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Riparian Habitat Joint Venture Project	California Partners In Flight	<p>The Riparian Habitat Joint Venture (RHJV) project was initiated by California Partners in Flight in 1994. To date, 18 federal, state and private organizations have signed the Cooperative Agreement to protect and enhance habitats for native landbirds throughout California. These organizations include the California Department of Fish and Wildlife, California Department of Water Resources, California State Lands Commission, Ducks Unlimited, National Audubon Society, National Fish and Wildlife Foundation, The Nature Conservancy, The Trust for Public Land, The Resources Agency State of California, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Geological Survey, and Wildlife Conservation Board. The RHJV, modeled after the successful Joint Venture projects of the North American Waterfowl Management Plan, reinforces other collaborative efforts currently underway that protect biodiversity and enhance natural resources as well as the human element they support.</p> <p>The vision of the RHJV is to restore, enhance, and protect a network of functioning riparian habitat across California to support the long-term viability of landbirds and other species. A wide variety of other species of plants and animals will benefit through the protection of forests along rivers, streams and lakes. The RHJV mission is to provide leadership and guidance to promote the effective conservation and restoration of riparian habitats in California through the following goals: (1) Identify and develop technical information based on sound science for a strategic approach to conserving and restoring riparian areas in California; (2) Promote and support riparian conservation on the ground by providing guidance, technical assistance and a forum for collaboration; and (3) Develop and influence riparian policies through outreach and education.</p> <p>In 2004, Partners In Flight prepared The Riparian Bird Conservation Plan, a guidance document that outline a strategy for conserving riparian birds, including birds using the Delta.</p>	Yes	Yes	Yes	<p>RHJV (Riparian Habitat Joint Venture). 2004. Version 2.0. The riparian bird conservation plan: a strategy for reversing the decline of riparian associated birds in California. California Partners in Flight. http://www.prbo.org/calpi/pdf/riparian.v-2.pdf. Riparian Habitat Joint Venture web site. Site accessed December 10, 2009. URL = http://www.rhju.org/</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Delta Vision	California Resources Agency	<p>Delta Vision was created by Executive Order of Gov. Arnold Schwarzenegger in 2006 to find a durable vision for sustainable management of the Sacramento-San Joaquin Delta, so it could continue to support environmental and economic functions critical to the people of California. Although it builds upon work done through the CALFED Bay-Delta Program, Delta Vision broadened the focus of past Delta efforts to recommend actions that address the full array of natural resource, infrastructure, land use, and governance issues necessary to achieve a sustainable Delta. In February 2007, the Governor appointed the independent Delta Vision “Blue Ribbon” Task Force chaired by Phil Isenberg.</p> <p>The Task Force issued its first report, Our Vision for the California Delta, in December 2007, which identified its vision for the Sacramento-San Joaquin Delta. The Task Force issued its second report, a Strategic Plan, identified and evaluated alternative implementing measures and management practices that would be necessary to implement Delta Vision recommendations. These implementation recommendations involved considering changes in the use of land and water resources, services to be provided within the Delta, governance, funding mechanisms, and ecosystem management practices. The final Strategic Plan was submitted to the public and the Delta Vision Committee on October 31, 2008.</p>	Yes	Yes	Yes	<p>California Resources Agency web site. Delta Vision Background. Site accessed July 24, 2009. URL = http://www.calwater.ca.gov/content/documents/newroom/Delta_Vision_Fact_Sheet_081508.pdf</p> <p>California Resources Agency web site. About Delta Vision website. Site accessed July 24, 2009. URL = http://deltavision.ca.gov/AboutDeltaVision.shtml</p> <p>California Resources Agency web site. Delta Vision Committee Implementation Report. December 2008. Site accessed July 24, 2009. URL = http://www.deltavision.ca.gov/DV_Committee/Jan2009/08-1231_Delta_Vision_Committee_Implementation_Report.pdf</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Marine Invasive Species Program	California State Lands Commission	<p>The California Marine Invasive Species Program is charged with preventing or minimizing the introduction of nonindigenous species to California Waters from commercial vessels. The program began in 1999 with the passage of California’s Ballast Water Management for Control of Nonindigenous Species Act, which addressed the threat of species introductions through ships’ ballast water during a time when federal regulations were not mandatory. In 2003, the Marine Invasive Species Act (MISA) was passed, reauthorizing and expanding the 1999 Act. Subsequent amendments to MISA and additional legislation have further expanded the scope of the program. The law charged the California State Lands Commission with oversight of the state’s program to prevent or minimize the introduction of nonindigenous species from commercial vessels. To advance this goal, the Commission uses a comprehensive approach that includes: ballast water and vessel fouling management tracking, compliance, and enforcement; sound policy development in consultation with a wide array of experts and stakeholders; applied research that advances the strategies for nonindigenous species prevention; and outreach and education to coordinate information exchange among scientists, legislators, and stakeholders.</p> <p>The Coastal Ecosystems Protection Act of 2006 directed the Commission to adopt performance standards for the discharge of ballast water by January 1, 2008, and prepare a report assessing the availability of treatment technologies to meet those standards. The Commission completed the rulemaking process and adopted the standards in October 2007; the technology assessment report was completed in December 2007.</p>	Yes	Yes	Yes	<p>California State Lands Commission web site. Description of the Marine Invasive Species Program. Site accessed January 15, 2013. URL = http://www.slc.ca.gov/Spec_Pub/MFD/Ballast_Water/About_The_Program.html</p> <p>California State Lands Commission web site. Marine Invasive Species Program homepage. Site accessed January 15, 2013. URL = http://www.slc.ca.gov/Spec_Pub/MFD/Ballast_Water/Ballast_Water_Default.html</p> <p>California State Lands Commission. 2009. Biennial Report on the California Marine Invasive Species Program. State Lands Commission. 2006. Commercial Vessel Fouling in California: Analysis, Evaluation, and Recommendations to Reduce Nonindigenous Species Release from the Non-Ballast Water Vector. April.</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Central Valley Joint Venture Program	Central Valley Joint Venture	<p>The Central Valley Joint Venture (CVJV) is a self-directed coalition consisting of 22 state and federal agencies and private conservation organizations. The partnership directs their efforts toward the common goal of providing for the habitat needs of migrating and resident birds in the Central Valley of California. The CVJV was established in 1988 as a regional partnership focused on the conservation of waterfowl and wetlands under the North American Waterfowl Management Plan. It has since broadened its focus to the conservation of habitats for other birds, consistent with major national and international bird conservation plans and the North American Bird Conservation Initiative.</p> <p>The CVJV provides guidance and facilitates grant funding to accomplish its habitat goals and objectives. Integrated bird conservation objectives for wetland habitats in the Central Valley identified in the 2006 Implementation Plan include restoration of 19,170 acres of seasonal wetland, enhancement of 2,118 acres of seasonal wetland annually, restoration of 1,208 acres of semi-permanent wetland, and restoration of 1,500 acres of riparian habitat.</p>	Yes	Yes	Yes	Central Valley Joint Venture web site. Site accessed January 15, 2013. URL = http://www.centralvalleyjointventure.org/ Central Valley Joint Venture, 2006. Central Valley Joint Venture Implementation Plan – Conserving Bird Habitat. U.S. Fish and Wildlife Service, Sacramento, CA.
Cache Creek, Bear Creek, Sulfur Creek, Harley Gulch Mercury TMDL	Central Valley Regional Water Quality Control Board	<p>Historic mining activities in the Cache Creek watershed have discharged and continue to discharge large volumes of inorganic mercury to creeks in the watershed. Much of the mercury discharged from the mines is now distributed in the creek channels and floodplain downstream from the mines. Natural erosion processes are expected to slowly move the mercury downstream out of the watershed over the next several hundred years. However, current and proposed activities in and around the creek channel can enhance mobilization of this mercury. To reduce mercury loads in these streams, which ultimately connect to the northern Delta, the Central Valley Regional Water Quality Control Board is implementing mercury TMDLs for Cache Creek and its tributaries, as well as Sulfur Creek. The implementation plans require a reduction in mercury loads through a combination of actions to clean up mines, sediments, and wetlands; identify engineering options; control erosion reduction actions, and perform studies and monitoring.</p>	Yes	Yes	Yes	CVRWQCB. October 2005. Cache Creek, Bear Creek, Sulfur Creek, Harley Gulch TMDL for Mercury, Staff Report. CVRWQCB. October 2007. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley, Fourth Edition Revised October 2007 (with Approved Amendments).

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Irrigated Lands Regulatory Program	Central Valley Regional Water Quality Control Board	The Irrigated Lands Regulatory Program (ILRP) regulates discharges from irrigated agricultural lands. Its purpose is to prevent agricultural discharges from impairing the waters that receive the discharges. The California Water Code authorizes State and Regional water boards to conditionally waive waste discharge requirements if this is in the public interest. On this basis, the Los Angeles, Central Coast, Central Valley, and San Diego regional water quality control boards have issued conditional waivers of waste discharge requirements to growers that contain conditions requiring water quality monitoring of receiving waters. Participation in the waiver program is voluntary; dischargers must file a permit application as an individual discharger, stop discharging, or apply for coverage by joining an established coalition group. The waivers must include corrective actions when impairments are found.	Yes	Yes	Yes	SWRCB web site. Site accessed July 21, 2009. URL = http://www.swrcb.ca.gov/water_issues/programs/agriculture/docs/about_agwaivers.pdf CVRWQCB irrigated lands web site. Site accessed July 21, 2009. http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/general_prog_info/index.shtml
Sacramento-San Joaquin Delta Estuary TMDL for Methylmercury	Central Valley Regional Water Quality Control Board	The Central Valley Regional Water Quality Control Board has identified the Delta as impaired because of elevated levels of methylmercury in Delta fish that pose a risk for human and wildlife consumers. As a result, it has initiated the development of a water quality attainment strategy to resolve the mercury impairment. The strategy has two components: the methylmercury total maximum daily load (TMDL) for the Delta and the amendment of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (the Basin Plan) to implement the TMDL program. The draft Basin Plan amendment would require methylmercury load and waste load allocations for dischargers in the Delta and Yolo Bypass to be met as soon as possible, but no later than 2030. The regulatory mechanism to implement the Delta Mercury Control Program for point sources would be through NPDES permits. Nonpoint sources would be regulated in conformance with the State Water Resources Control Board's Nonpoint Source Implementation and Enforcement Policy. Both point and nonpoint source dischargers would be required to conduct mercury and methylmercury control studies to develop and evaluate management practices to control mercury and methylmercury discharges. The Regional Water Board will use the study results and other information to amend relevant portions of the	No	Yes	Yes	CVRWQCB February 2008. Sacramento-San Joaquin Delta Estuary TMDL for Methylmercury, Draft Staff Report. Site accessed January 15, 2013. URL = http://www.waterboards.ca.gov/rwqcb5/water_issues/tmdl/central_valley_projects/delta_hg/april_2010_hg_tmdl_hearing/apr2010_tmdl_staffrpt_final.pdf CVRWQCB. July 2009. Control of Methylmercury in the Delta, Draft Basin Plan Amendment Staff Report.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>Delta Mercury Control Program during the Delta Mercury Control Program Review.</p> <p>The draft Basin Plan amendment also would require proponents of new wetland and wetland restoration projects scheduled for construction after 2011 to either participate in a comprehensive study plan or implement a site-specific study plan, evaluate practices to minimize methylmercury discharges, and implement newly developed management practices as feasible. Projects would be required to include monitoring to demonstrate effectiveness of management practices.</p> <p>Activities, including changes to water management and storage in and upstream of the Delta, changes to salinity objectives, dredging and dredge materials disposal and reuse, and changes to flood conveyance flows, would be subject to the open water methylmercury allocations. Agencies would be required to include requirements for projects under their authority to conduct control studies and implement methylmercury reductions as necessary to comply with the allocations by 2030.</p>				
Carlsbad Seawater Desalination Plant	City of Carlsbad	<p>The Carlsbad Seawater Desalination Plant is proposed for the site of the existing Encina Power Station. An EIR was completed in 2005. The Final Addendum to the EIR was completed in 2009.</p> <p>In December 2012 Poseidon Water finalized a 30-year water agreement with San Diego County Water Authority for the purchase of 50 million gallons per day of desalinated seawater and secured financing for the project. Construction of the plant began in late 2012 and pipeline construction began in spring of 2013. Pipeline installation is currently underway in Carlsbad and Vista and has been completed in San Marcos. Pipeline construction reached 75 percent complete milestone in September 2014. The desalination plant is scheduled to begin delivering water to San Diego by November 2015.</p>	No	Yes	Yes	<p>Carlsbad Desalination Project Website Accessed January 20, 2015. http://carlsbaddesal.com/construction-updates http://carlsbaddesal.com/desalination-plant1</p>

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Seawater Desalination Project at Huntington Beach	City of Huntington Beach	The Seawater Desalination Project at Huntington Beach is proposed for the site of the existing Huntington Beach Generating Station. An EIR was first completed in 2003. However, significant new information was added following the 2003 EIR. Therefore, the EIR was recirculated in 2005, and subsequently certified in 2005. The 2005 EIR was challenged in the Orange County Superior Court. The Court's final judgment was in favor of the City of Huntington Beach. Subsequently, City of Huntington Beach determined that the project had changed substantially and new information was available. Therefore, a subsequent EIR was prepared in 2010.	No	Yes	Yes	City of Huntington Beach. 2010. Seawater Desalination Project at Huntington Beach, Final Subsequent Environmental Impact Report, August, 2010. < http://www.huntingtonbeachca.gov/files/users/planning/poseidon_Final_SEIR.pdf > Website Accessed January 20, 2015 < http://www.huntingtonbeachca.gov/government/departments/planning/major/major-projects-view.cfm?ID=34 > The Environmental Impact Report was certified by the city council on September 7, 2010.
East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan	Contra Costa County and East Contra Costa County Habitat Conservancy	The East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan (Plan) was adopted in 2006 and provides regional conservation and development guidelines to protect natural resources while improving and streamlining the permit process for endangered species and wetland regulations. The Plan was developed by a team of scientists and planners with input from independent panels of science reviewers and stakeholders. Within the 174,018-acre inventory area, the Plan provides permits for between 8,670 and 11,853 acres of development and will permit impacts on an additional 1,126 acres from rural infrastructure projects. The Plan will result in the acquisition of a preserve system that will encompass 23,800 to 30,300 acres of land that will be managed for the benefit of 28 species as well as the natural communities that they depend upon.	Yes	Yes	Yes	Contra Costa County web site. East Contra Costa County Habitat Conservancy. Site accessed on January 15, 2013. URL = http://www.co.contra-costa.ca.us/depart/cd/water/HCP/index.html East Contra Costa County Habitat Conservation Plan Association. October 2006. Final East Contra Costa County Habitat

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>The East Contra Costa County Habitat Conservancy is a joint exercise of powers authority formed by Contra Costa County and the cities of Brentwood, Clayton, Oakley and Pittsburg to implement the Plan. It allows Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, the East Bay Regional Park District and the cities of Brentwood, Clayton, Oakley, and Pittsburg (collectively, the Permittees) to control permitting for activities and projects they perform or approve in the region that have the potential to adversely affect state- and federally listed species. The Plan also provides for comprehensive species, wetlands, and ecosystem conservation and contributes to the recovery of endangered species in northern California. The Plan avoids project-by-project permitting that often results in uncoordinated and biologically ineffective mitigation.</p>				<p>Conservation Plan/ Natural Community Conservation Plan. (http://www.co.contra-costa.ca.us/depart/cd/water/HCP/documents.html)</p>
<p>Contra Costa Canal Fish Screen Project</p>	<p>Contra Costa Water District</p>	<p>Contra Costa Water District diversion of water from the Sacramento-San Joaquin Delta at Rock Slough serves as a major component of its water supply. Between 120,000 and 130,000 acre-feet of water per year is diverted by the canal for irrigation and municipal and industrial uses. The diversion at Rock Slough is one of the largest unscreened Delta sites. The project would install fish screens at the Rock Slough diversion to minimize the entrainment losses of sensitive fish species. It includes flow control and transition structures necessary to reduce tidal influences and maintain flow rates. This will help the screen perform properly and allow fish to pass by it easily. Improvements at the diversion site also would reduce potential predation on target species, fulfill legal requirements of the U.S. Fish and Wildlife Service's 2008 Biological Opinion for the threatened Delta smelt, complete the mitigation for the Los Vaqueros Biological Opinion, and complete CVPIA requirements in Section 3406(b)(5). Construction is estimated to be complete in 2011.</p>	<p>No</p>	<p>Yes</p>	<p>Yes</p>	<p>Reclamation web site. Contra Costa Canal Fish Screen (Rock Slough) Fact Sheet. Site accessed January 15, 2013. URL = http://www.usbr.gov/mp/ARRA/docs/CONTRA%20COSTA%20FACT%20SHEET.pdf</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Contra Costa Canal Replacement Project	Contra Costa Water District	Contra Costa Water District's Canal Replacement Project will replace the canal with a pipeline along a portion of the 48-mile Contra Costa Canal near Oakley. The first phase was initiated in 2009. The project would encase a 1,900-foot portion of the Contra Costa Canal to reduce salinity and water quality impacts of groundwater seepage from adjacent agricultural areas, as well as to increase public safety and flood protection. Contra Costa Water District will be initiating plans for the remaining sections.	No	Yes	Yes	Contra Costa Water District – Oakley Pipeline Replacement website. Updated August 19, 2009. Accessed January 15, 2013. URL = http://www.ccwater.com/CanalProject.asp
Los Vaqueros Reservoir Expansion Project	Contra Costa Water District and U.S. Bureau of Reclamation	Los Vaqueros Reservoir is a 100,000 acre-foot off-stream storage reservoir owned and operated by Contra Costa Water District (CCWD) that is used to store water pumped from the Delta. This storage capacity allows CCWD to improve the water quality delivered to its customers and to adjust the timing of its Delta water diversions to accommodate the life cycles of Delta aquatic species, thus reducing species impact and providing a net benefit to the Delta environment. The proposed expansion project would increase the reservoir capacity to 275,000 acre-feet and add a new 470 cfs connection that would allow the Los Vaqueros system to provide water to South Bay water agencies – Alameda County Flood Control and Water Conservation District, Zone 7, Alameda County Water District, and Santa Clara Valley Water District – that otherwise would receive all of their Delta supplies through the existing SWP and CVP export pumps. It also would include construction of a new diversion on Old River with a capacity of 170 cfs. The new and expanded facilities would be operated in coordination with the U.S. Bureau of Reclamation and California Department of Water Resources to shift Delta pumping for the three South Bay water agencies from the CVP and SWP Delta export pumps to the expanded Los Vaqueros reservoir system.	No	Yes	Yes	Reclamation et al. 2009. Draft Environmental Impact Statement/Environmental Impact Report for the Los Vaqueros Reservoir Expansion Project. February 2009. Reclamation et al. 2010. Final Environmental Impact Statement/Environmental Impact Report for the Los Vaqueros Reservoir Expansion Project. March 2010.

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Alternative Intake Project	Contra Costa Water District, U.S. Bureau of Reclamation, and California Department of Water Resources	The Alternative Intake Project was completed in 2010. The project located a new drinking water intake at Victoria Canal, about 2.5 miles east of Contra Costa Water District's (CCWD) existing intake on the Old River, which allows CCWD to divert higher quality water when it is available. The new screened intake includes a 2.5-mile pipeline extension and a new pumping plant that ties into CCWD's existing conveyance system. The new intake has the same capacity and similar design as the existing Old River intake (250 cubic feet of water per second).	No	Yes	Yes	Contra Costa Water District web site. Site accessed January 15, 2013. URL = http://www.ccwater.com/aip.asp CCWD and USBR. October 2006. Final Environmental Impact Report /Environmental Impact Statement for the Contra Costa Water district Alternative Intake Project. Site accessed January 15, 2013. URL = http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=1818
Davis-Woodland Water Supply Project	Davis, Woodland, and University of California, Davis	The Davis-Woodland Water Supply Project would divert up to about 46,100 acre-feet per year of surface water from the Sacramento River and convey it for treatment and subsequent use in Davis and Woodland and on the University of California, Davis campus. The purposes of the project are to provide a reliable water supply to meet existing and future needs, improve water quality for drinking supply purposes, and improve treated wastewater effluent quality through 2040. Project activities would include construction and operation of a water intake/diversion, conveyance, and water treatment facilities. Surface water supplies would be acquired through new water rights and water rights transfers from senior water rights holders. The Project would be located in the east-central portion of Yolo County, between and within the cities of Woodland and Davis, the University of California, Davis campus, and west of the Sacramento River. The new water diversion facility would be constructed on the Sacramento River near the Interstate 5 crossing at the location of the existing Reclamation District 2035 diversion. The water treatment plant to treat the surface water diverted from the Sacramento River would have	No	Yes	Yes	City of Davis. October 2007. Davis-Woodland Water Supply Project Final Environmental Impact Report. http://www.wdcwa.com/docs/Final_Environmental_Impact_Report.pdf Site accessed April 25, 2016

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>an ultimate capacity of up to 106 millions of gallons per day (MGD). Water diversions under the project would be made in compliance with Standard Water Right Permit Term 91, which prohibits surface water diversions when water is being released from CVP or SWP storage reservoirs to meet in-basin entitlements, including water quality and environmental standards for protection of the Sacramento-San Joaquin Delta. Water supply needs during periods applicable to Term 91 would be satisfied by entering into water supply transfer agreements with senior water rights holders within the Sacramento River watershed.</p>				
<p>Delta Protection Commission Land Use and Resource Management Plan Update</p>	<p>Delta Protection Commission</p>	<p>The Delta Protection Commission (Commission), created with passage of the Delta Protection Act, was formed to adaptively protect, maintain, and where possible, enhance and restore the overall quality of the Delta environment consistent with the Delta Protection Act and the Land Use and Resource Management Plan for the Primary Zone. The Commission is currently updating its Land Use and Resource Management Plan (Management Plan), which was originally adopted in 1995. The Management Plan outlines the long-term land use requirements for the Sacramento-San Joaquin Delta and sets out findings, policies, and recommendations in the areas of environment, utilities and infrastructure, land use, agriculture, water, recreation and access, levees, and marine patrol/boater education/safety programs. The updated Management Plan will place increased emphasis on the requirement for local government general plans to provide for consistency with the provisions of the Management Plan. The Commission develops priorities and timelines for tasks to be implemented each year, and provides annual progress reports to the Legislature. One of the tasks identified by the Commission is to monitor the Delta Vision, Bay Delta Conservation Plan, and Delta Risk Management Strategy processes and provide input as deemed appropriate.</p>	<p>No</p>	<p>Yes</p>	<p>Yes</p>	<p>Delta Protection Commission web site. Land Use and Resource Management Plan. Site accessed November 26, 2012. URL = http://www.delta.ca.gov/plan_management.htm Delta Protection Commission. 2009. Draft Land Use and Resource Management Plan for the Primary Zone of the Delta. Compiled Draft Management Plan 11-12-2009.</p>
<p>Delta Plan</p>	<p>Delta Stewardship Council</p>	<p>In November 2009, the California Legislature enacted SBX7 1, which took effect on February 3, 2010. One portion of this legislation is known as the Sacramento-San Joaquin Delta Reform Act of 2009 (the Delta Reform Act). The Delta Reform Act requires the development of a legally enforceable, comprehensive, long-term management plan for</p>	<p>No</p>	<p>Yes</p>	<p>Yes</p>	<p>Fifth Staff Draft Delta Plan. August 2, 2011. www.deltacouncil.ca.gov. 2012.</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>the Delta, which is referred to as the Delta Plan. The Delta Reform Act also created the Delta Stewardship Council (Council), which is an independent State agency. One of the Council’s primary responsibilities is to adopt the Delta Plan.</p> <p>The Delta Reform Act requires the Council to adopt a Delta Plan that achieves the State’s coequal goals. The Delta Reform Act also specifies the following: (i) eight objectives that are “inherent” in the coequal goals (see Water Code section 85020), (ii) a related statewide policy to reduce reliance on the Delta in meeting the State’s future water supply needs through improved regional water self-reliance (Water Code section 85021); and (iii) certain specific subjects and strategies that must be included in the Delta Plan (see generally Water Code sections 85301–85309).</p> <p>The Delta Plan must include BDCP if the BDCP is completed and approved by DFW as a Natural Communities Conservation Plan and by federal agencies as a Habitat Conservation Plan.</p>				
Recreation Proposal for the Sacramento- San Joaquin Delta and Suisun Marsh	Department of Parks and Recreation	<p>In 2011, California State Parks developed a Recreation Proposal for the Delta and Suisun Marsh in response to the requirements in SBX7 1. The proposal recommends that communities on the edge of the Delta or Suisun Marsh with access to major transportation routes be developed as “gateways” to provide supplies and information to visitors about recreation opportunities available in an area. Recommendations also include collaboration with other agencies and other partners to expand wildlife viewing, angling, and hunting opportunities; and expansion of the State Park system in the Delta.</p>	Yes	Yes	Yes	California State Parks, Planning Division. Recreation Proposal for the Sacramento-San Joaquin Delta and Suisun Marsh, 2011.
EBMUD Camanche Permit Extension	East Bay Municipal Utility District	<p>The proposed project would extend the term of the existing Camanche water right Permit 10478 through the year 2040. Extending the Camanche Permit would allow EBMUD additional time to apply the water provided under Permit 10478 to municipal and industrial use within EBMUD’s designated service area. Additionally, EBMUD contends that the full entitlement of Permit 10478 through 2040 is needed to maintain operational flexibility to meet future projected water demand and address system vulnerabilities associated with several factors, including emergencies and potential effects of climate change.</p>	No	Yes	Yes	CEQAnet web site. Site accessed October 20, 2009. URL = http://www.ceqanet.ca.gov/ProjDocList.asp?ProjectPK=594217

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Lower Mokelumne River Spawning Habitat Improvement Project	East Bay Municipal Utility District	The Mokelumne River is tributary to the Sacramento-San Joaquin River Delta and supports five species of anadromous fish. The proposed project would initially place 4,000 to 5,000 cubic yards of suitably sized salmonid spawning gravel annually for a 3-year period at two specific sites, and then provide annual supplementation of 600 to 1,000 cubic yards thereafter. Fall-run Chinook salmon and steelhead are the primary management focus in the river. Availability of spawning gravel in this section of the Mokelumne River has been determined to be deficient because historic gold and aggregate mining operations removed gravel annually and upstream dams have reduced gravel transport to the area. This area was chosen because it is known to have supported fall-run Chinook salmon and steelhead spawning in the past and because the substrate is suitable for habitat improvement.	Yes	Yes	Yes	CEQANet web site. Site accessed October 20, 2009. URL = http://www.ceqanet.ca.gov/ProjDocList.asp?ProjectPK=596121
Water Supply Management Program 2040	East Bay Municipal Utility District	<p>East Bay Municipal Utility District's current Water Supply Management Program (WSMP 2020), adopted in 1993, serves as the basis for water conservation and recycling programs and for development of supplemental supply initiatives such as the Freeport Regional Water Project. The WSMP 2040 updates the current plan and extends the planning horizon another 20 years. It identifies and recommends a Preferred Portfolio of solutions to meet dry-year water needs through 2040, including desalination, enlargement of Mokelumne River reservoirs.</p> <p>The primary objectives of the WSMP 2040 are to maintain and improve EBMUD's water supply reliability to its customers and help meet the need for water in the future. WSMP 2040 will also adapt the EBMUD's water planning approach to circumstances that have changed since WSMP 2020 was adopted, such as competing and changing demands for water, the availability of Freeport water after 2009, and long-term climate change.</p>	No	Yes	Yes	<p>EBMUD web site. Water Supply Management Plan 2040. Site accessed October 20, 2009. URL = http://www.ebmud.com/water_environment/water_supply/water_supply_management_program/default.htm</p> <p>EBMUD. September 2009. Water Supply Management Program 2040. Final Draft.</p>

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Bay Area Regional Desalination Project	East Bay Municipal Utility District, Contra Costa Water District, Santa Clara Valley Water District, and San Francisco Public Utility Commission	The Bay Area's four largest water agencies are jointly exploring the development of regional desalination facilities that would benefit Bay Area residents and businesses served by these agencies. The Bay Area Regional Desalination Project could consist of one or more desalination facilities, with an ultimate total capacity of up to 71 million gallons per day. The project would provide an additional source of water during emergencies, such as earthquakes or levee failures, increase supply reliability, and provide water during droughts or maintenance of other facilities. A pilot plant was constructed near the southern end of Antioch Bridge. Following the pilot study, environmental documentation and designs will be completed for a full-scale plant.	No	No	Yes	San Francisco Public Utilities Commission web site. Fact Sheet. Site accessed June 30, 2009. URL= http://sfwater.org/Files/FactSheets/desal_FS_Jan2008(2).pdf URS. July 2007. Bay Area Regional Desalination Project Feasibility study. Bay Area Regional web site. Site accessed January 15, 2013. URL = http://www.regionaldesal.com/
Folsom Lake Temperature Control Device	El Dorado Irrigation District (EID) and U.S. Bureau of Reclamation	El Dorado Irrigation District, in collaboration with the U.S. Bureau of Reclamation, proposes to construct facilities on the bank of Folsom Lake to withdraw water from the warm upper reaches of the lake while preserving the cold water pool at the bottom of the lake to protect downstream aquatic species. The facilities will include a large diameter concrete lined vertical shaft and five lined horizontal adits extending from the shaft. This structure, known as a Temperature Control Device (TCD) will replace the District's five existing raw pump casings that currently extract water from Folsom Lake at a rate of 19.5 MGD. The new facility will be sized to accommodate a maximum extraction rate of 74 MGD over an 18-hr period, which is equivalent to 52 MGD.	No	No	Yes	Site accessed January 15, 2013. URL = http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=797
Supplemental Water Rights Project	El Dorado Water and Power Authority (EDWPA)	The proposed project is to establish permitted water rights allowing diversion of water from the American River basin to meet planned future water demands in the EID and GDPUD service areas and other areas located within El Dorado County that are outside of these service areas. EDWPA will be filing with the State Water Resources Control Board, Division of Water Rights, petitions for partial assignment of each of State Filed Applications 5644 and 5645, and accompanying applications allowing for the total withdrawal for use of 40,000 acre-	No	Yes	Yes	EDWPA. October 24, 2008. Initial Study for the El Dorado Water & Power Authority Supplemental Water Rights Project. Site accessed January 15, 2013. URL = http://www.ca-water.com/EDWPA.html

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		feet per year, consistent with the diversion and storage locations allowed it under the El Dorado-Sacramento Municipal Utility District (SMUD) Cooperation Agreement.				El Dorado Water & Power Authority. October 24, 2008. Notice of Preparation Supplemental Water Rights Project.
Freeport Regional Water Project	Freeport Regional Water Authority and U.S. Bureau of Reclamation	Freeport Regional Water Authority, a Joint Powers Authority created by exercise of a joint powers agreement between the Sacramento County Water Agency (SCWA) and EBMUD, is constructing a new water intake facility/pumping plant and 17-mile underground water pipeline within Sacramento County. The new water intake facility and pumping plant is located on the Sacramento River at the Freeport Bend, just upstream of Freeport and 10 miles south of Sacramento. The pumping plant will divert up to 185 million gallons per day of water from the river and pump it through new pipelines to EBMUD and SCWA project facilities. Components of the facility include an in-river intake fish screen, sheet-piled in-river transition structure, electrical substation, surge control facility, compressed air system, sediment collection and settling basin system, and utilities. Construction of the intake is expected to be completed in 2010; the water treatment plant is expected to be completed in 2012.	No	Yes	Yes	FCWA web site. Fact Sheet. Site accessed June 30, 2009. URL = http://www.freeportproject.org/nodes/construction/
El Monte Valley Mining, Reclamation, and Groundwater Recharge Project	Helix Water District	The first phase of this project will be for a surface mining project to remove 12 million tons of material over a 10-year period on a 580-acre parcel. The second phase will be for Helix Water District to use the quarry for groundwater recharge of highly purified recycled water. The third phase will be to reclaim the surface area of the mine. Helix Water District is initiating the planning and environmental documentation process in 2011. Padre Dam Municipal Water District may also participate in this project. The Helix Water District Board voted to suspend the El Monte Project in September 2011.	No	No	No	Helix Water District website. Site accessed January 20, 2015 URL= http://www.hwd.com/news/evp-suspend.htm >

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Public Draft Recovery Plan for Sacramento River Winter-run Chinook Salmon, Central Valley Spring-run Chinook Salmon and Central Valley Steelhead	National Marine Fisheries Service	The Draft Recovery Plan provides a roadmap that describes the steps, strategy, and actions that should be taken to return winter-run Chinook salmon, spring-run Chinook salmon, and steelhead to viable status in the Central Valley, California thereby ensuring their long-term persistence and evolutionary potential. The general near-term strategic approach to recovery includes methods to: secure all extant populations, monitor for <i>O. mykiss</i> in habitats accessible to anadromous fish, and minimize straying from hatcheries to natural spawning areas. Conduct critical research on fish passage and reintroductions with climate change, and develop recovery plan for sustainable populations that have minimal susceptibility to catastrophic events. Recovery plan for Sacramento River Winter-Run Chinook salmon, Central Valley Spring-Run Chinook salmon, and Central Valley Steelhead was released in July 2014.	Yes	Yes		U.S. Department of Commerce, National Oceanic and Atmospheric Administration, West Coast Region. Recovery Plan for Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead, July, 2014. < http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/california_central_valley/california_central_valley_recovery_plan_documents.html > Accessed January 20, 2015.
Eastern San Joaquin Integrated Conjunctive Use Program	Northeastern San Joaquin County Groundwater Banking Authority (NSJCGBA)	The Integrated Conjunctive Use Program is to develop approximately 140,000 to 160,000 acre-feet per year (AF/yr) of new surface water supply for the basin that will be used to directly and indirectly to support conjunctive use by the Northeastern San Joaquin County Groundwater Banking Authority (GBA) member agencies. This amount of water would support groundwater recharge at a level consistent with the GBA's objectives for conjunctive use and the underlying groundwater basin. Within this framework, the program would implement the following categories of conjunctive use projects and actions: <ul style="list-style-type: none"> • Water conservation measures • Water recycling • Groundwater banking • Water transfers • Development of surface storage facilities 	No	Yes	Yes	NSJCGBA. September 2009. Eastern San Joaquin Basin Integrated Conjunctive Use Program Programmatic Environmental Impact Report. NSJCGBA. February 2011. Eastern San Joaquin Basin Integrated Conjunctive Use Program Final Programmatic Environmental Impact Report.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Canada-Northwest-California Transmission Project	Pacific Gas and Electric	<ul style="list-style-type: none"> • Groundwater recharge • River withdrawals • Construction of pipelines and other facilities <p>To enable and facilitate sustainable and reliable management of San Joaquin County’s water resources, the GBA developed a series of Basin Management Objectives to support conjunctive use and address a variety of water resources issues, including groundwater overdraft, saline groundwater intrusion, degradation of groundwater quality, environmental quality, land subsidence, supply reliability, water demand, urban growth, recreation, agriculture, flood protection, and other issues. The purpose of the Basin Management Objectives is to ensure the long-term sustainability of water resources in the San Joaquin Region.</p> <p>Avista Utilities, British Columbia Transmission Corp. (BCTC), and Pacific Gas and Electric Company (PG&E) are analyzing the feasibility of constructing a high-voltage electrical transmission line intended to increase access to new renewable resources in British Columbia, Washington, Oregon, and California, and to increase the reliability of interconnected electrical networks. The line as initially conceived would stretch approximately 1,000 miles and would have the capacity to transport up to 3,000 megawatts (MW) of power both south-to-north and north-to-south. This project will require consultation and outreach with local communities, private stakeholders and government officials at all levels – city, county, state and federal – and approval from numerous government agencies over several years.</p> <p>While no route has been determined, a 40-mile wide by 1,000-mile long study area is currently under evaluation; it stretches from Selkirk Substation in southeast British Columbia to the Tesla/Tracy Substation in northern California. A final route will be a much narrower corridor within this 40-mile study area. Over the next few years, the project partners will conduct due-diligence on various route options and will confer with public and private stakeholders in and near the proposed transmission line corridor.</p>	No	No	Yes	PG&E web site. Canada – Pacific Northwest – Northern California Transmission Project Overview. Site accessed November 16, 2009. URL = http://www.pge.com/mybusiness/customer-service/onpgeutility/electrictransmission/canada/overview.shtml

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
American River Pump Station and Restoration Project	Placer County Water Agency and U.S. Bureau of Reclamation	<p>The American River Pump Station and Restoration Project, completed in 2008, includes a permanent pump station to replace a temporary pumping facility on the American River that was installed in anticipation of construction of Auburn Dam. The project also returned the river to its natural channel. The constructed project includes several features associated with rewatering the project site, constructing the new pump station and screened intake, and creating public access to the reopened river. These features were constructed in two phases, and included the following:</p> <ul style="list-style-type: none"> • Closure of the half-mile-long diversion tunnel • Removal of over 1 million yards of sediment left from Auburn Dam construction • Installation of over 60,000 yards of rocks and boulders • Construction of a whitewater course of chutes and pools alongside a portage path • Installation of a screened intake on a river chute that is safely passable by boat • Installation of a dividing ridge between the whitewater channel and the intake channel • Construction of a pumping well in the canyon wall beneath the pump station • Construction of the pump station and pipelines <p>Addition of a State Parks entrance facility, parking lots, 2 miles of access roads, and 4,000 feet of hiking trails</p>	Yes	Yes	Yes	Reclamation web site. Site accessed January 15, 2013. URL = http://www.usbr.gov/mp/ccao/pcwa/
Sacramento River Water Reliability Study (SRWRS)	Placer County Water Agency and U.S. Bureau of Reclamation	<p>The U.S. Bureau of Reclamation and Placer County Water Agency (PCWA), on behalf of PCWA, Sacramento Suburban Water District, and the cities of Roseville and Sacramento, are investigating the viability of a joint water supply diversion from the Sacramento River to meet the needs of the cost-sharing partners. The Sacramento River Water Reliability Study (SRWRS) plan will be consistent with the Water Forum Agreement in pursuing a Sacramento River diversion to accomplish the following objectives envisioned in the agreement: (1) meeting the needs of planned future growth within the Placer-Sacramento region, (2) maintaining a reliable water supply while</p>	No	No	Yes	Reclamation web site. Site accessed August 20, 2009. URL = http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=907

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>reducing diversions of surface water from the American River in future dry years to preserve the river ecosystem, and (3) enhancing ground water conjunctive management to help sustain the quality and availability of ground water for the future.</p> <p>To meet the water supply needs of the cost-sharing partners, the SRWRS is identifying a package of water supply infrastructure components, including new or expanded diversions from the Sacramento, Feather, or American rivers, and new or expanded water treatment and pumping facilities, storage tanks, and major transmission and distribution pipelines. The SRWRS includes a feasibility study and an EIS/EIR for identified water supply alternatives as the basis for seeking necessary biological opinions and permits from the responsible resource agencies to allow execution of necessary agreements and construction of the recommended water supply infrastructure.</p>				
Liberty Island Conservation Bank	Reclamation District 2093	<p>This project received permits and approvals in 2009 to create a conservation bank on the northern tip of Liberty Island that would preserve, create, restore, and enhance habitat for native Delta fish species, including Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, California Central Valley steelhead, delta smelt, and Central Valley fall- and late fall-run Chinook salmon. The project consists of creating tidal channels, perennial marsh, riparian habitat, and occasionally flooded uplands on the site. The project also includes the breaching of the northernmost east-west levee, and preservation and restoration of shaded riverine aquatic habitat along the levee shorelines of the tidal sloughs.</p> <p>The island's private levees failed in the 1997 flood and were not recovered, leaving all but the upper 1,000 acres and the adjacent levees permanently flooded. These upper acres encompass the proposed bank. The lower nearly 4,000 acres will remain, at least for the near future, predominantly open water and subtidal because tidal elevations are too great for marsh or riparian habitat.</p>	No	Yes	Yes	<p>CEQAnet web site. Site accessed July 30, 2009. URL = http://www.ceqanet.ca.gov/ProjDocList.asp?ProjectPK=595278</p> <p>Delta Protection Commission web site. March 2007 Preliminary Bank Proposal. Site accessed July 30, 2009. URL = http://www.delta.ca.gov/meetings/pdf/2007/092707_item_15.pdf</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Flood Management Program	Sacramento Area Flood Control Agency, Central Valley Flood Protection Board, and U.S. Army Corps of Engineers	The Sacramento Area Flood Control Agency (SAFCA) Flood Management Program includes studies, designs, and construction of flood control improvements. In the South Sacramento area, SAFCA projects include the South Sacramento Streams Project and the Sacramento River Bank Protection Project. The South Sacramento Streams Project consists of levee, floodwall, and channel improvements starting south of the town of Freeport along the Sacramento River to protect the City of Sacramento from flooding associated with Morrison, Florin, Elder, and Unionhouse creeks. The Sacramento River Bank Protection Project, which is implemented and funded primarily through the U.S. Army Corps of Engineers, addresses long-term erosion protection along the Sacramento River and its tributaries. Bank protection measures typically consist of large angular rock placed to protect the bank, with a layer of soil/rock material to allow bank re-vegetation. SAFCA contributes to funding the local share for bank protection activities within its jurisdiction.	Yes	Yes	Yes	SAFCA web site. South Sacramento Streams Project information. Site accessed January 15, 2013. URL = http://www.safca.org/Programs_SoSacStreams.html SAFCA web site. Sacramento River Bank Protection Program information. Site accessed January 15, 2013. URL = http://www.safca.org/Programs_SacBankProtection.html
Sacramento County General Plan Update	Sacramento County	The existing Sacramento County General Plan, adopted in 1993, has a time horizon of 2010. In 2002, the County initiated a comprehensive general plan update to guide the growth and development of the County through the year 2030. In June 2007, the county issued a draft updated general plan and began environmental review. The plan was adopted on November 9, 2011. The general plan update covers the entire unincorporated portion of Sacramento County, including portions of the Delta within Sacramento County. The update also includes a Delta Protection Element that identifies goals and objectives within the primary zone of the Delta.	No	Yes	Yes	County of Sacramento. May 2009. Sacramento County General Plan Update Draft Environmental Impact Report, State Clearinghouse Number: 2007082086. (http://www.dera.saccounty.net/PublicNotices/SQLView/ProjectDetails/tabid/71/Default.aspx?ProjectID=31418) County of Sacramento. November 9, 2011. General Plan Update. Site accessed January 15, 2013. URL = http://www.msa2.saccounty.net/planning/Pages/GeneralPlanUpdate.aspx

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Sacramento International Airport Master Plan	Sacramento County	The Master Plan for Sacramento International Airport was completed in 2004 and establishes a program for the improvement of existing facilities and the development of facilities at the Airport over the next 20 years. The plan identifies the type and extent of facilities that are required to meet projections of aviation demand and the airport functions, including the airfield, terminal and related passenger services, cargo, general aviation, airport support, and access. The Final Environmental Impact Report was completed in 2007. The Terminal Modernization is expected to be completed by 2011.	Yes	Yes	Yes	Sacramento Airports web site. Sacramento International Airport Master Plan. Site accessed December 15, 2009. URL = http://www.sacairports.org/int/planning/master_plan.html
South Sacramento Habitat Conservation Plan	Sacramento County and U.S. Fish and Wildlife Service	The proposed South Sacramento Habitat Conservation Plan (HCP) is a regional plan to address issues related to species conservation, agricultural protection, and urban development in south Sacramento County. The proposed HCP would cover 40 different species of plants and wildlife including 10 that are state or federally listed as threatened or endangered, and allow land owners to engage in the “incidental take” of listed species (i.e., to destroy or degrade habitat) in return for conservation commitments from local jurisdictions. The conservation measures outlined in the HCP would minimize and mitigate the impact of incidental take and provide for the conservation of covered species that may occur in the plan area. The geographic location of the proposed HCP includes a combined 341,000 acres within south Sacramento County (unincorporated area) and the cities of Rancho Cordova, Elk Grove, and Galt.	No	Yes	Yes	Sacramento County web site. Sacramento County. November 2, 2009. Preliminary Draft South Sacramento Habitat Conservation Plan. Site accessed January 15, 2013. URL = http://www.msa2.saccounty.net/planning/Pages/SSHCPTablesOfContents.aspx
Sacramento Stormwater Quality Partnership	Sacramento County, Sacramento, Citrus Heights, Elk Grove, Folsom, Galt, and Rancho Cordova	The Sacramento Stormwater Quality Partnership (SSQP) is a collaborative of public agencies that protects and improves water quality in local waterways for the benefit of the community and the environment. The partnership’s main charge is to oversee compliance with the Sacramento Area-wide Municipal Stormwater Permit, which is designed to comply with state and federal clean water regulations (NPDES Stormwater Permit No. CAS082597). The goals of the partnership are to: educate and inform the public about urban runoff pollution; encourage public participation in community and clean-up events; work with industries and businesses to encourage pollution prevention; require construction activities to reduce erosion and pollution; and require developing projects to include pollution controls	Yes	Yes	Yes	Sacramento Stormwater Quality Partnership website. Site accessed January 15, 2013. URL = http://www.beriverfriendly.net/ Sacramento Stormwater Quality Partnership website. Stormwater Quality Design Manual. Accessed January 15, 2013. URL =

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		that will continue to operate after construction is complete. Program elements include monitoring, target pollutant reduction, special studies (such as evaluating the effectiveness of BMPs), and public outreach.				http://www.beriverfriendly.net/newdevelopment/stormwaterqualitydesignmanual/#SWQ_DesignManual Sacramento County Stormwater Quality Program web site. Stormwater Quality Improvement Plan. 2009. Site accessed January 15, 2013. URL = http://www.beriverfriendly.net/documents/
SRWTP Facility Upgrade Project (EchoWater)	Sacramento Regional County Sanitation District	Upgrade existing secondary treatment facilities to advanced unit processes including improved nitrification/denitrification and filtration. The Sacramento Regional County Sanitation District is upgrading its existing facilities at the Sacramento Regional Wastewater Plant to meet new NPDES permit requirements. Project implementation would not result in an increase in permitted wastewater treatment capacity; however, would result in improved treated effluent water quality. The project will upgrade existing secondary treatment facilities to advanced unit processes including improved nitrification/denitrification and filtration.	No	Yes	Yes	http://www.regionalsan.com/sites/main/files/file-attachments/echowater_fei_r_09.12.14.pdf
San Francisco Bay Plan Amendment and Special Programs	San Francisco Bay Conservation and Development Commission	The San Francisco Bay Conservation and Development Commission (BCDC) is a 27-member commission created by the California Legislature in 1965 dedicated to the protection and enhancement of San Francisco Bay and to the encouragement of the Bay's responsible use. The commissioners are appointees from local governments and state/federal agencies. The BCDC has jurisdiction over the open water, 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, and some inland areas. It regulates all filling and dredging in San Francisco Bay (which includes San Pablo and Suisun Bays, sloughs and certain creeks and tributaries that are	No	Yes	Yes	San Francisco Bay Conservation and Development Commission web site. Draft Staff Report and Preliminary Recommendation for Proposed Bay Plan Amendment 1-08 Concerning Climate Change. Site accessed

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>part of the Bay system, salt ponds and certain other areas that have been diked-off from the Bay), protects Suisun Marsh, regulates new development within the first 100 feet inland from the Bay, pursues an active planning program to study Bay issues, and engages in the region-wide state and federal program to prepare a Long Term Management Strategy for dredging and dredge material disposal in San Francisco Bay.</p> <p>Among its various responsibilities, the BCDC sponsors special programs that address climate change planning; subtidal habitat research, restoration and management; and a long-term management strategy for the placement of dredged material in the San Francisco Bay region.</p>				<p>January 15, 2013. URL = http://www.bcdc.ca.gov/proposed_bay_plan/bp_amend_1-08.shtml</p>
San Francisco Bay Mercury TMDL	San Francisco Bay Region Water Quality Control Board	<p>San Francisco Bay is impaired because mercury contamination is adversely affecting existing beneficial uses, including sport fishing, preservation of rare and endangered species, and wildlife habitat. On February 12, 2008, the U.S. Environmental Protection Agency approved a Basin Plan amendment incorporating a TMDL for mercury in San Francisco Bay and an implementation plan to achieve the TMDL. The amendment was formerly adopted by the San Francisco Bay Water Board, the State Water Resources Control Board, and the state Office of Administrative Law. It is now officially incorporated into the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The San Francisco Bay mercury TMDL, which includes the waters of the Delta within the San Francisco Bay region, is intended to: 1) reduce mercury loads to achieve load and wasteload allocations, 2) reduce methylmercury production and consequent risk to humans and wildlife exposed to methylmercury, 3) conduct monitoring and focused studies to track progress and improve the scientific understanding of the system, and 4) encourage actions that address multiple pollutants. The implementation plan establishes requirements for dischargers to reduce or control mercury loads and identifies actions necessary to better understand and control methylmercury production. In addition, it addresses potential mercury sources and describes actions necessary to manage risks to Bay fish consumers. Load reductions are expected via implementation of the Delta Methylmercury TMDL (river source),</p>	Yes	Yes	Yes	SFBRWQCB. 2006. Basin Plan Amendment.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		plus urban runoff management, Guadalupe River mine remediation, municipal and industrial wastewater source controls and pretreatment, and sediment remediation.				
Alameda Watershed Habitat Conservation Plan	San Francisco Public Utilities Commission, U.S. Fish and Wildlife Service, and National Marine Fisheries Service.	San Francisco Public Utilities Commission (SFPUC) is in the process of developing a Habitat Conservation Plan in compliance with the federal Endangered Species Act for the purpose of conserving sensitive species that could be affected by operations and maintenance activities in the Alameda Creek watershed. The HCP proposes coverage for 17 species, including steelhead and Chinook salmon, over a period 30 years. Activities covered by the HCP include those in the Alameda Watershed Management Plan adopted in 2000 to maintain and improve source water quality and supply while preserving and enhancing the watershed's ecological resources. The SFPUC-owned Alameda Watershed consists of 36,000 acres of rolling grasslands, native woodlands, scrub and freshwater marshes within the Southern Alameda Creek Watershed. The conservation measures are expected to consist of a combination of avoidance and minimization measures, water and land management, river and stream restoration, barrier modification, and threat abatement.	No	Yes	Yes	SFPUC web site. Site accessed on January 15, 2013. URL = http://sfwater.org/index.aspx?page=412
San Joaquin County Multi-Species Habitat Conservation and Open Space Plan	San Joaquin Council of Governments	Permitted in 2000, the key purpose of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (Plan) is to provide a strategy for balancing the need to conserve open space and the need to convert open space to non-open space uses. These goals are intended to be met while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); providing and maintaining multiple-use open spaces that contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to project proponents and society at large. The conservation strategy relies on minimizing, avoiding, and mitigating impacts on the species covered by the Plan. Minimization of impacts on covered species takes a species-based approach	Yes	Yes	Yes	San Joaquin Council of Governments web site. San Joaquin County. November 14, 2000. San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. Site accessed on January 15, 2013. URL = http://www.sjcog.org/programs-projects/Habitat_files/The-Plan.htm

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		emphasizing the implementation of measures to minimize incidental take by averting the actual killing or injury of individual covered species and minimizing impacts to habitat for such species on open space lands converted to non-open space uses. Unavoidable impacts to covered species are addressed through a habitat-based approach that emphasizes compensation for habitat losses through the establishment, enhancement and management-in-perpetuity of preserves composed of a specific vegetation types or association of vegetation types (habitats) upon which discrete groups of covered species rely. The purchase of easements from landowners willing to sell urban development rights is the primary method for acquiring preserves. The Plan identifies zones distinguished by a discrete association of soil types, water regimes (e.g., Delta lands subject to tidal influence, irrigated lands, lands receiving only natural rainfall), elevation, topography and vegetation types. In general, impacts within a particular zone are mitigated within the same zone.				
San Joaquin County General Plan Update	San Joaquin County	The San Joaquin County General Plan 2010 was adopted on July 29, 1992. The general plan provides guidance for future growth in a manner that preserves the county's natural and rural assets. Most of the urban growth is directed to existing urban communities. In June 2008, San Joaquin County began the process to update the 1992 general plan. The general plan update will provide the blueprint for growth in the county unincorporated areas through 2030.	No	Yes	Yes	San Joaquin County General Plan Update web site. San Joaquin County. October 2009. San Joaquin County General Plan Update Staff Recommended Alternative. Sites Accessed November 26, 2012. URL = http://www.sjcgpu.com/overview.html#what
San Joaquin County, Stockton, and Tracy Stormwater Management Programs	San Joaquin County (Department of Public Works), Stockton (Municipal Utilities Department), Tracy (Water	San Joaquin County has developed a Stormwater Management Program committed to protecting local rivers and the Delta by involving and educating residents in stormwater pollution prevention, regulating stormwater runoff from construction sites, investigating non-stormwater discharges, and reducing non-stormwater run-off from municipal operations. Storm drainage is conveyed via County storm drains to the Calaveras, Mokelumne, Old, and San Joaquin Rivers, where it ultimately flows into the Delta. In addition to the County program, several municipalities in San	Yes	Yes	Yes	County of San Joaquin. September 2003. Stormwater Management Plan. City of Stockton. April 2009. City of Stockton Stormwater Management Plan. City of Tracy. September

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	Resources Department), and State Water Resources Control Board	Joaquin County have developed stormwater management programs and obtained National Pollutant Discharge Elimination (NPDES) permits from the State Water Resources Control Board (SWRCB). Permits issued for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities are typically issued to a group of co-permittees encompassing an entire metropolitan area. These permits are reissued as the permits expire. For smaller municipalities, the first 5-year term of the NPDES permits were adopted by the SWRCB in 2003 and expired on May 1, 2008. Under the General Permit, Section H.21, Continuation of Expired Permit, the General Permit continues in force and in effect until a new General Permit is issued or the SWRCB rescinds the General Permit. The goals of the City of Stockton's program are to reduce the degradation of the beneficial uses of the San Joaquin River and tributary streams and the regional groundwater aquifer caused by urban runoff in the metropolitan area of Stockton. The City of Tracy's NPDES permit requires the City to develop and implement a Storm Water Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable.				2003. Stormwater Management Program. Site Accessed January 15, 2013. URL = http://library.municode.com/HTML/16660/level2/TI11PUUT_CH11.34STMADICO.html#TOPTITLE
Emergency Storage Project	San Diego County Water Authority	The San Diego County Water Authority Emergency Storage Project increases storage of water imported from the Delta or Colorado River to be used if the imported water supplies are disrupted by a drought or catastrophe. The Emergency Storage Project includes construction of the new Olivenhain Reservoir, expansion of San Vicente Reservoir and Reservoir, pipelines to connect Olivenhain and San Vicente reservoirs to the Second Aqueduct. The water facilities for the Emergency Storage Project are under construction from 2000 to late 2014.	Yes	Yes	Yes	San Diego County Water Authority Project Website. Site accessed January 20, 2015 URL= http://www.sdcwa.org/emergency-storage-project
Delta Wetlands Project	Semitropic Water Storage District	The Delta Wetlands Project involves the construction of a new water diversion and storage system on two islands in the Sacramento-San Joaquin River Delta (Delta) – Bacon Island and Webb Tract (Reservoir Islands). The Reservoir Islands provide for a total estimated storage capacity of 215 thousand acre-feet. The Delta Wetlands Project would increase the availability of high-quality water in the Delta for export or outflow through the following: (1) diversion of water on to the	No	Yes	Yes	CEQAnet web site. Site accessed September 2, 2009. URL = http://www.ceqanet.ca.gov/ProjDocList.asp?ProjectPK=1718 Delta Wetlands web site.

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		Reservoir Islands during high-flow periods (i.e., December through March); (2) storage of water on the Reservoir Islands; (3) mitigation for wetland and wildlife effects of the water storage operations on the Reservoir Islands by implementing a habitat management plan on Bouldin Island and Holland Tract; (4) supplemental water storage in Semitropic Groundwater Storage Bank and the Antelope Valley Water Bank; (5) discharging water for export to designated south- of-Delta users when excess CVP or SWP pumping capacity is available (i.e., typically July through November); and (6) releasing water for water quality and outflow enhancement in the Bay-Delta Estuary typically from September through November.				Site accessed January 15, 2013. URL = http://www.deltawetlands.com SWRCB. 2001. Final environmental impact report for the Delta Wetlands Project. January. USACE. 2001. Final environmental impact statement for the Delta Wetlands Project. July. Semitropic Water Storage District. August 2011. Final Delta Wetlands Project Place of Use Environmental Impact Report.
Solano Multispecies Habitat Conservation Plan	Solano County Water Agency	The Solano Habitat Conservation Plan (HCP) is intended to support the issuance of an incidental take permit under the federal Endangered Species Act for a period of 30 years. This permit is required by the March 19, 1999 Solano Project Contract Renewal Biological Opinion between the U.S. Fish and Wildlife Service and U.S. Bureau of Reclamation. The scope of the Solano HCP was expanded beyond the requirements of the Biological Opinion to include additional voluntary applicants and additional species for incidental take coverage. Thirty-seven (37) species are proposed to be covered under the Solano HCP. The minimum geographical area to be covered is the Solano County Water Agency’s contract service area that is the cities of Fairfield, Vacaville, Vallejo, Suisun City, the Solano Irrigation District and the Maine Prairie Water District. The area covered by the HCP is all of Solano County and a small portion of Yolo County. The Final Administrative Draft was submitted to the lead agencies in June 2009. The HCP includes a Coastal Marsh Natural Community Conservation Strategy designed to maintain the water and sediment quality standards, hydrology of this natural community; contribute to the	No	Yes	Yes	Solano County Water Agency web site. Habitat Conservation Plan Final Administrative Draft. October 2012. Site accessed January 15, 2013. URL = http://www.scwa2.com/Conservation_Habitat_Docs.aspx

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		restoration of tidally influenced coastal marsh habitat; and promote habitat connectivity. Primary conservation actions include preservation (primarily through avoidance), restoration, invasive species control, and improvement of water quality. The plan area Covers 580,000 acres, which includes 12,000 acres of proposed development and 30,000 acres that will be preserved.				
Bay-Delta Water Quality Control Plan Update	State Water Resources Control Board	The State Water Board is updating the 2006 Bay-Delta Water Quality Control Plan (WQCP) in four phases: Phase I: Modifying water quality objectives (i.e., establishing minimum flows) on the Lower San Joaquin River and Stanislaus, Tuolumne, and Merced Rivers to protect the beneficial use of fish and wildlife and (2) modifying the water quality objectives in the southern Delta to protect the beneficial use of agriculture; Phase II: Evaluating and potentially amending existing water quality objectives that protect beneficial uses and the program of implementation to achieve those objectives. Water quality objectives that could be amended include Delta outflow criteria; Phase III: Requires changes to water rights and other measures to implement changes to the WQCP from Phases I and II; Phase IV: Evaluating and potentially establishing water quality criteria and flow objectives that protect beneficial uses on tributaries to the Sacramento River. The recirculated Supplemental Environmental Document for Phase 1 of the update to the Bay-Delta Water Quality Control Plan will be released in 2015.	Yes	Yes	Yes	State Water Resources Control Board website. Site accessed January 24, 2015 URL = http://www.swrcb.ca.gov/waterrights/water_issues/programs/bay_delta/
California Water Boards' Strategic Plan Update – 2008-2012	State Water Resources Control Board	The Strategic Plan Update broadly identifies the SWRCB's vision and direction for the future. It identifies goals intended to achieve that vision, which include: implementing strategies to fully support the beneficial uses for all 2006-listed water bodies; improving and protecting groundwater quality in high-use basins; increasing sustainable local water supplies available for meeting existing and future beneficial uses and ensuring adequate flows for fish and wildlife habitat; comprehensively addressing water quality protection and restoration in consideration of the connections between water quality, water quantity, and climate change, throughout California's water planning processes; improving Water Board transparency and	Yes	Yes	Yes	State Water Resources Control Board website. Site accessed January 20, 2015 URL = http://www.swrcb.ca.gov/water_issues/hot_topics/strategic_plan/2007update.shtml

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>accountability; enhancing consistency across the Water Boards; and ensuring that the Water Boards have access to information and expertise. The plan also identifies environmental priorities that focus on strategies for achieving environmental outcomes associated with protecting the State’s surface waters and groundwaters, and promoting sustainable water supplies.</p> <p>To better address the implementation of coordinated activities in the Bay-Delta, the State Water Board adopted Resolution 2007-0079 in 2007; similar resolutions were adopted by the San Francisco Bay and Central Valley regional water boards. In those resolutions, the Water Boards committed to ensure the protection of beneficial uses of water, and to the equitable administration of water rights in the Bay-Delta and its tributaries. A strategic work plan, completed in July 2008, describes the actions the Water Boards will undertake to protect beneficial uses of water in the Bay-Delta and the timelines and resource needs for implementing those actions. Workplan activities are divided into the nine broad elements covering a range of actions that: 1) implement the Water Boards’ core water quality responsibilities; 2) continue meeting prior Water Board commitments; 3) are responsive to priorities identified by the Governor and the Delta Vision Blue Ribbon Task Force; and 4) build on existing processes, such as the BDCP. The Water Boards do not have the capacity or responsibility to conduct all the planning and implementation activities needed to protect and restore fisheries, aquatic habitats, and other beneficial uses in the Bay-Delta. Accordingly, the work plan identifies activities that will need to be coordinated with other efforts.</p>				
<p>Financial Assistance Programs for Wastewater and Water Facilities for Small Communities</p>	<p>State Water Resources Control Board and Department of Public Health</p>	<p>SWRCB Resolution No. 200800048 includes the Small Community Wastewater Strategy to assist small and/or disadvantaged communities with wastewater needs for training and funding. The Small Community Wastewater Grant Program and Clean Water State Revolving Fund Program provide grants, low-interest loans and bonds for construction of wastewater facilities. The Department of Public Health Drinking Water State Revolving Fund provides grants and low-interest loans for disadvantaged and small communities. On February 19, 2013 the State Water Board approved a streamlined process.</p>	Yes	Yes	Yes	<p>State Water Resources Control Board website. Site accessed January 20, 2015 URL= http://www.waterboards.ca.gov/water_issues/programs/grants_loans/small_community_wastewater_grant/</p>

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Groundwater Ambient Monitoring and Assessment Program	State Water Resources Control Board, Central Valley Regional Water Quality Control Board, and Department of Public Health	The SWRCB and/or Central Valley RWQCB have an ongoing program to establish water quality objectives to protect beneficial uses of surface water and groundwater. Existing programs have focused on hazardous substances from landfills, waste disposal sites, fuel storage, and industrial facilities. The Groundwater Ambient Monitoring and Assessment program has been implemented to identify emerging pollutants and other constituents that affect drinking water quality. Currently, there is only one subbasin in the Central Valley that is under study as priority basin (western San Joaquin Valley near Tracy). This program is being coordinated with the Department of Public Health California Drinking Water Source Assessment and Protection program that provides information to water users. Information from these programs is used by these agencies to establish cleanup programs to protect groundwater quality.				State Water Resources Control Board website. Site accessed January 20, 2015 URL = http://www.waterboards.ca.gov/gama/
Delta Water Supply Project	Stockton	The Delta Water Supply Project is a new supplemental water supply for the Stockton Metropolitan Area by diverting water from the Delta and conveying it through a pipeline to a surface water treatment plant, where it would be treated to the highest drinking water standards and distributed. Initially, the project would have the capacity to treat and deliver up to 30 million gallons per day (mgd) or 33,600 acre-feet of water per year, meeting approximately one third of Stockton's water needs.	No	Yes	Yes	City of Stockton Municipal Utilities Department project web site. Site accessed January 15, 2013. URL = http://www.deltawatersupplyproject.com/
Battle Creek Salmon and Steelhead Restoration Project	U.S. Bureau of Reclamation and California State Water Resources Control Board	Construction of the Battle Creek Salmon and Steelhead Restoration Project was initiated in 2009 reestablish approximately 42 miles of prime salmon and steelhead habitat on Battle Creek, plus an additional 6 miles on its tributaries. The species benefited by the project include the Central Valley spring-run Chinook salmon (state- and federally listed as threatened), the Sacramento River winter-run Chinook salmon (state- and federally listed as endangered), and the Central Valley steelhead (federally listed as threatened). Restoration of Battle Creek will be accomplished primarily through the modification of the Battle Creek Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project No. 1121) facilities and operations, including instream flow releases. Facility changes include the removal of five diversion dams and construction of fish ladders and	No	Yes	Yes	Battle Creek Watershed Conservancy web site. Site accessed on January 15, 2013. URL = http://www.battle-creek.net/restoration.html Reclamation and SWRCB. 2005. Battle Creek Salmon and Steelhead Restoration Project final environmental impact statement/environmental impact report. July 2005.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
CALFED Levee Stability Program	U.S. Army Corps of Engineers	<p>fish screens at three diversion dams. The Pacific Gas and Electric Company (PG&E) is the owner and licensee of the Hydroelectric Project. Any changes to the Hydroelectric Project trigger the need for PG&E to seek a license amendment from FERC.</p> <p>The Restoration Project has been developed in collaboration with various resource agencies, including the U.S. Fish and Wildlife Service, National Marine Fisheries Service, the California Department of Fish and Wildlife, and the California Bay Delta Authority, and in conjunction with participation from the public, including the Greater Battle Creek Watershed Working Group and the Battle Creek Watershed Conservancy.</p> <p>The California Bay-Delta Program’s (CALFED) levee stability program provides for long-term protection of resources in the Delta by maintaining and improving the integrity of the area’s extensive levee system. Funds will be used by USACE to continue levee stability projects in the Delta. The federal CALFED Act (PL 108-361) directed USACE to deliver a report that identified and prioritized potential levee stability projects in the Delta that could be carried out with the authorized \$90 million in federal funds. An additional \$106 million was authorized to be appropriated by Section 3015 of WRDA 2007. To identify critically needed projects with active non-federal support, USACE invited Delta stakeholders to submit project proposals with letters stating their willingness to participate as cost-sharing sponsors. In response, Delta area reclamation districts and flood management agencies submitted 54 project proposals totaling more than \$1 billion in estimated costs.</p> <p>USACE evaluated proposals and prioritized potential projects according to how well they met USACE environmental, economic, and other implementation criteria. The USACE short-term strategy is to move quickly to construction on high priority levee reconstruction projects identified in that report. As part of this program, USACE is conducting emergency response planning. USACE has entered into a Memorandum of Agreement with DWR that allows the agencies to initiate geographic information system Flood Contingency Mapping for Delta counties and the Delta region.</p>	Yes	No	No	<p>URL = http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=99</p> <p>This project is no longer funded.</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Delta Dredged Sediment Long-Term Management Strategy (LTMS)	U.S. Army Corps of Engineers	The Delta Dredged Sediment Long-Term Management Strategy is a cooperative planning effort to coordinate, plan, and implement beneficial reuse of sediments in the Delta. Five agencies (U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, California Department of Water Resources, California Bay Delta Authority, and the Central Valley Regional Water Quality Control Board) have begun to examine Delta dredging, reuse, and disposal needs. The strategy development process will examine and coordinate dredging needs and sediment management in the Delta to assist in maintaining and improving channel function (navigation, water conveyance, flood control, and recreation), levee rehabilitation, and ecosystem restoration. Agencies and stakeholders will work cooperatively to develop a sediment management plan that is based on sound science and protective of the ecosystem, water supply, and water quality functions of the Delta. As part of this effort, the sediment management plan will consider regulatory process improvements for dredging and dredged material management so that project evaluation is coordinated, efficient, timely, and protective of Delta resources.	Yes	Yes	Yes	Delta Protection Commission web site. Monthly USACE fact sheet on Delta projects. Site accessed January 15, 2013. http://www.spn.usace.army.mil/projects/deltaltms/LTMSFacts_Apr24.pdf
Lower San Joaquin Feasibility Study	U.S. Army Corps of Engineers	The Lower San Joaquin Feasibility Study is intended to determine if there is a federal interest in providing flood risk management and ecosystem restoration improvements along the Lower (northern) San Joaquin River. The Lower San Joaquin River study area includes the San Joaquin River from the Mariposa Bypass downstream to, and including, the city of Stockton. The study area also includes the channels of the San Joaquin River in the southernmost reaches of the Delta: Paradise Cut and Old River as far north as Tracy Boulevard and Middle River as far north as Victoria Canal. The floodplains of the lower San Joaquin River and its tributaries are also included in the study area.	No	Yes	Yes	U.S. Army Corps of Engineers. 2009. URL = http://www.sjafca.com/lower_sj_river_feasibility.php
Sacramento River Bank Protection Project	U.S. Army Corps of Engineers	Originally authorized by Section 203 of the Flood Control Act of 1960, the Sacramento River Bank Protection Project is a long-term flood risk management project designed to enhance public safety and help protect property along the Sacramento River and its tributaries. While the original authorization approved the rehabilitation of 430,000 linear feet of levee, the 1974 Water Resources Development Act added 405,000 linear feet to the authorization and a 2007 bill authorized	No	Yes	Yes	U.S. Army Corps of Engineers web site. Accessed March 30, 2015. URL = http://www.spk.usace.army.mil/Missions/CivilWorks/SacramentoRiverBankPro

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		another 80,000 linear feet for a total of 915,000 linear feet of project. The Corps is set to release a Post Authorization Change Report, including an Environmental Impact Statement, to address the effects of the latest authorization. The U.S. Army Corps of Engineers, Sacramento District is responsible for implementation of the project in conjunction with its non-federal partner, the California Central Valley Flood Protection Board. A Draft Post Authorization Change Report Draft Environmental Impact Statement/Environmental Impact Report was released in December 2014.				tection.aspx Draft Post Authorization Change Report, Draft Environmental Impact Statement/Environmental Impact Report. 2014. URL = http://www.spk.usace.army.mil/Portals/12/documents/civil_works/SacBank/Sac_Bank_PACR_Public_Draft.pdf
Suisun Bay Channel Operations and Maintenance	U.S. Army Corps of Engineers	The project is located 30 miles northeast of San Francisco and is part of the San Francisco Bay to Stockton Ship Channel. The project provides for annual maintenance dredging of the main channel, 300 feet wide and -35 feet deep at Mean Lower Low Water, from the Carquinez Strait at Martinez to Pittsburg (called Suisun Bay Channel), and maintenance dredging of New York Slough Channel farther upstream to Antioch (a distance of 17 miles). The project also provides annual maintenance dredging for a channel 250 feet wide and -20 feet deep south of Seal Islands, from the main channel at Point Edith to the main channel again at Port Chicago at mile 6.	Yes	Yes	Yes	USACE web site. Suisun Bay Channel Operations and Maintenance. Site accessed January 15, 2013. URL = http://www.spn.usace.army.mil/projects/suisunbayo&m.html
Suisun Channel (Slough) Operation and Maintenance	U.S. Army Corps of Engineers	The Suisun Channel connects the City of Suisun near Fairfield, California to Grizzly Bay and thus to Suisun Bay 30 miles northeast of San Francisco. Project operations and maintenance provides for maintenance dredging of an entrance channel in Suisun Bay 200 feet wide and -8 feet deep, and thence a channel 100 to 125 feet wide and -8 feet deep for 13 miles to the head of navigation at City of Suisun, with a turning basin. This shallow draft channel is maintained on an infrequent basis.	Yes	Yes	Yes	USACE web site. Suisun Bay Channel Operations and Maintenance. Site accessed January 15, 2013. URL = http://www.spn.usace.army.mil/projects/suisunchanelo&m.html

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Folsom Dam Safety and Flood Damage Reduction Joint Federal Project	U.S. Department of the Interior, U.S. Army Corps of Engineers	The Folsom Dam was built by the U.S. Army Corps of Engineers and transferred to the U.S. Bureau of Reclamation in 1956. The Folsom Dam Safety and Flood Damage Reduction Project (Folsom DS/FDR) was developed to coordinate Reclamation's and Corps' multiple authorized projects at the Folsom Facility. A FONSI and Final Supplemental EA was signed in April 2008. Phase II was completed by the Bureau of Reclamation in 2011 and handed off to the US Army Corps of Engineers to construct Phase III, a control structure, which is currently underway.	Yes	Yes	Yes	<p>Bureau of Reclamation, Mid-Pacific Region, Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement/ Environmental Impact Report, Folsom, California, March, 2007.</p> <p>Bureau of Reclamation, Mid-Pacific Region, U.S. Army Corps of Engineers, Record of Decision, Folsom Dam Safety and Flood Damage Reduction Joint Federal Project, Folsom, California, May, 2007.</p> <p>Bureau of Reclamation, Mid-Pacific Region, Finding of No Significant Impact and Final Supplemental Environmental Assessment to the Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement/ Environmental Impact Report, Folsom, California, April 2008.</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Delta Islands and Levees Feasibility Study	U.S. Army Corps of Engineers and California Department of Water Resources	The feasibility study will address flood risk management, ecosystem restoration, water quality, water supply, and a variety of other issues. The California Department of Water Resources' (DWR) Delta Risk Management Strategy studies will be used to define problems, opportunities, and specific planning objectives. The feasibility study provides the mechanism by which the U.S. Army Corps of Engineers (USACE) can participate in a cost-shared solution to a variety of water resources needs for which it has authority. USACE and DWR share the cost of the feasibility study equally.	No	Yes	Yes	Delta Protection Commission. Site accessed January 15, 2013. URL = http://www.spk.usace.army.mil/Missions/CivilWorks/SacramentoSanJoaquinDelta.aspx
San Francisco Bay to Stockton Deep Water Ship Channel Project	U.S. Army Corps of Engineers, Port of Stockton, and Contra Costa County Water Agency	The San Francisco Bay to Stockton Deep Water Ship Channel Project is a congressionally authorized project being implemented by the U.S. Army Corps of Engineers (USACE), the Port of Stockton, and Contra Costa County Water Agency. A joint EIS/EIR will evaluate the action of navigational improvements to the Stockton Deep Water Ship Channel. A General Reevaluation Report is being prepared to determine the feasibility of modifying the current dimensions of the West Richmond, Pinole Shoal, Suisun Bay, and Stockton Ship Channels, which are currently maintained to 35 feet and provide access to oil terminals, industry in Pittsburg, and the Port of Stockton. The proposed action consists of altering the depth of the deep draft navigation route.	No	Yes	Yes	USACE web site. Accessed July 9, 2009. URL = http://www.spn.usace.army.mil/projects/stockton_navigation/index.html USACE web site. Accessed July 9, 2009. URL = http://www.spn.usace.army.mil/projects/stockton_navigation/Combined%20F2%20handouts.pdf
Sacramento Deep Water Ship Channel Project	U.S. Army of Corps of Engineers and Port of Sacramento	The Sacramento River Deep Water Ship Channel Project is a Congressionally authorized project being implemented by USACE and the Port of Sacramento. The proposed project would complete the deepening and widening of the navigation channel to its authorized depth of 35 feet. Deepening of the existing ship channel is anticipated to allow for movement of cargo via larger, deeper draft vessels. Widening portions of the channel would increase navigational safety by increasing maneuverability. The 46.5-mile-long ship channel lies within Contra Costa, Solano, Sacramento, and Yolo counties and serves the marine terminal facilities at the Port of Sacramento. The Sacramento Deep Water Ship Channel joins the existing 35-feet-deep channel at New York Slough, thereby affording the Port of Sacramento access to San Francisco Bay Area harbors and the Pacific Ocean.	No	No	Yes	Sacramento Deep Water Ship Channel web site. Site accessed July 31, 2009. URL = http://www.sacramentoshipchannel.org/

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Delta-Mendota Canal/California Aqueduct Intertie	U.S. Bureau of Reclamation	<p>The Delta-Mendota Canal/California Aqueduct Intertie consists of constructing and operating a pumping plant and pipeline connection between the Delta Mendota Canal (DMC) and the California Aqueduct. The Intertie, which is now operational, is used to achieve multiple benefits, including meeting current water supply demands, allowing for the maintenance and repair of the Central Valley Project (CVP) Delta export and conveyance facilities, and providing operational flexibility to respond to emergencies related to both the CVP and the State Water Project. The Intertie includes a 450-cfs pumping plant at the DMC that allows up to 400 cfs to be pumped from the DMC to the California Aqueduct via an underground pipeline. The additional 400 cfs allows the Jones Pumping Plant to pump to its authorized amount of 4,600 cfs. Because the California Aqueduct is located approximately 50 feet higher in elevation than the DMC, up to 900 cfs flow can be conveyed from the California Aqueduct to the DMC using gravity flow.</p> <p>The Intertie is owned by the federal government and operated by the San Luis & Delta-Mendota Water Authority. An agreement among Reclamation, DWR, and the San Luis & Delta-Mendota Water Authority identifies the responsibilities and procedures for operating the Intertie.</p>	No	Yes	Yes	<p>Reclamation. November 2009. Delta-Mendota Canal/California Aqueduct Intertie Final Environmental Impact Statement. Reclamation website. Accessed January 15, 2013. URL = http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=1014</p>
Shasta Lake Water Resources Investigation	U.S. Bureau of Reclamation	<p>The Shasta Lake Water Resources Investigation is currently being undertaken by the U.S. Bureau of Reclamation to determine the type and extent of federal interest in a multiple purpose plan to modify Shasta Dam and Reservoir to increase survival of anadromous fish populations in the upper Sacramento River; increase water supplies and water supply reliability to agricultural, municipal and industrial, and environmental purposes; and, to the extent possible through meeting these objectives, include features to benefit other identified ecosystem, flood damage reduction, and related water resources needs, consistent with the objectives of the CALFED Bay Delta Program. Anticipated alternatives for expansion of Shasta Lake include, among other features, raising the dam from 6.5 to 18.5 feet above current elevation, which would result in additional storage capacity of 256,000 to 634,000 acre-feet, respectively. The increased capacity is expected to improve water supply reliability and increase the cold water pool,</p>	No	Yes	Yes	<p>Reclamation. February 2012. Draft Feasibility Report. Site accessed January 15, 2013. URL = http://www.usbr.gov/mp/slwri/documents.html</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		which would provide improved water temperature conditions for anadromous fish in the Sacramento River downstream of the dam.				
San Luis Reservoir Expansion	U.S. Bureau of Reclamation	In 2001 Reclamation initiated the San Luis Low Point Improvement Project, a feasibility study on delivery reliability risks associated with algal blooms and low reservoir levels. In 2006 Reclamation initiated a Safety of Dams Corrective Action Study to determine actions to reduce seismic risks at the dam.	No	No	No	U.S. Bureau of Reclamation, Mid-Pacific Region. San Luis Reservoir Expansion, Draft Appraisal Report, Central Valley Project, California, December, 2013.
Delta-Mendota Canal Recirculation Feasibility Study	U.S. Bureau of Reclamation and California Department of Water Resources	Delta Mendota Canal (DMC) recirculation is a concept under study by the U.S. Bureau of Reclamation and California Department of Water Resources to augment San Joaquin River flows with Sacramento-San Joaquin River Delta water to reduce salinity and to maintain adequate flows required for beneficial uses. To accomplish this, the study is investigating options for recirculating water pumped from the Jones Pumping Plant, located in the south Delta near Tracy, through the DMC for release to the San Joaquin River. These releases would reach the San Joaquin River and eventually the south Delta via an existing wasteway or a yet to be identified route. The purpose of study is to meet certain requirements of PL 108-361 and D1641. The study has been proposed as a way “to provide flow, reduce salinity concentrations into the San Joaquin River, and reduce the reliance on the New Melones Reservoir for meeting water quality and fishery flow objectives through the use of excess capacity in export pumping and conveyance facilities” consistent with PL 108-361, Title 1, Section 103.	No	No	No	Reclamation web site. Site Accessed January 15, 2013. URL = http://www.usbr.gov/mp/dmcrecirc/index.html
North-of-the-Delta Offstream Storage Investigation	U.S. Bureau of Reclamation and California Department of Water Resources	The North-of-the-Delta Offstream Storage Investigation (NoDOS) evaluates the feasibility of offstream storage in the northern Sacramento Valley for improved water supply and water supply reliability, improved water quality, and enhanced survival of anadromous fish and other aquatic species. Specific objectives of the investigation are to: 1) increase water supplies to meet existing contract requirements, including improved water supply reliability, and provide greater flexibility in water management for agricultural, environmental, and municipal and industrial (M&I) users; 2) increase the survival of anadromous fish populations in the Sacramento River, as well as the survivability of other aquatic species; and 3) improve	No	Yes	Yes	Reclamation. 2008. North-of-the-Delta Offstream Storage Investigation Plan Formulation Report. September 2008.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>drinking water quality in the Delta.</p> <p>All initial alternatives include construction of a dam and reservoir at the Sites location, with various facilities and configurations for conveyance into and out of the reservoir.</p>				
Sacramento Valley Water Management Plan	U.S. Bureau of Reclamation and California Department of Water Resources	<p>In 1997, the State Water Resources Control Board (SWRCB) issued a notice of the water rights hearings to allocate responsibility for meeting the 1995 Delta Water Quality Control Plan (WQCP) objectives. Because the issues were so complex, the SWRCB divided the water rights proceedings into eight phases. Phase 8 was to allocate responsibility for satisfying the flow-related water quality objectives of the 1995 Delta WQCP among water right holders in the watersheds of the Sacramento, Cosumnes, and Calaveras Rivers. To avoid the consequences of delay associated with resolving Phase 8 issues, over 40 water suppliers in the Sacramento Valley, California Department of Water Resources (DWR), U.S. Bureau of Reclamation (Reclamation), and the Downstream Water Users developed a cooperative water management partnership to better manage water and provide a mechanism for satisfying Bay-Delta water quality and flow objectives. This partnership led to the development of the Short-Term Settlement Agreement which continues the commitment of Reclamation and DWR to meet the SWRCB D-1641 flow-related standards, and provides for a collaborative process among the parties to develop projects to meet water supply, water quality, and environmental needs in the Sacramento Valley, Bay-Delta, and throughout California. As a result of the parties' commitment, on January 31, 2003 the SWRCB dismissed Phase 8 of the Bay-Delta Hearings.</p> <p>As part of the agreement, 185,000 acre-feet of capacity is to be provided within three years of implementing the agreement to assist with meeting local and WQCP requirements as well as south of Delta needs. As part of the agreement, the parties agreed to further the objective to meet unmet water demands in the Sacramento Valley by providing at least 92,500 acre-feet, and up to a total of 185,000 acre-feet to support SWP and CVP water supplies during certain water year types. This would be accomplished through increased groundwater use and reservoir reoperation in lieu of river diversions.</p>	No	No	No	DWR web site. Sacramento Valley Water Management Plan. Site accessed July 22, 2009. URL = http://www.svwmp.water.ca.gov/

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Upper San Joaquin River Basin Storage Investigation	U.S. Bureau of Reclamation and California Department of Water Resources	<p>The Upper San Joaquin River Basin Storage Investigation is intended to examine how Upper San Joaquin Storage can enhance the San Joaquin River restoration efforts and improve water supply reliability for agricultural, municipal and industrial, and environmental uses in the Friant Division, the San Joaquin Valley, and other regions of the state. The Investigation also will evaluate integration of conjunctive management and water transfer concepts into project formulations. Additional storage is also expected to provide flood damage reduction benefits.</p> <p>The California Department of Water Resources (DWR), U.S. Bureau of Reclamation (Reclamation), and their partners have developed a two-phase Plan of Study. Phase 1 will identify water resource opportunities and issues in the Upper San Joaquin River watershed. This phase will include an appraisal of opportunities to increase surface storage and conjunctive uses for groundwater. Phase 2 will be more detailed and will begin with public meetings to determine the scope of the study. DWR and Reclamation will work with the public and key local, state and federal agencies, coordinate related activities, and present technical findings. Public involvement will be open and will guide the agencies' planning efforts.</p> <p>The objectives of the investigations are to: contribute to restoration of the San Joaquin River, improve water quality of the San Joaquin River, and facilitate additional conjunctive management and water exchanges that improve the quality of water deliveries to urban communities. To the extent possible, the Upper San Joaquin River Basin Storage Investigation will explore opportunities to provide other benefits that could include hydropower, flood control, and recreation.</p>	No	Yes	Yes	<p>Reclamation. May 29, 2009. Letter - Plan Formulation Report for the Upper San Joaquin River Basin Storage Investigation. Reclamation and DWR. October 2008. Upper San Joaquin River Basin Storage Investigation Plan Formulation Report.</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Water Year 2010 Interim Flows Project	U.S. Bureau of Reclamation and California Department of Water Resources	<p>The U.S. Bureau of Reclamation (Reclamation) is temporarily changing Friant Dam operations in Water Year 2010 to release Water Year 2010 Interim Flows from Friant Dam into the San Joaquin River and potentially downstream as far as the Sacramento-San Joaquin River Delta (Delta), as specified in the Stipulation of Settlement (Settlement) in NRDC et al. v. Kirk Rodgers et al., and as part of the San Joaquin River Restoration Project. The Water Year 2010 releases could be recaptured by existing water diversion facilities along the San Joaquin River and/or in the Delta. Interim Flows would be constrained by existing channel capacity, anticipated seepage, future agreements with downstream agencies, entities, and landowners, and the capacity of diversions, as well as water supply demand at the possible diversion locations. The purpose of the Water Year 2010 Interim Flows Project is to implement provisions of the Settlement related to Interim Flows and to collect relevant data to guide future releases of Interim Flows and Restoration Flows under the SJRRP. The full restoration flow schedule will be implemented no later than January 2014.</p> <p>See description of San Joaquin River Restoration Program, below.</p>	Yes	No (Interim)	No (Interim)	USBR and DWR. September 25, 2009. Final Environmental Assessment/Initial Study Water Year 2010 Interim Flows Project.
Grassland Bypass Project, 2010 - 2019	U.S. Bureau of Reclamation and San Luis & Delta Mendota Water Authority	<p>The purposes and objectives of the proposed continuation of the Grassland Bypass Project, 2010–2019 are:</p> <ul style="list-style-type: none"> • To extend the San Luis Drain Use Agreement in order to allow the Grassland Basin Drainers time to acquire funds and develop feasible drainwater treatment technology to meet revised Basin Plan objectives (amendment underway) and Waste Discharge Requirements by December 31, 2019; • To continue the separation of unusable agricultural drainage water discharged from the Grassland Drainage Area from wetland water supply conveyance channels for the period 2010–2019; and • To facilitate drainage management that maintains the viability of agriculture in the Project Area and promotes continuous improvement in water quality in the San Joaquin River; <p>The project would continue the present drainwater conveyance using the Drain with discharge of a portion of the collected drainwater to Mud Slough. New features include negotiation with the U.S. Bureau of Reclamation and other stakeholders for a 2010 Use Agreement for the</p>	No (Partial)	Yes	Yes	USBR and SLDMWA. August 2009. Grassland Bypass Project, 2010–2019 Final Environmental Impact Statement and Environmental Impact Report.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		Drain, to include an updated compliance monitoring plan, revised selenium and salinity load limits, an enhanced incentive performance fee system, a new Waste Discharge Requirement from the Regional Board, and mitigation for continued discharge to Mud Slough. In-Valley treatment/drainage reuse at the San Joaquin River Water Quality Improvement Project facility would be expanded to 6,900 acres.				
Agricultural Drainage Selenium Management Program Plan	U.S. Bureau of Reclamation and San Luis & Delta-Mendota Water Authority	Impairment of water quality in the San Joaquin River, the Delta, and San Francisco Bay has resulted in the completion of a TMDL for selenium in the lower San Joaquin River, listing of the western Delta as having impaired water quality for selenium, and initiation of a TMDL study for selenium in North San Francisco Bay. The overall goal of the Agricultural Drainage Selenium Management Program is to minimize discharges of selenium in subsurface agricultural drainage from the western San Joaquin Valley to the river and downstream areas. Actions being taken include reduction in the generation of agricultural drainage containing elevated levels of selenium (through land and irrigation management practices) and limiting where and when the drainage water can be discharged.	No	Yes	Yes	CVRWQCB. 2001. Total Maximum Daily Load for Selenium in the Lower San Joaquin River. Sacramento, California. Staff Report. August. Reclamation and San Luis & Delta-Mendota Water Authority. 2008. Grassland Bypass Project, 2010–2019 Environmental Impact Statement and Environmental Impact Report. Draft dated December. Reclamation. 2006. San Luis Drainage Feature Re-evaluation Final Environmental Impact Statement, Mid-Pacific Region, Sacramento, California. May 2006. SFBRWQCB Site accessed March 13, 2009. URL = http://www.swrcb.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/seleniumtmdl.shtml

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
2-Gates Project	U.S. Bureau of Reclamation and San Luis-Delta Mendota Water Authority	<p>The proposed 2-Gates Fish Protection Demonstration Project would install and operate removable gates at two key Delta locations to test the ability of the structures to manage turbidity plume dispersion towards the south Delta intakes. In a five-year pilot study, the gates would control flows in selected interior Delta channels to evaluate whether these changes reduce turbidity movement toward the south Delta intakes.</p> <p>Reclamation is the lead agency for the project, with the California Department of Water Resources providing technical assistance. Scientific advice will be provided by a panel of experts facilitated by the Delta Stewardship Council (formerly CALFED Bay-Delta Program). A funding source for the project has yet to be identified. Operational costs are undetermined.</p> <p>The project proposed that by operating the gates, movement of adult and juvenile delta smelt into the South Delta pumping area can be controlled. Gates would be closed for short periods December through February to control adult delta smelt movement and for moderate periods March through June to control larvae/juvenile delta smelt movement. Boat ramps would be used to allow boat passage when the gates are closed. From July through November, a period of high Delta boating activity, the gates would not operate, remaining in a fully open position.</p> <p>The proposed central Delta locations are on Old River between Bacon Island and Holland Tract, and Connection Slough between Mandeville and Bacon Islands.</p>	No	No	Yes	DWR web site. Delta Initiatives. 2-Gates Project fact sheet. Site accessed January 15, 2013. URL = http://www.water.ca.gov/deltainit/docs/TwoGatesProject.pdf
Red Bluff Diversion Dam Fish Passage Project	U.S. Bureau of Reclamation and Tehama Colusa Canal Authority	<p>The project modifies the Red Bluff Diversion Dam to reduce or minimize impacts on migration of anadromous fish, and improve the reliability of agricultural water supply in the Tehama-Colusa and Corning Canal systems. The project includes a new pumping plant and fish screen with a pumping capacity of 2,500 cubic feet per second (cfs). The initial installed pumping capacity is 2,000 cfs. There is no increase in water diversions above 2,500 cfs. The original diversion dam is currently in the decommissioning process.</p>	No	Yes	Yes	<p>TCCA Project web site. Project Brochure, February 2009. Site accessed January 15, 2013. URL = http://www.tccanal.com/RBDD-Bro-Singles1.pdf</p> <p>Reclamation web site. NEPA documents. Site accessed January 15, 2013.</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
						<p>URL= http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=237 Reclamation web site. Red Bluff Fish Passage Improvement Project. Site accessed September 2, 2013. URL= http://www.usbr.gov/mp/rbfish/</p>
Anadromous Fish Screen Program	U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service	The primary objective of the Anadromous Fish Screen Program (AFSP) is to protect juvenile Chinook salmon (all runs), steelhead, green and white sturgeon, striped bass and American shad from entrainment at priority diversions throughout the Central Valley. Section 3406 (b)(21) of the Central Valley Project Improvement Act (CVPIA) requires the Secretary of the Interior to assist the State of California in developing and implementing measures to avoid losses of juvenile anadromous fish resulting from unscreened or inadequately screened diversions on the Sacramento and San Joaquin rivers, their tributaries, the Delta, and the Suisun Marsh. Additionally, all AFSP projects meet Goal 3 of the CALFED Ecosystem Restoration Program's (ERP) Draft Stage 1 Implementation Plan.	Yes	Yes	Yes	<p>USFWS web site. Site accessed January 15, 2013. URL = http://www.fws.gov/cno/fisheries/cvpia/AnadromFishScreen.cfm</p>
American Basin Fish Screen and Habitat Improvement Project	U.S. Bureau of Reclamation, California Department of Fish and Wildlife, and Natomas Central Mutual Water Company	The U.S. Bureau of Reclamation and the California Department of Fish and Wildlife propose to authorize and provide funds to the Natomas Central Mutual Water Company (Natomas Mutual) to construct and operate the American Basin Fish Screen and Habitat Improvement Project. The purpose of the project is: (1) to avoid or minimize potentially adverse effects to fish, particularly anadromous juvenile fish, due to water diversions from the Sacramento River and Natomas Cross Canal by Natomas Mutual and other small pumps operated by individual landowners for diversion of water into the Natomas Basin; (2) to ensure reliability of Natomas Mutual's water diversion and distribution facilities for beneficial uses of its water supply within its service area; and (3) to maintain important habitat within the Natomas	No	Yes	Yes	<p>USBR and DFW. July 2008. American Basin Fish Screen and Habitat Improvement Project Sutter and Sacramento Counties, California Final Environmental Impact Statement/Environmental Impact Report. Site accessed January 15, 2013. URL = http://www.usbr.gov/mp/</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>Basin created by the operation of the Natomas Mutual’s water distribution facilities.</p> <p>The project would result in modifications of Natomas Mutual’s water diversion and distribution system adjacent to the Sacramento River and Natomas Cross Canal in Sacramento and Sutter counties, California. The modifications include the construction and operation of one or two positive-barrier fish screen diversion facilities; decommissioning and removing the Verona Diversion Dam and lift pumps; removing five pumping plants and one small private diversion; and modifying the distribution system. The project is anticipated to be implemented in three phases.</p>				<p>nepa/nepa_projdetails.cfm?Project_ID=783</p>
<p>San Luis Reservoir Low Point Improvement</p>	<p>U.S. Bureau of Reclamation, Santa Clara Valley Water District, and San Luis and Delta Mendota Water Authority</p>	<p>The U.S. Bureau of Reclamation and the California Department of Water Resources jointly manage San Luis Reservoir for the purpose of storing and reregulating Central Valley Project and State Water Project water from the Sacramento-San Joaquin Delta. San Luis Reservoir is an off-stream water storage facility that stores water for both projects. In 2000, the CALFED Programmatic Record of Decision identified the need to resolve the low point problem to potentially increase use of water from San Luis Reservoir by up to 200,000 acre-feet.</p> <p>The San Luis Reservoir Low Point Project is designed to address water supply reliability issues in San Luis Reservoir that result when water levels fall below 369 feet above sea level (corresponding to a reservoir capacity of 300,000 acre-feet) and create water quality degradation that has the potential to interrupt a portion of the San Felipe Division’s water supply. The term “low point” refers to a range of minimum pool elevations in San Luis Reservoir. During the late summer months if the reservoir elevation drops below 369 feet above sea level, the conditions in San Luis Reservoir promote the growth of algae in the reservoir. The water quality during the algal blooms is not suitable for agricultural water users with drip irrigation systems in San Benito County or municipal and industrial water users relying on existing water treatment facilities in Santa Clara County. The low point issue increases progressively as the reservoir continues to drop below elevation 369 feet. This creates a risk for the San Felipe Division</p>	<p>No</p>	<p>No</p>	<p>Yes</p>	<p>Reclamation. January 2011. Plan Formulation Report. Site accessed January 15, 2013. URL = http://www.usbr.gov/mp/sllpp/index.html</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		contractors because they rely on San Luis Reservoir for receiving their CVP allocation.				
Folsom Dam Safety and Flood Damage Reduction Project	U.S. Bureau of Reclamation, U.S. Army Corps of Engineers, Sacramento Area Flood Control Agency, and Central Valley Flood Protection Board	<p>The project represents a coordinated effort among the U.S. Bureau of Reclamation and U.S. Army Corps of Engineers to address dam safety and enhanced flood control at Folsom Dam. The project includes the Joint Federal Project Auxiliary Spillway, seismic improvements to the Main Concrete Dam and Mormon Island Auxiliary Dam (MIAD), static improvements to earthen structures, security upgrades, replacement of the Main Concrete Dam spillway gates, and a 3.5-foot (ft) raise to all Folsom Facility structures.</p> <p>Construction on the auxiliary spillway began in 2008 and is expected to be completed in 2015. The modifications to the dam would allow for the release of water sooner than is now possible, with the potential for higher releases should the downstream levees be improved to accommodate the increased flows. These larger, earlier releases from Folsom Reservoir would create and conserve flood storage space based on projected reservoir inflows resulting from a major storm impacting the upper American River watershed. However, the modifications would be operated using existing criteria until the completion of a revised Folsom Water Control manual and supporting supplemental environmental compliance documentation. The manual would be completed one year prior to completion of proposed structural modifications at Folsom Dam and Reservoir, at which time the full potential benefits of the proposed modifications would be realized.</p>	No	Yes	Yes	USBR, USACE, SAFCA, and CVFPB. March 2007. Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement/ Environmental Impact Report.
San Joaquin River Restoration Program	U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Water Resources and California Department of Fish and Wildlife	The San Joaquin River Restoration Program is a comprehensive long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of Merced River and restore a self-sustaining Chinook salmon fishery in the river while reducing or avoiding adverse water supply impacts from restoration flows. The restoration program is the product of more than 18 years of litigation, which culminated in a Stipulation of Settlement on the lawsuit known as NRDC, et al., v. Kirk Rodgers, et al. The settling parties reached agreement on the terms and conditions of the settlement, which was subsequently approved by Federal Court on October 23, 2006. The settling parties include the Natural Resources Defense Council, Friant Water Users Authority, and	Yes	Yes	Yes	San Joaquin River Restoration Program web site. Site accessed January 15, 2013. URL = http://www.restoresjr.net/Reclamation . September 28, 2012. Record of Decision.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>the U.S. Departments of the Interior and Commerce. The settlement's two primary goals are to:</p> <ul style="list-style-type: none"> • Restore and maintain fish populations in “good condition” in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish, and • Reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the settlement. <p>The settlement requires specific releases of water from Friant Dam to the confluence of the Merced River, which are designed primarily to meet the various life stage needs for spring- and fall-run Chinook salmon. The release schedule assumes continuation of the current average Friant Dam release of 116,741 acre-feet, with additional flow requirements depending on the year type. Interim flows began in October, 2009, and full restoration flows would begin no later than January 2014. Salmon will be reintroduced in the upper reaches no later than December 31, 2012. There are many physical improvements within and near the San Joaquin River that will be undertaken to fully achieve the river restoration goal. The improvements will occur in two separate phases that will focus on a combination of water releases from Friant Dam, as well as structural and channel improvements.</p> <p>The project was authorized and funded with the passage of San Joaquin River Restoration Settlement Act, part of the Omnibus Public Land Management Act of 2009 (Public Law 111-11).</p> <p>See description of Water Year 2010 Interim Flows Project, above.</p>				
Ballast Water Management Program	U.S. Coast Guard	<p>In July 2004, the Coast Guard established a ballast water management program for all vessels equipped with ballast water tanks that enter or operate within U.S. waters. This program requires vessels to maintain a ballast water management plan that is specific for that vessel and allows any master or appropriate official to understand and execute the ballast water management strategy for that vessel. The Coast Guard may impose a civil penalty if ships headed to the U.S. fail to submit a ballast water management reporting form.</p>	Yes	Yes	Yes	<p>U.S. Coast Guard web site. Ballast Water Management. Site accessed January 15, 2013. URL = http://www.uscg.mil/hq/cg5/cg522/cg5224/bwm.asp</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>The National Invasive Species Act (NISA) required the Coast Guard to establish national voluntary ballast water management guidelines. If the guidelines were deemed inadequate, NISA directed the Coast Guard to convert them into a mandatory national program. To comply with NISA, the Coast Guard has established both regulations and guidelines to prevent the introduction of these species because the original voluntary guidelines were deemed inadequate prior to establishing the regulations.</p>				
<p>Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and State Water Project</p>	<p>U.S. Department of Commerce, National Marine Fisheries Service, U.S. Bureau of Reclamation, and California Department of Water Resources</p>	<p>On June 4, 2009, NMFS issued a final biological opinion finding that continued operations of the Central Valley Project/State Water Project would likely jeopardize several listed species, including Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, Southern Distinct Population Segment of North American green sturgeon, and Southern Resident killer whales. The biological opinion effective through December 31, 2030.</p> <p>In its final biological opinion, NMFS identified a Reasonable and Prudent Alternative (RPA) that, if implemented, is believed to avoid the likelihood of jeopardizing the continued existence of these listed species. The following summarizes the actions identified in the RPA that would be undertaken by the U.S. Bureau of Reclamation and/or the California Department of Water Resources.</p> <ul style="list-style-type: none"> • Manage water temperature and water storage in Shasta Reservoir to benefit winter-run Chinook salmon in the Sacramento River • Provide flows and adequate water temperatures in Clear Creek to benefit spring-run Chinook salmon • Modify gate operation of the Red Bluff Diversion Dam (with the objective of removing the gates by 2012) to improve passage for salmon and green sturgeon • Improve juvenile salmonids rearing habitat in the lower Sacramento River and northern Delta • Improve survival of migrating juveniles by implementing additional gate closures at the Delta Cross Channel • Limit the strength of reverse flows in Old and New rivers to reduce entrainment of juvenile fish into the state and federal export facilities 	Yes*	Yes*	Yes	<p>NMFS. 2009. Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and State Water Project. June 4, 2009.</p>

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		<p>in the south Delta</p> <ul style="list-style-type: none"> • Implement facility improvements at the state and federal export facilities to increase fish survival • Implement measures, including a fish study using acoustic tags, to improve the ability to increase survival of juvenile steelhead migrating from the San Joaquin River basin • Implement a flow management standard, temperature management plan, and facility modifications to improve conditions for steelhead in the American River • Implement a new year-round minimum flow regime that improves conditions for steelhead in the Stanislaus River • Develop a Hatchery Genetic Management Plans to increase and stabilize the prey base for Southern Resident killer whales • Provide long-term fish passage at Keswick and Shasta dams on the Sacramento River, Nimbus and Folsom dams on the American River, and New Melones Dam on the Stanislaus River • The final biological opinion also identified research, monitoring, and reporting requirements. 				
Biological Opinion on the Long-Term Operations of the Central Valley Project and State Water Project (Delta smelt)	U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, and California Department of Water Resources,	<p>On December 15, 2008, the U.S. Fish and Wildlife Service (USFWS) delivered its Biological Opinion (BiOp) to the U.S. Bureau of Reclamation on the effects of the continued operation of the federal Central Valley Project and the California State Water Project on the delta smelt and its designated critical habitat. USFWS determined that the continued operation of these two water projects is likely to jeopardize the continued existence of the delta smelt and adversely modify its critical habitat. USFWS identified a Reasonable and Prudent Alternative (RPA) intended to protect each life-stage and the critical habitat of this federally protected species. The RPA addresses the following objectives: 1) prevent/reduce entrainment of delta smelt at Jones and Banks; 2) provide adequate habitat conditions that will allow the adult delta smelt to successfully migrate and spawn in the Bay-Delta; 3) provide adequate habitat conditions that will allow larvae and juvenile delta smelt to rear; and 4) provide suitable habitat conditions that will allow successful recruitment of juvenile delta smelt to adulthood.</p>	Yes*	Yes*	Yes	USFWS. 2008. Formal Endangered Species Act Consultation on the Proposed Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP). Sacramento, California.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
North American Waterfowl Management Plan	U.S. Fish and Wildlife Service	<p>The North American Waterfowl Management Plan, a collaboration of Canada, the United States, and Mexico to enhance waterfowl populations, was originally written in 1986 and envisioned as a 15-year effort to achieve landscape conditions that could sustain waterfowl populations. The plan has been modified twice since the 1986 Plan to account for biological, sociological, and economic changes that influence the status of waterfowl and the conduct of cooperative habitat conservation.</p> <p>The 2004 Plan is intended to define the needs, priorities, and strategies for the next 15 years, increase stakeholder confidence in the direction of Plan actions, and guide partners in strengthening the biological foundation of North American waterfowl conservation.</p>	Yes	Yes	Yes	USFWS. 2004. North American Waterfowl Management Plan, Strengthening the Biological Foundation, 2004 Strategic Guidance.
Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan	U.S. Fish and Wildlife Service	<p>U.S. Fish and Wildlife Service published a final Comprehensive Conservation Plan (CCP) for Stone Lakes National Wildlife Refuge in January 2007 to describe the selected alternative for managing Stone Lakes National Wildlife Refuge for the next 15 years. The refuge is located about 10 miles south of Sacramento, straddling I-5 and extending south from Freeport to Lost Slough. Under the plan, the Refuge will continue its focus of providing wintering habitat for migratory birds and management to benefit endangered species. Management programs for migratory birds and other Central Valley wildlife will be expanded and improved and public use opportunities will also be expanded. The number of refuge units open to the public will increase from one to five. In addition, environmental education, interpretation, wildlife observation, wildlife photography, hunting, and fishing programs will be expanded. The plan achieves the refuge's purposes, vision, and goals; contributes to the Refuge System mission; addresses the significant issues and relevant mandates; and is consistent with principles of sound fish and wildlife management.</p>	Yes	Yes	Yes	USFWS. 2007. Notice of Availability (72FR41084). USFWS. January 2007. Stone Lakes National Wildlife Refuge Comprehensive Conservation Plan. URL = http://www.fws.gov/stone_lakes/ccp.htm

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes	U.S. Fish and Wildlife Service	The recovery plan addresses the recovery needs for several fishes that occupy the Sacramento-San Joaquin Delta, including delta smelt, Sacramento splittail, longfin smelt, green sturgeon, Chinook salmon (spring-run, late fall-run, and San Joaquin fall-run), and Sacramento perch (believed to be extirpated). The objective of the plan is to establish self-sustaining populations of these species that will persist indefinitely. This would be accomplished by managing the estuary to provide better habitat for aquatic life in general and for the fish addressed by the plan. Recovery actions include tasks such as increasing freshwater flows; reducing entrainment losses to water diversions; reducing the effects of dredging, contaminants, and harvest; developing additional shallow-water habitat, riparian vegetation zones, and tidal marsh; reducing effects of toxic substances from urban non-point sources; reducing the effects of introduced species; and conducting research and monitoring.	Yes	Yes	Yes	U.S. Department of the Interior, Fish and Wildlife Service, 1996. Recovery Plan for the Sacramento/San Joaquin Delta Native Fishes, November, 1996.
San Joaquin Basin Action Plan	U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife	The San Joaquin Basin Action Plan is a cooperative agreement between the U.S. Bureau of Reclamation, the U.S. Fish and Wildlife Service, and the California Fish and Wildlife to jointly develop a habitat acquisition and wetland enhancement project on approximately 23,500 acres of lands within the Northern San Joaquin River Basin. The plan was created in 1989 to meet Kesterson Reservoir mitigation needs. Water supply for Level 4 will be acquired under CVPIA Section 3406(d)(5).	Yes	Yes	Yes	Reclamation web site. Environmental Documents for Section 3406(d) water. Site accessed January 15, 2013. URL = http://www.usbr.gov/mp/cvpia/3406d/env_docs/index.html

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Lower American River Temperature Reduction Modeling Project (Formerly the Lake Natoma Temperature Curtains Pilot Project)	U.S. Fish and Wildlife Service, Anadromous Fish Restoration Program; U.S. Bureau of Reclamation; Sacramento Water Forum	<p>The objective of the Lower American River Temperature Reduction Modeling Project is to develop predictive tools that will: 1) Reduce uncertainties in the performance of identified temperature control actions that could be implemented to improve the management of cold water resources in the Folsom/Natoma Reservoir system and the lower American River, and 2) Be available for daily operations, planning, and salmon and steelhead habitat studies by other project operators and other stakeholders.</p> <p>The project adapted, calibrated, and verified existing thermodynamic and hydrologic mathematical models for application at Folsom Reservoir, Lake Natoma and the lower American River. The models were used to assess the effectiveness of the identified actions individually and in combination in order to support a recommendation as to the development and implementation of one or more actions for the purpose of reducing temperatures in the lower American River. The actions identified to improve transport of cold water through Lake Natoma and reduce the temperature of the lower American River included: a Nimbus Dam curtain, a Lake Natoma plunge zone curtain, Nimbus powerplant debris wall removal, dredging Lake Natoma, and modifying Folsom Powerplant peak loading operation.</p>	No	No	Yes	USFWS web site. Site accessed January 15, 2013. URL = http://www.fws.gov/stockton/frp/project.cfm?code=2003-06 Reclamation, USFWS, and Sacramento Water Forum. 2007. Temperature Modeling of Folsom Lake, Lake Natoma, and the Lower American River. Prepared by the Bureau of Reclamation Technical Service Center. April 2007. Site accessed January 15, 2013. URL = http://www.fws.gov/stockton/frp/documents/LARreport40.pdf
Upgrade of Facilities to Restore Delta Smelt and Other Native Aquatic Species	U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, California Department of Water Resources, and California Department of Fish and Game	<p>The Interim Federal Action Plan for the California Bay-Delta included an action item for a federal-State and local partnership, led by USFWS to promote the development of a permanent fish restoration facility (the Bay Delta Center for Collaborative Science and Restoration Propagation of Native Imperiled Aquatic Species) to be located at Rio Vista. This facility would be capable of maintaining genetic refugia of delta smelt and other imperiled native aquatic species and producing the numbers of fish necessary for restoration and recovery. Federal agencies expect to partner with the State and local agencies in conducting initial engineering design, site demolition and preparation activities, planning and environmental compliance consultation, and other activities.</p> <p>In addition to the fish restoration facility, the plan calls for developing a backup delta smelt refugium to guard against a catastrophic event and loss of genetic diversity and to provide an interim restoration</p>	No	Yes	Yes	

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		propagation facility until the Rio Vista facility is operational. Federal agencies will work with the University of California, Davis and the State to upgrade and ensure safety compliance for the existing facility Delta Smelt Research and Culture Facility at Banks Pumping Plant.				
UCD Fish Conservation and Cultural Lab	University of California, Davis, California Department of Water Resources, and U.S. Bureau of Reclamation	The University of California, Davis (U.C. Davis) and California Department of Water Resources, working with federal agencies, operates a program to spawn and rear delta smelt for scientific studies, and develops and improves cultural methods for delta and longfin smelt.	Yes	Yes	Yes	DWR web site. Interim Delta Actions. Site accessed January 15, 2013. URL = http://www.water.ca.gov/deltainit/action.cfm
Delta Smelt Refuge Population and Delta Smelt Interim Refuge	University of California, Davis, California Department of Water Resources, Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and U.S. Bureau of Reclamation	The University of California, Davis (U.C. Davis) and California Department of Water Resources, working with federal agencies, operate a delta smelt culture laboratory located at DWR's Fish Facility near Byron.	Yes	Yes	Yes	DWR web site. Interim Delta Actions. Site accessed January 15, 2013. URL = http://www.water.ca.gov/deltainit/action.cfm
Delta Smelt Permanent Refuge	University of California, Davis, California Department of Water Resources, Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and U.S. Bureau of Reclamation	Program under development to develop a permanent facility, possibly at the proposed FWS Science Center at Rio Vista.	No	Yes	Yes	DWR web site. Interim Delta Actions. Site accessed January 15, 2013. URL = http://www.water.ca.gov/deltainit/action.cfm

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Lower American River Flow Management Standard Implementation	Water Forum and U.S. Bureau of Reclamation	Lower American River flow criteria in the NMFS Biological Opinion described above were developed based on information prepared by the Water Forum and U.S. Bureau of Reclamation (Reclamation), along with the participation of the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife. The Water Forum has prepared a Draft Environmental Impact Report to reach consensus on the substance of the flow management standard to be included in a joint petition to the State Water Resources Control Board to amend Reclamation's water right permits. Through management of water temperature and flow, the flow management standard is intended to improve the condition of aquatic resources in the lower American River, particularly fall-run Chinook salmon and steelhead. In addition, the flow management standard would benefit other fish species, the aquatic environment, and the riparian ecosystem of the lower American River corridor. Biological monitoring activities designed to support the flow management standard are currently being conducted by Reclamation and the California Department of Fish and Wildlife.	Yes	Yes	Yes	U.S. Bureau of Reclamation web site. Site accessed July 6, 2009. URL = http://www.usbr.gov/newroom/newsrelease/detail.cfm?RecordID=23261 Water Forum. December 2008. Flow Management Standard Program: Implementation Plan.
Riverside-Corona Feeder Conjunctive Use Project	Western Municipal Water District and U.S. Bureau of Reclamation	The Riverside-Corona Feeder Conjunctive Use Project will deliver water from the San Bernardino Groundwater Basin Areas to communities throughout western Riverside and San Bernardino counties and the cities of San Bernardino, Colton, Rialto, Grand Terrace, and Riverside during drought and emergency periods. The project will connect local groundwater basins to allow regional management and distribution of groundwater and connect the Chino Desalter Phase 3 project (described below) into the regional system. This project was initially evaluated in 2005. A Draft Supplemental EIR/EIS for the Riverside- Corona Feeder Pipeline was completed in January 2011. The project includes the Bunker Hill groundwater extraction facility and the feeder pipeline. The Supplemental EIR/EIS evaluated the No Action Alternative/No Project Alternative and four alternative pipeline alignments to deliver up to 40,000 acre-feet/year. The alignment alternatives include connections to Jurupa Community Services District and to the existing San Bernardino Valley Municipal Water District	No	Yes	Yes	Reclamation and Western Municipal Water District. 2012. Riverside-Corona Feeder Conjunctive Use Project, Final Environmental Impact Report/Statement, Lower Colorado Region, February, 2012. A Final Supplemental EIR/EIS was completed in February 2012. No "significant new information" was added to the Final SEIR/EIS following distribution of the draft SEIR/EIS.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		inland and central feeders to provide flexibility and facilitate connections to provide regional water management.				
West Sacramento Levee Improvements Program	West Sacramento Area Flood Control Agency and U.S. Army Corps of Engineers	The West Sacramento Levee Improvements Program (WSLIP) would construct improvements to the levees protecting West Sacramento to meet local and federal flood protection criteria. The program area includes the entire WSAFCA boundaries which encompasses portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel. The levee system associated with these waterways includes over 50 miles of levees in Reclamation District (RD) 900, RD 537, RD 811, DWR's Maintenance Area 4, and the Deep Water Ship Channel. These levees completely surround the West Sacramento. For the purposes of this program, the levees have been generally divided into the nine reaches: Sacramento River Levee North, Sacramento River Levee South, Port North Levee, Port South Levee, South Cross Levee, Deep Water Ship Channel Levee East, Deep Water Ship Channel Levee West, Yolo Bypass Levee, and Sacramento Bypass Levee.	No	Yes	Yes	City of West Sacramento web site. West Sacramento Levee Improvements Program Final EIS/EIR. February 2011. Site accessed January 15, 2013. URL = http://www.cityofwestsacramento.org/city/flood/finaleis_eir/default.asp
Lower Yolo Bypass Planning Forum	Yolo Basin Foundation and Delta Protection Commission	The Lower Yolo Bypass Planning Forum (Forum) is an entity formed by the Yolo Basin Foundation and the Delta Protection Commission, with funding from the California Department of Fish and Wildlife, to bring together stakeholders in the Yolo Bypass to address and resolve issues related to flood conveyance, sensitive species habitat, recreational opportunities, agriculture and privately managed habitat, and flood control levees. The Forum is providing guidance on strategies to increase the frequency and duration of spring flooding in the Yolo Bypass and fish passage, while maintaining existing land uses (e.g., agriculture) and flood control functions of the Bypass. The Forum encourages conservation strategies that consider the productivity of existing land uses, multiple conveyance options, willing landowners, existing planning efforts, and local stakeholder groups.	No	No	No	Yolo Bypass web site. Site accessed on January 15, 2013. URL = http://www.yolobypass.net
Yolo County General Plan Update	Yolo County	The Yolo County General Plan was adopted on July 17, 1983, and provides for growth and development in the unincorporated area through 2010. Yolo County occupies 653,549 acres (1,021 square miles) in the California Central Valley along the Sacramento River Delta.	No	Yes	Yes	Yolo County web site. Yolo County General Plan Final EIR. April 2009. Site accessed January 15, 2013. URL =

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		In May 2003, Yolo County began a comprehensive update to the county's general plan. In January 2009, the county conducted a series of public workshops to receive comments on the Revised Draft 2030 Countywide General Plan, and the Draft EIR was released in April 2009. According to the Draft EIR, the Draft General Plan would allow for additional growth in the unincorporated area of the County of approximately 30,195 people, up to 10,784 homes, and 19,209 jobs. At build-out of the Draft General Plan, assumed to occur by 2030 for the purposes of the EIR, the unincorporated county could have a population of approximately 64,700 persons, approximately 22,061 residential units, and approximately 53,154 jobs.				http://www.yolocounty.org/Index.aspx?page=1683
Yolo County Habitat/Natural Community Conservation Plan	Yolo County Joint Powers Authority	The Yolo County Habitat Joint Powers Authority (JPA), consisting of five local public agencies, launched the Yolo Natural Heritage Program in March 2007. This effort includes the continuing preparation of a joint Habitat Conservation Plan/ Natural Community Conservation Plan (HCP/NCCP). Member agencies include: Yolo County, City of Davis, City of Woodland, City of West Sacramento and City of Winters. The HCP/NCCP will describe the measures that local agencies will implement in order to conserve biological resources, obtain permits for urban growth and public infrastructure projects, and continue to maintain the agricultural heritage and productivity of the county. The nearly 653,820-acre planning area provides habitat for covered species occurring within five dominant habitats/natural communities. The plan proposes to address 63 covered species, including seven state-listed species: palmate-bracted birds beak, Colusa grass, Crampton's tuctoria, giant garter snake, Swainson's hawk, western yellow-billed cuckoo, and bank swallow. Interim conservation activities include acquiring permanent conservation easements for sensitive species habitat in the plan area.	No	No	Yes	Yolo Natural Heritage Program web site. Notice of Preparation and Notice of Intent. October 21, 2011. Site accessed January 15, 2013. URL = http://www.yoloconservationplan.org/
Yolo County Stormwater Management Program	Yolo County, Public Works Division	The Yolo County Stormwater Management Program (SWMP) is composed of six elements: Public Education and Outreach, Public Involvement and Participation, Illicit Discharges, Construction Activities, New Development and Redevelopment, and County Operations. The program provides education, opportunities for participation, requires permanent stormwater BMPs for major	Yes	Yes	Yes	Yolo County. 2003. Stormwater Management Program (SWMP) Planning Document. Revised October 2004

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		development, implements improved control measures at county facilities, and delineates responsibilities. The program was adopted by the Yolo County Board of Supervisors in 1994.				
South Bay Aqueduct Improvement and Enlargement Project	Zone 7 Water Agency and Department of Water Resources	The South Bay Aqueduct Improvement and Enlargement Project will improve and expand the existing South Bay Aqueduct. The project will increase the existing capacity of the water conveyance system up to its design capacity of 300 cfs, and expand capacity in a portion of the project to add 130 cfs (total of 430 cfs). These improvements are expected to assist Zone 7 in meeting its future conveyance capacity needs and allow DWR to reduce State Water Project peak power consumption by providing for variation in pumping and delivery schedule. The enlargement project will supply Zone 7's future Altamont Water Treatment Plant with additional State Water Project water. The enlarged South Bay Aqueduct will be able to carry an additional 130 cfs through Reach 1, and 80 cfs through reaches 2 and 4.	No	Yes	Yes	DWR. September 2004. South Bay Aqueduct Improvement and Enlargement Project Draft Environmental Impact Report. Zone 7 web site: Site accessed July 2, 2009. URL = http://www.zone7water.com/index.php?option=com_content&task=view&id=109&Itemid=450
Franklin Bulk Substation	Sacramento Municipal Utility District	This project will construct a new distribution substation with a breaker and a half bus configuration. In addition, the Rancho Seco-Pocket 230 kV No. 1 Line will be looped into the substation and 2-16.2 MVar of capacitor banks will be installed. The substation will include 5-230 kV circuit breakers and a single 230/69 kV transformer, rated at 224 MVA	No	Yes	Yes	Site accessed May 27, 2015. URL = http://www.oatioasis.com/SMD1/SMD1docs/2011_S MUD_10YrPlan_Final.pdf
SBX7 7	California State Administration	The administration will expand existing programs to provide technical assistance, shared data and information, and incentives to urban and agricultural local and regional water agencies, as well as local governmental agencies, to promote agricultural and urban water conservation in excess of the amounts envisioned by SBX7 7. We will work collaboratively with stakeholders to identify and remove impediments to achieving statewide conservation targets, recycling and stormwater goals; to evaluate and update targets for additional water use efficiency, including consideration of expanding the 20 percent by 2020 targets by holding total urban water consumption at 2000 levels until 2030, achieving even greater per capita reductions in water use. The administration will also work with local and regional	Yes	Yes	Yes	Water Action Plan. URL = http://resources.ca.gov/california_water_action_plan/ . Site accessed April 25, 2016.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		entities to develop performance measures to evaluate agricultural water management.				
Various Programs	California Local Agencies	Local agencies are increasingly conserving water by prohibiting certain types of wasteful water use. Examples include: prohibiting watering hard surfaces such as sidewalks, walkways, driveways or parking areas; prohibiting outdoor watering during periods of rain; and not serving water to customers in restaurants unless specifically requested. Local agencies are also pioneering incentive programs, for example, converting lawns to drought tolerant landscapes—and programs to capture rainwater.	No	Yes	Yes	Water Action Plan. URL = http://resources.ca.gov/california_water_action_plan/ . Site accessed April 25, 2016.
Water Quality Control Plan	State Water Resources Control Board	The State Water Resources Control Board will complete its update of the Water Quality Control Plan for the Delta and its upstream watersheds. The plan establishes both regulatory requirements and recommended actions. The State Water Resources Control Board's action will balance competing uses of water including, municipal and agricultural supply, hydropower, fishery protection, recreation, and other uses.	No	Yes	Yes	Draft Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the Bay Delta: San Joaquin River Flows and Southern Delta Water Quality (12/31/12)
San Joaquin River Restoration Program: Salmon Conservation and Research Facility and Related Management Actions Project	California Department of Fish and Wildlife and California Department of Water Resources	The Department of Fish and Wildlife and the Department of Water Resources will lead the state's effort to achieve the goals of restoring flows to the San Joaquin River from Friant Dam to the confluence of the Merced River, and bring back a naturally-reproducing, self-sustaining Chinook salmon fishery while reducing or avoiding adverse water supply impacts. Chinook will be reintroduced pursuant to the San Joaquin River Restoration Program, and the Department of Fish and Wildlife will complete construction of the conservation hatchery and research facility. The Department of Water Resources will perform activities that support the implementation of channel and structural improvements that result in restoring fish and flows. The administration will work with the Legislature and others to secure further funding as necessary to achieve these activities and the restoration goal.	No	Yes	Yes	A final EIR for the salmon conservation and research facility and related fisheries management actions project was released in April 2014.

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
Salton Sea Species Conservation Habitat Project	Natural Resources Agency, Salton Sea Authority, California Department of Fish and Wildlife, California Department of Water Resources	The Natural Resources Agency, in partnership with the Salton Sea Authority, will coordinate state, local and federal restoration efforts and work with local stakeholders to develop a shared vision for the future of the Salton Sea. The Salton Sea is one of the most important migratory bird flyways in North America and is immediately threatened with reduced inflows and increasing salinity. The Department of Fish and Wildlife and the Department of Water Resources will begin immediately to implement the first phase of this effort with the construction of 600 acres of near shore aquatic habitat to provide feeding, nesting and breeding habitat for birds. This project is permitted to increase to 3,600 acres and could be scaled even greater with additional resources. Concurrently, the Natural Resources Agency and the Salton Sea Authority are developing a roadmap for the Salton Sea that will evaluate additional restoration projects and identify economic development opportunities through renewable energy development.	No	Yes	Yes	The Final EIR/EIS was certified on August 8, 2013.
Klamath Basin Restoration	California Department of Fish and Wildlife, California Natural Resources Agency	The Department of Fish and Wildlife and the Natural Resources Agency will continue to work with diverse stakeholders to implement the Klamath Basin restoration and settlement agreements. Those agreements include measures to improve water quality in the Klamath River, restore anadromous fish runs, including Chinook and Coho salmon, and improve water reliability for agricultural and other uses by providing a drought planning mechanism for low water years. The administration will work with Congress to secure the necessary federal authorizations for the agreements and secure the necessary funding for removal of four hydroelectric dams on the Klamath River and funding for the necessary basin restoration.	Yes	Yes	Yes	Water Action Plan. URL = http://resources.ca.gov/california_water_action_plan/ . Site accessed April 25, 2016.
Sites Reservoir/North of the Delta Offstream Storage	California State Administration	The administration will work with the Legislature to make funding available to share in the cost of storage projects if funding partners step forward. The state will facilitate among willing local partners and stakeholders the development of financeable, multi-benefit storage projects, including working with local partners to complete feasibility studies. For example, the Sites Project Joint Powers Agreement, formed by a group of local government entities in the Sacramento Valley, is a potential emerging partnership that can help federal and state	No	No	Yes	Water Action Plan. URL = http://resources.ca.gov/california_water_action_plan/ . Site accessed April 25, 2016.

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		government determine the viability of a proposed off stream storage project – Sites Reservoir.				
Sustainable Groundwater Management Act	State Water Resources Control Board, California Department of Toxic Substances Control, California Department of Water Resources	The Department of Water Resources (DWR) has developed a Strategic Plan for its Sustainable Groundwater Management (SGM) Program. DWR’s SGM Program will implement the new and expanded responsibilities identified in the 2014 Sustainable Groundwater Management Act (SGMA). Some of these expanded responsibilities include: (1) developing regulations to revise groundwater basin boundaries; (2) adopting regulations for evaluating and implementing Groundwater Sustainability Plans (GSPs) and coordination agreements; (3) identifying basins subject to critical conditions of overdraft; (4) identifying water available for groundwater replenishment; and (5) publishing best management practices for the sustainable management of groundwater.	No	Yes	Yes	Water Action Plan. URL = http://resources.ca.gov/california_water_action_plan/ . Site accessed April 25, 2016.
Delta Science Plan	Delta Stewardship Council, California Department of Water Resources, California Department of Fish and Wildlife, State Water Resources Control Board, State Agencies, Delta Stewardship Council Implementation Committee, CA State Administration	The problems affecting the Delta need to be addressed on multiple fronts, including habitat loss, export conveyance, water projects operations, pollution control, and flows. The principal state entities charged with addressing these issues are the Delta Stewardship Council, Department of Water Resources, Department of Fish and Wildlife, and the State Water Resources Control Board. Several federal agencies exercise regulatory authority related to these issues. There are also multiple water districts, private parties, nongovernmental organizations and tribal communities with a profound stake in these issues. A coordinated approach to managing the Delta is essential to serve the needs of California’s residents. State agencies will commit to using collaborative processes to achieve water supply, water quality and ecosystem goals. This approach embraces enhanced sharing of data, consistent use of peer-reviewed science, coordinated review under the California Environmental Quality Act, improved integration of related processes, and encouragement of negotiated resolutions.	No	Yes	Yes	Water Action Plan. URL = http://resources.ca.gov/california_water_action_plan/ . Site accessed April 25, 2016.

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Staten Island Sandhill crane habitat enhancement	California Department of Fish and Wildlife	Restore and protect sandhill crane habitat, including higher habitat targets. This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	California EcoRestore. Site accessed May 23, 2015. URL = https://s3.amazonaws.com/californiawater/pdfs/ECO_FS_Overview.pdf
Twitchell Island Levee Habitat Restoration Project		This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	California EcoRestore. Site accessed May 23, 2015. URL = https://s3.amazonaws.com/californiawater/pdfs/ECO_FS_Overview.pdf
Restoration of Eastern Delta Floodplain Habitats on Grizzly Slough in the Cosumnes River Watershed	California Department of Fish and Wildlife	With 84,000 acres of land, bays and sloughs, the Suisun Marsh is significant: it is the largest contiguous estuarine marsh in the entire United States. The Grizzly Island Complex occupies about 15,300 acres of this prime wildlife habitat. The complex is a patchwork of 10 distinct land parcels, many of which are not connected and are surrounded by private land. They offer a variety of recreation opportunities and act as a vital buffer against further marsh development. The Grizzly Island Wildlife Area Uplands and Wetlands Enhancement was an enhancement/restoration project for approximately 475 acres of uplands and 150 acres of wetlands on the California Department of Fish and Wildlife's (CDFW) Grizzly Island Wildlife Area, located in the Suisun Marsh, south of the City of Fairfield in Solano County. This project aimed to provide breeding habitat for waterfowl many other bird species as well as provide additional habitat for elk. Existing water delivery and drainage systems were upgraded to allow CDFW to flood existing wetlands and to irrigate the uplands as needed. This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	Site accessed May 23, 2015. URL = https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=5467
Lower Putah Creek Realignment	California Department of Fish and Wildlife	The project will achieve this objective by restoring 300-700 acres of tidal freshwater wetlands, creating 5 miles of a new fish channel, improving anadromous fish access to 25 miles of stream, and restoring at least 5,000 square feet of salmon spawning habitat. Connectivity between these habitats will enhance salmonid in migration and	No	Yes	Yes	Site accessed May 22, 2015. URL = https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=27856

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		spawning as well as rearing and outmigration conditions for smolts. The project will achieve this objective by enhancing habitat within Lower Putah Creek to support the recovery of local fall-run Chinook salmon, steelhead, and Sacramento splittail populations. This project has been identified as one of the projects that will be implemented under California EcoRestore.				
Wallace Weir Improvements and Tule Canal Agricultural Crossings	Yolo County	Upgrading Wallace Weir will allow for coordination of the two weirs improving system performance and providing multiple management benefits. It will also allow for water management related to potential fisheries and waterfowl habitat south of Wallace Weir. The existing configuration could be replaced with a gated structure. Sliding gates could augment the operation of the weir and a permanent access road crossing could be installed on top of the structure. The new weir could consist of a series of tilt up gate structures, or flash boards, spanning the majority of the channel. These could be lifted easily at time of flow regulation for irrigation purposes. At the end of the irrigation season, the gates could be lowered or removed for the purposes of flood conveyance. On one side of the channel, three sluice gate structures could be installed to provide flow regulation for irrigation purposes. Alternatively, a more automated, but more costly, method could be implemented using a rubber bladder dam. This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	Site accessed May 22, 2015. URL = http://yolo-agenda1.yolocounty.org/docs/2013/BOS/20131022_155/2059_Project_Sheets_101613.pdf
Prospect Island Tidal Habitat Restoration Project		The northern portion of Prospect island (about 1,253 acres) is currently owned by the Department of Water Resources (DWR), who acquired the property with the intent of restoring freshwater tidal marshes and associated aquatic habitat. Consistent with the objectives for the refuge, the U.S. Army Corps of Engineers (USACE) and DWR completed the environmental documentation Mitigated Negative Declaration/Findings of No Significant Impact (MND/FONSI) for a restoration project on Prospect Island in 2001; however, funding for the wildlife refuge and the restoration project was never authorized. This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	DWR. Prospect Island Tidal Habitat Restoration Project. DWR web site. Site accessed September 2, 2013 URL = http://www.water.ca.gov/environmentalservices/docs/frpa/Prospect%20Island%20Fact%20Sheet%20ForWeb.pdf

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Tule Red Restoration Project	State and Federal Contractors Water Agency	The Tule Red Restoration Project is a public-private partnership effort to restore about 350 acres of tidal wetlands in the Suisun Marsh. The project is part of both current restoration requirements for the State and Federal Water Projects and an effort to reconnect land to water in the marsh in order to promote habitat for important native fish species, such as delta smelt and salmon. The Tule Red Restoration Project is an effort by the State and Federal Contractors Water Agency (SFCWA), a joint powers authority comprised of the export service contractors of the State Water Project (SWP) and the Central Valley Project (CVP). This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	SFCWA web site. Site accessed May 22, 2015. URL = http://www.sfcwa.org/2013/03/27/tule-red-restoration-project/
Southport Early Implementation Project	West Sacramento Area Flood Control Agency	The West Sacramento Area Flood Control Agency (WSAFCA) is proposing the Southport Sacramento River Early Implementation Project (EIP) to implement flood risk-reduction measures along the Sacramento River South Levee that protects the Southport community. WSAFCA is proposing the measures be implemented along 6 miles of the levee that runs along the west bank of the Sacramento River from the Barge Canal to the South Cross Levee. This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	USACE web site. Site accessed May 22, 2015. URL = http://www.spk.usace.army.mil/Portals/12/documents/usace_project_public_notices/Southport_DraftEIS-EIR_Nov2013.pdf
McCormack-Williamson Tract Flood Control and Ecosystem Restoration Project	California Department of Water Resources	This Project is a part of the North Delta Flood Control and Ecosystem Restoration Project and will implement flood control improvements principally on and around McCormack-Williamson Tract in a manner that benefits aquatic and terrestrial habitats, species, and ecological processes. Flood control improvements are needed to reduce damage to land uses, infrastructure, and the Bay-Delta ecosystem caused by catastrophic levee failures in the Project study area. This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	DWR web site. Site accessed May 22, 2015. URL = http://www.water.ca.gov/floodsafe/fessro/levees/north_delta/docs/
Hill Slough Restoration Project	California Department of Fish and Wildlife	The purpose of the overall project is to restore brackish tidal marsh and associated upland ecotone at the northern Suisun Marsh near the corner of Highway 12 and Grizzly Island Road to benefit endangered as well as migratory and resident species. This project will meet Ecosystem Restoration Program (ERP) goals and objectives by reducing the risk of entrainment of at-risk, native anadromous species	No	Yes	Yes	CDFW web site. Site accessed May 22, 2015. URL = http://www.dfg.ca.gov/ERP/erp_proj_hill_slough.asp

Project	Primary Agencies	Description	Existing Conditions	No Action/No Project	Cumulative	References
		of concern including spring-run and winter-run Chinook salmon, steelhead trout, and green sturgeon, as well as other resident and transitory fish species in the Suisun Bay. The project will also meet goals calling for restoration of tidal brackish marsh that will aid in the recovery of listed plant and wildlife species while contributing to primary productivity in the estuary. This project has been identified as one of the projects that will be implemented under California EcoRestore.				
Goat Island at Rush Ranch Tidal Marsh Restoration		This project aims to restore tidal marsh habitat by reconnecting and reestablishing tidal marsh hydrology and related physical and ecological processes within and around Goat Island Marsh. This project will be implemented in conjunction with construction of an Interpretive Nature Trail to Goat Island Marsh to offset public access impacts resulting from closure of the levee trail. This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	Bay Area Integrated Regional Water Management Plan web site. Site accessed May 22, 2015. URL = http://bairwmp.org/projects/goat-island-marsh-tidal-marsh-restoration-interpretive-nature-trail
Knights Landing Outfall Gates Fish Barrier Project	California Natural Resources Agency	Rehabilitate the outfall gates by repairing known structural deficiencies (including scouring found at the inlet and outlet gates), replacing worn out appurtenances, construct a trash barrier system to protect the gates and ease debris collection, and upgrading the electrical and communication system to include backup capability to meet current USACE O&M standards This project has been identified as one of the projects that will be implemented under California EcoRestore.	No	Yes	Yes	California Resources Agency web site. Site accessed May 22, 2015. URL = http://bondaccountability.resources.ca.gov/Project.aspx?ProjectPK=8263&PropositionPK=5
River Islands at Lathrop Section 408 Permission	U.S. Army Corps of Engineers, Sacramento District	Construction of a large-scale, mixed-use project consisting of residential development	No	Yes	Yes	River Islands EIS website. Site accessed December 3, 2015. URL= http://www.spk.usace.army.mil/Portals/12/documents/regulatory/eis/199500412/DEIS/RiverIsland_DEIS_Vol1_Chapters_Oct2014.pdf

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Mountain House Community	San Joaquin County	Trimark Communities started development of a new community in the western portion of San Joaquin County. At full buildout, 16,105 residential units on 4,784 acres would be developed, including residential, commercial, and some industrial development.	No	Yes	Yes	Mountain House web site. Site accessed December 3, 2015. URL= http://mountainhouse-towncenter.com/

* Denotes assumption of partial implementation. See Section 3D.3.2.3.1 and Appendix 5A for further details.