

This chapter provides a brief description of the project and plan area, as well as contextual background for this recirculated substitute environmental document (SED). It also describes the State Water Quality Control Board's (State Water Board's) authorities and provides a timeline of State Water Board past and proposed actions related to the plan amendments.

1.1 Project Description

The State Water Board is considering amendments to the 2006 *Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary* (2006 Bay-Delta Plan). The 2006 Bay-Delta Plan designates beneficial uses of water within the Bay-Delta, water quality objectives for the reasonable protection of those beneficial uses, and a program of implementation for achieving the water quality objectives.

The project (plan amendments) would establish the following updates to the 2006 Bay-Delta Plan.

- New flow objectives on the Lower San Joaquin River (LSJR)¹ and its three eastside tributaries² for the protection of fish and wildlife beneficial uses.
- Revised water quality objectives for the protection of agricultural beneficial uses in the southern Delta.
- A program of implementation to achieve these objectives.
- Monitoring and special studies necessary to fill information needs and determine the effectiveness of, and compliance with, the new objectives.

The new LSJR flow objectives and revised southern Delta water quality (SDWQ) objective and associated program of implementation would replace the existing San Joaquin River (SJR) flow and southern Delta salinity objectives and associated program of implementation in the 2006 Bay-Delta Plan.

1.2 Plan Area

The plan amendments involve changes in flow requirements in the SJR Basin and changes in water quality objectives for the southern Delta (Figure ES-1). The plan area encompasses the areas where the plan amendments apply to protect beneficial uses of water. For example, the LSJR flow objectives would require flows below the rim dams on the Stanislaus, Tuolumne, and Merced Rivers, and the mainstem of the LSJR between the confluence of the Merced River to Vernalis to protect fish and wildlife beneficial uses in those reaches. Thus, these plan amendments could directly affect

¹ The LSJR is that portion of the San Joaquin River between its confluence with the Merced River and downstream to Vernalis, and its three eastside tributaries—the Stanislaus, Tuolumne, and Merced Rivers.

² In this document, the term *three eastside tributaries* refers to the Stanislaus, Tuolumne, and Merced Rivers.

portions of the SJR Basin and Delta that drain into, divert water from, or otherwise obtain beneficial use (e.g., surface water supplies) from the following water bodies. These portions of the SJR Basin and Delta are referred to as the *plan area* throughout this SED (Figure ES-2).

- Stanislaus River Watershed, from and including New Melones Reservoir to the confluence of the LSJR.
- Tuolumne River Watershed, from and including New Don Pedro Reservoir to the confluence of the LSJR.
- Merced River Watershed, from and including Lake McClure to the confluence with the LSJR.
- Mainstem of the LSJR, between its confluence with the Merced River downstream to Vernalis.
- Areas that receive a portion of their water supply from, and that are contiguous with, the above areas.
- The southern Delta, including the SJR from Vernalis to Brandt Bridge, Middle River from Old River to Victoria Canal, and Old River/Grant Line Canal from the Head of Old River to West Canal.

In addition to implementing the plan amendments in the plan area, the State Water Board will evaluate, in a subsequent water rights proceeding, whether to impose responsibility on surface water users who divert surface water from the Stanislaus, Tuolumne, and Merced River Watersheds above the major dams. The plan amendments also have the potential to affect areas within the watersheds that receive a portion of their water supply from these areas. These areas are referred to as the *extended plan area* throughout this SED and are listed below (Figure ES-2).

- Stanislaus River Watershed upstream of New Melones Reservoir.
- Tuolumne River Watershed upstream of New Don Pedro Reservoir.
- Merced River Watershed upstream of Lake McClure.

Finally, the plan amendments also have the potential to affect areas outside of the plan area or extended plan area that obtain beneficial use of water from the Stanislaus, Tuolumne, and Merced Rivers, and the LSJR downstream of the Merced River, but are not contiguous with the plan area or extended plan area. These areas are included in the areas of potential effects for some of the resources evaluated throughout this SED and are listed below.

- City and County of San Francisco (CCSF).
- Any other area served by water delivered from the plan area or extended plan area not otherwise listed above.

1.3 Background

This document is a recirculated SED. On December 31, 2012, the State Water Board released a draft SED (2012 Draft SED) for the review and update of the SJR flow and southern Delta salinity objectives and associated program of implementation. After holding a public workshop and receiving public comments on the 2012 Draft SED in 2013, the State Water Board decided to recirculate the document. This SED considers comments received on the 2012 Draft SED, as summarized in Appendix M, *Summary of Public Comment on the 2012 Draft SED*, and provides

updated information and additional analyses on certain subjects, as described in the *Executive Summary* and Chapter 4, *Introduction to the Analysis*.

The State Water Board is currently conducting a phased evaluation of the 2006 Bay-Delta Plan. Phase I consists of a review and update of the current SJR flow and southern Delta salinity objectives and associated program of implementation. Phase II consists of review and potential modification to other parts of the 2006 Bay-Delta Plan, including Delta outflows, State Water Project (SWP) and Central Valley Project (CVP) export restrictions, and other requirements in the Bay-Delta to protect fish and wildlife beneficial uses. Phases I and II are independent of each other, addressing different water quality objectives and associated programs of implementation. In Phase III, the State Water Board will conduct proceedings to assign responsibility for actions to implement the water quality objectives established in Phase I and Phase II, including changes to water rights or other implementation actions.

When proposing to undertake or approve a discretionary project, state agencies must comply with the procedural and substantive requirements of the California Environmental Quality Act (CEQA).³ (Pub. Resources Code, § 21000 et seq.) CEQA applies to discretionary projects that may cause a direct or indirect physical change in the environment. The State Water Board is the lead agency under CEQA. This SED was prepared in compliance with CEQA and other laws to analyze the potential environmental impacts of adopting and implementing the proposed amendments to the Bay-Delta Plan associated with Phase I. Environmental impacts associated with Phase II will be evaluated in a separate environmental document. Adoption of the Bay-Delta Plan itself will not result in physical changes in the environment. Rather, it is through the implementation of the objectives in the Bay-Delta Plan that physical changes in the environment potentially may occur. Because the Bay-Delta Plan does not approve any particular projects, the assessment of the potential environmental impacts associated with amendments to the Bay-Delta Plan are necessarily conducted at a programmatic level. Specific actions to implement the water quality objectives in the Bay-Delta Plan will be assessed at a project-level basis in compliance with CEQA. The State Water Board anticipates preparing an environmental impact report (EIR) to evaluate environmental effects of assigning responsibility to implement the water quality objectives, such as in a water rights proceeding to implement the amendments to the 2006 Bay-Delta Plan (Phase I and Phase II).

In addition to other legal requirements, the State Water Board must comply with the requirements of CEQA when adopting water quality control plans (WQCP). The purpose of this SED, in part, is to provide an environmental analysis of the proposed amendments to the Bay-Delta Plan and the reasonably foreseeable methods of compliance with the amendments, as well as consideration of other factors. CEQA authorizes the Secretary of the Resources Agency to certify a regulatory program of a State agency as exempt from the requirements for preparing EIRs, negative declarations, and initial studies if certain conditions are met. (Pub. Resources Code, § 21080.5.) The State Water Board's water quality control planning program is a certified regulatory program and thus, a SED may be prepared in lieu of an EIR. (*Ibid.*; Cal. Code Regs., tit. 14, § 15251, subd. (g).)

³ CEQA's basic purposes are to: (1) inform the decision makers and public about the potential significant environmental effects of a proposed project; (2) identify ways that environmental damage may be avoided or reduced; (3) prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternative or mitigation measures when feasible; and (4) disclose to the public why an agency approved a project in the manner the agency chose if significant effects are involved. (Cal. Code Regs., tit. 14, § 15002, subd. (a).) To fulfill these functions, a CEQA review need not be exhaustive, and CEQA documents need not be perfect. The CEQA documents should be adequate, complete, and represent a good faith effort at full disclosure. (*Id.*, § 15151.)

This SED fulfills the requirements of CEQA and the State Water Board's CEQA regulations (Cal. Code Regs., tit. 23, § 3775 et seq.) to analyze the environmental effects of the proposed regulatory activity, as well as requirements of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) and other applicable requirements as described in Section 1.4, *State Water Board Authorities*. This SED will inform the State Water Board's consideration of the potential amendments to the 2006 Bay-Delta Plan described above.⁴

1.4 State Water Board Authorities

The State Water Board was formed in 1967 when the State Water Rights Board and the State Water Quality Control Board were merged by the legislature, based on the principle that water rights and water quality are interrelated and should be regulated in an integrated manner. The State Water Board is composed of five full-time appointees of the governor. The State Water Board allocates rights to the use of surface water, protects water quality by setting statewide policy, regulates public drinking water systems and, in coordination with the nine regional water quality control boards (Regional Water Boards), takes actions to ensure the highest reasonable quality for waters of the state through administration of the Porter-Cologne Act and portions of the federal Clean Water Act (CWA).

1.4.1 Porter-Cologne Act

The Porter-Cologne Act is the principal water quality control law for California. It establishes a comprehensive program to protect surface and groundwater quality and the beneficial uses of water in the state. Under the Porter-Cologne Act, the state is divided into nine regions, and a Regional Water Board has primary responsibility for protecting water quality within each region. The State Water Board oversees the Regional Water Boards' implementation of the Porter-Cologne Act. Together with the Regional Water Boards, the State Water Board implements the federal Clean Water Act in California. Section 303 of the Clean Water Act (33 U.S.C., § 1313) provides for the adoption of water quality standards by the states.

The Regional Water Boards have primary responsibility for the formulation and adoption of water quality control plans for their respective regions, subject to the State Water Board's and United States Environmental Protection Agency (USEPA) approval, as appropriate. (Wat. Code, § 13240 et seq.) The State Water Board may also adopt water quality control plans, which will supersede regional water quality control plans for the same waters to the extent of any conflict. (*Id.*, § 13170.) For a specified area, the water quality control plans designate the beneficial uses of waters that are to be protected, water quality objectives for the reasonable protection of the beneficial uses or the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (*Id.*, §§ 13241, 13050, subds. (h), (j).) The beneficial uses together with the water quality objectives that are contained in the water quality control plans, and applicable federal anti-degradation requirements, constitute California's water quality standards for purposes of the federal CWA. Water quality objectives usually are implemented through water quality actions, such as waste discharge requirements, or in the case of flow-related objectives, as conditions of water right permits or licenses or water quality certifications.

⁴ These plan amendments are the *project* as defined in State CEQA Guidelines, Section 15378.

WQCPs are periodically reviewed and amended to protect water quality. After a WQCP is adopted, the Water Code and the CWA require, respectively, a periodic and a triennial review of water quality control plans or water quality standards under Water Code Section 13240 and under Section 303 subdivision (c)(1) of the CWA. (33 U.S.C., § 1313, subd. (c)(1).) As explained herein, compliance with CEQA and the preparation of environmental documentation is required as part of the WQCP amendment process.

1.4.2 Water Rights

The State Water Board exercises adjudicatory and regulatory water quality and water rights functions in California. All water in California belongs to the people of the State. Although water cannot be privately owned, the right to use water can be acquired pursuant to statutory and common law. The State Water Board's water rights authority has been the principal authority used to implement the Bay-Delta Plan in the past because the flow and salinity objectives have been implemented through flow measures that have required changes in water rights. The State Water Board has authority to amend an existing water right permit or license under various authorities, including by invoking: (1) its reserved jurisdiction over permits under Water Code Section 1394; (2) its continuing authority to prevent the waste, unreasonable use, or unreasonable method of use of water under the California Constitution, Article X, Section 2; or (3) its continuing authority to protect public trust uses of water.

California law recognizes several types of rights to surface water, of which riparian and appropriative rights are the most common. A riparian right exists by reason of ownership of land abutting a stream or other body of water. The right allows a water user to divert from the natural flow of a stream for use on land within the watershed of the source. Seasonal storage of water is not allowed under a riparian right. In general, riparian water users have first priority to the use of the natural flow in a river. Water remaining after riparian users have taken their share is available to appropriators.

An appropriative water right consists of the right to divert a specified quantity of water for a reasonable, beneficial use. Appropriative rights carry a priority relative to other appropriative rights. The water user who is first in time is entitled to the full quantity of water specified under the right before junior appropriators may exercise their rights. Since December 19, 1914, the effective date of the Water Commission Act of 1913, the acquisition of an appropriative right requires a person to obtain a permit or license from the State Water Board or its predecessor agencies. Appropriative water rights fall into two general categories: pre-1914 appropriative water rights and post-1914 appropriative water rights. No permit or license is necessary to divert water under claim of pre-1914 appropriative right.

To obtain a new appropriative water right, a person must file a water rights application with the State Water Board to appropriate water, obtain a water right permit, and use the water in accordance with the permit for a reasonable and beneficial purpose. In acting on an application, the State Water Board considers a number of factors, including whether water is available for appropriation, whether the water will be put to beneficial use, and whether it is necessary to impose conditions to protect the environment, the public trust, and prior rights, including conditions to carry out water quality control plans. If the water is diverted and used in accordance with the terms of the permit, a license eventually will be issued confirming the extent of the appropriative right.

1.5 State Water Board Actions

The State Water Board is considering amendments to the 2006 Bay-Delta Plan, which was adopted by the State Water Board by Resolution No. 2006-0098 on December 13, 2006. The 2006 Bay-Delta Plan identified a number of emerging issues that required additional evaluation and water quality control planning. Two of the emerging issues identified for further evaluation and prioritization were SJR flows and southern Delta salinity (State Water Board 2006), which are the focus of the State Water Board's current planning efforts and this SED. In July 2008, the State Water Board adopted the *Strategic Workplan for Activities in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* and expressed its intent to review and potentially modify the SJR flow and southern Delta salinity objectives. The State Water Board again identified these issues for further review in the *2009 Staff Report on the Periodic Review of the 2006 Bay-Delta Plan*, adopted by Resolution No. 2009-0065 on August 4, 2009.

This is a recirculated SED. On February 13, 2009, the State Water Board initiated the review and potential amendment of the Bay-Delta Plan. It issued two notices: (1) a notice of preparation (NOP) and a scoping meeting notice for environmental documentation for the update and implementation of the Bay-Delta Plan relating to the southern Delta salinity and LSJR flow objectives; and (2) a notice of public staff workshop to receive information regarding potential amendments to the objectives. On April 1, 2011, the State Water Board issued a revised NOP and notice of an additional scoping meeting for June of 2011. The State Water Board also held several other public meetings and workshops to receive information and conduct discussions regarding issues related to the potential plan amendments.

1.5.1 Lower San Joaquin River Flows

This section describes the State Water Board's past actions and proposed plan amendments related to LSJR flows.

Flow Objectives Background

Storage reservoirs were constructed in the SJR Basin beginning in the 1940s through the 1970s. These storage reservoirs were constructed by local irrigation districts and as part of the larger federal CVP. The SJR flows at Vernalis and in the three eastside tributaries are generally much lower than the natural peaks in flow that would have occurred in spring and early summer because of reservoir storage and diversions. At the same time, the natural low flow periods of the late summer and early fall have been elevated at times due to agricultural return flows and power generation releases of previously stored water. The flow changes and physical habitat modification activities (e.g., gravel mining) have resulted in poor habitat conditions for native fishes and native LSJR fish populations (e.g., Chinook salmon and Central Valley steelhead) have declined.

The State Water Board first established flow objectives for the SJR at Vernalis in the 1995 Bay-Delta Plan to protect fish and wildlife beneficial uses (State Water Board 1995). These SJR flow objectives were primarily intended to protect anadromous species (ocean-going fish that migrate upstream to spawn), such as fall-run Chinook salmon, which use the three eastside tributaries.⁵ They were also intended to provide incidental benefits to Central Valley steelhead. The State Water Board set

⁵ The State Water Board established a narrative objective for salmon protection that is consistent with the anadromous fish doubling goals of the Central Valley Project Improvement Act (CVPIA).

different numeric objectives based on water year type for three time periods: February–June, excluding April 15–May 15 (spring flows); April 15–May 15 (pulse flows); and October (fall flows). The spring flows were intended to provide minimum net downstream freshwater flows in the SJR to address habitat concerns from reduced flows and water quality degradation. The pulse flows were developed to increase the success of Chinook salmon smolt outmigration from the SJR through the Bay-Delta. The fall flows were developed to provide attraction flows for adult salmon returning to the SJR Watershed to spawn. The spring flow and pulse flow objectives include two levels for each time period. The trigger for the higher flow is linked to the February–June Delta outflow objectives (X2),⁶ which are based on hydrologic conditions in the Sacramento River Basin and the SJR Basin.

In the State Water Board's Water Right Decision 1641 (D-1641) (revised March 15, 2000), the State Water Board allocated responsibility for meeting the SJR flow objectives in the 1995 Bay-Delta Plan to the U.S. Bureau of Reclamation (USBR). In order to obtain additional scientific information on which to base future objectives, in the State Water Board's Water Right Decision 1641 (D-1641), the State Water Board also approved the Vernalis Adaptive Management Plan (VAMP) experiment proposed by parties to the San Joaquin River Agreement in lieu of meeting the pulse flow objectives included in the 1995 Bay-Delta Plan. VAMP, which was initiated in 2000 and expired in 2011, was a large-scale, experimental management program that was designed to determine how juvenile fall-run Chinook salmon survival rates change in response to alterations in SJR flows and CVP and SWP exports, and with the installation of a permanent barrier at the head of Old River (HORB) (which was never permanently installed). The VAMP experiment, which was implemented for a 31-day period each year during April and May, was designed to assess a combination of SJR flows, varying between 3,200 cubic feet per second (cfs) and 7,000 cfs, and exports varying between 1,500 and 3,000 cfs. Information from the VAMP experiment was intended to inform potential changes to the SJR flow objectives. For various reasons, however, VAMP was not implemented as originally designed. In the 2006 Bay-Delta Plan, the flow objectives were not modified, but the program of implementation was changed to allow for the ongoing staged implementation of the pulse flow objectives through VAMP. In addition, as discussed above, SJR flows were identified as an emerging issue requiring additional consideration to address ongoing population declines of salmonids and the effect of SJR flows on pelagic organisms.

Other flow requirements for the SJR, including Endangered Species Act (ESA) biological opinion (BO) requirements and Federal Energy Regulatory Commission (FERC) licensing requirements are described in Chapter 2, *Water Resources*, and Appendix C, *Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives*.

⁶ X2 is the location of the 2 parts per thousand salinity contour (isohaline), 1 meter off the bottom of the estuary measured in kilometers upstream from the Golden Gate Bridge. The abundance of several estuarine species has been correlated with X2. In the 2006 Bay-Delta Plan, a salinity value--or electrical conductivity (EC) value--of 2.64 millimhos/centimeter (mmhos/cm) is used to represent the X2 location. Note, in this SED, EC is generally expressed in deciSiemens per meter (dS/m). The conversion is 1 mmhos/cm = 1 dS/cm.

Proposed Amendments

The State Water Board is considering amending the Bay-Delta Plan to establish new flow objectives on the LSJR and its three eastside tributaries to protect fish and wildlife beneficial uses. These objectives would establish flows sufficient to support and maintain the natural production of fish populations in the plan area. The flows are intended to mimic the natural hydrograph with respect to relative magnitude, duration, timing, and spatial extent of flows. The objectives also require a percentage of unimpaired flows to be maintained. The alternatives evaluated in this SED include implementation of the flow objectives by a range of percentages of unimpaired flow during the February–June period. Unimpaired flow represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. It differs from natural flow because unimpaired flow is the flow that occurs at a specific location under the current configuration of channels, levees, floodplain, wetlands, deforestation and urbanization. The program of implementation of the flow objectives also provides flexibility to adaptively manage flows outside of the February–June time period. The LSJR alternatives are listed below, including the No Project Alternative, which must be evaluated under CEQA.

- LSJR Alternative 1, the No Project Alternative, would continue the flow requirements as established in the 2006 Bay-Delta Plan and implemented through D-1641; this also includes continuation of, and full compliance with, the southern Delta salinity objectives as described in SDWQ Alternative 1.
- LSJR Alternative 2 would establish a range between 20 and 30 percent, with 20 percent as the starting percentage of unimpaired flow in the program of implementation.
- LSJR Alternative 3 would establish a range between 30 and 50 percent, with 40 percent as the starting percentage of unimpaired flow in the program of implementation.
- LSJR Alternative 4 would establish a range between 50 and 60 percent, with 60 percent as the starting percentage of unimpaired flow in the program of implementation.

The program of implementation for LSJR alternatives 2, 3, and 4 also describes the potential State Water Board actions listed below.

- How the State Water Board could use adaptive implementation to implement the flow objectives.
- The water rights actions that will be taken by the State Water Board to implement the flow objectives.
- Other State Water Board implementation actions to implement the flow objectives, including modification of hydropower project FERC license requirements through the FERC hydropower relicensing process.
- Non-flow measures that could be used to support and maintain the natural production of fish populations in the plan area.
- Special studies, reporting, and monitoring.

As noted at the beginning of this document, the State Water Board’s Phase III would specifically identify the water rights that could be modified as a result of adopting and applying the program of implementation for the LSJR flow objectives analyzed in this SED as part of Phase I. Details of the

LSJR alternatives are provided in Chapter 3, *Alternatives Description*, and the language of the amended WQCP is included in Appendix K, *Revised Water Quality Control Plan*.

1.5.2 Southern Delta Water Quality

This section describes the State Water Board's past actions and proposed plan amendments related to southern Delta water quality.

Water Quality Objectives Background

Elevated salinity in the southern Delta is caused by various factors, including low flows; salts imported to the SJR Basin in irrigation and wetland supply water; municipal discharges; subsurface accretions from groundwater; tidal actions; diversions of water by the CVP, SWP, and local water users; channel capacity; and agricultural drainage discharges to the SJR upstream of the Delta and in the Delta. Poor flow or circulation patterns in the southern Delta waterways also cause localized increases in salinity concentrations.

The State Water Board established the current southern Delta salinity objectives for the protection of agricultural beneficial uses in the 1978 Delta Plan. The 1978 Delta Plan includes salinity objectives, in the form of electrical conductivity (EC),⁷ for the protection of agriculture in the southern Delta at four compliance locations including: the SJR at Vernalis, the SJR at Brandt Bridge, Old River near Middle River, and Old River at Tracy Road Bridge. The approach used in developing the objectives involved an initial determination of the water quality needs of significant crops grown in the area, the predominant soil type, and local irrigation practices. In addition, the extent to which these water quality needs would be satisfied under "without project" (without the CVP and SWP) conditions was also considered. The State Water Board based the southern Delta EC objectives on the calculated maximum salinity of applied water (assuming no precipitation) that sustains 100 percent yields of two important salt-sensitive crops grown in the southern Delta (beans and alfalfa) in conditions typical of the southern Delta (surface irrigation of mineral soils) per the *University of California Guidelines and Irrigation and Drainage Paper 29: Water Quality for Agriculture of the Food and Agriculture Organization of the United Nations* (State Water Board 1978, page VI-16 – VI-19). The State Water Board set an objective of 0.7 deciSiemens per meter (dS/m) during the summer irrigation season (April 1–August 31) based on the salt sensitivity and growing season of beans and an objective of 1.0 dS/m during the winter irrigation season (September 1–March 31) based on the growing season and salt sensitivity of alfalfa during the seedling stage. In the 1978 Delta Plan, the State Water Board found that the most practical solution for long-term protection of southern Delta agriculture was construction of physical facilities to provide adequate circulation and substitute supplies.

The State Water Board delayed implementation of the southern Delta salinity objectives pending negotiations by the California Department of Water Resources (DWR), USBR, and the South Delta Water Agency (SDWA) concerning construction of physical facilities to protect agriculture in the southern Delta (permanent barriers or other devices). Because the negotiations were never completed, the 1991 Bay-Delta Plan provided for a staged implementation of the objectives.

⁷ In this document, EC is *electrical conductivity*, which is generally expressed in deciSiemens per meter (dS/m). Measurement of EC is a widely accepted indirect method to determine the salinity of water, which is the concentration of dissolved salts (often expressed in parts per thousand or parts per million). EC and salinity are therefore used interchangeably in this document.

The 1991 Bay-Delta Plan called for implementation of the objectives at Vernalis and Brandt Bridge by 1994 and implementation of the objectives at the two Old River sites by 1996 unless a three-party agreement was reached between DWR, USBR, and SDWA. In the 1995 Bay-Delta Plan, the State Water Board further delayed implementation of the EC objectives for the two Old River sites until December 31, 1997.

In D-1641, the State Water Board authorized a staged implementation of the southern Delta EC objectives. Pursuant to D-1641, USBR was required to meet the Vernalis EC objectives using any measures available. DWR and USBR also were required to meet an EC objective of 1.0 dS/m at Brandt Bridge on the SJR, Old River near Middle River, and Old River at Tracy Road Bridge (collectively, the interior southern Delta stations) September–March, and April–August, until April 1, 2005. As of April 1, 2005, D-1641 required that DWR and USBR, through their water right permits and license, meet an EC objective of 0.7 dS/m April–August at the interior southern Delta stations unless permanent barriers were constructed or equivalent measures were implemented to protect southern Delta agriculture along with an operations plan. As discussed below in Section 1.5.3, *Related Litigation*, the appellate court reviewing D-1641 struck down the provision allowing 1.0 dS/m at the interior salinity stations for April–August if such measures were taken. Accordingly, the objectives in the 2006 Bay-Delta Plan are in effect: 0.7 dS/m for April–August, and 0.7 dS/m for September–March.

Since 1991, DWR has installed temporary rock barriers in the southern Delta at three locations to improve water levels, circulation patterns, and water quality in the southern Delta for local agricultural diversion.⁸ DWR and USBR were planning to construct permanent physical facilities in the form of permanent operable gates (known as the South Delta Improvements Program) that would have provided better compliance with the objectives. However, the permanent facilities have not been constructed to date, and their construction is unlikely to occur due to endangered species concerns. The National Marine Fisheries Service (NMFS) biological opinion (BO) Stanislaus River reasonable and prudent alternative, including Action 3.1.3 (NMFS BO) was issued in June 2009 and specifically directs DWR to halt implementation of the South Delta Improvements Program. NMFS has indicated that consultation for the program cannot be reinitiated until after 3 years of fish predation studies at the southern Delta temporary barriers are completed. The studies were completed in 2011, and DWR is currently working with NMFS. After all permits have been acquired DWR can proceed with construction; however, there is not a schedule available for project completion at this time.

In 2006 the State Water Board issued a cease and desist order (CDO) against USBR and DWR for threatened violation of the interior southern Delta salinity objectives that imposed a time schedule for compliance with the objectives (State Water Board Order WR 2006-0006). In 2010, the State Water Board issued Order WR 2010-0002 modifying Order WR 2006-0006. The modified order amends the compliance schedule in Order WR 2006-0006 and imposes other interim measures. As an example, pursuant to Condition 5 of Order WR 2010-0002, DWR, in cooperation with USBR, is required to continue implementing temporary barriers in the southern Delta and is required to pursue and implement feasible improvements to the temporary barriers. Pursuant to Condition 7 of Order WR 2010-0002, DWR and USBR are also required to study the feasibility of controlling salinity by implementing measures other than the temporary barriers project, such as the feasibility of installing low lift pumps. Order WR 2010-0002 also delegates to the State Water Board Executive

⁸ DWR is the lead agency pursuant to CEQA and has prepared several environmental documents for construction and operations of the barriers.

Director the authority to require DWR and USBR to implement, on an interim basis, any alternative salinity control measures that the Executive Director determines are reasonable and feasible, based on the feasibility study.

Under the current objectives and methods for determining compliance, there have been many instances of exceedance of the EC objective in the southern Delta, in particular at the Old River near Tracy Road Bridge, Station P-12. Typically exceedance occurs due to dry hydrologic conditions in the Sacramento River and SJR Basins and degradation occurring downstream of Vernalis. The proposed interior southern Delta salinity compliance locations are comprised of three river segments rather than the current three specific point locations so that compliance measurements can be determined that will best represent and protect the beneficial uses in a an environment subject to alternating tidal flows. To facilitate this effort, DWR and USBR will work with State Water Board staff and solicit stakeholder input to develop and implement a special study to characterize the spatial and temporal distribution and associated dynamics of water level, flow, and salinity conditions in the southern Delta waterways. The study will identify the extent of low or null flow conditions and associated concentrations of local salt discharges. DWR and USBR's water rights will then be conditioned to require gathering of information to determine the appropriate locations and methods to assess attainment of the salinity objectives in the interior southern Delta.

Proposed Amendments

The existing SDWQ objectives for salinity identified in the 2006 Bay-Delta Plan would be amended to continue to protect agricultural beneficial uses in the southern Delta. The alternatives evaluated in this SED are listed below, including the No Project Alternative, which must be evaluated under CEQA.

- SDWQ Alternative 1, the No Project Alternative, would continue the 2006 Bay-Delta Plan southern Delta salinity objectives and require full compliance with 1.0 dS/m September–March and 0.7 dS/m April–August in the southern Delta and Vernalis; and continued conditioning of the DWR's and USBR's water rights to meet the interior southern Delta objectives and the USBR's water rights to meet the Vernalis objective. This also includes continuation of, and full compliance with, the SJR flow requirements as established in the 2006 Bay-Delta Plan as described in LSJR Alternative 1.
- SDWQ Alternative 2 would establish an annual 1.0 dS/m salinity objective for the southern Delta and Vernalis and would require continued conditioning of the DWR's and USBR's water rights to meet the interior southern Delta objectives. This alternative would also change the three interior southern Delta compliance locations. Instead of compliance being determined at the current compliance monitoring points (stations), the objective would be applicable in specified segments of the SJR, Middle River, and Old River/Grant Line Canal affecting agricultural beneficial uses. USBR's water rights would continue to be conditioned to meet EC levels of 0.7 dS/m August and 1.0 dS/m from September–March in the SJR at Airport Way Bridge near Vernalis to provide assimilative capacity for salinity inputs downstream of Vernalis. Various study, planning and monitoring requirements would also be imposed.
- SDWQ Alternative 3 would establish an annual 1.4 dS/m salinity objective for the southern Delta and Vernalis and would require continued conditioning of the DWR's and USBR's water rights to meet the interior southern Delta objectives. This alternative would also change the three interior southern Delta compliance locations. Instead of compliance being determined at the current compliance monitoring point stations, the objective would be applicable in specified

segments of the SJR, Middle River, and Old River/Grant Line Canal affecting agricultural beneficial uses. USBR's water rights would continue to be conditioned to meet EC levels of 0.7 dS/m from April–August and 1.0 dS/m from September–March in the SJR at Airport Way Bridge near Vernalis to provide assimilative capacity for salinity inputs downstream of Vernalis. Various study, planning and monitoring requirements would also be imposed

Details of the SDWQ alternatives are provided in Chapter 3, *Alternatives Description*, and the language of the amended WQCP is included in Appendix K, *Revised Water Quality Control Plan*.

1.5.3 Related Litigation

This section discusses litigation related to the establishment and implementation of water quality objectives in the 2006 Bay-Delta Plan and D-1641.

In 2006, the Third District Court of Appeal in *State Water Resources Control Board Cases 136 Cal. App.4th 674* issued a decision addressing challenges to the State Water Board's adoption of D-1641 and CEQA compliance. The court rejected the CEQA challenges and, in large part, upheld D-1641 but concluded that when a WQCP calls for an objective to be achieved by allocating responsibility to meet that objective in a water rights proceeding, the water right decision must fully implement that objective. Accordingly, the court determined that the State Water Board failed to fully implement the Vernalis pulse flow objective in the 1995 Bay-Delta Plan by instead allowing the immediate implementation of an alternate experimental flow regime under VAMP, thus accomplishing a de facto amendment of the Bay-Delta Plan without complying with the procedural requirements for amending such a plan. The court also found that the State Water Board failed to adequately implement the southern Delta salinity objectives at the three interior Delta locations by delaying implementation of the 0.7 dS/m objective at those locations. The court required a writ of mandate be issued commanding the State Water Board to commence proceedings to either assign responsibility for meeting the Vernalis pulse flow objective and the southern Delta salinity objectives in the 1995 Bay-Delta Plan or to modify those objectives. The State Water Board complied with the writ by amending the 2006 Bay-Delta Plan to allow staged implementation of the Vernalis pulse flow objective (through the target flows in VAMP) and by commencing the current project to evaluate the southern Delta salinity objectives and program of implementation.

Implementation of the southern Delta salinity objectives is at issue in *City of Tracy v. California State Water Resources Control Board* (Sacramento Superior Court Case No. 34-2009-80000392). In this case, the City of Tracy (Tracy) challenged the State Water Board's 2009 decision to remand the National Pollutant Discharge Elimination System permit issued by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) for Tracy's wastewater treatment plant. The State Water Board had partially remanded the permit to the Central Valley Water Board to include more rigorous requirements (including final water quality-based effluent limitations) to implement the southern Delta salinity objectives. In part, Tracy challenged the applicability of the salinity objectives in the underlying Bay-Delta Plan, arguing that they were never properly adopted and that the 2006 amendments did not provide an adequate program of implementation for municipal dischargers. The Central Valley Clean Water Association intervened in the litigation, representing municipal dischargers in the Central Valley. In 2011, the trial court ruled against the State Water Board, concluding that the State Water Board failed to comply with Water Code Section 13241 when it established the water quality objectives for EC in 1978 and that the Bay-Delta Plan's program of implementation was inadequate in relation to municipal dischargers. The trial court issued a writ ordering the State Water Board to vacate the portions of the Tracy order relating to the

effluent limitations for EC and to revise the order consistent with the court's decision, and requiring the Board to consider Water Code Section 13241's factors in establishing the salinity objective and to adopt a program of implementation describing the nature of actions for municipal dischargers to achieve the salinity objective. The State Water Board did not appeal.

1.6 References Cited

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