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2006 Bay Delta Plan
Deadline: 11/13/06

November 8, 2006



Song Her, Clerk to the Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95812

Re: State Water Contractors and Kern County Water Agency's Comments on
the Draft 2006 Water Quality Control Plan

Dear Ms. Her:

Enclosed is an original and 15 copies of State Water Contractors' and Kern County Water Agency's Comments on the Draft 2006 Water Quality Control Plan. Should you have any questions, please do not hesitate to contact Clifford W. Schulz at 321-4500.

Very truly yours,

A handwritten signature in cursive script that reads "Lorraine Lippolis".

Lorraine Lippolis
Secretary to Clifford W. Schulz

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Enclosures
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**STATE WATER RESOURCES CONTROL BOARD –
PERIODIC REVIEW OF THE 1995 WATER QUALITY CONTROL PLAN FOR THE
SAN FRANCISCO BAY’S SACRAMENTO-SAN JOAQUIN DELTA ESTUARY**

**COMMENTS BY THE KERN COUNTY WATER AGENCY AND THE STATE WATER
CONTRACTORS ON THE DRAFT 2006 WATER QUALITY CONTROL PLAN**

Throughout the two-year process that preceded public distribution of the State Water Board’s September 2006 draft “Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary,” (“2006 Plan”) representatives of the State Water Contractors organization and individual State Water Project (“SWP”) contractors, including the Kern County Water Agency, presented technical information and policy recommendations related to the proposed 2006 Plan. This paper will summarize our reactions to the draft 2006 Plan and suggest revisions needed to make it more consistent with the current state of the Delta and Judge Robie’s decision in the *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 674.

For ease of presentation and to assist the Board and its staff in understanding the SWP contractors’ issues, we have attached to this statement pertinent redlined pages of the draft 2006 Plan and Appendix 1 showing the changes we believe should be made before the Plan is approved by the State Water Board. These proposed changes fall into several broad categories, some of which are discussed below.

Purpose and Applicability:

At page three, the draft 2006 Plan states:

The purpose of this plan is to establish water quality control measures that can be implemented in part or in whole by assigning responsibility to water right holders and water users to mitigate for the effects on the beneficial uses of their diversion and use of water.

The SWP contractors support this statement and believe it represents an important policy that should be applied to all aspects of the 2006 Plan’s program of implementation. The SWP contractors have always recognized that the SWP should mitigate the impacts that it has on the Delta water quality needed to reasonably protect beneficial uses. Our consistent position, however, has also been that the SWP should not be required to modify its operations to mitigate for the impacts on water quality caused by local waste dischargers, whether they be municipal or agricultural.

In SWP contractors view, this quoted language does not establish a new policy. We have always believed and argued that this mitigation concept was built into the 1995 Delta Plan and water rights Decision 1641, particularly with respect to the southern Delta agricultural salinity objectives. This was our position in the CDO proceedings and in the workshops that preceded

issuance of this draft 2006 Plan. Many of the SWP contractors' proposed changes are related directly or indirectly to this mitigation of impacts policy, which at various places in the plan and its appendix seems to have been forgotten.

References to Water Rights Decision 1641:

There are many statements in the draft 2006 Plan that infer, if not directly aver, that the SWP "has an ongoing obligation to comply" with various water quality objectives (see, for example, draft 2006 Plan, p. 21). The SWP contractors' proposed changes try to remove all such "responsibility characterizations" that attempt to interpret Decision 1641. In many instances we disagree with these interpretations. Nevertheless, we have not tried to substitute our interpretations, as our basic position is that they are unnecessary in a water quality control plan. They cannot change what Decision 1641 requires and they simply raise unnecessary issues that cloud whether the State Water Board intends to follow the 2006 Plan's mitigation policy set out in the quotation above.

Somewhat related to this responsibility characterization issue, is the inconsistent use of the words "implement" and "meet" in the draft 2006 Plan. The statutory language in the Porter-Cologne Act for Plan objectives is "implement." The two terms are not synonyms and the SWP contractors believe that the statutory terms need to be consistently used, particularly given the decision in the *State Water Resources Control Board Cases*. Directory words and phrases, such as "meet," "comply with," and "shall be maintained," are best left for water rights orders so that there is a clean and clear distinction between what is being done through a quasi-legislative planning document such as the 2006 Plan and what is being ordered in a regulatory, quasi-judicial process such as a water rights hearing. There is no place in the 2006 Plan for language that can be interpreted as ordering language that must await completion of a properly noticed regulatory hearing.

South Delta Salinity Objectives:

All of the concerns broadly described above come starkly into focus when, at pages 25-26 of the draft 2006 Plan and page 70 of the Appendix, the salinity objectives for the protection of South Delta agricultural beneficial uses are discussed. Here the draft 2006 Plan specifically states that the SWP is responsible for "meeting" those objectives, an issue that is related to the CDO dispute, and a topic that is irrelevant to how the southern Delta salinity objectives should be implemented *in the future*.

This water quality control plan revision is being approved by the SWRCB less than two months before the Board begins workshops to consider whether to revise the southern Delta salinity objectives, or whether to implement those objectives in a different matter. A detailed discussion of the CDO hearing, of what happened in the past, and of how the State Water Board's staff interprets the Decision 1641 seems gratuitous and an effort by the Board's staff to create a document that, by its adoption, could be used to support its interpretation of Decision 1641 in other forums. The SWP contractors proposed changes, again, do not substitute our interpretation for that of the Board's staff. They delete what we consider to be inflammatory statements and substitute neutral characterizations that recognize that additional studies and workshops will further consider how to implement southern Delta salinity standards in the future. These changes

are vital to developing a way to best meet the southern Delta objectives outside of a courtroom and through a deliberative process.

Other Issues:

The SWP contractors have worked with the Department of Water Resources in this review of the draft 2006 Plan. We agree with, and incorporate as our comments, those comments of DWR, particularly relating to Suisun Marsh and salinity issues related to Rock Slough and the Contra Costa Canal.

Conclusion:

The draft 2006 Plan and Appendix 1 should be significantly modified before the State Water Board is asked to approve it and submit it to EPA. Primarily it needs to be reviewed by Board staff in light of the *State Water Resources Control Board Cases*, the comments made by all parties, and the upcoming proceedings on the southern Delta salinity objectives. Most importantly it needs to become more of a pure water quality control plan and less of a hybrid document that includes regulatory words, concepts, and arguments.

BAY-DELTA PLAN

Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

Chapter I. Introduction

A. Background

The San Francisco Bay/Sacramento-San Joaquin River Delta Estuary (Bay-Delta Estuary or Estuary) (Figure 1) is important to the natural environment and economy of California. The watershed of the Bay-Delta Estuary provides drinking water to two-thirds of the State's population and water for a multitude of other urban uses, and it supplies some of the State's most productive agricultural areas, both inside and outside of the Estuary. The Bay-Delta Estuary itself is one of the largest ecosystems for fish and wildlife habitat and production in the United States. Historical and current human activities (e.g., water development, land use, wastewater discharges, introduced species, and harvesting), exacerbated by variations in natural conditions, have degraded the beneficial uses of the Bay-Delta Estuary, as evidenced by the declines in populations of many biological resources of the Estuary. Most recently, populations of Delta smelt and other pelagic organisms have exhibited significant declines, leading to investigations as to the possible causes of the degradation of the health of the Delta.

The State Water Resources Control Board (State Water Board) has previously adopted water quality control plans and policies to protect the water quality and to control the water resources that affect the beneficial uses of the Bay-Delta Estuary. These plans and policies were adopted consistent with section 13000 et seq. of the California Water Code and pursuant to the authority contained in section 13170. This plan supersedes the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary adopted in May 1995 (1995 Bay-Delta Plan or 1995 Plan) as well as the preceding plans that the 1995 Plan superseded. The State Water Board periodically will review this plan pursuant to Water Code section 13240 to ensure that it provides reasonable protection for the designated ~~adequately protects~~ beneficial uses.¹ The State Water Board's measures to implement this plan ~~primarily will consist of the~~ regulation ~~amendment~~ of existing water rights, ~~but also may include other~~ regulatory measures to protect water quality that are within the Board's jurisdiction, and recommendations to other entities.

Appendix 1 of this plan, titled "Plan Amendment Report," explains the State Water Board's considerations in developing this Water Quality Control Plan. Appendix 1 provides the reasoning for any changes to the 1995 Plan, as well the environmental

¹ The federal Clean Water Act, at section 303 (c), also requires a review of federal "standards," as defined in the Act, contained in state water quality control plans. (33 U.S.C. § 1313 (c).) The review under section 13240 ordinarily is combined with a review of any federal standards in a state water quality control plan.

analysis for those changes. Documents used to develop this amendment of the 1995 Plan are listed in Appendix 2, titled "Referenced Documents". Appendix 3, titled "Responses to Comments," contains the State Water Board's responses to comments received in conjunction with the public hearing held to solicit feedback on this plan.

B. Purpose and Applicability

The purpose of this plan is to establish water quality control measures that can be implemented in part or in whole by assigning responsibility to water right holders and water users to mitigate for the effects on the beneficial uses of their diversions and use of water and in part by other actions. Like all water quality control plans, this plan consists of: (1) beneficial uses to be protected; (2) water quality objectives for the reasonable protection of beneficial uses; and (3) a program of implementation for achieving the water quality objectives. Together, the beneficial uses and the water quality objectives established to reasonably protect the beneficial uses are called water quality standards under the terminology of the federal Clean Water Act.

For the geographic area of the Bay-Delta Estuary, this plan is complementary to the other water quality control plans adopted by the State and Regional Water Quality Control Boards (Regional Water Boards) and State policies for water quality control adopted by the State Water Board. This plan provides reasonable protections for the Estuary's beneficial uses that require control of salinity (caused by saltwater intrusion, municipal discharges, and agricultural drainage) and water project operations (flows and diversions). This plan supersedes the regional water quality control plans to the extent of any conflict between this plan and the regional water quality control plans. The other plans and policies establish water quality objectives and requirements for parameters such as toxic chemicals, bacterial contamination, and other parameters which have the potential to impair beneficial uses or cause nuisance.

Most of the objectives in this plan are being implemented by assigning responsibilities to water right holders because the parameters to be controlled are primarily impacted by flows and diversions. This plan, however, is not to be construed as establishing the responsibilities of water right holders. Nor is this plan to be construed as establishing the quantities of water that any particular water right holder or group of water right holders may be required to release or forego to meet the objectives in this plan. The State Water Board will consider, in a future water rights proceeding or proceedings, the nature and extent of water right holders' responsibilities to meet these objectives. If necessary after a water rights proceeding, this plan will be amended to reflect any changes that may be needed to ensure consistency between the plan and the water right decision.

C. Legal Authority

The State Water Board has prepared this Water Quality Control Plan under the Porter-Cologne Act. The Regional Water Boards have primary responsibility for

D. Emerging Issues

This Water Quality Control Plan is primarily a planning document that serves to identify the water quality objectives and the beneficial uses to be protected. At the time of this 2006 update to the Plan there are a number of emerging issues that this Plan does not currently regulate. Those emerging issues are identified here. In addition to the activities described in *Program of Implementation Chapter*, the State Water Board will immediately begin a process to evaluate and prioritize water quality control planning activities to address the following emerging issues:

1. Pelagic Organism Decline (POD)
2. Climate Change
3. Delta and Central Valley Salinity

The State Water Board will conduct these planning activities in conjunction with the Delta Vision Process to develop a sustainable use and protection plan for the Delta, Suisun Bay, and Suisun Marsh. The Delta Vision Process, an interagency effort and outgrowth of the Little Hoover Commission's review of CALFED, was just commencing at the time of this Bay-Delta Plan update. Consistent with this process, the State Water Board recognizes that planning for and management of the Delta's multiple uses, resources, and ecosystem should occur in cooperation with elected officials, government agencies, stakeholders, academia, and affected Delta and California communities.

1. Pelagic Organism Decline

There is a marked decline in numerous pelagic fishes in the Sacramento-San Joaquin Delta Estuary and Suisun Bay. Currently, the Interagency Ecological Program (IEP), through its POD work team, is conducting studies to evaluate the potential causes of these declines. Some of the possible causes that are being considered include invasive species, water project operations, and toxins. The results of the POD studies will be available in 2007. At that time, the State Water Board will review the study results and may amend portions of this Plan to improve habitat conditions in the Estuary.

2. Climate Change

A growing body of information suggests that climate change could result in: 1) sea level rise that would adversely impact levees, water quality, and conveyance of water supplies through the Delta; 2) decreased snowmelt in the Sierra Nevada that would reduce effectiveness of existing water storage facilities; 3) increased rainfall that could exacerbate flooding; and 4) adverse biological effects from changes in flow and water quality. Water quality control planning must begin to address these possible effects. Future State Water Board activities therefore should consider the impacts of climate change and include requirements and recommendations to implement measures to offset adverse impacts of climate change. In addition, the State Water Board will need to provide timely response and guidance to water resources agencies, consistent with the Water Quality Control Plan, as they submit plans and requests to process

applications for water conveyance facilities and flow control structures such as the current South Delta Improvements Project or future conveyance structures such as a Delta peripheral canal.

3. Delta and Central Valley Salinity

A joint State and Regional Board Workshop on Central Valley Salinity Issues held in January 2006 resulted in broad stakeholder support for development of a Salinity Management Plan for the Central Valley and Delta (Salinity Management Plan) to protect beneficial uses of both surface waters and ground waters. Development and full implementation of the Salinity Management Plan is expected to take 40 to 50 years and to reduce the economic hardship related to managing salinity. The State Water Board will develop regulations and provide regulatory encouragement to ensure that infrastructure is developed that improves and maintains Central Valley and Delta salinity while providing certainty to local and regional planners, municipalities, agriculture, water suppliers, food processors, and others.

The State Water Board will continue to coordinate updates of the Bay-Delta Plan with on-going development of this comprehensive Salinity Management Plan. As part of this larger planning effort, the State Water Board ~~has noticed~~ intends to conduct a workshop and initiate further proceedings commencing in January 2007 to review: 1) the salinity requirements of the beneficial uses of water in the southern Delta; 2) the causes of salt loading in the southern Delta; 3) practices that could reduce salt loading from Delta sources; 4) flow and salt load reduction measures to implement the salinity objectives; and 5) the timeline for implementation of these measures. The State Water Board intends to develop and manage a study of salinity in the southern Delta as part of this effort. This process could result in amendments to the Bay-Delta Plan, further changes in water rights, or changes in both the Plan and water rights.

B. Water Quality Objectives for Agricultural Beneficial Uses

The water quality objectives in Table 2 provide reasonable protection of the beneficial use AGR, from the effects of salinity intrusion and agricultural drainage in the western, interior, and southern Delta. These objectives are unchanged from the 1991 Bay-Delta Plan.

C. Water Quality Objectives for Fish and Wildlife Beneficial Uses

The water quality objectives in Table 3 provide reasonable protection of fish and wildlife beneficial uses in the Bay-Delta Estuary including EST, COLD, WARM, MIGR, SPWN, WILD, and RARE. Protection of these fish and wildlife beneficial uses also provides protection for the beneficial uses of SHELL, COMM, and NAV. The parameters to be regulated under Table 3 are dissolved oxygen, salinity (expressed as electrical conductivity), Delta outflow, river flows, export limits, and Delta Cross Channel gate operation. Information available in 1995 indicated that, Unlike water quality objectives for parameters such as dissolved oxygen, temperature, and toxic chemicals, which have threshold levels beyond which adverse impacts to the beneficial uses occur, there ~~ar~~ were no defined threshold conditions that ~~could~~ be used to set objectives for flows and project operations. Instead, available information at that time indicateds that a continuum of protection exists and that. Higher flows and lower exports provided greater protection for the bulk of estuarine resources up to the limit of unimpaired conditions. Therefore, these objectives ~~ar~~ were set based on a subjective determination of the reasonable needs of all the consumptive and nonconsumptive demands on the waters of the Estuary. Upon completion of the POD studies, the State Water Board will reevalutate the available information.

Chapter IV. Program of Implementation

The Porter-Cologne Water Quality Control Act states that a water quality control plan consists of a designation or establishment of beneficial uses to be protected, water quality objectives, and program of implementation needed for achieving water quality objectives. [Wat. Code section 13050(j)]. The implementation program shall include, but not be limited to:

1. A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private;
2. A time schedule for the actions to be taken; and
3. A description of surveillance to be undertaken to determine compliance with the objectives (Wat. Code section 13242).

This program of implementation for the Water Quality Control Plan for the Bay Delta Estuary consists of five general components: (1) implementation measures within State Water Board authority; (2) measures requiring a combination of State Water Board authorities and actions by other agencies; (3) recommendations to other agencies; (4) a monitoring and special studies program; and (5) other studies that are being conducted by other entities but may provide information relevant to future proceedings. The specific actions identified within these components include time schedules for implementation, if appropriate. No time schedule is included for actions that have already been implemented.

The DWR's and USBR's have water rights permits contain terms and conditions that define their responsibilities an ongoing responsibility to implement comply with the municipal and industrial, agricultural, and fish and wildlife objectives, pursuant to the terms and conditions in their permits and licenses. As discussed above, these objectives are unchanged in this plan. Under their water right permits and license, the DWR and the USBR currently are required to comply with these objectives on an interim basis until the State Water Board adopts a further decision re-assigning responsibility for meeting these objectives. Based on this program of implementation, the State Water Board will determine whether any changes should be made to the DWR and USBR water rights permits and whether other water rights actions should be taken to implement the objectives.

A. Implementation Measures within State Water Board Authority

Under its water rights and water quality authority, the State Water Board will continue, as necessary and appropriate, to determine the contributions from water right permit and license holders needed to implement the objectives in this Plan that the State Water Board determines should be implemented through water project operations. This may be accomplished by conducting a water right proceeding at which the Board will take into consideration the requirements of the Public Trust Doctrine and the California Constitution, article X, section 2. The State Water Board will also continue, as necessary and appropriate, to use its Clean Water Act section 401 water quality certification authority to implement objectives in this Plan. Specifically, the following water quality objectives are currently, or may in the future be, implemented, in whole or in part, using water rights authority:

1. Delta Outflow
2. River Flows: Sacramento River at Rio Vista
3. River Flows: San Joaquin River at Airport Way Bridge, Vernalis
4. Export Limits
5. Delta Cross Channel Gates Operation
6. Salinity

The first five are flow-based objectives that rely upon water rights authorities to implement. Salinity, though a water quality objective, is still implemented, in part, through the State Water Board's water rights authorities.

The State Water Board may require compliance with these objectives in stages or may shift responsibility for meeting an objective among water right holders and other entities based on evidence it receives in a water right proceeding or in a water quality proceeding such as the one scheduled to begin in January 2007.

1. Delta Outflow Objective

The Delta Outflow Objective will be implemented through water rights actions. The objective requires a minimum amount of outflow, measured in cubic feet per second (cfs) as defined in footnote 10 of Table 3. Currently, Water Rights Decision 1641 and the so called "Phase 8 Agreement" establish the responsibilities for implementing ~~The DWR and the USBR currently are responsible under their permits and license to meet the Delta Outflow Objective on an interim basis until the State Water Board adopts a water right decision or order that assigns permanent responsibility for meeting the Delta Outflow Objective. This water right decision or order would follow a water right proceeding after a request for such a proceeding by the DWR or USBR.~~

2. River Flows: Sacramento River at Rio Vista

This objective will be implemented through water rights actions. Currently Water Rights Decision 1641 and the Phase 8 Agreement, establish the responsibilities for implementing ~~The DWR and the USBR currently are responsible under their water right permits and license to meet the flow objectives at Rio Vista on the Sacramento River on an interim basis until the State Water Board adopts a decision that assigns permanent responsibility for meeting the Sacramento River at Rio Vista flow objectives. This water right decision would follow a water right proceeding after a request for such a proceeding, by the DWR or USBR.~~

3. River Flows: San Joaquin River at Airport Way Bridge, Vernalis

This objective will be implemented through water rights actions and will include a timetable for implementation. Flow objectives for the San Joaquin River at the Airport Way Bridge near Vernalis have been established for three time periods:

- Spring flow objectives, February through April 14 and May 16 through June;
- Spring pulse flow objectives, April 15 through May 15; and
- Fall pulse flow objectives in October

~~The USBR is assigned responsibility under its water right permits, on an interim basis until the Board assigns permanent responsibility, to comply with all of these objectives. The USBR is authorized, however, d~~During the Spring pulse flow period in

April and May while the San Joaquin River Agreement (SJRA⁵) is in effect, ~~to meet the~~ experimental target flows in the VAMP ~~will be implemented~~ in lieu of ~~meeting the~~ Spring flow objectives for the April-May period. After the SJRA terminates, the State Water Board ~~may review the objectives in a water quality proceeding or immediately will~~ conduct a water right proceeding to decide ~~whether and to what extent~~ how to assign responsibility to ~~various other~~ parties for implementing ~~meeting these objectives,~~ and may review the objectives. In the interim, the State Water Board expects USBR to use all measures available to meet these objectives including reservoir releases, purchased water releases, and recirculation of water if it is found to be environmentally and operationally feasible.

Additional data and scientific analyses are needed to either support or modify the current spring flow objectives. These data and analyses are described in the 'Recommendations to Other Agencies' section of this chapter.

~~The USBR is assigned responsibility under its water right permits and license to comply with the Spring pulse flow objectives by no later than December 31, 2011. Before that date, however, the USBR is authorized under its water right permits, while the SJRA is in effect, to meet flow requirements that differ from the pulse flow objectives. This is an interim condition in the USBR's New Melones water storage permits; once the SJRA expires or is terminated, the Board will commence a proceeding to determine the responsibilities of various water right holders for meeting the pulse flow objectives.~~

The staged implementation of the Spring pulse flow objectives, with the first stage consisting of variations on the objectives, allows additional scientific investigation into flow needs on the San Joaquin River during the pulse flow period. In the first stage of implementation, the USBR and other parties are conducting a 12-year study referred to as the Vernalis Adaptive Management Plan (VAMP). The VAMP is designed to protect juvenile chinook salmon migrating down the San Joaquin River and to evaluate the effects of varying the San Joaquin River flow and the State Water Project (SWP) and Central Valley Project (CVP) water exports at times when the head of Old River flow barrier⁶ is restricting the flow of water into Old River, on the survival of marked juvenile chinook salmon migrating through the Sacramento-San Joaquin Delta.

The VAMP study has been ongoing for seven years, but the study has not yet yielded conclusive results regarding needed changes to the Spring pulse flow objectives. The completed study will provide critical data about flow needs on the San Joaquin River during the Spring pulse flow period.

Until no later than December 31, 2011, or until the SJRA is terminated, if earlier, the following interim Spring pulse flow objectives shall be implemented ~~maintained~~ on the San

⁵ The SJRA is a settlement agreement among numerous parties to the water rights hearing resulting in D-1641 to meet the San Joaquin River portions of various flow-dependent water quality objectives in the 1995 Plan.

⁶ The purpose of the head of Old River barrier is to reduce the downstream movement of juvenile San Joaquin River chinook salmon into the southern Delta via Old River where fish mortality increases due to predation and higher levels of exposure to export facilities and agricultural diversions.

Joaquin River at Vernalis during the 31-day April and May⁷ pulse period in order to obtain additional scientific information concerning flow needs on the San Joaquin River during the pulse flow period. The target flow should be based on the existing flow, as defined in table 5.

[Remainder of Page 24 Has Not Been Reproduced]

December 31, 2011, or until the SJRA is terminated, whichever occurs first. After the SJRA terminates, the State Water Board will use the information gained from the VAMP study and other pertinent information to determine what, if any, changes are needed to the pulse flow objectives. The State Water Board will then make any appropriate changes to the Water Quality Control Plan and, through a water rights proceeding, assign, as appropriate, long-term responsibility for meeting the pulse flow objectives to water right holders whose water diversions impact the flow of water.

4. Export Limits

This objective will be implemented through water rights actions. The DWR and the USBR are responsible under their water right permits and licenses to meet the objectives for export pumping as they are only directed towards the CVP and SWP pumping operations.

5. Delta Cross Channel Gates Operation

This objective will be implemented through water rights actions. The USBR, as the owner and operator of the Gates, is solely responsible under its water right permits and licenses for implementing to meet the Delta Cross Channel Gates Closure objectives.

6. Salinity Control

Salinity objectives are implemented through a mix of water rights actions (flow) and salinity control measures depending on the location and beneficial use affected. Salinity objectives and their implementation fall into the following broad categories:

- i. Municipal and Industrial Uses: These objectives will be implemented through water rights actions (flow), as the ~~The DWR and the USBR currently are responsible under their water right permits and licenses for implementation of chloride objectives~~ are primarily to protect municipal and industrial uses from ocean derived chlorides.
- ii. Fish and Wildlife in Suisun Marsh: This objective will be implemented through water rights actions, as the salinity levels are primarily provided by flows or a combination of flows and control structures. ~~The DWR and the USBR currently are responsible under their water right permits and licenses~~ Water Rights Decision 1641 establishes the current obligations to implement meet the numeric salinity objectives for Suisun Marsh at stations S-21, and S-42 (Figure 5). Due to evidence showing a potential for the objectives at stations S-97 and S-35 to cause harm to the beneficial uses they are intended to protect, the State Water Board in Decision 1641 (D-1641) did not require of the DWR and USBR attainment of the objectives at these two stations. Implementation of the salinity objectives at these two stations is discussed in section B.5.
- iii. Fish and Wildlife in The San Joaquin River: This objective will be implemented through water rights actions. ~~The DWR and the USBR currently are~~ D-1641 establishes the current responsibilities under their water right permits and licenses for implementation of the San Joaquin River Salinity objective to protect fish and wildlife uses.
- iv. Agriculture in the Western Delta, Interior Delta, and Export Area: These objectives will be implemented through water rights actions. ~~The DWR D1641 establishes the current and the USBR currently are~~ responsibilities under their water right permits and licenses for implementation of the Western Delta, Interior Delta, and Export Area salinity objectives to protect agricultural uses.
- v. Agriculture in the Southern Delta: ~~DWR and the USBR~~ D1641 establishes the current water ~~rights~~ responsibilities under their water right permits and licenses for implementation of

the Southern Delta salinity objectives to protect agricultural beneficial uses. Implementation of salinity objectives in the southern Delta requires a mix of salt load control and flow related measures. It is therefore discussed in section B of the Program of Implementation: 'Measures Requiring a Combination of State Water Board Authorities and Actions by Other Agencies.'

B. Measures Requiring a Combination of State Water Board Authorities and Actions by Other Agencies

Implementation of the following water quality objectives will require water rights and water quality measures by the State Water Board, in concert with actions taken by other agencies:

Implementation of these objectives can be accomplished through a combination ~~by one or all of the following: dedicated water flows for dilution flows,~~ regulation of water diversions, pollutant discharge controls, best management practices to control the amount of waste produced, and improvements in water circulation. In addition to describing the actions taken, or to be taken, by the State Water Board, this section describes the actions taken, and that should be taken, by other agencies to implement these objectives. The State Water Board will use its authority, as needed and appropriate, under section 13165 of the California Water Code to require that studies are conducted.

1. Southern Delta Agricultural Salinity Objectives

Elevated salinity in the southern Delta is caused by a variety of factors. ~~Low flows, salts imported in irrigation water by the State and federal water projects, municipal discharges; subsurface accretions from groundwater; tidal actions; diversions of water by the SWP, CVP, and local water users; channel capacity; and discharges from land derived salts, primarily from agricultural drainage have all been considered as causal factors.~~ These salinity objectives currently are implemented through a mix of water right actions permits ~~and salinity control. D1641 establishes the current water rights actions~~ ~~The USBR is responsible under its water rights for implementing meeting~~ the salinity objectives on the San Joaquin River at Vernalis and ~~DWR and USBR are both responsible under their water right permits and license for meeting~~ the salinity objectives at the other three southern Delta stations (San Joaquin River at Brandt Bridge, Old River at Middle River and Old River at Tracy Road Bridge (interior southern Delta stations)). Salinity objectives on the San Joaquin River at Vernalis are also being implemented through through non-water rights actions, including the San Joaquin River Salinity Control Program in the Central Valley Regional Water Quality Control Board's (Regional Water Board) Water Quality Control Plan for the Sacramento and San Joaquin River Basins. In October of 2005, the State Water Board approved an Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins. The amendment consists of a Control Program for Salt and Boron Discharges into the Lower San Joaquin River and other actions to implement salinity objectives in the SJR at Vernalis. The salt and boron basin plan amendment includes implementation measures and a timeline for implementation of salt load allocations.

The salinity objectives at Vernalis can be attained by releasing dilution water from New Melones and other sources, completing a drain to remove the salts generated by agricultural drainage and municipal discharges from the San Joaquin Valley, and conducting measures in the San Joaquin Valley such as the measures discussed below for controlling salinity in the interior southern Delta. The salinity objectives for the interior southern Delta can be implemented by measures that include state regulatory actions, state funding of projects and studies, and long-term implementation of management practices to control saline discharges.

State Regulatory Actions

i. The State Water Board has allocated responsibility to some water right holders to release dilution flows. Currently, D1641 establishes water right actions directed to USBR to implement USBR is required to meet the Vernalis objectives, and directed to USBR and DWR to implement both are required to meet the interior southern Delta objectives, but The State Water Board could also require releases from other non-SWP/CVP reservoirs after notice and an opportunity for a hearing. In lieu of some water releases, water right holders such as USBR and DWR should use measures that affect circulation of water in the southern Delta (including permanent barriers or operational gates).

ii. The Central Valley Regional Water Board shall impose discharge controls on in-Delta discharges of salts by agricultural, domestic, and municipal dischargers.

iii. The Central Valley Regional Board shall implement the Total Maximum Daily Load (TMDL) for the San Joaquin River at Vernalis, develop and adopt a basin plan amendment and TMDL for areas upstream of Vernalis, and implement the TMDL and Water Quality Control Plan to reduce salinity and other pollutants reaching the southern Delta.

It is the intent of the State Water Board to implement the southern Delta salinity objectives by utilizing water rights actions to the extent needed to mitigate water right holders' effects on salinity in the southern Delta and to utilize water quality actions and recommendation to other entities to reduce saline discharges and other pollutants reaching the southern Delta. The hearings scheduled to begin in January 2007 will provide a forum to receive information related to the impacts of water right holders, discharges, and other factors on southern Delta salinity.

State Funding of Programs

i. The State Water Board has various financial assistance programs under which it can contribute funding for programs that will help meet the salinity objectives or to improving understanding about salinity conditions in the southern Delta (primarily the San Joaquin River upstream of Vernalis). To date, it has funded tens of millions of dollars worth of projects and studies for such programs. The State Water Board provides funds through the State Revolving Fund Loan Program, the Agricultural Drainage Loan Program, the Agricultural Drainage Management Loan Program, Proposition 13, 40, and 50 grant funding through the Nonpoint Source Pollution Control Programs and Watershed Protection Programs.

APPENDIX 1

10. Southern Delta Electrical Conductivity Objectives for the Protection of Agricultural Beneficial Uses

During the Plan Review, the State Water Board received information as to whether it should modify the Southern Delta Electrical Conductivity Objectives for the Protection of Agricultural Beneficial Uses set forth in Table 2 of the Plan, and whether the program of implementation should be modified. Elevated salinity (measured as EC) in the southern Delta is caused by a multitude of ~~F~~ factors, including: ~~L~~ low flows; salts imported in irrigation water by the State and federal water projects; municipal discharges; subsurface accretions from groundwater; tidal actions; diversions of water by the SWP, CVP, and local water users; channel capacity; and discharges of land-derived salts, primarily from agricultural drainage have all been viewed as contributing factors. Some of ~~T~~ the factors listed above contribute to salinity at each of the four Southern Delta compliance locations to varying degrees depending on location, flow conditions, and other factors. The southern Delta EC objectives are intended to protect southern Delta agricultural uses from these effects.

The Prop. 13 Nonpoint Source Pollution Control Program provides grant funding for projects that protect the beneficial uses of water throughout the state through the control of nonpoint source pollution. Loans are available to local public agencies and nonprofit organizations formed by landowners to prepare and implement local nonpoint source plans. Sixty percent of the funds will be allocated to projects in the Counties of Los Angeles, Orange, Riverside, San Diego, San Bernardino, and Ventura. Forty percent of the funds are to be allocated to projects in the remaining counties.

Discussion

The State Water Board received information from several parties concerning the southern Delta agricultural salinity objectives. Some of that information concerned potential changes to the objectives or the program of implementation, while much of the information was related to other matters or proceedings outside of the scope of the review of the objectives. The SJRGA advocated increasing the salinity objectives at Vernalis to 1.0 mmhos/cm throughout the year and eliminating the objectives during August, September, and October of below normal, dry, and critically dry years. The San Joaquin River Water Authority Exchange Contractors (SJEC) also argued for increasing the 0.7 mmhos/cm southern Delta EC objectives to 1.0 mmhos/cm or higher. DWR and SWC did not recommend any specific changes to the salinity objectives; however, they did recommend that additional analyses be conducted to determine the appropriateness of the objectives. DWR also recommended various changes to the program of implementation to delay implementation of the 0.7 EC objective at the interior southern Delta sites until various actions occur. SWC also recommended a review of DWR's responsibility for implementing the objectives at Brandt Bridge. SDWA opposed increasing the salinity objectives and advocated increasing the effective period of the 0.7 EC objective from March 1 through September 30. CCWD, the Central Valley Regional Water Board, and the USEPA recommended that no changes be made to the southern Delta agricultural EC objectives.

The SJRGA provided a variety of scientific, economic, and policy testimony and exhibits in support of its recommendations to change the salinity objective at Vernalis.⁹ The SJRGA submitted evidence indicating that the current Vernalis water quality objective of 0.7 mmhos/cm EC during the irrigation season is not necessary to protect agricultural beneficial uses at Vernalis (including irrigation for beans, alfalfa, and corn). The SJRGA presented evidence that when considering rainfall, irrigation water salinities of 1.1 EC are adequate to provide 100 percent crop yields of beans and other crops grown in the southern Delta and thus a year round EC objective of 1.0 would conservatively protect all crops. The SJRGA pointed out that the original studies upon which the objectives were based, were conducted in pots without considering natural leaching by rainfall, using sub-irrigation of organic soils, which are rare in the southern Delta. The SJRGA argued that poor soil conditions, shallow water tables, and poor groundwater quality in the southern Delta along with

⁹ The SJRGA did not comment specifically regarding the objectives at the other three southern Delta locations.

of irrigation water salinity can be tolerated if additional water is applied to increase the leaching fraction, the Central Valley Regional Water Board stated that none of the information presented during the workshop adequately refutes the State Water Board's previous findings that an EC of 0.7 is protective of all crops on all soil types in the southern Delta. The Central Valley Regional Water Board stated that the conclusions reached by the various witnesses would require special cropping or water management, which would shift the costs from the dischargers to the water users. Regarding the paper titled *An Approach to Develop Site-Specific Criteria for Electrical Conductivity to Protect Agricultural Beneficial Uses that Accounts for Rainfall* submitted by the SJRGA (SJRG-03), the Central Valley Regional Water Board pointed out that the study only covers soil, rainfall, and other conditions specific to the Davis area. The Central Valley Regional Water Board stated that there is no new science to justify changing the objectives or to discount the science on which the objectives were originally based. (RB5-02 and 03.)

The USEPA commented that they do not believe there is sufficient scientific or technical evidence at this time to support changes in the EC objectives because, in addition to other reasons, information from the crop studies is not specific to conditions in the Delta. (USEPA-04.)

While the SJRGA and the SJEC submitted evidence to indicate that a salinity objective of 0.7 EC is not necessary to protect southern Delta agriculture, that information was not specific to the southern Delta. Given the unique soil conditions in the southern Delta and other complicating factors discussed by SDWA, the scientific analyses of irrigation crop salinity needs presented by various parties cannot be correlated to conditions in the southern Delta without further field studies to verify such results. Further, other factors may also alter irrigation salinity needs such as irrigation practices and depth to water table that would need to be investigated before considering changes to the objectives. In addition, adequate information is not available to support expanding the effective period of the 0.7 mmhos/cm EC objectives to apply during March and September at this time. As a result, additional field analyses are needed to confirm any recommendations for changes in the salinity objectives before any modifications are made to the objectives. As discussed, the State Water Board recommends conducting an independent scientific investigation (similar to the investigation on which the objectives are based) to review the issues raised during this review in greater detail. While parties recommended changes to the objectives based on testimony and evidence from various sources, that evidence was not specific to conditions for crops grown in the southern Delta. However, the State Water Board may consider making changes to the southern Delta EC objectives in the future based on additional analyses concerning the irrigation water quality needs of crops grown in the southern Delta. The State Water Board has scheduled will convene a workshops beginning in January 2007 to discuss, among other topics, undertaking an independent scientific investigation of irrigation salinity needs in the southern Delta (similar to the investigation on which the objectives are based). The purpose of the scientific investigation will be to review the issues raised during this review in greater detail and to provide a foundation for supporting the objectives or

making changes to the objectives in the future based on studies specific to the southern Delta.

The State Water Board recognizes that permanent barriers (or operational gates) have not been installed in the southern Delta to assist in achieving the southern Delta EC objectives and that even when the barriers are installed, they may not always be adequate to fully meet the objectives at the Old River sites and will not assist in achieving the objectives at Brandt Bridge on the San Joaquin River. Accordingly, a revised additional program of implementation measures may be needed to achieve full implementation. The State Water Board considered these issues when it issued D-1641 and placed water right responsibility on DWR and USBR for meeting southern Delta EC objectives. If DWR or USBR believe that changes in this responsibility are warranted they may pursue a petition to change their water right obligations or petition to add other responsible parties to share in the burden of meeting the objectives at any time. Some of those revisions may occur through water rights actions, while others may be actions under the Board's water quality authority or by other entities. A revised program of implementation should be incorporated into the Bay-Delta water quality control plan, with time schedules for full implementation, as appropriate; as pursuant to Justice Robie's decision in the State Water Resources Control Board Cases, it is important that any future water rights implementation decision by the State Water Board be consistent with the program of implementation set forth in the water quality control plan. The proceedings scheduled for January 2007 will provide an appropriate forum for considering modifications to the program of implementation for the southern Delta salinity objectives.

Central Valley Salinity

As a result of a joint State Water Board and Regional Water Board workshop on salinity issues in the Central Valley in January of 2006, the State Water Board directed creation of a joint panel of Regional and State Water Board staff to develop a plan to address salinity issues in the Central Valley. The panel is currently preparing a report for the State Water Board with its findings and recommendations.

Cease and Desist Order

~~On February 15, 2006, the State Water Board adopted a Cease and Desist Order against DWR and USBR for threatened violation of the 0.7 EC objective at the interior southern Delta compliance locations. The order puts USBR and DWR on a time schedule, with reporting requirements, to implement measures to obviate the threat of non-compliance with the 0.7 southern Delta agricultural EC objective in their permits and license at the three interior southern Delta compliance stations. DWR and USBR have indicated that they will have difficulty meeting the 0.7 EC objective during drier years at the Old River sites without installation of permanent barriers in the southern Delta and that they will have difficulty meeting the 0.7 EC objective at Brandt Bridge without additional measures to reduce saline discharges.~~

Conclusion

The State Water Board does not have adequate evidence on which to base substantive changes to the southern Delta EC (salinity) objectives for the protection of agricultural beneficial uses at this time. Therefore, these objectives remain unchanged in the 2006 Plan. The Board will receive additional evidence on this matter beginning in January 2007 and will also consider modifications to the program of implementation.

Footnote 5 of Table 2 of the 1995 Plan states that the 0.7 mmhos/cm EC objective will be implemented at the two Old River sites by December 31, 1997. The 2006 Plan deletes this footnote because it is obsolete. Currently, DWR and USBR are