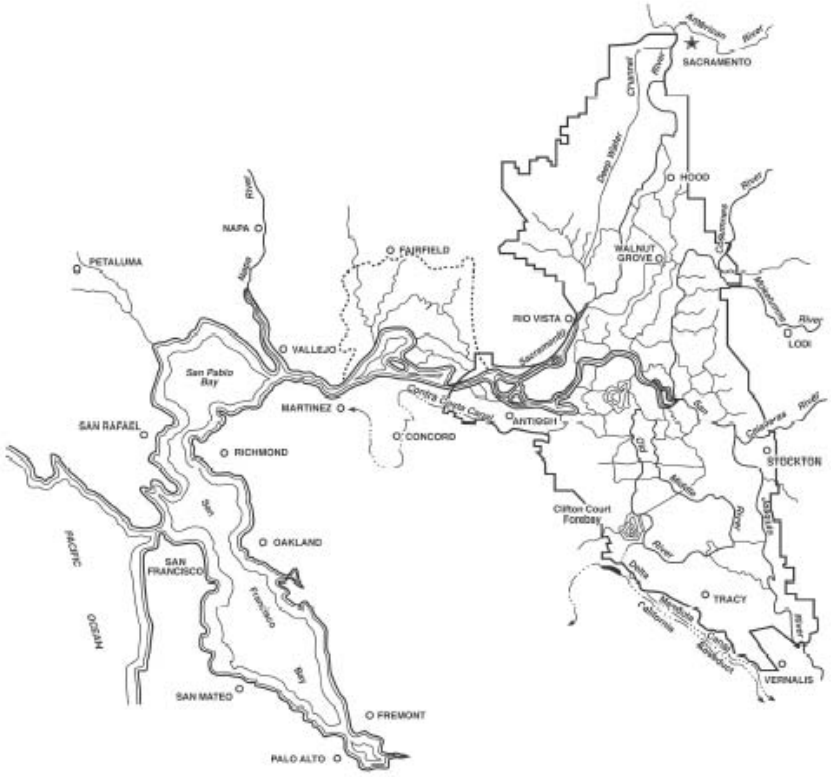

Staff Report

PERIODIC REVIEW OF THE 1995 WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY/SACRAMENTO-SAN JOAQUIN DELTA ESTUARY

Adopted by Resolution 2004 – 0062

SEPTEMBER 30, 2004

STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2004-0062

ADOPTION OF THE 2004 STAFF REPORT REGARDING PERIODIC REVIEW OF THE 1995 WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY/SACRAMENTO-SAN JOAQUIN DELTA ESTUARY

WHEREAS:

1. The State Water Resources Control Board (SWRCB) is responsible for the regulation of activities and factors that may affect the quality of the waters of the State (Wat. Code sections 13000, 13001.)

2. The SWRCB adopted a water quality control plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (1995 Plan) in resolution 95-24. The 1995 Plan was adopted by the SWRCB to establish water quality control measures that contribute to the protection of beneficial uses in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary.

3. The California Water Code and the federal Clean Water Act require, respectively, a periodic and a triennial review of water quality objectives or standards under Water Code sections 13170 and 13240 and under section 303(c)(1) of the federal Clean Water Act (33 USC § 1313(c)(1)).

4. The SWRCB began this review of the 1995 Plan by issuing a notice of public workshop on December 10, 2003, for a workshop that the SWRCB held on January 8, 2004.

5. The SWRCB received comments from interested parties during, and immediately after, the January 8, 2004 workshop.

6. The SWRCB staff have prepared a Staff Report addressing the issues noted in the comments.

7. Based on review of the comments, as well as analysis of the issues, the Staff Report recommends that the SWRCB receive further information to help it decide whether to amend the following parts of the 1995 Plan:

    a. Delta Outflow objectives
    b. River Flow objectives: Sacramento River at Rio Vista
    c. River Flow objectives: San Joaquin River at Airport Way Bridge, Vernalis: February-April 14 and May 16-June
    d. Export limit objectives
    e. San Joaquin River at Airport Way Bridge, Vernalis: 31 day Pulse Flow objectives for April 15 – May 15
    f. Southern Delta Electrical Conductivity objectives

g. Chloride Objectives, Compliance Location at Contra Costa Canal at Pumping Plant #1, and Potential New Objectives
h. Salmon protection objective
i. Delta cross channel gates closure objective
j. The water quality compliance and baseline monitoring program
k. Other parts of the Program of Implementation

8. In addition to recommending consideration of changes in the above parts of the 1995 Plan, the Staff Report recommends that the Program of Implementation section of the 1995 Plan be amended as necessary to address implementation of any new or revised objectives that may be adopted in any plan amendment or revised Plan.

9. The Staff Report recommends that the following matters should not be considered for changes or new objectives at this time:

    a. Dissolved oxygen objectives
    b. Other issues not related to the setting of water quality objectives in the Bay or Delta.
    c. San Joaquin River electrical conductivity upstream of Vernalis
    d. Water level objectives
    e. Western Suisun Marsh salinity objectives
    f. Year round flow objectives on the San Joaquin River

10. The Staff Report includes a plan of work that recommends that the SWRCB proceed immediately to conduct informational workshops to receive detailed technical information on the matters that the Staff Report recommends be considered for changes.

11. Based on the information received during the periodic review and the additional information to be received during future workshops addressing the issues listed in paragraph 6 above, the SWRCB staff will recommend any needed amendments and will prepare draft plan amendments or a draft revised plan for consideration by the SWRCB, and any required environmental documentation. At that time interested parties will have the opportunity, at a public hearing, to comment on staff's recommendations and on the environmental analysis. After the hearing, the SWRCB staff will prepare responses to comments. Subsequently, the SWRCB will hold a Board meeting to consider adopting any proposed changes.

THEREFORE, BE IT RESOLVED:

1. That the SWRCB adopts the Staff Report regarding periodic review of the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento – San Joaquin Delta Estuary and authorizes the Executive Director to transmit the Report to the U.S. Environmental Protection Agency (USEPA), Region 9, in compliance with section 303(c)(1) of the federal Clean Water Act.

2. That the SWRCB affirms that the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento – San Joaquin Delta Estuary, as it currently exists, remains effective until such time as it is changed by formal action of the SWRCB.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 30, 2004.

Debbie Irvin
Clerk to the Board

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LIST OF ABBREVIATIONS

cfs	cubic feet per second
DO	dissolved oxygen
EC	electrical conductivity
E/I	Export/Inflow ratio
MAF	million acre-feet
mg/l	milligram(s) per liter
mmhos/cm	millimhos per centimeter
NDOI	Net Delta Outflow Index
ppt	parts per thousand
TAF	thousand acre-feet
TOC	total organic carbon

LIST OF ACRONYMS

BI	Bay Institute
BPA	Basin Plan Amendment
CALFED	aka California Bay Delta Authority
CBDA	California Bay Delta Authority
CCWD	Contra Costa Water District
CDWA	Central Delta Water Agency
CEQA	California Environmental Quality Act
CFBF	California Farm Bureau Federation
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVRWQCB	Central Valley Regional Water Quality Control Board
DFA	California Department of Food and Agriculture
DFG	California Department of Fish and Game
DO	Dissolved Oxygen
DWR	California Department of Water Resources
DWSC	Deep Water Ship Channel
EMP	Environmental Monitoring Program
FERC	Federal Energy Regulatory Commission
GGAS	Golden Gate Audubon Society et al.
IEP	Interagency Ecological Program
JPOD	Joint Points of Diversion
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NCWA	Northern California Water Association
NOAA Fisheries	National Marine Fisheries Service
NRCS	U.S. Natural Resources Conservation Service
OCAP	Operations Criteria and Plan
SDIP	South Delta Improvement Plan
SDWA	South Delta Water Agency
SEW	Suisun Ecological Workgroup

SEWD	Stockton East Water District
SJREC	San Joaquin River Water Authority, Exchange Contractors
SJRGA	San Joaquin River Group Authority
SJVDP	San Joaquin Valley Drainage Program
SLDMWA	San Luis Delta-Mendota Water Authority
SMPA	Suisun Marsh Preservation Agreement
SRCD	Suisun Resource Conservation District
SWC	State Water Contractors
SWP	State Water Project
SWRCB	State Water Resources Control Board
SEWD	Stockton East Water District
TUD	Tuolumne Utilities District
TMDL	Total Maximum Daily Load
UDWA	Urban Drinking Water Agency
USBR	United States Bureau of Reclamation
USCOE	United States Army Corps of Engineers
USDOI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VAMP	Vernalis Adaptive Management Plan
WQCP	Water Quality Control Plan

STAFF REPORT

2004 PERIODIC REVIEW
OF THE
1995 WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO
BAY/SACRAMENTO-SAN JOAQUIN DELTA ESTUARY

Executive Summary

The State Water Resources Control Board (SWRCB) is conducting a periodic review to evaluate new information for consideration of new water quality objectives or changes to the objectives specified in the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (1995 Bay-Delta Plan or Plan). This staff report contains recommendations to the SWRCB regarding the issues that should receive further consideration. It discusses the 16 major issues that were addressed in the oral comments received at the December 10, 2003 workshop as well as written comments submitted prior to February 5, 2004. For each issue there is a summary of the comments, a brief discussion and staff recommendation on whether or not to consider changes in the Plan to address the issue. It is important to note that addressing the issue does not guarantee a change in the Plan.

Based on review of the comments, as well as analysis of the issues, staff recommends that the SWRCB hold a multi-day workshop beginning in the fall of 2004 to receive detailed information about potential changes in the Plan. The workshop topics are identified below and reflect staff's recommendations on the order that issues should be discussed.

1. Changes to the water quality compliance and baseline monitoring program
2. Delta cross channel gates closure
3. Salmon protection
4. Chloride Objectives, Compliance Location at Contra Costa Canal at Pumping Plant #1, and Potential New Objectives
5. Delta Outflow
6. Export limits
7. River Flows: Sacramento River at Rio Vista
8. River Flows: San Joaquin River at Airport Way Bridge, Vernalis: February-April 14 and May 16-June
9. San Joaquin River at Airport Way Bridge, Vernalis: 31 day Pulse Flow April 15 – May 15
10. Southern Delta Electrical Conductivity
11. Other Changes to the Program of Implementation

In addition to these issues, staff recommends that the Program of Implementation section of the 1995 Plan be amended as necessary to address any new or revised objectives that may be adopted in any plan amendment or revised Plan. Staff also recommends that the SWRCB update the Program of Implementation to be consistent with existing environmental, regulatory, planning, and program conditions as appropriate.

Staff recommends that the following issues are not appropriate for review at this time:

- Dissolved oxygen
- Other issues not related to the setting of water quality objectives in the Bay or Delta.
- San Joaquin River electrical conductivity upstream of Vernalis
- Water level objectives
- Western Suisun Marsh salinity objectives
- Year round flow objectives on the San Joaquin River

Based on the information already received during the periodic review and the additional information received during future workshops, the SWRCB staff will recommend any needed amendments and will prepare draft plan amendments or a draft revised plan[1] for consideration by the SWRCB, and any required environmental documentation. At that time interested parties will have the opportunity, at a public hearing, to comment on staff's recommendations and on the environmental analysis. After the hearing, the SWRCB will hold a Board meeting to consider adopting any proposed changes.

The 1995 Plan and other related documents are posted on the SWRCB's Division of Water Rights website at www.waterrights.ca.gov/baydelta/1995%20Quality%20Plan.htm.

[1] Staff will recommend and the SWRCB will later decide, based on the volume and magnitude of amendments necessary, whether to amend the 1995 Plan or prepare an entirely new water quality control plan.

I. Introduction

The 1995 Plan was adopted by the State Water Resources Control Board (SWRCB) to establish water quality control measures that contribute to the protection of beneficial uses in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. Together, these beneficial uses and the water quality objectives established to protect them are referred to as water quality standards under the terminology of the federal Clean Water Act. The California Water Code and the federal Clean Water Act require, respectively, a periodic and a triennial review of water quality objectives or standards. In accordance with these statutes, the SWRCB is conducting a periodic review of the 1995 Plan. This report describes the actions taken by the SWRCB to date for the periodic review of the 1995 Plan and includes staff's recommendations for future actions.

II. Background

The San Francisco Bay/Sacramento-San Joaquin Delta Estuary and Suisun Marsh (herein after collectively referred to as 'the Delta') are located at the confluence of California's two major river systems, the Sacramento River and San Joaquin River, and the San Francisco Bay. The Delta (as defined in Water Code section 12220) encompasses a combined total of approximately 851,000 acres (of which approximately 135,000 acres consist of waterway, marshland, or other water surfaces) and is one of the country's largest and most important estuarine systems for fish and waterfowl production on the Pacific Coast. Additionally, the Delta is one of California's most fertile and important agricultural regions, and its tributary watersheds provide water for about two-thirds of California's municipal, industrial, and agricultural water users.

Given the Delta's importance to California's economy and environment, the SWRCB and its predecessors have undertaken numerous proceedings regarding water rights within the Delta's tributary watersheds and the protection of its beneficial uses. A timeline summarizing these proceedings is included as an appendix to this report.

Under its authority to protect the beneficial uses of water, on May 22, 1995, the State Water Resources Control Board (SWRCB) adopted the 1995 Plan. The 1995 Plan can be viewed electronically at www.waterrights.ca.gov/baydelta/1995%20Quality%20Plan.htm. The 1995 Plan established water quality control measures that contribute to the protection of beneficial uses in the Delta. The 1995 Plan identified: (1) beneficial uses of the Delta 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. The 1995 Plan superseded the Water Quality Control Plan for Salinity (adopted in May 1991) and the Water Quality Control Plan for the Sacramento-San Joaquin Delta and Suisun Marsh (adopted in August 1978).

III. Periodic Review Process and Subsequent Process

Water quality control plans identify the beneficial uses of the subject water bodies, specify numeric or narrative objectives that are appropriate for protecting those beneficial uses and specify a program for implementing actions to ensure the specified objectives are met. (Wat. Code, § 13050 (j).)

California Water Code section 13170 authorizes the SWRCB to adopt water quality control plans in accordance with the provisions of Water Code sections 13240 through 13244. Plans adopted by the SWRCB supersede regional water quality control plans for the same waters to the extent of any conflict. Water Code section 13240 requires that water quality control plans be periodically reviewed. The federal Clean Water Act, at section 303 (c) (33 U.S.C. § 1313 (c), requires a triennial review of state water quality "standards," as defined in the Act. Adoption of this report marks the completion of the periodic review. Next, the SWRCB will embark on a process that may lead to a revised Plan or amendments to the 1995 Plan.

In the upcoming process, the SWRCB intends to conduct several technical workshops and conduct other investigations, to receive technical information that will help it determine whether and how it should amend or revise the 1995 Plan to better protect the beneficial uses of water in the Delta and Suisun Marsh. As a result of the workshops and investigations, the SWRCB staff may prepare draft amendments to the 1995 Plan or may prepare a draft revision of the Plan. Any draft or drafts amending or revising the Plan will include appropriate environmental analysis of the proposed amendments or revisions. The SWRCB will provide notice of the draft or drafts to all members of the public who have expressed an interest, specifying the means of obtaining copies and setting a public hearing on the draft amendments or draft revision of the Plan. (Wat. Code, § 13244.)

A. Public Notice

The SWRCB began its periodic review on December 10, 2003, by issuing a notice of a public workshop to receive comments from agencies and members of the public regarding any elements of the 1995 Plan that the SWRCB should consider amending. The notice included a list of potential issues prepared by staff. The SWRCB held the public workshop on January 8, 2004 and accepted written comments through February 5, 2004.

B. Comments Received

The SWRCB received written and/or oral comments from the following parties: Contra Costa Water District (CCWD); the San Joaquin River Group Authority (SJRGA); the San Luis and Delta-Mendota Water Authority (SLDMWA); South Delta Water Agency (SDWA); the United States Department of the Interior (USDOI); the California Department of Water Resources (DWR); the State Water Contractors (SWC); the California Department of Fish and Game (DFG); the Northern California Water

Association (NCWA); Golden Gate Audubon Society, et al.[2] (GGAS); the San Joaquin River Water Authority, Exchange Contractors (SJREC); The Bay Institute (BI); Central Delta Water Agency (CDWA); California Farm Bureau Federation (CFBF); Delta Wetlands; Stockton East Water District (SEWD); Suisun Resource Conservation District (SRCD); Tuolumne Utilities District (TUD); the Urban Drinking Water Agency (UDWA); and Deltakeeper. Oral comments made by the parties at the workshop were substantially the same as their written comments. However, Deltakeeper only presented oral comments and did not submit written comments. The transcript from the workshop and all written comments are posted on the SWRCB's Division of Water Rights' website at http://www.waterrights.ca.gov/baydelta/Triennial%20Plan.htm.

C. General Responses to Comments

The SWRCB received some comments that do not pertain directly to the objectives in the 1995 Plan. For example, some comments addressed the environmental review of new or revised flow or flow-dependent water quality objectives. These comments are noted, but they are not relevant to this periodic review. If the SWRCB proposes to amend or revise the Plan in the next proceeding, the SWRCB will determine at that time how it will comply with the California Environmental Quality Act (CEQA). In most cases the SWRCB prepares a revised plan or a plan amendment that includes environmental documentation that is functionally equivalent to an environmental impact report or a negative declaration, pursuant to Public Resources Code section 21080.5. Comments on the environmental review of proposed new or revised flow or flow-dependent water quality objectives should be made during the environmental review process for any plan amendment or revised Plan that is prepared after this periodic review. (*See* Cal. Code Regs., tit. 23, § 3775-3782.)

The SWRCB also received comments addressing the allocation of responsibility for implementation of the various objectives or requesting that specific permit conditions be added or amended in individual water right or water quality permits or certifications. Such comments should be raised during future water right or water quality proceedings on implementation of the objectives.[3]

Likewise, comments concerning the environmental review of potential allocations of implementation responsibility for any new or revised objectives should be addressed during the CEQA review of the potential allocations of responsibility. Comments regarding SWRCB Decision 1641 (D-1641) should have been raised during the hearing that preceded the Decision or in petitions for reconsideration within 30 days after the

[2] This group includes Golden Gate Audubon Society, Marin Audubon Society, San Joaquin Audubon Society, Committee to Save the Mokelumne, California Sport Fishing Protection Alliance, and California Water Impact Network.

[3] Actual implementation of any revisions to the 1995 Plan entails a separate process from the review of the 1995 Plan. While the revised Water Quality Control Plan will describe implementation measures generally, it will not be the instrument that requires the actual measures. These measures, to the extent that they require changes in water rights, will be the result of a separate proceeding, similar to the proceeding that led to D-1641, which is the Decision that implements most of the objectives in the 1995 Plan.

SWRCB adopted D-1641. To the extent that any affected water right holder wishes to change his or her water right permit or license terms and conditions added or amended by D-1641, the affected water right holder may file a petition for change with the SWRCB. In addition, if any party has a complaint concerning the exercise of water rights, the party may file a complaint with the SWRCB's Division of Water Rights and the complaint will be investigated as appropriate.

Some of the comments on the water quality objectives in the 1995 Plan request relaxation of water quality objectives or changes in the compliance locations where the location changes may amount to a less stringent requirement. Assuming that the SWRCB has information supporting a change and making the change appears to be in the public interest, the SWRCB will analyze the change pursuant to its "Statement of Policy with Respect to Maintaining High Quality of Waters in California" set forth in SWRCB resolution No. 68-16 and, if appropriate, pursuant to 40 CFR section 131.12 which is the federal anti-degradation policy, before making the change. The federal anti-degradation policy applies only to water quality objectives and beneficial uses that are water quality standards within the meaning of the federal Clean Water Act. Regulation of water quality objectives pursuant to 40 CFR section 131.12 that are not federal water quality standards, such as objectives for flow and water project operations, could fundamentally interfere with the State's water allocation authority, which is protected under federal Clean Water Act section 101(g) (33 U.S.C. § 1251(g)).

The 1995 Plan includes only objectives that apply to the waters of the Sacramento-San Joaquin Delta and Suisun Marsh. These objectives are in addition to the objectives adopted by the Central Valley and San Francisco Bay Regional Water Quality Control Boards for this geographic area. All of the compliance locations for the Plan objectives are within the geographic boundaries of the estuary that includes the Sacramento-San Joaquin Delta, Suisun Marsh, and the San Francisco Bay. Some commenters suggest that the SWRCB should set objectives for compliance locations upstream of the Delta. These areas, however, are within the existing planning areas of the Central Valley Regional Water Quality Control Board (CVRWQCB), and that board has authority to set objectives at those locations to the same extent that the SWRCB could set objectives. Further, the CVRWQCB has the authority to recommend measures to the SWRCB for implementation of objectives adopted by the CVRWQCB, including recommending implementation measures for flow-dependent objectives.

Accordingly, it is unnecessary for the SWRCB to extend its review outside the current geographical area addressed in the 1995 Plan. Additionally, to the extent that the commentors want the SWRCB to consider requiring instream flows or other measures in tributaries of the Delta to protect public trust uses, the SWRCB can generally conduct such proceedings without the need for a water quality objective.

Staff does not recommend that the SWRCB consider revising the designated beneficial uses of the waters of the Bay and Delta Estuary. Nor did any of the commentors suggest that the beneficial uses specified in the 1995 Plan be revised.

IV. Organization of This Report

The 1995 Plan contains flow and flow-dependent water quality objectives to protect municipal and industrial, agricultural, and fish and wildlife uses in the Delta and Suisun Marsh. The objectives are contained in three tables in the 1995 Plan. In addition, the program of implementation for the 1995 Plan includes a fourth table, titled Water Quality Compliance and Baseline Monitoring Program, that specifies compliance and baseline monitoring locations and the parameters that must be monitored at each location.

The analysis of the issues identified in this staff report is organized to follow the tables in the 1995 Plan. For each issue, staff has summarized the comments received, provided some background on the topic, and based on staff's analysis of the issue, made a recommendation on whether or not the issue should be reviewed at this time. Staff recommendations for review of an objective or a portion of the Program of Implementation does not guarantee that the review will result in any changes in a future proceeding to consider amendments or revisions to the 1995 Plan.

This report identifies the following issues that apply to the three Water Quality Objectives tables:

Table 1 – Water Quality Objectives for Municipal and Industrial Beneficial Uses

Issue 1: Chloride Objectives, Compliance Location at Contra Costa Canal at Pumping Plant #1 (Rock Slough), and Potential New Objectives

Table 2 – Water Quality Objectives for Agricultural Beneficial Uses

Issue 2: Southern Delta Electrical Conductivity

Issue 3: San Joaquin River Electrical Conductivity Upstream of Vernalis

Issue 4: Year Round Flow Objectives on the San Joaquin River to Protect Agriculture and Other Uses in the Southern and Central Delta

Issue 5: Water Level Objectives

Table 3 – Water Quality Objectives for Fish and Wildlife Beneficial Uses

Issue 6: Dissolved Oxygen

Issue 7: Salmon Protection

Issue 8: Western Suisun Marsh Salinity Objectives: Cordelia Slough at Ibis Club and Goodyear Slough at Morrow Island Clubhouse (Interagency Stations S-35 and S-97)

Issue 9: Delta Outflow

Issue 10: River Flows – Sacramento River at Rio Vista

Issue 11: River Flows – San Joaquin River at Airport Way Bridge, Vernalis: February-April 14 and May 16-June

Issue 12: River Flows – San Joaquin River at Airport Way Bridge, Vernalis: 31 day pulse flow April 15-May 15[4]

Issue 13: Export Limits

Issue 14: Delta Cross Channel Gates Closure

This report identifies the following issues that apply to the Program of Implementation:

[4] This time period is variable as provided in the 1995 Plan.

Table 4 – Water Quality Compliance and Baseline Monitoring Program

Issue 15: Changes to the Water Quality Compliance and Baseline Monitoring Program

Issue 16: Other updates to the Program of Implementation

Additionally, this report identifies other issues raised by the commentors that do not necessarily belong under any particular table or were not applicable to this periodic review process. These issues are summarized at the end of the Staff Analysis before section VI of this report.

V. Staff Analysis

Provided below are the current objectives contained in the 1995 Plan. Following the objectives is the staff analysis of the issues identified during this periodic review. The analysis of each issue provides a summary of the comments received, relevant background information, and staff's recommendation regarding further SWRCB review. As stated above, staff recommendations for review of an objective or a portion of the Program of Implementation does not guarantee that the review will result in any changes.

Current Objectives:

Table 1
Water Quality Objectives For Municipal and Industrial Beneficial Uses

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI [1])	PARAMETER	DESCRIPTION (UNIT)	WATER YEAR TYPE [2]	TIME PERIOD	VALUE
Contra Costa Canal at Pumping Plant #1 *-or-* ***San Joaquin River at Antioch Water Works Intake***	**C-5 (CHCC06)** **D12 (near) (RSAN007)**	***Chloride (Cl-)***	***Maximum mean daily 150 mg/l Cl- for at least the number of days shown during the calendar year. Must be provided in intervals of not less than two weeks duration. (Percentage of calendar year shown in parenthesis)***	***W*** ***AN*** ***BN*** ***D*** ***C***		***No. of days each calendar year ≤150 mg/l Cl-*** ***240 (66%)*** ***190 (52%)*** ***175 (48%)*** ***165 (45%)*** ***155 (42%)***
Contra Costa Canal at Pumping Plant #1 *-and-* ***West Canal at mouthof Clifton Court Forebay*** *-and-* ***Delta-Mendota Canal at Tracy Pumping Plant*** *-and-* ***Barker Sloughat North Bay Aqueduct Intake*** *-and-* ***Cache Slough at City of Vallejo Intake***		***Chloride (Cl-)***	***Maximum mean daily (mg/l)***	***All***	***Oct-Sep***	***250***

[1] River Kilometer Index station number.
[2] The Sacramento Valley 40-30-30 water year hydrologic classification index (see page 23 of 1995 Plan) applies for determinations of water year type.
[3] Cache Slough objective to be effective only when water is being diverted from this location.

Table 2
Water Quality Objectives For Agricultural Beneficial Uses

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI [1])	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	& VALUE
WESTERN DELTA						
Sacramento River *at Emmaton*	*D-22 (RSAC092)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC (mmhos/cm)*		*0.45 EC April 1 to date shown*	*EC from date shown to Aug 15 [4]*
				W	*Aug 15*	*----*
				AN	*Jul 1*	*0.63*
				BN	*Jun 20*	*1.14*
				D	*Jun 15*	*1.67*
				C	*----*	*2.78*
San Joaquin River at Jersey Point	*D-15\ (RSAN018)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC (mmhos/cm)*		*0.45 EC April 1 to date shown*	*EC from date shown to Aug 15 [4]*
				W	*Aug 15*	*----*
				AN	*Aug 15*	*----*
				BN	*Jun 20*	*0.74*
				D	*Jun 15*	*1.35*
				C	*----*	*2.20*
INTERIOR DELTA						
South Fork Mokelumne River at Terminous	*C-13 (RSMKL08)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC (mmhos/cm)*		*0.45 EC April 1 to date shown*	EC from date *shown to Aug 15 [4]*
				W	*Aug 15*	*----*
				AN	*Aug 15*	*----*
				BN	*Aug 15*	*----*
				D	*Aug 15*	*----*
				C	*----*	*0.54*
San Joaquin River at San Andreas Landing	*C-4 (RSAN032)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC (mmhos/cm)*		*0.45 EC* April 1 to *date shown*	*EC from date shown to Aug 15 [4]*
				W	*Aug 15*	*----*
				AN	*Aug 15*	*----*
				BN	*Aug 15*	*----*
				D	*Jun 25*	*0.58*
				C	*----*	*0.87*
SOUTHERN DELTA						
San Joaquin River at Airport Way Bridge, Vernalis	*C-10 (RSAN112)*	*Electrical Conductivity (EC)*	*Maximum 30-day running average of mean daily EC (mmhos/cm)*	*All*	*Apr-Aug*	*0.7*
					Sep-Mar	*1.0*
-and-					***-or-***	
San Joaquin River at Brandt Bridge site	*C-6 (RSAN073)*					
-and-	*C-8*		*If a three-party contract has been implemented among the DWR, USBR, and SDWA, that contract will be reviewed prior to implementation of the above and, after also considering the needs of other beneficial uses, revisions will be made to the objectives and compliance/monitoring locations noted, as appropriate.*			
Old River near Middle River [5]	*(ROLD69)*					
-and-	*P-12*					
Old River at Tracy Road Bridge [5]	*(ROLD59)*					
EXPORT AREA						
West Canal at mouth of Clifton Court Forebay	*C-9 (CHWST0)*	*Electrical Conductivity (EC)*	*Maximum monthly average of mean daily EC (mmhos/cm)*	*All*	*Oct-Sep*	*1.0*
-and-						
Delta-Mendota Canal at Tracy Pumping Plant	*DMC-1 (CHDMC004)*					

[1] River Kilometer Index station number.

[2] Determination of compliance with an objective expressed as a running average begins on the last day of the averaging period. If the objective is not met on the last day of the averaging period, all days in the averaging period are considered out of compliance.

[3] The Sacramento Valley 40-30-30 water year hydrologic classification index (see page 23) applies for determinations of water year type.

[4] When no date is shown, EC limit continues from April 1.

[5] The EC objectives shall be implemented at this location by December 31, 1997.

Table 3
WATER QUALITY OBJECTIVES FOR FISH AND WILDLIFE BENEFICIAL USES

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER(RKI 1[])	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	VALUE
DISSOLVED OXYGEN						
San Joaquin River between Turner Cut & Stockton	*(RSAN050-RSAN061)*	*Dissolved Oxygen (DO)*	*Minimum DO (mg/l)*	*All*	*Sep-Nov*	*6.0 [4]*
SALMON PROTECTION						
			narrative	*Water quality conditions shall be maintained, together with otehr measures in the watershed, sufficient to achieve a doubling of natural production of chinook salmon from the average production of 1967-1991, consistent with the provisions of State and federal law.*		
SAN JOAQUIN RIVER SALINITY						
San Joaquin River at and between Jersey Point and Prisoners Point [5]	*D-15 (RSAN018)* ***-and-*** *D-29 (RSAN038)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC(mmhos/cm)*	*W,AN,BN,D*	*Apr-May*	*0.44 [6]*
EASTERN SUISUN MARSH SALINITY						
Sacramento River at Collinsville	*C-2 (RSAC081)*	*Electrical Conductivity (EC)*	*Maximum monthly average of both daily high tide EC values (mmhos/cm), or demonstrate that equivalent or better protection will be provided at the location*	*All*	*Oct*	*19.0*
					Nov-Dec	*15.5*
-and-					*Jan*	*12.5*
Montezuma Slought at National Steel	*S-64 (SLMZU25)*				*Feb-Mar*	*8.0*
-and-					*Apr-May*	*11.0*
Montezuma Slough near Beldon Landing	*S-49 (SLMZU11)*					
WESTERN SUISUN MARSH SALINITY						
Chadbourne Slough at Sunrise Duck Club	*S-21 [7] (SLCBN1)*	*Electrical Conductivity (EC)*	*Maximum monthly average of both daily high tide EC values (mmhos/cm), or demonstrate that equivalent or better protection will be provided at the location*	*All but deficiency period*	*Oct*	*19.0*
					Nov	*16.5*
-and-					*Dec*	*15.5*
Suisun Slough, 300 feet south of Volanti Slough	*S-42 [8] (SLSUS12)*				*Jan*	*12.5*
					Feb-Mar	*8.0*
-and-					*Apr-May*	*11.0*
Cordelia Slough at Ibis Club	*S-97 [8] (SLCRD06)*			*Deficiency period [9]*		
-and-					*Oct*	*19.0*
Goodyear Slough at Morrow Island Clubhouse	*S-35 [8] (SLGYR03)*				*Nov*	*16.5*
					Dec-Mar	*15.6*
-and-					*Apr*	*14.0*
Water supply intakes for waterfowl management areas on Van Sickle and Chipps islands	*No locations specified*				*May*	*12.5*
BRACKISH TIDAL MARSHES OF SUISUN BAY						
			narrative		*[10]*	

Table 3 (continued)
WATER QUALITY OBJECTIVES FOR FISH AND WILDLIFE BENEFICIAL USES

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER(RKI 1[])	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	VALUE
DELTA OUTFLOW						
		Net Delta Outflow Index (NDOI) (11)	*Minimum monthly average (12) NDOI (cfs)*	*All*	*Jan*	*4,500 [13]*
				All	*Feb-Jun*	*[14]*
				W,AN	*Jul*	*8,000*
				BN		*6,500*
				D		*5,000*
				C		*4,000*
				W,AN,BN	*Aug*	*4,000*
				D		*3,500*
				C		*3,000*
				All	*Sep*	*3,000*
				W,AN,BN,D	*Oct*	*4,000*
				C		*3,000*
				W,AN,BN,D	*Nov-Dec*	*4,500*
				C		*3,500*
RIVER FLOWS						
Sacramento River at Rio Vista	*D-24 (RSAC101)*	*Flow rate*	*Minimum monthly average [15] flow rate (cfs)*	*All*	*Sep*	*3,000*
				W,AN,BN,D	*Oct*	*4,000*
				C		*3,000*
				W,AN,BN,D	*Nove-Dec*	*4,500*
				C		*3,500*
San Joaquin River at Airport Way Bridge, Vernalis	*C-10 (RSAN112)*	*Flow rate*	*Minimum monthly average [16] flow rate (cfs) [17]*	*W,AN*	*Feb-Apr 14*	*2,130 or 3,420*
				BN,D	*and*	*1,420 or 2,280*
				C	*May 16-Jun*	*710 or 1,140*
				W	*Apr 15-*	*7,330 or 8,620*
				AN	*May 15 [18]*	*5,730 or 7,020*
				BN		*4,620 or 5,480*
				D		*4,020 or 4,880*
				C		*3,110 or 3,540*
				All	*Oct*	*1,000 [19]*
EXPORT LIMITS						
		Combined export rate [20]	*Maximum 3-day running average (cfs)*	*All*	*Apr 15- May 15 [21]*	*[22]*
			Maximum percent of Delta inflow diverted [23] [24]	*All*	*Feb-Jun*	*35% Delta inflow [25]*
				All	*Jul-Jan*	*65% Delta inflow*
DELTA CROSS CHANNEL GATES CLOSURE						
Delta Cross Channel at Walnut Grove	—	*Closure of gates*	*Closed gates*	*All*	*Nov-Jan*	*[26]*
					Feb-May 20	*----*
					May 21- Jun 15	*[27]*

Table 3 Footnotes:

[1] River Kilometer Index station number.

[2] Determination of compliance with an objective expressed as a running average begins on the last day of the averaging period. If the objective is not met on the last day of the averaging period, all days in the averaging period are considered out of compliance.

[3] The Sacramento Valley 40-30-30 Water Year Hydrologic Classification Index (see Figure II-1) applies unless otherwise specified.

[4] If it is infeasible for a waste discharger to meet this objective immediately, a time extension or schedule of compliance may be granted, but this objective must be met no later than September 1, 2005.

[5] Compliance will be determined at Jersey Point (station D15) and Prisoners Point (station D29).

[6] This standard does not apply in May when the best available May estimate of the Sacramento River Index for the water year is less than 8.1 MAF at the 90% exceedence level. [Note: The Sacramento River Index refers to the sum of the unimpaired runoff in the water year as published in the DWR Bulletin 120 for the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total unimpaired inflow to Oroville Reservoir; Yuba River at Smartville; and American River, total unimpaired inflow to Folsom Reservoir.]

[7] The effective date for objectives for this station is October 1, 1995.

[8] The effective date for objectives for this station is October 1, 1997.

[9] A deficiency period is: (1) the second consecutive dry water year following a critical year; (2) a dry water year following a year in which the Sacramento River Index (described in footnote 6) was less than 11.35; or (3) a critical water year following a dry or critical water year.

[10] Water quality conditions sufficient to support a natural gradient in species composition and wildlife habitat characteristic of a brackish marsh throughout all elevations of the tidal marshes bordering Suisun Bay shall be maintained. Water quality conditions shall be maintained so that none of the following occurs: (a) loss of diversity; (b) conversion of brackish marsh to salt marsh; (c) for animals, decreased population abundance of those species vulnerable to increased mortality and loss of habitat from increased water salinity; or (d) for plants, significant reduction in stature or percent cover from increased water or soil salinity or other water quality parameters.

[11] Net Delta Outflow Index (NDOI) is defined in Figure II-3.

[12] For the May-January objectives, if the value is less than or equal to 5,000 cfs, the 7-day running average shall not be less than 1,000 cfs below the value; if the value is greater than 5,000 cfs, the 7-day running average shall not be less than 80% of the value.

[13] The objective is increased to 6,000 cfs if the best available estimate of the Eight River Index for December is greater than 800 TAF. [Note: The Eight River Index refers to the sum of the unimpaired runoff as published in the DWR Bulletin 120 for the following locations: Sacramento River flow at Bend Bridge, near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River flow at Smartville; American River, total inflow to Folsom Reservoir; Stanislaus River, total inflow to New Melones Reservoir; Tuolumne River, total inflow to Don Pedro Reservoir; Merced River, total inflow to Exchequer Reservoir; and San Joaquin River, total inflow to Millerton Lake.]

[14] The minimum daily Delta outflow shall be 7,100 cfs for this period, calculated as a 3-day running average. This requirement is also met if either the daily average or 14-day running average EC at the confluence of the Sacramento and the San Joaquin rivers is less than or equal to 2.64 mmhos/cm (Collinsville station C2). If the best available estimate of the Eight River Index (described in footnote 13) for January is more than 900 TAF, the daily average or 14-day running average EC at station C2 shall be less than or equal to 2.64 mmhos/cm for at least one day between February 1 and February 14; however, if the best available estimate of the Eight River Index for January is between 650 TAF and 900 TAF, the operations group established under the Framework Agreement shall decide whether this requirement will apply, with any disputes resolved by the CALFED policy group. If the best available estimate of the Eight River Index for February is less than 500 TAF, the standard may be further relaxed in March upon the recommendation of the operations group established under the Framework Agreement, with any disputes resolved by the CALFED policy group. The standard does not apply in May and June if the best available May estimate of the Sacramento River Index (described in footnote 6) for the water year is less than 8.1 MAF at the 90% exceedence level. Under this circumstance, a minimum 14-day running average flow of 4,000 cfs is required in May and June. Additional Delta outflow objectives are contained in Table II-4.

[15] The 7-day running average shall not be less than 1,000 cfs below the monthly objective.

[16] Partial months are averaged for that period. For example, the flow rate for April 1-14 would be averaged over 14 days. The 7-day running average shall not be less than 20% below the flow rate objective, with the exception of the April 15-May 15 pulse flow period when this restriction does not apply.

[17] The water year classification will be established using the best available estimate of the 60-20-20 San Joaquin Valley Water Year Hydrologic Classification (see Figure II-2) at the 75% exceedence level. The higher flow objective applies when the 2-ppt isohaline (measured as 2.64 mmhos/cm surface salinity) is required to be at or west of Chipps Island.

[18] This time period may be varied based on real-time monitoring. One pulse, or two separate pulses of combined duration equal to the single pulse, should be scheduled to coincide with fish migration in San Joaquin River tributaries and the Delta. The operations group established under the Framework Agreement will determine the time period for this 31-day flow requirement.

[19] Plus up to an additional 28 TAF pulse/attraction flow during all water year types. The amount of additional water will be limited to that amount necessary to provide a monthly average flow of 2,000 cfs. The additional 28 TAF is not required in a critical year following a critical year. The pulse flow will be scheduled by the operations group established under the Framework Agreement.

[20] Combined export rate for this objective is defined as the Clifton Court Forebay inflow rate (minus actual Byron-Bethany Irrigation District diversions from Clifton Court Forebay) and the export rate of the Tracy pumping plant.

[21] This time period may be varied based on real-time monitoring and will coincide with the San Joaquin River pulse flow described in footnote 18. The operations group established under the Framework Agreement will determine the time period for this 31-day export limit.

[22] Maximum export rate is 1,500 cfs or 100% of 3-day running average of San Joaquin River flow at Vernalis, whichever is greater. Variations to this maximum export rate are authorized if agreed to by the operations group established under the Framework Agreement. This flexibility is intended to result in no net water supply cost annually within the limits of the water quality and operational requirements of this plan. Variations may result from recommendations of agencies for protection of fish resources, including actions taken pursuant to the State and federal Endangered Species Act. The CALFED policy group will resolve disputes within the operations group. Any agreement on variations will be effective immediately and will be presented to the Executive Director of the SWRCB. If the Executive Director does not object to the variations within 10 days, the variations will remain in effect.

[23] Percent of Delta inflow diverted is defined in Figure II-3. For the calculation of maximum percent Delta inflow diverted, the export rate is a 3-day running average and the Delta inflow is a 14-day running average, except when the CVP or the SWP is making storage withdrawals for export, in which case both the export rate and the Delta inflow are 3-day running averages.

[24] The percent Delta inflow diverted values can be varied either up or down. Variations are authorized subject to the process described in footnote 22.

[25] If the best available estimate of the Eight River Index (described in footnote 13) for January is less than or equal to 1.0 MAF, the export limit for February is 45% of Delta inflow. If the best available estimate of the Eight River Index for January is greater than 1.5 MAF, the February export limit is 35% of Delta inflow. If the best available estimate of the Eight River Index for January is between 1.0 MAF and 1.5 MAF, the export limit for February will be set by the operations group established under the Framework Agreement within the range of 35% to 45%. The CALFED policy group will resolve disputes within the operations group.

[26] For the November-January period, close Delta Cross Channel gates for up to a total of 45 days. The operations group established under the Framework Agreement will determine the timing and duration of the gate closure.

[27] For the May 21-June 15 period, close Delta Cross Channel gates for a total of 14 days. The operations group established under the Framework Agreement will determine the timing and duration of the gate closure.

FOOTNOTE 2 FOR TABLE 1 AND FOOTNOTE 3 FOR TABLES 2 AND 3

Sacramento Valley
Water Year Hydrologic Classification

Year classification shall be determined by computation of the following equation:

INDEX = 0.4 * X + 0.3 * Y + 0.3 * Z

Where: X = Current year's April – July Sacramento Valley unimpaired runoff

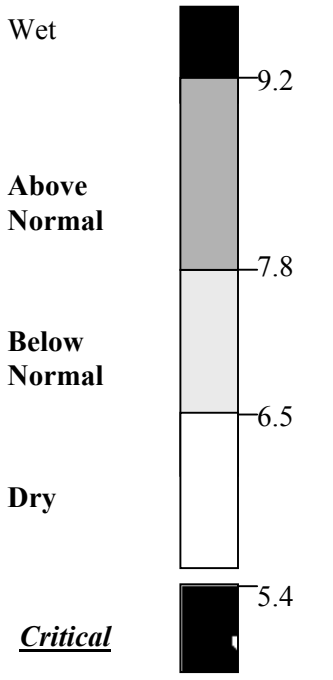
Y = Current October – March Sacramento Valley unimpaired runoff

Z = Previous year's index[1]

The Sacramento Valley unimpaired runoff for the current water year (October 1 of the preceding calendar year through September 30 of the current calendar year), as published in California Department of Water Resources Bulletin 120, is a forecast of the sum of the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River at Smartville; American River, total inflow to Folsom Reservoir. Preliminary determinations of year classification shall be made in February, March, and April with final determination in May. These preliminary determinations shall be based on hydrologic conditions to date plus forecasts of future runoff assuming normal precipitation for the remainder of the water year.

	Index
Classification	**Millions of Acre-Feet (MAF)**
Wet……	Equal to or greater than 9.2
Above Normal…..	Greater than 7.8 and less than 9.2
Below Normal…..	Equal to or less than 7.8 and greater than 6.5
Dry…….....	Equal to or less than 6.5 and greater than 5.4
Critical……..…	Equal to or less than 5.4

YEAR TYPE [2]
All Years for All Objectives



[1] A cap of 10.0 MAF is put on the previous year's index (Z) to account for required flood control reservoir releases during wet years.

[2] The year type for the preceding water year will remain in effect until the initial forecast of unimpaired runoff for the current water year is available.

FOOTNOTE 17 FOR TABLE 3

San Joaquin Valley
Water Year Hydrologic Classification

Year classification shall be determined by computation of the following equation:

INDEX = 0.6 * X + 0.2 * Y + 0.2 * Z

Where: X = Current year's April – July San Joaquin Valley unimpaired runoff

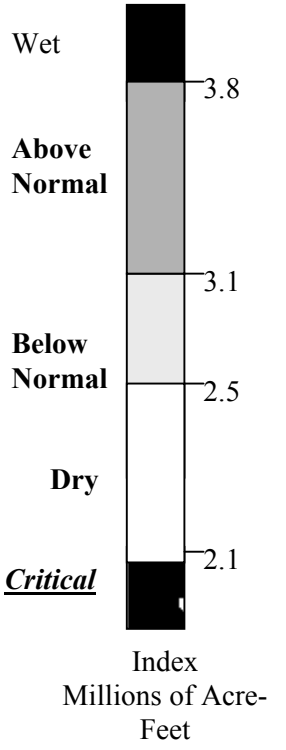
Y = Current October – March San Joaquin Valley unimpaired runoff

Z = Previous year's index[1]

The San Joaquin Valley unimpaired runoff for the current water year (October 1 of the preceding calendar year through September 30 of the current calendar year), as published in California Department of Water Resources Bulletin 120, is a forecast of the sum of the following locations: Stanislaus River, total flow to New Melones Reservoir; Tuolumne River, total inflow to Don Pedro Reservoir; Merced River, total flow to Exchequer Reservoir; San Joaquin River, total inflow to Millerton Lake. Preliminary determinations of year classification shall be made in February, March, and April with final determination in May. These preliminary determinations shall be based on hydrologic conditions to date plus forecasts of future runoff assuming normal precipitation for the remainder of the water year.

Classification	Index Millions of Acre-Feet (MAF)
Wet……	Equal to or greater than 3.8
Above Normal…..	Greater than 3.1 and less than 3.8
Below Normal…..	Equal to or less than 3.1 and greater than 2.5
Dry…….	Equal to or less than 2.5 and greater than 2.1
Critical……..	Equal to or less than 2.1

YEAR TYPE [2]
All Years for All Objectives



[1] A cap of 4.5 MAF is put on the previous year's index (Z) to account for required flood control reservoir releases during wet years.

[2] The year type for the preceding water year will remain in effect until the initial forecast of unimpaired runoff for the current water year is available.

FOOTNOTE 11 AND 23 FOR TABLE 3

NDOI and PERCENT INFLOW DIVERTED [1]

The NDOI and the percent inflow diverted, as described in this footnote, shall be computed daily by the DWR and the USBR using the following formulas (all flows are in cfs):

NDOI = DELTA INFLOW - NET DELTA CONSUMPTIVE USE - DELTA EXPORTS

PERCENT INFLOW DIVERTED = (CCF + TPP) ÷ DELTA INFLOW

where *DELTA INFLOW = SAC + SRTP + YOLO + EAST + MISC + SJR*

SAC = Sacramento River at Freeport mean daily flow for the previous day; the 25-hour tidal cycle measurements from 12:00 midnight to 1:00 a.m. may be used instead.
SRTP = Sacramento Regional Treatment Plant average daily discharge for the previous week.
YOLO = Yolo Bypass mean daily flow for the previous day, which is equal to the flows from the Sacramento Weir, Fremont Weir, Cache Creek at Rumsey, and the South Fork of Putah Creek.
EAST = Eastside Streams mean daily flow for the previous day from the Mokelumne River at Woodbridge, Cosumnes River at Michigan Bar, and Calaveras River at Bellota.
MISC = Combined mean daily flow for the previous day of Bear Creek, Dry Creek, Stockton Diverting Canal, French Camp Slough, Marsh Creek, and Morrison Creek.
SJR = San Joaquin River flow at Vernalis, mean daily flow for the previous day.

where *NET DELTA CONSUMPTIVE USE = GDEPL - PREC*

GDEPL = Delta gross channel depletion for the previous day based on water year type using the DWR's latest Delta land use study.[2]
PREC = Real-time Delta precipitation runoff for the previous day estimated from stations within the Delta.

and where *DELTA EXPORTS* [3] *= CCF + TPP + CCC + NBA*

CCF = Clifton Court Forebay inflow for the current day.[4]
TPP = Tracy Pumping Plant pumping for the current day.
CCC = Contra Costa Canal pumping for the current day.
NBA = North Bay Aqueduct pumping for the current day.

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1 Not all of the Delta tributary streams are gaged and telemetered. When appropriate, other methods of estimating stream flows, such as correlations with precipitation or runoff from nearby streams, may be used instead.

2 The DWR is currently developing new channel depletion estimates. If these new estimates are not available, DAYFLOW channel depletion estimates shall be used.

3 The term "Delta Exports" is used only to calculate the NDOI. It is not intended to distinguish among the listed diversions with respect to eligibility for protection under the area of origin provisions of the California Water Code.

4 Actual Byron-Bethany Irrigation District withdrawals from Clifton Court Forebay shall be subtracted from Clifton Court Forebay inflow. (Byron-Bethany Irrigation District water use is incorporated into the GDEPL term.

FOOTNOTE 14 FOR TABLE 3

TABLE A

Number of Days When Maximum Daily Average Electrical Conductivity of 2.64 mmhos/cm Must Be Maintained at Specified Location [a]

PMI [b] (TAF)	Chipps Island (Chipps Island Station D10)					PMI [b] (TAF)	Port Chicago (Port Chicago Station C14) [d]					PMI [b] (TAF)	Port Chicago (Port Chicago Station C14)[d]				
	FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN
< 500	0	0	0	0	0	**0**	0	0	0	0	0	**5250**	27	29	25	26	6
750	0	0	0	0	0	**250**	1	0	0	0	0	**5500**	27	29	26	28	9
1000	28 [c]	12	2	0	0	**500**	4	1	0	0	0	**5750**	27	29	27	28	13
1250	28	31	6	0	0	**750**	8	2	0	0	0	**6000**	27	29	27	29	16
1500	28	31	13	0	0	**1000**	12	4	0	0	0	**6250**	27	30	27	29	19
1750	28	31	20	0	0	**1250**	15	6	1	0	0	**6500**	27	30	28	30	22
2000	28	31	25	1	0	**1500**	18	9	1	0	0	**6750**	27	30	28	30	24
2250	28	31	27	3	0	**1750**	20	12	2	0	0	**7000**	27	30	28	30	26
2500	28	31	29	11	1	**2000**	21	15	4	0	0	**7250**	27	30	28	30	27
2750	28	31	29	20	2	**2250**	22	17	5	1	0	**7500**	27	30	29	30	28
3000	28	31	30	27	4	**2500**	23	19	8	1	0	**7750**	27	30	29	31	28
3250	28	31	30	29	8	**2750**	24	21	10	2	0	**8000**	27	30	29	31	29
3500	28	31	30	30	13	**3000**	25	23	12	4	0	**8250**	28	30	29	31	29
3750	28	31	30	31	18	**3250**	25	24	14	6	0	**8500**	28	30	29	31	29
4000	28	31	30	31	23	**3500**	25	25	16	9	0	**8750**	28	30	29	31	30
4250	28	31	30	31	25	**3750**	26	26	18	12	0	**9000**	28	30	29	31	30
4500	28	31	30	31	27	**4000**	26	27	20	15	0	**9250**	28	30	29	31	30
4750	28	31	30	31	28	**4250**	26	27	21	18	1	**9500**	28	31	29	31	30
5000	28	31	30	31	29	**4500**	26	28	23	21	2	**9750**	28	31	29	31	30
5250	28	31	30	31	29	**4750**	27	28	24	23	3	**10000**	28	31	30	31	30
≤ 5500	28	31	30	31	30	**5000**	27	28	25	25	4	**>10000**	28	31	30	31	30

[a] The requirement for number of days the maximum daily average EC (EC) of 2.64 mmhos per centimeter (mmhos/cm) must be maintained at Chipps Island and Port Chicago can also be met with maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOIs of 11,400 cfs and 29,200 cfs, respectively. If salinity/flow objectives are met for a greater number of days than the requirements for any month, the excess days shall be applied to meeting the requirements for the following month. The number of days for values of the PMI between those specified in this table shall be determined by linear interpolation.

[b] PMI is the best available estimate of the previous month's Eight River Index. (Refer to Footnote 13 for Table 3 for a description of the Eight River Index.)

[c] When the PMI is between 800 TAF and 1000 TAF, the number of days the maximum daily average EC of 2.64 mmhos/cm (or maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOI of 11,400 cfs) must be maintained at Chipps Island in February is determined by linear interpolation between 0 and 28 days.

[d] This standard applies only in months when the average EC at Port Chicago during the 14 days immediately prior to the first day of the month is less than or equal to 2.64 mmhos/cm.

Table 4. Water Quality Compliance and Baseline Monitoring

Station Number	Station Description	Cont. Rec.[1]	Physical/ Chem-ical[2]	Multi-para-meter[3]	Phyto-plank-ton[4]	Zoo-plank-ton[4]	Ben-thos[4]
C2 ■	Sacramento River @ Collinsville	*					
C3 ▲	Sacramento River @ Greens Landing		*	*	*		
C4 ■	San Joaquin River @ San Andreas Ldg.	*					
C5 ■	Contra Costa Canal @ Pumping Plant #1	*					
C6 ■	San Joaquin River @ Brandt Bridge site	*					
C7 ▲	San Joaquin River @ Mossdale Bridge			*			
C8 ■	Old River near Middle River	*					
C9 ●	West Canal at mouth of CCForebay Intake				*		*
C10 ●	San Joaquin River near Vernalis		*		*		
C13 ■	Mokelumne River @ Terminous	*					
C14 ■	Sacramento River @ Port Chicago	*					
C19 ■	Cache Slough @ City of Vallejo Intake	*					
D4 ▲	Sacramento River above Point Sacramento		*		*	*	*
D6 ▲	Suisun Bay @ Bulls Head Pt. nr. Martinez		*	*	*	*	*
D7 ▲	Grizzly Bay @ Dolphin nr. Suisun Slough		*		*	*	*
D8 ▲	Suisun Bay off Middle Point near Nichols		*		*	*	
D10 ●	Sacramento River @ Chipps Island			*		*	
D12 ●	San Joaquin River @ Antioch Ship Canal			*		*	
D15 ■	San Joaquin River @ Jersey Point	*					
D16 ▲	San Joaquin River @ Twitchell Island					*	*
D22 ●	Sacramento River @ Emmaton					*	
D24 ●	Sacramento River below Rio Vista Bridge			*			*
D26 ▲	San Joaquin River @ Potato Point		*		*	*	
D28A ▲	Old River near Rancho Del Rio		*	*	*	*	*
D29 ■	San Joaquin River @ Prisoners Point	*					
D41 ▲	San Pablo Bay near Pinole Point		*		*		*
D41A ▲	San Pablo Bay nr. mouth of Petaluma R.						*
DMC1 ●	Delta-Mendota Canal at Tracy Pump. Plt.			*			
P8 ▲	San Joaquin River @ Buckley Cove		*	*	*	*	*
P12 ■	Old River @ Tracy Road Bridge	*					
MD10 ▲	Disappointment Slough near Bishop Cut		*		*	*	
S21 ■	Chadbourne Slough @ Sunrise Duck Club	*					
S35 ■	Goodyear Sl. @ Morrow Is. Clubhouse	*					
S42 ●	Suisun Slough 300' so. of Volanti Slough	*				*	
S49 ■	Montezuma Slough near Beldon Landing	*					
S64 ■	Montezuma Slough @ National Steel	*					
S97 ■	Cordelia Slough @ Ibis Club	*					
NZ032 ■	Montezuma Slough, 2nd bend from mouth					*	
NZ080 ■	San Joaquin River, 549 meters upstream of light 26					*	

(continued)

■ Compliance monitoring station ▲ Baseline monitoring station • Compliance and baseline monitoring station

Table 4. Water Quality Compliance and Baseline Monitoring (cont.)

{PRIVATE } Station Number	Station Description	Cont. Rec.[1]	Physical/ Chem-ical[2]	Multi-para-meter[3]	Phyto-plank-ton[4]	Zoo-plank-ton[4]	Ben-thos[4]
--- ■	Sacramento R. (I St. Bridge to Freeport) (RSAC155)	*					
--- ■	San Joaquin R. (Turner Cut to Stockton) (RSAN050-RSAN061)	*					
--- ■	Barker Sl. at No. Bay Aqueduct (SLBAR3)	*					
--- ■	Water supply intakes for waterfowl management areas on Van Sickle Island and Chipps Island	*					

□ Compliance monitoring station □ Baseline monitoring station • Compliance and baseline monitoring station

1 Continuous recorder only (EC, dissolved oxygen, and/or temperature) for purpose of compliance. For municipal and industrial intake chlorides objectives, EC can be monitored and converted to chlorides.

2 Physical/chemical monitoring is conducted monthly at discrete sites and includes the following parameters: water column depth, secchi, nutrient series (inorganic and organic N-P), water temperature, dissolved oxygen, electrical conductivity, turbidity, and chlorophyll *a*. In addition, on-board recording for vertical and horizontal profiles is conducted intermittently for the following parameters: water temperature, dissolved oxygen, electrical conductivity, turbidity, and chlorophyll *a*.

3 Multi-parameter monitoring is conducted continuously and provides telemetered data on the following parameters: water temperature, pH, dissolved oxygen, electrical conductivity, turbidity, chlorophyll *a*, wind speed and direction, solar radiation, air temperature, and tidal elevation.

4 Sampling occurs monthly at discrete sites.

Table 1 Issues

Issue 1: Chloride Objectives, Compliance Location at Contra Costa Canal at Pumping Plant #1 (Rock Slough), and Proposed New Objectives

Comments Received:

CCWD comments that both the 1995 Plan and the CVRWQCB's efforts towards establishing a comprehensive drinking water policy are necessary for the development of water quality objectives that protect municipal and industrial beneficial uses in the Delta. CCWD notes that the 1995 Plan and the CVRWQCB's proposed Basin Plan do not include objectives in the Delta and its tributaries for certain drinking water constituents of concern, such as disinfection by-products and pathogens. CCWD comments that the SWRCB should adopt an objective that protects drinking water quality by, at a minimum, imposing a limitation of 50 micrograms/liter (l) bromide and 3.0 mg/l total organic carbon (TOC) at all drinking water intakes in the southern and central Delta.

CCWD also comments that the relocation of the compliance location at Contra Costa Canal at Pumping Plant No. 1 (PP#1) is not an appropriate topic for review. CCWD states that relocating the compliance point would: (1) violate State and federal anti-degradation policies, (2) create a conflict between the State and federal projects because the USBR must comply with the Congressional directive in its approval of the Coordinated Operations Agreement to operate the CVP to meet the objectives in D-1485 but DWR would be required to meet objectives at a new compliance point, (3) violate the Delta Protection Act (DPA), which requires a water supply adequate to maintain and expand urban development in the Delta, and that (4) relocation of the compliance point would not improve water quality at Pumping Plant #1. CCWD and CALFED are implementing projects to reduce or eliminate the degradation of water that occurs in Rock Slough and the Contra Costa Canal.

Finally, CCWD commented that review of either potential flexibility in meeting Delta outflow (X2) standards or whether compliance with the 150 mg/l chloride objective should be determined on a water year, rather than a calendar year basis should be conducted in combination with an evaluation of other actions that other parties may propose that have the potential to affect Delta water quality.

DWR comments that it has consistently taken the position that the SWP and CVP cannot reasonably control salinity within Rock Slough or at PP#1. DWR believes that Delta salinity in Old River provides the underlying background conditions within Rock Slough. DWR recommends that a new location for water quality objectives be established in a location that the CVP and SWP (Projects) can control. Currently DWR and USBR measure water quality in Old River at Bacon Island and near the confluence with Rock Slough because the SWP and CVP can control salinity at this location through storage releases and/or export curtailments. Therefore, DWR believes that the SWRCB should change the compliance location for the municipal water quality objectives at Contra Costa Canal at Pumping Plant #1 to Old River at Bacon Island, where the Projects have control

over water quality. DWR proposes that if the SWRCB desires to maintain a water quality objective at Rock Slough, the ongoing Rock Slough Water Quality Improvement Project should be included in the Plan of Implementation for that objective.

In addition to reviewing and changing the location for the municipal objectives, DWR recommends that the SWRCB review the need for the 150 mg/l chloride objective to protect industrial beneficial uses because the industrial uses that were the basis for increased water quality protection no longer exist.

The SLDMWA comments that the SWRCB should consider changing the compliance point for CCWD PP #1 to Old River near Rock Slough. SLDMWA also comments that the time period in which the 150 mg/l chloride objective applies should be modified to correspond with the water year (October 1 through September 30) instead of the calendar year in order to allow DWR and USBR to meet the objectives without an unnecessary water cost to other beneficial uses.

SWC comments that the SWRCB should schedule its review of the chloride objectives near the end of the periodic review proceedings to give the Delta interests, including CCWD, an opportunity to resolve issues related to Rock Slough.

USDOI comments that the current location for determining compliance with the chloride objectives may no longer result in the most effective assessment for fulfilling this objective.

Discussion:

In the 1978 Delta Plan, the SWRCB set two objectives to provide reasonable protection for municipal and industrial beneficial uses of Delta waters from the effects of salinity intrusion. The first chloride objective establishes a year-round maximum mean daily chloride concentration measured at five Delta intake facilities, including Contra Costa's PP#1, of 250 milligrams per liter (mg/l) for the reasonable protection of municipal beneficial uses. This objective is consistent with the United States Environmental Protection Agency's secondary maximum contaminant level for chloride of 250 mg/l and is based on aesthetic (taste) considerations.

The second chloride objective establishes a maximum mean daily chloride concentration of 150mg/l (measured at either PP#1 or the San Joaquin River at Antioch Water Works Intake) for the reasonable protection of industrial beneficial uses. This requirement is in effect for a minimum of between 155 and 240 days each calendar year, depending on the water year type, and is based on operational requirements for paper processing facilities then served by CCWD.

In the 1991 Plan the SWRCB reviewed the water quality objectives for municipal and industrial use contained in the 1978 Plan and reviewed potential new objectives for trihalomethanes and other disinfection by-products (including bromides). The SWRCB concluded that technical information regarding trihalomethanes and other disinfection by-products was not sufficient to set a scientifically sound objective. Accordingly, the

SWRCB continued the existing objectives for chloride concentration and, until more information is developed regarding these constituents, set a water quality 'goal' for bromides of 0.15 mg/l. The SWRCB also noted that the 150 mg/l chloride objective was maintained in part, because it provides ancillary protection for other municipal and industrial uses in the absence of objectives for trihalomethanes and other disinfection by-products. These objectives remain unchanged in the 1995 Plan.

Staff Recommendation:

Commentors recommend further SWRCB review of several specific issues regarding the Water Quality Objectives for Municipal and Industrial Beneficial Uses. These issues include potential modifications to the 150 mg/l chloride objective, relocation of PP#1, and potential new objectives for bromides or other disinfection by-products and TOC. Staff notes that the 1991 Plan reviewed objectives similar to the new objective proposed by CCWD and deferred adoption of these objectives pending further scientific review of these constituents. Accordingly staff recommends that the SWRCB hold a workshop regarding potential new objectives for bromides or other disinfection by-products and TOC to receive new information that may have been developed since the 1991 Plan was adopted. Several parties comment on the 150 mg/l chloride objective. The paper plant whose operations were protected by the objective is no longer operating. However, since the SWRCB has maintained the 150 mg/l objective due to its ancillary protection of water quality in the absence of objectives for other constituents, staff recommends that the SWRCB also address this objective in a workshop. Finally, several parties comment on the location of PP#1 and offer substantive arguments both in favor and opposed to moving this compliance location. Accordingly, staff recommends that this issue also be addressed in a workshop before the SWRCB. Staff also recommends that the program of implementation for this objective be reviewed as appropriate.

Table 2 Issues

Issue 2: Southern Delta Electrical Conductivity

Comments Received:

CDWA comments that the Vernalis electrical conductivity (EC) objective of 0.7 mmhos/cm should be required in March, September and October, in addition to the current application of the objectives during the April through August period. CDWA comments that the 1.0 mmhos/cm objective for November through February should be maintained in order to protect existing agricultural uses.

The SJRGA, however, comments that there should be no EC objectives at Vernalis from November through March. The SJRGA states that it is a waste and unreasonable use of water to require releases of water from New Melones Reservoir during November through March to meet an agricultural EC objective when there are few diversions from the southern Delta during this period.

SDWA comments that the SWRCB should review the description of the EC objectives as they apply during April. SDWA states that due to the 30-day averaging methodology for determining compliance with the objectives, USBR is able to maintain salinity at higher levels early in the month because the 31-day April-May San Joaquin River pulse flow objective required at Vernalis results in high flows and therefore low salinity at the end of the month, enabling USBR to meet the objectives. SDWA recommends that the 30-day running average calculation restart on April 1 of each year in order to protect agricultural beneficial uses starting at the beginning of the month.

SDWA comments that the 0.7 EC objectives should also apply in March, September, and October because significant irrigation occurs during these months. SDWA comments that the agricultural EC objectives were imposed to protect alfalfa in the fall and winter and beans in the spring and summer and that the objectives should be reexamined to reflect the water quality needs of current cropping patterns, including tree and grape vine crops which generally require lower salinity irrigation water.

SDWA comments that the SWRCB should immediately implement the interior southern Delta water quality objectives (San Joaquin River at Brandt Bridge, Old River near Middle River, and Old River at Tracy Road Bridge) at all four southern Delta compliance locations. SDWA also comments that the SWRCB should consider setting new compliance locations to insure that there is unidirectional flow in South Delta channels to protect water quality throughout the southern Delta.

Discussion:

Elevated salinity in the southern Delta is caused by low flows, salts imported in irrigation water by the SWP and the CVP, and discharges of land-derived salts, primarily from agricultural drainage. The southern Delta EC objectives are intended to protect southern Delta agricultural uses from these effects.

The SWRCB established the current southern Delta EC objectives for the protection of agricultural beneficial uses in the 1978 Delta Plan. The approach used in developing agricultural salinity objectives for the Delta involved an initial determination of the water quality needs of significant crops grown in the area, the predominant soil type, and irrigation practices in the area. In addition, the extent to which these water quality needs would be satisfied under "without project" (SWP/CVP) conditions was also considered. The SWRCB based the southern Delta EC objectives on the calculated maximum salinity of applied water which sustains 100% 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 of the Food and Agriculture Organization of the United Nations (page VI-16 – VI-19, 1978 Delta Plan). The SWRCB set an objective of 0.7 mmhos/cm during the summer irrigation season (April 1 through August 31) based on the salt sensitivity and growing season of beans and an objective of 1.0 mmhos/cm during the winter irrigation season (September 1 through March 31) based on the growing season and salt sensitivity of alfalfa during the seedling stage.

The SWRCB delayed implementation of the objectives pending negotiations by DWR, USBR, and SDWA concerning construction of physical facilities to protect agriculture in the southern Delta. Due to the fact that the negotiations were never completed, the SWRCB proposed a staged implementation of the objectives in the 1991 Plan that called for implementation of the Vernalis and Brandt Bridge objectives by 1994 and the Old River objectives by 1996 unless a three-party agreement was reached between DWR, USBR and SDWA. In the 1995 Plan, the SWRCB further delayed implementation of the EC objectives for the two Old River sites until December 31, 1997.

In D-1641, the SWRCB required a staged implementation of the southern Delta EC objectives. Pursuant to D-1641, USBR is required to meet the Vernalis EC objectives using any measures available to it. DWR and USBR are also required to meet an EC objective of 1.0 mmhos/cm at Brandt Bridge on the San Joaquin River, Old River near Middle River, and Old River at Tracy Road Bridge (the interior southern Delta stations) from March to September until April 1, 2005. As of April 1, 2005, DWR and USBR are required to meet an EC objective of 0.7 EC from April through August. The 0.7 EC objectives are replaced by the 1.0 EC objectives from April through August after April 1, 2005 if permanent barriers are constructed, or equivalent measures are implemented, in the southern Delta and an operations plan that reasonably protects southern Delta agriculture is prepared by DWR and USBR and approved by the Executive Director of the SWRCB.

Staff Recommendation:

As cropping patterns may have changed since the current objectives were established, staff recommends that the southern Delta EC objectives be reviewed during periodic review to determine if changes in the objectives, or how compliance with those objectives is determined, are needed to protect agricultural beneficial uses and to ensure that the objectives do not result in a waste or unreasonable use of water. As recommended by SDWA, staff recommends that the SWRCB review whether additional protection may be needed during the periods preceding and following the April 15 to May 15 pulse flow period. Given recent developments and requirements for salinity management in the Lower San Joaquin River and southern Delta, staff also recommends that the implementation recommendations for these objectives be reviewed to ensure that they are timely described, effective, feasible, and consistent with existing requirements for salinity management in the southern Delta. To the extent possible, staff recommends that review of this issue be coordinated with the CVRWQCB's ongoing TMDL and Basin Plan Amendment (BPA) efforts for salt and boron on the San Joaquin River.

Issue 3: San Joaquin River Electrical Conductivity Objectives Upstream of Vernalis

Current Objectives:

Currently there are no water quality objectives for EC (salinity) on the San Joaquin River upstream of Vernalis.

Comments Received:

SDWA comments that the SWRCB should set a new compliance location for the 0.7/1.0 EC objectives at or upstream of the San Joaquin River's confluence with the Newman Wasteway. SDWA states that such an objective is necessary because the 1995 Plan's Vernalis EC objectives and other efforts have been unsuccessful in addressing the San Joaquin River salinity problem.

CDWA comments that the Plan should include an EC objective on the San Joaquin River upstream of Vernalis in order to ensure compliance with the Vernalis EC objectives. CDWA states that USBR has not produced a plan to meet the objectives and continues to show substantial violations of the objectives in its forecast modeling.

SEWD comments that EC objectives consistent with the Vernalis EC objectives should be established upstream of Vernalis in the vicinity of the Newman Wasteway to aid in meeting the EC objectives at Vernalis in order to conserve water in New Melones Reservoir for other beneficial uses. SEWD states that the SWRCB should establish these objectives since the CVRWQCB has failed to set such objectives as directed in D-1641.

TUD comments that there should be at least one additional EC objective of 0.7 and 1.0 on the San Joaquin River upstream of Vernalis in order to relieve the entire responsibility for meeting the objectives at Vernalis from USBR's inadequate New Melones supplies. TUD suggests that salinity objectives be set at the Newman Wasteway in order to determine the amount of salt being contributed to the San Joaquin River by Salt and Mud sloughs. TUD comments that the SWRCB should extend the time frame in which this 0.7 EC objective ends from August 31 to October 31 of each year to correspond to agricultural water use.

Discussion:

In D-1641, the SWRCB directed the CVRWQCB to develop and adopt salinity objectives and a program of implementation for the main stem of the San Joaquin River upstream of Vernalis (page 85). However, due to competing demands and budgetary constraints, adequate staffing was not allocated to the CVRWQCB to complete this work.

Currently, the CVRWQCB is preparing a Total Maximum Daily Load (TMDL) and Basin Plan Amendment (BPA) for salt and boron on the San Joaquin River at Vernalis. Progress on salinity (EC) objectives for the main stem of the San Joaquin River has been delayed pending completion of the Vernalis TMDL and BPA. However, staff understands that the CVRWQCB has already completed significant work on establishing upstream objectives.

Staff Recommendation:

Staff does not recommend including review of a salinity requirement for the main stem of the San Joaquin River upstream of Vernalis in this review of the WQCP. Staff recommends that the scope of the location-specific objectives in the Plan be limited to the confines of the legal Delta, Suisun Marsh, and San Francisco Bay. Vernalis is the legal boundary of the Delta on the San Joaquin River. In addition, the CVRWQCB has

dedicated significant effort toward establishing a salinity objective upstream of Vernalis and is currently making progress toward adoption of an objective upstream. Staff recommends that the SWRCB give the CVRWQCB additional time to develop upstream objectives. If development of upstream objectives is not progressing satisfactorily, the SWRCB may begin its own proceeding to adopt appropriate objectives or take other actions. Such proceedings could take place outside of the current process to consider amendments to the 1995 Plan.

Issue 4: Year Round Flow Objectives on the San Joaquin River to Protect Agriculture and Other Uses in the Southern and Central Delta

Current Objectives:

Currently there are no year round flow objectives on the San Joaquin River to protect agriculture and other beneficial uses from the potential effects of a shift in the timing of flows caused by implementation of the Vernalis flow objectives.

Comments Received:

SDWA comments that the SWRCB should set a minimum year round flow objective on the San Joaquin River to protect the beneficial uses of downstream users in order to prevent a shift in the timing of flows caused by flows released pursuant to the Vernalis pulse flow objectives.

Discussion:

SDWA's comments principally relate to impacts it claims occur to its water rights as the result of the SWRCB's approval of long-term changes in place and purpose of use of water rights to allow the parties to conduct the Vernalis Adaptive Management Plan (VAMP)[5]. SDWA's comments are primarily based on water supply concerns. SDWA raised similar concerns during the Bay-Delta Water Right hearing.

Staff Recommendation:

Staff does not recommend the SWRCB consider setting new flow objectives to protect agricultural beneficial uses on the San Joaquin River. The concerns expressed in SDWA's comments were addressed by the SWRCB in D-1641 in which the SWRCB found that the changes the SWRCB approved to conduct the VAMP would not injure SDWA's members' water rights. If SDWA believes that conditions have changed or additional information is available to demonstrate injury to water rights due to a change in the timing of flows, it may file a water right complaint with the Division of Water Rights and provide supporting information to substantiate its complaint.

[5] The VAMP is an experiment being conducted to determine the relative sensitivity of out-migrating San Joaquin salmon to tributary flow and export pumping.

Issue 5: Water Level Objectives

Current Objectives:

There are currently no water level objectives for the Delta.

Comments Received:

SDWA comments that the SWRCB should adopt water level objectives in the southern and central Delta to protect agriculture, fisheries, recreation, and other public trust uses.

Discussion:

Water level fluctuations in the southern and central Delta are the result of tidal actions, sediment accumulation, weather conditions and water diversions. There are numerous water diversions in the Delta, with the SWP and the CVP being the major diverters. SDWA has expressed its concerns to the SWRCB about water level impacts on several occasions. SDWA filed a complaint with the Division in 1999 against DWR and USBR concerning water level impacts on agriculture in the southern Delta. However, SDWA was not able to provide information on the extent to which water level impacts are the result of SWP and CVP operations, and the complaint was closed in 2000.

The SWRCB addressed water level concerns related to combined SWP and CVP operations (referred to as Joint Points of Diversion (JPOD)) in D-1641. The SWRCB included a condition that requires DWR and USBR to prepare an approved water level response plan to ensure that water levels are not lowered to the injury of water users in the southern Delta as a result of JPOD before use of the other project's pumping facility is authorized. In addition, recent water transfers utilizing the SWP and the CVP Delta pumping facilities have also been conditioned on implementation of an approved water level response plan.

Staff Recommendation:

While SDWA raises several concerns related to maintaining water levels in the south and central Delta, SDWA's interests in implementing water level objectives are associated with agricultural diversions. SDWA has raised this concern on numerous occasions, indicating that reduced water levels are primarily due to operations by the SWP and CVP. DWR and USBR have questioned to what degree low water levels are related to diversions by the SWP and CVP and to what degree they are responsible for maintaining water levels at times of year when flow in the absence of operations of the projects may be much lower. In addition, DWR and USBR have also questioned SDWA's members' basis of water right for diversions. These problems are characteristic of issues that are normally addressed during the water right complaint process. Consequently, staff believes that the issue of injury to SDWA's members' water rights is more appropriately addressed in the water rights process wherein the SWRCB could examine the effects of water diversions on water levels for agricultural diversions and the basis of right for those diversions. Based on the

issues discussed above, staff recommends that the SWRCB not consider adopting water level objectives for the southern and central Delta at this time.

Table 3 Issues

Issue 6: Dissolved Oxygen

Comments Received:

SDWA comments that implementation of the Dissolved Oxygen (DO) objective contained in the 1995 Plan should be amended. SDWA notes that the CVRWQCB's Draft DO TMDL for the San Joaquin River at Stockton concludes that altered river bathymetry caused by construction of the Stockton Deep Water Ship Channel (DWSC) in combination with nutrient loading and upstream diversions and export operations are the cause of the DO impairment. SDWA points out that data from the TMDL investigation indicates that reducing upstream nutrient loading alone would not increase the DO concentrations enough to meet the current objective. As a result, SDWA recommends that the SWRCB consider setting mandatory minimum flows in the summer and fall (and other mandatory flows as necessary) to provide adequate protection for DO.

CDWA comments that minimum flows are needed to address the DO problem between the DWSC and Turner Cut.

Discussion:

The SWRCB initially adopted the DO objective contained in the 1995 Plan as part of the 1991 Plan. The 1991 Plan and 1995 Plan identify the reach of the San Joaquin River from Turner Cut to the head of Old River as an area of concern due to low DO levels. DO levels below 5.0 mg/l were found to create an oxygen block, which impedes upstream salmon migration. DO levels in the reach of the San Joaquin River located near the Turner Cut have been measured as low as 1.5 mg/l and DO levels in the DWSC have been measure as low as 0.0 mg/l. These reduced DO levels can cause physiological stress and increased mortality to fish in addition to delaying or blocking upstream migration. (1995 FEIR, p. X-1.)

In D-1641, the SWRCB addressed the implementation of the DO objective by stating that the TMDL process was an appropriate course for long-term planning and ultimate improvement in DO levels. (D-1641, p. 78.) The CVRWQCB has reviewed this issue and released a staff report proposing the adoption of a TDML for DO in the San Joaquin River. The CVRWQCB identifies the following three main factors contributing to the DO impairment. First, upstream releases of oxygen-demanding substances react by various mechanisms in the DWSC to reduce DO concentrations. Second, DWSC geometry intensifies the impact of these various reaction mechanisms such that net oxygen demand exerted in the DWSC is increased. Third, the reduced flow through the DWSC increases

the residence time for these various reaction mechanisms, further increasing net oxygen demand exerted in the DWSC.

The proposed BPA assigns a percent responsibility for each of these factors and proposes corrective actions to address each factor. The proposed corrective actions include several studies regarding the reduction of oxygen demanding substances and phased implementation of discharge requirements. Corrective actions specific to DWSC geometry include requiring the U.S. Army Corps of Engineers (USCOE) to evaluate the impacts of the DWSC on DO concentrations and proposing that the USCOE mitigate for these impacts. Finally, the proposed BPA recommends that the SWRCB consider amending current water right permits authorizing activities that reduce flow through the DWSC to require that impacts on oxygen demand loading capacity be evaluated and mitigated to less than the amount apportioned to those factors in the TDML. The proposed BPA also recommends that the SWRCB require evaluation and full mitigation of the potential impacts of future water right permits or water transfer applications on reduced flow and oxygen demand loading capacity in the DWSC. The CVRWQCB is currently considering adoption of the TMDL, however, as of the preparation of this report, it had not taken action on this matter.

Staff Recommendation:

No parties presented information suggesting that the DO objective should be changed. Both SDWA's and CDWA's comments address potential changes to the implementation of the DO objective. Currently, the CVRWQCB is in the process of considering the adoption of a proposed TMDL intended to implement the existing DO objective. Once any TMDL is adopted by the CVRWQCB, the TMDL must then be approved by the SWRCB. Therefore, staff concludes that a review of the DO objective or the implementation recommendations during the current periodic review process would be duplicative of the existing TDML process and premature at this time. Accordingly, staff recommends that the DO objective not be reviewed during the current periodic review. If additional information regarding the DO objective or its implementation is developed in the future, the SWRCB may address this information in future water right or water quality proceedings.

Issue 7: Salmon Protection

Comments Received:

The SJRGA, CDWA, the BI, and the USDOI support a further review of the narrative salmon-doubling objective. SJRGA comments that the narrative salmon-doubling objective contained in Table 3 of the 1995 Plan should be clarified by specifying that the objective is a goal rather than an absolute pursuant to Fish and Game Code section 6911. Also, the SJRGA comments that the objective should define "production" consistently with Fish and Game Code section 6911, and that the objective should be broadly interpreted as applying to the San Joaquin and Sacramento River systems as a whole, and not specific tributary streams.

The CDWA recommends that the SWRCB specify the measures necessary to achieve the doubling of salmon, as well as set flow, water quality and temperature objectives on each tributary to the Delta to achieve those objectives.

The BI asks that the SWRCB amend the narrative objective as follows: (1) amend the Sacramento and San Joaquin Basin Plans to incorporate the narrative objective, (2) set stream- and run-specific numeric salmon doubling targets for all major salmon-producing Central Valley rivers and tributaries in order to measure compliance with the narrative objective, (3) set stream-specific flow objectives and flow ramping criteria to achieve salmon doubling for specific chinook runs on all major salmon-producing Central Valley rivers and tributaries, (4) require screening and/or curtail diversions and exports during periods of risk to juvenile salmon in and upstream of the Delta, and (5) establish a fee on SWP and non-project water users to fund implementation of actions to achieve doubling (as a state equivalent of the federal CVPIA Restoration Fund).

USDOI comments that a workshop reviewing the salmon protection measures in the 1995 Plan would provide a useful forum for assessing new analytical methods that could provide a better estimate of progress towards the doubling goal.

The parties opposing a review of the narrative salmon-doubling objective include the SLDMWA, NCWA, DFG, the SWC, and DWR.

DWR recommends that the salmon doubling objective not be changed at this time. DWR states that State and federal agencies are monitoring compliance with the current objective, and some projects that have been implemented to meet the objective have not yet been completed.

SWC comment that a review of the salmon-doubling objective is not necessary at this time because the SWRCB recently completed a salmon-doubling workshop and concluded that no review was necessary at that time. No new information has come to light since the last workshop.

DFG believes that reviewing the narrative salmon objective is not necessary at this time. Ongoing monitoring and restoration programs are still being evaluated for their effects on Pacific salmon stocks. Further, recovery-planning processes must be completed and evaluated for effectiveness before the objective is reviewed.

NCWA comments that the objective does not need revision until the projects that are currently ongoing are completed and evaluated for their effectiveness.

GGAS comments that the salmon doubling criteria needs revision because some aspects of D-1641 do not conform to the stated doubling objective.

Deltakeeper supports retaining the salmon-doubling objective.

Discussion:

The SWRCB convened a workshop to review the status of the narrative salmon objective in December 2001. The SWRCB solicited written comments and oral testimony from interested parties to ascertain if progress had been made to double the natural production of salmon passing through the Bay or Delta. In a letter to workshop participants in January 2002, SWRCB Chairman Arthur Baggett concluded that in light of ongoing projects to restore salmon runs, "more time is needed to determine whether the measures currently in place and in progress will meet the narrative objective."

In the ensuing time period, estuary and tributary studies, habitat improvement projects and water right proceedings have continued. For example, recent water right hearings have established interim and long-term instream flow requirements on the Yuba River. The timing and magnitude of these in-stream flow requirements will improve habitat conditions for all races and species of anadromous salmonids on the Yuba River. Similarly, the recently initiated Federal Energy Regulatory Commission re-licensing of the Oroville project will likely result in improved habitat conditions for salmonids in the Feather River.

Though various habitat improvement and salmon restoration projects have been implemented in the past decade, and ocean and tributary conditions have been generally favorable, the rate of increase in some salmon populations has not been rapid. While fall run populations have exceeded the doubling goal in the Sacramento River basin, other races in the Sacramento and San Joaquin basins have lagged behind target levels. SWRCB staff believes that Delta water quality objectives should be scrutinized as a whole to determine whether Delta conditions are a limiting factor in meeting the narrative salmon-doubling objective. In addition, Governor Schwarzenegger has identified salmon restoration as a key provision of his Draft Action Plan for California's Environment.

The comment submitted by GGAS does not relate to the objective, but rather to the SWRCB's decision in D-1641 regarding implementation of the objective. GGAS' comments in general argue for the reconsideration of D-1641 and not for review of the current objectives, except to the extent that they are less protective than federal Delta objectives promulgated by the Environmental Protection Agency (EPA) in December 1994. We note the EPA has not rescinded its standards for the Bay and Delta despite its commitment to do so once it approved the SWRCB's 1995 Plan. EPA committed to rescinding its standards as part of the Framework Agreement that EPA signed in December 1994. In September 1995, EPA approved the SWRCB's 1995 Plan. When EPA approves a revised or new standard, "such standard shall thereafter be the water quality standard for the applicable waters of that State." (33 U.S.C. § 1313(c)(3).) Accordingly, the 1995 Plan's beneficial uses and objectives, not the EPA standards, are the current standards under the federal Clean Water Act. GGAS' comments pertain to D-1641, and the time has expired for filing challenges to D-1641.

Staff Recommendation:

Though some salmon stocks passing through the Delta are showing positive population trends, after reviewing the submitted comments and the Governor's Draft Action Plan for

California's Environment, staff recommends that the SWRCB review the adequacy of salmon restoration efforts. A review of the objective should ascertain whether progress is being made toward the current objective, or if the current objective needs modification. To that end, the SWRCB should request an update on the studies and restoration projects that were presented at the 2001 SWRCB salmon-doubling workshop. The SWRCB also should request information that it can use to determine whether Delta conditions are a limiting factor in meeting the objective. It is staff's opinion that the periodic review workshops should focus on habitat conditions and restoration efforts within the Delta itself, and not expand the focus of the Plan to Delta tributaries. The CVRWQCB has primary authority to set water quality and temperature objectives in the tributaries to protect fishery uses as part of its basin planning program.

Issue 8: Western Suisun Marsh Salinity Objectives: Cordelia Slough at Ibis Club and Goodyear Slough at Morrow Island Clubhouse (Interagency Station S-35 and S-97)

Comments Received:

USDOI does not indicate whether it recommends review of Suisun Marsh objectives, but comments that since 1995 the agencies involved in the Suisun Marsh have made substantial progress in addressing the competing water quality needs in the Marsh. These federal, State, and local agencies currently are assessing the potential scope of a joint EIS/EIR for the Suisun Marsh Implementation Plan. These agencies likely will present new information and assessment of the salinity objectives in the western marsh during the SWRCB's workshop.

DWR requests that the SWRCB review the 2001 Suisun Ecological Workgroup (SEW) Report on beneficial uses and water quality objectives for brackish tidal marshes of Suisun Bay prepared for the SWRCB in support of the periodic review. DWR supports revision of the water quality objectives at S-35 and S-97 in light of new information becoming available and their importance in defining "equivalent or better protection" in the western Marsh. DWR states the SWRCB should coordinate changes in the objectives with development of the Habitat Management, Preservation and Restoration Plan for Suisun Marsh, being prepared by the Suisun Marsh Charter Group. Any potential changes in the objectives should be made in collaboration with the efforts of the Suisun Marsh Charter Group.

SWC agree with DWR that this matter is ready for review at this time.

SRCD comments that the SWRCB should not amend the S-35 and S-97 salinity objectives unless and until the Suisun Marsh Preservation Agreement (SMPA) is appropriately amended, funded, and implemented. Such implementation must include a period of time to evaluate whether the amended SMPA programs are providing equivalent or better protection of the Suisun Marsh. Until such time, SRCD argues the salinity objectives must remain unchanged as they are crucial to the sustained health of the Marsh.

DFG does not support modifying the 1995 Plan until the Suisun Marsh Implementation Plan is completed through the Suisun Marsh Charter process. DFG states that, while the Brackish Marsh subcommittee of the SEW believes the narrative objective should ultimately be revised to emphasize species diversity and maintaining historic salinity regime variability, DFG does not recommend that the SWRCB address modification of the objective at this time. Any recommendations will be developed through the Suisun Charter process.
GGAS requests that the SWRCB protect the unmanaged portion of Suisun Marsh and require compliance with the only monitoring stations (S-35 and S-97) that could provide a mechanism for protecting the unmanaged marsh from further degradation. The SMPA proposes to reclassify the two western most compliance stations within the managed portion of the marsh, S-35 and S-97, as monitoring stations, thus eliminating any effective means of preventing further salinity increases in the western managed marshes.

Discussion:

Salinity objectives for the Suisun Marsh, adopted by the SWRCB in the 1978 Plan and implemented by the SWRCB in 1978 in D-1485, were based on research into salinity tolerance of important waterfowl plants such as alkali bullrush. At that time, the D-1485 salinity objectives were thought to represent the most saline water that can be applied regularly to well-managed wetlands without loss of alkali bullrush seed production. In Condition 7 of D-1485, the SWRCB deferred the compliance dates for the salinity objectives in the western Suisun Marsh and required the DWR and USBR to develop and fully implement a plan to meet the objectives.

In 1984, to meet the objectives of the 1978 Plan, DWR, USBR, DFG and SRCD began developing the "Plan of Protection." In 1987 those same agencies signed the SMPA as a contractual framework for implementing the Plan of Protection.

In the 1995 Plan, the SWRCB amended the salinity objectives that it first adopted in the 1978 Delta Plan. The 1995 Plan lists numeric salinity objectives at seven locations within the marsh and a narrative objective for the brackish tidal marsh areas. D-1641 states that the purpose of the Suisun Marsh salinity objectives is to provide water of sufficient quality to the managed wetlands to achieve soil water salinities capable of supporting plants characteristic of a brackish marsh. The numeric salinity objectives can be implemented either by insuring that salinity does not exceed the numeric EC values or by providing equivalent or better protection for fish and wildlife at the locations of the compliance stations. In D-1641, the SWRCB does not require that DWR and USBR meet the objectives at S-35 and S-97 and instead requires these agencies to conduct monitoring at these stations.

The Delta outflow objectives in the 1995 Plan are generally higher during months the Suisun Marsh salinity objectives are in effect and therefore produce less saline conditions than occurred under the 1978 Delta Plan. (D-1641, p. 50.) This information coupled with the greater than expected effectiveness of the Suisun Marsh Salinity Control Gate, convinced the SMPA parties to begin negotiations to amend the SMPA. These negotiations led to the SMPA III.

SMPA III does not address the narrative objectives for the unmanaged tidal marshlands. When the SWRCB adopted the 1995 Plan it was unclear whether the narrative objective would be achieved through implementation of the Delta outflow objectives. To address this issue, the SWRCB directed DWR to convene the SEW. SEW's task was to identify specific measures to implement and evaluate the achievement of the narrative objective and to develop recommendations for numeric objectives to replace it. The "Suisun Ecological Workgroup Final Report to the State Water Resources Control Board" was completed in November 2001. The Workgroup consisted of five technical subcommittees whose goal was to make a single recommendation to the SWRCB. However, recommendations for salinity objectives differed greatly between subcommittees due to different environmental requirements of the beneficial uses in the Suisun Marsh ecosystem. Therefore SEW did not develop a single recommendation. Instead each subcommittee prepared its own set of recommendations.

In 2001, after the CALFED Record of Decision (ROD) was issued, the Suisun Marsh Charter group was formed to resolve issues of amending the SMPA, obtain a Regional General Permit, implement the Suisun Marsh Levee Program and recover endangered species. The broader purpose of the Charter Group is to develop and agree on a long-term implementation plan consistent with, and in the context of the CALFED Bay Delta Program. The Charter Group principal agencies are USFWS, USBR, DFG, DWR, SRCD, CBDA and NOAA Fisheries. The proposed Suisun Marsh Plan would be consistent with the goals and objectives of the Bay-Delta Program, and would balance them with the SMPA, federal and State Endangered Species Acts and other management and restoration programs within the Suisun Marsh in a manner responsive to the concerns of all stakeholders and based upon voluntary participation of private landowners. The Plan is currently undergoing CEQA/National Environmental Policy Act (NEPA) review. At the conclusion of the environmental review, the USFWS will issue the necessary Biological Opinions.

Staff recommendation:

Staff does not recommend amending the salinity objectives on Table 3 that apply to Interagency Stations Nos. S-97 and S-35 at this time. Staff agrees with DFG, DWR and SRCD that changes to Suisun Marsh objectives in the 1995 Plan should be coordinated with development of the Habitat Management, Preservation and Restoration Plan for Suisun Marsh being prepared by the Suisun Marsh Charter Group. The Plan is being completed through the combined efforts of the State and federal agencies and private parties that have jurisdiction or interest in the Marsh. Staff believes a plan that is the result of such a collaborative effort will best serve the long-term health of the Marsh. However, the Plan will not be completed in time for any of the upcoming workshops. Therefore, this issue should be taken up during the next periodic review of the Plan. Also, staff believes that the completion of the Plan will answer the concerns regarding salinity in the western managed marsh raised by GGAS.

Issue 9: Delta Outflow

Comments Received:

CCWD comments that any modifications to Delta outflow objectives must be done in the context of protecting drinking water beneficial uses. CCWD further notes that water quality could be protected while allowing more flexibility in the Delta outflow objectives if the water gained by relaxing the objectives were applied to a "Water Quality Account" to be used at a later date for improvements in Delta water quality.
The USDOI recommends that the Delta outflow objectives be reviewed to allow some flexibility. There are times when conflicts occur between upstream and Delta fishery management issues, and the USDOI argues that flexibility is necessary to resolve the issues. Proper agency coordination and oversight would be required to ensure that no resources are harmed.

DWR comments that Delta outflow compliance should be made more flexible. DWR suggests that variations to this objective could be provided for in the Plan in much the same way as the Plan allows for flexibility in regard to the Export/Inflow ratio.

The BI recommends that the SWRCB revise the methodology for measuring compliance with the Delta outflow objectives to ensure that the calculated location of the 2.64 mmhos/cm average EC correlates accurately with its actual location during the February – June period. Also, BI suggests that if the objectives are revised, they should be thoroughly enforceable through the water quality control plan.

SJRGA comments that it believes that the SWRCB should review and revisit the 2.64 mmhos/cm average EC, also known as the "X2" objective.

Discussion:

Delta outflow has been recognized as an important habitat indicator for estuarine populations. (Jassby, et. al. 1995.) The Delta outflow objective requires that certain calculated flows, referred to as the Net Delta Outflow Index (NDOI), be maintained during each month. For some months, the required flows are based on water year type or on the previous month's tributary river flow conditions.

The Delta outflow index is correlated with the location of X2[6]. Therefore the SWRCB allowed for the February through June flow objective, calculated as a three-day running average, to be met alternatively based on the location of X2. The 1995 Plan provides that the Delta outflow objectives in effect from February through June are considered achieved

[6] X2 is defined as the distance from the Golden Gate Bridge in kilometers (km) of the 2 part per thousand (ppt) isohaline at a depth of one meter from the bottom of the channel. During the development of the Delta outflow objectives, it was agreed that the 2-ppt salinity isohaline at the bottom of the water column could be represented by a specific conductance of 2.64 mmhos/cm at the surface. This conversion was made because the majority of field salinity EC data are measured at the surface. These data are adjusted to 25°C to provide comparable data.

if either a maximum daily average EC or a 14-day running average EC of 2.64 mmhos/cm is maintained downstream of the confluence of the Sacramento and San Joaquin rivers. Currently, the 1995 Plan allows some flexibility in the February outflow objectives if the best available estimate of the Eight River Index for January is between 650 TAF and 900 TAF, provided certain additional conditions are met, and additional flexibility in the March objective if the Eight River Index for February is below 500 TAF. Under these conditions, the 1995 Plan provides that the CALFED operations group will determine if this objective is applicable, with any disputes to be resolved by the CALFED policy group. This objective is implemented in D-1641, with some modification. D-1641 delegates the authority to the Executive Director of the SWRCB to determine if this objective applies under the conditions outlined above.

Changing the Delta outflow objectives has important implications for the aquatic resources of the Bay-Delta Estuary. The release of water stored in upstream reservoirs by the State and federal water projects to provide flow and to repel salinity also has implications for fisheries in the watersheds where the stored water originates. In certain hydrologic situations, wet conditions in January can trigger higher flow requirements in February, even though the remaining months of the water year may be dry. The USDOI and DWR provided information to show that there are occasions when efforts to meet the Delta outflow objectives through stored water releases or pumping curtailments may provide better fishery protection if used at a different time of the year.

The proponents of more flexible Delta outflow objectives advocate a system of consultation with State and federal fishery agencies to determine when and to what extent the objectives should be relaxed. We assume the commentors are requesting increased flexibility under all hydrologic conditions. Under this scenario, the current objectives would remain in place, but could be relaxed if certain upstream fisheries needs were deemed more important than Delta outflow. For example, in some years, releasing water for Delta outflow can increase river stages such that spawning salmonids, especially steelhead trout, utilize spawning gravels in areas that are only temporarily inundated. When the Delta outflow release ends, river stages are reduced, redds may be dewatered and fry can be stranded. These parties suggest that an adaptive management system may be helpful in avoiding this kind of situation, and would be possible if the objectives were modified to allow more flexibility.

The BI contends that the alternative methods available to the State and federal water projects to meet Delta outflow objectives, found in footnote 14 for Table 3, reduce the effectiveness of the objectives because the 2.64 mmhos/cm average EC level may be moved upstream relative to the positions described in Table A of footnote 14.

Staff Recommendation:

Staff believes that adding flexibility to the Delta outflow objectives contained in Table 3 and its associated footnotes could be beneficial to the aquatic resources of the Delta and its tributaries, and recommends that the SWRCB receive additional information regarding the objectives through the workshop process. Staff believes that this issue may be urgent in light of recent fisheries concerns in the Sacramento and Lower American Rivers associated

with implementation of this objective. In connection with workshops on this issue, staff recommends that the SWRCB also review the alternative methods available to meet the Delta outflow objective contained in footnote 14 of the Plan.

Issue 10: River Flows – Sacramento River at Rio Vista

Comment Received:

The USDOI recommends that the Sacramento River flow objectives at Rio Vista be reviewed to allow some flexibility. There are times when conflicts occur between upstream and Delta fishery management issues, and USDOI argues that flexibility is necessary to resolve the issues. Proper agency coordination and oversight would be required to ensure that no resources are harmed.

Discussion:

Staff assumes that the USDOI is requesting flexibility in the Sacramento River flow objectives similar to the additional flexibility it requests for the Delta outflow objectives. USDOI requests consultation with a technical advisory group so that adaptive management decisions can be made based on a system of biological priorities.

Staff Recommendation:

Staff recommends that the Sacramento River flow objective be reviewed to determine if flexibility in meeting these objectives would benefit instream beneficial uses at different times in different areas. Staff recognizes that this objective is generally met when the Projects are making releases for other objectives and regulatory requirements, including Delta outflow. As discussed in the Delta outflow section, there are times when meeting Delta flow objectives can operate to the detriment of the fishery in upstream areas. While the USDOI does not specifically suggest a method for modifying the Sacramento River flow objectives, staff recommends that if the SWRCB decides to review the Delta outflow objectives, Sacramento River flow objectives should also be reviewed to ensure consistency.

Issue 11: River Flows – San Joaquin River at Airport Way Bridge, Vernalis: February-April 14 and May 16-June

Comments Received:

CDWA comments that flow objectives for the San Joaquin River should be set at Stockton either in lieu of or in addition to the objectives at Vernalis. CDWA states that flow objectives at Stockton in conjunction with export limits and barrier operations could meet the purposes of the fish and wildlife flow objectives.

SDWA comments that elevated spring and fall flows are "a misuse of high quality water." SDWA states that instead of requiring increased flows, the SWRCB should adopt revised

flow schedules in combination with export curtailments and operational requirements for the Head of Old River Barrier to protect fisheries.
The BI comments that the SWRCB should revise the April through June San Joaquin River flow objectives to provide additional protection to out-migrating juvenile chinook salmon. The BI further comments that additional objectives should be included in the plan to protect San Joaquin River fish and wildlife at other times of year. The BI states that the SWRCB should not set objectives based on perceived constraints on the availability of CVP water to meet flow requirements.

DFG comments that the SWRCB should consider allowing for some flexibility in the San Joaquin River flow objectives under extreme conditions in order to preserve storage in New Melones Reservoir for temperature control on the Stanislaus River during the summer for fishery protection purposes.

DWR supports review of the Vernalis flow objectives.

SJRGA comments that the flow objectives should be changed to exclusively reflect hydrological conditions on the San Joaquin River. The SJRGA states that the objectives should not be linked to hydrological conditions on the Sacramento River, due to the significantly different hydrological conditions that may occur between the two watersheds.

SEWD agrees with the SJRGA that the San Joaquin River flow objectives should not reflect hydrological conditions within the Sacramento River watershed. SEWD recommends elimination of the two-tiered objectives and adoption of the lower of the two variable flow objectives independent of Delta Outflow. SEWD states that any additional flow necessary to meet the Delta Outflow objectives should be met from the Sacramento River Basin.

USDOI comments that the SWRCB should consider amending the San Joaquin River flow objectives to allow for flexibility in meeting the objectives in order to conserve water supplies during dry hydrological conditions, while at the same time providing an equivalent level of fisheries protection.

Deltakeeper comments that the San Joaquin River flow objectives should be revised to be more protective.

The SLDMWA comments that the SWRCB should not consider any revisions to the San Joaquin River flow objectives until the California Court of Appeal, Third Appellate District, issues a decision in the litigation over D-1641 and discussions concerning the future of the California Bay-Delta Authority Program are completed.

Discussion:

The purpose of the spring San Joaquin River flow objectives is to improve survival of salmon smolts emigrating down the San Joaquin River and to improve habitat conditions in the central and southern Delta for numerous aquatic species. Data show that increased flows in the San Joaquin River during the spring months are highly correlated with

increased numbers of adult chinook salmon returning to the river to spawn two and a half years later, implying that increased spring flows likely improve salmon smolt survival. (FEIR, p. VIII-28.) The correlation between increased survival and higher flows is likely the result of decreased migratory time through the central Delta and decreased chance of straying from the main-stem of the San Joaquin River to the export pumps. In addition to providing protection for chinook salmon smolts, the spring flow objectives also contribute a portion of the flows needed to meet the Delta outflow objectives and to improve salinity conditions and provide transport flows for other estuarine species that are spawning at that time, including Delta smelt, Sacramento splittail, and striped bass.

The current San Joaquin River flow objectives for the February through April 14 and May 16 through June period are a function of both water year type and the flow required under the Delta Outflow objective. For each year type, two San Joaquin flow objectives are designated. The higher flow objectives apply when X2 is required to be at or west of Chipps Island, with the lower flow objectives applying at all other times. The Delta outflow objectives are based on the Eight River index, which is the calculated sum of the unimpaired runoff of the Sacramento, Feather, Yuba, American, Stanislaus, Merced and San Joaquin Rivers. (Footnote [13], Table 3 of 1995 Plan, p. 20.) Because the Sacramento River and its tributaries contribute the majority of the flow comprising the Eight River index, hydrological conditions within the Sacramento River watershed disproportionately determine the required Delta outflow. The Sacramento River watershed may experience very different hydrological conditions than the conditions experienced in the San Joaquin River watershed, with the Sacramento River watershed historically receiving much higher runoff than the San Joaquin River watershed. As a result, the higher San Joaquin River flow objectives may be triggered by wetter conditions in the Sacramento River watershed even when conditions in the San Joaquin River watershed are comparably much drier. As indicated above, numerous parties have expressed concern with this component of the San Joaquin River flow objectives.

The SWRCB implemented the San Joaquin River flow objectives in D-1641 and required USBR to meet the objectives. USBR has not consistently met the objectives from 2002 through 2004, with violations primarily occurring during February. USBR has stated that the reason for noncompliance has been a need to maintain water in storage in New Melones Reservoir so that it is available to meet other water quality and water supply needs of the project. While USBR is not required to meet the Vernalis flow objectives by making releases from New Melones Reservoir, for various reasons, USBR has not attempted to utilize other methods for meeting the objectives. However, even if other methods were employed, water supplies in the San Joaquin River watershed are limited during drier hydrological conditions and are subject to a number of competing needs.

Staff Recommendation:

Staff recommends that the SWRCB review the February - April 14 and May 16 – June flow objectives for the San Joaquin River at Vernalis. Given that the objectives have not been met consistently for the past three years, it is likely that USBR will continue to have difficulty meeting the objectives in the future if USBR's operations and/or the water quality objectives are not modified. In reviewing the objectives, staff recommends that the

SWRCB consider the value of dual objectives based on Delta outflow. Staff also recommends that the SWRCB investigate the appropriateness of reducing the flow objectives in favor of other actions that could obtain protections equivalent to the protections provided by the spring flow objectives. Staff recommends that any proposed reductions in the flow objectives be examined to determine potential impacts on meeting Delta outflow objectives, as well as the other purposes of the flow objectives.

Staff does not recommend consideration of a flow objective at Stockton. There are no tributaries to the San Joaquin River between Stockton and Vernalis. Therefore, staff believes Vernalis is the appropriate location for measuring the flow of the San Joaquin River before it enters the Delta. In addition, staff does not recommend delaying review of the San Joaquin spring flow objectives until the Court of Appeal issues a decision and/or discussions are completed concerning the future of the CBDA, as recommended by the SLDMWA. In light of the fact that USBR has had difficulty meeting the objectives for the past three years and has requested review of the objectives, it does not seem appropriate to delay review for what may be several years until other issues are resolved. In addition, it is not clear what bearing the future of the CBDA has on whether the objectives should be reviewed. Should physical facilities or operational parameters change as a result of CBDA activities, those changes would argue for a future review of any objectives in place at that time.

Issue 12: River Flows – San Joaquin River at Airport Way Bridge, Vernalis: 31 day pulse flow April 15 – May 15

Comments Received:

CDWA comments that the April/May San Joaquin River pulse flow requirement is not based on scientific information and does not provide reasonable protection for beneficial uses. CDWA states that if the pulse flow requirement is purely an experiment then the requirement should be eliminated and replaced with an experiment that does not require additional releases of stored water from the San Joaquin River watershed, but instead restricts export pumping.

DFG comments that it is willing to assist the SWRCB in addressing any changes that may need to be made to the pulse flow objectives based on the recent Superior Court ruling on the matter.

DWR supports review of the San Joaquin River April/May pulse flow objectives.

The SJRGA recommends that the SWRCB change the April/May pulse flow objectives to correspond to the VAMP flow targets based on evidence from the 2002 Annual Technical Report on the VAMP (page 5) that the VAMP provides equivalent protection to the 1995 Plan flow objectives.

The SJRGA comments that footnote 18 of Table 3 (the SJRGA's letter mis-references footnote 14) of the 1995 Plan should be expanded and implemented to allow for more flexibility in pulse flow releases based on real-time monitoring of fishery needs. Footnote

18 of Table 3 of the 1995 Plan calls for one or two separate pulses of combined duration to equal the single pulse flow. The SJRGA comments that this condition should be expanded to allow for a variety of release options based on the needs of the fishery. The SJRGA further comments that the flexibility allowed for conducting the pulse flow outside of the April 15 through May 15 time period based on real-time salmon needs should be expanded.

USDOI notes that the 2003 State court decision may dictate review of the April/May pulse flow objectives. USDOI states that the SWRCB should review the studies that evaluated the objectives (including base flows) in preparation for D-1641 and their assumptions as to methods of compliance.

GGAS comments that the SJRA and the VAMP are unlawful and fail to protect the environment.

SEWD comments that the San Joaquin River spring pulse flow objectives should be changed to reflect the "functionally equivalent" VAMP flow targets. SEWD also comments that the pulse flows should be expanded to allow for varying pulses based on studies on the Stanislaus River that indicate that fish are prompted to migrate based on short pulses of water rather than sustained pulses.

SDWA comments that the SWRCB should reevaluate the methods by which water is provided by the SJRGA members for the pulse flow. SDWA states that reservoir operators are currently able to sell water for the pulse flows and then recapture water that would otherwise be lost to beneficial use, without experiencing a reduction in consumptive use. SDWA states that the SWRCB should require that sales of water for the pulse flow be limited to water resulting from a reduction in consumptive use.

SWC comment that it may be advisable not to consider any changes to the San Joaquin River flow objectives for Fish and Wildlife uses until after a decision is issued by the Court of Appeal in pending litigation on the matter. The SWC states that there is no immediate need to modify the objectives since the trial court order requiring changes in the objectives has been stayed.

Discussion:

The purpose of the April/May pulse flow objectives is to aid in cueing chinook salmon smolt outmigration from the San Joaquin River. San Joaquin River fall-run chinook salmon principally migrate down the river in April and May, with some migration also occurring in June. The objectives are for the April 15 to May 15 period. However, the time period may be modified based on real-time monitoring to coincide with fish migration. The flow objectives range from 3,110 and 8,620 cfs based on water year type and the required location of the 2 ppt isohaline, with higher flows required when that location is required to be at or west of Chipps Island. Based on evidence that short-duration flow fluctuations, adequately separated in time, are effective in cuing smolts into outmigration, the objectives call for one pulse, or two separate pulses of combined duration equal to the single pulse.

When considering how to allocate responsibility to implement the flow-dependent objectives in the 1995 Plan, the SWRCB gave water right holders the opportunity to negotiate agreements with other water right holders and interested parties proposing allocations of responsibilities. The SJRA was proposed by various parties to allocate responsibility for meeting the San Joaquin River April/May pulse flow objectives. Pursuant to the SJRA, signatories to the agreement agreed to provide flows for an interim period of 12 years during April and May to conduct the VAMP experiments. The VAMP experiment is designed to determine the effects of export pumping at various specified river flows ranging from 3,200 cfs to 7,000 cfs. (D-1641, page 19.) The flows specified in the VAMP are sometimes lower than the flow objectives included in the 1995 Plan, while the export limits are equally or more restrictive than those in the 1995 Plan. In D-1641, the SWRCB approved conducting the experiment in lieu of meeting the 1995 Plan objectives for the April/May San Joaquin River pulse flow. The SWRCB found that conducting the experiment would provide valuable information concerning the relationship between river flows and export rates and could provide the basis for future changes to the objectives during future review of the flow and Plan objectives.

The Sacramento County Superior Court, in reviewing D-1641, decided to remand the SWRCB's decision to authorize the experiment instead of immediately implementing the pulse flow objectives to the SWRCB. The SWRCB has appealed this ruling, and the Court of Appeal has not issued a decision.

Staff Recommendation:

Staff recommends that the SWRCB review the San Joaquin River April/May pulse flow objectives to determine if any changes in the objectives are warranted at this time. Staff recommends that the SWRCB consider whether to include flexibility in the objectives to allow for increased protection of beneficial uses, implementation of the VAMP experiments, or staged implementation of the objectives. Staff also recommends that the SWRCB consider whether, on the basis of the completed parts of the VAMP experiments, there is adequate information to revise the flow objectives. Staff understands that studies completed to date pursuant to the VAMP may not yet provide adequate information to determine what if any changes should be made to the pulse flow objectives. However, given recent concerns by the court and the interest from affected parties in reviewing this issue at this time, staff believes that it is appropriate to consider proposed changes to the objectives prior to completion of the VAMP studies.

Issue 13: Export Limits

Comments Received:

SLDMWA comments that the objectives that limit exports in response to fish populations should be reconsidered. SLDMWA states that new data may show that increased flexibility in export limits may be available without or with a minimal corresponding degradation of other beneficial uses protected by the 1995 Plan. .

DWR and USDOI request an adjustment to the export/inflow (E/I) ratio to clarify footnote 23 of the 1995 Plan. They request that the SWRCB modify the export limit objectives to allow the State and federal water projects to choose between compliance with a 14-day running inflow average and a 3-day running inflow average.
Delta Wetlands requests that the export limit objective be modified to take into account the prospect of in-Delta storage.

CDWA comments that the export limit of 1,500 cfs or 100 percent of San Joaquin River flow does not conform to the Delta Smelt Biological Opinion of approximately 50 percent of San Joaquin River flow. Central Delta believes that the current objective is not protective of the fishery needs.

GGAS comments that the 65 percent export limit is not protective of the Bay and Delta fishery and that the environmental impacts of these export rates have not been properly analyzed.

Discussion:

Delta export limitations are included in the 1995 Plan in order to "protect the habitat of estuarine-dependent species by reducing the entrainment of various life stages by the major export pumps in the southern Delta." (1995 Plan, p.15.) To implement this goal, the SWRCB limited exports of water from the southern Delta to a specific percentage of total inflow, which varies by hydrologic conditions and time of year. Inflow and export rates are defined by running averages, with a 14-day running average used for inflow, and a 3-day running average used for export. When the State and federal water projects are releasing water from storage for export, the inflow rate parameter is calculated using a 3-day running average. During the San Joaquin River April/May 31-day pulse flow period, exports may be further limited based on San Joaquin River flow.

The comments received from DWR and USDOI indicate that a change in footnote 23 of Table 3 should be made so as to accommodate project operations. Currently, the objective requires the State and federal water projects to switch from using a 14-day running average of inflow in export/inflow ratio calculations, to a 3-day running average when they begin releasing water from storage to meet export demands. The intent of the switch to a 3-day average is to allow the DWR and USBR to export storage releases immediately. However, in certain instances, such as when inflow to storage reservoirs drops below releases, the Projects are required to change to the 3-day running average, even though they have not consciously changed their operations. Mandating a change to the 3-day average could force the Projects to curtail exports sooner than if they were operating to the 14-day objective. In these situations, the Projects believe it would benefit their operations to choose either the 14-day or the 3-day average, with no adverse impacts to the fishery.

A number of commentors requested that the SWRCB review the issue of in-Delta storage and release accounting in regard to export limits. Currently, the 1995 Plan does not address how in-Delta storage releases are to be accounted for in the export/import ratio calculation. In 2001, the SWRCB issued a water right permit to Delta Wetlands, which intends to store up to 417,000 acre-feet per annum on several interior Delta islands. Delta Wetlands' water

right is junior to the Projects'; therefore, storage and releases from these islands are not allowed to "adversely affect the operation of the federal Central Valley Project or the State Water Project." (Decision 1643, pg. 107.) When the Delta is in balanced conditions[7], or when the projects are releasing water from storage to meet 1995 Plan objectives, Delta Wetlands would be forced to cease discharges. However, should an in-Delta storage project be operated conjunctively with, or solely by, the DWR and USBR, the storage and release of water in the Delta could be taken into consideration in calculating any export/inflow ratio in an updated water quality control plan. Because this, or similar, scenarios may occur in the future, it may be appropriate to clarify the water quality objectives to account for in-Delta storage and export of water.

Staff Recommendation:

The SWRCB should review footnote 23 of the export limits objective in Table 3 of the 1995 Plan during the periodic review. The review should focus on whether footnote 23 should be changed to increase the flexibility in selecting the accounting standard to follow when determining the export/import ratio, and the resultant effects on aquatic resources of the Delta. The SWRCB should also consider whether to specify the manner in which in-Delta storage releases are accounted for in the 1995 Plan, and the adequacy of the export limits contained in footnote 22.

Regarding CDWA's comment on April/May period when exports are limited by San Joaquin River flows; staff is aware that the export limits defined in footnote 22 of the 1995 Plan may be less stringent than the export limits in the USFWS Biological Opinion for Delta Smelt. The export projects must meet the more restrictive of any export limitations placed upon them by different regulatory agencies. If CDWA wishes to provide scientific evidence that the current objective is not protective of the beneficial uses it should be allowed to do so.

Regarding GGAS' comments on export rates, we assume GGAS is requesting a review of the objective. GGAS should provide additional information on the scope and direction of its requested review if the SWRCB holds a workshop on export limits.

Issue 14: Delta Cross Channel Gates Closure

Comment Received:

SLDMWA comments that the SWRCB should consider amending the water quality objectives that apply to operations of the Delta Cross Channel Gates based on new information concerning the effects of gate closures on fisheries.

[7] Balanced water conditions is defined as periods when DWR and USBR agree that releases from upstream reservoirs plus unregulated flow approximately equal the water supply needed to meet Sacramento Valley inbasin uses, plus exports. Excess water conditions are defined as periods when DWR and USBR agree that releases from upstream reservoirs plus unregulated flow exceed Sacramento Valley inbasin uses, plus exports (i.e., additional water is available in the system).

Discussion:

USBR created the Delta Cross Channel in 1953 to transport Sacramento River water into the interior Delta. The original purpose of the Delta Cross Channel Gates (gates) was to prevent Delta flooding. There are several regulatory requirements governing gate operations. The purpose of these requirements is to balance the needs for fresh water exports and the needs of salmon migrating through the Delta.

When open, the gates allow fresh water to flow into the interior Delta from the Sacramento River, decreasing salinity levels and allowing higher-quality water to be pumped from the Delta. Closed, the gates prevent Sacramento Basin salmon smolts out-migrating to the ocean from being drawn into the inner channels of the Delta where they may be entrained at the Delta pumping facilities or suffer increased mortality due to predation.

Pursuant to the 1995 Plan, there are three time-periods in which the gates are required to be closed for salmon protection. From November 1 through January 31, the gates are required to be closed for a total of up to 45 days for fisheries protection as requested by the USFWS, NOAA Fisheries, and DFG. From February 1 through May 20 the gates are required to be closed. Finally, from May 21 through June 15 the gates are required to be closed for a total of 14 days for fisheries protection as requested by the USFWS, NOAA Fisheries, and DFG.

Staff Recommendation:

In 2000, CALFED and the Interagency Ecological Program (IEP) began a three-year study of the benefits and impacts of various gate closure scenarios. The goal of the study is to determine the best operational scenario that benefits both fisheries and water quality. While the study is incomplete, a summary of the work is expected at the CALFED Science Conference in October 2004. If information on the operations of the gates is available at the time of workshop, staff recommends reviewing the information.

Program of Implementation Issues

Issue 15: Changes to the Water Quality Compliance and Baseline Monitoring Program

Current Program:

The Program of Implementation in the 1995 Plan includes a Water Quality and Baseline Monitoring Program, which is described in Table 4 on pages 43-45 of the 1995 Plan. To ensure compliance with the water quality objectives in the 1995 Plan, to identify meaningful changes in any significant water quality parameters potentially related to operation of the SWP or the CVP, and to reveal trends in ecological changes potentially related to project operations, in D-1641 at condition 11 (p. 149), the SWRCB directs DWR and USBR to perform the Water Quality and Baseline Monitoring Program. D-1641 also directs DWR and USBR to evaluate the Water Quality Compliance and Baseline Monitoring once every three years to ensure the goals of the monitoring program are attained. DWR and USBR report the results of this monitoring to the SWRCB in the Environmental Monitoring Program (EMP).

Comments Received:

DWR and the SWC comment that the SWRCB should review the monitoring program of the 1995 Plan to update Table 4 of that plan to be consistent with the most recent version of Table 5 of D-1641 and to consider any (previously submitted) recommendations of the technical evaluation that were not previously approved by the Executive Director.

DFG comments that a review of the 1995 Plan should include an update of the Compliance and Baseline Monitoring program in coordination with the IEP and the CALFED Science Program. Factors to discuss include new monitoring proposed for CALFED and any revised monitoring associated with the new Operations Criteria and Plan (OCAP) and South Delta Improvement Program (SDIP) biological opinions and SDIP environmental documentation.

The SJRGA comments that the SWRCB should not modify the preliminary Water Quality Compliance and Baseline Monitoring Program in Table 4 of the 1995 Plan.

USDOI comments that the SWRCB review of the 1995 Plan provides a timely opportunity to provide updated information regarding Delta monitoring programs.

Discussion:

In March of 2003, DWR and USBR submitted the IEP's 2001-2002 review of the EMP in compliance with condition 11(e) on page 149 of D-1641. In that review, DWR and USBR requested changes to Table 5 and Figure 4 on pages 192-194 of D-1641, which are the same as Table 4 and Figure 2 in the1995 Plan. In summary, the changes (1) add, establish,

and/or better integrate stations and monitoring elements where needed for more comprehensive, integrative data analysis and modeling; (2) consolidate two neighboring continuous and discrete stations; and (3) change discrete sampling frequency from monthly to near monthly according to the tides. Some of the changes affect baseline monitoring stations and some of them affect compliance stations. In her response of August 11, 2003, the Executive Director of the SWRCB approved the requested changes to baseline monitoring stations and the addition of baseline monitoring stations. However, the Executive Director stated that the changes proposed for the compliance stations must be publicly noticed and any comments must be formally reviewed by the SWRCB before they could be approved. This type of review should first occur as part of a comprehensive review of the 1995 Plan and should then be the subject of a conforming water right change petition affecting the permits of the DWR and USBR, who are required to implement the compliance plan as a condition of their water right permits.

Staff Recommendation:

While staff recognizes that the SJRGA does not support the modification of the Water Quality Compliance and Baseline Monitoring Program, DWR at various meetings has presented compelling information to review the locations of the baseline and compliance stations. For reasons such as workers safety and better data collection, staff recommends that the SWRCB consider making changes to the compliance/baseline stations C9, C10, D10, D12, D22, D24 and S42, adding baseline monitoring at one compliance station (D29), and making a proposed change in the sampling interval for certain parameters in the EMP.

Issue 16: Other Updates to the Program of Implementation

Comments Received:

The SWRCB received a number of comments that could be construed to pertain to the program of implementation. The following comments specifically request changes to the program.

The Farm Bureau comments that the Plan should include measures and funding to eradicate invasive species in the Delta. The Farm Bureau specifically comments that Chapter IV, Part C, Section 6 (Reduce the impacts of introduced species on native species in the estuary) of the 1995 Plan should be updated to reflect changes in the law (i.e. Fish and Game Code sections 6430-6439 which have been repealed and incorporated into the Public Resources Code at section 71200, relating to ballast water).

DWR comments that the Program of Implementation needs to be updated to reflect the significant habitat improvement projects undertaken by CALFED and recent actions by the CVRWQCB regarding DO.

The SJREC comment that the SWRCB should amend its Program of Implementation in the Plan as it pertains to the agricultural salinity objectives. Specifically, the SJREC comment that the SWRCB should require the USBR to prepare a plan for financing and implementing a drainage program for drainage-impaired irrigators on the west side of the

San Joaquin Valley and that the required drainage program should be consistent with the San Luis Act and court rulings regarding the San Luis Drain.

Discussion:

The 1995 Plan addresses the detrimental effect of invasive species in Chapter IV, Part C, Section 6 (Recommendations to Improve Habitat Conditions). This section addresses the need for the CDFG, NOAA Fisheries, and the USFWS to identify the impacts that these species have had on the Bay and Delta ecosystem, and explore the benefits of controlling those species. Staff believes that the issue of invasive species control is important, but it would be improper to include the issue as an objective in the Plan. The responsibility of meeting an invasive species objective would be difficult to assign to any entity or entities, as no party can control invasive species introductions, other than as mentioned in Section 6 of the 1995 Plan.

The implementation measures contained in the 1995 Plan recommend actions that should be undertaken by certain agencies to improve Bay and Delta conditions for a number of beneficial uses. Because implementation of the 1995 Plan requires independent regulatory actions, the 1995 Plan does not order any specific action be undertaken nor does it provide for funding any actions. Staff believes that the WQCP is not the correct forum for assigning responsibility for certain actions, and funding those actions. This suggestion is more appropriately made during future water right or water quality actions that may occur.

Staff Recommendation:

If the SWRCB decides to modify the 1995 Plan, staff recommends that an updated program of implementation be drafted that takes into account changes to the regulatory environment and existing law. In regard to the issue specifically raised by DWR, staff anticipates that an updated Program of Implementation will address recent actions taken to improve habitat and meet flow and water quality objectives. Following the release of an updated program of implementation, all parties will have an opportunity to comment on the revisions to that document.

Other Issues

Additional comments were made that staff believes are not directly related to the modification of existing objectives or the addition of new objectives. A number of these comments were related to coordination of the SWRCB's responsibilities to modify the WQCP and the actions of other governmental agencies to improve water quality in the Delta and its tributaries. Staff believes that the opportunity for coordination on these issues will present itself in future SWRCB workshops.

1. **Comment:** The Farm Bureau comments that environmental review of changes to the Plan must adequately address potential impacts to agriculture in addition to economic impacts related to agriculture. The Farm Bureau further comments that

the impacts of CALFED and its ability to mitigate for impacts of the 1995 Plan should be addressed in the environmental review.

Response: The SWRCB's environmental review of any revisions to the 1995 Plan will comply with CEQA and will take into account the unique circumstances of the Delta. In addition, the 1995 Plan review will comply with the requirements of Water Code §13241, which requires the review of economic impacts.

2. **Comment:** GGAS makes various comments regarding the implementation of the Plan in D-1641.

   Response: GGAS' comments in general argue for the reconsideration of D-1641 and not for review of the current objectives, except to the extent that they are less protective than federal Delta objectives promulgated by the EPA in December 1994. To the extent that GGAS' comments argue for reconsideration of D-1641, they are not timely and they are irrelevant to the review of the Plan.

3. **Comment:** SEWD comments that the SWRCB should coordinate periodic review of the 1995 Plan with the CVRWQCB's TMDL and BPA process for salt and boron on the San Joaquin River.

   Response: The SWRCB is responsible for reviewing and approving BPAs, thereby allowing the SWRCB to maintain consistency between the BPA process and SWRCB actions. Additionally, the SWRCB staff is coordinating with CVRWQCB staff regarding these proceedings.

4. **Comment:** TUD comments that the SWRCB should require USBR to implement a drainage program to reduce the concentration of salt in the water exported to the upper San Joaquin River. TUD states that drainage service could be in the form of treatment, improved irrigation or drainage methods and that USBR should be limited on the amount of water it can deliver until it does so.

   Response: The issue of USBR providing drainage to its contractors in the San Joaquin Valley involves a contractual dispute that may be settled in federal district court. Staff recommends that the SWRCB not address this issue at this time.

5. **Comment:** UDWA comments that the SWRCB should review the relationship between the 1995 Plan and CALFED's efforts to improve water quality for drinking water and other uses.

   Response: SWRCB staff recommends that this issue be addressed during any revisions to the Program of Implementation.

6. **Comment:** UDWA comments that the SWRCB should work closely with the CVRWQCB to develop a Central Valley drinking water policy and to prevent degradation of drinking water quality through waste discharge requirements.

Response: This comment is a request for development of a water quality policy rather than a comment on changes in the Plan, and accordingly should be raised separately. The responsibility of the SWRCB and the CVRWQCB is to establish objectives for the quality of water in the natural watercourses, while the responsibility of the Department of Health Services (DHS) is to establish standards for the constituents in drinking water. The SWRCB's policy on the sources of drinking water, adopted in 1988, sets criteria for the source waters for which drinking water is a beneficial use. Because the DHS is the agency responsible for setting standards for drinking water, it is the practice of the SWRCB and the regional boards to observe the standards set by DHS and to establish and implement water quality objectives for source waters that will provide reasonable protection of the beneficial uses, one of which in the Delta is drinking water. (*See* Wat. Code, § 13241.) It is the responsibility of the CVRWQCB to establish waste discharge requirements and NPDES permits to protect the quality of beneficial uses of water.

7. **Comment:** The SJREC comments that review of the 1995 Plan should be done in coordination with the CVRWCB's current TMDL and BPA process for salt and boron on the San Joaquin River. The SJREC state that both processes should take into consideration the quality of water being supplied to the SJREC through the Delta Mendota Canal and the consequent ability of the SJREC to meet water quality objectives for salt and other constituents. The SJREC further comment that the SWRCB should condition the water right permits of the USBR to include a requirement that the USBR agree to the Management Agency Agreement specified in the CVRWQCB's TMDL for salt and boron.
   Response: As previously stated, SWRCB and CVRWQCB staff are coordinating their efforts. The remaining comment does not address proposed amendments to the 1995 Plan, but rather addresses how these objectives should be implemented in a water right proceeding. These comments should be made in the context of a water right hearing to implement any amendments that may result from this periodic review.

VI. Future Actions Regarding this Report

If the SWRCB adopts this staff report in a resolution at a Board meeting, the SWRCB and/or its staff will conduct a series of workshops to receive detailed information from the interested parties on each subject area recommended for review. It is anticipated that these workshops will be conducted during fall 2004. Based on the information already received during this periodic review and the additional information received during future workshops, the SWRCB staff will prepare any necessary draft plan amendments or a draft revised plan for consideration by the SWRCB and any required environmental documentation.

After the SWRCB staff has prepared any necessary draft plan amendments or a draft revised plan, the SWRCB will give all interested parties notice of a public hearing in which they can formally comment on the proposed changes and on the environmental analysis. Similarly, if the SWRCB determines that no amendments are necessary, interested parties

will also have the opportunity to comment at a public hearing. After the hearing, the SWRCB will hold a Board meeting to consider adopting any proposed changes.

The 1995 Plan, and supporting environmental documentation, can be found online at http://www.waterrights.ca.gov/baydelta. To obtain hard copies of these, or any related documents, or to add yourself or your organization to the Bay - Delta mailing list, please contact Ms. Gita Kapahi at (916) 341-5289, or via U.S. mail:

Ms. Gita Kapahi, Chief
Bay/Delta Unit
P.O. Box 2000
Sacramento, CA 95812-2000

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State Water Resources Control Board, Final Environmental Impact Report for Implementation of the 1995 Bay/Delta Water Quality Control Plan, State Clearinghouse Number 97-1220576, November 1999

State Water Resources Control Board, Revised Water Right Decision 1641. In the Matter of: Implementation of Water Quality Objectives for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: A Petition to Change Points of Diversion of the Central Valley Project and the State Water Project in the Southern Delta; and a Petition to Change Places of Use and Purposes of Use of the Central Valley Project, March, 2000.

The Interagency Ecological Program for the Sacramento-San Joaquin Estuary. Suisun Ecological Workgroup Final Report to the State Water Resources Control Board. Technical Report 68, 2001.

APPENDIX

Timeline

Decision 935 (1959): Authorizes diversion of water at Friant Dam on the San Joaquin River by USBR.

Decision 990 (1961): Authorizes diversion of water for most of the USBR's CVP.

Decisions 1275 and 1291 (1967): Authorizes the DWR to store and divert water from the Feather River and the Delta for the purposes of delivering water to the SWP service area.

SWRCB Resolution No. 68-17: Supplemented a water quality control policy for the Delta prepared by the CVRWQCB that was approved by the SWRCB in June 1967.

Decision 1379 (1971): Required the CVP and the SWP to meet objectives for non-consumptive fish and wildlife uses in addition to agricultural, municipal, and industrial consumptive uses. This decision was stayed by the court and the stay was never dissolved.

SWRCB Resolution No. 73-16: Adopted a water quality control plan that supplemented the water quality control policies for the Delta.

1978 Delta Plan (1978): Water Quality Control Plan for the Sacramento-San Joaquin Delta and Suisun Marsh. The Plan was adopted pursuant to SWRCB Resolution No. 78-43.

Decision 1485 (1978): The hearings addressed two sets of issues: (1) in-Delta needs for agriculture and the environment; and (2) the needs of users along the rivers and tributaries contributing to the Delta and users served by the CVP and SWP exports. This decision implements the water quality objectives in the 1978 Delta Plan by modifying only the permits of the USBR and DWR.

California v. United States (1978): The U.S. Supreme Court affirms that a state may impose any condition on control, appropriation, use or distribution of water in a federal reclamation project that is not inconsistent with clear Congressional directives respecting the project. The decision thus confirmed the SWRCB's authority to impose terms and conditions in USBR permits including those adopted in D-1485.

Racanelli Decision (1986): The SWRCB's actions in adopting the 1978 Delta Plan and D-1485 were challenged by various parties. The Court of Appeal criticized the SWRCB's approach in adopting the 1978 Delta Plan and held that the SWRCB must determine the protections required for all beneficial uses of the water, not just the protections that could be attributed to the SWP and the CVP. The court also said that the SWRCB should consider the responsibilities of all water right holders in the watershed tributary to the Delta. However, since the SWRCB had already announced hearings to modify D-1485, the Court of Appeal reversed the trial court decision and directed the trial court to deny the writ. The D-1485 permit terms remained in effect on Project diversions from the Delta.

1991 Plan (1991): Water Quality Control Plan for Salinity, San Francisco Bay/Sacramento-San Joaquin Delta Estuary. The Plan was adopted pursuant to SWRCB Resolution 91-34.

1995 Plan (1995): Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. The Plan was adopted pursuant to SWRCB Resolution 95-24.

Water Right Order 95-06 (1995): Interim Order that modified some of the conditions of D-1485 to eliminate inconsistencies between D-1485 and the Principles of Agreement (Bay/Delta Accord) among some Delta parties.

Water Right Order 98-09 (1998): Extension of temporary conditions in WRO 95-06.

Decision 1641 (2000): Implementation of the 1995 Plan. In this decision the SWRCB amended the permits and licenses of numerous entities including USBR and DWR. The Decision also amends water rights to accommodate agreements affecting the San Joaquin River parties and watershed, the East Bay Municipal Utilities District, the Woodbridge Irrigation District, the Merced Irrigation District, Oakdale and South San Joaquin Irrigation Districts, and the Turlock and Modesto Irrigation Districts. To the extent that parts of Phase 8 of the hearing were conducted, they dealt with Sacramento River water right holder responsibilities.

Water Right Order 2000-10 (2000): Order approving water right changes needed to implement an agreement among Bear River parties and DWR to satisfy their responsibilities to the 1995 Plan.

Water Right Order 2001-05 (2001): Order staying Phase 8 of the Bay-Delta water right hearing for 18 months, after which the hearing was to be dismissed unless the USBR or DWR request the hearing. In Phase 8 of the hearing the SWRCB would have received evidence for the purpose of considering an apportionment of responsibilities among permit and license holders in the Sacramento River watershed for implementing the 1995 Plan objectives. The hearing was dismissed as a result of DWR and USBR agreeing to take responsibility for meeting those objectives.

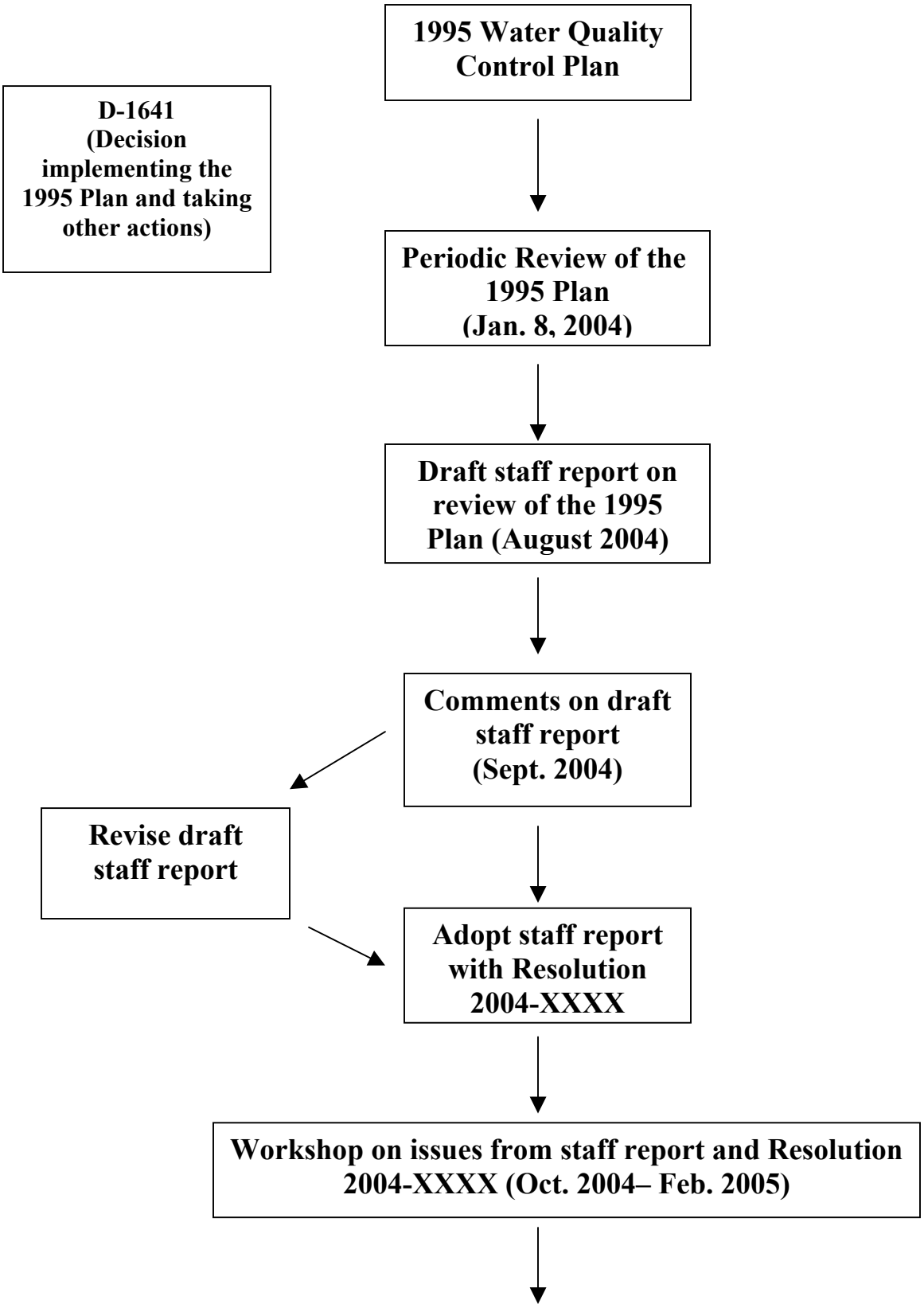
January 8, 2004: Workshop that initiated Periodic Review of the 1995 Plan objectives.

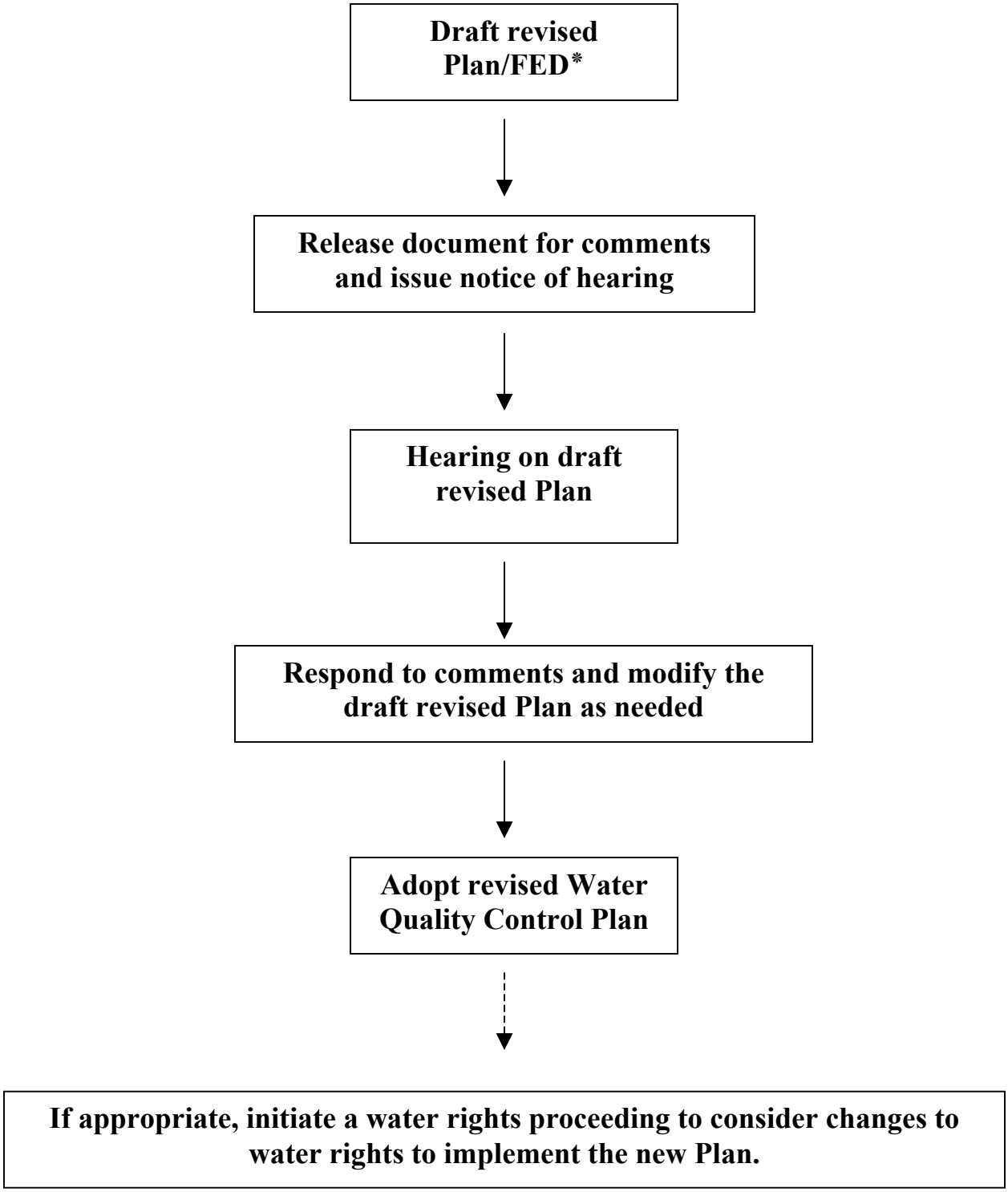
August 2004: Release of draft staff report on Periodic Review of the 1995 Plan.

September 2004: Workshop and Board meeting to consider adoption of the Periodic Review of the 1995 Plan staff report.

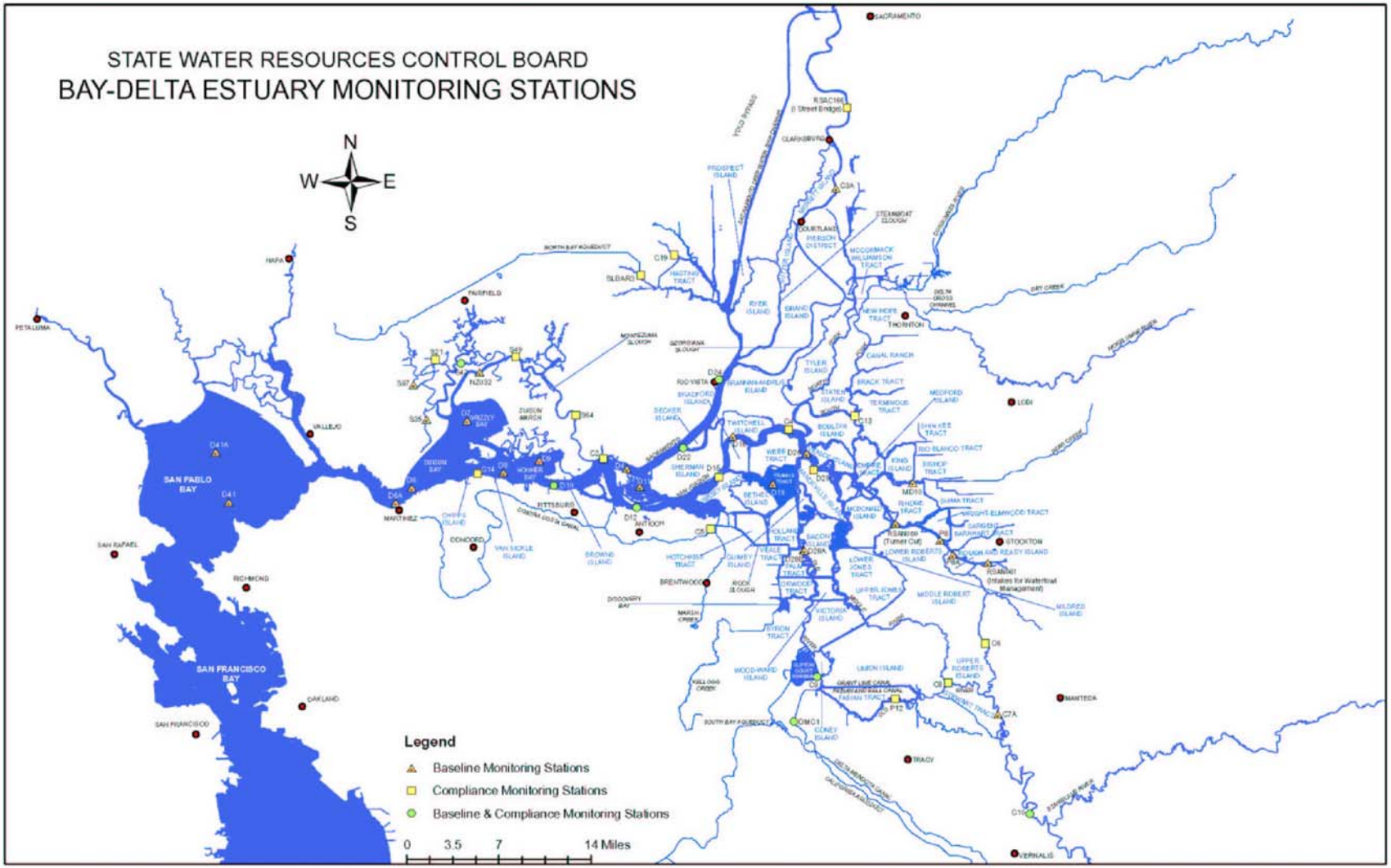
October 2004: Commence workshops on the issues identified in the Periodic Review of the 1995 Plan.

Water Quality Control Plan Review Process





* FED = functionally equivalent document that fulfills CEQA requirements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