

# CALFED Bay-Delta Program

## Water Quality Program Plan Year 10 (State FY 2009-2010; Federal FY 2010)

### **Implementing Agencies:**

California Department of Public Health  
U.S. Environmental Protection Agency  
State Water Resources Control Board  
Central Valley Regional Water Quality Control Board

### **Coordinating Agencies:**

California Department of Water Resources  
California Department of Fish and Game  
U.S. Bureau of Reclamation  
U.S. Geological Survey  
U.S. Fish and Wildlife Service  
NOAA Fisheries

July 1, 2009



## Introduction

This Water Quality Program Plan identifies the CALFED Program activities that are scheduled to be completed during State Fiscal Year (FY) 2009-2010 and Federal FY 2010. As appropriate, the Program Plan and activities will be adjusted during the year to reflect, for example, changes in priorities, funding, policies or program direction.

## Progress Report

### Franks Tract

(Also included in the CALFED Conveyance Program Plan)

Public scoping meetings for the project EIS/EIR and collection of baseline environmental data for the project were completed. Using extensive hydrodynamic and particle tracking modeling, preliminary gate operations to protect Delta fisheries and reduce sea water intrusion into central and south delta were developed. Conceptual level design layouts for the project alternatives were completed. Maintenance of flow and salinity monitoring stations to establish baseline conditions for subsequent analysis continued. The project schedule has been delayed by the stop work order on State bond funded projects.

### CCWD Alternative Intake Project

(Also included in the CALFED Conveyance Program Plan)

The Final EIR/EIS was completed and circulated to the public in October 2006. The U.S. Fish and Wildlife Biological Opinion was secured in April 2007. The National Marine Fisheries Service Biological Opinion was secured in July 2007. A draft federal Special Study was completed in January 2008. A federal Record of Decision (ROD) was issued in April 2008 to change the point of diversion specified in the CCWD water service contract. Construction was started in the spring of 2008 and the intake and pipeline will be completed and operational in the spring of 2010.

### CCWD Canal Replacement project

Construction is under way on Phase I, replacement of the open canal with pipeline from Contra Costa Pumping Plant #1 to Marsh Creek, approximately 1900 feet. Completion of Phase 1 is expected in the fall of 2009. If additional funding becomes available, construction will continue immediately with Phase 2.

### North Bay Aqueduct Alternate Intake Project

Agreement with DWR for funding the costs of environmental analysis, planning and design of the North Bay Aqueduct Alternate Intake Project was executed in 2008. A consultant has been procured to develop the EIR/EIS. Solano County Water Agency is completing an updated feasibility study to augment the CALFED funded feasibility study done in 2003. This project was also included in the CALFED funded Delta Region Drinking Water Quality Management Plan done in 2005. The EIR/EIS is expected to be completed by 2012 and construction completed by 2015.

### Department of Public Health Grant Programs (CDPH)

The Department of Public Health established updated project priority lists for their Proposition 50 funds. CDPH invited 27 projects from the priority lists to submit funding applications. Of the projects invited, no projects were identified as CALFED-related. CDPH continues to track 12 Proposition 50 projects, with a total cost of \$98 million, that are CALFED-related.

## **State Water Resources Control Board Grant Program**

This grant program was completed in 2009 with two projects selected. However, the state budget crisis has precluded awards of any new project grants. These two, and many other grants, are on hold until funding becomes available.

## **Water Boards Delta Strategy**

Although impacted by budget constraints and personnel changes, significant progress was made by the Water Boards in most areas of the [Bay-Delta Strategic Plan](#). The following is only a sampling of the work done pursuant to the strategic plan. An updated list of workplan elements and revised due dates is attached.

- Water Quality and Contaminant Control – Work continued on Delta mercury with development of a draft TMDL and several stakeholder workshops. Preliminary ammonia studies were completed and an ammonia research framework was developed. Technical work on the Central Valley Drinking Water Policy has been suspended due to budget problems but Regional Board Staff are working on a status report that may propose policy options for completing this project.
- Comprehensive Monitoring Program – Work on a Delta regional monitoring program was initiated by Central Valley Regional Water Board staff. A project to monitor Delta island discharges was also started.
- Southern Delta Salinity and San Joaquin River Flow objectives – The State Water Board issued a Notice of Preparation for environmental documentation for review and update of these objectives in March 2009.
- Comprehensive Review of the Bay-Delta Plan – State Water Board staff released a draft periodic review which, if approved, will establish priorities for development of new or revised Bay-Delta Plan objectives. This work will be coordinated with that of the Bay-Delta Conservation Plan (BDGP).
- Water Right Investigation – State Water Board Division of Water Rights staff began collecting information from Delta land owners on their water rights.

## **Program to Meet Standards (PTMS)**

The Bureau of Reclamation (USBR) continued to implement activities specified in PL 108-361 for the PTMS. Westside Regional Drainage Plan efforts to reduce and manage salt, selenium, and boron discharges continued as did other key activities including BMPs for the refuges receiving Federal water in the SJR Basin and development of a stakeholder-led real-time water quality program for the SJR.

## **San Joaquin Basin Water Quality Monitoring Partnership**

This work, conducted through a cooperative agreement with the San Francisco Estuary Institute (SFEI), focused on developing a strategy responsive to issues identified by stakeholders. To aid sampling coordination, an online directory of current water quality monitoring has been developed and placed on a website maintained by SFEI. (Building on this pilot San Joaquin Basin directory, the Regional Water Board is expanding directory coverage to the full Central Valley and Delta.) Options for a data center to assist collection, reporting and interpretation of information were explored and will be incorporated in the Final Strategy report. As an offshoot of this project, EPA is also working with the State Board on a web-based outreach and education program to regional and citizen monitoring groups.

## **San Joaquin Basin Water Quality Indicators**

This study developed and tested indicators water quality impairments (salinity and selenium), causes, and management responses. The objective was to determine whether, and at what scales within the San Joaquin Basin, effects of management activities could be detected. The project was most successful in measuring effects of management for selenium control in the Grasslands, a watershed where a variety of practices were implemented and monitored. The final report, issued in early 2008, was presented to the CALFED Science Board as an indicator case study.

## Delta Cumulative Impacts Study

The contractor, Tetra Tech, completed the first Phase of this Study, an inventory of modeling applicable to analyzing cumulative water quality impacts of urban development on aquatic resources. EPA has decided not to pursue Phase 2 at this time.

## Program Evaluation

CALFED Science Program and Water Quality Program staff completed the peer review of the CALFED Water Quality Program Stage 1 Final Assessment. The peer review was conducted by an independent panel of four nationally recognized experts in the fields of water quality, civil and hydraulic engineering, hydrology, infrastructure analysis, water quality treatment and water management. The panel provided the following key recommendations that apply to future program implementation:

1. Improve the risk assessment approach and introduction of the basic Equivalent Level of Public Health Protection (ELPH) interpretation
2. The approach to dealing with water treatment operations in the Final Assessment Report requires significant revision, and the use of treatment plant water quality models should be considered (e.g., WTP.exe developed by the USEPA)
3. Future implementation of the CALFED WQ program should define the target balance between science, implementation activities, and effort needed to comply with legal decisions, and it would be helpful to develop a comprehensive and linked model that tracks organics and bromide within the Delta, through conveyance, to water treatment plants, and into the distribution systems in order to assess the impact or benefit of implementation plans. Such a model could be continuously improved while still providing decision-makers with a framework on how to assess real performance measures, including answers to basic questions such as "How much have DBPs been reduced as a result of various actions?"
4. ELPH, as it was operationally defined by numerical targets, was not deemed to be a suitable risk assessment approach. Methods for a more robust quantitative, risk analysis are available and should be developed for CALFED. The use of regulated DBPs only was viewed as an unsatisfactory risk assessment approach as the national regulatory process lags behind knowledge of DBP species toxicity and must balance economics and DBP nationwide occurrence. In addition, consideration of DBPs alone may exclude significant human risk from other contaminants in drinking water (e.g., arsenic).

## Year 10 Activities

### Franks Tract

(Also included in the CALFED Conveyance Program Plan)

- Description: The Department of Water Resources and the U.S. Bureau of Reclamation are working on refining the alternatives of modifying river channels and/or Delta circulation patterns to protect fishery resources and improve water quality.
- Deliverables: Scoping report, baseline data collection reports; preliminary geotechnical engineering report; alternatives analysis report; hydrodynamic and water quality modeling report, fisheries modeling report, Initial Alternatives Information Report, Plan Formulation Report, Feasibility Study, and EIS/EIR.
- Schedule: Draft of scoping report, geotechnical report, alternatives analysis report, fisheries modeling report, hydrodynamic and water quality modeling report, and the Initial Alternatives

Information Report are under review at this time. The Draft EIS/EIR is expected to be ready by spring 2010, subject to the availability of funding.

- Cost: \$ 5 mil (State), \$ 2 mil (SWP), \$2 mil (Federal)
- Potential Problems: The project schedule has been delayed due to stop work order on State bond funded projects. Due to several ongoing fisheries issues in the Delta, the fisheries agencies have been unable to provide staff support to the Franks Tract Project. If this continues, the project schedule could be impacted further.
- Performance Measure Development: To be addressed in NEPA/CEQA documents.
- Science Review or Science Understanding: Fisheries and Modeling Workgroups consisting of agency staff and consultants.
- Public Involvement and Outreach: Several meetings and workshops have been held as a part of NEPA/CEQA process. Public outreach activities will continue through the completion of the project.
- Linkages with Other Elements: Ecosystem Restoration Program, BDCP, and Delta Vision.
- Environmental Compliance: To be addressed in NEPA/CEQA documents.
- Environmental Justice: To be addressed in NEPA/CEQA documents.
- Tribal Activities: To be addressed in NEPA/CEQA documents.

### **CCWD Alternative Intake Project**

(Also included in the CALFED Conveyance Program Plan)

- Description: Contra Costa Water District (CCWD) is constructing a screened intake on Victoria Canal that would relocate some of CCWD's diversions to obtain better source water quality and shift diversion from an unscreened intake on Rock Slough.
- Deliverables: Construction has begun and will continue on the first of three phases with a gravel road and new setback levees surrounding the new pumping plant site, to be complete by October, 2008. The second phase, building the pumping plant intake structure, began August 1, 2008. Construction of the pipeline and tunnel under Old River began in January 2009 and completion of the entire project is expected in the spring of 2010.
- Schedule: The Project is on schedule.
- Potential Problems: Delay of state bond funding. Final DFG permit has been drafted and is completing review.
- Public Involvement and Outreach: There are no public involvement or outreach activities planned for this fiscal year.
- Linkages to Other Elements: Conveyance Program
- Environmental Compliance: Execution of a Record of Decision.
- Environmental Justice: Has already been addressed in the EIS/EIR.
- Tribal activities: Have already been addressed during environmental compliance.

### **CCWD Canal Replacement project**

- Description: CCWD is replacing a portion of the open canal with pipeline to protect the District's drinking water supply from existing and future water quality degradation caused by seepage of contaminated groundwater.
- Deliverables: Construction of Phase I and establishment of an endowment for wetland mitigation lands in the Holland Tract Preserve. Preparation of the 70% design for Phase II.
- Schedule: Begin Phase I Construction (2009); complete Phase 1 pipeline construction by September 2010; complete Phase II design (2010).
- Cost: \$10.1 million (State).
- Potential Problems: Delay of state bond funding may delay completion schedule.
- Science Review or Science Understanding: Addressed in NEPA/CEQA documents.
- Public Involvement and Outreach: Addressed as part of the CEQA/NEPA process.

- Linkages: Ecosystem Restoration Program.
- Environmental Compliance: Complete. Addressed in NEPA/CEQA documents.
- Environmental Justice: Addressed in NEPA/CEQA documents.
- Tribal Activities: Addressed in NEPA/CEQA documents.

### **North Bay Aqueduct Alternate Intake Project**

- Description: California Department of Water Resources (DWR) is planning a screened intake on the Sacramento River that would provide an alternate diversion to the North Bay Aqueduct to be able to shift diversions from an intake on Barker Slough to obtain better source water quality and reduce impacts to endangered aquatic species in Barker Slough.
- Deliverables: EIR/EIS consultant has been procured by DWR and work on the EIR/EIS will be underway in FY 2009/2010. NOD expected in 2012.
- Schedule: The Project is on schedule.
- Potential Problems: Delay of state bond funding.
- Public Involvement and Outreach: CEQA and NEPA scoping session are planned for this fiscal year.
- Linkages to Other Elements: Conveyance Program
- Environmental Compliance: EIR/EIS being developed.
- Environmental Justice: Not addressed yet.
- Tribal activities: Not addressed yet.

### **Central Valley Drinking Water Policy**

- Description: A multi-year effort is currently underway to develop a drinking water policy for surface waters in the Central Valley. As water flows out of the Sierra foothills and into the valley, pollutants from a variety of urban, industrial, agricultural, and natural sources affect the quality of water, which leads to drinking water treatment challenges and potential public health concerns. Current policies and plans lack water quality objectives for several known drinking water constituents of concern, such as disinfection by-product precursors and pathogens, and do not include implementation strategies to provide effective source water protection. The exact types of regulatory requirements that will be included in the drinking water policy have not been determined but the goal is to develop a policy that provides clear guidance to ensure consistent source water protection.
- Deliverables: Water treatment cost evaluation final report, evaluation of point and nonpoint source control strategies, analytical models, monitoring NPDES facilities for drinking water constituents of concern, completion of final data summaries, and monitoring plan for pathogens in Central Valley surface waters.
- Schedule: Water treatment and evaluation final report (2009); analytical models (2009); monitoring NPDES facilities for drinking water constituents of concern (conducted monthly for one year beginning in 2009); final data summaries (2009), staff report describing process and products to date and policy options (June 2009), staff report based on preferred policy option (January 2010), Regional Water Board adoption of preferred policy (June 2010).
- Cost: Proposition 50 grant - \$650K; CUWA/SRCSD funding Regional Water Board staff -\$115K.
- Potential Problems: Suspension of state grant funding has put this project significantly behind schedule and may eliminate some deliverables.
- Performance Measure Development: Data gathered and analyzed for the drinking water policy development will be integrated into the performance measures development and reporting.

- Public Involvement and Outreach: Public involvement will be sought during all listed tasks. Stakeholders will have ample opportunity to provide input on final reports for technical tasks. Outreach to stakeholders is an ongoing task.

### **Department of Public Health Grant Programs**

- Description: CDPH provides Proposition 50 grants for two types of projects related to CALFED. One type of grant is for projects to reduce disinfection byproducts (DBPs) that result from source water quality in the State Water Project (Proposition 50 Chapters 4a.5 and 4b). The other type of grant is for protection of drinking water sources from contamination (Proposition 50 Chapter 4a.4).
- Deliverables: Implementation of treatment processes to decrease level of DBPs produced in the distribution system. Potential improvements to source water quality for public water systems that complete source water protection projects.
- Schedule: CDPH is moving towards issuance of Letters of Commitment and Funding Agreements for invited projects. CDPH has issued Letters of Commitment to 5 projects and Funding Agreements to 7 projects.
- Cost: Proposition 50 grants totaling approximately \$98 million.
- Potential Problems: Limitations in the amount of funding available for worthwhile projects
- Public Involvement and Outreach: CDPH uses a public process in the development of criteria and the implementation of its funding programs. For instance, after presenting the draft Prop 50 implementation criteria at a series of public workshops around the state, CDPH established a stakeholder group with representatives from small and large drinking water systems, advocates for environmental justice and disadvantaged communities, and organizations representing water systems.
- Environmental Justice: CDPH worked with the previously mentioned stakeholder group in finalizing funding priority lists and project invitation lists and in developing changes in the criteria to improve access to funding for water systems serving disadvantaged communities. The same stakeholder group is participating in the development of CDPH's Proposition 84 criteria.

### **Water Boards' Delta Strategic Workplan – Southern Delta Salinity and San Joaquin River Flow Objectives**

- Description: The State Water Board will continue work on development of new or changed objectives. Studies of salinity effects on crops will wrap-up while work on environmental documentation for both Southern Delta Salinity and San Joaquin River Flows will continue. This will include continued development of the Department of Fish and Game (DFG) salmon model for the San Joaquin River.
- Deliverables: Staff report on potential water quality planning alternatives. Study report on salinity effects on crops in the Southern Delta.
- Schedule: Staff alternatives report - 3<sup>rd</sup> quarter 2009. Research report on modeling salinity effects - 4<sup>th</sup> quarter 2009.
- Cost: \$700,000 from the State Water Board's Clean-up and Abatement fund.
- Science - The dynamic model of salinity effects on crops will be a major step forward in scientific understanding of salinity and irrigation. Peer review is included with the project.
- Outreach - The State Water Board and Regional Water Boards hold frequent public workshops and hearings on Delta Strategic Workplan elements.
- Linkages - San Joaquin River flow is linked to water supply reliability, water quality, and salmonid restoration objectives.

### **Water Boards' Delta Strategic Workplan – Comprehensive Review of the Bay-Delta Plan**

- Description: With adoption of the periodic review staff report, the State Water Board will initiate work on the identified priority elements of the Bay-Delta Plan. State Water Board staff in coordination with the Bay-Delta Conservation Plan (BDCP) process will begin work on environmental documentation for potential changes to the Bay-Delta Plan.
- Deliverables: Staff report on potential water quality control plan alternatives. Modeling analyses for various alternatives and CEQA for potential modifications to WQ objectives and implementation.
- Schedule: Staff report, 4<sup>th</sup> quarter 2009. Modeling analysis, 3<sup>rd</sup> quarter 2009 through 4<sup>th</sup> quarter 2010.
- Outreach: The State Water Board and Regional Water Boards hold frequent public workshops and hearings on Delta Strategic Workplan elements.
- Linkages – The comprehensive review of the Bay-Delta plan includes the Southern Delta salinity and San Joaquin River flow objectives work. It will likely consider current Delta conveyance conditions as well as future scenarios with new conveyance facilities.
- Environmental compliance – Environmental documentation is an integral part of the plan modification process.

### **Water Boards' Delta Strategic Workplan – Water Quality and Contaminant Control**

- Description - This includes a variety of programs and projects including TMDL development for mercury and pesticides and research on the effects of ammonia and other toxic substances.
- Deliverables and Schedule -- A list of Water Boards' Delta strategic workplan elements with deliverables and schedule is included as an attachment.
- Outreach – All Water Board actions include ample opportunity for public comment through posted notices, workshops, hearings, and public meetings.
- Linkages – Many of the Water Board water quality and contaminant control actions support ecosystem restoration goals in the Delta. For example, the Stockton Ship Channel dissolved oxygen TMDL is intended to improve conditions for salmon migration.
- Environmental compliance – TMDLs are implemented through basin plan amendments which are required to develop substitute environmental documents.

### **Program to Meet Standards**

- Description: A project to develop and initiate implementation of a program to meet all existing water quality standards and objectives for which Central Valley Project has responsibility.
- Deliverables: Feasibility Study and EIS/EIR in 2009.
- Schedule: Draft EIS/EIR (Fall 2009); Final Feasibility Study and EIS/EIR (June 2009); ROD (August 2009).
- Cost: \$0.25 million (Reclamation).
- Potential Problems: The Westley Wasteway (one of the paths to the SJR from the DMC) is no longer connected to the SJR due to river migration over time. Total Suspended Solids (TSS) and Turbidity have been parameters of concern based upon the 2004 and 2007 Recirculation Pilot Studies.
- Science Review or Science Understanding: Addressed in NEPA/CEQA documents and Fisheries Technical Memorandum.
- Public Involvement and Outreach: Conduct public stakeholder meetings for feedback regarding the proposed alternatives and modeling results for the study; regularly update the website.
- Linkages to Other Elements: Water Quality Program, Ecosystem Restoration Program.
- Environmental Compliance: Addressed in NEPA/CEQA documents.
- Environmental Justice: Addressed in NEPA/CEQA documents.
- Tribal Activities: Addressed in NEPA/CEQA documents.

### **San Joaquin Basin Water Quality Monitoring Partnership**

- Description: The Project is now completing a concise strategy report that will address monitoring coordination, quality assurance, data analysis and interpretation, data sharing, and institutional support. Details for these elements, and recommended next steps, will be developed in consultation with potential partners. The Project is being coordinated with the monitoring programs of Regional and State Boards, and work of the California Surface Water Quality Monitoring Council.
- Products: A Final Strategy document will include recommendations and, if possible, commitments for first steps, for coordinating monitoring and assessment for the San Joaquin Basin. The pilot directory of monitoring activities within the San Joaquin Basin will be incorporated into a web-based Central Valley/Delta-wide directory for public access and use.
- Schedule: all work will be completed by mid 2010.
- Cost: the total cost of the project is \$232,000.
- Potential Problems: There is great need for coordination of monitoring and assessment across major agencies and programs, but efforts at this coordination have had limited success in the past. Similarly, it will be important to coordinate the San Joaquin strategy with similar regional monitoring initiatives in the Delta and Sacramento regions.
- Science Understanding: A significant portion of the technical and scientific grounding for this work comes through the State and Regional Water Board 'monitoring architecture' and protocols of SWAMP.
- Public Involvement and Outreach: The project will sponsor, or collaborate in, workshops (including web-based sessions) for technical outreach and general monitoring education.
- Linkage to Other Elements: Ecosystem Restoration Program.

### **Delta Cumulative Impacts Study**

(Phase 2 work is on hold)

### **Implementation of Program Evaluation Recommendations**

- Description: If resources become available, the Water Quality Program should begin work on the key recommendations from the CALFED Water Quality Program Stage 1 Final Assessment report and the science panel review. These actions include development of a health risk based definition of "equivalent level of public health protection" (ELPH), reducing the concentrations of the pollutants of concern, and development of a comprehensive drinking water quality model that connects source water quality with disinfection byproducts at the tap.
- Products: A health risk based definition of ELPH. A comprehensive source to tap model of disinfection byproduct formation.
- Schedule: None at this point.
- Cost: unknown.
- Potential Problems: There may not be sufficient data to support either the comprehensive drinking water quality model or assessment of health risk from drinking water.
- Science Understanding: Implementation of these recommendations would greatly improve our scientific understanding of the human health effects of drinking water management actions.
- Public Involvement and Outreach: Development of both of these recommendations with appropriate interpretation of results would be an important addition to public understanding of drinking water health risk.
- Linkage to Other Elements: Conveyance Program, Ecosystem Restoration Program.

Attachment 1 – Water Boards Bay-Delta Strategic Workplan Update

<b>Schedule of Element Actions Table</b>			
See End Notes for additional information			
			<b><u>Original Date</u></b>
			<b><u>Revised Date</u></b>
<b>1.0</b>	<b>Water Quality and Contaminant Control</b>		
	<b>1.1</b>	<b>TMDLs</b>	
	<b>1.1.1</b>	<b>Implementation of San Joaquin River at Vernalis Salt &amp; Boron TMDL</b>	
		Management Agency Agreement with US Bureau of Reclamation approved by Regional Board	October 2008
		USBR's draft monitoring and evaluation plan	January 2009
		USBR's final monitoring and evaluation plan incorporating Regional Board comments	July 2009
		USBR's draft compliance monitoring report	January 2010
		USBR's final compliance monitoring report incorporating Regional Board comments	July 2010
	<b>1.1.2</b>	<b>Upstream San Joaquin River Salinity Objectives and TMDL</b>	
		Scoping meeting to solicit public input regarding Basin Plan Amendment and potential environmental impacts	March 2009
		Funding from State Board Cleanup and Abatement Account will be requested to establish a contract for CEQA technical support services in preparing environmental documentation for Basin Plan Amendment.	July 2009
			<b>February 2009<sup>i</sup></b>
		Coordination of technical efforts with State Board southern Delta salinity objectives, including salinity objective development and San Joaquin River water quality modeling	Ongoing
	<b>1.1.3</b>	<b>Stockton Deep Water Ship Channel Dissolved Oxygen TMDL</b>	
		First of two rounds of studies required by the TMDL	Completed
		Contracting for final round of TMDL studies, initiating two years of new studies	February 2009
			<b>July/ August 2009<sup>ii</sup></b>
	<b>1.1.4</b>	<b>Implementation of Delta Waterways Diazinon and Chlorpyrifos TMDL</b>	
		Approved by USEPA	October 2007
		Implemented using the Irrigated Land Program. Compliance dates vary by watersheds (tributary to the Delta)	Ongoing
	<b>1.1.5</b>	<b>Implementation of Stockton Urban Waterways Pathogen TMDL</b>	
		Approved by USEPA	June 2008
		TMDL requirements are implemented through the City of Stockton and San Joaquin Counties NPDES municipal stormwater permits.	Ongoing
	<b>1.1.6</b>	<b>Delta and San Francisco Bay Mercury TMDL</b>	

		The San Francisco Bay mercury TMDL was approved by USEPA and is currently being implemented	February 2008	
		Central Valley Regional Water Board opened hearing for the Delta mercury TMDL	April 2008	
		Stakeholder process to address stakeholder concerns expressed during the April 2008 Delta mercury TMDL hearing meeting	July 2009	
		Central Valley Regional Water Board will hold second hearing meeting for the Delta mercury TMDL and Implementation Framework	Early 2009	<b>October 2009<sup>iii</sup></b>
		Stakeholder process to develop a detailed implementation plan for the Delta mercury TMDL	December 2010	
	<b>1.1.7</b>	<b>North San Francisco Bay Selenium TMDL</b>		
		Proposed numeric targets were presented to the advisory committee and other interested parties	September 2008	
		Draft technical report	April 2009	
		Final technical report	Fall 2009	
	<b>1.1.8</b>	<b>San Francisco Bay PCB TMDL</b>		
		TMDL approved by San Francisco Bay Regional Board	February 2008	
		Consideration by SWRCB followed by OAL and USEPA	March 2009	<b>May 2009</b>
	<b>1.1.9</b>	<b>Old &amp; Middle Rivers Dissolved Oxygen TMDL</b>		
		Regional Board is continuing to assess relevant data to understand the impairment, and if needed prioritize TMDL development	Ongoing	
	<b>1.2</b>	<b>Drinking Water Policy for the Central Valley</b>		
		Staff held public scoping meetings for this project	August 2008	
		Central Valley Regional Water Board staff is working with a stakeholder work group to complete technical studies necessary to develop policy recommendation	August 2009	
		Preparation of Central Valley Drinking Water Policy staff report describing process and products to date and policy options	October 2009	<b>June 2009<sup>iv</sup></b>
		Develop staff report based on preferred policy option	January 2010	
		Conduct peer review and respond to comments on draft staff report	January 2010	<b>March 2010</b>
		Conduct public review	April 2010	
		Central Valley Regional Water Board to consider adoption of policy	June 2010	
	<b>1.3</b>	<b>Once-Through Cooling</b>		
		CEQA scoping document for statewide policy with preliminary draft policy released	March 2008	

	Expert Review Panel presented draft findings on scoping document and preliminary draft policy	April- June 2008	
	CEQA scoping meetings on statewide policy held on May 8 and 13. Comments were due by May 20, 2008.	May 2008	
	Draft staff report and statewide policy released for public review and comment/ external scientific peer review and comment	December 2008	
	Public workshops to receive comments on draft staff report and statewide policy	February 2009	
	Draft Policy and Substitute Environmental Document (SED) for public review and external scientific peer review	April 2009	
	Revised SED and revised draft policy	June 2009	
	Public workshops and response to comments leading to a final draft policy with proposed consideration by State Water Board	June 2009	
	The NPDES permit renewal process for Mirant's Contra Costa Power Plant is currently on hold, pending adoption of the Policy		<b>Currently on hold<sup>v</sup></b>
	Evaluate the need for additional actions to prevent impacts to Fish and Wildlife beneficial uses	On-going	
<b>1.4</b>	<b>Sediment Quality Objectives for Enclosed Bays &amp; Estuaries</b>		
	State Water Board adopted Phase I SQOs	February 2008	
	Sediment grab samples were collected throughout southern and central Delta for use in a multiple line of evidence approach	September - May 2008	
	Initiate Phase II	March 2009	
	Adopt and submit Phase II SQOs to OAL	December 2010	
<b>1.5</b>	<b>Invasive Species</b>		
	USEPA Draft NPDES permit for ballast water discharges	May 2008	
	The State Water Board issued a Clean Water Act Section 401 Water Quality Certification for U.S. EPA's Vessel General Permit	December 22, 2008	
	State Boards staff continue to work with the California Agencies Aquatic Invasive Species Team (CAAIST)	Next meeting- early 2009	
<b>1.6</b>	<b>Blue-Green Algae</b>		
	<i>DPH Contract</i> – Develop and validate liquid chromatography/mass spectrometry (LC/MS) method(s) for cyanotoxins including, but not limited to, saxitoxin, anatoxin, and cylindrospermopsin.	June 2008- Fall 2008	<b>Contract Canceled<sup>vi</sup></b>
	<i>DPH Contract</i> - Develop decision tree and sampling plan for the collection, handling, and shipment of water, algal, and tissue samples.	June 2008- December 2008	<b>See Endnote 6 (above)</b>

	OEHHA Contract – Final Report on BGA Risk Assessment will be completed.	Fall 2008	<b>Summer 2009</b>
	DPH Contract – Conduct LC/MS analysis for microcystins by collecting a maximum of 100 samples per year from throughout the State.	June 2008- June 2010	<b>See Endnote 6</b>
	DPH Contract - Perform evaluation of field/test kits for cyanotoxins.	June 2009	<b>See Endnote 6</b>
	Develop a prototype identification guide for common cyanobacteria (e.g. photomicrographs and a list of distinguishing features).	December 2009	
	Develop taxonomic identifications using microscopy in order to screen phytoplankton samples for the presence of potentially toxin-producing species.	June 2010	
	The State and Regional Water Boards will assess the need to take additional actions to control for BGA blooms in the Delta and other areas of the State.	Ongoing	
<b>1.7</b>	<b>Characterize Discharges from Delta Islands</b>		
	A contract was executed with UC Davis (UCD), which includes a task to conduct monitoring and evaluate the potential impact of island drainage on beneficial uses in the Delta, with recommendations for future monitoring and studies	June 2008	
	Preparation of the draft monitoring plan and QAPP	April 2009	
	Coordination with stakeholders and preparation of the final monitoring plan and QAPP	May 2009	
	Initiate monitoring activities	May 2009	
	Final report with data and recommendations	March 2010	
<b>1.8</b>	<b>Ammonia Effects on Delta Smelt and Algal Primary Productivity</b>		
	<b>1.8.1 Delta Smelt Survival Studies</b>		
	State and Regional Water Boards contracted with researchers at UCD to conduct toxicity tests with larval Delta smelt to determine their sensitivity to ammonia	April 2008	
	Final report: The effects of ammonia/ um and wastewater treatment effluent-associated contaminants on Delta smelt	February 2009	<b>April 3, 2009<sup>vii</sup></b>
	Conduct follow-up studies as needed	April - July 2009	<b>June – August 2009</b>
	<b>1.8.2 Algal Primary Production</b>		
	Complete SFSU experiments in the northern Delta to determine whether ambient in-stream ammonium concentrations reduce algal growth rates	April 2009	<b>July 2009<sup>viii</sup></b>
	Draft Report	June 2009	<b>August 2009</b>
	<b>1.8.3 Additional Actions</b>		

		Ammonia Literature Review and Data Analysis Draft UCD synthesis report on existing data, studies, and literature on the effects of ammonia on aquatic species		<b>March 2009</b>
		Ammonia Summit to present studies and gather information related to the impact of ammonia on Delta species and develop recommendations for future study		<b>Summer 2009</b>
	<b>1.9</b>	<b>Selenium Screening Study for Delta</b>		
		Results of Moss Landing Marine Laboratory analysis of selenium in about 100 fish collected from the Central Valley and Delta over the last eight years. The fish were obtained from a fish tissue archive that includes thousands of fish.	July- October 2008	<b>March 2009<sup>ix</sup></b>
		Central Valley Regional Water Board to analyze and assess the data, prepare a written report, and present results to stakeholders for review, comment, and discussion of potential follow-up actions.	November 2008- March 2009	<b>April 2009</b> <b>See Endnote 9 (above)</b>
		Meet with stakeholders to evaluate options for follow-up on study findings, as necessary.	March - June 2009	<b>April-June 2009</b>
	<b>1.10</b>	<b>Agency Cooperation on In-Delta Pesticide Use</b>		
		Meetings with Department of Pesticide Regulations, County Agricultural Commissioners, Department of Food and Agriculture, and Water Quality Coalitions to assess need for increased enforcement or restrictions on pesticide use in the Delta	July- December 2008	<b>through June 2009</b>
		Gather, compile, and assess information and develop recommendations for future steps including, but not limited to, development of an MOU.	January- June 2009	

<b>2.0</b>	<b>Comprehensive Monitoring Program</b>		
	Completion of draft Delta contaminants synthesis report (prepared by UCD)	September 2008	<b>April 2009<sup>10</sup></b>
	Establish process for stakeholder involvement, hold RMP stakeholder kick-off meeting, and organize stakeholder working groups	September 2008	
	Completion of draft report summarizing existing water quality monitoring programs in the Delta (prepared by Aquatic Science Center)	January 2009	<b>April 2009<sup>11</sup></b>
	RMP strategy and alternative report(s)	July 2009	<b>September 2009<sup>12</sup></b>
	Summary of options and needed resources	June 2009	<b>Fall 2009</b>
	Water Boards' consideration of options and associated resource needs	December 2009	
<b>3.0</b>	<b>San Joaquin River Flow and Southern Delta Salinity Objectives</b>		<b>See Endnote<sup>13</sup></b>
	Evaluate compliance with objectives and take enforcement as needed	Ongoing	
	Independent expert review report of current science RE: salinity objectives	April 2008- 4th Qtr. 2008	<b>September 2009<sup>14</sup></b>
	Modeling analyses of potential water supplies needed to meet salinity objectives from various sources	August 2007 - 4th Qtr. 2008	<b>4<sup>th</sup> Qtr. 2009<sup>15</sup></b>
	Workshop to solicit information on DFG's SJR salmon escapement model, review of the VAMP, and other information	September 2008	
	NOP and Scoping for Bay-Delta Plan and Notice of Public Workshop regarding potential modifications to Salinity and SJRF Objectives	February 13, 2009	
	Water Quality Control Planning workshops to receive information on potential changes needed to the salinity and SJRF objectives	1st Qtr. 2009	<b>April 2009- July 2009</b>
	Prepare staff report regarding potential water quality control planning alternatives	1st – 2nd Qtr. 2009	<b>4th Qtr. 2009</b>
	Modeling analyses for various alternatives and CEQA for potential modifications to WQ objectives and implementation	2nd Qtr. 2009 - 2nd Qtr. 2010	<b>3<sup>rd</sup> Qtr. 2009- 3<sup>rd</sup> Qtr. 2010</b>
	Issue draft EIR for comment by responsible agencies	3rd Qtr. 2010	<b>4<sup>th</sup> Qtr. 2010</b>
	Issue draft EIR for public comment	4th Qtr. 2010 - 2nd Qtr. 2011	<b>1<sup>st</sup> Qtr. 2011- 3<sup>rd</sup> Qtr. 2011</b>
	Prepare WQCP modifications	2nd - 4th Qtr. 2011	<b>3<sup>rd</sup> Qtr. 2011- 1<sup>st</sup> Qtr. 2012</b>
	Hold WR hearing to consider potential changes to WR requirements	2nd Qtr. 2011	<b>3<sup>rd</sup> Qtr. 2011</b>
	Prepare draft WR order	2nd - 4th Qtr. 2011	<b>3<sup>rd</sup> Qtr. 2011- 1<sup>st</sup> Qtr. 2012</b>

	Draft WQCP modifications and draft WR order for public comment	4th Qtr. 2011	<b>1<sup>st</sup> Qtr. 2012</b>
	State Water Board meeting on draft WQCP modifications and draft WR order	1st Qtr. 2012	<b>2<sup>nd</sup> Qtr. 2012</b>
	State Water Board to consider changes to WQCP, WR order, and EIR cert.	Prior to April 2012	<b>Prior to July 2012</b>
	Consider DWR's petition to change the CDO as necessary	Unspecified	
<b>4.0</b>	<b>Suisun Marsh Management, Preservation, and Restoration</b>		
	Water Boards staff will continue to support the interagency effort to develop a Suisun Marsh Plan (SMP). The Water Boards will also coordinate with the BDCP and Delta Vision related to these issues.	Through completion of planning process	
	Water Boards staff will review and provide comments on draft EIR/ EIS.	Early 2009	<b>See Endnote<sup>16</sup></b>
	Water Board staff will review the final EIR/EIS. The Suisun Marsh Charter Group will also provide a proposed plan for determining what if any changes should be made to the water quality objectives included in the Bay-Delta Plan for Suisun Marsh.	Early 2010	
	The Water Boards will regulate, manage, and study pollutants in Suisun Marsh	Ongoing	
	San Francisco Bay Regional Water Board staff will continue to address development around Suisun Marsh to minimize impacts through the 401 Water Quality Certification Program, review of environmental documents, and working with local agencies	Ongoing	
	The Water Boards will consider taking additional actions as needed to protect beneficial uses of water within Suisun Marsh and Bay-Delta	As Needed	
<b>5.0</b>	<b>Comprehensive Review of Bay-Delta Plan</b>		
	BDCP Coordination	On-going	
	Solicit written input on factual issues concerning Delta's ecology	August 29, 2008	
	Workshop on Review of the 2006 Bay-Delta Plan	October 8, 2008	
	Staff will finalize a detailed scope of services for the periodic review of the Bay-Delta Plan and obtain a written commitment from BDCP Managers for any portion of the final scope of services they choose.	As soon as possible after October 2008	
	Conduct an evidentiary hearing on critical issues affecting Delta's ecology	Nov-08	<b>Canceled<sup>17</sup></b>
	Participation in BDCP environmental review process and all BDCP Processes, working groups, and steering committee	Ongoing	
	Staff will review and comment on first draft BDCP	3 <sup>rd</sup> Qtr. 2009	

	Staff will review and comment on BDCP Public Draft EIR/EIS and Public Draft BDCP	4 <sup>th</sup> Qtr. 2009	
	WQC Planning workshop to consider potential changes to BD Plan	1st Qtr 2010	
	Review final BDCP EIR/S	2nd Qtr 2010	
	WR hearings to consider potential changes to WR license/ permit requirements and other measures to implement changes to BD Plan	2nd- 3rd Qtr 2010	
	Prepare proposed changes to BD Plan and WR decision or order	4th Qtr 2010 - 3rd Qtr 2011	
	Public review of draft changes to BD Plan and draft WR decision/ order	3rd- 4th Qtr 2011	
	Make any needed changes to draft	4th Qtr 2011	
	State Water Board adoption of draft changes to BD Plan, draft WR decision/ order	End 4th Qtr 2011	
	Consideration of any petitions related to changes in conveyance	Unspecified	
<b>6.0</b>	<b>Reasonableness Proceeding</b>		
	To be addressed by efforts within the Comprehensive Review of Bay-Delta Plan and through Staff participation in the BDCP process		
<b>7.0</b>	<b>Water Right Investigation &amp; Enforcement</b>		
	Efforts described in the Workplan for this element are on schedule		
<b>8.0</b>	<b>Water Use Efficiency</b>		
<b>8.1</b>	<b>Water Recycling</b>		
	Draft Recycled Water Policy and Staff Report for public comment	November 2008	
	Adopted by State Water Board at Board meeting	February 3, 2009	
<b>8.2</b>	<b>20% by 2020</b>		
	Preparation of a multi-agency strategic plan	October 2008	<b>June 2009<sup>18</sup></b>
<b>8.3</b>	<b>Urban Water Conservation</b>		
	State Water Board consideration of recommendations for an urban water conservation regulatory strategy following the 20% by 2020 plan		
<b>8.4</b>	<b>Reasonableness of High Water Use</b>		
	Evaluation of reasonableness of urban and agricultural high water use	End of 2012	
<b>8.5</b>	<b>Water Measurement Database</b>		
	Feasibility report submitted to the Legislature estimating costs of a coordinated water measurement database	January 2009	

		Feasibility report is undergoing State Water Board final review, and will be sent to CalEPA.	January 2009	
<b>9.0</b>	<b>Other Activities</b>			
	<b>9.1</b>	<b>Delta Smelt Refuge Population</b>		
		Implementation of CAA funding for the establishment and maintenance of a delta smelt refuge, including retrofitting egg incubation laboratory and juvenile and adult rearing systems, and perform pair-wise crosses of wild fish to create a genetically robust refuge population.	February 2008	<b>2nd Qtr. 2009<sup>19</sup></b>
	<b>9.2</b>	<b>Screening Diversions in the Delta &amp; Tributaries</b>		
		Actions being considered as part of the Periodic Review		
	<b>9.3</b>	<b>Minimum In-Stream Flow Standards</b>		
		DFG submitted a list of 22 priority streams for development of in-stream flow recommendations, including several Delta tributaries	August 2008	
		DFG intends to submit a flow recommendation for Butte Creek		
		SWRCB will consider what actions to take to implement DFG's recommendations		
	<b>9.4</b>	<b>Salinity Management Plan for the Central Valley (CV-SALTS)</b>		
		Stakeholders to complete comprehensive work plan for activities leading to a Basin Plan Amendment	May 2009	
		Regional Board to consider stakeholder progress made and determine how to proceed with associated Basin Planning	June 2009	
		Stakeholders to identify project director and functioning management team for execution of their comprehensive work plan	August 2009	
		Contracting as needed for performance of various tasks in the comprehensive work plan finalized	November 2009	

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<sup>i</sup> Cleanup and Abatement Account funds were received in February 2009.

<sup>ii</sup> The contracting effort is currently on hold until the next fiscal year, primarily as a result of the bond freeze. Contract execution is contingent on the bond freeze being lifted, DWR approving the contract, and other State budgetary factors.

<sup>iii</sup> The Delta Mercury TMDL is delayed by about 18 months due to the addition of a facilitated stakeholder process (using the Center of Collaborative Policy) to address public concerns raised during the TMDL development process.

<sup>iv</sup> Funding for the technical studies was, and continues to be, suspended as a result of the freeze on bond-funds.

<sup>v</sup> This element is delayed about 6 months from the schedule in the Strategic Workplan. The NPDES permit renewal process for Mirant's Contra Costa Power Plant is currently on hold, until the Policy is adopted.

<sup>vi</sup> The DPH contract was canceled due to nonperformance of contractor. Replacement contracts for tasks contained in DPH contracts are being processed. Since they are not executed, due dates for tasks in the scopes of work cannot be accurately estimated at this time.

<sup>vii</sup> This element was initially delayed approximately 3 months due to budget problems. Release of the final report on the effects of ammonia and wastewater treatment effluent-associated contaminants on Delta smelt was delayed due to an extension of the review process. Follow-up studies will include: (1) a repeat of the test designed to assess whether Delta smelt survival is negatively impacted by one or more contaminant(s) that are positively correlated with ammonia from SRWTP and (2) studies to establish ammonia effect concentrations (e.g., LC50) for two Delta smelt life stages (larval and juvenile).

<sup>viii</sup> Delayed 6 to 12 months due to budget problems and adverse field conditions. The Study period is extended to allow for additional sampling efforts and associated experiments.

<sup>ix</sup> Data analyses and reporting are delayed one month due to a delay in obtaining the results of the selenium fish tissue analysis.

<sup>10</sup> Preparation of the Contaminants Syntheses Report is delayed as a result of contracting and work load constraints.

<sup>11</sup> Preparation of the Delta Water Quality Monitoring Summary Report is delayed as a result of contracting and work load constraints.

<sup>12</sup> Release of the strategy and alternatives report is delayed to allow completion of the Contaminants Synthesis Report and the Delta Water Quality Monitoring Summary Report.

<sup>13</sup> Most activities of this element are taking longer than anticipated due to work load.

<sup>14</sup> Delayed due to dynamic models not available for evaluation.

<sup>15</sup> Alternative salinity objectives not available for analysis.

<sup>16</sup> EIR/ EIS is late- no update is available as of 3-17-09.

<sup>17</sup> On November 18, 2008 the State Water Board voted not to proceed with the periodic review informational proceeding discussed in the Bay-Delta Strategic Workplan.

<sup>18</sup> Plan delayed 8 months (from October, 2008).

<sup>19</sup> Contract delays.