

Delta Improvements Package – Progress and Schedule

Agenda Item: 8

Meeting Date: February 11, 2004

Summary: This report provides an update on the status of possible actions, their progress and schedule, which could be considered in a Delta Improvements Package.

Recommended Action: This is an informational item only. No action will be taken.

Background

The CALFED Record of Decision (ROD) calls for a balanced approach to achieving key goals of water supply reliability, ecosystem restoration, water quality improvement, and levee system integrity.

The implementing agencies are proposing to take a series of actions over the next few years which carry out or are closely related to key ROD commitments. These actions include: Operations Criteria and Plan (OCAP), South Delta Improvements Program (SDIP), CVP-SWP Intertie, Freeport Project, and Trinity River Project. During 2003, the agencies recognized that many of their proposed actions were interrelated, and that decisions on key components could not be made in isolation. For example, the South Delta Improvement Program proposes to increase the export limit of the State Water Project. Operating to a higher limit could reduce the ability of the Environmental Water Account (EWA) to manage for the recovery of endangered fish, if the EWA assets were not improved. Improving the EWA, however, would require agreement that the EWA would continue beyond its four-year experimental period.

The agencies also recognized that while each had its own priorities based on jurisdiction and mandates, it was important to coordinate decision making and move forward with a package of actions that was consistent with the Bay-Delta Program's (Program) principle of balance. The agencies have been working since 2002 to implement this balanced and integrative approach to decision-making.

Ultimately, the successful implementation of each of the proposed actions requires balanced progress and meaningful assurances that the key interests of all Program stakeholders will be addressed. As one example, this means that in-Delta water quality concerns must be addressed concurrent with proposed water supply improvements such as SDIP. Moreover, all stakeholders have emphasized the importance of integrating the work of the Science Program into agency decision-making.

Proposed Actions

Actions are being proposed in four areas: water supply, water quality, environmental protection, and science. The level of detail currently available is variable at this time; this is mainly a reflection of differing project timelines and will change over time. Some projects are in the implementation phase while others are just starting to flesh out the concepts. Not all the potential actions are agreed upon by all the CALFED agencies and the details of others are being debated. However, there is general agreement by the agencies that the actions described in Attachment A are worth evaluating. It is also important to note that these actions do not constitute a complete list of actions being considered or underway. Dates associated with each action are subject to change as an integrated package comes together.

Public Review

The elements under consideration will undergo an extensive and public review process, through a variety of means, including CEQA and NEPA reviews when required, workshops, review by BDPAC and its subcommittees, meetings with stakeholders, and presentations to the Authority. In addition, all projects under consideration will have to complete applicable regulatory permitting requirements.

Fiscal Information

Not applicable

List of Attachments

Attachment A: Summary of Status of Activities under Consideration
Attachment B: Schedule for Activities under Consideration

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ATTACHMENT A

SUMMARY OF STATUS OF ACTIVITIES UNDER CONSIDERATION

State and Federal agencies, water users, Delta interests and environmental groups have been participating in discussions to achieve mutually supported water management, water quality improvement and ecosystem restoration actions which will collectively improve the Bay-Delta's resources in a balanced manner. This Attachment summarizes the status of a number of the activities under discussion. It is important to note that the activities described in this summary are at different stages of planning or implementation. Some of the activities were described in the 2000 CALFED Programmatic Record of Decision (ROD) and have at least the programmatic-level endorsement of the CALFED Agencies. Other activities are being proposed by agencies or other processes, and have not yet been approved or endorsed by all relevant agencies. This list is subject to revision as activities continue to be evaluated.

WATER SUPPLY RELIABILITY

Increase State Water Project (SWP) Pumping Capacity to 8,500 cfs. This activity is part of the long-planned South Delta Improvement Program (SDIP). As explained in the Plan for Action in the Record of Decision, increased pumping can be used to increase water supplies through restoring the SWP's operational flexibility as well as allow diversion of a larger proportion of water supplies in the Delta during periods of good water quality. Increasing SWP pumping of its Banks Pumping Plant to 8500 cfs and installing permanent, operable barriers in the south Delta will improve water supply reliability for the SWP, Central Valley Project (CVP) and local agricultural diversions in the Delta, and allow SWP facilities to convey larger amounts of water during periods of higher quality water in the Delta for urban use. It will also increase opportunities to convey water for the Environmental Water Account, water transfers, and storage programs as well as provide greater capability for SWP facilities to assist the CVP in meeting the needs of CVP water users and wildlife refuges. Such increased pumping is conditioned upon avoiding adverse impacts to fisheries and in-Delta water supply.

Lead agencies: Department of Water Resources (DWR) and U.S. Bureau of Reclamation (USBR).

Schedule: A Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) is expected to be released in the spring of 2004, and the final EIS/EIR and Record of Decision in the fall of 2004.

Implement SWP/CVP Integration Plan

- **The SWP will convey CVP refuge water at the Banks Pumping Plant.** This action will assist the CVP, which has limited pumping capacity at Tracy.
 - SWP will wheel up to 100,000 AF of refuge water after the SWP export limit is increased to 8,500 cfs. This action will be included in the SDIP EIS/EIR

- **The CVP will provide water to assist DWR in meeting the SWP's water quality responsibility.** This action will assist the SWP, which has limited storage capacity. This action is not to be charged to the 800,000 acre feet of water dedicated to fish and water quality by the Central Valley Project Improvement Act.
 - The CVP will provide up to 75,000 AF after the increased pumping at Banks is approved. This action is included in the preferred operation alternative in the SDIP EIS/EIR.

 - The amount of refuge water conveyed by the SWP and the amount of water provided by the CVP for Delta water quality are expected to increase incrementally to the maximums over several years and in coordination with the installation and operation of permanent, operable barriers in the south Delta.

- **Water made available by Sacramento Valley water users pursuant to an Agreement known as "Phase 8" of the Bay-Delta water rights hearings by the State Water Resources Control Board (SWRCB) will be shared by the CVP and SWP.** The Sacramento Valley water users reached agreement on a suite of actions that would meet the water quality requirements of the region, meet local needs, and provide water for export to the CVP and SWP. CVP and SWP have now agreed how they will share the water made available to them - 40% to the CVP and 60% to the SWP.

Lead agencies: DWR and USBR.

Schedule: The SDIP Draft EIS/EIR, which will include the SWP wheeling of refuge water and the CVP provision of water quality water, is anticipated in the spring of 2004.

The Agencies anticipate completion of the EIR/EIS and CEQA/NEPA process for the Sacramento Valley Water Management Program (Phase 8) in March 2005 and the start of implementation of the program in May, 2005.

Design and Construct CVP/SWP Aqueduct Intertie. As described in the CALFED Record of Decision, the goal of the 400 cfs CVP/SWP Aqueduct Intertie is to provide operational flexibility and improve water supply reliability for the CVP. The project involves construction and operation of a pipeline between the Delta Mendota Canal and the California Aqueduct. The project is designed to increase the ability of the CVP to use the full capacity of the Tracy Pumping Plant (presently operated to a maximum of 4600 cfs). The agencies involved will develop cooperative operation for the Intertie.

Lead agencies: USBR and the San Luis and Delta Mendota Canal Authority are the Federal and State lead agencies, and DWR is a responsible agency.

Schedule: Public Draft of an Environmental Assessment/Initial Study (EA/IS) is expected in April 2004. A decision on FONSI/Negative Declaration is expected in June 2004.

Operations Criteria and Plan Update

USBR and DWR are in the process of updating the Operations Criteria and Plan (OCAP) which describes the operations of the CVP and SWP. It will include the actions described above and also operations of the Freeport Regional Water Project proposed by East Bay Municipal Utility District and Sacramento County, and USBR's operation of its Trinity Project as it affects flows in the Central Valley. (See related actions at the end of this attachment) The USBR and DWR will seek Biological Opinions under the Endangered Species Act for the OCAP. USBR intends to complete the OCAP before renewing certain long-term CVP contracts.

Lead agencies: USBR and DWR.

Schedule: The OCAP biological assessment is expected in February, 2004. The biological opinions are expected in June, 2004.

ENVIRONMENTAL WATER ACCOUNT

Continue the Environmental Water Account (EWA). As described in the EWA Operating Principles Agreement attached to the ROD, the EWA is a cooperative management program whose purpose is to provide protection to the fish of the Bay-Delta Estuary through environmentally beneficial changes in the operations of the SWP and the CVP at no uncompensated water cost to the projects' water users.

The EWA is implemented by five agencies: DWR, USBR, U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries (formerly called National Marine Fisheries Service), and the California Department of Fish and Game (DFG). The agencies acquire water, called the "EWA assets" which they use to augment streamflows or Delta outflows, or to modify exports to provide fishery benefits and to replace the regular project water supply interrupted by the changes to project operations. The EWA was a four-year experiment, subject to continuation by agreement of the agencies. There is now broad agency and stakeholder support to continue to EWA beyond Year 4.

The EWA agencies and stakeholders have participated in "gaming" that approximated the operation of the EWA in different year types, and have considered the results of CALSIM II modeling in order to assess the assets that would be required for EWA to continue to meet its goals and objectives once Banks pumping is approved at 8,500 cfs, and assuming the coordinated operations of the CVP and SWP recently developed by the projects. The agencies are considering extending the EWA with the following assets and operations:

- **Fixed Assets – Capital Assets and Water Purchases**

The fixed assets will be provided through a combination of capital projects and water purchases. Until the capital projects can be implemented a greater emphasis on purchases may be needed. On an interim basis, the Project agencies are considering purchase of water on behalf of EWA from willing sellers sufficient to provide the following quantities to the CVP or SWP at O'Neil Forebay or other locations south of the Delta: 210 TAF in critical years; 230 TAF in dry years; and 250 TAF in all other year types as defined by the 40-30-30 index in SWRCB Water Right Decision 1641. These numbers are subject to adjustment upon agreement by the EWA Agencies.

- **Variable Operational Assets**

- **SWP Pumping of (b)(2)/ERP Upstream Releases** – This asset allows EWA access to pump half of any CVPIA Section 3406(b)2 upstream releases that reach the Delta SWP export pumps at times they cannot be exported by the CVP but can be exported by the SWP due to available capacity. EWA Agencies will determine how to apportion pumping of ERP upstream releases that reach the Delta.

- **EWA Use of SWP Excess Capacity** – This asset allows the EWA access to surplus flows and use of excess SWP and CVP Delta pumping and conveyance capacity in the winter and spring as such capacity may become available and allows access to excess SWP capacity in the summer and fall as it becomes available to convey EWA water to areas south of the Delta.
- **Export/Inflow Ratio Flexibility** – This asset allows the EWA Agencies access to water supplies made available through the flexibility in regulatory standards provided to the Management Agencies, specifically the discretion to relax the Export/Inflow ratio standard.
- **Water Management Tools and Agreements**

500 cfs Capacity at SWP Banks Pumping Plant – This tool provides EWA with dedicated capacity above 6,680 cfs at the SWP Banks Delta Pumping Plant in the summer (July through September) to convey EWA water to areas south of the Delta.

- **EWA Debt Carryover and Source Shifting**

These tools allow EWA to borrow up to a total of 100,000 AF from the CVP and SWP to be carried over from one year to the next and assure that EWA may enter into agreements with one or more contractors to shift sources of water to help avoid EWA caused “low point problems” in San Luis Reservoir.

- **Wet/Dry Year Exchanges**

This tool allows EWA to enter into up to 200,000 AF of wet year/dry year water exchanges with SWP and CVP contractors to help manage EWA assets, incur debt, increase the functionality of EWA and to reduce the overall costs of EWA, to the extent permitted by State and Federal law.

- **Storage**

This tool allows EWA to enter into agreements to store at least 200,000 AF of water in storage projects south of the Delta.

Lead agencies: USBR, DWR, USFWS, NOAA Fisheries, and DFG.

Schedule: The long-term EWA proposal will be subject to public review and comment during 2004. The Draft EIS/EIR on the long-term EWA is expected in September, 2004; the Final EIS/EIR in March, 2005.

ESA COMPLIANCE AND ECOSYSTEM RESTORATION

Water project ESA consultation requirements. As part of the integrated package of actions currently being considered for water project operations, USBR and DWR are preparing analyses of project impacts to comply with FESA, CESA, and NCCPA. USBR and DWR are jointly preparing a Biological Assessment for the OCAP and an Action Specific Implementation Plan (ASIP) for the SDIP. Based on these documents, the USFWS, NOAA Fisheries, and DFG intend to prepare a single set of consistent and coordinated Biological Opinions and NCCPA approval. This integrated package will allow the USFWS, NOAA Fisheries, and DFG to comprehensively analyze the effects of proposed water project operations to listed species.

Lead Agencies: USFWS, NOAA Fisheries, DFG, USBR, DWR

Schedule: OCAP Biological Assessment expected in February 2004 and SDIP ASIP expected by in the spring of 2004, with Biological Opinions expected, respectively, in the summer and fall of 2004.

Update of CALFED ROD programmatic ESA consultation – EWA and ERP.

CALFED Programmatic compliance requirements under FESA, CESA, and the NCCPA are met with the Multi-Species Conservation Strategy (MSCS) and its implementation through the MSCS Conservation Agreement (“Agreement”). Although the Agreement is for thirty years it also refers to some intermediate steps for implementation. One of the shorter term steps includes completing a subset of ERP actions focused on at-risk species, called “Milestones”, within Stage 1.

Another short-term step is that the CALFED fishery agencies have provided a commitment, subject to specified conditions and legal requirements, that in the first four years of Stage 1, there will be no reductions, beyond existing regulatory levels, in CVP or SWP Delta exports resulting from measures to protect fish under FESA and CESA.

These short-term regulatory commitments are based on the availability of three tiers of assets:

- Tier 1 is the baseline level of protection provided by existing regulatory requirements
- Tier 2 includes the EWA combined with full annual funding for the ERP (\$150 million)
- Tier 3 is based upon the commitments and ability of the CALFED Agencies to make additional water available should it be needed to avoid jeopardy

After the first four years, the ROD requires USFWS, NOAA Fisheries, and DFG to revisit the regulatory commitments for water project exports. This includes an evaluation of the efficacy of the EWA and progress towards accomplishing the Milestones. The EWA agencies are redrafting the EWA Operating Principles, which will be the basis for a long-term EWA. USFWS, NOAA Fisheries, and DFG will also determine what changes, if any, are needed to the Tier 2 and Tier 3

assets that, along with the Tier 1 assets, are adequate to maintain ESA commitments in the future.

Lead Agencies: USFWS, NOAA Fisheries, DFG, USBR, DWR

Schedule: Evaluation of the EWA, progress toward achieving the milestones, and annual ERP funding will be completed no later than March 2004. Re-initiation of consultation will result in updated Biological Opinions by September 30, 2004. The Agreement will also be amended to extend program-level regulatory commitments consistent with the findings of the updated Biological Opinions.

Water Quality

Introduction

The Authority is sponsoring a coordinated effort to address water quality issues throughout the Delta and in the lower San Joaquin River through programs and projects undertaken by CALFED agencies. This effort is intended to ensure that water quality issues are identified and adequately addressed as water supply and ecosystem restoration activities proceed in the south Delta. Several individual projects have been identified to be implemented as part of the program. Because of suspected redirected impacts of one conveyance project (the South Delta Improvements Program), the water quality efforts identified here focus on salinity and DO impairments. However, the range of significant impairments affecting the Delta and, potentially, impeding the success of other Program activities, is broader. Thus, projects to address other impairments such as mercury, pesticides, and sediments may be added to comprehensively address the water quality goals and objectives as they relate to the Delta and lower San Joaquin River.

Goals and Objectives

1. Meet and/or maintain water quality standards for the protection of beneficial uses
 - a. Dissolved oxygen and salt impairments throughout Delta
 - b. Other water quality parameters potentially affected (e.g., mercury, sediment, pesticides)
2. Evaluate and mitigate potential redirected water quality impacts
3. Meet all water quality related regulatory requirements, including but not limited to:
 - a. Current water quality protection terms and conditions in water right permits and D-1641
 - b. CEQA and NEPA environmental impact analysis
 - c. Clean Water Act, Section 404 permits and 401 water quality certifications
 - d. Endangered Species Act
 - e. Rivers and Harbors Act, Section 10 requirements
4. Continuous improvement of water quality in the Delta

In-Delta Salinity Projects

Old River and Rock Slough Water Quality Improvement Projects. The purpose of these projects is to reduce or relocate agricultural drainage in the south Delta and reduce seepage into the Contra Costa Canal, minimizing salinity levels and other water quality constituents of concern to drinking water at urban intakes in the south Delta. The areas of study are the Veale and Byron tracts and the Contra Costa Canal intakes on Old River and Rock Slough. In accordance with the ROD, projects to reduce or relocate agricultural drainage from Veale and Byron tracts must be completed before completion of the permanent barriers.

Objectives:

Salinity (and chloride concentrations) at CCWD Pumping Plant #1 would be reduced by the following actions:

- The Veale Tract Project would relocate an agricultural outfall pump station from the north side to the south side of Veale tract and develop Best Management Practices (BMPs) for Agriculture on Veale Tract.
- Lining a portion of the Contra Costa Canal intake will reduce seepage from local agricultural activities adjacent to the Canal.

Salinity at the Old River Intake would be reduced by the following action:

- The Byron Tract Project would extend a discharge pipe 100 ft and add a diffuser and also develop BMPs for Byron Tract agricultural uses and Discovery Bay.

Lead agencies:

CCWD: Contra Costa Water District (CCWD) initiated and is working on the project.

DWR: Provided funds for planning studies, environmental documentation, technical review, implementation

USBR: Lead Federal agency

Schedule:

A draft of the environmental assessment for the Byron Tract Project was released for public review on November 17, 2003.

The environmental document for the Veale Tract Project was released for public review on January 22, 2004.

Implementation of the Veale Tract and Byron Tract projects is scheduled to begin Summer 2004

Develop Strategy for Franks Tract. Recent computer modeling studies indicate that restoration alternatives for Franks Tract, a flooded island in the Delta, could significantly reduce salinity at south Delta and central Delta water intakes at certain times of the year. In addition Franks Tract can be restored as part of the Ecosystem Restoration Program (ERP). A multi-year project plan that has the goal of optimizing improvements in Delta water quality, ecosystem restoration, and recreation is under development by DWR, U.S. Geological Service (USGS) and stakeholders. Agency coordination will occur through a team under the Conveyance Program's North Delta Program. A phased approach is being considered that would allow incremental improvement and monitoring to achieve the most cost-effective solutions.

Objectives:

- Reduction in salinity throughout the central and south Delta especially during the summer and fall months of dry and critically dry years.
- Improve habitat by restoring the levees and interior of Franks Tract.
- Removal of invasive species within Franks Tract.
- Improve food supply to aquatic organisms; and enhance recreation opportunities.

Lead agencies:

DWR: Feasibility study lead

USGS: Science and monitoring lead

Proposed Schedule: Current discussions center on conducting science investigations, environmental documentation, and preliminary design concurrently with the feasibility study. Very preliminary schedule dates are:

- Feasibility Studies started in 2004 and will continue through 2006
- Science and Performance Monitoring will also start in 2004 and continue through 2010
- EIS/EIR and Preliminary Design will start in 2004
- Phased Design will start in 2005 and continue through 2008 depending on the results on the phased alternatives.
- Phased Construction could start in 2005 and continue through 2009 depending on the phased alternatives.
- Real Time Operations Experiments could start in 2005 and continue through 2010

Delta Cross Channel Reoperation. The Delta Cross Channel Re-operation involves the thorough assessment of the Delta Cross Channel (DCC) operation strategies to improve fish survival, water quality, and conveyance. The project team will evaluate the results of three years of studies and will make a recommendation for DCC re-operation. Such reoperation will be evaluated on hydrodynamics, water quality, juvenile salmon releases in the vicinity of the DCC and presence of adult striped bass and sturgeon. Information on benefits and costs of DCC reoperation will be used in conjunction with an evaluation of the proposed Through Delta Facility to determine appropriate future steps to meet overall Bay Delta Program objectives. USBR has completed the following tasks associated with this project:

- Conducted two years of studies and experiments to provide a solid basis for future DCC operations
- Conducted intensive hydrodynamic and water quality monitoring of DCC tidal operations
- Conducted juvenile/adult fish tracking studies
- Independent Science Panel reviewed all work plans and results of first two years of studies
- Held public workshops to present the preliminary results of these studies

Objectives:

- Improved water quality in the Central and South Delta.
- Juvenile salmon survival and adult salmon passage.

Lead Agencies: USBR, USGS, DFG, USFWS, NOAA Fisheries, USEPA

Schedule: Final studies will be completed in the 2005. Recommendations will developed using workshops and science review to be presented to management in fall of 2005 including an integrated evaluation of Delta conveyance and operations (including DCC, TDF), and progress of alternative drinking water quality measures to determine need for the Through Delta Facility (TDF).

Through Delta Facility. The purpose of the Through Delta Facility is to improve water quality conditions in the south Delta without impacting fish by transporting 4000 cfs of water from the Mokelumne River to the south Delta. The Project team will refine concepts and feasibility of TDF options, determine TDF benefits and impacts on water quality and fisheries, and determine

the effects of TDF on other CALFED actions. An independent science panel will review all of the technical information of the three years of field and research studies developed for the project and provide its advice and recommendations on the technical viability and water quality and fishery benefits and impacts of a TDF. The project team will integrate and analyze the information and provide its recommendation to the California Bay-Delta Authority (CBDA). If it is determined that the TDF is needed, action agencies will prepare environmental documentation, preliminary design, and environmental permitting for a proposed project. DWR has completed the following tasks associated with this project:

- Developed an integrated DCC/TDF Work Team
- Formed a North Delta Fish Facilities Technical Team to assist in developing screening concepts for the Sacramento River 4,000 cfs intake and facility concepts for the TDF discharge into the Mokelumne River
- Conducted juvenile/adult fish tracking studies
- Initiated three research projects to address whether adult fish species entering a TDF can be safely lifted back into the Sacramento River system
- Commenced research at U.C. Davis regarding fish friendly trash racks that may be used on a TDF

Objectives:

Improved water quality in the central and south Delta.

Lead Agencies: DWR conducting analysis and project specific environmental review

Schedule: Final studies will be completed in the 2005. Recommendations will be developed using workshops and science review to be presented to management in fall of 2005. An integrated evaluation of Delta conveyance and operations (including DCC, TDF), and progress of alternative drinking water quality measures needs to be done to determine need for a TDF.

Install Permanent Operable Barriers. Dredging Delta channels and installing permanent operable barriers to ensure water of adequate quantity and quality to agricultural diverters within the south Delta. These actions, along with the extension of approximately 24 agricultural diversions, will be considered in the South Delta Improvement Program EIS/EIR. Barriers are part of the CALFED Record of Decision and the CVPIA.

Objectives:

- Increased protection for the South Delta agricultural diverters in both water supply and water quality.
- Provide real time barrier operations to protect San Joaquin River salmon.
- Improve dissolved oxygen conditions in the Stockton Deepwater Ship Channel and south Delta channels through increased flow or circulation.

Lead agencies:

DWR: CEQA Lead, design and construction lead

USBR: NEPA lead, design assistance, Federal funding lead.

Schedule:

The SDIP Draft EIS/R is expected to be released in spring of 2004

Final EIS/R and Record of Decision in the fall of 2004.

Begin construction in 2006

In-Delta Dissolved Oxygen Projects

Dissolved Oxygen Implementation Strategy - The CALFED Record of Decision (ROD) identifies milestones to investigate and correct the dissolved oxygen deficit in the lower San Joaquin River's Deep Water Ship Channel (DWSC). CBDA staff is facilitating progress on the ROD milestones within the Central Valley Regional Water Quality Control Board (CVRWQCB) schedule and regulatory framework for the dissolved oxygen Total Maximum Daily Load (TMDL). In 1999, the CVRWQCB provided an opportunity for a watershed stakeholder group (San Joaquin River Dissolved Oxygen TMDL Steering Committee) to suggest its own load allocation and implementation strategy to CVRWQCB staff for consideration in the development of a TMDL. In 2003, this watershed group proposed a framework for a phased implementation approach, which recommends further study of causes and potential long-term solutions for the dissolved oxygen impairment, while improving conditions in the short-term using mechanical aeration throughout the impaired reach of the San Joaquin River. This stakeholder implementation framework and the certain actions proposed in the South Delta Improvements Projects provide the basis for the following strategy. Following passage of Proposition 13, DWR delegated disbursement responsibility to the ERP for \$40M to correct the dissolved oxygen problem in the San Joaquin River. Authority staff and DWR will coordinate and support disbursement of funds for studies, environmental review and implementation projects to implement this strategy and solve the dissolved oxygen problem.

Objectives:

Restore dissolved oxygen conditions to meet Basin Plan objectives and protection of associated beneficial uses. This includes removal of intermittent low dissolved oxygen block to anadromous fish migration. Primarily addresses objective 1.a, with secondary benefit to all other objectives.

Implementing Agencies:

CBDA: Lead 2000 Water Bond agency and coordinator. The ERP is leading the effort to coordinate and manage a long-term implementation strategy with watershed stakeholders and input from the CVRWQCB.

CVRWQCB: TMDL Lead.

DWR: Participant in research and implementation

USBR: Research

U.S. Army Corps of Engineers (ACOE): participant in implementation

DFG, NOAA Fisheries, and USFWS: ESA impacts coordination

Schedule: Completion of actions below by Year 7 (ROD Phase I).

- CVRWQCB will complete the dissolved oxygen TMDL, including a description of its regulatory actions and the planned actions and commitments of responsible entities to address the impairment.
- Authority will proceed immediately with a \$6.8 million three-year study to identify upstream sources of oxygen demand and their linkage to the dissolved oxygen impairment. The Authority approved an ERP Selection Panel recommendation for this study at the December 11, 2003 meeting.
- The Authority, with assistance from other agencies, will oversee the completion of aeration feasibility studies and construction, operation and performance evaluation of aeration demonstration project by 2005. Aeration feasibility studies are currently ongoing.
- Authority staff with assistance from other agencies and stakeholders will lead development and execution of a long-term implementation plan that includes studies to address remaining technical data gaps, evaluation of potential control alternatives, and develops a comprehensive solution to the dissolved oxygen impairment. An ongoing work assignment will identify the first round of research topics for a CBDA PSP in FY04-05. A strategy to study possible impacts from Delta actions and deepening of the DWSC will be included in the plan.
- Design and construct Head of Old River barrier by end of 2007.

San Joaquin River Salinity

The CALFED Record of Decision (ROD) identifies the following water quality control elements for the Lower San Joaquin River (LSJR) and Delta that will be implemented by CALFED agencies:

- Reduce turbidity and sedimentation, pesticides, trace metals, mercury, selenium, oxygen demanding substances, and salt (Ecosystem Restoration Project)
- Address drainage problems in the San Joaquin Valley (Water Quality Program)
 - A Basin Plan Amendment to Implement a TMDL for salinity
 - Implement source control measures (including real time management)
- Study recirculation of export water to reduce salinity and improve dissolved oxygen in the San Joaquin River

Of the pollutants identified under the Ecosystem Restoration Program element, only salt reduction is considered here; it is described under two sections below: *Basin Plan Amendment to Implement a TMDL for Salinity* and *Implement Source Control Measures*. Reduction of oxygen demanding substances is considered in the ‘Dissolved Oxygen Implementation Strategy’ section.

Basin Plan Amendment to Implement a Total Maximum Daily Load (TMDL) for Salinity:

Central Valley Regional Water Quality Control Board (CVRWQCB) staff has developed a draft amendment to the Sacramento River and San Joaquin River Water Quality Control Plan (Basin Plan) to implement a salt and boron Total Maximum Daily Load (TMDL) for LSJR. A draft staff report, *Proposed Amendment to the Sacramento River and San Joaquin River Water Quality Control Plan for the Control of Salt and Boron Discharges into the San Joaquin River*, was

released in November 2003 and a CVRWQCB workshop was held in December 2003. As proposed, the amendment to the Basin Plan will establish a control program for point and nonpoint source discharges of salt and boron to the LSJR from the Mendota Dam to the Airport Way Bridge near Vernalis (Vernalis). The proposed control program is intended to implement the first phase of a TMDL and bring the LSJR near Vernalis into compliance with the existing salt and boron water quality objectives. No new water quality objectives are proposed in this phase of the TMDL or as part of this amendment. Allocations for new salinity objectives will be considered in a subsequent phase. The staff report includes the following elements:

- Total Maximum Daily Load with load allocations for nonpoint sources and waste load allocations for point sources.
- proposed program of implementation
- compliance time schedule to meet water quality objectives and allocations
- estimates of costs to comply with water quality objectives and allocations

The proposed program of implementation includes the use of waste discharge requirements to regulate discharges from irrigated lands (including agricultural and wetland discharges). Operational flexibility is provided to dischargers through the option to participate in a CVRWQCB approved program of real-time management. Real-time management provides the opportunity for dischargers to manage the timing of their discharges such that the quantity of salt conveyed from the basin is maximized while still complying with water quality objectives.

Objectives

Meet the water quality objectives at Vernalis.

Schedule:

Workshops on TMDL held in December 2003 and January 2004.

Adoption of the TMDL by June 2004.

Implementation of Source Control Measures: Source control measures include the continuing efforts of the San Joaquin Valley Drainage Implementation Program (SJVDIP), the USBR drainage program, the Grasslands Bypass Project, and other actions by CBDA agencies. Also included here is a proposal to study management of salt loads from Mud and Salt Sloughs through changes to the timing of drainage releases from wildlife refuges.

The SJVDIP is an interagency program created in 1991 to implement the recommendations of the report, A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley, otherwise known as the Rainbow Report. Participants are DWR, DFG, CDFA, SWRCB, USBR, USFWS, USGS, USDA. The goals of the SJVDIP are to coordinate State and Federal drainage programs budgets and assist local agencies in achieving the following drainage management goals:

1. Improve water quality,
2. Sustain agricultural productivity,
3. Restore fish and wildlife resources.

Proposition 204 Drainage Reuse Subaccount coordinated by the SJVDIP, was authorized by the Safe, Clean Reliable Water Supply Act of 1996 (SB 453). Participating agencies are CDFA, DWR, and SWRCB based on an MOU. The program is funded over a six year period at approximately \$1,000,000/year and is currently in the fifth year of the funding cycle. Farmers and Water Districts within the San Joaquin Valley have adopted several irrigation improvements and drainage reduction practices since the implementation of the Rainbow Report. SJVDIP's limited funding is used in improving water quality in the San Joaquin River and the Delta. The volume of drainage water annually discharged into the San Joaquin River has decreased from 57 thousand acre feet in 1990 to 30 thousand acre feet in 2000. DWR's San Joaquin District (SJD) Drainage Program funding is used primarily in the SWP area, although some projects in the SJR area have been supported by the SJD.

The USBR drainage program is currently evaluating options to provide drainage service o the San Luis Unit of the CVP. USBR has acquired some lands in the Westlands Water District as a part of drainage litigation settlement agreements.

The proposal to reduce the impact of discharges from the Federal Wildlife Refuges adjoining Mud and Salt Sloughs by delaying discharges until San Joaquin River flows are increased during the VAMP period should be studied. This approach is consistent with the previously funded projects to establish a real-time salinity management program, study of the potential for real-time salinity management at the San Luis National Wildlife Refuge and the proposed salinity TMDL.

Objectives:

- Reduce salt loads into the San Joaquin River
- Where it is not economically or technically feasible to reduce salt loads, reduce the impact of salt loads to the San Joaquin River by managing releases

Lead Agencies:

SJVDIP

State – DWR, CDFA, DFG, SWRCB

Federal – USBR, USFWS, USDA-NRCS, USGS

Proposition 204 Drainage Reuse Subaccount

CDFA, DWR, SWRCB

Schedule:

SJVDIP and other grant funded projects – Ongoing

USBR and DWR Drainage Programs : ongoing

Begin study of refuge salinity management – Summer 2004

San Joaquin River/CVP Recirculation Feasibility Study

D1641 includes a requirement for Reclamation to study the circulation of CVP Delta export supplies from the Delta-Mendota Canal (DMC) into the San Joaquin River to increase the assimilative capacity of the river, and to reduce the need for water releases from the eastern tributaries to the San Joaquin River. A plan of action for a phased approach to studying the feasibility of recirculation was developed and submitted to the SWRCB.

An appraisal level study has been initiated, and a report of the water supply and water quality benefits and impacts of two alternatives is nearing completion. A summary of potential fish and wildlife impacts, wetlands impacts, and contaminants is also under preparation. An appraisal report identifying recirculation as a potentially feasible project is needed to support a request to Congress for feasibility study authority and subsequent appropriations to complete the studies.

Lead Agencies:

USBR: Study lead, per D1641

DWR: Modeling support for studies

DFG, USFWS, NOAA Fisheries: review of potential impacts

Schedule: Appraisal level study is nearly complete. An Appraisal study with indications of feasibility is needed before congress can authorize further planning and implementation. No dates have been set for further feasibility studies.

SCIENCE

A number of science practices and principles are applied throughout the Bay-Delta programs. These practices include the development of conceptual models to describe our current state of knowledge, workshops to clarify the state of knowledge and narrow uncertainties, independent peer reviews, and proposal solicitation processes to ensure new science is applied to both high priority management issues and advancing our state of knowledge over the long-term. This summary briefly describes the science practices being applied to some of the most pressing water management activities and actions.

Environmental Water Account Technical Reviews: The CBDA Science Program established an independent technical review panel, which has conducted reviews of the EWA program annually since October 2001. These reviews have focused on the technical basis underlying the use of EWA assets for environmental benefit and on the relative effects of diversions and upstream operations on aquatic species of concern. Copies of these reviews are available at http://science.calwater.ca.gov/workshop/past_workshops.shtml.

In the third annual review of the EWA (completed in October 2003), the EWA Review Panel identified several key technical recommendations relevant to extending the EWA and determining how assets and operations will be defined for the long-term. These recommendations include:

- Building on past gaming, conduct studies that specifically evaluate biological risks and benefits across *multiple* years and changing hydrological conditions under the proposed size and operational regimes.
- Conduct assessments of the proposed size and operation of the EWA which take into account new information on the relative risks of project diversions on salmonids and smelt populations and new information on the relative benefits of different uses of EWA assets
- Identify synergies and interactions between EWA actions and other Bay-Delta program actions, including the proposed Delta projects described in this report; and
- Identify potential mechanisms for adapting EWA as new scientific information becomes available in the future.

The EWA agencies (USBR, DWR, USFWS, NMFS, and DFG) are now focused on the development of proposals for a long-term EWA. Working together, these agencies have completed “gaming” exercises to test EWA capabilities over a five-year period in the context of proposed water project features and new operations rules. In addition, they have used a long-term planning model (CALSIM II) and a spreadsheet accounting model to test the function of EWA assets and tools in a longer sequence of years. Documentation of the assumptions, process and outcomes of “gaming” as well as the other methods used to test EWA size and function will be compiled for a review focusing on the proposed long-term EWA in summer 2004. The EWA

agencies will use the results of this review as well as existing and new information about project effects, EWA benefits to salmonids and delta smelt, and interactions with other program activities to evaluate and modify implementation of the EWA. Mechanisms for adapting EWA in response to new information will be developed during revision of the EWA Operating Principles Agreement and in consultations on proposed projects under consideration.

The CBDA Science Program will coordinate review of the EWA related products by the EWA Technical Review Panel and provide feedback on proposed mechanisms for adapting the EWA based on new information in the future.

Lead Agency: CBDA

Schedule: The EWA Agencies will compile the relevant information in spring, 2004. Review of the proposed long-term EWA is targeted to occur in summer 2004.

South Delta Hydrodynamics and Fish Investigations: A series of studies have been proposed to address critical gaps in our understanding of fish movements, distribution, and entrainment due to various CVP and SWP operational regimes. These studies will help evaluate the near and far-field effects of South Delta exports and barrier operations on fish so that potential benefits of the EWA, VAMP, or SDIP operational options can be maximized. In addition, the effort will be used to support future planning activities outlined in the Program Plans. These investigations will include refining an existing multi-dimensional South Delta computer model and collecting fish movement data during various operations. New flow stations in the South Delta will be established as a part of this effort.

Lead Agency: The USBR will be the lead Federal agency. The DWR will be the State lead agency. These are collaborative studies conducted under the Interagency Ecological Program.

Schedule: Study proposals are expected to undergo independent peer review in early 2004, and (subject to peer review) could start in spring 2004. The studies would be conducted over three years. Cost of the special studies and analysis is estimated at approximately \$2.5 million per year.

Delta Smelt Fish Facility Survival: A number of evaluations are planned to address delta smelt survival in the fish salvage process at the South Delta export facilities. These studies will evaluate critical aspects of delta smelt survival through the collection, handling, transport, and release processes used during fish salvage. This information will be used to inform decisions about fish facility improvements at the State and Federal South Delta export facilities.

Lead Agency: The DFG is the State lead agency. These are collaborative studies conducted under the Interagency Ecological Program.

Schedule: Studies are expected to start in Spring 2004. Preliminary results are expected by summer 2005 and will be used to guide future work. Approximately \$1 million has been allocated to fund this work.

Addressing Critical Information Gaps and Uncertainties Regarding Water Operations and

Biological Resources: The CBDA Science Program has also organized three public workshops to consider specific technical issues relevant to interactions between water operations and the conservation and protection of biological resources. The intent of these workshops was to clarify the state of knowledge and narrow uncertainties. Reports summarizing discussions and findings from the workshops can be found at

http://science.calwater.ca.gov/workshop/past_workshops.shtml.

The CBDA Science Program's upcoming solicitation package (PSP) is designed to address gaps in scientific information related to key issues about the relationship between various water management actions and biological resources. Specifically, the PSP will invite proposals on topics identified in the multi-year Science Program work plan approved by the Authority in 2003, including:

- Information needed to support evaluation of population-level effects of diversions on salmonids and delta smelt;
- Refining information about fish entrainment, operational regimes, and salt transport in the South Delta;
- Understanding relationships between indirect effects of diversions and sensitive fish species;
- Exploring new approaches to identify system wide linkages between river processes, sensitive species populations, project operations, and future hydrologic scenarios

Up to \$20 million may be available to support studies accepted through the PSP. This funding comes from a variety of sources including California State Propositions 13 and 50. Budget decisions regarding the expenditure of State bond funds would affect this funding.

Lead Agency: CBDA Science Program.

Schedule: A proposal solicitation package is schedule for completion during the first half of 2004.

RELATED ACTIONS

Trinity River In December 2000, Interior signed the ROD on the Trinity River Mainstem Fishery Restoration EIS/EIR. The ROD was the culmination of years of studies on the Trinity River. The ROD adopted the preferred alternative, a suite of actions which included a variable annual flow regime, mechanical channel rehabilitation, sediment management, watershed restoration and adaptive management. The EIS/EIR was challenged in Federal District Court and litigation is ongoing. The District Court has limited the flows available to the Trinity River until preparation of a supplemental environmental document is completed. As a result of ongoing litigation, the flows described in the ROD may not be implemented at this time. However, Reclamation is including the ROD flows as part of the OCAP action on which Reclamation is consulting.

Freeport Regional Water Project Reclamation is currently preparing an EIS/EIR in cooperation with the Freeport Regional Water Authority which addresses a potential new diversion at Freeport in Sacramento County. This diversion would include East Bay Municipal Utility District's (EBMUD) exercising new diversions under its amended contract. Similar to the approach with Trinity, this action, while not being implemented at present, is part of the future proposed action on which Reclamation is consulting. Reclamation's proposed action relative to the FRWP is only the action of making the water available for diversion at Freeport. All site-specific/localized actions of the FRWP such as construction/screening and any other site-specific effects of the diversion facility are being addressed in a separate consultation.

Attachment B Schedule for Activities Under Consideration

Program Element Summary Tasks	2003	2004	2005	2006	2007	2008	2009	2010
CVP/SWP Operations Criteria and Plan (OCAP)		▲ 2/04 - Final OCAP/Biological Assessment ▲ 6/04 - Final Biological Opinion						
Trinity River				▲ 10/04 - Final Supplemental EIS				
Freeport Regional Water Project		▲ 12/03 - Draft EIR/S Comment Period Ends ▲ 6/04 - Biological Opinion (OCAP)						
				▲ 7/04 - Record of Decision				
South Delta Improvement Program								
				▲ Release Public Draft EIR/S ▲ End Comment Period ▲ 6/04 - Biological Opinion (OCAP)				
				▲ Final EIR/S ▲ Record of Decision				
DMC/CA Interrie (400cfs)								
		▲ 4/04 - Public Draft EA/IS ▲ 6/04 - Decision on FONS//Negative Declaration						
Environmental Water Account								
				▲ 9/04 - Draft EIR/S on Long-Term EWA ▲ 3/05 - Final EIR/S on Long-Term EWA				
Old River and Rock Slough Water Quality Improvement Projects								
		▲ 11/03 - Draft Initial Study/Mitigated Negative Declaration for Old River (Byron Tract) ▲ 2/04 - Draft Environmental Document for Veale Tract ▲ Begin Construction of Veale and Byron Tract Projects						
Re-consultation of CALFED Programmatic BO								
		▲ 3/04 - Assess ERP and EWA implementation and start consultation ▲ 9/04 - Complete consultation						
Science Program Public Workshops								
		▲ 2/04 - Contaminant Stressors Workshop ▲ 7/04 - EWA Salmonid Workshop ▲ 7/04 - Review of Proposed Long-Term EWA ▲ 9/04 - EWA Delta Smelt Workshop ▲ 10/04 - CALFED Science Conference ▲ 11/04 - Annual Review of the EWA						

