

DEPARTMENT OF WATER RESOURCES

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March 22, 2005

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Workshops Regarding Revisions to the 1995 Bay-Delta Water Quality Control Plan,
Program of Implementation

Dear Ms. Irvin:

Enclosed are the Department of Water Resources comments on Topic 11 of the State Water Resources Control Board Workshop addressing DWR recommendations for changes to the Program of Implementation. We will transmit to you through electronic mail these same comments with the power point presentation on this topic.

If you have any questions or need additional information please contact me at (916) 653-5613 or crothers@water.ca.gov.

A handwritten signature in cursive script that reads "Cathy Crothers".

Cathy Crothers
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Enclosures

cc: list attached

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**Department of Water Resources Comments
State Water Resources Control Board Workshops Regarding
Changes to the 1995 Water Quality Control Plan
Program of Implementation
March 22, 2005**

The May 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (1995 Plan) includes a Program of Implementation (POI) that identifies measures needed to implement the water quality objectives specified in the 1995 Plan. The POI identifies four categories of measures: (1) measures that will be implemented solely by the SWRCB through its authority over water diversion and use; (2) measures requiring coordinated actions by State Water Resource Control Board (SWRCB) and other agencies; (3) measures implemented by other agencies to improve habitat conditions; and (4) monitoring and special studies to evaluate compliance with the objectives, identify changes in baseline conditions, assess the ecological response to the water quality objectives, and increase understanding of the estuarine ecosystem.

The Department of Water Resources (DWR) provides the following comments that identify the progress that has been made to implement the measures identified in the POI and suggest what might be modified or added to update the POI. Additional comments related to these modifications have been submitted by DWR during the prior SWRCB workshops.

A. Implementation Measures within SWRCB Authority

The POI identifies water flow related objectives that the SWRCB would use its water rights authority to implement. DWR recommends that this section be updated to reflect implementation required under Water Right Decision 1641 (D-1641). That Decision holds the U.S. Bureau of Reclamation (Reclamation) and the DWR responsible for implementing most of the water quality objectives as a condition for the Delta diversions by the Central Valley Project (CVP) and the State Water Project (SWP). Reclamation and DWR operate the CVP and SWP to meet D-1641 requirements. Also, the SWCRB should discuss the status of all the phases of the Bay/Delta hearing process.

DWR has no objection to the Board updating the POI by indicating it would continue to use its water rights authority to implement most of the objectives identified in any revised Water Quality Control Plan (WQCP) that may result from this review process. However, as we described in the workshop on the Pumping Plant #1 (PP#1) chloride objectives, Reclamation and DWR are physically unable to always meet those objectives through our operations of the SWP and CVP because of local drainage and discharges, and the manner that Contra Costa

Water Agency now diverts from Rock Slough. To address this problem, we believe that the list objectives to be addressed solely through the water rights process specifically exclude the PP #1 chloride objectives from the municipal and industrial supply. The exclusion should clearly note that the implementation of the PP #1 objectives is discussed in subsequent section of the POI which addresses coordinated measures by SWRCB and other parties. This approach is consistent with that used for the salinity objectives for south Delta agriculture, which is specifically excluded from this section. We will describe more specifically below how we propose to address the implementation of the PP #1 objectives through coordinated actions by SWRCB and others.

The POI also indicates that the SWRCB will use its Clean Water Act section 401 water quality certification authority where appropriate. During the last few years, the Department has worked with SWRCB staff towards preparing the material needed to seek a 401 water quality certification needed for the Federal Energy Regulatory Commission's (FERC) relicensing of DWR's Oroville facilities. DWR submitted the application for the new FERC license in January 2005. We expect to submit the application for the 401 certification to the SWRCB in 2006. The project being proposed for relicensing assumes that the Oroville facilities will continue to be operated to meet the terms of the SWP's water rights permits, including the Delta water quality objectives contained in that permit.

B. Implementation Measures Requiring SWRCB and Multi-Agency Cooperation

The POI identifies four water quality objectives whose implementation would require coordinated actions by the SWRCB and other agencies. These objectives are (1) the San Joaquin River dissolved oxygen objective, (2) the narrative objective for salmon protection; (3) the narrative objective for brackish tidal marshes of Suisun Bay; and (4) southern Delta agriculture salinity objectives. We suggest each of these four objectives be retained and updated in a new POI. As mentioned, we also suggest adding a fifth objective, the PP #1 chloride objectives for protection of municipal uses. Finally, we recommend that the SWRCB recognize in the WQCP the phased implementation of the San Joaquin fish flow objectives as set forth in D1641.

1) Dissolved Oxygen

The SWRCB's September 30, 2004 Staff Report for the Periodic Review of the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary summarizes the work being done by the Central Valley Regional Water Quality Control Board (CVRWQCB) and others to help achieve the San Joaquin River dissolved oxygen objective. We suggest this material be updated and reflected in the new POI. This update should identify the actions being done (1) by the CVRWQCB to reduce the biological oxygen demand in

local discharges, (2) by DWR with California Bay Delta Authority (CBDA) funding to install a demonstration aeration system in the Stockton Deep Water Ship Channel in 2005, (3) by DWR to install a permanent operable barrier at the head of Old River to increase flow in the lower San Joaquin River, and (4) by the San Joaquin River Water Quality Management Group in cooperation with DWR and Reclamation to improve salinity and dissolved oxygen in the lower San Joaquin River.

2) Salmon Narrative

A substantial amount of work has been done since 1995 to improve salmon habitat in the Delta and its tributaries, which contribute toward meeting the narrative objective for salmon protection. Much of this work has been carried out by the U.S. Department of Interior's Central Valley Improvement Act (CVPIA), by the DWR and the Department of Fish and Game (DFG) under the Delta Fish Agreement Program (more commonly known as the 4-Pumps Program), by Reclamation under the Tracy Fish Agreement, and by CBDA (and its predecessor CALFED) under its Ecosystem Restoration Program. These measures have included screening water diversions, reducing the illegal take of salmon, improving spawning and rearing habitat, and providing additional water through CALFED Environmental Water Account Program to increase flows and reduce Delta diversions to protect and enhance salmon populations. These habitat improvement measures will be discussed in greater detail later in this presentation.

3) Suisun Marsh

The POI identifies the formation of a Suisun Marsh Ecological Work Group to identify and recommend measures needed to implement the narrative objective for the brackish tidal marshes of Suisun Bay. The Suisun Ecological Workgroup (SEW), consisting of representatives from DWR, Reclamation, DFG, U.S. Fish and Wildlife Service, Suisun Resource Conservation District, California State University San Francisco, and SWRCB, was formed in May 1995 to recommend channel water salinity objectives to protect the beneficial uses of the Suisun Marsh. Four technical subcommittees were formed to address brackish marsh vegetation, waterfowl, aquatic habitat, and wildlife. The Final Suisun Ecological Workgroup Report was submitted to the SWRCB in August 2002. This report includes recommendations from each of the technical subcommittees for salinity objectives, future monitoring, and special studies for consideration by the SWRCB for implementation in future proceedings, as appropriate. It also includes an alternative recommendation prepared by DFG. Some of the recommended actions might be appropriate for inclusion into the POI.

A recommendation among two of the technical subcommittees for addressing delaying implementation of objectives at two stations in the Suisun Marsh, S-97 and S-35 was addressed by the SWRCB in D-1641 which formally converted

these stations from compliance stations to monitoring stations. Recommendations for implementation of a comprehensive monitoring and management plan were also submitted by SEW to CALFED for inclusion in the Comprehensive Monitoring and Research Program (CMARP).

During preparation of the SEW report, CALFED requested DWR, USBR, SRCD, DFG, and USFWS to develop a regional plan (Charter) that balances implementation of the CALFED Program, Suisun Marsh Preservation Agreement, and other management and restoration programs within Suisun Marsh in a manner responsive to the concerns of stakeholders and based upon voluntary participation by private landowners. Upon completion of the Charter in 2001, development of an implementation plan began, which has evolved into the Habitat Management, Preservation, and Restoration Plan for Suisun Marsh scheduled for completion in June 2006.

4) Southern Delta Agricultural Salinity

The POI identifies New Melones water releases, additional water releases that might be secured through ongoing FERC proceedings, implementation of the SWRCB's Nonpoint Source Management Plan and the San Joaquin Valley Drainage Program, and the CVRWQCB's salt load reduction program as measures needed to implement the southern Delta agricultural salinity objectives. This will include specific recommendations of measures that could be included in the new POI.

As noted in its prior comments on Workshop Topic 10 addressing southern Delta salinity, DWR also recommends modifying the POI to recognize the importance of the permanent operable barriers in helping to control southern Delta salinity and that implementation is related to these facilities. DWR recommends modifying the POI to be consistent with D-1641 implementation found at Table 2, footnote 5 (D-1641, p. 182). Furthermore, the SWRCB should consider review of recent studies that evaluate irrigation water quality needs of crops and influences of upstream water management. Therefore, DWR recommends deleting the last sentence of the first paragraph in the POI Section B.4. and replace with the following:

"The 0.7 EC objective at Brandt Bridge, Old River near Middle River, and Old River at Tracy Road Bridge shall be implemented no earlier than December 2008, after a review of the appropriateness of these objectives and the reasonableness of achieving these objectives. In the interim, the 1.0 EC objective shall apply at these stations year-round. DWR is encouraged to proceed with its plans to install permanent operable barriers before December 2008 to improve salinity in the southern Delta channels. Prior to December 2008, the SWRCB shall evaluate the salinity objectives based on (1) the salinity tolerances of crops currently grown in the southern Delta reflecting an analysis of the rainfall effect on irrigation

water quality needs in the southern Delta, and (2) the reasonableness of achieving these objectives given inflow water quality objectives and local salinity drainage in the southern Delta”.

5) Pumping Plant #1 Municipal Chlorides

As mentioned earlier, we propose the POI identify a number of measures that would need to be coordinated by SWRCB and others to implement the PP #1 chloride objective. SWRCB could continue to use its water rights authority to require Reclamation and DWR to meet these objectives through the operations of the CVP and SWP. However, such a requirement should recognize the physical inability of the two projects to meet this objective all the times due to local drainage and Contra Costa Water District's (CCWD) operations of its PP #1. The POI should establish an alternative compliance location and compliance objective at Holland Tract which the projects would be responsible to meet when CCWD's operations significantly impair our ability to fully meet the water quality objective at PP #1. A new compliance and/or baseline monitoring station for this compliance point should be included in the monitoring and special studies section of the POI.

In addition the SWRCB's water rights actions, the POI should identify at least two other actions by others as needed to meet the water quality objectives at PP #1. The first is the CBDA project to reduce drainage discharges from Veale Tract which is to be completed in 2005. The second is the lining of Contra Costa Canal which is to be completed in 2006.

Specifically, as mentioned in our comments during the Workshop on Topic 4, DWR recommends the SWRCB consider implementation that would be phased as explained in following proposed change to the POI:

“Multiple factors contribute to elevated levels of chloride in Rock Slough and at PP#1, including ocean based salts intruding in the Delta, discharges of land-derived salts from local drainage, reduced circulation of water in Rock Slough, and CCWD diversion operations at Los Vaqueros Reservoir Intake. Feasible measures to implement the chloride objectives at PP#1 include: (1) regulating salinity intrusion of ocean water in the Delta at Old River, (2) regulating local discharges of land derived salts found in drainage water, (3) maintaining adequate circulation in Rock Slough. Implementation of the chloride objectives at PP#1 shall be phased so that different causes of the elevated salinity shall be addressed as soon as reasonably feasible. Presently, Reclamation and DWR are responsible for achieving the water quality objectives at PP #1. The first phase of implementation will require Reclamation and DWR to be responsible for achieving the water quality objectives at PP #1 except under conditions of low circulation within Rock Slough, when other factors are the basis for elevated salinity. During conditions of low circulation,

implementation will be achieved by assigning partial responsibility to Reclamation and DWR as measured at a monitoring location in Old River near Holland Tract. A subsequent phase of implementation will require other entities to share in achieving the objective through other measures, such as adoption of waste discharge requirements to reduce discharges that contribute to elevated salinity. Before such waste discharge requirements are imposed, the SWRCB will review the effects of the CALFED Bay-Delta agricultural drainage projects within the Rock Slough and Contra Costa Canal area. The CALFED project to relocate drainage from Veale Tract is scheduled to be implemented in 2005 and the lining of Contra Costa Canal may occur in 2006. These projects will improve local water quality conditions in the area and help implement the objective at PP #1."

DWR and Reclamation request that the SWRCB add a new compliance monitoring station in Old River at Holland Tract. This request is described further in the discussion of changes to the Monitoring and Special Studies Program

6) San Joaquin River Fish Flow (VAMP)

DWR recommends that the SWRCB modify the POI to recognize that the Vernalis pulse flow objective will be implemented in phases, with the first phase consisting of the VAMP flows required for the experiment to determine the next phase. At completion of the VAMP, the SWRCB would consider the results of the VAMP to form a basis of the level of protection needed for out-migrating salmon. The second phase of implementation would occur after developing a new objective, if appropriate, and then conducting a water rights hearing to implement the objective. Specific modification of the POI could be as follows:

"The plan's objectives for flows during mid-April to mid-May are intended to benefit out-migrating Chinook salmon. Presently Reclamation and water agencies upstream of Vernalis in the San Joaquin River Basin are responsible for providing specific flows on the San Joaquin River at Vernalis to conduct an experiment that will provide information on the effects of flows and export pumping from the CVP and SWP south Delta facilities, known as the Vernalis Adaptive Management Plan (VAMP). The fish flow objective at Vernalis during the pulse flow period will be implemented in phases. The first phase will be through flows required under the San Joaquin River Agreement (March 1, 1999) while conducting the VAMP. After completion of the VAMP, the Board will consider results of the VAMP to determine if a new objective is needed. If so, it would develop an objective that reasonably protects the level of protection and amend the objective during a review of the WQCP. The second phase of implementation will occur after the review and any necessary amendments of the WQCP by conducting a water rights hearing assigning the responsibility for the flows to appropriate water right holders."

C. Recommendations to Improve Habitat Conditions

The 1995 PIO identified 14 types of habitat improvement measures which could be taken, in addition to implementing water quality objectives for the Bay-Delta Estuary, to improve fish and wildlife beneficial uses in the Estuary. Many of the identified measures have been implemented through the U.S. Department of Interior's Central Valley Project Improvement Program, CALFED's Bay Delta Program, DWR's 4-Pumps Program, and other programs. Following is a summary of the habitat improvements measures that have been or will be implemented by DWR.

1. Reduce losses of fishes to unscreened water diversions. DWR has funded the installation of fish screens in the Suisun Marsh, the Delta, and upstream tributaries. These screens have been funded by DWR's Suisun Marsh, 4-Pumps and Planning programs. The U.S. Department of Interior CVPIA program and USBR Tracy Pumping Plant Agreement program have also help fund several of these facilities.
2. Reduced entrainment by, and improve fish survival at, the SWP and CVP export facilities. In recent years, DWR has routinely shifted some of the SWP Delta diversions from the spring to summer months when salmon and delta smelt are less vulnerable to entrainment. The water supply impacts of such shifts have been minimized by the use of water acquired by the CVPIA b2 and the Environmental Water Account programs

In accordance with a recent Biological Opinion by NOAA Fisheries, DWR has initiated an evaluation of predation of steelhead in Clifton Court Forebay and an assessment of ways to reduce predation in the Forebay.

DWR has also worked with USBR to evaluate potential improvements in fish screening and handling that could be used to reduce fish entrainment losses at the CVP and SWP south Delta diversions.

3. Review and modify existing commercial and sport harvesting regulations. Harvest regulations are outside DWR's authority.
4. Reduce illegal harvesting. DWR 4-Pumps Program has and continues to fund DFG's Bay Delta Enhanced Enforcement Program. This program has supported up to 10 game wardens to reduce predation on salmonids and striped bass in the Delta and its tributaries. It has been funded by Reclamation has also funded the program through its Tracy Pumping Plant Agreement.

5. Evaluate the effectiveness of barriers as a means of improving fish survival in the Delta. DWR has conducted several evaluations of barriers to improve fish survival in the Delta. It conducted a 3-year evaluation of the effectiveness of an acoustic barrier at the head of Georgiana Slough to reduce salmon smolt movement into the central Delta. This evaluation did not find the acoustical barrier system to be effective.

DWR through the Interagency Ecological Program also initiated an evaluation of alternative operations of the Delta Cross Channel on salmon movement and survival. This evaluation was later incorporated into and continues under the CALFED Bay-Delta Program. Its results were summarized in the SWRCB's earlier workshop on the Cross Channel Gate operations.

While not an evaluation, DWR continues to install a barrier at the head of Old River to improve downstream salmon passage in the spring and upstream migration in the fall.

6. Reduce the impacts of introduced species on native species in the Estuary. CBDA has funded DWR to set up a monitoring program for the early detection of zebra mussel introduction into the Central Valley. DWR is attempting to secure long-term funding to maintain the program. DWR, through the Interagency Ecological Program, has help fund and carried out studies on the biology and effects of mitten crab. It also helps fund IEP monitoring studies which have identified the introduction, distribution, and abundance of introduced species in the Estuary. The monitoring data are also used in analyses to help determine the effects of introduced species, and to help identify potential methods to control these species. Much of that monitoring is carried out under the mandates of D-1641.
7. Improve hatchery programs for species of concern. DWR funds the operation of the Oroville Fish Hatchery to offset habitat lost upstream of the Oroville Dam. DFG also operates the hatchery to produce additional fish to enhance the fishery. Improvements in the hatchery's facilities and operations are being evaluated as part of the FERC relicensing process. Potential measures to improve these facilities and operations are being evaluated and being considered for implementation.

DWR has also helped fund an evaluation of establishing and maintaining a captive winter run salmon brood stock to for use in the supplementation of the natural stock.

DWR funded an evaluation of net pens to improve the survival of hatchery salmon releases to the Estuary and evaluation to determine the effect of the straying on the spread of fish diseases in the Central Valley.

8. Minimize losses of salmon and steelhead due to flow fluctuations. In accordance with NOAA Fisheries Biological Opinions, DWR has reduced the rate of flow fluctuations to reduce losses of salmon, steelhead, and other fishes in the Feather River below Oroville Dam.

Reclamation and DWR have also proposed modification of the 1995 Plan Delta Outflow (X2) objective to reduce impact that implementation of the objective can have on flow fluctuations in upstream tributaries. DWR and others will be providing a proposal on the process for allowing flexible implementation of the Delta Outflow objective at Port Chicago (X2). It would provide for amending D-1641 and water rights to allow the objective to be implemented in a flexible manner while providing equivalent protection. A flexible process would be implemented on a case by case basis and include a consultation process among fishery and project agencies (CALFED Ops Group) with notice to the Executive Director of the SWRCB of any planned variation in outflow. This process, with possible sideboards or limits on any proposed flex, will be provided to the SWRCB as part of the final comments on the workshops.

9. Expand the gravel replacement and maintenance programs of salmonid spawning habitat. DWR has and continues to fund gravel maintenance programs to improve salmonids in the Central Valley under its 4-Pumps Program. Most of this work has been in the San Joaquin Valley. DWR is also considering adoption of a gravel replacement and maintenance program in the lower Feather as part of the FERC relicensing of the Oroville facilities.
10. Evaluate alternative water conveyance and storage facilities of the SWP and CVP in the Delta. DWR is evaluating in-Delta conveyance and storage facilities through the CALFED Bay-Delta Program. It will soon be releasing a Draft Environmental Impact Report/Statement for the South Delta Improvement Program which includes the construction of a permanent operable barrier at the head of Old River to improve salmonid movement through the south Delta. Because it can be opened and closed relatively quickly, it can be more precisely operated to protect fish than the temporary barrier that has been installed in recent years. DWR is also evaluating methods to provide fish passage at a new diversion on the Sacramento River if one is ever decided to be needed. DWR is continuing to evaluate the feasibility of in-Delta storage facilities.
11. Develop an experimental study program on the effects of pulse flows on fish eggs and larvae in the Delta. DWR has and continues to participate in two studies to evaluate the effects of flows on fish egg and larvae movement in the Delta. DWR, through the IEP, helps fund and conduct a

modeling study to assess potential effects of flow and south Delta diversions on larval fish movement in the Delta. DWR also helps fund and conduct a field study to evaluate the potential effects of south Delta diversions on the movement of young fish larval fish in the south Delta.

12. Implement actions needed to restore and preserve marsh, riparian, and upland habitat in and upstream of the Delta. DWR has helped or is helping to restore a number of marsh and riparian restoration projects in and upstream of the Delta. We have worked with the CALFED Program to restore wetland habitat on Decker Island, and are evaluating the potential of restoring Liberty Island and alternative restoration plans for Prospect Island. As previously described, we are also working with parties to identify and implement measures to improve habitat in the Suisun Marsh. DWR's 4-Pumps Program, with funding assistance from CBDA, Reclamation, DFG and others, has implemented several aquatic and riparian restoration projects, particularly in the San Joaquin River Basin.
13. Implement temperature control measures to reduce adverse impacts on salmon and steelhead. In accordance with NOAA Fisheries Biological Opinions, DWR has modified its operations to improve water temperatures for salmon and steelhead in the Feather River below Oroville Dam.
14. Implement measures to appropriately control Suisun Marsh soil and channel water salinities, including actions identified in the SMPA. DWR's activities in the Suisun Marsh are summarized above in the section on implementing measures requiring SWRCB and multi-agency cooperation.

D. Monitoring and Special Studies Program

DWR suggested several changes to the compliance and baseline monitoring program in a previous workshop. DWR recommends that the Board revise the WQCP by replacing the existing Table 4 and Figure 2 with the attached revised Table 4 and Figure 2, which show changes presented to the Board during the workshop and as recommended herein. The revised Table 4 and Figure 2 will improve the WQCP Environmental Monitoring Program for the reasons discussed in DWR and Reclamation's written comments submitted October 27.

In addition to the changes identified above, we recommend that the SWRCB identify an additional compliance monitoring station in Old River at Holland Tract. DWR and Reclamation currently operate a monitoring station at this location and use it as a point of operational control in trying to meet the chloride objectives at PP #1. This new station would provide the SWRCB an alternative compliance site to help implement the PP #1 chloride objectives at times when Contra Costa Water District's PP #1 operations substantially impair DWR's and Reclamation's ability to fully meet the PP #1 objectives. This new compliance station should be

identified in the Table 4 and Figure 2, and be footnoted to make it effective upon the SWRCB's amendment of DWR's and Reclamation's water rights. The SWRCB could then identify the specific conditions under which the new compliance point would be used in the water right amendment.

CONCLUSION

DWR believes the POI can be easily updated and modified in the manner described above for inclusion into a new Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary.