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October 5, 2015

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Dear Chairman Marcus and Board Members:

By this letter the South Delta Water Agency ("SDWA") strongly urges the State Water Resources Control Board to reject the Department of Water Resources' ("DWR") and US Bureau of Reclamation's ("USBR") recently filed Petition for a Change in Point of Diversion. That Petition seeks authorization to add new points of diversion for the State Water Project and the Central Valley Project on the Sacramento River as part of the continually morphing Bay-Delta Conservation Plan, now Delta Fix.

A number of other parties have submitted comments on this Petition. The Local Agencies of the North Delta and Central Delta Water Agency submitted a letter dated August 31, 2015 which noted many deficiencies in the Petition. SDWA joins in those comments.

Contra Costa Water Agency also submitted a letter dated September 23, 2015, wherein it noted that the plan underlying the Petition was clearly inconsistent with the co-equal goals of the State and that it would be detrimental to both water quality in general and fish and wildlife in particular. The letter provided modeling summaries which showed that exports would increase

during dry years and that reverse flows in Middle and Old River would be increased during times of concern. SDWA joins in those comments.

Recently, NRDC, Defenders of Wildlife, The Bay Institute and other environmental groups submitted a comment letter (date September 29, 2015). This letter pointed out that the SWRCB was legally prevented from considering the Petition until new flow criteria to protect beneficial uses in the Delta (and elsewhere) were adopted pursuant to California Water Code Sections 85086 et. seq. In addition, the environmental organizations' letter showed how the SWRCB's Executive Director had confirmed himself that the Board was legally obligated to adopt such new flow requirements prior to, or at least as part of any change petition dealing with the BDCP or its follow-on configuration. There can be no doubt that the SWRCB's tentative time line for handling the Petition is contrary to the law.

We note that the criteria for approving any change petition is that the petitioner(s) "include sufficient information to demonstrate a reasonable likelihood that the proposed change ***will not injure any other legal user of water***." (Emphasis added) [Ca Water Code Section 1701.1(d)]. It is clear from even a cursory review of the Petition and of the draft environmental documents (for the Delta Fix) that the Petitioners have not just failed to provide such information, but indeed have provided information indicating there will be significant injury to other legal users.

The Board is reminded of the US EPA letter dated August 26, 2014 (attached) commenting on the BDCP draft EIS for BDCP. Therein the EPA stated ". . . operating any of the proposed conveyance facilities which constitute Conservation Measure 1 (CM1) [the twin tunnels] would contribute to increased and persistent violations of water quality standards in the Delta, set under the Clean Water Act, measured by electrical conductivity (EC) and chloride concentrations." Although there are some slight differences between the BDCP CM1 and the current Delta Fix twin tunnel project, those differences in no way alter the tunnels' impacts on EC and chlorides in the Delta. The current Delta Fix Project does not mitigate these water quality impacts.

When a project is anticipated to decrease water quality and result in violations of current standards it is on its face incapable of "not injuring any legal user." The DWR and USBR appear to be trying to circumvent the Section 1701 process. On cannot petition for a change in point of diversion and "expect" that the SWRCB process will find and mandate mitigation measures to prevent harm from occurring. The ***petitioner*** is required to show ***how*** the change will not injure others. It is of extreme relevance that the Petition is support by a ***draft*** EIS/EIS. This means that the public comments dealing with how the project and environmental evaluation affect legal users have not been determined. Thus, before the project proponents even know what impacts they will be causing, they want the SWRCB to bless the change in point of diversion. Recall, that the massive amount of comments dealing with every aspect of the prior BDCP (30,000+ page DEIS/R) have gone unanswered and remain unaddressed. It is clear that DWR and USBR do not want to confront the impacts of their project, but simply want the SWRCB to approve it with some general condition of "don't harm anyone else." Such an approach is contrary to the law and virtually every policy relating to water and water quality.

It is important to remember what the DWR and USBR have not done with regard to their statutory and regulatory obligations. First and foremost is the nearly 20 year old CVPIA

obligation to double anadromous fish populations. One can only speculate how the USBR, in conjunction with DWR will ever take actions to meet this mandate, especially since this obligation if met might resolve many of the current problems in the estuary.

Similarly, under HR 2828 (PL 108-361; attached see Section 103(d)(2)(D)(I) on page 7) the USBR is supposed to have already developed and implemented a "Plan to Meet Standards" whereby it would meet all of its water quality obligations as mandated by the SWRCB. Whatever stage this missing, 10 year old plan is in, the USBR is certainly not meeting its permit obligations for water quality. The recent drought shows us just how poorly the projects plan for multi-year droughts. In this one, the projects needed only a six month dry period to discover they could not meet in-Delta and cold water requirements. As the drought progressed, no less that 13 times the projects petitioned for and the SWRCB granted non-public temporary changes to the permit conditions of the projects. During this same time, the projects exported millions of acre feet of water, much of which went into San Luis Reservoir. The permits of this reservoir are also burdened with the same water quality obligations in the Delta as are the upstream dams, reservoirs and export facilities. Instead of using this water to meet their project permit conditions, the SWRCB allowed it to go to consumptive use and "re-balanced away" the balancing done when the standards were adopted and implemented.

Even if the drought is somehow an unexpected, impossible to plan for string of events, the DWR and USBR's failure to meet the southern Delta salinity standards remains independent of the drought. As the projects merrily skip along ignoring these obligations, we can see the utter contempt they have for them by the fact that the projects did not even petition for relaxation of them in the myriad of other temporary urgency change petitions during the drought, rather they simply violated them almost the entire year. These and other fishery-related violations are well documented and set for the recent CalSPA complaint filed with the Board.

The only time the SWRCB has made a showing of enforcing the projects' permit obligations was the 2006 CDO process against DWR and USBR (see attached Order WR 2010-0002). That process gave us the harsh regulatory mandate to "obviate future" water quality violations; a condition so onerous that it was never challenged by the projects. After extending and softening the conditions in the CDO, the ultimate deadline for meeting the southern Delta salinity standards passed without even a comment by the entities under the CDO or the regulator who imposed it. At the current time, DWR and USBR are in violation of the CDO by not producing a plan to meet the southern Delta salinity standards within 180 days of January 1, 2013 [see WR 2010-0002 at pages 21-22].

The point being of course that the projects are seeking to alter their operations without first setting forth how they would meet the current obligations, much less the state law mandated new requirements (the as-yet undetermined new fishery flow obligations). The process has once again been turned on its head; instead of forcing the projects to meet their obligations and then see how they might maximize exports, the SWRCB is contemplating the approval of something to maximize exports and deferring both the obligations and the compliance with them for a later time. The last time the Board did this (Delta Accord/Principles for Agreement/1995 WQCP/D-1641) we ended up with a "no-net loss" permit condition which was in effect during the time the fisheries crashed.

There is no rational interpretation of the facts which indicates the projects can secure a change in point of diversion. There is no information indicating that the change can be made

without injuring other legal users, and as laid out above, the facts are the opposite. The projects do not meet their current obligations and thus beneficial uses are not being protected. With the petitioned for change, water quality will get worse and beneficial uses will be harmed further.

Lastly, the hearings leading to D-1641 included some 82 days. In those hearings, multiple parties from across the state participated in the extensive presentation of evidence and cross-examination of the numerous expert and non-expert witnesses. The hearings were to determine the extent to which DWR and USBR would be responsible to meet the standards in the 1995 WQCP. The subject Change Petition deals with the very same issues; to what degree will such a change affect DWR and USBR operations and compliance with current and to-be-developed standards. The notion that statewide and local interests throughout the state could effectively address these issues in some truncated hearing in April of 2016 indicates the SWRCB is not serious in addressing the protection of beneficial uses but is perhaps more concerned with facilitating a reallocation of water rights. The potential alternatives by which the projects would meet their obligations would be so numerous as to require significant time and effort. A hearing on a change petition to fundamentally alter the operations of the Delta during a drought and as various fish species approach extinction would require hearings over a year at the very minimum.

SDWA strongly recommends the SWRCB reject the Petition, enforce current project obligations and move forward in developing a new Bay-Delta Water Quality Control Plan.

Very truly yours,

JOHN HERRICK

Attachments
cc: Mr. Tom Howard
Dante Nomellini, Esq.
Dean Ruiz, Esq.

Attachment 1

Letter from U.S. EPA dated 26 August 2014 to National Marine Fisheries Service, West Coast Region

Re: Draft Environmental Impact Statement for the Bay Delta Conservation Plan, San Francisco Bay Delta, California (CEQ# 20130365)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OFFICE OF THE
REGIONAL ADMINISTRATOR

Aug 26, 2014

Will Stelle, Regional Administrator
West Coast Region National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Subject: Draft Environmental Impact Statement for the Bay Delta Conservation Plan, San Francisco Bay Delta, California (CEQ# 20130365)

Dear Mr. Stelle:

The U.S. Environmental Protection Agency has reviewed the Bay Delta Conservation Plan (BDCP) Draft EIS pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. The Draft EIS explores options for a comprehensive conservation strategy to restore and protect the Sacramento–San Joaquin Delta's ecosystem health, water supply, and water quality.

As you know, the San Francisco Bay/Sacramento-San Joaquin Delta Estuary is one of the largest and most important estuarine systems on the Pacific Coast of the United States, supporting over 750 species. It is the hub of California's water distribution system, supplying drinking water to 25 million people and irrigation water to 4 million acres of farmland. The decline of aquatic resources in the Estuary, along with the corresponding impacts on urban and agricultural water districts that rely on water exported from it, present significant challenges. Recent circumstances have only underscored the importance of working together on these issues, as California is experiencing severe drought and water shortages. We believe the NEPA process is well-suited to bring all of these considerations together, including the consideration of the environmental impacts of reasonable alternatives to the BDCP as it is currently proposed. We appreciate the effort to prepare the Draft EIS, and we support your recent decision to prepare a Supplemental Draft EIS to take a closer look at these issues.

EPA fully supports the stated purpose of the BDCP effort: to produce a broad, long-term planning strategy that would meet the dual goals of water reliability and species recovery in this valuable ecosystem, and we recognize the potential benefits of a new conveyance facility. However, we are concerned that the actions proposed in the Draft EIS may result in violations of Clean Water Act water quality standards and further degrade the ecosystem.

Our comments are consistent with those we have made in conversations that have taken place over the last few years among the agencies involved in managing the Delta. Many of our comments have also been made by others, both formally and informally, throughout the process, and we believe that they reflect a developing consensus within the scientific and regulatory communities. We are committed to continuing to work with you and other stakeholders toward a project proposal that meets the dual goals

of water reliability and species recovery in the Bay Delta, and toward a well documented EIS that adequately informs decision-makers and the public, as required by NEPA.

Clean Water Act Water Quality Standards

The Draft EIS shows that operating any of the proposed conveyance facilities, which constitute Conservation Measure 1 (CM1), would contribute to increased and persistent violations of water quality standards in the Delta, set under the Clean Water Act, measured by electrical conductivity (EC) and chloride concentrations. We recommend that the Supplemental Draft EIS include one or more alternatives that would, instead, facilitate attainment of all water quality standards in the Delta. Specifically, we recommend that an alternative be developed that would, at minimum, not contribute to an increase in the magnitude or frequency of exceedance of water quality objectives, and that would address the need for water availability and greater freshwater flow through the Delta. Such an alternative should result in a decrease in the state and federal water projects' contributions to the exceedance of any water quality objectives in the Delta.

We also note that, while CM1 would improve the water quality for agricultural and municipal water agencies that receive water exported from the Delta, water quality could worsen for farmers and municipalities who divert water directly from the Delta. In that regard, we recommend that the Supplemental Draft EIS consider measures to ensure that the project would not increase concentrations of bromide around the intake for the North Bay Aqueduct at Barker Slough. In addition, we recommend consideration of whether additional measures, such as operational modifications both upstream and downstream, are needed to avoid increasing mercury and selenium concentrations and bioavailability in the Delta.

The Draft EIS indicates that CM1 would not protect beneficial uses for aquatic life, thereby violating the Clean Water Act. Total freshwater flows will likely diminish in the years ahead as a result of drought and climate change. Continued exports at today's prevailing levels would, therefore, result in even lower flows through the Delta in a likely future with less available water. We recommend that the Supplemental Draft EIS consider modified operational scenarios for CM1 alternatives that would have beneficial effects on covered fish populations during all life stages and attain water quality standards in the Bay Delta.

Habitat Restoration

The Draft EIS describes a general proposal to restore approximately 150,000 acres of wetlands, uplands, grasslands, and riparian areas in and around the Delta to offset the adverse impacts of the continued operations of the water projects. However, the Draft EIS does not indicate whether suitable acreage is available or whether restoration alone would be sufficient to recover fish populations. We are concerned over the sole reliance on habitat restoration for ecosystem recovery, recognizing that existing freshwater diversions and significantly diminished seaward flows have played a significant role in precluding the recovery of Bay Delta ecosystem processes and declining fish populations. We recommend that the Supplemental Draft EIS consider measures to ensure freshwater flow that can meet the needs of those populations and the ecosystem as a whole, and is supported by the best available science. We recommend that this analysis recognize the demonstrated significant correlations between freshwater flow and fish species abundance. We also recommend that the Supplemental Draft EIS include gradients of partial success for each habitat type to be restored, as supported by available science. The impacts

could be re-evaluated relative to each alternative (CMs2-11) in light of these gradients and the likely success rates for each habitat restoration type.

Alternatives

The Draft EIS defines the alternatives in terms of the design and capacity of the proposed conveyance structure. Each alternative is paired with a particular operational scenario. EPA agreed with this organizational construct early in the BDCP process, expecting that the Draft EIS would present a range of fully evaluated alternatives that clarifies the environmental and water supply tradeoffs being considered. The Draft EIS, however, focuses primarily on Alternative 4. It appears that the environmental impacts of certain other alternatives would be reduced if those alternatives were matched with more optimal operational criteria (for example, Alternative 5 with Operational Scenario F). Other reasonable alternatives could be developed by incorporating a suite of measures, including Integrated Water Management, water conservation, levee maintenance, and decreased reliance on the Delta.[1] Such alternatives would be consistent with the purpose and need for the project, as well as with the California Bay Delta Memorandum of Understanding among federal agencies[2] and the Delta Reform Act of 2009.

Project-level Analysis

The Draft EIS states that it includes a *project-level* analysis of environmental effects associated with CM1 (the conveyance facilities, which define the alternatives), and a *programmatic-level* analysis of 21 other Conservation Measures, including a suite of habitat restoration and aquatic stressors management initiatives. Programmatic-level inputs were used in some of the "project-level" analyses. We recommend that the Supplemental Draft EIS include project-level information and analyses for the conveyance tunnels, including the information necessary for permit decisions, to support the federal decision.

Upstream/Downstream Impacts

The federal and State water management systems in the Delta are highly interconnected, both functionally and physically. The Draft EIS does not address how changes in the Delta can affect resources in downstream waters, such as San Francisco Bay, and require changes in upstream operations, which may result in indirect environmental impacts that must also be evaluated. We recommend that the Supplemental Draft EIS include an analysis of upstream and downstream impacts.

NEPA Effects Determination

The Draft EIS presents *NEPA Effects Determinations,* but does not describe the decision rules that were used to make those determinations from the analytical information presented for each impact category. We recommend that the *NEPA Effects Determinations* and thresholds -- quantitative when possible – be provided for each category so that it is clear why some estimated impacts result in one *NEPA Effects Determination* over another. We also recommend that the Supplemental Draft EIS explain whether all metrics are considered equal in the analysis or some are weighted. Please clarify whether negative impacts in one metric category translate into an adverse determination, regardless of the other metrics. Lastly, it would be helpful to include summary tables for each impact category so that the public and decision-makers can understand the metrics and their results and how they compare among alternatives.

[1] The "Portfolio Approach" developed by a diverse set of stakeholders is one attempt to place Delta water management into the larger context of facilities investments and integrated operations. http://www.sdcwa.org/sites/default/files/files/news-center/top-issues/portfolio-based-bay-delta-conceptual-alternative_1-16-13.pdf

[2] http://www2.epa.gov/sites/production/files/documents/baydeltamousigned.pdf

Adaptive Management

The Draft EIS explains that the adaptive management program is a work in progress. The specific approach for an adaptive management program and its effect on environmental consequences is fundamental to the success of the BDCP and should be addressed during the NEPA process. We recommend that a more detailed adaptive management program be provided in the Supplemental Draft EIS, since the goal of species recovery relies significantly on an effective adaptive management program. As you develop the plan, include detailed information on the plan's objectives, explicit thresholds, alternative hypotheses, responsive actions, and designated responsible parties.

Conclusion

EPA remains committed to working with the federal and state lead agencies to develop an environmentally sound, scientifically defensible, and effective plan for restoring the Bay Delta ecosystem and achieving greater water supply reliability. Please note that, because you are preparing a Supplemental Draft EIS, which we anticipate will address many of the issues raised about this Draft EIS, including the issues we have outlined here, EPA will defer our rating until the Supplemental Draft is circulated for public review and comment. We have also enclosed more detailed comments and recommendations for your consideration.

We are available to discuss our comments and recommendations. Please send one hard, and one electronic, copy of the Supplemental Draft EIS to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at 415-947-8702. Alternatively, your office may contact Kathleen Johnson, Enforcement Division Director. Ms. Johnson can be reached at 415-972-3873.

Sincerely,

/S/

Jared Blumenfeld

Enclosure

cc: Ren Lohoefener, Regional Director, Pacific Southwest Region, U.S. Fish and Wildlife Service
David Murillo, Regional Director, Mid Pacific Region, U.S. Bureau of Reclamation

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE BAY DELTA CONSERVATION PLAN; AUGUST 25, 2014

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I. Water Quality Impacts

A. Adverse Impacts

Chapter 8 indicates that all project alternatives would result in adverse, significant, unmitigated effects to water quality and one or more beneficial uses within the affected water bodies. For example:

- The proposed changes in water management would measurably exacerbate impairment of agricultural and aquatic life beneficial uses in the South Delta and Suisun Marsh (p. 8-439);
- Bromide, chloride, dissolved organic carbon, and electrical conductivity (EC) are expected to increase due to changes in hydrodynamics as a result of the implementation of the CM1 Alternative 4 (pp.8-420, -428, -454, and -439). In addition, the feasibility of mitigation actions for EC is uncertain (p. 8-441); therefore, the net effect to overall salinity levels is unclear;
- Mercury, pesticide, and selenium exposure levels may increase and be cumulatively significant (p. 8-446, -767, -768); and
- Water quality degradation resulting from the increased pumping of freshwater from the North Delta could cause increases in water treatment costs (p. 8-420).

All Bay Delta Estuary waters are impaired due to numerous contaminants, including pesticides, manufacturing compounds, metals (including selenium), pathogens, nutrients/low dissolved oxygen, invasive species, salinity, and toxicity from unknown sources. Without adequate mitigation, these impairments would be exacerbated by any of the alternatives evaluated in the Draft EIS. Poor water quality in the Bay Delta Estuary and its tributaries adversely affects terrestrial and aquatic ecosystems, drinking water, recreation, industry, agriculture, and the local, state, and interstate economy.

Recommendation: *Discuss mitigation measures that would reduce the projected adverse impacts on water quality, and discuss whether the proposed actions would contribute to impairments of beneficial uses or further degrade water quality.*

B. Salinity (Electrical Conductivity, Chloride) and Bromide

1. Water Quality Standards Exceedances and Degradation

The Bay Delta Water Quality Control Plan (WQCP) contains EC objectives for the Delta to protect agricultural and fish and wildlife beneficial uses, and chloride objectives to protect municipal and industrial water supply beneficial uses. Bromide, a significant precursor to brominated disinfection byproducts, is subject to CALFED Drinking Water Program goals (p. 8-42). The Draft EIS estimates that EC, chloride and bromide concentrations would increase under CM1 Alternative 4, relative to the No Action Alternative and Existing Conditions for Delta locations. The document predicts increased exceedances of numeric water quality standards, which suggests that CM1 Alternative 4 would result in a loss of protection for municipal, agricultural, and aquatic life beneficial uses. Specifically, CM1 Alternative 4 would result in:

- A 17% increase in days out of compliance with the agricultural EC standard at Emmaton (p. 8-252 lines 6-7). The EC objective at Emmaton is intended to protect agricultural beneficial uses, but also has ancillary benefits to aquatic life. Increasing noncompliance days would further contribute to existing EC water quality impairments in the western Delta, and degrade beneficial use protection for agricultural and aquatic life beneficial uses.

- A 7% increase in days exceeding the municipal chloride standard (250 milligrams per liter (mg/L) mean daily maximum) at Contra Costa Canal Pumping Plant #1 (p. 8-243 line 26) and "substantial degradation during the months October through December when average concentrations would be near, or exceed, the objective" (p. 8-243 lines 33-34 and Appendix 8G, 27 Table Cl-9).

- A doubling of the frequency of exceeding the lower municipal chloride standard at Antioch and Contra Costa Canal Pumping Plant #1: "All of the Alternative H1-H4 Scenarios would result in substantially increased chloride concentrations in the Delta such that frequency of exceeding the 150 mg/L Bay-Delta WQCP objective would approximately double" compared to Existing Conditions (p. 8-429) and the No Action Alternative (Appendix 8G Table Cl-64).

- Increased EC levels in Suisun Marsh, exacerbation of the existing EC water quality impairment, and degradation of aquatic life beneficial use protection (p. 8-438 and Appendix 8H-27). "The most substantial EC increase would occur at Beldon Landing with long-term average EC levels increasing by 1.3-6.0 milliSiemens per centimeter (mS/cm), depending on the month and operations scenario, at least doubling during some months the long-term average EC relative to Existing Conditions" and the No Action Alternative (p. 8-438).

- Higher quality water to those receiving the exported water, but adverse impacts on those who rely on water directly from the Delta: "the operations and maintenance activities under Scenario H1-H4 of Alternative 4 would cause substantial degradation to water quality with respect to bromide at Barker Slough… and could necessitate changes in water treatment plant operations or require treatment plant upgrades" (p.8-420).

The EC and chloride analyses in the Draft EIS provide some confusing results. For example, the 16-year average EC concentration (mass balance) at Emmaton is 887 micromhos per centimeter (μmhos/cm) for CM7, and 935 μmhos/cm for CM8, even though outflow (an indicator of freshwater flow to the estuary) is twice as high for CM8. Similarly, chloride concentrations predicted for CM7 (mass balance and EC-chloride relationship) at Antioch on the San Joaquin River are slightly lower than those for CM8.

The water quality chapter of the Draft EIS does not evaluate the alternatives against the full suite of Water Quality Objectives for Fish and Wildlife Beneficial Uses, which are found in Table 3 of the Bay Delta WQCP. The Delta outflow objective is discussed in Chapter 5 Water Supply, and a brief discussion of Delta outflow objective is in the HCP for only the CEQA Preferred Alternative 4.

Recommendations: *Describe mitigation measures that would prevent the proposed project from resulting in increased exceedances of water quality objectives in the already-degraded Delta. These measures may include reducing exports to provide more outflow and mitigate salinity intrusion.*

Explain the differences in the predictions among CM1 alternatives, including why twice as much outflow would result in higher salinity concentrations for Alternative 8 relative to Alternative 7. Disclose the confidence intervals for the mass-balance and EC-chloride relationship approaches for predicting future concentrations of EC and chloride.

Evaluate all CM1 alternatives with respect to all water quality standards listed in Tables 1-3 of the Bay-Delta WQCP, and indicate whether each standard would be met under each alternative.

2. **Mitigation Effectiveness**

Appendix 8H "Electrical Conductivity" states that, although the modeling results show exceedences of water quality D-1641 standards, the project proponents "intend" to operate the State Water Project and Central Valley Project facilities by fine tuning reservoir storage and exports in real time to meet the standards (p. 8H-1). The water quality objectives that would be met in this manner are not specified, nor is an estimate provided of the impact of this measure on water supply. Furthermore, the Draft EIS includes the caveat that "if sufficient operational flexibility to offset chloride increases is not feasible under Alternative 4 operations, achieving chloride reduction pursuant to this mitigation measure would not be feasible under this Alternative" (p.8-430). A similar caveat is stated regarding bromide (p. 8-422). These statements suggest that the water supply exports that define the Alternative 4 operational scenario would be given higher priority than meeting water quality standards, thus rendering that scenario potentially inconsistent with the protection of beneficial uses.

Recommendations: *Clearly identify the water quality objectives that the proponents intend to meet by fine-tuning reservoir storage and exports in real time, and clearly state this intention as an enforceable commitment. Reconcile the conflicting caveats regarding operational flexibility with this commitment.*

Provide an estimate of the amount of water that would be needed to meet water quality standards during periods when the modeling predicts exceedances, and describe how the use of water for this purpose would impact water diversions for upstream and downstream users. Include a comparison against drought years.

Provide historical data to illustrate how D-1641 standards have been met in the past, including the number of times that DWR has submitted Temporary Urgency Change Petitions with the State Water Board requesting modification of requirements of D-1641 because of drought conditions.

3. Mitigation Relationship to Water Quality Standards

EPA understands that the modeling for the water quality analysis was based on an assumption that the Emmaton EC water quality standard compliance point would be moved four miles upstream to Three Mile Slough, as DWR is anticipated to request. We also understand that DWR will request that the State Water Resources Control Board include this compliance point change as part of the Phase II update to the Bay Delta WQCP. The State Board will review this request, as will the EPA. We are concerned that the intended mitigation for the water quality violations at Emmaton relies on a change in the compliance point. We consider the movement of the compliance point to Three Mile Slough a relaxation of the EC standard because it would potentially permit four miles of additional salinity intrusion into the upper estuary, which could have negative impacts on multiple beneficial uses.

Recommendations: *Explain the technical, scientific, and policy reasons for using Three Mile Slough in DSM2 modeling for assessing EC compliance at Emmaton. Describe how EC was estimated at Emmaton under the No Action Alternative and for Existing Conditions if it was not directly estimated using DSM2; and interpret the comparison of EC at Three Mile Slough in CM1 operational scenarios to EC at Emmaton.*

Identify all of the water quality standards, including EC at Emmaton, which the BDCP assumes will be modified. Disclose the process for obtaining a modification of a water quality standard.

4. Impacts of Changes to the Salinity Gradient (X2)

The salinity gradient, approximated by X2[1], has an inverse relationship with many diverse bay and estuarine fishes, including the threatened and endangered species that are the conservation targets of the BDCP. As X2 decreases (i.e., moves out to sea) habitat conditions for some species improve and relative abundance increases[2]. Because the location of X2 is closely tied to freshwater flow through the Delta, the proposed project would have a strong influence on this parameter, yet the Draft EIS does not analyze each alternative's impacts on aquatic life in the context of this relationship.

Examination of the predicted changes in monthly average X2 for each CM1 operational scenario, A through G, would help determine how the quantity and quality of estuarine habitats and relative fish abundance would change under those scenarios for multiple fish species. It would also be useful to estimate the range of monthly average X2 values (and/or monthly Delta outflow) for each alternative and compare it to the pattern of freshwater flows and salinity gradients that characterized a reference time period when resident and migratory fish populations were in comparatively better condition. The operational scenarios that more closely mimic the reference period freshwater flow and salinity gradient pattern could be expected to produce aquatic conditions and habitats that benefit native and migratory fishes and support important food web processes at all ecosystem levels.

Freshwater flow may be one of the best tools available in the short term to improve fish populations and protect aquatic life beneficial uses prior to the completion of planned restoration projects, given its widely cited importance to ecosystem recovery. Relative fish abundance responses to freshwater flow can be estimated using regression equations provided in peer reviewed literature and government reports.[3] The equations do not directly include the effects of tidal marsh and floodplain restoration on fish populations; therefore, in their current form, they would be most useful for evaluating the impacts of flow variations prior to the completion of restoration projects. We anticipate that the ability to measure the benefits of restoration projects will improve after the projects are started and measurements and monitoring data become available.

The Draft EIS does not evaluate potential downstream effects of CM1 alternatives on San Francisco Bay fish populations. The description of impacts to San Francisco Bay from Delta Outflow changes (p. 11-132) stops at Suisun Bay even though outflow affects relative abundance of San Francisco Bay fishes such as Bay shrimp, starry flounder, and Pacific Herring. Some of these populations may be negatively affected by reduced outflows associated with CM1 alternatives, and the effect of restoration CMs (2-12) on these fish populations may or may not be beneficial.

Recommendations*: Describe the estuarine salinity gradient and how it defines important aquatic habitats, including marine, low salinity zones, and migratory corridors for target fishes. Describe its relevance to important aquatic life communities, including phytoplankton and zooplankton.*

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[1] X2 refers to the distance from the Golden Gate up the axis of the estuary to the point where daily average salinity is 2 parts per thousand at 1 meter off the bottom (Jassby et. al. 1995).

[2] Jassby AD, Kimmerer WJ, Monismith SG, Armor C, Cloern JE, Powell TM, Schubel JR, Vendlinski TJ. 1995. Isohaline position as a habitat indicator for estuarine applications. Ecological Applications 5(1): 272-289;
Kimmerer, W. J. 2002. Effects of freshwater flow on abundance of estuarine organisms: Physical effects or trophic linkages? Marine Ecology Progress Series 243:39-55;
Kimmerer WJ, Gross ES, MacWilliams ML. 2009. Is the response of estuarine nekton to freshwater flow in the San Francisco Estuary explained by variation in habitat volume? Estuaries and Coasts 32: 375-389.

[3] United States Fish and Wildlife Service, September 27, 2005, Recommended Streamflow Schedules To Meet the AFRP Doubling Goal in the San Joaquin River Basin (FWS 2005), pp. 27 *available at:*
http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/docs/sjrf_spprtinfo/afrp_2005.pdf;
Jassby AD, Kimmerer WJ, Monismith SG, Armor C, Cloern JE, Powell TM, Schubel JR, Vendlinski TJ. 1995. Isohaline position as a habitat indicator for estuarine applications. Ecological Applications 5(1): 272-289;
Kimmerer, W. J. 2002. Effects of freshwater flow on abundance of estuarine organisms: Physical effects or trophic linkages? Marine Ecology Progress Series 243:39-55;
Kimmerer WJ, Gross ES, MacWilliams ML. 2009. Is the response of estuarine nekton to freshwater flow in the San Francisco Estuary explained by variation in habitat volume? Estuaries and Coasts 32: 375-389.

Describe the Delta outflow objective in the Water Quality Chapter, including a description of the "X2" concept, recognizing that the "X2" concept provides the foundation for the Delta outflow objective and is the basis for protecting springtime estuarine habitat for resident and migratory fishes, which are the targets of the BDCP.

Include a year-round salinity gradient and/or Delta outflow analysis for each CM1 alternative. This can be accomplished using information already generated for the BDCP EIS.[4] Compare the results to a defined and supported reference period to determine how closely each scenario may mimic the salinity gradient and/or monthly outflow pattern. Alternatively, use three-dimensional modeling that maps the salinity gradient within the estuary on a monthly time step for all CM1 alternatives. This would make it possible to estimate the size and location of salinity zones, such as the low salinity zone, under different operational scenarios; however, it is not clear if this approach could be easily compared to a reference period using the same modeling tools.

Include at least one-dimensional salinity gradient and Delta outflow analyses for the fish species evaluated in Chapter 11. Define and support an agreed upon relative reference period for the analyses.

Use the referenced flow-abundance tools to predict a range of potential fish abundance changes under each operational scenario for CM1. The Kimmerer 2002 relationships should be used to evaluate potential downstream impacts to Bay fish populations. Provide the results of these analyses and explain that they do not include benefits of habitat restoration or entrainment reductions from minimizing use of south Delta pumping facilities when they cause the most harm for salmonids.[5]

C. Potential Increases in Methylmercury Formation and Transport

EPA agrees that restoring wetlands and floodplains in and near the Delta is an essential component of reviving the Estuary's health; however, nearly all the locations targeted for habitat restoration in the Delta have been, or are at risk of being, contaminated with mercury from historical mining sources and ongoing air deposition from industry. Sport fish in the Delta are already burdened with higher concentrations of mercury than anywhere else in the State,[6] and the presence of this powerful neurotoxin in the food web poses a threat to public health and the ecosystem as a whole. For this reason, health advisories have been issued for the Delta and several upstream rivers.

The BDCP relies heavily on proposed restoration in Yolo Bypass to mitigate for the adverse impacts of the CM1 alternatives on fish populations, noting that the Bypass is one of the places in the Delta that shows the most potential for providing floodplain benefits for fish, including salmon (BDCP p. 2-80). The Draft EIS, however, says that the Yolo Bypass may contribute up to 40% of the total methylmercury production in the entire Sacramento watershed (p. 25-63). The State Water Board has also observed that, when the Yolo Bypass is flooded, it becomes the dominant source of methylmercury to the Delta, and that restoration activities could exacerbate the existing mercury problem.[7] While EPA strongly supports restoration of aquatic habitat in the Delta, caution must be exercised to ensure that it

[4] Information needed to support salinity gradient and Delta outflow analyses appears to have been developed by completed modeling efforts for BDCP. The salinity gradient and low salinity zone are discussed in the HCP; X2 and Delta outflow are CALSIM outputs; a 3-dimensional model (UnTRIM) was used in Appendix 5A (Part D, Attachment 3 "Evaluation of Sea Level Rise Effects using UNTRIM San Francisco Bay-Delta Model") to predict salinity gradient changes in climate change scenarios; and a spring Delta outflow comparison was provided for the longfin smelt analysis in the Draft EIS. The longfin smelt analysis in Chapter 11 includes a comparison of average monthly spring Delta outflow between CEQA and NEPA baselines and the H1 – H4 operational scenarios.

[5] For more information, see EPA's comments to the State Water Resources Control Board regarding the State's effort to improve aquatic life beneficial use protection by modifying and/or adopting new water quality standards for flow in the Delta. See *l*etter from US EPA to SWRCB, December 11, 2012, available at http://www2.epa.gov/sites/production/files/documents/sfdelta-decpost-workshopltr-dec2012.pdf; EPA presentation to SWRCB available at http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/wrkshp2/erinforesman.pdf

[6] SWAMP- Surface Water Ambient Monitoring Program http://www.waterboards.ca.gov/water_issues/programs/swamp/rivers_study.shtml

[7] P. 29 Periodic Review of the 2006 Water Quality Control Plan, State Water Resource Control Board http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/periodic_review/docs/periodicreview2009.pdf

does not result in unintended consequences that adversely affect water quality. Minimizing the formation and mobilization of methylmercury in wetlands is critical. Given the already high levels of mercury in the system, restoration in certain locations should be avoided if methylmercury production cannot otherwise be reduced or mitigated. For this reason, the BDCP's restoration acreage goals may not be attainable.

The DEIS underestimates the potential impacts of methylmercury on covered species and public health. Quantification of the methylmercury contributions from the proposed restoration were not provided in the document (this is acknowledged on p. 8-260), and the methylmercury NEPA Effects determinations rely on the success of unproven mitigation methods (CM12) that are currently under development to minimize formation and transport of methylmercury from Yolo Bypass, Cache Slough Complex, and the Cosumnes River Restoration Opportunity Areas (p.3-154). In the AQUA-8 "Effects of Contaminants Associated with Restoration Measures" evaluation of the impact of methylmercury, selenium, and other contaminants on delta smelt, the analysis of Alternative 1A concludes that methylmercury impacts to Delta smelt and winter-run Chinook salmon are "uncertain" (p. 11-277, 11-343). The analysis for Alternative 1A (and subsequent alternatives)[8] states that restoration actions (CM2, CM4–CM7, and CM10) may increase production, mobilization, and bioavailability of methylmercury in the aquatic system, but that many effects are unknown at this time.

Research studies in the Yolo Bypass that were conducted by the US Geological Survey found methylmercury production values in Yolo Bypass managed wetlands and agricultural lands to be "among the highest ever recorded in wetlands."[9] The Yolo Bypass mercury bioaccumulation study[10] reported that all caged and wild fishes sampled had methylmercury fish tissue concentrations greater than the small fish tissue objective in the Delta Methylmercury TMDL (0.03 micrograms per kilogram (µg/kg) wet weight).[11] In addition, 59% of wild fishes and 82% of caged fishes had methylmercury concentrations greater than 0.20 µg/g wet weight, which is a threshold above which fish health is impaired.[12] Finally, 52% of caged fish and 26% of wild fish had fish tissue concentrations greater than observed thresholds that reduce bird reproduction[13] and greater than the large fish tissue objective (intended to protect human health and wildlife consumers). These results suggest that increasing production, transport, and bioavailability of methylmercury through restoration actions could result in adverse effects to human health and the environment.

The Environmental Justice Chapter of the Draft EIS provides conflicting information and conclusions regarding whether or not the BDCP alternatives would create conditions conducive to increased bioaccumulation of mercury in Delta fish species, and whether such bioaccumulation would be cumulatively significant for increasing the body burden (pp. 28-22, 25, 103) in fish. The USGS Yolo

[8] Analyses for subsequent alternatives refer back to the analysis for Alternative 1A.

[9] Alpers, C.N., Fleck, J.A., Marvin-DiPasquale, M., Stricker, C.A., Stephenson, M., and Taylor, H.E., Mercury cycling in agricultural and managed wetlands, Yolo Bypass, California: Spatial and seasonal variations in water quality: Science of The Total Environment, Volume 484, 15 June 2014, Pages 276–287 http://dx.doi.org/10.1016/j.scitotenv.2013.10.096.

[10] Ackerman, J. "Agricultural Wetlands as Potential Hotspots for mercury bioaccumulation: experimental evidence using caged fish" Environmental Science and Technology 2010, 44, 1451-1457.

[11] The Delta Mercury and Methylmercury TMDL contains two fish tissue objectives that target specific beneficial uses. The average methylmercury concentrations shall not exceed 0.08 and 0.24 mg methylmercury/kg, wet weight, in muscle tissue of trophic level 3 and 4 fish, respectively (150-500 mm total length). These objectives are protective of (a) people eating 32 g/day (eight ounces, uncooked fish per week) of commonly eaten, legal size fish, and (b) all wildlife species that eat large fish. Small fish (less than 50 mm in length) – 0.03 mg methylmercury/ kg, wet weight, in muscle. The average methylmercury concentrations shall not exceed 0.03 mg methylmercury/kg, wet weight, in whole fish less than 50 mm in length. Large fish (150 – 500 mm total length) – 0.08 and 0.24 mg methylmercury/ kg, wet weight, in muscle. These objectives target protection of sensitive wildlife that eat fish. http://www.swrcb.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2010-0043_res.pdf.

[12] Frayer, W. E.; Peters, D. D.; Pywell, H. R. Wetlands of the California Central Valley status and Trends: 1939 to mid-1980's; U.S. Department of the Interior, Fish and Wildlife Service: Washington, DC, 1989.

[13] Albers, P. H.; Koterba, M. T.; Rossmann, R.; Link, W. A.; French, J. B.; Bennett, R. S.; Bauer, W. C. Effects of methylmercury on reproduction in American kestrels. Environ. Toxicol.Chem.2007, 26, 1856–1866; Burgess, N. M.; Meyer, M. W. Methylmercury exposure associated with reduced productivity in common loons. Ecotoxicology 2008, 17, 83–91, as cited in Ackerman, J. "Agricultural Wetlands as Potential Hotspots for mercury bioaccumulation: experimental evidence using caged fish" Environmental Science and Technology 2010, 44, 1451-1457.

Bypass bioaccumulation study referenced above showed that the majority of wild and caged fishes had methylmercury tissue levels above the public health threshold for trophic level 3 fish and very close to the public health threshold for trophic level 4 (large) fish. Although the Delta is posted with fish advisories, people who rely on fishing for subsistence may consume more than the advisory recommends. Although the Draft EIS acknowledges that "restoration actions are likely to result in increased production, mobilization, and bioavailability of methylmercury in the aquatic system" (p. 25-64), it concludes that there would be no adverse effects on public health to any populations (p. 25-64, p. 28-22). This conclusion is inconsistent with the potential for increased methylmercury production, bioaccumulation, and effects to Environmental Justice communities, and the proposed mitigation actions described do not address the potential for significant negative effects to human health.

Recommendations: *Acknowledge that particular areas may not be suitable for restoration or that the acreages of proposed restoration may need to be reduced if such areas prove to be large contributors of methylmercury to the Delta ecosystem.*

Summarize recent research and current literature relevant to the potential for methylmercury impairment under existing conditions and future conditions; the potential impacts on covered fishes that use the Yolo Bypass; and the potential for bioaccumulation impacts to higher order species and human health.

Describe the existing methods that show potential for reducing formation and transport of methylmercury, and the CMs to which they could be applied. Further describe the range of potential reductions that could be expected from CM12 methods for minimizing methylmercury formation and transport.

Reconcile the Draft EIS's conflicting conclusions regarding the likely impact of the BDCP alternatives on the conditions conducive to bioaccumulation of methylmercury, and provide the basis for these conclusions.

Describe and commit to water column and fish and invertebrate tissue monitoring for mercury and methylmercury to support adaptive management actions. Include a commitment to ensure that adequate warning signs are posted in appropriate languages regarding the risks of consuming fish caught in the Delta, and provide further outreach to minority populations about these risks. Such outreach should include meaningful involvement by the affected populations.

D. Selenium

Soils on the west side of the San Joaquin Valley are high in selenium. As a result, it is present in agricultural drainage and enters the Delta in the San Joaquin River at Vernalis. When mobilized in the environment and transformed to organic, bioavailable forms, selenium is highly bioaccumulative and can be toxic to organisms at very low levels of chronic exposure. The BDCP proposes to bring additional reliable water to the west side of the San Joaquin Valley. This would result in a greater volume of water and greater loads of selenium being discharged to the San Joaquin River. Although available data show that the maximum selenium concentration at Vernalis is not exceeding the current water quality objective of 5 micrograms per liter (μg/L)[14] (p. 8-96), the operations of the proposed project would contribute significantly more selenium-laden San Joaquin River water to the Delta (p. 8-226). In addition, EPA is in the process of updating its national recommended chronic aquatic life criterion for selenium in freshwater to reflect the latest scientific information, which indicates that toxicity to aquatic life is driven by dietary exposures. As of this writing, a peer review draft of the

[14] 4-day average for above normal and wet year types and a monthly mean for dry and below normal water year types.

updated criterion is undergoing public review, with comments due to EPA in July 2014. Following consideration of comments received, the draft criterion will be revised, as appropriate, and released as a draft criterion for public review.

EPA is concerned that the potential effects of selenium on covered species, especially green sturgeon, are underestimated in the Draft EIS. The analysis discusses increased residence time of selenium in Suisun Bay and concludes that the impacts of the proposed restoration measures on green sturgeon are "not adverse"; but does not discuss the south Delta, which would receive increased loads of selenium under all CM1 alternatives (p. 11-526). The increased loads, combined with increased residence time, could lead to greater selenium absorption in clam tissue, which is a primary food item of sturgeon (p. 11-257). Adverse effects of elevated selenium on early life stages of green sturgeon have been documented[15].

Likewise, impacts of increased selenium loads to salmonids are not adequately addressed in the Draft EIS. Although salmonids do not eat clams, they are sensitive in all their life stages (figure 12 in Presser, Luoma 2010).[16] One objective of the San Joaquin River Restoration Project (SJRRP) is to manage the river to restore salmon migration. The increased drainage of selenium-enriched water from the West side of the San Joaquin Valley that would likely result from the BDCP could compromise this effort.

Recommendations: *To mitigate for the project's impacts to selenium levels in the estuary as a result of the BDCP operations, consider reviving and funding the Bureau of Reclamation's Land Retirement Program[17] to remove from cultivation and irrigation large areas of selenium laden lands on the West side of the San Joaquin Valley. This would save irrigation water, reduce discharges of selenium into the San Joaquin River basin, and advance attainment of selenium reduction targets[18] set by EPA and the Central Valley Regional Water Quality Control Board. Evaluate the extent to which restoration of these "retired" lands to the native plant community could also contribute to the recovery of threatened and endangered plants and animals listed by FWS. Consider analyzing the cost/benefit of implementing treatment technologies vs. land retirement. Although cost/benefit analyses are not required under NEPA, such an analysis may be useful to decision makers and the public in this case.*

Reanalyze the proposal to develop wetlands as part of the conservation plan, taking into account the increased amount of agricultural drainage water from selenium-enriched lands that would enter these areas in the Delta as a result of BDCP operations, and the potential for selenium build-up and availability.

Discuss hydrodynamics and increased residence time of selenium in the San Joaquin River in the southern Delta and its potential impact on clam uptake of selenium, bioaccumulation in sturgeon, and the potential for population effects.

Reference and summarize the available literature regarding the impacts of selenium on sturgeon, especially with respect to early life stages, and consider such impacts in the analysis of increased selenium loading.

The evaluation of the Alternatives should consider the objectives of ongoing or proposed projects and programs that are intended to improve Bay Delta water quality and fish and aquatic resources. Disclose

[15] Linares, J., Linville, R. Eenennaam, JV, Doroshov, S. 2004 Selenium effects on health and reproduction of white sturgeon in the Sacramento-San Joaquin estuary. Final Report for Project No. ERP-02-P35.
[16] Presser TS and Luoma SN 2010 Ecosystem-Scale Selenium Modeling in Support of Fish and Wildlife Criteria Development for the San Francisco Bay-Delta Estuary, California USGS Administrative Report.
[17] http://www.usbr.gov/mp/cvpia/3408h/index.html
[18] http://www.gpo.gov/fdsys/pkg/FR-2000-05-18/html/00-11106.htm

potential conflicts with such projects or programs, as well as ways in which such conflicts could be avoided or minimized. In particular, the potential for competing management objectives between the BDCP and the SJRRP should be comprehensively analyzed and described.

E. Additional Water Quality Impacts

The conclusion that there would be no impact to dissolved oxygen concentrations in reservoirs (p. 8-192, lines 6-15) is unsupported given that three major reservoirs are predicted to experience a 10% increase in dead pool under the No Action Alternative.

Recommendation: *Describe how predicted dead pool conditions in reservoirs may impact dissolved oxygen concentrations and other contaminant concentrations that may increase in these extreme conditions, and revise the impact conclusions, as appropriate.*

It is not clear whether residence time was considered in the impact assessment of water quality contaminants such as pesticides and metals. It appears that southern Delta residence times would increase due to increased use of the north Delta pumps (and decreased use of south Delta pumps), limiting freshwater inputs to, and movement of water in, the south Delta. These conditions could increase residence time of water moving through the southern Delta, which would increase aquatic life exposure to contaminants such as pesticides and selenium.

Recommendation: *Explicitly state whether or not residence time was included in assessments of contaminant impacts on aquatic life and other beneficial uses in the water quality analysis. If residence time was not considered, explain why it was not included and how increasing residence time could increase negative effects of contaminants as a result of CM1 operations.*

II. Fish and Aquatic Resources

A. Aquatic Resources Beneficial Uses

Data and other information provided in the Draft EIS indicate that that all CM1 alternatives may contribute to declining populations of Delta smelt, Longfin smelt, green sturgeon, and winter-run, spring-run, fall-run and late-fall run Chinook salmon. Impact analyses in Chapter 11 show that entrainment, rearing, and migration conditions for these species are estimated, for many of the action alternatives, to be similar to, or worse than, existing conditions and sometimes worse than the future no action condition. Some of the NEPA effects that are described as "not determined" for some alternatives are very similar to effects that are described as "adverse" for other alternatives. Data regarding the impacts on fish is provided in various tables, and the summary statements made in the text do not always accurately reflect the information in those tables.

1. Longfin Smelt Abundance

Long-term and recent sharp declines in fish abundance have been cited by the lead federal agencies, their partners, and EPA as evidence of collapse in the Bay Delta ecosystem. Longfin smelt relative abundance is estimated to decline for all but one of the CM1 alternatives in most water year types (and in the average of all water year types) when compared to *Existing Conditions*.[19] Alternative 8 is the only alternative that has a predicted relative abundance increase for Longfin smelt relative to *Existing Conditions*. In comparison to the *No Action* Alternative, four CM1 alternatives are predicted to result in declines in the Longfin smelt abundance index, while five CM1 alternatives are predicted to result in positive changes to that index. Despite these predictions, the Draft EIS concludes that the

[19] Table 11-1A-8 page 11-297 "Estimated differences between scenarios for longfin smelt relative abundance in FMWT or Bay Otter Trawl,", Table 11-2A-7 page 11-764, Table 11-3-7 page 11-1097, Table 11-4-8 page 11-1308; Table 11-5-7 page 11-1742; Table 11-6-8 page 11-1951; Table 11-7-7 page 11-2227, Table 11-8-8 page 11-2492; Table 11-9-8 page 11-2768.

impact on Longfin smelt abundance would be "not determined" for all CM1 alternatives for the NEPA effects determination. This conclusion disregards the predicted differences among the alternatives in comparison to the *No Action Alternative,* and the predominantly negative impacts in comparison to *Existing Conditions*.

2. Entrainment of Juvenile Delta Smelt

The summary table on page 11-55 of the Draft EIS states that Alternative 4's flow-related effects on fish would lead to "beneficial impacts" with respect to entrainment of Delta smelt. While the prediction for Alternative 4 shows somewhat less entrainment in comparison to the No Action Alternative, the predicted difference is much smaller for juveniles than for adults, and Alternatives 1, 2, 7, and 8 are predicted to result in substantially less entrainment at all life stages. Compared to Existing Conditions, Alternative 4 is predicted to result in *increased* entrainment of Delta smelt, especially juveniles. It is unclear how increases in juvenile entrainment would result in overall beneficial impacts. Entrainment estimates provided in the Draft EIS show reductions in adult entrainment, but increases in juvenile entrainment for all Alternatives except Alternatives 7 and 8, compared to Existing Conditions, and for Alternatives 3 and 5, compared to the No Action Alternative. The discussion in the text provides the caveat that "entrainment is expected to remain at or below the levels currently experienced by fish… there are very few instances where there would be increases, but these are substantially offset by decreases during other periods" (p.11-53).The analysis does not describe the relative importance of reducing entrainment of each life stage (adult and juvenile) to the overall population. No comparison among alternatives is provided, nor does the Draft EIS explain why some alternatives, such as Alternatives 7 and 8, show much larger reductions than other alternatives in both juvenile and adult entrainment.

3. Impacts on Delta Smelt Rearing Conditions

The Draft EIS forecasts changes to rearing conditions for Delta smelt by estimating the change in available fall abiotic habitat with and without estimated habitat restoration benefits relative to the two baselines: Existing Conditions and No Action Alternative. CM1 alternatives with "Fall X2" operational criteria are predicted to increase fall rearing habitat relative to the No Action Alternative. These include CM1 Alternatives 2, 4 H4, and 5-9. Alternatives 6 (isolated facility, eliminates south Delta exports) and 7 (enhanced flows) show the highest predicted increases in fall rearing habitat. The absolute values of fall rearing habitat or significance thresholds are not provided.

Recommendations: *Modify operational scenarios for CM1 alternatives to develop at least one alternative that would have more certain and beneficial effects on covered fish populations during all life stages.*

Present the predicted impacts to each of the covered fish species and impact categories (entrainment, spawning, rearing, migration), for all the alternatives and baselines in comparative form, sharply defining the issues and providing a clear basis for choice among options by the decision-makers and the public (40 CFR 1502.14).

Provide absolute value estimates and proportional changes, in addition to relative changes from baselines, for predictions under each CM1Alternative.

Describe the scientific basis of, and uncertainty associated with, any assumptions made in the analysis, including in the development of the No Action Alternative. This may include, for example, data regarding current entrainment levels of all covered fish species at all life stages in all water year types.

B. NEPA Effects Determinations

The NEPA Effects Determinations provided in the Draft EIS are not always consistent with the impacts described. We list a few examples below.

- **Alternative 1 AQUA-5: Effects of Water Operations on Rearing Habitat for Delta Smelt:** The description of impacts reports a 22% loss of rearing habitat (p. 11-265), which suggests that the impact should be considered adverse if proposed habitat restoration does not produce anticipated benefits. Instead, Table 11-1A-SUM2 (page 11-16) lists the NEPA Effects Determination as "Not Determined." The NEPA Effects discussion on page 11-265 does not explicitly state that the NEPA Conclusion is "not determined."
  Alternative 1 AQUA-21 Effects of Water Operations on Entrainment of Longfin Smelt: The description of impacts shows that entrainment is estimated to increase for juvenile Longfin smelt in dry (14%), below normal (46%), and above normal (33%) water year types (Table 11-1A-6), and the ***Summary*** text on page 11-295 states, "It is concluded that these changes in Longfin smelt entrainment would be adverse under Alternative 1A." The subsequent ***NEPA Effects*** statement comes to a different conclusion, "The overall effect of the Alternative 1A operations scenario would not be adverse to Longfin smelt." Table 11-1A-SUM2 also lists the NEPA conclusion for entrainment of Longfin smelt as "not adverse."
- **Impact AQUA-22: Effects of Water Operations on Spawning, Egg Incubation, and Rearing Habitat for Longfin Smelt.** The NEPA Effects discussion predicts reductions of 8 to 10 percent in relative abundance of Longfin smelt for Alternative 1A, suggesting an adverse impact on this species from Alternative 1A. No NEPA conclusion is explicitly stated in this section (p. 11-295); however, Table 11-1A- SUM2 (page 11-16) lists the NEPA conclusion as "not determined."

Furthermore, throughout the document, different NEPA Effects Determinations are provided for similar impact descriptions. For example, in the discussion of "Effects of Water Operations on Migration Conditions for Winter-Run Chinook Salmon", the Draft EIS concludes that Alternatives 1 and 8 would have "adverse" NEPA Effects and Alternatives 7 and 4 would have "not determined" NEPA Effects, even though the estimated NEPA effects are quantitatively similar for the multiple metrics evaluated. It is not apparent how the lead agencies decided that one impact was beneficial and another adverse.

Recommendations: *Describe the decision making process and decision rules used to make NEPA Effects Determinations from the analytical information presented for each impact category. Define the NEPA Effects Determinations and provide thresholds -- quantitative when possible -- for each category so that it is clear why some estimated impacts result in one NEPA Effects Determination over another. Explain whether all metrics are considered equal in the analysis or some are weighted. If negative impacts in one metric category translate into an adverse conclusion, regardless of the other metrics, this should be disclosed. Include summary tables for each impact category so that the reader can see the metrics and their results and how they compare among alternatives.*

Compare the NEPA Effects Determinations with the narrative text describing the metrics and NEPA Effects among all alternatives for each impact category (e.g., AQUA-42 above) to ensure that decision rules and methods are used consistently.

III. Analytical and Presentational Issues

A. Defining the Project Proposal

The proposed project evaluated in the Draft EIS is not fully defined. EPA is aware that interagency discussions with the project proponents regarding key aspects of the proposed project are ongoing. Many of the undefined aspects of the BDCP are fundamental to the potential environmental impacts of

the proposal. For example, it is EPA's understanding that potential agreement, in advance, to a certain range of exports is under consideration in the HCP discussions. While an Implementation Agreement has been released for public comment, it is incomplete and is still being discussed by the involved parties. The Implementation Agreement's financing and decision making elements are important for public disclosure because they affect the likely implementation and success of mitigation and environmentally beneficial activities, yet these effects are not described for public review in the DEIS.

In addition, given the large scale nature of the construction activities associated with the BDCP, "minor" changes in proposed project design or operation can make a significant difference in the potential environmental impacts.

Recommendation: *Fully describe the proposed project and reasonable alternatives, including information that is integral to decisions that are being made about the proposed project design and operations.*

The Draft EIS explains that the adaptive management program is a work in progress (p. 3D-9, BDCP p. 3.4-32). The specific approach for an adaptive management program and its effect on environmental consequences is a fundamental issue that should be addressed during the NEPA process. Given that species recovery depends largely on the success of the adaptive management program, it is essential that a more fully formulated adaptive management program be described in the EIS.

Recommendation: *Describe the adaptive management program in detail, including clear objectives, explicit thresholds, alternative hypotheses, and designated responsible parties. In addition, explain any limitations imposed on the adaptive management program by the Implementation Agreement, and explain how those limitations affect the integrity of the adaptive management program.*

B. Alternatives Analysis

The Draft EIS states that alternatives in the document are "evaluated at an equal level of detail, as required by NEPA" (p. 3-5); however, the lead federal agencies' Progress Assessments indicate that the operational components of the alternatives were subjected to different levels of analysis. For example, iterative modeling runs were conducted for Operational Scenario H (solely associated with the CEQA Preferred Alternative 4) that were not run for other Operational Scenarios.

The Draft EIS defines the Alternatives in terms of the design and capacity of the proposed conveyance structure. Each alternative is then paired with a particular operational scenario. EPA agreed with this organizational construct early in the BDCP process, expecting to see a range of alternatives that could present the environmental and water supply tradeoffs being considered. Instead, the DEIS focuses primarily on Alternative 4. It appears that the environmental impacts of certain other alternatives would be reduced if those alternatives were matched with more optimal operational criteria (for example, Alternative 5 with Operational Scenario F); however, the DEIS does not attempt to optimize the other alternatives for environmental and water supply benefits. Other reasonable alternatives could be developed by incorporating a suite of measures, including water conservation, levee maintenance, and decreased reliance on the Delta.[20] Such alternatives would be consistent with the purpose and need for the project, as well as with the California Bay-Delta Memorandum of Understanding among federal agencies[21] and the Delta Reform Act of 2009.

[20] The "Portfolio Approach" developed by a diverse set of stakeholders is one attempt to place Delta water management into the larger context of facilities investments and integrated operations.

[21] http://www2.epa.gov/sites/production/files/documents/baydeltamousigned.pdf

Recommendations: *Work with State and federal partners to modify and further analyze the proposed Operational Scenarios to improve the precision and utility of the aquatic life analyses for all the operational alternatives.*

If differences in the level of analysis remain among the Alternatives, disclose, and explain the reason for those differences.

Evaluate the environmental impacts of pairing each Alternative with more optimal operational criteria.

C. Comparison of Alternatives

The Draft EIS does not clearly present the alternatives and their respective environmental impacts in a clear and comparative manner. Because technical results are not synthesized and displayed in a comparative format, it is difficult for the reader to compare the predicted effects of CM1 alternatives.

Further compounding the difficulty is the fact that the Draft EIS uses two very different baselines (Existing Conditions and No Action), pursuant to CEQA and NEPA regulations, and neither baseline is clearly defined. The assumptions that inform the baseline descriptions are spread throughout the document (Chapter 4, Appendix 4D, Appendix 5A, and Appendix 3A). Although Chapter 4 attempts to summarize the baselines, the summary is confusing, and references appendices that are hundreds of pages long. The baseline assumptions form the basis for all impact assessments; therefore, their lack of clarity creates an underlying uncertainty in the document's analyses and conclusions.

The Draft EIS considers many other types of uncertainties, including those related to long-term climate change and human behavior, however, the treatment of uncertainty is confusing and exhibits a strong tendency to assume outcomes favorable to the proposed project. Uncertainties are expressed by "non-determined" NEPA conclusions, but they are not explicitly detailed in the body of the Draft EIS. EPA has repeatedly raised concerns about the treatment of uncertainty in the Draft EIS, and the Delta Independent Science Board and an independent panel commissioned by the Delta Science Program recently expressed similar critiques.[22] Notably, the Panel concluded that the Effects Analysis of the BDCP (as incorporated by reference into the EIS) is "fragmented in its presentation, inconsistent with its technical appendices, and… inadequately conveys the fully integrated assessment that is needed to draw conclusions on the Plan due to incomplete information."

Recommendations: *Include, in the body of the document, summary tables comparing the effects of all CM1 alternatives and the No Action Alternative to the applicable water quality standards and other relevant environmental impact indicators, and compare and contrast the alternatives with respect to one another in the text. This discussion should inform potential mitigation strategies by identifying which alternatives would need more or less mitigation to comply with environmental objectives.*
Clearly explain the underlying assumptions inherent in the baselines. We suggest that this be presented in Chapter 4.

Explicitly acknowledge uncertainties encountered in the analyses, explain what has been or could be done to eliminate or reduce those uncertainties, and disclose any assumptions made in the face of uncertainties that could not be eliminated.

[22] Delta Independent Science Board Review: http://deltacouncil.ca.gov/sites/default/files/documents/files/Cover-letter-v.4.pdf
Independent Science Panel Review: http://deltacouncil.ca.gov/sites/default/files/documents/files/Delta-Science-Independent-Review-Panel-Report-PHASE-3-FINAL-SUBMISSION-03132014_0.pdf

D. Scope of Impact Analysis

The scope of analysis in the Draft EIS does not fully consider upstream and downstream impacts of the proposed actions in the Delta. As evidenced by the intergovernmental response to California's ongoing drought, the state and federal water projects are functionally and physically interconnected. For example, actions that Central Valley Project (CVP) operators take from the Trinity River have implications for South of Delta CVP and SWP deliveries, and operational changes in the Delta require upstream adjustments in project operations. Based on EPA's ongoing discussions with the federal lead agencies, we understand that the U.S. Bureau of Reclamation is continuing to evaluate its broad operational response to the proposed changes in the Delta, for both near term and longer term operations. Upstream operational changes caused by BDCP implementation could have significant environmental and water supply impacts in the upstream areas, and these impacts must be disclosed in the DEIS. Similarly, the BDCP activities are expected to have impacts on downstream aquatic resources in San Pablo and San Francisco Bay, primarily by changing the magnitude and timing of outflow and by altering the mix of contaminant inputs from upstream (see discussion of selenium, above.)

Recommendation: *Explicitly recognize the integrated nature of the watershed and the water supply projects operating in the watershed, and analyze the upstream and downstream impacts, in particular to water supply and aquatic resources.*

E. Integrated Water Management

The BDCP effort has been ongoing since 2006. Initially, its broad goals were (a) the preparation of an HCP for continued operation of the state and federal water projects, and (b) a change in the mode of conveyance of export water through the Delta. As evidenced by the Alternatives Screening Criteria, as well as Water Supply Chapter 5 of the Draft EIS, there is now also a strong water supply *enhancement* component to the BDCP. That is, the project proponents appear to be anticipating that the CEQA Preferred Alternative 4 of the BDCP would result in the same or greater water exports (ranging from a decrease of 1% to an increase of 18%) than would be available in the absence of the BDCP (Table 5-9). Since the goals of a project drive the scope of the alternatives that must be evaluated in the NEPA process (as well as in the subsequent CWA Section 404 permitting process), EPA believes that a more robust discussion and evaluation of the water supply component of this project is warranted in the EIS.

California is moving quickly towards integrated water management, yet it is not clear how, as currently drafted, the BDCP conveyance component is consistent with this approach. Although the Draft EIS acknowledges California's progress in Demand Management in Appendix 1C, demand management is not incorporated into the project alternatives. Alternatives, such as the Portfolio Alternative, that proposed a more comprehensive and integrated approach to meeting the stated dual goals of the BDCP, were not evaluated.

Recommendations: *Explain how the proposed changes in conveyance and exports fit within the larger integrated water management plan for California. Include a more comprehensive consideration of, and response to, suggested alternatives such as the "Portfolio Alternative" and discuss the demand scenario driving the Delta export facilities. Include a consideration of the significant water conservation efforts Statewide and in the export areas.*

F. Habitat Restoration

We are concerned that the analysis assumes a 100 percent success rate for habitat restoration, which is not consistent with our experience, or supported by restoration ecology and conservation biology academic literature and scientific investigation. The potential adverse impacts of CM1 operations would be greater than projected in the DEIS in the likely event that restoration of the Bay Delta ecosystem is not 100 percent successful.

Recommendations: *Discuss restoration methods, performance metrics, and documented success rates for each habitat restoration type proposed.*

Work with the federal and state wildlife agencies to develop analytical methods to evaluate gradients of partial success for each habitat type. Re-evaluate the impacts of each Alternative (CMs2-11) in light of these gradients and the likely success rates for each habitat restoration type. Incorporate the results into final conclusions about the impacts of BDCP alternatives.

G. Aquatic Species Recovery

Although not explicitly stated in the Draft EIS, the primary premise of the BDCP appears to be the hypothesis that endangered and threatened fish populations in the San Francisco Estuary can be protected from further degradation by habitat restoration without increasing freshwater flow to the Estuary. As noted in the Executive Summary, restoration of more than 150,000 acres of habitat is proposed under most BDCP alternatives. Only moderate changes in freshwater flows (Delta outflow) to the Estuary are proposed under any of the alternatives. In particular, all sub-alternatives for CEQA Preferred Alternative 4) would result in less Delta outflow compared to the No Action Alternative (DEIS Table 5-9).

The habitat restoration-only premise is inconsistent with broad scientific agreement, reflected in EPA's Delta Action Plan[23], that existing freshwater flow conditions in the San Francisco Estuary are insufficient to protect the aquatic ecosystem and multiple fish species, and that *both increased freshwater flows and aquatic habitat restoration* are needed to restore ecosystem processes in the Bay Delta and protect native and migratory fish populations.[24]

The Draft EIS acknowledges the importance of freshwater flow to fish species abundance, but is inconsistent in describing its analyses of the benefits of habitat restoration versus increased freshwater flow. For example, page 11-202, lines 24 to 28 state that "although it is recognized that there are statistically significant correlations between freshwater flow and abundances of several fish species (e.g., Kimmerer 2002, FWS 2005), these correlations were not used in the EIR/EIS analysis to estimate fish population responses to alternatives because they do not directly include the effects of tidal marsh and floodplain restoration on fish populations." Elsewhere (e.g., p. 11-297), the document states that the Kimmerer 2002 model *was* used for the analysis. Correlations that do not include the effects of restoration were rejected for some analyses, but not for others.

Recommendation: *A consistent approach that recognizes the demonstrated significant correlations between freshwater flow and fish species abundance should be used to analyze all of the Alternatives. Describe the analytical approach and provide the rationale for, and implications of, any deviations from it.*

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[23] http://www2.epa.gov/sites/production/files/documents/actionplan.pdf

[24] This broad scientific agreement is illustrated in the following reports: (a) Public Policy Institute of California (2013) Scientist and Stakeholder Views on the Delta Ecosystem "a strong majority of scientists prioritizes habitat and flow management actions that would restore more natural processes within and upstream of the delta" (p. 2). http://www.ppic.org/content/pubs/report/R_413EHR.pdf
(b) State Water Resources Control Board (2010) Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem Flows Report, p.7. "Both flow improvements and habitat restoration are essential to protecting public trust resources [defined as "native and valued resident and migratory species habitats and ecosystem processes" p. 10].
(c) National Academy of Sciences Natural Resource Council Committee on Sustainable Water Management in California's Bay-Delta (2012) Report: Sustainable Water and Environmental Management in California's Bay-Delta "…sufficient reductions in outflow due to diversions would tend to reduce the abundance of these organisms ["these organisms" = 8 Bay Delta aquatic species at various trophic levels]." Page 60 and "Thus, it appears that if the goal is to sustain an ecosystem that resembles the one that appeared to be functional up to the 1986-93 drought, exports of all types will necessarily need to be limited in dry years, to some fraction of unimpaired flows that remains to be determined." Page 105
(d) California Department of Fish and Wildlife (2010) Quantifiable Biological Objectives and Flow Criteria "…current Delta water flows for environmental resources are not adequate to maintain, recover, or restore the functions and processes that support native Delta fish." Page 1 in Executive Summary

H. Project-level Decision-making

The Draft EIS indicates that it provides a *project level* analysis of the proposed changes in conveyance (CM1) and a *programmatic* analysis of other BDCP elements. The level of engineering detail provided for the tunnels is not commensurate with the level of site-specific information typically provided in an EIS for a project that would require federal permits. For example, actions that would result in impacts to aquatic resources (e.g., grading, dredging, trench and fill, boring, spoils piling, levee work, excavation, etc.) are not detailed or quantified at a project-level of detail (e.g., limited information is provided regarding acres and/or linear feet of estimated impacts to waters of the US, the volume of sediment proposed for disposal sites, or the size and length of intakes, p. 3-92; 3C-3). Where reusable tunnel material sites are estimated for the pipelines and the forebays, they are estimated only for the preferred alternative and "may" be on the order of thousands of acres (p. 3-96). We do not believe the information provided in the Draft EIS is adequate to support a full assessment of the project-level impacts and mitigation opportunities, or to determine whether the project, as proposed, would satisfy requirements for requisite authorizations and permits. Given the lack of project-level information, EPA agrees with the Corps that supplemental NEPA review will be needed before a section 404 permit or CWA section 408 "Letters of Permission" could be issued.[25]

The use of programmatic inputs to project-level analyses in the Draft EIS also substantially limited the predictive power of evaluations that were intended to provide project-level precision. For example, Section 8.4.1.7 "Constituent-Specific Considerations Used in the Assessment" states that the modeling to predict water quality effects (salinity) of CM1 operational scenarios relied on estimates of impacts from implementation of other conservation measures, specifically CM2 (Yolo Bypass Floodplain Restoration) and CM4 (tidal marsh restoration), which are evaluated in the Draft EIS at a programmatic level (p. 8-153). A representative estimate of the location and amount of tidal marsh restoration was used to predict water quality effects under each CM1 operational scenario. The programmatic nature of the CM4 input, which is based on an assumed 100 percent success rate, represents only one potential future configuration of tidal marsh restoration. The actual success rate and physical location(s) of tidal marsh restoration will have varying impacts on water quality elements such as salinity. The representative locations and amounts of CM4 and CM2 that were used for CM1 water supply modeling were not disclosed in the Draft EIS, nor has any feasibility analyses been cited that describes the availability of suitable sites in the restoration opportunity areas. The uncertainties introduced by the use of CM4 programmatic estimates raises concerns over the reliability of water quality modeling results, and whether the analysis presented in the Draft EIS is sufficient to support federal permit decisions.

Despite the substantial impact that the physical location of tidal marsh habitat restoration may have on water quality elements such as salinity, the Draft EIS does not describe how the locations for CM4 estimates were chosen or how likely it is that CM4 would result in the targeted amount of restoration (65,000 acres). A tidal marsh restoration success rate of less than 100 percent may yield very different results for predicted salinity values under each CM1 operational scenario. Typical success rates for wetland restoration have been reported to be substantially lower, e.g., on the order of 20-60 percent, and full restoration may require decades[26], yet this underlying uncertainty associated with the predicted salinity values is not characterized in the Draft EIS.

The envisioned CM-1 tunnels would require one of the largest construction projects in the nation, which would occur in the upper portion of a sensitive estuary. The proposed structure includes elements (e.g.,

[25] See Corps comments on the Draft EIS July 16, 2014 and July 29, 2014

[26] J.L. Lockwood and S.L. Pimm (1999), When Does Restoration Succeed? (Chapter 13 in Ecological Assembly Rule: Perspectives, Advances, and Retreats; and Angel Borja & Daniel M. Dauer & Michael Elliott & Charles A. Simenstad (2010) Medium- and Long-term Recovery of Estuarine and Coastal Ecosystems: Patterns, Rates and Restoration Effectiveness, Estuaries and Coasts (2010) 33:1249-1260.

intake facilities and fish screens) that have never been constructed in the Sacramento River at this scale, yet the Draft EIS provides only a qualitative analysis of construction-related water quality impacts. This is inconsistent with the intent of the Draft EIS to support project-level decision making, which necessitates project-level analysis. Assessment of construction-related impacts is a basic element of project-level analysis, yet the Draft EIS provides no quantitative estimates of the amounts of soil, sediment, and contaminants that would be discharged to water bodies during CM1 construction, nor a rationale for not including such estimates. The qualitative description of best management practices does not provide an adequate basis for a lead federal agency to write permit conditions that would be effective in minimizing the water quality impacts of constructing CM1.

Additionally, on page 8-293, in lines 35 to 38, the Draft EIS states that "Alternative 1A would result in similar potential contaminant discharges to water bodies and associated water quality effects to those discussed above for the no action alternative." It is not clear how the impacts on water quality from construction-related activities of building a 35-mile twin tunnel facility, with 5 screened on-bank intakes, would be the same as not building it.

Recommendations: *Provide quantitative information regarding project footprints and estimates of soil, sediment and contaminant discharges during construction, as well as the impacts of those discharges and measures that would mitigate those impacts.*

Provide the level of detailed information necessary to support project-level analyses and permit and authorization decision making, or specify and commit to the additional detailed work and appropriate supplemental NEPA analysis that will need to be done prior to project-level decision making.

Provide confidence intervals around predicted water quality effects of CM1 operational scenarios. Describe the methods used to identify tidal marsh habitat locations for estimating water supply effects of CM1 operational scenarios, and explain the reasons for choosing these locations. Disclose the tidal marsh habitat locations that were used to estimate water supply effects of CM1 operational scenarios. Evaluate water supply effects of CM1 scenarios using several configurations and success rates of CM4 and disclose methods and results.

Provide a summary of tidal marsh habitat success rates reported in academic literature and restoration industry reporting. Include a description of elements that drive restoration success, including location characteristics and restoration actions.

Describe the locations in Restoration Opportunity Areas that exhibit the location characteristics that optimize restoration success, would provide salinity gradient habitat benefits for pelagic native fishes and would protect municipal water supply intakes.

I. Energy Infrastructure

The Draft EIS indicates that DWR will conduct a five-to-seven year Systems Impact Study (SIS) to evaluate the electrical transmission and power needed for conveyance facilities (p. 21-22). This study is projected to be completed in time to procure the necessary power to support construction and operation of the facilities. Based on the Draft EIS, it is not clear whether the SIS could affect the conclusions summarized in the EIS, of the energy needed for the system (Table 21-11 p. 21-34) or to what extent it may influence the procurement and placement of future transmission and associated infrastructure.

Recommendations: *Provide additional details on the purpose of the SIS and how it may affect the assessment of the BDCP's energy needs as well as the procurement and placement of future transmission and associated infrastructure.*

In the absence of the SIS, disclose the assumptions made regarding electrical transmission placement and energy needs for the proposed conveyance facilities and whether the SIS could affect the analysis of environmental impacts.

Clarify, particularly with respect to impacts on terrestrial species, the level of uncertainty involved with future placement, and associated impacts, of the transmission line and related infrastructure pending the completion of the SIS.

Discuss whether the SIS would provide an opportunity to focus procurement of a guaranteed source of 100% renewable energy (e.g., contractually binding agreement) for the BDCP.

J. No Action Alternative

The No Action Alternative assumes that no BDCP actions would be undertaken, and that climate change and sea level rise would occur and water demands and diversions north and south of the Delta would increase, resulting in reduced freshwater flows into the Delta (p. 5-57). Under the No Action Alternative described in the Draft EIS, no action would be taken in response to the impacts of climate change and sea level rise on the Delta.

EPA supports the Draft EIS's recognition that climate change and sea level rise would likely result in decreased freshwater flows into and through the Delta and increased salinity intrusion; however, the assumption that, in the face of diminished overall water supply due to climate change, diversions north of the Delta would be allowed to increase seems unrealistic. Similarly, maintaining existing reservoir operations and meeting existing water supply demands is unlikely with the predicted effects of sea level rise and climate change. Comparing the CM1 alternatives to a "No Action" Alternative that assumes that no actions would be taken by *any* party to address climate change-induced reductions in overall water availability has the potential effect of exaggerating the benefits of the CM1 alternatives to the project proponents.

The Draft EIS appears to contradict itself by stating that some of the water supply delivery differences between CM1 alternatives and the No Action Alternative in the year 2060 are "*solely* attributable to sea level rise and climate change, and not to the operational scenarios themselves (emphasis added, p. 5-47, lines 20-23)." This overlooks the significant impact of the CM1 project operational scenarios, which propose exporting volumes of water approximately equal to, or greater than, those exported under existing conditions, regardless of overall water availability. In a future affected by climate change and sea level rise, with less fresh water to allocate among <u>all</u> water users, exports of such magnitude would further reduce water availability for other uses and users.

Recommendations: *Consider and incorporate into the No Action Alternative predictable actions by other parties to address the anticipated effects of increased north of Delta demands, climate change, and sea level rise on water availability. This should include consideration of any measures that would likely be taken to reduce demands both north and south of the Delta.*

Clarify that the comparisons of CM1 alternatives to the No Action Alternative isolate the effects that would be attributable to CM1, and that such effects would occur in the context of increased north of Delta demands, sea level rise, and climate change, not "in the absence of" the effects of those stressors.

K. Impacts to Wetlands

At this time, no Clean Water Act (CWA) Section 404 permit application has been submitted for discharges of dredged or fill material into waters of the United States, including wetlands, associated

with projects described in the BDCP. EPA and the Corps encourage lead agencies to proactively integrate CWA Section 404 regulatory requirements into the NEPA process to streamline environmental review by using NEPA documents for multiple permitting processes. With this in mind, EPA and the Corps met with the lead and federal state agencies multiple times over the past several years in the interest of using the BDCP EIS/EIR to inform Corps' CWA 404 regulatory decisions. Although constructive and informative, those meetings did not result in an agreement to coordinate the NEPA and CWA 404 permit reviews.

Information provided in the Draft EIS and through meetings with the lead agencies illustrate that there are substantial challenges to finding that discharges associated with Alternative CM1 are consistent with the CWA Section 404(b)(1) Guidelines. In addition, the Draft EIS acknowledges that additional analyses for NEPA may be required to support Corps CWA Section 404 permit decisions for CM1 and that additional NEPA work will be done for other conservation measures (p.1-13). The Corps also submitted comments on the Draft EIS verifying that the Draft EIS does not provide the site-specific information necessary to form the basis for a permit decision, and we agree with that comment.[27]

Recommendation: *Demonstrate that the proposed project would meet the requirements for a CWA section 404 permit.*

Wetland Extent and Jurisdiction (Section 12.3.4)
The accuracy of the CWA jurisdictional determination and estimates of impacts to jurisdictional waters need to be improved for project-level analysis. The Draft EIS is intended to provide project-level information for CM1. However, the BDCP applicants were not able conduct field delineations of wetlands and waters of the U.S. Instead the extent of wetlands and other waters in the study area was determined primarily using aerial photography interpretation in a GIS with limited (26 sites) field delineations (p. 12-146). However, the Draft EIS does not provide an estimate of GIS-based mapping accuracy as compared to the on-the-ground mapping. The Draft EIS also states that the extent of impacts to jurisdictional wetlands and other waters is likely an overestimate because actual construction footprints will be smaller than presented in the document and because some mapped wetlands and waters could be non-jurisdictional (p. 12-147). However, in some areas, when compared for other projects (e.g., Delta Wetlands project EIS) the extent of potential wetlands and waters mapped for BDCP is substantially lower. While the extent of ground disturbance may be overestimated in the document, it is likely that the extent of wetlands and waters have been substantially underestimated.

Recommendations**:** *In Section 12.3.2.4, clearly describe how the GIS-based mapping compared to the field delineations and provide an estimate of GIS mapping accuracy. Use available approved wetland delineations from other projects to supplement the GIS mapping.*

Identify a schedule for improving delineation methods completing wetland delineations on sites where DWR has access or can reasonably obtain access. Estimate direct fill impacts and secondary effects to waters using engineering drawings and cross sections.

L. Air Quality Impacts

General Conformity
The Draft EIS discloses that this project would generate emissions within multiple air basins that are federally designated as nonattainment for ozone, PM2.5 (particulate matter smaller than 2.5 microns), and/or PM10 (particulate matter smaller than 10 microns); as well as designated maintenance areas for

[27] See Corps comments on the Draft EIS July 16, 2014 and July 29, 2014

carbon monoxide (CO; p. 22-13, Table 22-4). The Draft EIS states that general conformity to the State Implementation Plan (SIP), with regard to all of these pollutants except CO, would be demonstrated through the use of a combination of mitigation measures and the purchase of offsets. For CO, conformity would need to be demonstrated through the use of local air quality modeling analyses (i.e., dispersion modeling).

The availability of sufficient offsets to demonstrate conformity for the BDCP may be limited. EPA is aware that other construction projects scheduled to take place in the BDCP project area during the BDCP's proposed construction time frame also include the purchase of offsets to demonstrate conformity. For example, two segments of the California High Speed Rail project scheduled to be constructed in the San Joaquin Valley Air District are currently pursuing a significant amount of offsets for several criteria pollutants.

The Draft EIS is not clear as to whether the federal lead agencies have made a general conformity determination. To the extent there is information regarding conformity, the Draft EIS also appears to rely on qualitative, not quantitative information. EPA interprets the general conformity rule as including all direct and indirect emissions from the federal action; therefore, the emissions from all conservation measures required as part of this federal action should be quantified and evaluated in the general conformity determination.

Recommendation: *Demonstrate that all direct and indirect emissions of the federal action, including all required conservation measures, would conform to the applicable SIPs and not cause or contribute to violations of the National Ambient Air Quality Standards (NAAQS).*

Continue to work closely with the local air districts to secure legally binding offset agreements and complete the general conformity determinations.

Include the Draft General Conformity Determination either as a detailed summary or as an appendix, and the previously referenced "Conformity Letters."

IV. Additional Issues

A. Alternatives

The reason for including maximum pumping capacity (10,600 cfs) for the State Water Project's Banks Pumping Plant in all CM1 alternatives that include north Delta intakes is not clear. The existing pumping restriction for Banks Pumping Plant for the gates of Clifton Court Forebay is intended to minimize erosive forces. Section 5.2.1.3 refers to the Corps of Engineers' Public Notice for the Bank Pumping Plant, which states that that additional permitting for the SWP's diversions would not be required so long as the SWP did not exceed a diversion of 13,250 acre feet (daily and 3-day running average). It is not clear that the Corps' goal of minimizing erosion would be met by full pumping capacity operation.

Recommendations: *Describe the Corps of Engineers' pumping restriction for the Banks Pumping Plant. Describe the circumstances under which the Banks pumping plant would be able to pump at maximum capacity, and why erosion would no longer be a significant effect from pumping.*

The description of CM2 (Yolo Bypass fisheries enhancement) in Section 3.6.2.1 (p. 3-122) does not contain information about the amount and location of planned restoration activities, disclosure of targeted flood frequency, or a description of how CM2 differs from what is already required of the Bureau of Reclamation by the 2009 NMFS Biological Opinion, Section I.6.1 (page 34 in the 2009

Biological Opinion with 2011 amendments). That Biological Opinion requires Reclamation to "provide significantly increased acreage of seasonal floodplain rearing habitat, with biologically appropriate durations and magnitudes, from December through April, in the lower Sacramento River basin, on a return rate of approximately one to three years, depending on water year type." The Biological Opinion indicates that the amount of floodplain restoration should range between 17,000-20,000 acres (excluding tidally-influenced areas), with appropriate frequency and duration.

It is EPA's understanding that CM2 is evaluated programmatically and subsequent NEPA document(s) will further define aspects of this alternative. Indeed, the Bureau has already collected scoping comments for the development of an EIS specific to CM2. It is not clear how programmatic information from this Conservation Measure was used to inform project-level impact determinations for Chapter 5 through Chapter 11 in the current Draft EIS.

Recommendations: *Provide additional available information about the planning of CM2, including floodplain acreages, frequency and duration of estimated inundation, and maps of potential locations of restoration sites.*

Summarize the potential overlap between CM2 and Section I.6.1 of the 2009 Biological Opinion so that the reader is informed about the existing requirements under Section 7 of ESA and how actions taken or proposed pursuant to the Biological Opinion may be modified by the BDCP.

Indicate whether additional water would be needed to flood the Yolo Bypass and, if so, where the water would come from.

Explain how programmatic information drawn from this Conservation Measure was used to inform project-level impact conclusions for water supply and water quality.

Recent floodplain habitat loss over the last few decades is listed as one of the reasons for proposing CM2, however, floodplain habitat loss has been occurring for more than a few decades.

Recommendations: *Provide a broader description of long-term floodplain habitat loss over a 100 year timeframe and describe how it has affected fisheries populations, with appropriate citations.*

It does not appear that a feasibility analysis was conducted to determine the availability of lands for restoration within the Restoration Opportunity Areas for CMs 2, 4-11. We understand that much of this information is confidential; however, there are multiple other draft HCP efforts moving forward that overlap with the project area, creating the potential for restoration planning conflicts on the same parcel of land.

Recommendation: *Conduct an analysis of areas that support each type of proposed habitat restoration in each of the Restoration Opportunity Areas and develop criteria for prioritizing acquisition based on potential restoration success and availability. Consider the other draft HCP efforts that overlap or are immediately adjacent to the project area to identify potential conflicts on restoration areas.*

The Draft EIS does not include a comprehensive description of the CVP and SWP with and without new north Delta intake facilities or through-Delta operations. Such information is needed to assist the reader in understanding how the water delivery system operates under Existing Conditions and how it would change under CM1 alternatives.

Recommendation: *Include a description of existing CVP and SWP operations in the Chapter 3 discussion of the No Action alternative, including how operations would change or remain static under each proposed alternative.*

The North Delta Bypass rules are difficult to understand and should be more clearly explained, particularly in the context of how flows occur currently (p. 3-181-3-209). Listing the rules does not enable the reader to understand how the new facilities would operate within the CVP and SWP system and, subsequently, how the new rules could modify the Sacramento River where new intakes would be placed and operated.

Section 3.6.4.2 provides only an annual average of how often the north Delta intakes would be used versus the south Delta intakes. For the reader to understand how the system would work, information about the potential timing, frequency, and duration of operation of each of the pumps throughout the year would be more useful.

Recommendations: *Provide information and references that describe current CVP and SWP operations. Describe modifications to reservoir operations to avoid dead pool conditions for all alternatives.*

Clearly state that BDCP's North Delta Bypass rules are intended to protect flows from only one storm pulse or, potentially, two storm pulses if the first storm arrives before December 1st. Explain that subsequent storm pulses (that are important fish cues for migration) can be exported after BDCP's new operational rules have been met.

Provide information about the potential timing, frequency, and duration of operation of each of the pumps throughout the year, including when and the conditions under which each pump would be used alone or simultaneously with the other.

Provide information about Sacramento River flows to put the North Delta Bypass rules in context. For example, describe how often flows are at the levels used as thresholds in the bypass rules to help the reader to generally understand how much flow would remain in the river versus be diverted into the new intakes. Also provide exceedance curves of Sacramento River flows and the Post Pulse Water Operations for each CM1 alternative, and consider including a chart that summarizes information in Table 3-16 (p. 3-183) describing Post Pulse Water Operations, and include Sacramento River flows for comparison.

The Export/Import ratio (also known as Export Limits in Table 3 of the Water Quality Control Plan) does not necessarily solely apply to the south Delta or explicitly exclude new points of diversion. The description of how the export/import ratio from the 1995 Bay-Delta WQCP is included in operational requirements and impacts from the CM1 alternatives (p. 3-32) may not be consistent with the description of the E/I ratio as interpreted by NMFS.[28]

Recommendation: *Describe how the E/I ratio was used in evaluations of each operational scenario for the alternatives. If the approach ultimately used in the analysis differs from the D-1641 approach, explain the reason(s) for, and implications of, using the different approach.*

[28] See NMFS Progress Assessment p. 10 http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/NMFS_Progress_Assessment_Regarding_the_BDCP_Administrative_Draft_4-11-13.sflb.ashx

State whether or not project proponents will request that the State Water Board modify the existing E/I water quality standard so it does not apply to the north Delta intakes and describe the process for having that modification approved.

Information that provides context for the Fremont Weir and Yolo Bypass Operational Criteria should be provided in the section that generally describes these operational criteria (p. 3-187). In the absence of context, it is unclear how the rules would change. For example, with no information about how often Sacramento River flows at Freeport are expected to be greater than 25,000 cfs, it is unclear how often the 17.5 and 11.5-foot elevation gates would be open and how often the Yolo Bypass floodplain restoration work would provide benefits to aquatic life using these resources.

Recommendations: *Provide cumulative distribution curves that show expected flows at Freeport under each CM1 alternative for each type of water year. Discuss the curves in the text and identify the median frequency at which Sacramento River flows at Freeport are expected to be greater than 25,000 cfs.*

Provide maps showing Yolo Bypass inundation of 3,000 to 6,000 cfs.

The Fremont Weir is described as a necessary component of CM1; however, the Draft EIS states that "CM2 is a programmatic element that will be further developed and analyzed in future technical and environmental reviews." The impacts associated with this element are not estimated and disclosed in the Draft EIS. For example, although Fremont Weir gate operational rules were developed for the purposes of modeling, the impacts of the proposed operation of the Fremont Weir do not appear to have been analyzed. Without such analysis, the impacts of CM1 cannot be fully evaluated.

Recommendation: *Describe the updates to Fremont Weir that would take place under all of the Alternatives.*

The Rio Vista Minimum Instream Flow Criteria shown on p. 3-188 are substantially different from the Rio Vista flow criteria in the 2006 Bay-Delta WQCP, which are implemented through water right permit D-1641. It is not clear how the BDCP process would result in a change to the Bay-Delta WQCP water quality standards and the water right permit.

Recommendations: *Describe the Rio Vista flow criteria in the 2006 Bay-Delta WQCP and the D-1641 permit requirements. Describe the difference in flows proposed by the BDCP and explain how they would be attained.*

If it is anticipated that water quality standards would be modified subject to a request connected to the implementation of BDCP, describe the process by which the modification would be requested and processed by the State Water Board.

The discussion in Section 5.2.2.2 "The Revised Water Quality Control Plan (2006)" does not reflect substantial work the State Water Board has completed or undertaken relevant to the 2006 Bay Delta WQCP, including the 2009 Triennial Review and its conclusions, the 2010 Flow Criteria Report, and the Phase I and Phase II Updates to the 2006 Bay-Delta WQCP. These updates include potential modifications to San Joaquin River tributary and lower San Joaquin River flows, Delta outflow objectives, export/inflow objectives, Delta Cross Channel Gate closure objectives, Suisun Marsh objectives, potential new reverse flow objectives for Old and Middle Rivers and potential new floodplain habitat flow objectives. Under recent state legislation, the State Water Board will also be evaluating changes to outflow requirements for major Delta tributaries. Although the outcome of these

State Water Board regulatory processes is unknown at this time, it is reasonable to expect that all will have significant impacts on BDCP planning and implementation.

Recommendation: *Summarize the current status of the State Water Board's update to flow objectives, including export limits and minimum Delta outflows. Updated objectives should be considered in the impacts analyses, and the document should describe how any proposed or pending updates to flow standards may affect the analyses and the implementation of the BDCP. Describe the mechanisms that would be in place in the BDCP, the Implementation Agreement or other BDCP agreements to assure implementation of future SWRCB water quality and water rights actions.*

B. Water Supply

We are concerned that the "Overview of California Water Demand" discussion in Section 5.1.1.3 provides an incomplete summary of water demand in California. For example, population growth is discussed as a reason for increasing urban water demand (p. 5-4); however, there is no reference to the statewide mandate to increase water efficiency 20% by the year 2020 for urban water uses, which is discussed in appendices to other chapters. Details are not provided regarding the rate of urban water demand growth or estimated urban water demand and use, and no basis other than population growth is provided for the conclusion that water demands will increase. Similarly, the importance of water to the agricultural economy is discussed (p. 5-4); however, there is no discussion about the importance of water to other economic sectors.

Municipal and industrial (M & I) demand north of the Delta was estimated by assuming full build out of facilities associated with water rights and contracts north of the Delta, primarily to meet projections of increasing urban water demand (p. 5-57). It is not clear whether the 81% estimated increase under the No Action Alternative, compared to Existing Conditions, takes into consideration the required water efficiency efforts for municipal and industrial water use (see table 5-8). This is important because "increased system demands by water rights holders, especially in El Dorado, Placer, and Sacramento counties" is identified as a reason for projected decreases in reservoir storage and CVP and SWP deliveries under the No Action Alternative (p. 5-61 through 5-64). An overestimation of M & I demand would result in exaggerated projected decreases in water availability for those other uses.

Recommendations: *Modify Table 5-1 to include sectors of consumptive water use, average water use in each category, and estimated rates of growth in each category.*

Summarize the information in Table 5-1 in the text of Section 5.1.1.3.

Provide an overview of water demand in California that summarizes water use by sector (e.g., urban, agricultural, industrial), discloses the economic value generated by each sector, and estimate the rates of water demand growth in each sector.

Clarify whether or not the 2010 urban water efficiency mandate of a 20% reduction in M & I water use by 2020 is included in estimates of future water demand. If it is not included in water demand estimates, explain why it is excluded in the context of the potential impact of overestimating demand on BDCP estimates of water supply effects.

Evaluate water supply effects of CM1 scenarios using several configurations and success rates of CM4, and disclose methods and results.

C. Groundwater

The Draft EIS describes beneficial impacts on groundwater resources for some alternatives as a result of CM1 (p. 7-54). It states that for all alternatives, increases in surface water supplies as a result of BDCP would result in diminished use of groundwater (p.7-84); however, no documentation is provided to support this assumption.

The Draft EIS states that groundwater use in the San Joaquin River area is estimated to be between 730,000 and 800,000 acre-feet per year, which exceeds the basin's estimated safe yield of 618,000 acre-feet per year and that each groundwater basin has experienced some overdraft (p.7-18). The Draft EIS also states that the estimated overdraft is between 1 and 2 million acre-feet annually, with many basins in Tulare Lake Basin in critical condition (p.5-4). The Draft EIS assumes that these overdrafts would stop after implementation of the BDCP. On the contrary, we believe it is reasonable to expect that provision of more water could result in more water being used, including as much groundwater as allowed, rather than in strict substitution of surface water for groundwater. Without management of groundwater resources, it is not clear that the pressure on groundwater resources would be diminished as a result of the BDCP.

Recommendations: *Explain the basis for the assumption that increases in surface water supplies would result in diminished use of groundwater. The likelihood and potential impacts of increased use of surface water supplies for aquifer storage and recovery should be discussed.*

Consider development of a mitigation measure to address management of groundwater resources in the southern San Joaquin Valley.

D. Water Quality

Reporting methods for the chloride and EC analyses may partially obscure conclusions about the predicted range of salinity intrusion, chloride, and EC concentrations for existing conditions, the No Action Alternative, and CM1 alternatives. The chloride modeling analysis (Appendix 8G) provides a 16-year average of estimated chloride concentrations, a 5-year drought average chloride concentration, and a percent exceedence of the minimum health objective of 250 mg/L chloride. Combining 16 years of water quality data and reporting the average omits the predicted range of maximum mean daily chloride concentrations predicted for each of the compliance points under various alternatives compared to their baselines. Averages can mask the severity of chloride and EC concentrations by allowing wet years with lower salinity (chloride and EC) levels to balance dry years with higher salinity concentrations. The 5-year drought average provides some indication for time periods when increased salinity concentrations are expected; however, elevated EC and chloride concentrations at certain compliance points may also occur in above normal and below normal years following dry years.

The reason for, and consequences of, constraining the water quality analysis by using a 16-year hydrology modeling period is not described in the Draft EIS nor its appendices. The 16-year hydrology period extends from 1975 to 1991 and includes a drought period and the highest water year recorded in recent decades (1982). If this hydrology period is different than other periods that could have been chosen or the entire 82-year period available for modeling, results of the water quality analysis may be inaccurate.

Recommendation: *Explain why the 16-year period was used and the 82-year period was not used, and describe the potential impacts on the precision of the water quality effects predicted by the modeling exercise reported in the Draft EIS Chapter 8 appendices and summarized in the text of the Draft EIS. Compare the 16-year hydrology period (1975-1991) to the entire hydrology period available, disclose*

that comparison to the public and decision-makers, and explain how the smaller time period may influence water quality predictions.

The assertion that water demand will go down in the Tulare basin, in the face of large increases in population, is not thoroughly supported (p. 30-31). This is stated to be the expected result of a decrease in agriculture (now using 82% of the water p. 30-32), but it is not a given that the acreage in agriculture would decrease when additional water resources become available as a result of BDCP. Rather, increases in both population and agriculture are plausible.

Recommendations: *Include a discussion of growth that considers the potential for increases in both urbanization and agricultural development in response to increased reliable water supplies, and that addresses the entire San Joaquin Valley. Include an explanation of why additional water resources are needed (p. 5-4) if projected urbanization would use less water (p. 30-11).*

Water Quality Impact Conclusion WQ-26 (effects on selenium concentrations resulting from restoration activities) lists impacts before mitigation, as "Less Than Significant." After mitigation, conclusions are "Less Than Significant" and "Not Adverse." Analysis of residence time for planned remediation efforts is not quantitative and, therefore, lacks sufficient resolution to substantiate impact conclusions.

Recommendation*: Re-analyze Impact WQ-26 based on quantitative measures of residence time and selenium bioaccumulation that: (1) include specificity of locations and species, and (2) reflects current science that assesses the Delta as one interconnected system physically and biologically.*

Consider making the environmental commitments for selenium in restored areas a high priority by addressing these impacts within the main water quality and aquatic resources part of the EIS. Clearly identify the potential impacts of using water supplies containing selenium for wetlands with high residence times and selenium risks to fish and wildlife.

Selenium bioaccumulation modeling for sturgeon is shown in Appendix 8M2, but an impact conclusion is not listed within the category of impacts to white and green sturgeon (e.g., AQUA-136). Other identified species considered of concern in terms of selenium effects, for which no conclusions are provided, are diving ducks (scoter and scaup), clapper rail, salmonids (Chinook salmon, steelhead) and splittail.

Recommendations*: Provide an impact analysis for these species, and add impact conclusions for these species to the category of Fish and Aquatic Resources impacts.*

Illustrate and conceptualize mixing of selenium sources. Document representativeness of sites to selenium modeling to enable coordination of site locations to modeling predictions.

Perform selenium bioaccumulation modeling to specifically address the potential for (1) less Sacramento River flow (i.e., less estuary dilution and increased residence times), and (2) more San Joaquin River flow (increased Se loads or concentrations) entering the Plan Area. Perform an analysis that is both species-specific and location-specific, and develop habitat-use and life-cycle diagrams to inform the selenium modeling. Identify the times and places of greatest ecosystem sensitivity to selenium as outcomes of the modeling and relate the outcome to the entire plan area. Add selenium bioaccumulation modeling of additional fish and bird species to identify the predators with the greatest selenium exposure within fish and bird communities. Development of a comprehensive set of enrichment factors to relate dissolved selenium concentrations to suspended particulate material selenium concentrations would address the uncertainty in this step of selenium modeling.

The data sets that were used to model selenium in sturgeon and derive impacts are not spatially and temporally matched. Locations in the western Delta are ecologically and hydrologically disconnected from the Bay, where effects to sturgeon are known to be greatest.[29]

***Recommendation**: Consider comprehensive sturgeon habitat and cumulative effects in selenium modeling and impact analysis.*

The multiple times that eutrophication is mentioned on page 8-70 (Section 8.2.3.1.0 Nitrate/Nitrite and Phosphorous) may suggest to some readers that the San Francisco Estuary is suffering from large-scale eutrophication. Currently, eutrophication is not one of the major stressors negatively affecting the open waters of the San Francisco Estuary.

***Recommendations:** Clarify that monitoring shows that the open waters of the San Francisco Estuary do not show signs of large-scale eutrophication and that anoxic waters and sediment are not commonly reported in the Estuary. Identify the sites with demonstrated low dissolved oxygen problems and describe the extent to which nutrients, subsequent algal blooms, and microbial respiration contribute to low DO problems in the Estuary.*

Discuss the lack of diatom algal blooms as a stressor in the Estuary and the relationship between nutrients and the composition of the algal community and subsequent frequency of desired algal blooms. This can be a short summary in a few sentences and can refer to other locations in the document where nutrients and algal community composition is discussed in more detail. See http://www.sfestuary.org/pea-soup/ for more information.

E. Fish and Aquatic Resources

The temperature analysis does not provide biologically meaningful temperature estimates for Chinook salmon and, potentially, other fishes. The majority of temperature estimates are calculated using models that predict monthly average temperatures which can obscure the occurrences of daily temperatures fluctuating above life stage impairment and lethal thresholds for Chinook salmon and other fishes. Daily temperatures are estimated for the mainstem of the upper Sacramento River in the segment downstream of Keswick dam because a model with a daily time unit of analysis is available for this exercise (Sacramento River Water Quality Model). Temperature models with a daily time unit are not yet available for the Feather, American, lower Sacramento, and Trinity Rivers, but we understand Bureau of Reclamation is developing daily temperature models as part of the OCAP Biological Opinion remand process. Completion of these models should be prioritized and used in any additional analyses to provide meaningful estimates of temperature impacts to fishes.

***Recommendations:** Estimate potential temperature impacts when updated models become available. Identify temperature thresholds for specific life stages based on NMFS recommendations and other available guidance; for example, EPA temperature criteria. Identify mitigation measures that would minimize adverse temperature conditions.*

[29] (1) Linares, J., Linville, R. Eenennaam, JV, Doroshov, S. 2004 Selenium effects on health and reproduction of white sturgeon in the Sacramento-San Joaquin estuary. Final Report for Project No. ERP-02-P35.
(2) Linville RG 2006 Effect of excess selenium on the health and reproduction of white sturgeon (*Acipenser transmontanus*): Implications for San Francisco Bay-Delta. Ph.D. dissertation, University of California, Davis, CA 232 pp.
(3)Beckon, WN & Maurer, TC, 2008 Species at Risk from Selenium Exposure in the San Francisco Estuary. Final Report to the US EPA IAA No. DW14022048-01-0.
(4) Presser TS and Luoma SN 2010 Ecosystem-Scale Selenium Modeling in Support of Fish and Wildlife Criteria Development for the San Francisco Bay-Delta Estuary, California USGS Administrative Report.

EPA Region 10 developed EPA Guidance Criteria for Water Temperature[30] to assist States and Tribes in adopting water quality standards for the protection of coldwater salmonids. The guidance criteria provide an averaging period for temperature targets and would be an appropriate benchmark against which to evaluate estimated impacts from CM1 alternatives, in addition to the evaluated criteria summarized in Table 11-1A-11.

Recommendation: *Compare impacts from CM1 and other CMs with the potential to impact water temperatures to EPA Guidance Criteria for Water Temperature to provide an additional metric for estimated impacts to Chinook salmon.*

The Draft EIS assumes that state-of-the art fish screens would function in a way that results in minimal to zero entrainment, but provides no evidence that these screens would completely or almost completely prevent entrainment of larval, juvenile, or adult covered fishes. No details are provided regarding the design or operation of the proposed fish screens.

Recommendation: *Explain how the proposed fish screens would prevent entrainment of all life stages of covered fishes. Describe the entrainment thresholds that would trigger reduced pumping at the North Delta Diversion intakes, and mitigation strategies for minimizing entrainment if the fish screens do not function as anticipated.*

The construction analysis relies on Best Management Practices for concluding that potential impacts to aquatic species would not be adverse. The construction is estimated to span ten years, coffer dams are expected to be constructed simultaneously, and potentially increasingly severe weather conditions during the ten-year construction period are likely to challenge the most effective Best Management Practices. Additionally, some of the equipment that would need to be constructed (including the dual 40 foot wide tunnel boring machines) would be some of the largest in the world and the Best Management Practices that have been designed for more conventional construction projects may not be applicable or effective as anticipated.

Recommendation: *Describe options for minimizing construction impacts in the event that BMPs do not perform as anticipated or completely fail, given the size and scale of the construction.*

NEPA effects determinations used in Chapter 11 include: beneficial, not adverse, adverse, and no determination. These terms are not defined nor are thresholds for selecting among them identified. The reader is not provided with an indication or description of the magnitude of estimated positive or negative impacts or uncertainty associated with each conclusion.

Recommendation: *Define the NEPA conclusions and provide thresholds -- quantitative when possible -- for each category so that it is clear why some estimated impacts result in a NEPA conclusion.*

Multiple indicators are used to evaluate impact and derive NEPA Effects determinations; however, the Draft EIS does not describe how each indicator was used to support the NEPA effects determination. For example, AQUA-42 Effects of Water Operations on Conditions for Chinook salmon (Winter-Run ESU) uses nine indicators to determine the overall effect of CM1 alternatives on adult and juvenile migration for winter run Chinook salmon. We have summarized key information from this section in the following table:

[30] http://www.epa.gov/region10/pdf/water/final_temperature_guidance_2003.pdf

AQUA-42 Effects of Water Operations on Conditions for Chinook salmon (Winter-Run ESU)

Migration Indicators	**Alt 1**	**Alt 4**	**Alt 7**	**Alt 8**
Upstream of Red Bluff flow during juvenile emigration period (Nov – August)	Similar to No Action Alternative (NAA) July & October + 36% Aug, Sept, & Nov -44%	Similar to NAA November 5-18% lower	Similar to NAA November -14%	Flows 26% lower than NAA
Monthly mean temperature between Keswick and Bend Bridge (Nov – Aug)	Less than 5% difference in monthly mean T relative to NAA	Less than 5% difference in monthly mean T relative to NAA	Less than 5% difference in monthly mean T relative to NAA	Less than 5% difference in monthly mean T relative to NAA
Flow during adult migration (Dec – Aug)	Similar to NAA; August flows could be 19% lower.	Similar to NAA but May & June +12%	Similar to NAA or greater w/ few (unstated) exceptions.	Similar to NAA but up to 18% lower in July and August
Monthly mean T btw Keswick and Bend Bridge (Dec – Aug)	Less than 5% difference in monthly mean T relative to NAA	Less than 5% difference in monthly mean T relative to NAA	Less than 5% difference in monthly mean T relative to NAA	Less than 5% difference in monthly mean T relative to NAA
Through-Delta Monthly mean flows downstream of NDD	10-31% lower than NAA	11-23% lower than NAA	25% lower than NAA	15% lower than NAA in November
Predation at intakes % of annual juvenile production (2 methods)	9%-3% 18.5%	0.02 – 0.30% 12%	0.02 – 0.30% 12%	0.02 – 0.30% 11.6%
	19,000 linear feet 22 acres of habitat	6360 linear feet 12.3 acres	6360 linear feet 12.3 acres	6360 linear feet 12.3 acres
DPM analysis of % survival through the Delta to Chipps	Wet – 45.5% Dry – 26% All – 33.3%	Wet – 45-46% Dry – 25-27% All – 33-35%	Wet – 45% Dry – 26% All – 33%	Wet – 44% Dry – 27% All – 33.5%
Adult migration -- % of Sacramento River-origin water at Collinsville	December – 63% January – 71% February – 67%	December – 66% January – 73% February – 68%	December – 65% January – 73% February – 67%	Results not provided for Alt 8 but a range of 58–71%
NEPA Effects Determination	**Adverse**	**Not Determined**	**Not Determined**	**Adverse**

It is not clear whether all nine indicators are considered equal when identifying the NEPA effect determination for migration overall. The monthly mean temperatures do not substantially vary among alternatives, so that indicator appears to be less useful than the others in differentiating between the alternatives. Some indicators show improved conditions relative to the No Action Alternative, while others show relatively worse conditions. For some indicators, the level of detail that is provided in the text differs from one alternative to another. The narrative descriptions of the multiple indicators in the NEPA Effects paragraphs often highlights different indicators when discussing the NEPA Effects determination, suggesting that some indicators are more important than others, depending on the alternative being evaluated. The reader sees only the summarized results of multiple indicators but cannot ascertain how the information was used to determine NEPA effects.

Recommendation: *Explain how each metric was used, and how the metrics were used in combination, to derive the NEPA Effects determinations, including whether the metrics were weighted in any way. Thresholds that were used to determine the appropriate NEPA Effects conclusion should be disclosed.*

The description of Clean Water Act programs in the Water Quality Regulatory Setting Section 8.3.1.1 (p. 8-112-114) contains a number of errors. For example, it appears to indicate that EPA has delegated its CWA oversight responsibility to the State of California. A useful description of CWA programs and how they operate in the San Francisco Bay Estuary can be found in the US EPA Advance Notice of Proposed Rule-making for Water Quality Challenges in the San Francisco Bay/Sacramento San Joaquin Delta, available at http://www2.epa.gov/sites/production/files/documents/baydeltaanpr-fr_unabridged.pdf pages 11-18.

Recommendation: *Review the description of CWA programs in the San Francisco Bay Delta Estuary and California.*

It appears from the Draft EIS that there could be significant impacts to vernal pools from implementation of CM1 and CM4. Impacts and mitigation for vernal pools are only presented as “vernal pool complex” and it is not clear from the document what percentage of this habitat is vernal pool wetlands (wetted surface area).

The Draft EIS states that implementation of CM4 may result in the loss of 372 acres of vernal pool complex habitat and CM1 could result in up to an additional 37 acres of loss (depending on alternative). With the information in the Draft EIS we cannot assess what proportion of these impacts are to wetlands. The document also states that AMM12 limits removal of “vernal pool crustacean habitat” to 10 wetted acres. However, it is not clear if all vernal pool wetlands are being considered “crustacean habitat.” According to the document, these 10 wetted acres of crustacean habitat equates to approximately 67 acres of “vernal pool complex” habitat. The 67 acres of impact allowed by AMM12 is significantly less than the 372 acres of potential loss identified for CM4.

Because the Draft EIS only presents theoretical footprints for tidal marsh restoration under CM4, it is unclear whether CM4 can be fully implemented while limiting vernal pool loss to 10 wetted acres as called for under AMM12. As the Draft EIS acknowledges, vernal pools are a highly sensitive community that has experienced significant loss in California. Yet, only 40 acres of restoration and 400 acres of protection are proposed in the near-term under the plan. Given the potential direct loss identified for CM1 and CM4, and the potential functional loss identified from implementation of CM2, the proposed vernal pool restoration may not be sufficient to meet mitigation needs under CWA Section 404. Mitigation needs cannot be fully assessed until project level information is available for all CMs.

Recommendations: *Clearly state what percentage of the vernal pools complex habitat may be vernal pool wetlands (by wetted surface area). Clarify whether AMM12 applies to all vernal pool wetlands or only vernal pool wetlands occupied by special status crustaceans.*

Clearly state how many acres of vernal pool wetlands may be lost from implementation of CM1 and CM4. Clarify whether it is feasible to fully implement CM4 while limiting vernal pool losses to 10 wetted acres and if there is a tradeoff, please disclose and discuss.

Quantify the potential functional loss to vernal pool habitat from changes in inundation and acknowledge that compensatory mitigation may be required for loss of function even if there is no net loss in area. Acknowledge and address that compensatory mitigation requirements under CWA Section 404 maybe greater than the vernal pool complex restoration and protection proposed under the plan.

Appendix 3B details dredged material (DM) and reusable tunnel material (RTM) disposal and reuse commitments, among other environmental commitments. Neither Appendix 3B nor Chapter 3 details how much DM and RTM will be generated by each alternative; however, Chapter 12 identifies potentially significant impacts to wetlands and waters from disposal of this material. Impacts to jurisdictional wetlands and waters must be avoided and minimized to the maximum extent practicable consistent with the 404 Guidelines. Furthermore, the Draft EIS does not address the Delta Long Term Management Strategy (LTMS)[31] goal to maximize beneficial reuse of DM by setting specific reuse targets for both DM and RTM. Appendix 3B states that material will be placed in multiple storage locations and reused in BDCP projects to the extent feasible, however, there are potentially many other construction and restoration projects in the Delta that could use the DM and RTM. If material will be placed in waters either temporarily or permanently, sediment testing will need to be coordinated with the Corps, EPA, and Regional Water Quality Control Boards.

Recommendations: *Include the volume of DM and RTM in Chapter 3 and Appendix 3B. In Appendix 3B clearly state that placement of DM and RTM must comply with the CWA 404(b)(1) Guidelines, in addition to meeting to BDCP goals.*

Discuss beneficial reuse goals for DM and RTM, including whether material will be made available for reuse in projects within and outside the BDCP.

Discuss whether placement of DM and RTM on peat soils, either temporarily or permanently, will further subsidence and undermine levee stability.

Clearly identify accessibility of placement sites and commit to promoting beneficial reuse of DM and RTM both within and outside BDCP projects.

For any material placed in waters, clarify that sediment testing must be coordinated with the USACE, EPA, and RWQCB.

F. Energy

The Draft EIS states that conveyance facility energy requirements are moderate and would not result in any substantial impacts (p. 21-25). The cumulative impacts analysis concludes that, while the cumulative energy demands of the BDCP, in combination with ongoing and reasonably foreseeable

[31] The San Francisco Bay Long Term Management Strategy (LTMS) is a cooperative effort of EPA, the US Army Corps of Engineers, the San Francisco Regional Water Quality Control Board, the San Francisco Bay Conservation and Development Commission, and stakeholders in the region to develop a new approach to dredging and dredged material disposal in the San Francisco Bay area. The LTMS serves as the "Regional Dredging Team" for the San Francisco area, implementing the National Dredging Policy in cooperation with the National Dredging Team.http://www.epa.gov/region9/water/dredging/ltms/index.html

future projects, may affect regional resources, the increase attributable to any alternative is not cumulatively considerable, compared to statewide use (300,000 gigawatt-hours) (p. 21-61). A comparison only to statewide use does not provide sufficient context for decision makers and the public to understand the new energy demands associated with the BDCP alternatives and evaluate their potential effects on local and regional energy supplies.

Recommendations: *Include a table showing the current overall energy usage by the CVP and SWP to supply water to the end users, compared to the projected overall energy demand by the CVP and SWP to do the same under the No Action and each of the BDCP build alternatives. Separately, for additional context, compare these projections to recent and reasonably foreseeable development projects, including the High Speed Rail project. Include an evaluation of the effects of each alternative on peak and base period demands, as well as effects on local and regional energy supplies, as recommended by the State CEQA Energy Conservation Guidelines (Appendix F).*

EPA supports the use of gravity-fed tunnels to transport water to minimize net energy use for conveyance to the greatest extent possible. Alternative 4 is designed to take greater advantage of gravity than the other alternatives. According to the Draft EIS, the Department of Energy has estimated that construction of two 40-foot tunnels (Alternative 4) would require about 78% more electrical energy than would be needed for alternatives requiring two 33-foot tunnels (p. 21-31 and Table 21-9); however, since Alternative 4 would eliminate the need for an intermediate low-head pumping plant for flows of more than 9,000 cfs (p. 21-31), Alternative 4 would be able to 'recover' the extra energy used during construction in 25 years. It is not clear why the 33-foot tunnel alternatives do not include gravity-fed designs.

Recommendations: *Discuss the practicability of increasing the energy head (difference in water elevation) between the intermediate Forebay at the north of the Delta and the Clifton Court and Byron Forebays to allow for greater gravity-fed flow through the 33-foot tunnel alternatives. Discuss whether 9,000 cfs could be achieved without the need for intermediate low-head pumping through 33-foot tunnels.*

Consider alternate locations for the intakes, including upstream of the Sacramento Regional Wastewater Treatment Plant, and evaluate whether an increase in the energy head between the alternative north end intake locations and the south end of the proposed conveyance system could decrease net energy use for each alternative.

Include a table that demonstrates, for each alternative, the time that would be needed to 'recover' the energy used during construction. Incorporate into the table any additional alternatives that would minimize net energy use, and the time to 'recover' energy used during their construction. As part of the same table, include the overall energy for construction and operation of the BDCP for the total expected life of the project.

EPA strongly supports the goal, stated in the Draft EIS, to power the BDCP's average 270 megawatt (MW) construction load and 57 MW permanent load with 100% renewable energy (p. 21-33). This would avoid emissions of greenhouse gases and other pollutants associated with the generation of energy from fossil fuels. We find, however, that the Draft EIS defers much of the necessary analysis of renewable energy benefits, challenges, and opportunities to the future development of other documents, and lacks clear commitments regarding procurement of renewable energy. For example, regarding construction, Mitigation Measure AQ-15 in Chapter 22 includes a suite of greenhouse gas emission reduction strategies that would be utilized to develop a future GHG Mitigation Program to reduce construction related GHG emissions to net zero (p. 22-75). At this time, it is unclear which strategies

would comprise the program and whether a commitment would be made to enter into a purchase agreement for 100% renewables (Strategy 1) or temporarily increase renewable energy purchases to offset BDCP construction emissions (Strategy 12).

Regarding operations, Chapter 21 of the Draft EIS explains that the energy needed for pumping water would be provided from a mix of hydro, power purchase contracts, power exchanges and power markets (p. 21-22). The Draft EIS notes that 60% of the State Water Project's (SWP) 2010 load was met by hydro resources, while the remainder of the load was met by a mix of coal power and real-time purchases from the California Independent System Operator's (CAISO) energy market (p. 21-7). According to Chapter 21, the potential for new or expanded electrical power generation facilities is not discussed in the Draft EIS because it will be addressed through SWP power purchase programs (p. 21-33). Similarly, new energy sources to support the potential increased load from the Central Valley Project (CVP) are not discussed in the Draft EIS. It is unknown what type of power source (e.g., renewable, natural gas) would be substituted for the CVP-generated electricity that would be consumed by the project, itself, or to what extent some of additional energy required would be made up with higher efficiency (p. 22-198).

The Draft EIS references DWR's Climate Action Plan, which established near-term (by 2020) and long-term (by 2050) goals of reducing emissions of greenhouse gases throughout DWR's operations -- including those of the SWP -- in part, by increasing the use of renewable energy sources. Similarly, the President's June 2013 Climate Action Plan established a goal for the federal government of consuming 20 percent of its electricity from renewable energy sources by 2020.

Recommendations:
Identify opportunities to power the BDCP conveyance system with renewable energy for the life of the project to demonstrate how the stated goal of powering the anticipated construction and operations energy loads with 100% renewable energy could be met. Consider committing to power construction and/or the conveyance system operations with 100% renewable energy, similar to the CA High Speed Rail (HSR) Authority's commitment to use 100% renewable energy for operation of the HSR. At minimum, commit to ensure that construction and operation of the BDCP facilities are powered by renewable energy sources to the greatest extent feasible.

Discuss whether DWR's Renewable Energy Procurement Plan (REPP) would provide a mechanism to secure 100% renewable sources for construction and operations of the BDCP prior to project approval. Consider adopting an approach similar to the California High Speed Rail Authority's partnership with the National Renewable Energy Laboratory to create and implement a strategic energy plan for the BDCP. Outline the steps that would need to occur, the barriers that would need to be overcome and the potential for partnerships with entities in the vicinity of the Delta that are aiming to achieve similar goals.

Quantify how securing new,100% renewable energy sources for construction and operations of the BDCP would assist DWR in achieving its Climate Action Plan (CAP) goals. Discuss the extent to which hydropower resources will be used to meet the 2020 and 2050 goals in the CAP, and whether larger hydropower generators would qualify.

Discuss the extent to which the CVP is currently being used to meet California's renewable energy goals. To reduce potential indirect effects from substitute electricity for any new CVP energy usage, consider a commitment to ensure that new, renewable sources are secured to compensate for any use of CVP electricity for the BDCP.

Under the "NEPA Effects" section for each alternative in Chapter 21.3.3, the Draft EIS indicates that the use of Best Management Practices will ensure that only high-efficiency equipment is utilized during construction and that all feasible control measures to improve equipment efficiency and energy use are included. Similarly, it is noted that operation of the water conveyance facilities would be managed to maximize efficient energy use, including off-peak pumping and the use of gravity and, therefore, would not result in a wasteful or inefficient energy use. These conclusions are identical for every tunnel conveyance alternative.

Recommendations: *Explain how all of the energy efficiency mitigation measures and Best Management Practices referenced in Chapter 21 would be made an enforceable part of the project's implementation schedule. We recommend implementation of applicable mitigation measures prior to or, at a minimum, concurrently with, commencement of construction of the project.*

With regard to solicitations for future contracts for project construction and operations, consider including the following as energy efficiency requirements:

- *The use of energy- and fuel-efficient fleets;*
- *For construction, the utilization of grid-based electricity and/or onsite renewable electricity generation, to the extent possible, rather than diesel and/or gasoline powered generators;*
- *Using lighting systems that are energy efficient, such as LED technology;*
- *Recycling construction debris to maximum extent feasible;*
- *Planting shade trees in or near construction projects where feasible;*
- *Giving preference to construction bids that use Best Available Control Technology, particularly those seeking to deploy zero emission technologies;*
- *Employing the use of alternative fueled vehicles;*
- *Using the minimum feasible amount of GHG-emitting construction materials that is feasible;*
- *Use of cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production; and,*
- *Use of lighter-colored pavement where feasible.*

G. HCP Monitoring and Assessment

The BDCP is a project of such significance, with a reliance on extensive monitoring and technical information, that its development and approval represents an opportunity to advance aquatic resource monitoring for the entire state of California. For several years, EPA and partner state and federal agencies have been advancing a comprehensive monitoring program that supports integration of federal and state aquatic resource permitting for Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs). When implemented as a monitoring program, the framework that has been established will generate information to evaluate site specific and regional outcomes of habitat conservation and aquatic resource mitigation activity. This framework has been created in consideration of the Clean Water Act (CWA) Mitigation Rule (33 CFR Parts 325 and 332; 40 CFR Part 230), the "Five Point Policy" (Addendum to the HCP Handbook), Tenets of a State Wetland and Riparian Monitoring Plan (CA Water Quality Monitoring Council 2010)[32], and Designing Monitoring Programs in an Adaptive Management Context for Regional Multiple Species Conservation Plans[33].

[32] Tenets of a State Wetland and Riparian Monitoring Program. 2010. California Water Quality Monitoring Council (CA Wetland Monitoring Workgroup). (http://www.waterboards.ca.gov/mywaterquality/monitoring_council/wetland_workgroup/docs/2010/tenetsprogram.pdf).

[33] Atkinson, A. J., P. C. Trenham, R. N. Fisher, S. A. Hathaway, B. S. Johnson, S. G. Torres and Y. C. Moore. 2004. Designing Monitoring Programs in an Adaptive Management Context for Regional Multiple Species Conservation Plans. U.S. Geological Survey Technical Report. USGS Western Ecological Research Center, Sacramento, CA. 69 pages. (http://www.dfg.ca.gov/habcon/nccp/publications.html).

At the state level, the 2007 MOU signed by the Secretaries of the California Environmental Protection Agency (Cal/EPA) and the California Natural Resources Agency (Resources Agency) establishes the Water Quality Monitoring Council. The Council now requires the boards, departments and offices within Cal/EPA and the Resources Agency to integrate and coordinate their water quality and related ecosystem monitoring, assessment, and reporting. The Monitoring Council is further aligning state aquatic resource monitoring programs with their federal counterparts in order to develop an integrated monitoring program that addresses the needs of the HCP/NCCPs while providing CWA monitoring data and information that will satisfy the Corps of Engineers, EPA, and the Water Boards.

The primary goal of such a program is to develop a fully integrated monitoring framework (covering ESA, CESA, CWA, and the Porter-Cologne Act) that provides the best available information on the extent of impacts from permitted activities and progress toward achieving conservation targets using common databases to facilitate the sharing of this information across eco-regions and among local, regional, state and federal programs.

The monitoring design for this comprehensive federal/State monitoring program is based on the EPA tiered monitoring approach (http://water.epa.gov/type/wetlands/outreach/upload/techfram_pr.pdf), which has also been adopted by the State, is increasingly used by programs across the country, and is consistent with the tiered approach described by Atkinson et al. (2004)[34]. The Delta Science Plan (dated 12/30/2013 and found at http://deltacouncil.ca.gov/science-program/delta-science-plan) describes a process by which this monitoring approach could be developed and implemented, including sections on adaptive management, data management, modeling, and communication. EPA strongly supports the recommendations in the Delta Science Plan.

Recommendation: *Discuss how the BDCP mitigation monitoring and reporting program will be consistent with the federal and State efforts discussed above.*

[34] Ibid

8/27/2014 1:33pm

BDCP DEIS: Corrections and Additional Editorial Recommendations

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Will, Ryan –

Yesterday, I sent you EPA's major comments on the BDCP DEIS. During our review of the DEIS, we also identified a number of corrections that are needed, as well as some missing information that would improve the document's usefulness. These are listed below. In our role as a Cooperating Agency, we request that you also address the following in the Supplemental Draft EIS:

- Potential funding sources shown on page 8-105 of the BDCP are not valid. The table in the BDCP shows EPA's 2011 budget being spent on conservation measures under the BDCP. The text states that "Funding for this program [California Bay-Delta Restoration appropriations] is assumed to continue and to support natural community restoration under BDCP" (p.8-106 of the BDCP). EPA has not committed any funding towards the construction and implementation of the BDCP and any future funds that are available for projects in the San Francisco Bay Delta are subject to EPA's future budget, legislative mandates, and agency discretion. Please remove the section of the BDCP that indicates that EPA funding is assumed to continue and support restoration components of the BDCP for 50 years.

- There are errors in the Draft EIS describing multiple Clean Water Act programs including the CWA 404 Regulatory Program. In addition, the CWA Section 404 Program is described differently in different chapters. Please make the following corrections:

    - Correct language on page 8-114 that states that CWA Section 404 is implemented "via the issuance of National Pollutant Discharge Elimination System permits." The NPDES program comes from Section 402 of the CWA. The words "NPDES" permits should be replaced with "Section 404 permits." The following sentence in the Draft EIS accurately states that the "USACE is authorized to issue Section 404 permits."

    - Correct language on page 8-113 (lines 4-6) that states California "administers the CWA through the Porter-Cologne Act." Section 303 of the CWA gives the states the authority to establish water quality standards, subject to EPA approval, and the NPDES Program is delegated to the State of California under CWA Section. California administers these CWA programs **and** the Porter-Cologne Act.

    - The following sentence in the Draft EIS on page 8-114 is not correct and should be removed: "If a federal agency is a partner in the implementation of a project, the proposed action/project must be recognized as the LEDPA." A proposed action is not the LEDPA simply because a federal agency is a partner and chooses that proposed action as its preferred alternative. Federal agencies are required to comply with the 404(b)(1) Guidelines and their preferred alternative must meet the restrictions to discharge outlined at 40 CFR 230.10.

- Table 3-3 (p.3-19) "Summary of Proposed BDCP Conservation Measures of All Action Alternatives" is the only complete Conservation Measure (CM) summary table provided in the entire Draft EIS. While it is helpful to the extent that it lists all of the CMs in one place, it is lacks key information such as acreage

targets.

- CM2 is not included in the list of Conservation components for Alternative 1A on p. 3-49. The Draft EIS states that CM2 is included in all of the Alternatives considered.

- CM2 is not included in the description of CM3 Natural Communities Protection and Restoration (page 3-129).

- Table 8-1 Designated Beneficial Uses for Water Bodies in the Study Area identified Estuarine Habitat as an "Additional Beneficial Use of the Delta" suggesting the Delta is the only group of water bodies with the Estuarine Habitat beneficial use. The San Francisco Bay and its component water bodies, including Suisun Bay and Marsh also have the Estuarine Habitat beneficial use and they are part of the BDCP "Plan Area."

- The 2012 Pulse of the Delta was finalized in October 2012. Delete the word "draft" in reference to the *2012 Pulse of the Delta* on Page 8-48, line 39.

- Figure 8-7 shows the compliance locations commonly discussed in Chapter 8 with so many labeled locations that the reader cannot see their location precisely.

- It is very helpful to readers to provide citations when "available evidence" is referred to in the Draft EIS. For example, page 8-457, line 7, states "available evidence suggests that restorations activities establishing new tidal and non-tidal wetlands, new riparian and new seasonal floodplain habitat could potentially lead to new substantial sources of localize DOC loading within the Delta."

- Existing Conditions and No Action Alternative values are slightly different in Tables 11-1A-5 (p. 293) and 11-4-4 (page 1302). The tables rely on the same entrainment analysis at south Delta pumps, but one is for Alternative 1A and the other is for Alternative 4. The Existing Conditions and No Action Alternative numbers are very similar, but should be identical, and it is not clear why they are different. This occurs again for the North Bay Aqueduct Analysis (p. 11-295 Table 11-1A-7 v. page 11-4-6 page 11-1304).

- The list of local habitat conservation plans and natural community conservation plans in the Delta includes plans that are adjacent to the Delta is missing the south Sacramento HCP (page 11-176).

- Page 11-160: There is very little description of Section 10 and Section 7 of ESA. The Revised or Supplemental Draft EIS should include a description of basic regulatory requirements and targets that are applicable to the BDCP such as "contribute to recovery" for Section 10 and "avoid jeopardy" for Section 7.

- Page 11-166: CWA Section 303(c) Water Quality Standards and protection of beneficial uses should be discussed in this section.

- Page 11-175: The need for a change in point of diversion to D1641 should be discussed in this section.

- Page 11-183: Table 11-3, please discuss options for soft stabilization along river banks near the intake structures.

- Table ES-11 and its associated text describe changes in average Delta outflow, total exports, and south Delta pumping for the BDCP alternatives in the late long term (2060); however, the baseline for this comparison should be specified.

- The change in total exports from the No Action Alternative to Alternative 1 is listed in Table ES-11 as 1,025 thousand acre feet however, subtracting the value of No Action Alternative total exports (4441 TAF) from that of Alternative 1 total exports (5459 TAF) yields a difference of 1018 TAF. Similar small potential errors are present in the rest of the Total Exports Change column.

- The average Delta outflow and export values in Table ES-11 do not match average Delta outflow and export values in Table 5-4 Water Supply Summary Tables. Many of the values are very close to one another, but are not the same. The true values are important for determining compliance with Delta outflow water quality standards.

- Selenium effects and thresholds vary between the EIS and the appendices (see p. 8-167 (table 8-55) and page 8M-9 (table 8M-3)).

- Language used to describe Total Maximum Daily Loads in the Plan Area and Study area for Chapter 8 could be misinterpreted. Table 8-4 and the text in lines 13-15 on page 8-24 state that a number of TMDLs are "complete", which could be read as suggesting that TMDL water quality targets have been achieved, which is not accurate for most TMDLs. Many of these TMDLs are *adopted* and water quality is improving as a result, but is not yet meeting the TMDL quantitative targets. Replace the word "complete" with "adopted" in reference to TMDLs in this section.

- Table 22-5 should be updated to identify the annual PM2.5 NAAQS as 12 micrograms per meter cubed ($\mu g/m^3$).

- Table 22-3 provides ambient air quality monitoring data, in terms of standards exceedances, for the relevant air basins from 2008 to 2010. This table should be updated to provide monitoring data from 2010 to 2012.

- The data used to describe organophosphate pesticides on page 8-85, Tables 8-23 and 8-24 do not characterize existing conditions. More recent data show that diazinon is rarely detected in Delta waters in recent years and chlorpyrifos detections and exceedences have substantially declined. Update the pesticide discussion using more recent data. These data are available at http://www.ceden.org.

- In Table 30-2, it is unclear how much of the environmental water is also used by agriculture and urban users. Separate tables by water year type would be more informative.

Thank you for your consideration of these recommendations. If you have any questions, please contact me.

-Kathy

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Attachment 2

HR 2828 (PL 108-361 – October 25, 2004)

Water Supply, Reliability, and Environmental Improvement Act

Public Law 108–361
108th Congress

An Act

To authorize the Secretary of the Interior to implement water supply technology and infrastructure programs aimed at increasing and diversifying domestic water resources.

Oct. 25, 2004
[H.R. 2828]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Water Supply, Reliability, and Environmental Improvement Act.
California.

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "Water Supply, Reliability, and Environmental Improvement Act".

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

TITLE I—CALIFORNIA WATER SECURITY AND ENVIRONMENTAL ENHANCEMENT

Calfed Bay-Delta Authorization Act.

SEC. 101. SHORT TITLE.

This title may be cited as the "Calfed Bay-Delta Authorization Act".

SEC. 102. DEFINITIONS.

In this title:

(1) CALFED BAY-DELTA PROGRAM.—The terms "Calfed Bay-Delta Program" and "Program" mean the programs, projects, complementary actions, and activities undertaken through coordinated planning, implementation, and assessment activities of the State agencies and Federal agencies as set forth in the Record of Decision.

(2) CALIFORNIA BAY-DELTA AUTHORITY.—The terms "California Bay-Delta Authority" and "Authority" mean the California Bay-Delta Authority, as set forth in the California Bay-Delta Authority Act (Cal. Water Code § 79400 et seq.).

(3) DELTA.—The term "Delta" has the meaning given the term in the Record of Decision.

(4) ENVIRONMENTAL WATER ACCOUNT.—The term "Environmental Water Account" means the Cooperative Management Program established under the Record of Decision.

(5) FEDERAL AGENCIES.—The term "Federal agencies" means—

(A) the Department of the Interior, including—
(i) the Bureau of Reclamation;
(ii) the United States Fish and Wildlife Service;
(iii) the Bureau of Land Management; and
(iv) the United States Geological Survey;
(B) the Environmental Protection Agency;
(C) the Army Corps of Engineers;
(D) the Department of Commerce, including the National Marine Fisheries Service (also known as "NOAA Fisheries");
(E) the Department of Agriculture, including—
(i) the Natural Resources Conservation Service; and
(ii) the Forest Service; and
(F) the Western Area Power Administration.

(6) FIRM YIELD.—The term "firm yield" means a quantity of water from a project or program that is projected to be available on a reliable basis, given a specified level of risk, during a critically dry period.

(7) GOVERNOR.—The term "Governor" means the Governor of the State of California.

(8) RECORD OF DECISION.—The term "Record of Decision" means the Calfed Bay-Delta Program Record of Decision, dated August 28, 2000.

(9) SECRETARY.—The term "Secretary" means the Secretary of the Interior.

(10) STATE.—The term "State" means the State of California.

(11) STATE AGENCIES.—The term "State agencies" means—
(A) the Resources Agency of California, including—
(i) the Department of Water Resources;
(ii) the Department of Fish and Game;
(iii) the Reclamation Board;
(iv) the Delta Protection Commission;
(v) the Department of Conservation;
(vi) the San Francisco Bay Conservation and Development Commission;
(vii) the Department of Parks and Recreation; and
(viii) the California Bay-Delta Authority;
(B) the California Environmental Protection Agency, including the State Water Resources Control Board;
(C) the California Department of Food and Agriculture; and
(D) the Department of Health Services.

SEC. 103. BAY DELTA PROGRAM.

(a) IN GENERAL.—

(1) RECORD OF DECISION AS GENERAL FRAMEWORK.—The Record of Decision is approved as a general framework for addressing the Calfed Bay-Delta Program, including its components relating to water storage, ecosystem restoration, water supply reliability (including new firm yield), conveyance, water use efficiency, water quality, water transfers, watersheds, the Environmental Water Account, levee stability, governance, and science.

(2) REQUIREMENTS.—

(A) IN GENERAL.—The Secretary and the heads of the Federal agencies are authorized to carry out the activities described in subsections (c) through (f) consistent with—

(i) the Record of Decision;

(ii) the requirement that Program activities consisting of protecting drinking water quality, restoring ecological health, improving water supply reliability (including additional storage, conveyance, and new firm yield), and protecting Delta levees will progress in a balanced manner; and

(iii) this title.

(B) MULTIPLE BENEFITS.—In selecting activities and projects, the Secretary and the heads of the Federal agencies shall consider whether the activities and projects have multiple benefits.

(b) AUTHORIZED ACTIVITIES.—The Secretary and the heads of the Federal agencies are authorized to carry out the activities described in subsections (c) through (f) in furtherance of the Calfed Bay-Delta Program as set forth in the Record of Decision, subject to the cost-share and other provisions of this title, if the activity has been—

(1) subject to environmental review and approval, as required under applicable Federal and State law; and

(2) approved and certified by the relevant Federal agency, following consultation and coordination with the Governor, to be consistent with the Record of Decision.

(c) AUTHORIZATIONS FOR FEDERAL AGENCIES UNDER APPLICABLE LAW.—

(1) SECRETARY OF THE INTERIOR.—The Secretary of the Interior is authorized to carry out the activities described in paragraphs (1) through (10) of subsection (d), to the extent authorized under the reclamation laws, the Central Valley Project Improvement Act (title XXXIV of Public Law 102–575; 106 Stat. 4706), the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other applicable law.

(2) ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY.—The Administrator of the Environmental Protection Agency is authorized to carry out the activities described in paragraphs (3), (5), (6), (7), (8), and (9) of subsection (d), to the extent authorized under the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), the Safe Drinking Water Act (42 U.S.C. 300f et seq.), and other applicable law.

(3) SECRETARY OF THE ARMY.—The Secretary of the Army is authorized to carry out the activities described in paragraphs (1), (2), (6), (7), (8), and (9) of subsection (d), to the extent

authorized under flood control, water resource development, and other applicable law.

(4) SECRETARY OF COMMERCE.—The Secretary of Commerce is authorized to carry out the activities described in paragraphs (2), (6), (7), and (9) of subsection (d), to the extent authorized under the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other applicable law.

(5) SECRETARY OF AGRICULTURE.—The Secretary of Agriculture is authorized to carry out the activities described in paragraphs (3), (5), (6), (7), (8), and (9) of subsection (d), to the extent authorized under title XII of the Food Security Act of 1985 (16 U.S.C. 3801 et seq.), the Farm Security and Rural Investment Act of 2002 (Public Law 107–171; 116 Stat. 134) (including amendments made by that Act), and other applicable law.

(d) DESCRIPTION OF ACTIVITIES UNDER APPLICABLE LAW.—

(1) WATER STORAGE.—

(A) IN GENERAL.—Activities under this paragraph consist of—

(i) planning and feasibility studies for projects to be pursued with project-specific study for enlargement of—

(I) the Shasta Dam in Shasta County; and

(II) the Los Vaqueros Reservoir in Contra Costa County;

(ii) planning and feasibility studies for the following projects requiring further consideration—

(I) the Sites Reservoir in Colusa County; and

(II) the Upper San Joaquin River storage in Fresno and Madera Counties;

(iii) developing and implementing groundwater management and groundwater storage projects; and

(iv) comprehensive water management planning.

(B) STORAGE PROJECT AUTHORIZATION AND BALANCED CALFED IMPLEMENTATION.—

(i) IN GENERAL.—If on completion of the feasibility study for a project described in clause (i) or (ii) of subparagraph (A), the Secretary, in consultation with the Governor, determines that the project should be constructed in whole or in part with Federal funds, the Secretary shall submit the feasibility study to Congress.

(ii) FINDING OF IMBALANCE.—If Congress fails to authorize construction of the project by the end of the next full session following the submission of the feasibility study, the Secretary, in consultation with the Governor, shall prepare a written determination making a finding of imbalance for the Calfed Bay-Delta Program.

(iii) REPORT ON REBALANCING.—

(I) IN GENERAL.—If the Secretary makes a finding of imbalance for the Program under clause (ii), the Secretary, in consultation with the Governor, shall, not later than 180 days after the end of the full session described in clause (ii),

prepare and submit to Congress a report on the measures necessary to rebalance the Program.

(II) SCHEDULES AND ALTERNATIVES.—The report shall include preparation of revised schedules and identification of alternatives to rebalance the Program, including resubmission of the project to Congress with or without modification, construction of other projects, and construction of other projects that provide equivalent water supply and other benefits at equal or lesser cost.

(C) WATER SUPPLY AND YIELD STUDY.—

(i) IN GENERAL.—The Secretary, acting through the Bureau of Reclamation and in coordination with the State, shall conduct a study of available water supplies and existing and future needs for water—

(I) within the units of the Central Valley Project;

(II) within the area served by Central Valley Project agricultural, municipal, and industrial water service contractors; and

(III) within the Calfed Delta solution area.

(ii) RELATIONSHIP TO PRIOR STUDY.—In conducting the study, the Secretary shall incorporate and revise, as necessary, the results of the study required by section 3408(j) of the Central Valley Project Improvement Act of 1992 (Public Law 102–575; 106 Stat. 4730).

(iii) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a report describing the results of the study, including—

(I) new firm yield and water supply improvements, if any, for Central Valley Project agricultural water service contractors and municipal and industrial water service contractors, including those identified in Bulletin 160;

(II) all water management actions or projects, including those identified in Bulletin 160, that would—

(aa) improve firm yield or water supply; and

(bb) if taken or constructed, balance available water supplies and existing demand with due recognition of water right priorities and environmental needs;

(III) the financial costs of the actions and projects described under subclause (II); and

(IV) the beneficiaries of those actions and projects and an assessment of the willingness of the beneficiaries to pay the capital costs and operation and maintenance costs of the actions and projects.

(D) MANAGEMENT.—The Secretary shall conduct activities related to developing groundwater storage projects to the extent authorized under law.

(E) COMPREHENSIVE WATER PLANNING.—The Secretary shall conduct activities related to comprehensive water management planning to the extent authorized under law.

(2) CONVEYANCE.—

(A) SOUTH DELTA ACTIONS.—

(i) IN GENERAL.—In the case of the South Delta, activities under this subparagraph consist of—

(I) the South Delta Improvements Program through actions to—

(aa) increase the State Water Project export limit to 8,500 cfs;

(bb) install permanent, operable barriers in the South Delta, under which Federal agencies shall cooperate with the State to accelerate installation of the permanent, operable barriers in the South Delta, with an intent to complete that installation not later than September 30, 2007;

(cc) evaluate, consistent with the Record of Decision, fish screens and intake facilities at the Tracy Pumping Plant facilities; and

(dd) increase the State Water Project export to the maximum capability of 10,300 cfs;

(II) reduction of agricultural drainage in South Delta channels, and other actions necessary to minimize the impact of drainage on drinking water quality;

(III) evaluation of lower San Joaquin River floodway improvements;

(IV) installation and operation of temporary barriers in the South Delta until fully operable barriers are constructed; and

(V) actions to protect navigation and local diversions not adequately protected by temporary barriers.

(ii) ACTIONS TO INCREASE PUMPING.—Actions to increase pumping shall be accomplished in a manner consistent with the Record of Decision requirement to avoid redirected impacts and adverse impacts to fishery protection and with any applicable Federal or State law that protects—

(I) water diversions and use (including avoidance of increased costs of diversion) by in-Delta water users (including in-Delta agricultural users that have historically relied on water diverted for use in the Delta);

(II) water quality for municipal, industrial, agricultural, and other uses; and

(III) water supplies for areas of origin.

(B) NORTH DELTA ACTIONS.—In the case of the North Delta, activities under this subparagraph consist of—

(i) evaluation and implementation of improved operational procedures for the Delta Cross Channel to address fishery and water quality concerns;

(ii) evaluation of a screened through-Delta facility on the Sacramento River; and

(iii) evaluation of lower Mokelumne River floodway improvements.

(C) INTERTIES.—Activities under this subparagraph consist of—

(i) evaluation and construction of an intertie between the State Water Project California Aqueduct and the Central Valley Project Delta Mendota Canal, near the City of Tracy, as an operation and maintenance activity, except that the Secretary shall design and construct the intertie in a manner consistent with a possible future expansion of the intertie capacity (as described in subsection (f)(1)(B)); and

(ii) assessment of a connection of the Central Valley Project to the Clifton Court Forebay of the State Water Project, with a corresponding increase in the screened intake of the Forebay.

(D) PROGRAM TO MEET STANDARDS.—

(i) IN GENERAL.—Prior to increasing export limits from the Delta for the purposes of conveying water to south-of-Delta Central Valley Project contractors or increasing deliveries through an intertie, the Secretary shall, not later than 1 year after the date of enactment of this Act, in consultation with the Governor, develop and initiate implementation of a program to meet all existing water quality standards and objectives for which the Central Valley Project has responsibility. Deadline.

(ii) MEASURES.—In developing and implementing the program, the Secretary shall include, to the maximum extent feasible, the measures described in clauses (iii) through (vii).

(iii) RECIRCULATION PROGRAM.—The Secretary shall incorporate into the program a recirculation program to provide flow, reduce salinity concentrations in the San Joaquin River, and reduce the reliance on the New Melones Reservoir for meeting water quality and fishery flow objectives through the use of excess capacity in export pumping and conveyance facilities.

(iv) BEST MANAGEMENT PRACTICES PLAN.—

(I) IN GENERAL.—The Secretary shall develop and implement, in coordination with the State's programs to improve water quality in the San Joaquin River, a best management practices plan to reduce the water quality impacts of the discharges from wildlife refuges that receive water from the Federal Government and discharge salt or other constituents into the San Joaquin River.

(II) COORDINATION WITH INTERESTED PARTIES.—The plan shall be developed in coordination with interested parties in the San Joaquin Valley and the Delta.

(III) COORDINATION WITH ENTITIES THAT DISCHARGE WATER.—The Secretary shall also coordinate activities under this clause with other entities that discharge water into the San Joaquin River to reduce salinity concentrations discharged into

the River, including the timing of discharges to optimize their assimilation.

(v) ACQUISITION OF WATER.—The Secretary shall incorporate into the program the acquisition from willing sellers of water from streams tributary to the San Joaquin River or other sources to provide flow, dilute discharges of salt or other constituents, and to improve water quality in the San Joaquin River below the confluence of the Merced and San Joaquin Rivers, and to reduce the reliance on New Melones Reservoir for meeting water quality and fishery flow objectives.

(vi) PURPOSE.—The purpose of the authority and direction provided to the Secretary under this subparagraph is to provide greater flexibility in meeting the existing water quality standards and objectives for which the Central Valley Project has responsibility so as to reduce the demand on water from New Melones Reservoir used for that purpose and to assist the Secretary in meeting any obligations to Central Valley Project contractors from the New Melones Project.

(vii) UPDATING OF NEW MELONES OPERATING PLAN.—The Secretary shall update the New Melones operating plan to take into account, among other things, the actions described in this title that are designed to reduce the reliance on New Melones Reservoir for meeting water quality and fishery flow objectives, and to ensure that actions to enhance fisheries in the Stanislaus River are based on the best available science.

(3) WATER USE EFFICIENCY.—

(A) WATER CONSERVATION PROJECTS.—Activities under this paragraph include water conservation projects that provide water supply reliability, water quality, and ecosystem benefits to the California Bay-Delta system.

(B) TECHNICAL ASSISTANCE.—Activities under this paragraph include technical assistance for urban and agricultural water conservation projects.

(C) WATER RECYCLING AND DESALINATION PROJECTS.—Activities under this paragraph include water recycling and desalination projects, including groundwater remediation projects and projects identified in the Bay Area Water Plan and the Southern California Comprehensive Water Reclamation and Reuse Study and other projects, giving priority to projects that include regional solutions to benefit regional water supply and reliability needs.

(D) WATER MEASUREMENT AND TRANSFER ACTIONS.—Activities under this paragraph include water measurement and transfer actions.

(E) URBAN WATER CONSERVATION.—Activities under this paragraph include implementation of best management practices for urban water conservation.

(F) RECLAMATION AND RECYCLING PROJECTS.—

Applicability.

(i) PROJECTS.—This subparagraph applies to—

(I) projects identified in the Southern California Comprehensive Water Reclamation and Reuse Study, dated April 2001 and authorized by

section 1606 of the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h–4); and

(II) projects identified in the San Francisco Bay Area Regional Water Recycling Program described in the San Francisco Bay Area Regional Water Recycling Program Recycled Water Master Plan, dated December 1999 and authorized by section 1611 of the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h–9).

(ii) DEADLINE.—Not later than 180 days after the date of enactment of this Act, the Secretary shall—

(I) complete the review of the existing studies of the projects described in clause (i); and

(II) make the feasibility determinations described in clause (iii).

(iii) FEASIBILITY DETERMINATIONS.—A project described in clause (i) is presumed to be feasible if the Secretary determines for the project—

(I) in consultation with the affected local sponsoring agency and the State, that the existing planning and environmental studies for the project (together with supporting materials and documentation) have been prepared consistent with Bureau of Reclamation procedures for projects under consideration for financial assistance under the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h et seq.); and

(II) that the planning and environmental studies for the project (together with supporting materials and documentation) demonstrate that the project will contribute to the goals of improving water supply reliability in the Calfed solution area or the Colorado River Basin within the State and otherwise meets the requirements of section 1604 of the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h–2).

(iv) REPORT.—Not later than 90 days after the date of completion of a feasibility study or the review of a feasibility study under this subparagraph, the Secretary shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a report describing the results of the study or review.

(4) WATER TRANSFERS.—Activities under this paragraph consist of—

(A) increasing the availability of existing facilities for water transfers;

(B) lowering transaction costs through permit streamlining; and

(C) maintaining a water transfer information clearinghouse.

(5) INTEGRATED REGIONAL WATER MANAGEMENT PLANS.—Activities under this paragraph consist of assisting local and

regional communities in the State in developing and implementing integrated regional water management plans to carry out projects and programs that improve water supply reliability, water quality, ecosystem restoration, and flood protection, or meet other local and regional needs, in a manner that is consistent with, and makes a significant contribution to, the Calfed Bay-Delta Program.

(6) ECOSYSTEM RESTORATION.—

(A) IN GENERAL.—Activities under this paragraph consist of—

(i) implementation of large-scale restoration projects in San Francisco Bay and the Delta and its tributaries;

(ii) restoration of habitat in the Delta, San Pablo Bay, and Suisun Bay and Marsh, including tidal wetland and riparian habitat;

(iii) fish screen and fish passage improvement projects, including the Sacramento River Small Diversion Fish Screen Program;

(iv) implementation of an invasive species program, including prevention, control, and eradication;

(v) development and integration of Federal and State agricultural programs that benefit wildlife into the Ecosystem Restoration Program;

(vi) financial and technical support for locally-based collaborative programs to restore habitat while addressing the concerns of local communities;

(vii) water quality improvement projects to manage or reduce concentrations of salinity, selenium, mercury, pesticides, trace metals, dissolved oxygen, turbidity, sediment, and other pollutants;

(viii) land and water acquisitions to improve habitat and fish spawning and survival in the Delta and its tributaries;

(ix) integrated flood management, ecosystem restoration, and levee protection projects;

(x) scientific evaluations and targeted research on Program activities; and

(xi) strategic planning and tracking of Program performance.

(B) REPORTING REQUIREMENTS.—The Secretary or the head of the relevant Federal agency (as appropriate under clause (ii)) shall provide to the appropriate authorizing committees of the Senate and the House of Representatives and other appropriate parties in accordance with this subparagraph—

(i) an annual ecosystem program plan report in accordance with subparagraph (C); and

(ii) detailed project reports in accordance with subparagraph (D).

Reports.
Deadlines.

(C) ANNUAL ECOSYSTEM PROGRAM PLAN.—

(i) IN GENERAL.—Not later than October 1 of each year, with respect to each ecosystem restoration action carried out using Federal funds under this title, the Secretary, in consultation with the Governor, shall submit to the appropriate authorizing committees of

the Senate and the House of Representatives an annual ecosystem program plan report.

(ii) PURPOSES.—The purposes of the report are—

(I) to describe the projects and programs to implement this subsection in the following fiscal year; and

(II) to establish priorities for funding the projects and programs for subsequent fiscal years.

(iii) CONTENTS.—The report shall describe—

(I) the goals and objectives of the programs and projects;

(II) program accomplishments;

(III) major activities of the programs;

(IV) the Federal agencies involved in each project or program identified in the plan and the cost-share arrangements with cooperating agencies;

(V) the resource data and ecological monitoring data to be collected for the restoration projects and how the data are to be integrated, streamlined, and designed to measure the effectiveness and overall trend of ecosystem health in the Bay-Delta watershed;

(VI) implementation schedules and budgets;

(VII) existing monitoring programs and performance measures;

(VIII) the status and effectiveness of measures to minimize the impacts of the program on agricultural land; and

(IX) a description of expected benefits of the restoration program relative to the cost.

(iv) SPECIAL RULE FOR LAND ACQUISITION USING FEDERAL FUNDS.—For each ecosystem restoration project involving land acquisition using Federal funds under this title, the Secretary shall—

(I) identify the specific parcels to be acquired in the annual ecosystem program plan report under this subparagraph; or

(II) not later than 150 days before the project is approved, provide to the appropriate authorizing committees of the Senate and the House of Representatives, the United States Senators from the State, and the United States Representative whose district would be affected, notice of any such proposed land acquisition using Federal funds under this title submitted to the Federal or State agency.

Deadline. Notices.

(D) DETAILED PROJECT REPORTS.—

(i) IN GENERAL.—In the case of each ecosystem restoration program or project funded under this title that is not specifically identified in an annual ecosystem program plan under subparagraph (C), not later than 45 days prior to approval, the Secretary, in coordination with the State, shall submit to the appropriate authorizing committees of the Senate and the House of Representatives recommendations on the proposed program or project.

(ii) CONTENTS.—The recommendations shall—

(I) describe the selection of the program or project, including the level of public involvement and independent science review;

(II) describe the goals, objectives, and implementation schedule of the program or project, and the extent to which the program or project addresses regional and programmatic goals and priorities;

(III) describe the monitoring plans and performance measures that will be used for evaluating the performance of the proposed program or project;

(IV) identify any cost-sharing arrangements with cooperating entities;

(V) identify how the proposed program or project will comply with all applicable Federal and State laws, including the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

(VI) in the case of any program or project involving the acquisition of private land using Federal funds under this title—

(aa) describe the process and timing of notification of interested members of the public and local governments;

(bb) describe the measures taken to minimize impacts on agricultural land pursuant to the Record of Decision; and

(cc) include preliminary management plans for all properties to be acquired with Federal funds, including an overview of existing conditions (including habitat types in the affected project area), the expected ecological benefits, preliminary cost estimates, and implementation schedules.

(7) WATERSHEDS.—Activities under this paragraph consist of—

(A) building local capacity to assess and manage watersheds affecting the Delta system;

(B) technical assistance for watershed assessments and management plans; and

(C) developing and implementing locally-based watershed conservation, maintenance, and restoration actions.

(8) WATER QUALITY.—Activities under this paragraph consist of—

(A) addressing drainage problems in the San Joaquin Valley to improve downstream water quality (including habitat restoration projects that improve water quality) if—

(i) a plan is in place for monitoring downstream water quality improvements; and

(ii) State and local agencies are consulted on the activities to be funded;

except that no right, benefit, or privilege is created as a result of this subparagraph;

(B) implementation of source control programs in the Delta and its tributaries;

(C) developing recommendations through scientific panels and advisory council processes to meet the Calfed Bay-Delta Program goal of continuous improvement in Delta water quality for all uses;

(D) investing in treatment technology demonstration projects;

(E) controlling runoff into the California aqueduct, the Delta-Mendota Canal, and other similar conveyances;

(F) addressing water quality problems at the North Bay Aqueduct;

(G) supporting and participating in the development of projects to enable San Francisco Bay Area water districts, and water entities in San Joaquin and Sacramento Counties, to work cooperatively to address their water quality and supply reliability issues, including—

(i) connections between aqueducts, water transfers, water conservation measures, institutional arrangements, and infrastructure improvements that encourage regional approaches; and

(ii) investigations and studies of available capacity in a project to deliver water to the East Bay Municipal Utility District under its contract with the Bureau of Reclamation, dated July 20, 2001, in order to determine if such capacity can be utilized to meet the objectives of this subparagraph;

(H) development of water quality exchanges and other programs to make high quality water available for urban and other users;

(I) development and implementation of a plan to meet all Delta water quality standards for which the Federal and State water projects have responsibility;

(J) development of recommendations through science panels and advisory council processes to meet the Calfed Bay-Delta Program goal of continuous improvement in water quality for all uses; and

(K) projects that are consistent with the framework of the water quality component of the Calfed Bay-Delta Program.

(9) SCIENCE.—Activities under this paragraph consist of—

(A) supporting establishment and maintenance of an independent science board, technical panels, and standing boards to provide oversight and peer review of the Program;

(B) conducting expert evaluations and scientific assessments of all Program elements;

(C) coordinating existing monitoring and scientific research programs;

(D) developing and implementing adaptive management experiments to test, refine, and improve scientific understandings;

(E) establishing performance measures, and monitoring and evaluating the performance of all Program elements; and

(F) preparing an annual science report. Reports.

(10) DIVERSIFICATION OF WATER SUPPLIES.—Activities under this paragraph consist of actions to diversify sources of level 2 refuge supplies and modes of delivery to refuges while maintaining the diversity of level 4 supplies pursuant to section

3406(d)(2) of the Central Valley Project Improvement Act (Public Law 102–575; 106 Stat. 4723).

(e) NEW AND EXPANDED AUTHORIZATIONS FOR FEDERAL AGENCIES.—

(1) IN GENERAL.—The heads of the Federal agencies described in this subsection are authorized to carry out the activities described in subsection (f) during each of fiscal years 2005 through 2010, in coordination with the Governor.

(2) SECRETARY OF THE INTERIOR.—The Secretary of the Interior is authorized to carry out the activities described in paragraphs (1), (2), and (4) of subsection (f).

(3) ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY AND THE SECRETARIES OF AGRICULTURE AND COMMERCE.—The Administrator of the Environmental Protection Agency, the Secretary of Agriculture, and the Secretary of Commerce are authorized to carry out the activities described in subsection (f)(4).

(4) SECRETARY OF THE ARMY.—The Secretary of the Army is authorized to carry out the activities described in paragraphs (3) and (4) of subsection (f).

(f) DESCRIPTION OF ACTIVITIES UNDER NEW AND EXPANDED AUTHORIZATIONS.—

(1) CONVEYANCE.—Of the amounts authorized to be appropriated under section 109, not more than $184,000,000 may be expended for the following:

(A) SAN LUIS RESERVOIR.—Funds may be expended for feasibility studies, evaluation, and implementation of the San Luis Reservoir lowpoint improvement project, except that Federal participation in any construction of an expanded Pacheco Reservoir shall be subject to future congressional authorization.

(B) INTERTIE.—Funds may be expended for feasibility studies and evaluation of increased capacity of the intertie between the State Water Project California Aqueduct and the Central Valley Project Delta Mendota Canal.

(C) FRANKS TRACT.—Funds may be expended for feasibility studies and actions at Franks Tract to improve water quality in the Delta.

(D) CLIFTON COURT FOREBAY AND THE TRACY PUMPING PLANT.—Funds may be expended for feasibility studies and design of fish screen and intake facilities at Clifton Court Forebay and the Tracy Pumping Plant facilities.

(E) DRINKING WATER INTAKE FACILITIES.—

(i) IN GENERAL.—Funds may be expended for design and construction of the relocation of drinking water intake facilities to in-Delta water users.

(ii) DRINKING WATER QUALITY.—The Secretary shall coordinate actions for relocating intake facilities on a time schedule consistent with subsection (d)(2)(A)(i)(I)(bb) or take other actions necessary to offset the degradation of drinking water quality in the Delta due to the South Delta Improvement Program.

(F) NEW MELONES RESERVOIR.—

(i) IN GENERAL.—In addition to the other authorizations granted to the Secretary by this title, the Secretary shall acquire water from willing sellers

and undertake other actions designed to decrease releases from the New Melones Reservoir for meeting water quality standards and flow objectives for which the Central Valley Project has responsibility to assist in meeting allocations to Central Valley Project contractors from the New Melones Project.

(ii) PURPOSE.—The authorization under this subparagraph is solely meant to add flexibility for the Secretary to meet any obligations of the Secretary to the Central Valley Project contractors from the New Melones Project by reducing demand for water dedicated to meeting water quality standards in the San Joaquin River.

(iii) FUNDING.—Of the amounts authorized to be appropriated under section 109, not more than $30,000,000 may be expended to carry out clause (i).

(G) RECIRCULATION OF EXPORT WATER.—Funds may be used to conduct feasibility studies, evaluate, and, if feasible, implement the recirculation of export water to reduce salinity and improve dissolved oxygen in the San Joaquin River.

(2) ENVIRONMENTAL WATER ACCOUNT.—

(A) IN GENERAL.—Of the amounts authorized to be appropriated under section 109, not more than $90,000,000 may be expended for implementation of the Environmental Water Account.

(B) NONREIMBURSABLE FEDERAL EXPENDITURE.—Expenditures under subparagraph (A) shall be considered a nonreimbursable Federal expenditure in recognition of the payments of the contractors of the Central Valley Project to the Restoration Fund created by the Central Valley Project Improvement Act (Title XXXIV of Public Law 102–575; 106 Stat. 4706).

(C) USE OF RESTORATION FUND.—

(i) IN GENERAL.—Of the amounts appropriated for the Restoration Fund for each fiscal year, an amount not to exceed $10,000,000 for any fiscal year may be used to implement the Environmental Water Account to the extent those actions are consistent with the fish and wildlife habitat restoration and improvement purposes of the Central Valley Project Improvement Act.

(ii) ACCOUNTING.—Any such use of the Restoration Fund shall count toward the 33 percent of funds made available to the Restoration Fund that, pursuant to section 3407(a) of the Central Valley Project Improvement Act, are otherwise authorized to be appropriated to the Secretary to carry out paragraphs (4) through (6), (10) through (18), and (20) through (22) of section 3406(b) of that Act.

(iii) FEDERAL FUNDING.—The $10,000,000 limitation on the use of the Restoration Fund for the Environmental Water Account under clause (i) does not limit the appropriate amount of Federal funding for the Environmental Water Account.

(3) LEVEE STABILITY.—

(A) IN GENERAL.—For purposes of implementing the Calfed Bay-Delta Program within the Delta (as defined in Cal. Water Code § 12220)), the Secretary of the Army is authorized to undertake the construction and implementation of levee stability programs or projects for such purposes as flood control, ecosystem restoration, water supply, water conveyance, and water quality objectives.

(B) REPORT.—Not later than 180 days after the date of enactment of this Act, the Secretary of the Army shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a report that describes the levee stability reconstruction projects and priorities that will be carried out under this title during each of fiscal years 2005 through 2010.

Applicability.

(C) SMALL FLOOD CONTROL PROJECTS.—Notwithstanding the project purpose, the authority granted under section 205 of the Flood Control Act of 1948 (33 U.S.C. 701s) shall apply to each project authorized under this paragraph.

(D) PROJECTS.—Of the amounts authorized to be appropriated under section 109, not more than $90,000,000 may be expended to—

(i) reconstruct Delta levees to a base level of protection (also known as the "Public Law 84–99 standard");

(ii) enhance the stability of levees that have particular importance in the system through the Delta Levee Special Improvement Projects Program;

(iii) develop best management practices to control and reverse land subsidence on Delta islands;

(iv) develop a Delta Levee Emergency Management and Response Plan that will enhance the ability of Federal, State, and local agencies to rapidly respond to levee emergencies;

(v) develop a Delta Risk Management Strategy after assessing the consequences of Delta levee failure from floods, seepage, subsidence, and earthquakes;

(vi) reconstruct Delta levees using, to the maximum extent practicable, dredged materials from the Sacramento River, the San Joaquin River, and the San Francisco Bay in reconstructing Delta levees;

(vii) coordinate Delta levee projects with flood management, ecosystem restoration, and levee protection projects of the lower San Joaquin River and lower Mokelumne River floodway improvements and other projects under the Sacramento-San Joaquin Comprehensive Study; and

(viii) evaluate and, if appropriate, rehabilitate the Suisun Marsh levees.

(4) PROGRAM MANAGEMENT, OVERSIGHT, AND COORDINATION.—

(A) IN GENERAL.—Of the amounts authorized to be appropriated under section 109, not more than $25,000,000 may be expended by the Secretary or the other heads of Federal agencies, either directly or through grants, contracts, or cooperative agreements with agencies of the State, for—

(i) Program support;

(ii) Program-wide tracking of schedules, finances, and performance;

(iii) multiagency oversight and coordination of Program activities to ensure Program balance and integration;

(iv) development of interagency cross-cut budgets and a comprehensive finance plan to allocate costs in accordance with the beneficiary pays provisions of the Record of Decision;

(v) coordination of public outreach and involvement, including tribal, environmental justice, and public advisory activities in accordance with the Federal Advisory Committee Act (5 U.S.C. App.); and

(vi) development of Annual Reports.

(B) PROGRAM-WIDE ACTIVITIES.—Of the amount referred to in subparagraph (A), not less than 50 percent of the appropriated amount shall be provided to the California Bay-Delta Authority to carry out Program-wide management, oversight, and coordination activities.

SEC. 104. MANAGEMENT.

(a) COORDINATION.—In carrying out the Calfed Bay-Delta Program, the Federal agencies shall coordinate their activities with the State agencies.

(b) PUBLIC PARTICIPATION.—In carrying out the Calfed Bay-Delta Program, the Federal agencies shall cooperate with local and tribal governments and the public through an advisory committee established in accordance with the Federal Advisory Committee Act (5 U.S.C. App.) and other appropriate means, to seek input on Program planning and design, technical assistance, and development of peer review science programs.

(c) SCIENCE.—In carrying out the Calfed Bay-Delta Program, the Federal agencies shall seek to ensure, to the maximum extent practicable, that—

(1) all major aspects of implementing the Program are subjected to credible and objective scientific review; and

(2) major decisions are based upon the best available scientific information.

(d) GOVERNANCE.—

(1) IN GENERAL.—In carrying out the Calfed Bay-Delta Program, the Secretary and the Federal agency heads are authorized to participate as nonvoting members of the California Bay-Delta Authority, as established in the California Bay-Delta Authority Act (Cal. Water Code §79400 et seq.), to the extent consistent with Federal law, for the full duration of the period the Authority continues to be authorized by State law.

(2) RELATIONSHIP TO FEDERAL LAW AND AGENCIES.—Nothing in this subsection shall preempt or otherwise affect any Federal law or limit the statutory authority of any Federal agency.

(3) CALIFORNIA BAY-DELTA AUTHORITY.—

(A) ADVISORY COMMITTEE.—The California Bay-Delta Authority shall not be considered an advisory committee within the meaning of the Federal Advisory Committee Act (5 U.S.C. App.).

(B) FINANCIAL INTEREST.—The financial interests of the California Bay-Delta Authority shall not be imputed to any Federal official participating in the Authority.

(C) ETHICS REQUIREMENTS.—A Federal official participating in the California Bay-Delta Authority shall remain subject to Federal financial disclosure and conflict of interest laws and shall not be subject to State financial disclosure and conflict of interest laws.

(e) ENVIRONMENTAL JUSTICE.—The Federal agencies, consistent with Executive Order 12898 (59 Fed. Reg. 7629), should continue to collaborate with State agencies to—

(1) develop a comprehensive environmental justice workplan for the Calfed Bay-Delta Program; and

(2) fulfill the commitment to addressing environmental justice challenges referred to in the Calfed Bay-Delta Program Environmental Justice Workplan, dated December 13, 2000.

(f) LAND ACQUISITION.—Federal funds appropriated by Congress specifically for implementation of the Calfed Bay-Delta Program may be used to acquire fee title to land only where consistent with the Record of Decision.

SEC. 105. REPORTING REQUIREMENTS.

(a) REPORT.—

(1) IN GENERAL.—Not later than February 15 of each year, the Secretary, in cooperation with the Governor, shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a report that—

(A) describes the status of implementation of all components of the Calfed Bay-Delta Program;

(B) sets forth any written determination resulting from the review required under subsection (b) or section 103(d)(1)(B); and

(C) includes any revised schedule prepared under subsection (b) or section 103(d)(1)(B)(iii)(II).

(2) CONTENTS.—The report required under paragraph (1) shall describe—

(A) the progress of the Calfed Bay-Delta Program in meeting the implementation schedule for the Program in a manner consistent with the Record of Decision;

(B) the status of implementation of all components of the Program;

(C) expenditures in the past fiscal year for implementing the Program;

(D) accomplishments during the past fiscal year in achieving the objectives of additional and improved—

(i) water storage;

(ii) water quality, including—

(I) the water quality targets described in section 2.2.9 of the Record of Decision; and

(II) any pending actions that may affect the ability of the Calfed Bay-Delta Program to achieve those targets and requirements;

(iii) water use efficiency;

(iv) ecosystem restoration;

(v) watershed management;

(vi) levee system integrity;

(vii) water transfers;

(viii) water conveyance;

(ix) water supply reliability (including new firm yield), including progress in achieving the water supply targets described in section 2.2.4 of the Record of Decision and any pending actions that may affect the ability of the Calfed Bay-Delta Program to achieve those targets; and

(x) the uses and assets of the environmental water account described in section 2.2.7 of the Record of Decision;

(E) Program goals, current schedules, and relevant financing agreements, including funding levels necessary to achieve completion of the feasibility studies and environmental documentation for the surface storage projects identified in section 103 by not later than September 30, 2008;

(F) progress on—

(i) storage projects;

(ii) conveyance improvements;

(iii) levee improvements;

(iv) water quality projects; and

(v) water use efficiency programs;

(G) completion of key projects and milestones identified in the Ecosystem Restoration Program, including progress on project effectiveness, monitoring, and accomplishments;

(H) development and implementation of local programs for watershed conservation and restoration;

(I) progress in improving water supply reliability and implementing the Environmental Water Account;

(J) achievement of commitments under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) and endangered species law of the State;

(K) implementation of a comprehensive science program;

(L) progress toward acquisition of the Federal and State permits (including permits under section 404(a) of the Federal Water Pollution Control Act (33 U.S.C. 1344(a))) for implementation of projects in all identified Program areas;

(M) progress in achieving benefits in all geographic regions covered by the Program;

(N) legislative action on—

(i) water transfer;

(ii) groundwater management;

(iii) water use efficiency; and

(iv) governance;

(O) the status of complementary actions;

(P) the status of mitigation measures; and

(Q) revisions to funding commitments and Program responsibilities.

(b) ANNUAL REVIEW OF PROGRESS AND BALANCE.—

(1) IN GENERAL.—Not later than November 15 of each year, the Secretary, in cooperation with the Governor, shall review progress in implementing the Calfed Bay-Delta Program based on— Deadline.

(A) consistency with the Record of Decision; and

(B) balance in achieving the goals and objectives of the Calfed Bay-Delta Program.

(2) REVISED SCHEDULE.—If, at the conclusion of each such annual review or if a timely annual review is not undertaken, the Secretary or the Governor determines in writing that either the Program implementation schedule has not been substantially adhered to, or that balanced progress in achieving the goals and objectives of the Program is not occurring, the Secretary and the Governor, in coordination with the Bay-Delta Public Advisory Committee, shall prepare a revised schedule to achieve balanced progress in all Calfed Bay-Delta Program elements consistent with the intent of the Record of Decision.

(c) FEASIBILITY STUDIES.—Any feasibility studies completed as a result of this title shall include identification of project benefits and a cost allocation plan consistent with the beneficiaries pay provisions of the Record of Decision.

SEC. 106. CROSSCUT BUDGET.

(a) IN GENERAL.—The President's budget shall include such requests as the President considers necessary and appropriate for the appropriate level of funding for each of the Federal agencies to carry out its responsibilities under the Calfed Bay-Delta Program.

(b) REQUESTS BY FEDERAL AGENCIES.—The funds shall be requested for the Federal agency with authority and programmatic responsibility for the obligation of the funds, in accordance with subsections (b) through (f) of section 103.

(c) REPORT.—Not later than 30 days after submission of the budget of the President to Congress, the Director of the Office of Management and Budget, in coordination with the Governor, shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a financial report certified by the Secretary containing—

(1) an interagency budget crosscut report that—

(A) displays the budget proposed, including any interagency or intra-agency transfer, for each of the Federal agencies to carry out the Calfed Bay-Delta Program for the upcoming fiscal year, separately showing funding requested under both pre-existing authorities and under the new authorities granted by this title; and

(B) identifies all expenditures since 1998 by the Federal and State governments to achieve the objectives of the Calfed Bay-Delta Program;

(2) a detailed accounting of all funds received and obligated by all Federal agencies and State agencies responsible for implementing the Calfed Bay-Delta Program during the previous fiscal year;

(3) a budget for the proposed projects (including a description of the project, authorization level, and project status) to be carried out in the upcoming fiscal year with the Federal portion of funds for activities under subsections (b) through (f) of section 103; and

(4) a listing of all projects to be undertaken in the upcoming fiscal year with the Federal portion of funds for activities under subsections (b) through (f) of section 103.

SEC. 107. FEDERAL SHARE OF COSTS.

(a) IN GENERAL.—The Federal share of the cost of implementing the Calfed Bay-Delta Program for fiscal years 2005 through 2010

in the aggregate, as set forth in the Record of Decision, shall not exceed 33.3 percent.

(b) PAYMENT FOR BENEFITS.—The Secretary shall ensure that all beneficiaries, including beneficiaries of environmental restoration and other Calfed program elements, shall pay for the benefit received from all projects or activities carried out under the Calfed Bay-Delta Program.

(c) INTEGRATED RESOURCE PLANNING.—Federal expenditures for the Calfed Bay-Delta Program shall be implemented in a manner that encourages integrated resource planning.

SEC. 108. COMPLIANCE WITH STATE AND FEDERAL LAW.

Nothing in this title—

(1) invalidates or preempts State water law or an interstate compact governing water;

(2) alters the rights of any State to any appropriated share of the waters of any body of surface or ground water;

(3) preempts or modifies any State or Federal law or interstate compact governing water quality or disposal;

(4) confers on any non-Federal entity the ability to exercise any Federal right to the waters of any stream or to any ground water resource; or

(5) alters or modifies any provision of existing Federal law, except as specifically provided in this title.

SEC. 109. AUTHORIZATION OF APPROPRIATION.

There are authorized to be appropriated to the Secretary and the heads of the Federal agencies to pay the Federal share of the cost of carrying out the new and expanded authorities described in subsections (e) and (f) of section 103 $389,000,000 for the period of fiscal years 2005 through 2010, to remain available until expended.

TITLE II—MISCELLANEOUS

SEC. 201. SALTON SEA STUDY PROGRAM.

Deadline.

Not later than December 31, 2006, the Secretary of the Interior, in coordination with the State of California and the Salton Sea Authority, shall complete a feasibility study on a preferred alternative for Salton Sea restoration.

SEC. 202. ALDER CREEK WATER STORAGE AND CONSERVATION PROJECT FEASIBILITY STUDY AND REPORT.

(a) STUDY.—Pursuant to Federal reclamation law (the Act of June 17, 1902 (32 Stat. 388, chapter 1093), and Acts supplemental to and amendatory of that Act (43 U.S.C. 371 et seq.)), the Secretary of the Interior (referred to in this section as the "Secretary"), through the Bureau of Reclamation, and in consultation and cooperation with the El Dorado Irrigation District, is authorized to conduct a study to determine the feasibility of constructing a project on Alder Creek in El Dorado County, California, to store water and provide water supplies during dry and critically dry years for consumptive use, recreation, in-stream flows, irrigation, and power production.

(b) REPORT.—

(1) TRANSMISSION.—On completion of the study authorized by subsection (a), the Secretary shall transmit to the Committee

on Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report containing the results of the study.

(2) CONTENTS OF REPORT.—The report shall contain appropriate cost sharing options for the implementation of the project based on the use and possible allocation of any stored water.

(3) USE OF AVAILABLE MATERIALS.—In developing the report under this section, the Secretary shall use reports and any other relevant information supplied by the El Dorado Irrigation District.

(c) COST SHARE.—

(1) FEDERAL SHARE.—The Federal share of the costs of the feasibility study authorized by this section shall not exceed 50 percent of the total cost of the study.

(2) IN-KIND CONTRIBUTION FOR NON-FEDERAL SHARE.—The Secretary may accept as part of the non-Federal cost share the contribution such in-kind services by the El Dorado Irrigation District as the Secretary determines will contribute to the conduct and completion of the study.

(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $3,000,000.

SEC. 203. FOLSOM RESERVOIR TEMPERATURE CONTROL DEVICE AUTHORIZATION.

Section 1(c) of Public Law 105–295 (112 Stat. 2820) (as amended by section 219(b) of Public Law 108–137 (117 Stat. 1853)) is amended in the second sentence by striking "$3,500,000" and inserting "$6,250,000".

Approved October 25, 2004.

LEGISLATIVE HISTORY—H.R. 2828:

HOUSE REPORTS: No. 108–573, Pt. 1 (Comm. on Resources).
CONGRESSIONAL RECORD, Vol. 150 (2004):
July 9, considered and passed House.
Sept. 15, considered and passed Senate, amended.
Oct. 6, House concurred in Senate amendment.

○

Attachment 3

State Water Resources Control Board Order WR 2010-0002
Modifying Order WR 2006-0006

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER WR 2010-0002

In the Matter of Cease and Desist Order WR 2006-0006 against the Department of Water Resources and the United States Bureau of Reclamation in Connection with Water Right Permits and License for the State Water Project and Central Valley Project[1]

SOURCES: Sacramento and San Joaquin Rivers and their tributaries, and the Sacramento-San Joaquin Delta Estuary

COUNTY: San Joaquin

ORDER MODIFYING ORDER WR 2006-0006

BY THE BOARD:

1.0 INTRODUCTION

By this order, the State Water Resources Control Board (State Water Board or Board) modifies State Water Board Order WR 2006-0006, which is a cease and desist order issued against the Department of Water Resources (DWR) and the United States Bureau of Reclamation (USBR) in response to the threatened violation of DWR's water right permits for the State Water Project (SWP) and USBR's water right license and permits for the Central Valley Project (CVP). In Part A of Order WR 2006-0006, the State Water Board required DWR and USBR to take corrective actions in accordance with a time schedule in order to obviate the threatened violation of the requirement to meet a water quality objective for salinity designed to protect agricultural beneficial uses in the southern Sacramento-San Joaquin Delta Estuary (Delta).[2]

[1] Permits 16478, 16479, 16481, 16482, and 16483 (Applications 5630, 14443, 14445A, 17512, and 17514A, respectively) of the Department of Water Resources and License 1986 (Application 23) and Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, 15735, 16597, 16600, and 20245 (Applications 13370, 13371, 234, 1465, 5638, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9364, 9366, 9367, 9368, 15764, 22316, 14858A, 19304, and 14858B, respectively) of the United States Bureau of Reclamation.

[2] In Part B of Order WR 2006-0006, the State Water Board amended the July 1, 2005 approval by the Chief of the Division of Water Rights of a Water Quality Response Plan submitted by DWR and USBR for their use of each other's points of diversion in the Delta. This order does not modify Part B of Order WR 2006-0006.

At the outset, it bears emphasis that the purpose of this proceeding is not to determine the responsibility of DWR and USBR to meet the salinity objective, an issue that was addressed in Order WR 2006-0006, or to revisit the issue of whether a threat of violation exists. Instead, the purpose of this proceeding is to determine whether to modify the compliance schedule contained in Order WR 2006-0006, and whether to impose any interim protective measures.

As more fully explained below, we have determined that the July 1, 2009 deadline to obviate the threat of violation should be extended in recognition of the fact that, in a biological opinion issued in June of 2009, the National Marine Fisheries Service (NOAA Fisheries) prohibited DWR from constructing permanent, operable gates in the southern Delta as part of the South Delta Improvements Program (SDIP). Construction of the gates was a central component of DWR and USBR's plan to achieve compliance with the salinity objective as required by Order WR 2006-0006. We will extend the compliance deadline until after we have completed our current review of the salinity objectives and associated program of implementation contained in the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (2006 Bay-Delta Plan) and any subsequent water right proceeding so that, in developing a revised compliance plan, DWR and USBR can take into account any changes to their responsibility for meeting the objective that may occur as a result of our review. To avoid undue delay in the preparation and implementation of a revised compliance plan, we will require DWR and USBR to provide any technical assistance necessary to support our efforts to complete our review of the 2006 Bay-Delta Plan and any subsequent water right proceeding expeditiously.

In the interim, we will require DWR, with any necessary assistance from USBR, to continue to implement and improve upon the temporary barriers program. The temporary barriers improve salinity in the southern Delta, but they are not sufficient by themselves to ensure compliance with the salinity objective. More information is needed, however, concerning the effectiveness and feasibility of other salinity control measures. Accordingly, we will require DWR and USBR to study the feasibility of alternative salinity control measures, and we will delegate to the Executive Director the authority to require DWR and USBR to implement on an interim basis any additional salinity control measures that the Executive Director determines are reasonable and feasible.

2.0 LEGAL, FACTUAL, AND PROCEDURAL BACKGROUND

2.1 State Water Board Decision 1641

In State Water Board Decision 1641 (Revised March 15, 2000, in accordance with State Water Board Order WR 2000-02), the State Water Board determined the responsibility of specified water right holders, including DWR and USBR, to meet water quality objectives set forth in the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (1995 Bay-Delta Plan). As part of that decision, the Board imposed a number of requirements on DWR and USBR, including the requirement to meet salinity objectives designed to protect agricultural beneficial uses in the interior southern Delta. Specifically, the SWP and CVP water rights are conditioned on implementation of 0.7 millimhos per centimeter (mmhos/cm) electrical conductivity (EC) from April 1 through August 31 each year and 1.0 mmhos/cm EC from September 1 through March 31 each year at the following three locations in the interior southern Delta: (1) Station C-6 (San Joaquin River at Brandt Bridge), (2) Station C-8 (Old River near Middle River), and (3) Station P-12 (Old River at Tracy Road Bridge).[3] (Revised Decision 1641 at pp. 159-161, 182.) These objectives are referred to in this order as the interior southern Delta salinity objectives.

2.2 Cease and Desist Authority for Water Right Violations

The State Water Board may issue a cease and desist order (CDO) in response to a violation or threatened violation of (1) the prohibition against the unauthorized diversion of water, (2) a term or condition of a water right permit, license, certification, or registration, or (3) a State Water Board order or decision issued pursuant to specified provisions of the Water Code. (Wat. Code, § 1831, subds. (a) & (d)(1-3).) The State Water Board may require compliance immediately or the State Water Board may set a time schedule for compliance. (Wat. Code, § 1831, subd. (b).) The State Water Board may, after notice and opportunity for hearing, modify, revoke, or stay a CDO, either on its own motion or upon application by any aggrieved person. (Wat. Code, § 1832.)

[3] In addition, the CVP is required to meet the same salinity objectives in the San Joaquin River at Vernalis, but the requirement to meet the objectives at Vernalis is not an issue in this proceeding.

Water Code section 1845, subdivision (b) provides that any person who does not comply with a CDO may be liable for an amount not to exceed one thousand dollars for each day in which the violation occurred. In addition to imposing administrative civil liability pursuant to this provision, the State Water Board may request the Attorney General to petition the superior court for injunctive relief. (*Id*., § 1845, subd. (a).)

2.3 State Water Board Order WR 2006-0006

On February 15, 2006, the State Water Board issued a CDO against DWR and USBR for the threatened violation of the requirement to meet the 0.7 mmhos/cm interior southern Delta salinity objective. (State Water Board Order WR 2006-0006 or 2006 CDO.) The State Water Board ordered USBR and DWR to implement measures to obviate the threat of violation by July 1, 2009. (*Id*. at pp. 17, 26.) The State Water Board established the July 1, 2009 compliance deadline in order to accommodate DWR and USBR's plan to meet the salinity objective by constructing permanent, operable gates (then called permanent barriers) in the Delta. (*Id*. at pp. 17, 21-22.) The gates were expected to decrease salinity levels by improving water circulation in interior southern Delta channels. At the time, DWR and USBR estimated that construction of the permanent gates would be completed by early 2009. (*Id*. at p. 27.)

Although the State Water Board established the July 1, 2009 deadline in order to accommodate DWR and USBR's plan to construct the permanent gates, the Board did not require DWR and USBR to construct the gates. Instead, the Board required DWR and USBR to develop and implement a plan to obviate the threat of violation by either constructing the permanent gates or implementing equivalent salinity control measures. (*Id*. at pp. 23, 29-30.) The Board required DWR and USBR to submit the compliance plan to the Board's Executive Director for approval within 60 days of the effective date of the order.

In the 2006 CDO, the State Water Board also imposed several reporting requirements. The Board ordered DWR and USBR to submit quarterly status reports on progress towards compliance with the 0.7 mmhos/cm interior southern Delta salinity objective, including an updated projection of the final compliance date. (*Id*. at p. 31.) In addition, the Board required DWR and USBR to report any projected future exceedances of the objective, as well as any actual exceedances. (*Id*. at p. 30.) A report of any potential or actual exceedance was to include a description of any corrective actions DWR or USBR had taken to avoid or curtail the exceedance. The Board specified that corrective actions could include additional releases from

upstream CVP facilities or south of the Delta SWP or CVP facilities, a change in timing of releases from SWP or CVP facilities, a reduction in exports, recirculation of water through the San Joaquin River, purchases or exchanges of water with other entities, modified operations of temporary barriers in the Delta, reductions in saline drainage from upstream sources, or the provision of alternative supplies to Delta farmers, including overland supplies. (*Ibid*.)

2.4 DWR and USBR's Compliance Plan

As required by the 2006 CDO, DWR and USBR submitted a compliance plan dated April 14, 2006. (State Water Board Staff Exhibit 10.) The plan proposed to obviate the threat of violation at Station C-8 (Old River near Middle River) and Station P-12 (Old River at Tracy Road Bridge) by constructing the permanent, operable gates component of the SDIP. The plan stated that additional actions to control local salinity discharges might be needed, but the gates were a necessary first step. The plan proposed to obviate the threat of violation at Station C-6 (San Joaquin River at Brandt Bridge) by continuing and expanding ongoing San Joaquin River salinity management activities. The State Water Board Executive Director approved the compliance plan by letter dated May 12, 2006. (State Water Board Staff Exhibit 9.)

2.5 Environmental Review Process for the SDIP

In order to implement the SDIP, including the permanent gates, DWR and USBR needed to comply with numerous regulatory requirements, including the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), sections 401 and 404 of the Clean Water Act (33 U.S.C. §§ 1341, 1344), section 10 of the Rivers and Harbors Act (33 U.S.C. § 403), and sections 1600 through 1616 of the Fish and Game Code. (See DWR Exhibit DWR-14.)[4] In addition, USBR and DWR needed to prepare environmental documentation pursuant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), respectively.

[4] DWR Exhibit DWR-14 is a quarterly status report that DWR submitted to the State Water Board in accordance with the 2006 CDO. DWR requests the State Water Board to take official notice of this report, along with a number of other reports that DWR submitted to the Board in accordance with the 2006 CDO, all of which are labeled for identification Exhibits DWR-13 through DWR-32. We take official notice of these reports pursuant to California Code of Regulations, title 23, section 648.2 (authorizing the State Water Board to take official notice of matters that may be judicially noticed), and pursuant to Evidence Code section 452, subdivision (c) (authorizing judicial notice of the official acts of administrative agencies).

On June 6, 2006, USBR initiated formal consultation with NOAA Fisheries and the U.S. Fish and Wildlife Service (USFWS) pursuant to section 7 of the ESA (16 U.S.C. § 1536). (DWR Exhibit DWR-14.) In DWR's August 31, 2006 status report, DWR estimated that the consultation process would be complete, and NOAA Fisheries and USFWS would issue biological opinions concerning the SDIP, by November 2, 2006. (*Ibid*.) DWR estimated that most of the other regulatory approvals necessary to implement the SDIP would be obtained by November 2006, as well. (*Ibid*.) To comply with NEPA and CEQA, USBR and DWR had prepared a draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the SDIP in November 2005. (DWR Exhibit DWR-13.) By December 2006, USBR and DWR had finalized the EIS/EIR. (DWR Exhibit DWR-04, p. 2; DWR Exhibit DWR-16.)

In a quarterly status report dated February 28, 2007, DWR informed the State Water Board that consultation with NOAA Fisheries and USFWS had been delayed due to the fishery agencies' concerns about the interrelatedness of the SDIP and the long-term operation of the CVP and SWP under the Operations, Criteria, and Plan (OCAP), which was the subject of a separate consultation process. (DWR Exhibit DWR-16.) In a quarterly status report dated May 31, 2007, DWR reported that DWR and USBR had agreed to include operation of the permanent gates as part of the OCAP consultation, which meant that the consultation process for the gates would be delayed until April 2008. (DWR Exhibit DWR-17.) As a result, DWR estimated that the permanent gates would not be constructed and operable until April 2011. (*Ibid*.) Accordingly, DWR requested the State Water Board to modify Order WR 2006-0006 by extending the July 1, 2009 compliance deadline to July 1, 2011. (*Ibid*.)

Although the State Water Board resolved to take action on DWR's request (State Water Board Resolution 2007-0079 at p. 7), the Board did not schedule a hearing to consider the request until June of 2009. In the interim, DWR continued to submit quarterly status reports. In a quarterly status report dated February 29, 2008, DWR informed the Board that the NOAA Fisheries' biological opinion would not be completed until sometime between March and May of 2009, and therefore the permanent gates would not be operable until April 2012. (DWR Exhibit DWR-20.)

In a quarterly status report dated February 27, 2009, DWR informed the State Water Board that USFWS had issued a biological opinion on December 15, 2008, which allowed operation of the gates, subject to USFWS approval to protect Delta smelt. NOAA Fisheries, on the other hand,

had released a draft biological opinion in December 2008, which concluded that the permanent gates would degrade critical habitat for Central Valley steelhead. (DWR Exhibit DWR-24.) In addition, staff from NOAA Fisheries had indicated that additional studies were needed to address the potential impact of the gates on salmonid predation. (*Ibid*.) According to DWR, NOAA Fisheries proposed to estimate the predation impacts of the permanent gates based on a two-year study of the predation impacts of temporary barriers in the Delta that the United States Army Corps of Engineers had required as a condition of the Clean Water Act section 404 permit for the temporary barriers. (*Ibid*.) DWR estimated that the two-year predation study would not be complete until early 2011, and therefore the schedule for completion of the permanent gates would be further delayed. (*Ibid*.)

2.6 Application for Modification of Order WR 2006-0006

By letter dated May 29, 2009, DWR and USBR again applied for a modification to Order WR 2006-0006 in light of the fact that the permanent gates would not be installed by July 1, 2009. (State Water Board Staff Exhibit 5.) In the letter, DWR stated that its upcoming quarterly status report would provide information on changes to the schedule. In the subsequent status report, dated June 1, 2009, DWR explained that a three-year predation study was needed, rather than a two-year study, and therefore installation of the permanent gates would be delayed by another four years. (State Water Board Staff Exhibit 4.) Contrary to DWR's previous estimate that the gates would be operable by April 2012, DWR estimated that the gates could be completed in time for the 2016 agricultural season. (*Ibid*.)

2.7 NOAA Fisheries' 2009 Biological Opinion for CVP and SWP Operations

On June 4, 2009, NOAA Fisheries issued a final biological opinion for the operation of the CVP and SWP under the OCAP. In the biological opinion, NOAA Fisheries found that the replacement of temporary barriers in the Delta with permanent operable gates would adversely modify critical habitat, and directed DWR not to implement the SDIP. (Staff Exhibit 3, p. 659.) Under the ESA, NOAA Fisheries was required to identify any reasonable and prudent alternatives that would allow the gates to be operated in compliance with the ESA. (16 U.S.C. § 1536(b)(3)(A).) In this case, however, NOAA Fisheries did not identify any reasonable and prudent alternative to the permanent gates that would meet ESA requirements. (Staff Exhibit 3, p. 659.) NOAA Fisheries stated that USBR could reinitiate consultation, or DWR could apply for

a permit under section 10 of the ESA, after analyses of the operation of temporary barriers in the Delta had been completed. (*Ibid*.)

2.8 Exceedances of Interior Southern Delta Salinity Objective

Since the State Water Board issued the 2006 CDO against DWR and USBR in February 2006, salinity levels at Station P-12 (Old River at Tracy Road Bridge) have exceeded the 0.7 mmhos/cm salinity objective on numerous occasions. According to the exceedance reports that USBR and DWR submitted to the State Water Board as part of this proceeding,[5] the salinity objective was exceeded at Station P-12 during the following periods: (1) April 2007 (USBR Exhibit 8);[6] (2) June 16 through July 13, 2008 (DWR Exhibit DWR-27); (3) April 1 through April 20, 2009 (DWR Exhibit DWR 30); and (4) June 24 through July 3, 2009 (DWR Exhibit DWR-32). In addition, the exceedance reports that were submitted indicate that the salinity objective was exceeded at Station C-6 (San Joaquin River at Brandt Bridge) from June 25 through July 13, 2008, and at Station C-8 (Old River near Middle River) from June 22 through July 13, 2008. (DWR Exhibit DWR-27.)[7]

The only corrective action identified in DWR's and USBR's exceedance reports that DWR or USBR took in order to avoid or curtail exceedances of the interior southern Delta salinity objective was the implementation of the temporary barriers program. (See DWR Exhibit DWR-31; DWR Exhibit DWR-32.) The temporary barriers program entails the seasonal construction and operation of three flow control barriers in the southern Delta. (DWR Exhibit

[5] The exceedances only include those that were reported in the exceedance reports that DWR and USBR submitted as part of this proceeding. Additional exceedances that were not documented in the exceedance reports that were submitted as part of this proceeding are not included in this listing.

[6] USBR Exhibit 8 is an exceedance report that USBR submitted to the State Water Board in accordance with Decision 1641 and the 2006 CDO. USBR requests the State Water Board to take official notice of this report, along with a number of other reports that USBR submitted to the Board in accordance with the 2006 CDO and some related correspondence, all of which are labeled for identification USBR Exhibits 1 through 8. We take official notice of USBR Exhibit 8 pursuant to California Code of Regulations, title 23, section 648.2 (authorizing the State Water Board to take official notice of matters that may be judicially noticed), and pursuant to Evidence Code section 452, subdivision (c) (authorizing judicial notice of the official acts of administrative agencies). The remaining documents are either the subject of DWR's request for official notice or contain information that is also contained in DWR's exhibits. We also note that USBR labeled two documents as USBR Exhibit 1. The other document, the written testimony of Paul Fujitani, has been admitted into evidence.

[7] DWR also has reported exceedances of the 1.0 mmhos/cm salinity objective during the following periods: March 16-22, 2008 (DWR Exhibit DWR 25); December 19, 2008 through March 10, 2009 (DWR Exhibit DWR-30); and March 23-31, 2009 (*ibid*).

DWR-05.) As stated earlier, the temporary barriers improve salinity levels, but they are not sufficient by themselves to ensure that the objective will be met. (*Id.* at p. 5.)

2.9 Water Quality Control Planning Process

The State Water Board is currently reviewing the 2006 Bay-Delta Plan to determine what, if any, changes should be made to the southern Delta salinity objectives or the associated program of implementation for those objectives to ensure the reasonable protection of agricultural beneficial uses in the southern Delta. As part of this effort, the State Water Board issued a Notice of Preparation pursuant to CEQA and held a public scoping meeting in March of 2009. (State Water Board Staff Exhibit 6.) State Water Board staff are currently preparing technical and environmental analyses to inform the State Water Board regarding any modification to the objectives. In July of 2009, the State Water Board released a draft report for public review entitled *Salt Tolerance of Crops in the Southern Sacramento-San Joaquin Delta* (Draft Report) by Dr. Glen Hoffman.[8] The Draft Report suggests that higher salinity water than the current objectives may be fully protective of agricultural beneficial uses in the southern Delta and recommends additional analyses to further review this issue. Once the Draft Report is finalized, the information from it and other relevant information will be used to inform the State Water Board's water quality control planning (basin planning) and environmental review proceedings.

Following completion of environmental analyses, State Water Board staff will prepare any proposed amendments to the southern Delta salinity objectives or the associated program of implementation and will circulate the draft amendments and associated environmental documentation for public comment. The State Water Board will then determine what, if any, changes should be made to the objectives and program of implementation through adoption of any amendments to the Bay-Delta Plan. Following this basin planning phase, the State Water Board will undertake any necessary water rights or other proceeding to assign responsibility for meeting the southern Delta salinity objectives, which could include changes to DWR's and USBR's responsibility for meeting the interior southern Delta salinity objectives. The State

[8] San Luis and Delta-Mendota Water Authority request the State Water Board to take official notice of Dr. Hoffman's report. We take official notice of the report pursuant to California Code of Regulations, title 23, section 648.2 (authorizing the State Water Board to take official notice of matters that may be judicially noticed), and pursuant to Evidence Code section 452, subdivision (c) (authorizing judicial notice of the official acts of administrative agencies). We take official notice of the existence of the report and its conclusions, but do not take official notice of the truth of the matters asserted in the report.

Water Board plans to complete the basin planning phase followed by the water rights implementation phase by the spring of 2012. (State Water Board Staff Exhibit 7, p. 68.)

2.10 Evidentiary Hearing

On June 5, 2009, the State Water Board issued a notice of public hearing on DWR and USBR's application to modify Order WR 2006-0006. The State Water Board held the hearing on June 25, 29, and 30, 2009. The key hearing issues were as follows:

1. What modifications, if any, should the State Water Board make to the compliance schedule set forth in Part A of Order WR 2006-0006, and how should any modifications be structured to take into account any potential changes to the southern Delta salinity objectives or the program of implementation that may occur as a result of the State Water Board's current review of the Bay-Delta Plan?

2. If the compliance schedule contained in Part A of Order WR 2006-0006 is modified, what interim protective measures, if any, should be imposed?

The following entities participated in the evidentiary portion of the hearing: DWR; USBR; South Delta Water Agency (SDWA) and Lafayette Ranch (hereafter collectively referred to as South Delta); County of San Joaquin and San Joaquin County Flood Control & Water Conservation District (hereafter collectively referred to as San Joaquin County); California Sportfishing Protection Alliance (CSPA); California Water Impact Network (C-WIN); San Luis and Delta-Mendota Water Authority (SLDMWA) and Westlands Water District (Westlands); San Joaquin River Group Authority; San Joaquin River Exchange Contractors Water Authority; Stockton East Water District (Stockton East); Contra Costa Water District; and Central Delta Water Agency.

At the hearing, the following persons and entities presented policy statements, either orally or in writing: SLDMWA and Westlands; the San Joaquin River Group Authority; Stockton East; the State Water Contractors; Delta farmer Mike Robinson; Restore the Delta; and the California Salmon and Steelhead Association.

3.0 DISCUSSION

3.1 The Compliance Deadline Should Be Extended until the Water Quality Control Planning Process Is Complete

DWR and USBR's application to modify Order WR 2006-0006 did not specify what modifications DWR and USBR would like the State Water Board to make to the 2006 CDO. During the hearing on their application, however, DWR and USBR requested that ordering paragraph A.1 of the 2006 CDO, which requires DWR and USBR to obviate the threat of violation of the 0.7 mmhos/cm interior southern Delta salinity objective by July 1, 2009, be stayed, or that the compliance deadline be extended, until the State Water Board has completed the water quality control planning process described in section 2.9, above. (DWR Closing Brief, p. 2; USBR Closing Brief, p. 3.)

DWR also requested that paragraph A.1 be stayed, or that the compliance deadline be extended, until DWR has obtained the regulatory approvals necessary to install the permanent gates. (DWR Exhibit DWR-04, p. 1; DWR Closing Brief, p. 2.) Finally, DWR requested that ordering paragraph A.3 be modified to provide that a compliance plan is not required until the Board has completed the water quality control planning process and DWR has obtained the approvals necessary to install the gates. (DWR Exhibit DWR-04, p. 2.)

SLDMWA and Westlands support DWR and USBR's request to stay paragraph A.1 or extend the deadline until completion of the water quality control planning process. South Delta, San Joaquin County, CSPA, and C-WIN oppose any modification to the CDO.

DWR and USBR's request to extend the July 1, 2009 compliance deadline until the water quality control planning process has been completed should be granted, but DWR's request to extend the deadline until DWR has obtained the approvals necessary to install the gates should be denied. The July 1, 2009 compliance deadline was based on DWR and USBR's original plan to construct the gates by July 1, 2009. Obviously, that plan is no longer viable. As discussed above, construction and operation of the gates has been delayed until at least 2016, and ultimately may prove to be infeasible due to concerns about impacts to endangered species.

At this juncture, DWR and USBR should begin to evaluate the feasibility of alternative salinity control measures in order to prepare a revised compliance plan. In light of the fact that the

salinity objectives and associated program of implementation contained in the 2006 Bay-Delta Plan are currently under review, completion of the revised compliance plan should be delayed to the extent necessary to allow the plan to take into account any changes to DWR's or USBR's responsibility for meeting the interior southern Delta salinity objectives that may be made as a result of our review of the 2006 Bay-Delta Plan. Accordingly, we will not require the revised compliance plan to be submitted until we have completed our review of the 2006 Bay-Delta Plan and any subsequent water right proceeding to consider whether to change DWR's or USBR's responsibility for meeting the objectives as a result of any changes to the 2006 Bay-Delta Plan.

The revised compliance plan should specify a new compliance deadline, based on the amount of time required to implement the measures necessary to obviate the threat of violation. It may be possible to include the permanent gates in the revised compliance plan, depending on the outcome of the ongoing predation studies and any subsequent efforts to obtain NOAA Fisheries' approval of the gates, but development and implementation of the revised plan should not be delayed indefinitely pending approval of the gates, which may never occur. Accordingly, DWR's request to postpone the compliance deadline until DWR has obtained the approvals necessary to install the gates should be denied.

South Delta and C-WIN suggest that extending the compliance deadline would not be consistent with the State Water Board's statement in the 2006 CDO, that the Board would not extend the deadline beyond July 1, 2009, considering that the salinity objectives were first adopted in 1978, and there is evidence that salinity is a factor in limiting crop yields for southern Delta agriculture. (Order WR 2006-0006 at p. 27.) At the time when the Board made that statement, however, the record supported the conclusion that the permanent gates could be constructed by early 2009, which is no longer the case.

South Delta and C-WIN also contend, as do CSPA and San Joaquin County, that the compliance deadline should not be extended, and the State Water Board should take steps to enforce the 2006 CDO, because alternative salinity control measures exist that DWR and USBR could have implemented in the past, and should implement in the future, in order to obviate the threat of violation. South Delta argues further that the State Water Board found in Decision 1641 that construction of permanent, operable gates alone would not be sufficient to result in attainment of the objectives, and therefore DWR and USBR should have implemented additional salinity control measures in the past.

Specifically, an expert witness for South Delta testified that DWR and USBR could meet the objectives by modifying the design and operation of the temporary barriers, installing low lift pumps at one or more of the barriers, and recirculating water from the CVP's Delta-Mendota Canal through the San Joaquin River. (South Delta Exhibits SDWA 1, SDWA 2, SDWA 12.) Similarly, an expert witness for CSPA testified that DWR and USBR could meet the objectives by implementing some or all of the alternative salinity control measures listed as possible corrective actions in the 2006 CDO, including reducing exports, reducing highly saline drainage from upstream sources, and increasing flows in the San Joaquin River by releasing more water from CVP reservoirs or purchasing water from third parties. (CSPA Exhibit CSPA-2, pp. 5-6.)[9]

It is possible that DWR and USBR could have obviated the threat of violation by July 1, 2009, or earlier, by pursuing multiple compliance strategies simultaneously. In our judgment, however, it was reasonable for DWR and USBR to focus their efforts on implementation of the strategy set forth in the compliance plan approved by the Executive Director in 2006, which included construction of the permanent gates as a necessary first step, until NOAA Fisheries issued its biological opinion in June 2009, and it became clear that operation of the permanent gates may not be feasible. In addition, we find that DWR and USBR were diligent in their efforts to obtain the approvals necessary to construct the permanent gates. With respect to future compliance, as explained in greater detail in section 3.3, below, the record does not support South Delta's contention that alternative salinity control measures exist that would achieve compliance with the objectives and that could be implemented in 2010 without further analysis or environmental review. For these reasons, we disagree with South Delta and CSPA that the compliance deadline should not be extended, or that we should take steps at this point to enforce the 2006 CDO.

South Delta and CSPA also contend that the outcome of the water quality control planning process is too speculative to be considered in determining whether to modify the compliance schedule. We recognize that the outcome of our review of the 2006 Bay-Delta Plan and its

[9] Although the southern Delta salinity objectives were established in order to protect agricultural beneficial uses, not fish and wildlife beneficial uses, CSPA and C-WIN assume that achieving the objectives also will serve to protect fish and wildlife. CSPA and C-WIN are correct that some salinity control measures, such as reducing highly saline drainage, may have incidental benefits to fish and wildlife. Other measures, however, such as recirculation, may have incidental adverse impacts to fish and wildlife. Even increasing San Joaquin River flows, which CSPA favors, could have incidental adverse impacts to fish and wildlife, to the extent that water is released from storage in order to meet salinity objectives later in the irrigation season, which could reduce the amount of water available to protect fishery resources during other periods of the year when the water would be more beneficial to fishery resources.

implementation is uncertain, and the interior southern Delta salinity objectives could remain unchanged. Nonetheless, a reasonable possibility exists that the objectives, or DWR's and USBR's responsibility for meeting the objectives, could change as a result of our review, and therefore DWR and USBR should not be required to prepare and submit a revised compliance plan until our review is completed. To avoid undue delay in the preparation and implementation of the revised compliance plan, we will strive to complete our review of the 2006 Bay-Delta Plan as quickly as possible. Toward that end, we will require DWR and USBR to cooperate in providing any technical assistance necessary to complete our review of the plan and any subsequent water right proceeding expeditiously.

3.2 Extending the Compliance Deadline Is Consistent with the State Water Resources Control Board Cases

South Delta and San Joaquin County contend that extending the compliance deadline would constitute a failure to fully implement the interior southern Delta salinity objectives in contravention of the Court of Appeal's holding in the *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 674. That opinion involved numerous cases challenging various aspects of Decision 1641. In large part, the Court of Appeal upheld Decision 1641, but the Court also held that the State Water Board had erred when it failed to fully implement certain water quality objectives, including the southern Delta salinity objectives. (*Id*. at pp. 689-690, 724-735.)

The Court's holding in the *State Water Resources Control Board Cases* was based on Water Code section 13247, which provides that state agencies "in carrying out activities which may affect water quality, shall comply with water quality control plans approved or adopted by the [State Water Board], unless otherwise directed or authorized by statute . . . ." Based on this section, the Court reasoned that the State Water Board was required to fully implement the southern Delta salinity objectives because the program of implementation contained in the 1995 Bay-Delta Plan had specified that those objectives would be achieved by assigning responsibility for meeting them to water right holders in the Delta watershed. (*Id*. at pp. 724-735.) Specifically, the Court faulted the State Water Board for allowing DWR and USBR to meet a 1.0 EC objective instead of the 0.7 EC objective if permanent gates were constructed or equivalent salinity control measures were implemented. (*Id*. at p. 735.)[10]

[10] The Court also faulted the State Water Board for allowing DWR and USBR to meet the salinity objectives by April 1, 2005, when the 1995 Bay-Delta Plan provided that full compliance would be achieved in 1995 at one of the
[footnote continues on next page]

To remedy the discrepancy between the 1995 Bay-Delta Plan and Decision 1641, the Court held that the State Water Board must either initiate a proceeding to assign full responsibility for meeting the southern Delta salinity objectives or duly amend the plan. (*Id*. at p. 735.) Consistent with the Court's decision, and as discussed above, the Board has initiated a review of the current (2006) Bay-Delta Plan to consider whether to change the southern Delta salinity objectives or the associated program of implementation.

Contrary to South Delta and San Joaquin County's contention, extending the compliance deadline in the 2006 CDO does not constitute a failure to fully implement the southern Delta salinity objectives in contravention of the holding in the *State Water Resources Control Board Cases*. As the State Water Board explained in the 2006 CDO itself, the establishment of a compliance schedule as part of the CDO does not relieve USBR and DWR of the requirement to meet the objectives, which remains a condition of their permits. (Order WR 2006-0006 at p. 27.) Instead, the establishment of a compliance schedule constitutes an exercise of the Board's enforcement discretion, in recognition of the fact that DWR and USBR have not taken the steps necessary to avoid a threatened violation, and as a practical matter it will take time to achieve compliance. Likewise, modifying an existing compliance schedule, as contemplated here, constitutes an exercise of enforcement discretion. Essentially, the modification of the compliance schedule in this CDO reflects our determination that further enforcement action would not be warranted, provided that DWR and USBR take steps to obviate the threat of violation in accordance with the modified compliance schedule.

For the reasons explained above, establishing or modifying a compliance schedule does not constitute a failure to fully implement the southern Delta salinity objectives. Moreover, establishing a compliance schedule is consistent with Water Code section 13247, which was the basis for the Court's holding in the *State Water Resources Control Board Cases*. As stated earlier, section 13247 requires state agencies to comply with water quality control plans "unless otherwise directed or authorized by statute . . . ." Water Code section 1831, subdivision (b) expressly authorizes the State Water Board to establish a compliance schedule in a CDO issued in response to a violation or threatened violation of a water right requirement. Thus, assuming for the sake of argument that establishment of a compliance schedule constitutes a

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compliance stations, and by the end of 1997 at two of the compliance stations. (*Id*. at pp. 734-735.) The Court acknowledged, however, that the issue of delayed implementation of the objectives had become moot by the time the Court rendered a decision. (*Id*. at p. 735.)

failure to fully implement the southern Delta salinity objectives, the establishment of a compliance schedule is nonetheless entirely consistent with section 13247.

3.3 Interim Protective Measures

Having decided that the compliance schedule contained in the 2006 CDO should be modified, we turn to the next key hearing issue, which is whether to impose any interim protective measures. South Delta, CSPA, C-WIN and San Joaquin County oppose any changes to the 2006 CDO, and therefore do not recommend that any interim protective measures be imposed. As discussed above, however, South Delta, CSPA, C-WIN, and San Joaquin County contend that a variety of alternative salinity control measures exist that DWR and USBR could and should implement in order to meet the interior southern Delta salinity objectives, including modifications to the design and operation of the temporary barriers, installation of low lift pumps at one or more of the barriers, recirculation of water from the CVP's Delta-Mendota Canal through the San Joaquin River, reducing exports, reducing highly saline drainage from upstream sources, and increasing flow in the San Joaquin River by releasing more water from CVP reservoirs or purchasing water from third parties.

DWR contends that no interim measures should be imposed because DWR already is taking actions to improve the temporary barriers program, and USBR continues to implement measures to reduce salt loads in the San Joaquin River. (DWR Closing Brief, pp. 13-18.) DWR argues that any additional measures would require further analysis to determine whether they would be effective in controlling salinity. In addition, DWR argues that before implementing any additional measures, the potential environmental impacts of the measures would need to be evaluated pursuant to CEQA and NEPA, and ESA consultation likely would be required.

Like DWR, USBR, SLDMWA, and Westlands contend that the only appropriate interim protective measure is continuation of the temporary barrier program. (USBR Closing Brief, pp. 3-6; SLDMWA and Westlands Closing Brief, pp. 1, 7-8.) USBR argues that any interim protective measure involving a flow requirement, in particular, would require an analysis of the environmental and water supply impacts of the requirement, and a determination of whether the requirement constitutes a reasonable use of water pursuant to article X, section 2 of the California Constitution. Similarly, SLDMWA and Westlands argue that interim measures should not be imposed if they would exacerbate the water supply shortage that SLDMWA's member

agencies are currently experiencing. Specifically, SLDMWA and Westlands oppose recirculation to the extent that recirculation would displace pumping to supply water to SLDMWA's member agencies. For its part, Stockton East opposes any interim measures that would entail an increase in releases from New Melones Reservoir. (Stockton East Closing Brief, pp. 2-3.) Stockton East also opposes recirculation, unless it would serve to reduce reliance on New Melones.[11]

DWR, USBR, and South Delta appear to agree that DWR should continue to implement the temporary barriers project and pursue improvements to its operation and design. For example, expert witnesses for both DWR and SDWA testified that tying open culverts on the Old River barrier during certain tidal periods and increasing the Middle River barrier by one foot are technically feasible and have the potential to improve water quality. (DWR Exhibit DWR-05, pp. 4-5; South Delta Exhibit 12, pp. 1-2.) DWR's witness testified that for the past several years DWR has tied open certain culverts and monitored the results. (DWR Exhibit DWR-05, pp. 4-5.) In addition, DWR has applied or will apply for the permit amendments necessary to raise the height of the Middle River barrier.

Instead of simply recognizing DWR's efforts to improve the operation and design of the temporary barriers project, as suggested by DWR, we will require DWR, as a condition of this order, to continue to implement the temporary barriers program and to pursue the improvements to the program discussed above, and any other potential improvements, in consultation with SDWA, and with any necessary assistance from USBR. In addition, we will require DWR and USBR to continue to implement, and update as necessary, the component of DWR and USBR's

[11] Stockton East argues that H.R. No. 2828 (the Water Supply, Reliability, and Environmental Improvement Act of 2004 (Pub.L. No. 108-361 (Oct. 25, 2004) 118 Stat. 1681)) does not allow USBR to make additional water releases from New Melones Reservoir in order to meet the southern Delta salinity objectives. In conducting the feasibility study of alternative salinity control measures, discussed below, DWR and USBR should address the consistency of any measure that involves increased releases from New Melones with H.R. No. 2828. We emphasize, however, that while H.R. No. 2828 requires USBR to develop methods for reducing reliance on releases from New Melones Reservoir to meet water quality objectives, nothing in H.R. No. 2828 relieves USBR from its responsibility to achieve water quality objectives as required by its water right permits. (*Id.*, § 108(1)(3)&(5); see also 43 U.S.C. § 383 [section 8 of the Reclamation Act of 1902].)

April 14, 2006 compliance plan that was intended to achieve compliance at Station C-6 (San Joaquin River at Brandt Bridge).[12]

With the exception of the two requirements described above, the administrative record does not support the imposition of any of the other salinity control measures identified by South Delta, CSPA, C-WIN, and San Joaquin County at the present time. DWR presented expert witness testimony, which South Delta did not refute, that salinity in the southern Delta cannot be significantly improved by increasing releases from reservoirs in the Sacramento River watershed. (DWR Exhibit DWR-06.) In addition, the witness presented testimony that CVP and SWP exports have minimal impact on and control over water quality at the interior southern Delta salinity locations. (*Ibid*.) The record is inconclusive as to the feasibility of the remaining salinity control measures. More information is needed concerning their effectiveness in controlling salinity, technical feasibility, cost, environmental impacts, and water supply impacts.

For example, South Delta did not submit any evidence to substantiate the assertion of its witness that low lift pumps would be effective in controlling salinity and could be installed without further analysis or environmental review. Moreover, an expert witness for DWR explained in rebuttal testimony that the effectiveness of low lift pumps has not been modeled or otherwise analyzed, and additional planning, design, permitting, and environmental review would be required before low lift pumps could be installed. (R.T. (June 30, 2009) pp. 219-223.)

Similarly, the feasibility of recirculation requires further analysis. According to USBR's website (http://www.usbr.gov/mp/dmcrecirc/index.html), USBR is currently evaluating the feasibility of recirculation, formally referred to as the Delta-Mendota Canal Recirculation Project, as required pursuant to Decision 1641 and the Water Supply, Reliability, and Environmental Improvement

[12] CSPA and C-WIN argue that Water Code section 13360 prohibits the State Water Board from specifying the manner of compliance with the southern Delta salinity objectives. Section 13360 provides in relevant part: "No waste discharge requirement or other order of a regional board or the state board or decree of a court *issued under this division* shall specify the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner." (Italics added.) Section 13360 has no bearing on this order, however, because section 13360 applies only to requirements or orders issued pursuant to Division 7 of the Water Code (commencing with section 13000), and this order is issued pursuant to Water Code sections 1831 and 1832, which are part of Division 2 (commencing with section 1000) of the Water Code.

Act of 2004 (Pub.L. No. 108-361, §103 (Oct. 25, 2004) 118 Stat. 1681). In addition, USBR and DWR are preparing a joint EIS/EIR for the recirculation project pursuant to NEPA and CEQA.[13]

The feasibility of increasing San Joaquin River flows also requires further analysis. In particular, the administrative record does not contain substantial evidence concerning the extent to which the interior southern Delta salinity objectives could be met by increasing flows in the San Joaquin River, the availability of water for purchase or exchange in order to increase San Joaquin River flows, the cost of any such water, or the potential impact of increasing such flows on water supplies, including water supplies needed to protect fishery resources.

To remedy the lack of information concerning the effectiveness and feasibility of alternative salinity control measures, we will require DWR and USBR to conduct a feasibility study and submit a report to the State Water Board. At a minimum, the study should address the effectiveness and feasibility of installing low lift pumps and increasing flows in the San Joaquin River. We will also require DWR and USBR to submit copies of the feasibility study and EIS/EIR for the Delta-Mendota Canal Recirculation Project, once those documents have been completed. Finally, we will delegate to the Executive Director the authority to require DWR and USBR to implement on an interim basis any alternative salinity control measures that the Executive Director determines are reasonable and feasible, based on the feasibility study and any other available information.

4.0 CONCLUSION

We find that DWR and USBR have been diligent in their efforts to obtain the approvals necessary to construct permanent, operable gates in the southern Delta in accordance with the compliance plan approved by the Executive Director in 2006. That plan is no longer viable, however, in light of NOAA Fisheries' recent biological opinion, and the associated delay and uncertainty regarding the feasibility of constructing the permanent gates. In recognition of the fact that it will take time to develop and implement a revised compliance plan, we will extend the

[13] We take official notice of the fact that USBR is conducting the feasibility study and USBR and DWR are preparing an EIS/EIR, as evidenced by the documents and other information posted on USBR's website. We take official notice of these facts pursuant to California Code of Regulations, title 23, section 648.2 (authorizing the State Water Board to take official notice of matters that may be judicially noticed), and pursuant to Evidence Code section 452, subdivisions (c) (authorizing judicial notice of the official acts of administrative agencies) and (h) (authorizing judicial notice of facts and propositions that are not reasonably subject to dispute and are capable of immediate and accurate determination by resort to sources of reasonably indisputable accuracy).

compliance deadline set forth in Order WR 2006-0006. Moreover, we will extend the deadline until after we complete our review of the 2006 Bay-Delta Plan and any subsequent water right proceeding, so that DWR and USBR's revised compliance plan can take into account any changes to DWR's or USBR's responsibility for meeting the interior southern Delta salinity objectives that may occur as a result of our review of the 2006 Bay-Delta Plan. We will also require DWR and USBR to provide any technical assistance necessary to support our efforts to complete our review of the 2006 Bay-Delta Plan and any subsequent water right proceeding expeditiously.

In the interim, we will require DWR to continue to implement and improve upon the temporary barriers program, in consultation with SDWA, and with any necessary assistance from USBR. In addition, we will require DWR and USBR to study the effectiveness and feasibility of alternative salinity control measures, and implement any additional measures that the Executive Director determines are both reasonable and feasible.

ORDER

IT IS HEREBY ORDERED that Part A. of the ordering section of Order WR 2006-0006, beginning on page 28, is modified as follows:

A. The State Water Resources Control Board (State Water Board) ORDERS that, pursuant to Water Code sections 1831 through 1836, the Department of Water Resources (DWR) and the United States Bureau of Reclamation (USBR) shall take the following corrective actions and satisfy the following time schedules:

1. DWR and USBR shall implement measures to obviate the threat of non-compliance with Condition ~~5~~6 on page 159, Condition 1 on pages 159 and 160, and Condition 1 on pages 160 and 161 of Revised Decision 1641 (D-1641) regarding the 0.7 mmhos/cm electrical conductivity (EC) objective~~ by July 1, 2009~~. Beginning April 1, 2005, these conditions require DWR and USBR to meet the 0.7 EC Water Quality Objective for Agricultural Beneficial Uses at the following locations specified in Table 2 of D-1641 at page 182:

1) San Joaquin River at Brandt Bridge (Interagency Station No. C-6);
2) Old River near Middle River (Interagency Station No. C-8); and
3) Old River at Tracy Road Bridge (Interagency Station No. P-12)[14]

Notwithstanding the foregoing, if as a result of the State Water Board's review of the 2006 Bay-Delta Plan, the Board adopts an order or decision modifying DWR's or USBR's responsibility for meeting the interior southern Delta salinity objective, then DWR and USBR shall implement measures to ensure compliance with the Board's order or decision.

2. ~~Within 60 days from the date of this order~~Within 180 days from the completion of the State Water Board's pending proceeding to consider changes to the interior southern Delta salinity objectives and the associated program of implementation included in the 2006 Bay-Delta Plan, and any subsequent water right proceeding to consider whether to change DWR's or USBR's responsibility for meeting the objectives as a result of any changes to the 2006 Bay-Delta Plan, DWR and USBR shall submit a revised, detailed plan and schedule to the Executive Director for compliance with the conditions ~~mentioned~~ set forth in paragraph one, above.~~, including~~ The plan shall include planned completion dates for actions that will obviate the ~~current~~ threat of non-compliance with the 0.7 EC objective at stations C-6, C-8, and P-12 and shall specify the date by which the threat of non-compliance will be eliminated ~~by July 1, 2009~~. ~~If the plan provides for implementation of equivalent measures, DWR and USBR shall submit information establishing that those measures will provide salinity control at the three compliance stations equivalent to the salinity control that would be achieved by permanent barriers.~~ Notwithstanding the foregoing, if as a result of the State Water Board's review of the 2006 Bay-Delta Plan, the Board adopts an order or decision modifying DWR's or USBR's responsibility for meeting the interior southern Delta salinity objective, then DWR and USBR shall submit a revised, detailed plan and schedule to the Executive Director for compliance with the Board's order or decision. The plan shall include planned completion dates for actions that will ensure compliance with the Board's order or decision and shall specify the date by which compliance will be achieved. For purposes of this paragraph, the pending proceeding

[14] Hereinafter referred to as the interior southern Delta salinity objective.

to consider changes to the interior southern Delta salinity objectives and the associated program of implementation and any subsequent water right proceeding shall be deemed to have been completed if the State Water Board has not issued a final order in the water right proceeding by January 1, 2013, unless the Deputy Director for Water Rights determines that the water right proceeding has been initiated, is proceeding as expeditiously as reasonably possible, and will be completed no later than October 1, 2014. To assist DWR and USBR in determining when the revised compliance plan is due, the Deputy Director will notify DWR and USBR when the proceeding to consider changes to the interior southern Delta salinity objectives and the associated program of implementation and any subsequent water right proceeding have been completed. The plan and schedule submitted by DWR and USBR are subject to approval by the Executive Director of the State Water Board, shall be comprehensive, shall provide for full compliance with DWR's and USBR's responsibility to meet the interior southern Delta salinity objective (or any Board order or decision modifying DWR's or USBR's responsibility for meeting the objective), and shall include significant project milestones. DWR and USBR shall submit any additional information or revisions to the schedule and plan that the Executive Director requests within the period that the Executive Director specifies. DWR and USBR shall implement the plan and schedule as approved by the Executive Director. Once approved, the revised compliance plan shall supersede any inconsistent requirements established pursuant to Order WR 2006-0006 or this order.

~~3. Within 60 days from the date of this order, if DWR and USBR decide to implement the permanent barriers project or equivalent measures, DWR and USBR shall submit a schedule to the Chief of the Division of Water Rights (Division) for developing an operations plan that will reasonably protect southern Delta agriculture. DWR and USBR shall submit the final plan to the Executive Director for approval no later than January 1, 2009. To ensure that the plan is adequate prior to the required compliance date, DWR and USBR shall submit a draft of the operations plan by January 1, 2008, to the Division Chief for review and comment.~~

3. DWR and USBR shall comply without delay with any reasonable requests for technical assistance, including modeling, necessary to assist the State Water Board in its current efforts to review and implement the 2006 Bay-Delta Plan expeditiously.

Specifically, within two weeks of adoption of this order, the Deputy Director for Water Rights will submit to DWR and USBR a scope of work and time schedule for DWR and USBR to provide modeling assistance to the State Water Board in its current efforts to review and implement the 2006 Bay-Delta Plan. DWR and USBR shall execute the scope of work pursuant to the time schedule specified in the scope of work. At the discretion of the Deputy Director for Water Rights, modifications or additions to the scope of work may be made to ensure the expeditious review of the 2006 Bay-Delta Plan, including the addition of technical assistance unrelated to modeling. If DWR or USBR object to any provisions of the scope of work, within two weeks of receipt of the scope of work, or any modifications to that scope of work, DWR and USBR may request reconsideration of the scope of work by the Executive Director of the State Water Board. DWR and USBR shall implement any scope of work approved by the Deputy Director for Water Rights, or by the Executive Director in cases where reconsideration has been requested.

4. In order to obviate the threat of violation at Station C-6 (San Joaquin River at Brandt Bridge), within 60 days from the date of this order DWR and USBR shall submit for approval by the Executive Director any necessary revisions to DWR and USBR's April 14, 2006 Compliance Plan for Monitoring Station C-6. DWR and USBR shall implement this element of the April 14, 2006 compliance plan and any revisions to this element of the plan required by the Executive Director.

5. DWR, with any needed cooperation from USBR, including funding and technical assistance, shall continue to implement the temporary barriers project. In addition, DWR, with assistance from USBR, shall pursue and implement, if feasible, any improvements to the temporary barriers project, including, but not limited to, the proposed increase in the height of the barrier located in Middle River near Victoria Canal. DWR and USBR shall consult with South Delta Water Agency (SDWA) regarding potential improvements to the temporary barriers project on a yearly basis and as needed throughout the irrigation season. DWR and USBR shall expeditiously complete any necessary analyses to determine the feasibility of any proposed improvements and shall diligently pursue any permitting or funding needed to implement improvements. If DWR or USBR disagrees with SDWA regarding the feasibility of a proposed improvement or the analyses necessary to determine the

feasibility of a proposed improvement, DWR and USBR shall immediately advise the Executive Director who will make a determination regarding necessary actions. By February 1 of each year, DWR and USBR shall submit a plan for approval by the Executive Director outlining the proposed construction and operation of the temporary barriers during the upcoming irrigation season. DWR and USBR shall implement the plan as approved by the Executive Director.

6. USBR shall diligently pursue completion of the Delta-Mendota Canal Recirculation Project Feasibility Study. DWR and USBR shall submit to the State Water Board copies of the Final Feasibility Study and the Environmental Impact Statement/Environmental Impact Report for the project within 10 days of the completion of those documents.

7. DWR and USBR shall study the feasibility of controlling salinity by implementing measures other than the temporary barriers project, recirculation of water through the San Joaquin River, and construction and operation of the permanent, operable gates. For each measure studied, DWR and USBR shall evaluate the extent to which the measure could control salinity at each of the interior southern Delta compliance locations, whether implementation of the measure would result in compliance with the interior southern Delta salinity objective at each of the locations, the technical and regulatory feasibility of the measure, the costs of the measure, and any potential impacts of the measure, including potential impacts to water quality, fishery resources, or water supplies. The study shall include, but is not limited to, an evaluation of the installation of low lift pumps at one or more of the temporary barriers. In addition, DWR and USBR shall evaluate, through modeling, whether compliance with the interior southern Delta salinity objective could be achieved by increasing flows in the San Joaquin River. In evaluating the feasibility of increasing flows in the San Joaquin River, DWR and USBR shall (1) evaluate the feasibility of both increased releases from CVP and SWP facilities and purchases or exchanges of water from third parties, and (2) evaluate the potential impacts of increasing flows on water supplies, including water supplies needed to protect fishery resources. Within 60 days from the date of this order, DWR and USBR shall submit a study plan to the Deputy Director for Water Rights for the Deputy Director's review and approval. The Deputy Director may direct DWR and USBR to make any changes to the study plan necessary to ensure a

meaningful evaluation of alternative salinity control measures. In addition, the Deputy Director may require DWR and USBR to conduct the study in phases, to refine or augment the study based on the results of an earlier phase, or to evaluate a combination of alternative salinity control measures designed to improve or achieve compliance with the interior southern Delta salinity objective. DWR and USBR shall make any changes to the study plan that the Deputy Director requires within the period that the Deputy Director specifies, and shall conduct the study in accordance with the approved study plan. Within 180 days from the Deputy Director's approval of the study plan, DWR and USBR shall submit a report to the Executive Director that describes the study and its results.

8. During the interim period before the revised compliance plan described in paragraph 2, above, is developed and approved, the authority is delegated to the Executive Director to require DWR or USBR to implement any additional salinity control measures that the Executive Director determines are feasible and reasonable based on the Executive Director's review of the studies described in paragraphs 5 and 6, above, or any other available information. Any decision of the Executive Director under authority delegated pursuant to this paragraph is subject to reconsideration pursuant to sections 768 through 771 of title 23 of the California Code of Regulations.

~~4~~9. In the event that DWR and/or USBR projects a potential exceedance of the 0.7 EC objective at Interagency Stations C-6, C-8, ~~and~~or P-12, prior to ~~July 1, 2009~~the compliance deadline specified in the plan approved pursuant to paragraph 2, above, DWR and/or USBR shall immediately inform the State Water Board of the potential exceedance and shall describe the corrective actions they are initiating to avoid or reduce the exceedance. Corrective actions may include but are not limited to additional releases from upstream ~~Central Valley Project (~~CVP~~)~~ facilities or south of the Delta State Water Project (SWP) or CVP facilities, modification in the timing of releases from Project facilities, reduction in exports, recirculation of water through the San Joaquin River, purchases or exchanges of water under transfers from other entities, modified operations of temporary barriers, reductions in highly saline drainage from upstream sources, or alternative supplies to Delta farmers (including overland supplies).

~~5~~10. If there is an exceedance of the 0.7 EC objective for Interagency Stations C-6, C-8, ~~and~~or P-12, within 30 days from the date of the exceedance, DWR and USBR shall report to the Executive Director (1) the length of time over which the exceedance occurred and (2) the corrective actions taken to curtail the exceedance, including the amount of water bypassed or released from upstream CVP supplies and south of Delta SWP and CVP supplies, the net reduction in exports, and the measured quantity of other actions, if any, taken specifically to correct the exceedance. DWR and USBR also shall identify the amount of their Project supplies remaining for beneficial uses following corrective actions. Upon receipt of the above report, the Executive Director will make a recommendation to the State Water Board regarding whether to take enforcement action. In deciding whether to initiate enforcement action, the Executive Director shall consider the extent to which the noncompliance was beyond DWR's and USBR's control and the actions taken to correct the exceedance.

~~6~~11. Every three months, commencing on the last day of the month following the date of ~~this order~~Order WR 2006-0006, DWR and USBR shall submit to the State Water Board a status report on progress towards compliance with the referenced permit/license conditions and an updated projection of the final compliance date ~~(including completion of construction and commencement of operations if DWR and USBR determine that permanent barriers or equivalently protective measures are the preferred method of compliance)~~. During the interim period before the revised compliance plan described in paragraph 2, above, is developed and approved, the status report shall describe the activities undertaken to comply with paragraphs 4, 5, 6, 7, and 8, above.

~~7~~12. If DWR or USBR is unable to collect EC data at Interagency Station Nos. C-6, C-8, or P-12 for more than seven (7) consecutive days for any reason, DWR and USBR shall report the outage in writing to the Executive Director. The report shall include the reason for the loss of data, a plan to restore data collection, and the anticipated date that data collection will resume.

~~8~~13. DWR and USBR shall submit to the Executive Director by December 1 of each year the annual monitoring report required by Condition 11, paragraph c, on page 149 of D-1641, beginning with the report required by December 1, 2005. DWR and USBR

shall make historical results of the monitoring required under paragraph c available to the State Water Board and other interested parties by posting the data on the internet. The posted data shall include a computation of the 30-day running average.

~~9~~14. DWR and USBR shall serve copies of all reports, plans, and other communications required by the above paragraphs of this order on the Central Delta Water Agency; ~~South Delta Water Agency~~ SDWA; San Joaquin County; California Sportfishing Protection Alliance; California Water Impact Network; and Contra Costa Water District, and shall submit a proof of service to the Executive Director or to the ~~Division Chief~~ Deputy Director for Water Rights showing that the copies were served concurrently with their submittal to the Executive Director or the ~~Division Chief~~ Deputy Director.

Upon the failure of any person to comply with a CDO issued by the State Water Board pursuant to chapter 12 of Part 2 of Division 2 of the Water Code (commencing with section 1825), the Attorney General, upon the request of the State Water Board, shall petition the superior court for the issuance of prohibitory or mandatory injunctive relief as appropriate, including a temporary restraining order, preliminary injunction, or permanent injunction. (Wat. Code, § 1845, subd. (a).) Any person or entity who violates a CDO may be liable for a sum not to exceed one thousand dollars ($1,000) for each day in which the violation occurs. (Wat. Code, § 1845, subd. (b)(1).)

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on January 5, 2010.

AYE:	Chairman Charles R. Hoppin Vice Chair Frances Spivy-Weber Board Member Arthur G. Baggett, Jr. Board Member Walter G. Pettit
NAY:	None
ABSENT:	Board Member Tam M. Doduc
ABSTAIN:	None

Jeanine Townsend

Jeanine Townsend
Clerk to the Board