

Department of
Conservation and
Development

Water Agency

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Contra Costa County

John Kopchik
Director



November 9, 2015

Zachary Simmons, Project Manager
US Army Corps of Engineers, Sacramento District
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Sacramento, California 95814-2922
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**Re: Comments on the Department of Water Resources' 2015 California WaterFix Section
404/10 Application
Public Notice SPK-2008-00861**

Dear Mr. Simmons:

Contra Costa County has reviewed the U.S. Army Corps of Engineers' (USACE) September 9, 2015 Public Notice regarding the California WaterFix and the California Department of Water Resources' (DWR) application for a Department of the Army individual permit (See 33 C.F.R. §325) to allow for the implementation of key components of the State's California WaterFix program. Specifically, DWR is seeking authorizations from the USACE necessary for the construction and operation of new water conveyance facilities. Contra Costa County has the following comments and major concerns about this application.

The application is incomplete

The application to the USACE is premature and was submitted while decision makers and the public were still reviewing draft environmental documents for the proposed project. Our review of the Bay Delta Conservation Plan (BDCP)/California WaterFix (CWF) partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) that was released to the public on July 10, 2015 has found numerous flaws and inadequacies that make it impossible for decision makers like the USACE or the State Water Resources Control Board (SWRCB) to make a reasoned decision.

As stated in the Delta Independent Science Board's September 30, 2015 comment letter (Attachment 4), the Independent Science Board indicates in no uncertain terms that the RDEIR/SDEIS is "*sufficiently incomplete and opaque to deter its evaluation and use by decision makers, resource managers, scientists and the broader public.*"

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The SWRCB in its October 30, 2015 comment letter (Attachment 3) criticized the RDEIR/SDEIS for only optimizing the preferred alternative which is a variant on the original Peripheral Canal proposal and not optimizing or developing an alternative requested by the SWRCB that would have included increased flows for fish. The SWRCB notes that only limited time was given to their requested higher flow alternative. The RDEIR/SDEIS failed to present any graphs of the ratio of Delta outflows, Sacramento inflows and San Joaquin inflows to unimpaired flows to allow decision makers and the public to compare the WaterFix flow ratios with the SWRCB's 2010 Delta Flow Criteria. The SWRCB-requested alternative has the potential to be a least environmentally damaging practicable alternative, but was not given serious consideration by DWR and the U.S. Bureau of Reclamation (Reclamation).

The WaterFix application to the USACE is “supported” by draft environmental documents that are wholly inadequate. The following are examples of the major problems with the current WaterFix project proposal:

- The preferred alternative in the current RDEIR/SDEIS fails to achieve either of the two co-equal goals of “providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem.” (See Wat. Code, §§ 85054; 85301(a).) This renders the RDEIR/SDEIS noncompliant with the requirements of the state Sacramento-San Joaquin Delta Reform Act of 2009 (Wat. Code, §§ 85000-85350) and Division B, Title 2, Section 205 of the federal Consolidated Appropriations Act of 2012 (Pub. L. 112-74 (Dec. 23, 2011) 125 Stat. 786).
- The DWR and the California Natural Resource Agency (CNRA) and Reclamation have allowed the export water contractors to develop a flawed project and valuable input from Delta interests and environmental organizations and even other State Agencies (e.g. Delta Stewardship Council Independent Science Board) have gone unanswered.
- DWR, CNRA, Reclamation and Interior have failed to consider or analyze a reasonable range of alternatives. Fourteen (14) of the 15 alternatives in the draft RDEIR/SDEIS involve an isolated facility and north Delta intakes, with no new storage or actions to reduce demand on the Delta and increase local sources of water. The three new alternatives in the RDEIR/SDEIS have the same basic configuration as those 14, meaning 17 out of 18 project alternatives are essentially the same project alternative. These project alternatives do not foster informed decision-making, and do not permit a reasoned choice.
- The current RDEIR/SDEIS preferred alternative still relies on exports from the existing south Delta export locations (especially in dry years when the Delta is most stressed) and often would result in worse reverse flows in Old and Middle Rivers. The new North Delta intakes also adversely impact listed fish species (*i.e.*, species listed as threatened and endangered under the state and federal Endangered Species Acts) by reducing flows through the Delta to San Francisco Bay, reducing the percentage of flow through Sutter and Steamboat Sloughs, and increasing predation. Therefore, the project’s net benefits to listed fish species are minimal, if any.
- Astonishingly, the RDEIR/SDEIS’s preferred alternative would increase exports in dry periods and would only infrequently capture additional surplus water in wet periods. This is completely contrary to the original BDCP planning principles and the “Big Gulp, Little

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Sip” concept touted in the BDCP “An Overview and Update” dated March 2009. Specifically, principle #2 states “*Divert more water in the wetter periods and less in the drier periods.*” Moreover, the preferred alternative is in direct conflict with State policies of reducing reliance on the Delta in meeting California’s future water supply needs. (See Wat. Code, §§ 10608(c) & 85021.)

- The Operations and Water Quality modeling for the November, 2013 BDCP Draft EIR/EIS contained major errors and the computer models needed to be revised. However, no new modeling was done for the new RDEIR/SDEIS project or project alternatives. Instead DWR and Reclamation have based their RDEIR/SDEIS analyses on the original flawed modeling studies from three and a half years ago, and on brief water quality “*sensitivity analyses*” performed for completely different future demand, climate change scenarios, and habitat restoration conditions, *i.e.*, late-long-term rather than early-long-term.
- The estimated \$15 billion cost for construction of the tunnels does not represent the total cost of the whole project, estimated upwards of \$50 billion, and would most likely be rendered obsolete once the State Water Resources Control Board (SWRCB) adopts long-overdue, more-stringent, Delta flow requirements to protect fish and other beneficial uses.

Detailed discussions and graphical presentations disclosing these major problems with the WaterFix project, and the lack of any full model runs to support the claims made by DWR and Reclamation, can be found in Contra Costa County and Contra Costa Water District’s October 30, 2015 comments on the seriously flawed RDEIR/SDEIS (Attachments 1 and 5).

Proposed WaterFix project violates existing USACE limits on inflow to Clifton Court

A detailed review of the WaterFix sensitivity analysis data for Alternative 4A reveals that the monthly exports from the south Delta exceeded the U.S. USACE limits on inflow to Clifton Court Forebay from the south Delta. These sensitivity analysis data were provided to Contra Costa County by DWR. As described on page 5A-B6 of the BDCP Draft EIR/EIS, the USACE limits to daily diversion into Clifton Court Forebay to 6,680 cfs (specified as a three-day average daily diversion of 13,250 acre-feet). Higher inflows are permitted from mid-December to mid-March when the flow of the San Joaquin River at Vernalis exceeds 1,000 cfs. An additional 500 cfs is also permitted for July–September to reduce National Marine Fisheries Service (NMFS) biological opinion impacts.

Figure 1 below shows the WaterFix analysis State Water Project (SWP) South Delta export data for Alternative 4A, Scenario H3, at early long term, for April through November when the USACE limits of 6,680 cfs apply. The simulated inflows to Clifton Court (SWP through-Delta exports) are as high as 9,750 cfs with total south Delta export as high as 14,350 cfs. This is well in excess of the permitted values for this period, and is inconsistent with the WaterFix project’s claim of reduced exports from the south Delta that contribute to ecosystem benefits.

The WaterFix RDEIR/SDEIS is inadequate because it fails to clearly disclose to the public and to decision makers like the USACE that DWR is proposing to eliminate existing limits on the inflow to Clifton Court, and that the analyses to support the USACE application violates that limit. DWR’s Clean Water Act Section 404 application to the USACE is also inadequate and

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deceiving because it fails to inform decision makers and the public that DWR intends to ignore the USACE limits on inflow to Clifton Court Forebay. If DWR does intend to comply with the USACE limits, the application is incomplete because no full model runs were performed for the proposed project and the analyses that were done exceed and violate the Clifton Court Forebay inflow limits.

Revised versions of Chapter 3 do not indicate any deletion of the language from the BDCP Draft EIR/EIS Chapter 3 acknowledging that the USACE limits were assumed to not apply. DWR and Reclamation deleted the references in BDCP Draft EIR/EIS Chapter 3, Description of Alternatives (pages 3-32 and Table 3-5 on 3-36) without acknowledging it in their revisions to Alternative 3 (in RDEIR/SDEIS Appendix A).

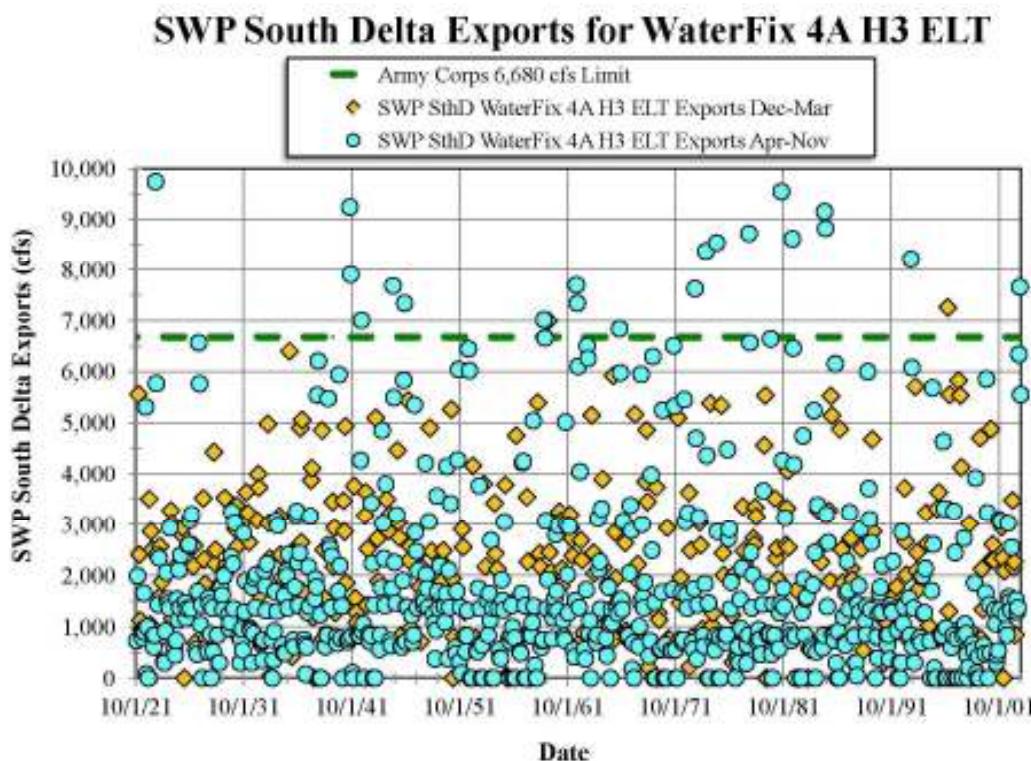


Figure 1: Monthly SWP exports from the south Delta for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term) for the period October 1921 through September 2003. There are many exceedances of the USACE limit on inflow to Clifton Court Forebay. These were not disclosed in the RDEIR/SDEIS.

Figure 2 shows the same SWP south Delta export data as Figure 1, but this time plotted as a function of Delta outflow. The violations of the USACE limits occur during drier months when Delta outflows are lower. This is again directly contrary to the principle of taking a “Little Sip” during drier periods, *i.e.*, reducing exports relative to existing levels.

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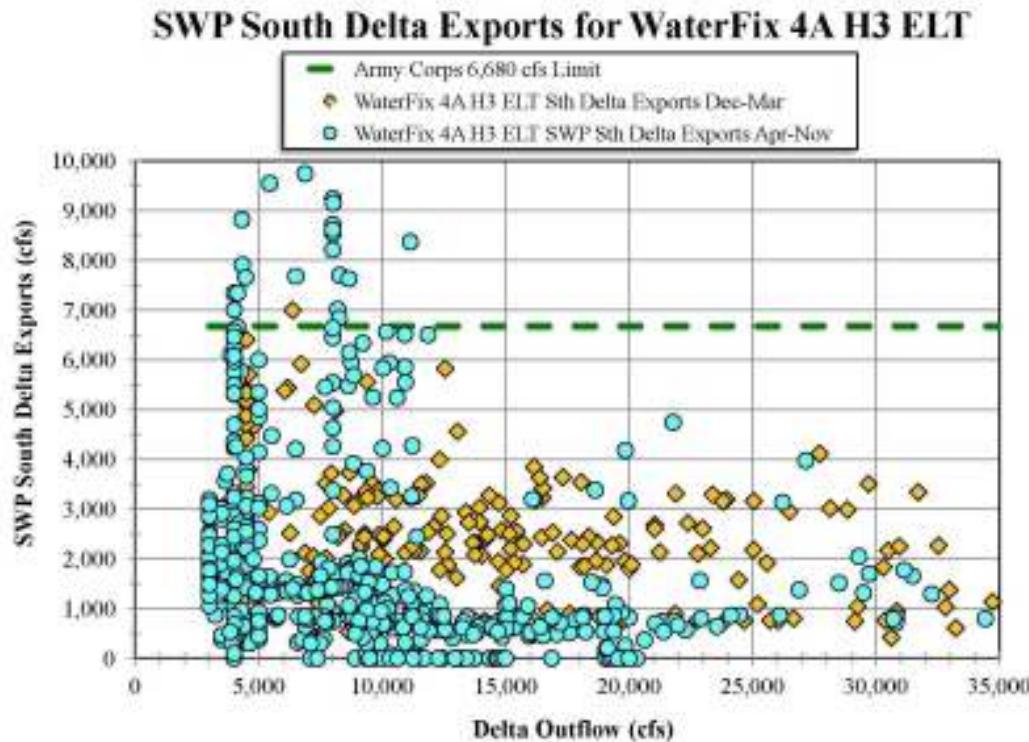


Figure 2: Monthly SWP exports from the south Delta as a function of Delta outflow for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term). There are many exceedances of the USACE limit on inflow to Clifton Court. They occur during periods of lower Delta outflow.

DWR's August 24, 2015 application to the USACE should have been, and still should be, rejected with the request that a new Draft EIR/EIS is prepared that includes new alternatives that comply with the U.S. Army Corps of Engineers limits on inflow to Clifton Court Forebay, and other legal requirements set by the SWRCB and the biological opinion. As discussed in detail in the U.S. Environmental Protection Agency's (EPA) October 30, 2015 comments on the RDEIR/SDEIS (Attachment 2), Endangered Species Act (ESA) Section 7 consultation with U.S. Fish and Wildlife Service and National Marine Fisheries Service regarding the construction and operation of new conveyance facilities is underway but not complete. Additional information is being generated to identify criteria for operating the new WaterFix facilities, to be included in the Biological Opinions and Incidental Take Permits. EPA stated that "*this information and such operating criteria could result in environmental impacts that have not been analyzed in the SDEIS.*"

Until all these factors are included in a new Draft EIR/EIS and the new Draft is fully reviewed by decision makers and the public, and completed as Final EIR/EIS, it will not be possible for the USACE to fully comprehend the environmental impacts of the proposed WaterFix project.

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The California WaterFix proposal to incorporate an operable Head of Old River Barrier is highly problematic

The USACE notice states that the CWF proposed project would include a permanent operable barrier at the head of Old River. After several flawed draft EIR/EIS documents, DWR released a final EIR/EIS for the South Delta Improvements Project (SDIP) in December 2006. On December 15, 2006, DWR certified the South Delta Improvements Project Final EIR. DWR only proposed moving forward with stage one, to install permanent gates that will replace temporary structures installed and removed each year. DWR stated that any activity regarding stage two, which involved increasing SWP exports above the USACE limits (typically 6,680 cfs) to 8,500 cfs, will require further study and public input. It is not clear whether the federal government ever issued a Record of Decision (ROD) for the SDIP FEIS because DWR suspended the SDIP project shortly thereafter.

The WaterFix RDEIR/SDEIS for the CWF does not contain sufficient information for the public and affected parties to determine the specific impacts of the Head of Old River Barrier (e.g., on water quality and resident fish passage in the south Delta) and of increasing inflow to the unscreened Clifton Court intake (e.g., of the decreasing numbers of pelagic organisms and anadromous fish).

The new North Delta intakes and continued use of the South Delta intakes will have significant adverse impacts on key fish species

The existing **south Delta export intakes** would continue to harm key fish species because the south Delta would still be used for 51% of the exports, the BDCP and CWF proponents are intending to increase diversions, rather than decrease diversions, at Clifton Court Forebay (USACE limits), which would remain unscreened.

Despite this continued, sometimes, increased use of the south Delta export intakes, DWR and Reclamation claim the CWF benefits fish by minimizing reverse flows in the south Delta. However, they are not willing to back that up by agreeing to Old and Middle River (OMR) limits that correspond to no, or very little, reverse flow year round, say, for example, OMR > -2,000 cfs. There are resident fish in the south and central Delta year round that need to be protected every month. Limiting OMR in only a few key months will shift the impacts to other months and start the decline of other Delta fish species. Even an OMR limit of -5,000 cfs represents a significant reverse flow that will still harm Delta fish. The WaterFix analysis data provided by DWR shows that reverse flows would still be as large as -14,000 cfs and even increase in some months as a result of the WaterFix project. This is not the Least Environmentally Damaging Practicable Alternative.

The proposed **north Delta intakes** and operating rules will also harm key fish species by reducing flows downstream of the intakes which also increases predation and reduces survival, altering the olfactory cues for returning salmon and steelhead, and impinging and entraining fish at the new screened intakes. The problems with the north Delta intakes were acknowledged in the November 2013 Draft BDCP Executive Summary. Because the CWF no longer includes any

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significant habitat restoration, DWR and Reclamation can no longer assume habitat restoration will offset those adverse north Delta impacts on key fish species.

If reverse flows in the south Delta that draw anadromous fish out of the north Delta are bad, why would DWR and Reclamation instead move the intakes to the north Delta closer to the fish they claim to be protecting?

The north Delta intakes will also cause reverse flows in **Sutter and Steamboat Sloughs** that will significantly harm migrating fish. The BDCP Draft EIR/EIS argued these reverse flows would be eliminated by the habitat restoration (in the Cache Slough region). However, the CWF no longer includes any appreciable habitat restoration.

The California WaterFix project will cause significant adverse impacts to water quality in the Delta

The BDCP Draft EIR/EIS found that the proposed project would cause significant adverse impacts on water quality in the Delta, but deemed these significant impacts “*unavoidable*.” The WaterFix RDEIR/SDEIS now finds there are fewer significant adverse impacts on Delta water quality and fails to propose any binding actions to avoid or mitigate water quality impacts. As discussed in detail in Contra Costa Water District’s September 30, 2015 comments (Attachment 5), DWR uses an incorrect baseline (without Fall X2) and provides additional outflow above those needed to meet SWRCB D-1641 and Fall X2 requirements in October in the with-project case. The erroneous baseline makes Delta water quality worse than under existing conditions and the additional October outflows make the with-project water quality better than it would actually be with the WaterFix project. The RDEIR/SDEIS acknowledges future habitat restoration under EcoRestore and other future projects will contribute to degradation of Delta water quality, but neither these habitat restoration actions nor the actual WaterFix preferred alternative are analyzed using full model runs. The significant water quality degradation in the Delta due to the proposed project is contrary to State and federal antidegradation statutes and the 2009 Delta Reform Act.

The claims made by California WaterFix project proponents are refuted by the analyses

The CWF project proponents claim the project will benefit the Delta ecosystem by reducing exports from the south Delta, minimizing reverse flows in the south Delta, and capturing more water in wet years, while also increasing water supply reliability (at least for south-of-Delta export contractors.) As discussed in detail in Contra Costa County’s October 30, 2015 comments on the RDEIR/SDEIS none of these benefits will actually occur. The south Delta export intakes will still be used for 50% of the total exports. Because the proposed project does not include any new storage, the project is unable to capture “new” water when flows in the Delta are very high (wet months) and would rely instead on increasing exports well above existing levels in dry months when Delta outflows are very low and the Delta is already stressed.

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The California WaterFix project is not consistent with State and Federal statutes

State and Federal law (Sacramento-San Joaquin Delta Reform Act of 2009 (Wat. Code, §§ 85000-85350) and Division B, Title 2, Section 205 of the federal Consolidated Appropriations Act of 2012 (Pub. L. 112-74 (Dec. 23, 2011) 125 Stat. 786)) require achievement of coequal goals, including the inherent objectives of improving water quality in the Delta and protecting the Delta as a place. It is no longer sufficient to merely “balance” beneficial uses of water. Bay-Delta projects that does not help to achieve both coequal goals and the inherent objective of improving Delta water quality does not help advance California’s need for a sustainable Delta solution, and is not consistent with the State and Federal statutes.

The California WaterFix RDEIR/SDEIS fails to analyze a reasonable range of alternatives

The 2009 Delta Reform Act, CEQA and NEPA require analysis of a reasonable range of alternatives. Seventeen of the 18 alternatives are essentially the same alternative. The only different alternative is modified through Delta conveyance (Alternative 9). None of the alternatives that have been analyzed are compatible with the SWRCB’s 2010 Delta Flow Criteria. Two alternatives requested by the SWRCB that included increased Delta flows (BDCP Alternative 8 and WaterFix Alternative 4H3) were not properly optimized or analyzed. The basic CWF alternative was not optimized by adding new storage, reducing demand through water conservation actions, or investigating other intake locations. None of the BDCP and CWF alternatives represent a Least Environmentally Damaging Practicable Alternative.

California WaterFix environmental documents fail to disclose serious problems with the project

The RDEIR/SDEIS hides and fails to clearly disclose problems with proposed CWF operations. The graphical presentations are insufficient to inform and fully disclose to regulators, the significant adverse impacts of the preferred alternative (as noted by Delta Independent Science Board in their September 30, 2015 comments). WaterFix would increase exports in driest months when Delta outflows are very low and Delta ecosystem is most stressed. The RDEIR/SDEIS does mention that the project proponents are reinterpreting the SWRCB’s D-1641 export/inflow ratio standards, but it is not made clear to regulators and decision makers that this sometimes results in more of the Delta inflow being exported than permitted by the SWRCB D-1641 standards. The Head of Old River barrier impacts on the movement of Delta smelt and on Delta water quality are not disclosed separately from all the other proposed changes to the Delta infrastructure and operations, and due to climate change.

California WaterFix project fails to analyze a Least Environmentally Damaging Practicable Alternative

The CWF proposed project alternatives do not have the capability of capturing surplus water during periods of high flow in the Delta (wetter months) and instead diverts more water in drier

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periods (months with very low outflow). None of these flawed alternatives can be considered a least environmentally damaging practicable alternative.

DWR and Reclamation need to analyze a wider range of alternatives that include new storage upstream, in or immediately adjacent to the Delta, and south-of-the Delta, demand reduction and local water supply actions, and other potential intake locations such as the western Delta. If south Delta intakes are bad, and north Delta intakes will also harm key fish species then other intake locations must be fully analyzed.

DWR's Section 404 application is unduly optimistic and misleading

DWR's August 24, 2015 application on page 2 states that:

"The actions proposed by DWR in this permit application, which are referred to as the California WaterFix, would bring about fundamental, systemic change to the current system, putting the State on a course to "[a]chieve the two coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem." (California Public Resources Code Section 29702, subd. [a])."

This statement is incorrect and misleads decision makers and the public. The proposed project will have significant adverse impacts on key fish species and water quality in the Delta, and would fail to result in any significant increase in export water supply over existing levels. The proposed project will hinder rather than contribute to the coequal goals required by State and federal statutes (including Public Law 112-74).

The statement in the DWR application under Ecological and Water Supply Benefits that the "proposed project would result in substantially improved conditions in the Delta for endangered and threatened species and afford greater water supply reliability for the State" is also false. The BDCP and WaterFix analysis data provided to the County by DWR shows, e.g., that reverse Old and Middle River flows would actually increase in some months and would remain significantly reversed (i.e., more negative than say -2,000 cfs) the majority of the time. The project will not minimize reverse flows despite the applicants' claims to the contrary.

DWR also states that "*(i)ntegration of state-of-the-art fish screens at each intake to minimize entrainment.*" However, the project will continue use of, and sometimes increase, export diversions from the south Delta via an unscreened Clifton Court Forebay. DWR did not disclose their intent to exceed and violate the existing USACE limits on inflows to Clifton Court Forebay. Increasing inflows to Clifton Court Forebay and leaving it unscreened is wholly inconsistent with this reference to state-of-the-art fish screens and misleads decision makers and the public.

Similarly, the proposed project would **not** advance the State's water supply goals because the proposed upgrades to the SWP/CVP water conveyance system does not integrate new storage and other infrastructure that would allow the SWP and CVP to capture more water during wet periods (month) when flows in the Delta are very high and there is water available that is surplus to the needs of the Delta. The applicant makes claims about capturing more water while making

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no attempt to include infrastructure (storage) to store the captured water. The analysis data provided to the County by DWR suggest that the project would regularly be unable to capture more water during wet months because existing south-of-Delta reservoirs would already be full.

Contrary to DWR's misleading statement on page 3, implementation of the California WaterFix **does not** represent an important step forward in the State's efforts to resolve the longstanding conflicts within the Delta. In fact, decoupling the ecosystem restoration from the tunnels and marketing EcoRestore as "new" restoration, when almost all of the "proposed" restoration is required by the biological opinions and already long overdue, only deepens the current distrust.

On page 1 of the Continuation Sheet for ENG FORM 4345, the Department of Water Resources discusses the number of alternatives that were analyzed. However, 17 of the 18 BDCP and WaterFix alternatives all involved export diversions facilities in the north Delta that would have very similar adverse impacts on key fish species no matter the subsequent alignment of the isolated canal, pipeline or tunnels, or the number of intakes. Seventeen of the 18 alternatives are essentially the same alternative. The USACE should request that the applicant consider a larger range of different alternatives, including much less environmentally damaging alternatives.

On page 2 of the Continuation Sheet for ENG FORM 4345, DWR notes that "habitat restoration is still recognized as a critical component of the State's long-term plans for the Delta." Under the California EcoRestore, the State will pursue restoration of more than 30,000 acres of fish and wildlife habitat by 2020. The USACE should request that the applicant analyze (with actual detailed model runs) and disclose the likely significant adverse cumulate impacts of the proposed project in combination with EcoRestore.

On page 3 of the Continuation Sheet for ENG FORM 4345, the applicant discusses the Conceptual Engineering Report, Modified Pipeline/Tunnel Option – Clifton Court Forebay Pumping Plant, Volume 1, dated April 1, 2015. The applicant fails to disclose DWR's **November 2009 Conceptual Engineering Report – Through-Delta Facility Conveyance Option** which contains feasible examples of how the Clifton Court Forebay could be screened with state-of-the-art fish screens to significantly reduce the impacts of continued use of south Delta export facilities. The USACE should request that the applicant include new fish screens for the Clifton Court, and Jones Pumping Plant, export facilities.

U.S. Army Corps of Engineers Notice also misleads public regarding CWF project

It is unfortunate that the official Notice (SPK-2008-00861) posted by the USACE did not include a link to the actual application submitted by DWR. The Notice merely summarized some details of the original application and, therefore, perpetuated and legitimized a number of the false claims made by the applicant.

The Notice states that "*(t)he applicant has stated that improvements to the conveyance system are needed to respond to increased demands and risks to water supply reliability, water quality, and the aquatic ecosystem.*" The proposed conveyance modification will likely improve the quality of export water delivered by the SWP and CVP to south-of-Delta contractors, but will also likely significantly degrade water quality in the Delta, which is contrary to State and federal

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antidegradation statutes and the 2009 Delta Reform Act. There are acute problems with the aquatic environment, water quality in the Delta, and water supply reliability, that need to be addressed as soon as possible, but this flawed project proposal will harm key fish species, degrade water quality and is expected to impact the water supply of senior water right holders while barely increasing the export water supply.

The USACE Notice also states that “*(t)he applicant is in the process of developing information to support the analysis of alternatives pursuant to the Section 404(b)(1) Guidelines. All reasonable project alternatives, in particular those which may be less damaging to the aquatic environment, will be considered.*” The alternatives presented in the BDCP Draft EIR/EIS and in the California WaterFix RDEIR/SDEIS involve continued use of the existing inadequately screened south Delta export intakes, increased exports and reverse flows during drier months when the Delta is most stressed, and new intakes in the north Delta directly along the migration path of key salmon and steelhead species. The new north Delta intakes were acknowledged in the November 2013 Draft BDCP Executive Summary to adversely impact key fish species. The alternatives that have been considered at this time are damaging to the aquatic environment. The USACE must request additional alternatives be developed that actually improve the aquatic environment and contribute to achieving the coequal goals be developed, e.g., alternatives that include new storage, actions to reduce water demand, and other possible locations for the new intakes to allow water to flow into and through the Delta before being diverted.

The USACE’s Notice indicates that the applicant is in the process of developing a Conceptual Mitigation Plan. The deadline for comments should at least be postponed until sometime well after this Mitigation Plan is completed and made available for public comment and review.

The Notice also states that the “*decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the described activity on the public interest.*” The WaterFix RDEIR/SDEIS is inadequate and does not support a decision by the USACE because it fails to carry out a detailed environmental analysis, with full model runs, of the cumulative impacts of the proposed project, the foreseeable habitat restoration actions under EcoRestore (which are already required through the federal biological opinions and long overdue) and future storage projects that have been studied for many years as part of the CalFed Bay-Delta program and its successors. The RDEIR/SDEIS acknowledges the adverse impacts on water quality could be significant depending upon the location of the new habitat, and new storage will change the timing and quantity of exports via the new conveyance causing additional significant adverse impacts that have not yet been analyzed or disclosed. The USACE must request that the applicant do a full cumulative analysis of the environmental impacts of these future actions.

The USACE Notice states that the “*decision whether to issue permission pursuant to Section 408 [typo: should be 404] will be based on an evaluation of whether the project will impair the usefulness of the project works or is injurious to the public interest. The benefits, which reasonably may be expected to accrue from the proposed alteration, must be balanced against its reasonably foreseeable detriments.*” The proposed project is injurious to the public interests because it will hinder rather than harm the State and federal coequal goals, will require expenditure of funds that could otherwise have been used to meet the ecosystem, water quality

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and water supply needs of California and the nation, and will likely result in a very expensive stranded assets (the twin tunnels and new intakes) once the SWRCB sets new increased flow requirements for the Delta.

When Contra Costa County asked the USACE for a copy of the original DWR application, or that a link be provided on the USACE website, we were asked to submit a Freedom of Information Act request. Freedom of Information Act requests involve additional paperwork and substantial delay as well as the possibility of additional financial costs for the entity requesting the material. This is not good public policy and denies the public the opportunity to fully understand and comment upon the proposed project and Section 404 application.

A public hearing is needed to fully discuss the numerous problems with the California WaterFix project

Contra Costa County requests that a public hearing be held to consider this application. The California WaterFix project is seriously flawed and will have significant adverse impacts on key fish populations in the Bay-Delta system. A hearing will provide concerned Delta stakeholders the opportunity to present more detailed information about the major problems with the project discussed above.

County Recommendation

There is an urgent need to address the serious problems with the Delta ecosystem. The USACE should reject this application and request a new set of alternatives and analyses that will contribute to achievement of the coequal goals.

If the U.S. Army Corps Engineers decides against this course of action, the USACE should suspend the current deadline for comments and set a new deadline once the Conceptual Mitigation Plan, Biological Opinions, WaterFix Final EIR/EIS and related documents are completed.

If the USACE decides against suspending the deadline for comments, the USACE should hold a public hearing to allow a full discussion of the problems and major impacts of this WaterFix project.

If you have any questions regarding these comments, please contact me at (925) 674-7824.

Sincerely,



Ryan Hernandez
Manager
Contra Costa County Water Agency

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Attachments:

1. Contra Costa County comments on WaterFix RDEIR/SDEIS, dated October 30, 2015
2. USEPA comments on WaterFix RDEIR/SDEIS, dated October 30, 2015
3. SWRCB comments on WaterFix RDEIR/SDEIS, dated October 30, 2015
4. Delta Independent Science Board comments on WaterFix RDEIR/SDEIS, dated September 30, 2015
5. Contra Costa Water District comments on WaterFix RDEIR/SDEIS, dated October 30, 2015

Cc: Michael Jewell, Chief, Regulatory Branch, USACE
Governor Jerry Brown
U.S. Secretary of Commerce, Penny Pritzker
U.S. Secretary of Interior, Sally Jewell
U.S. Deputy Secretary of Interior, Michael Connor
Christy Goldfuss, Managing Director, Council on Environmental Quality
Senator Diane Feinstein
Senator Barbara Boxer
Congressman Mark DeSaulnier
Congressman Mike Thompson
Congressman Eric Swalwell
Congressman John Garamendi
Congressman Jerry McNerney
Congressman Jared Huffman
Congresswoman Nancy Pelosi
Will Stelle, Regional Administrator, NOAA Fisheries, West Coast Regional Office
Ren Lohoefener, Regional Director, USFWS, Pacific Southwest Region
Jared Blumenfeld, Region 9 Administrator, U.S. Environmental Protection Agency
Brigadier General Mark Toy, South Pacific Region, U.S. Army Corps of Engineers
John Laird, Secretary, California Natural Resources Agency
Charlton H. Bonham, Director, California Department of Fish and Wildlife
Mark W. Cowin, Director, California Department of Water Resources
Felicia Marcus, Chair, State Water Resources Control Board
Contra Costa County Board of Supervisors
John Kopchik, Director, Contra Costa County Department of Conservation and Development

The Board of Supervisors

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Contra Costa County



David J. Twa
Clerk of the Board
and
County Administrator
(925) 335-1900

October 30, 2015

John Laird
Secretary
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

David Murillo
Regional Director, Mid-Pacific Region
U.S. Bureau of Reclamation
Federal Office Building
2800 Cottage Way
Sacramento CA 95825-1898

BDCP/WaterFix Comments
P.O. Box 1919
Sacramento, CA 95812
Email: BDCPComments@icfi.com

Re: Proposed Changes to the Bay Delta Conservation Plan/California WaterFix Continue to Threaten the Delta, Time for Plan “B”

Dear Secretary Laird and Director Murillo:

Attached to this letter are Contra Costa County's comments on the Draft Bay Delta Conservation Plan (“BDCP”)/California WaterFix (“CWF”) and associated partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (“RDEIR/SDEIS”). As further explained in this letter and its attachments, the RDEIR/SDEIS fails to consider a reasonable range of viable project alternatives, fails to model and disclose the full adverse environmental impacts of the project, and assumes away what were previously considered significant adverse, but unavoidable, water quality impacts of the project without any actual detailed water quality modeling being done. The RDEIR/SDEIS is therefore totally inadequate under CEQA and NEPA, and not responsive to state policies (2009 Delta Reform Act), and should be withdrawn.

A great deal of information is circulating on the release of the BDCP/CWF and its recirculated environmental documents. The California WaterFix has been portrayed positively and unduly optimistically by the project proponents, but there are a host of major problems with the project. We request your personal review of the issues with the proposed project and urgent consideration of an alternative approach outlined herein.

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The current proposal by the California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Reclamation) to build new intakes in the north of the Sacramento-San Joaquin Delta (Delta) and export a significant percentage of Delta inflow will be a disaster for the Delta ecosystem, threatened and endangered fish species, the already degraded Delta water quality, and those living in or near the Delta that rely on the Delta for their water supply. The availability of good quality water in the Delta is essential for municipal drinking water for the residents of Contra Costa County as well as agriculture, recreation, and industry in this region.

Contra Costa County asks you both to undertake a serious review and reconsideration of this deeply flawed RDEIR/SDEIS and work with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) fisheries to develop a new approach (including the ability to capture and store “new” water during periods of high flow) that will actually restore and sustain the Delta ecosystem and address California’s water supply needs. This would greatly benefit not only California, but also the nation. The time to consider a Plan “B” is long overdue.

Despite what is stated by the project proponents in their press releases, the current project as proposed by DWR and, apparently, as supported by Reclamation, continues to have serious flaws and will harm, rather than improve the Delta ecosystem. Equally serious, it fails to produce any real increase in water supply reliability for California – something that is even more important in view of our current drought emergency.

The following are examples of the major problems with the current BDCP/CWF proposal:

- The preferred alternative in the current RDEIR/SDEIS fails to achieve either of the two co-equal goals of “providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem.” (See Wat. Code, §§ 85054; 85301(a).) This renders the RDEIR/SDEIS noncompliant with the requirements of the state Sacramento-San Joaquin Delta Reform Act of 2009 (Wat. Code, §§ 85000-85350) and Division B, Title 2, Section 205 of the federal Consolidated Appropriations Act of 2012 (Pub. L. 112-74 (Dec. 23, 2011) 125 Stat. 786).
- The DWR and the California Natural Resource Agency (CNRA) and Reclamation have allowed the export water contractors to develop a flawed project and valuable input from Delta interests and environmental organizations and even other State Agencies (e.g. Delta Stewardship Council Independent Science Board) have gone unanswered. The Delta Independent Science Board’s September 30, 2015 letter indicates in no uncertain terms that the BDCP/CWF is “*sufficiently incomplete and opaque to deter its evaluation and use by decision makers, resource managers, scientists and the broader public.*”
- DWR, CNRA, Reclamation and Interior have failed to consider or analyze a reasonable range of alternatives. Fourteen (14) of the 15 alternatives in the draft RDEIR/SDEIS involve an isolated facility and north Delta intakes, with no new storage or actions to reduce demand on the Delta and increase local sources of water. The three new alternatives in the RDEIR/SDEIS have the same basic configuration as those 14, meaning 17 out of 18 project alternatives are essentially the same project alternative. These project alternatives do not foster informed decision-making, and do not permit a reasoned choice.

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- The current RDEIR/SDEIS preferred alternative still relies on exports from the existing south Delta export locations (especially in dry years when the Delta is most stressed) and often would result in worse reverse flows in Old and Middle Rivers. The new North Delta intakes also adversely impact listed fish species (*i.e.*, species listed as threatened and endangered under the state and federal Endangered Species Acts) by reducing flows through the Delta to San Francisco Bay, reducing the percentage of flow through Sutter and Steamboat Sloughs, and increasing predation. Therefore, the project’s net benefits to listed fish species are minimal, if any.
- Astonishingly, the RDEIR/SDEIS’s preferred alternative would increase exports in dry periods and would only infrequently capture additional surplus water in wet periods. This is completely contrary to the original BDCP planning principles and the “Big Gulp, Little Sip” concept touted in the BDCP “An Overview and Update” dated March 2009. Specifically, principle #2 states “Divert more water in the wetter periods and less in the drier periods.” Moreover, the preferred alternative is in direct conflict with State policies of reducing reliance on the Delta in meeting California’s future water supply needs. (See Wat. Code, §§ 10608(c) & 85021.)
- The Operations and Water Quality modeling for the November, 2013 BDCP Draft EIR/EIS contained major errors and the computer models needed to be revised. However, no new modeling was done for the new RDEIR/SDEIS project or project alternatives. Instead DWR and Reclamation have based their RDEIR/SDEIS analyses on the original flawed modeling studies from three and a half years ago, and on water quality sensitivity analyses performed for completely different future demand, climate change scenarios, and habitat restoration conditions, *i.e.*, late-long-term rather than early-long-term.
- The estimated \$15 billion cost for construction of the tunnels does not represent the total cost of the whole project, estimated upwards of \$50 billion, and would most likely be rendered obsolete once the State Water Resources Control Board (SWRCB) adopts long-overdue, more-stringent, Delta flow requirements to protect fish and other beneficial uses.

These major issues are discussed in more detail in the attachments to this letter.

Time for a Fresh Approach - Plan “B”

The Bay Delta Conservation Plan/California WaterFix proponents have done very little to develop a holistic and sustainable solution. The Delta is in serious decline and there are major water shortages in California, even in non-drought years. Fish populations are plummeting. DWR and Reclamation should fully embrace the responsibility and complexity of solving the problems of fish decline, degraded Delta water quality, the increasing demands for water in California, and the impacts of climate change.

It is unfortunate that due to state and federal budget constraints, this responsibility has been ceded to a special interest group, the export water contractors, who do not have the interests of the environment or the rest of California at heart. Because of the control exerted by the export contractors over the BDCP planning budget, the BDCP/CWF RDEIR/SDEIS was rushed into

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print without any new modeling, and no new viable project alternatives. This seriously flawed document is not worthy of DWR or Reclamation, and has further delayed addressing the urgent needs of the Delta and California’s water supply.

A sustainable solution to California’s Bay-Delta fish and water supply problems can be achieved using the following approach. These are not new ideas. They have been provided by numerous Bay-Delta stakeholders to DWR and Reclamation as part of the BDCP process, and they were addressed in large part in the January 2014 California Water Action Plan. They have mainly been ignored or prematurely rejected by the single-focused BDCP/CWF proponents.

1. Capture water when there is high flow in the Delta and its upstream tributaries. This will require additional storage in or close to the Delta and south of the Delta. Additional storage located north of the Delta is needed, but it will not address the current problems of increasing water availability south of the Delta.
2. Storing captured water in wet periods will reduce the pressure to rely on the Delta for exports in drier periods. This will reduce resistance to adoption by the SWRCB and fishery agencies of necessary increased protections for fish in drier periods in the form of increased flows, and more stringent reverse flow limits and export restrictions. Only after the flows needed to sustain fish species are established will it be possible to determine how much water is available for export by the BDCP/CWF proponents.
3. If increases in Delta exports are focused on periods of high Delta outflow, water quality will be good enough in the western Delta to meet export needs. DWR and Reclamation should analyze alternatives involving new intakes in the western Delta in the vicinity of Sherman Island. Such an alternative would maintain flows for the fish through the Delta and eliminate the problems of reverse flows caused by both the south and north Delta intakes. During high flow periods, key pelagic fish species will be located west of Sherman Island. This alternative will also eliminate the need to construct lengthy expensive tunnels all the way under the Delta.
4. Increasing flows in the Delta during drier months will also help restore and maintain good water quality in the interior Delta.
5. Exports from the south Delta could still continue but only under “safe” conditions for fish. Reverse flows in Old and Middle Rivers would need to be highly constrained, e.g., Old and Middle River flows that are never less than, say, -2,000 cfs, as a monthly average, in all months.
6. Implement a portfolio of other actions to reduce demand on the Delta, strengthen Delta levees, address other fish stressors, and restore habitat in the Delta and in its upstream tributaries.

If done right, this approach will result in a win-win-win solution that achieves both coequal goals and the inherent goals of improving water quality in the Delta and protecting the Delta as an evolving place (see Wat. Code, § 85020). The current Bay Delta Conservation Plan/California WaterFix maintains the existing “lose-lose” situation that pits water users against the environment and forces the SWRCB to balance rather than enhance beneficial uses. Indeed, it is

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telling that despite the court decisions upholding the Fall X2 limits, the export contractors still included an analysis of the proposed project without Fall X2 in the RDEIR/SDEIS (Appendix F).

It is unfortunate not to mention tragic for Delta smelt and other declining fish populations that after the expenditure of more than \$250 million on planning studies, and after tying up the staff resources of state and federal agencies and interested stakeholders for more than nine years, the BDCP/CWF proponents have failed to produce a viable or legally-permissible solution to the water and ecosystem problems facing California, and have failed to produce a legally adequate environmental document.

Once again, Contra Costa County respectfully asks that you both take a hard look at the current flawed BDCP/CWF process (and the legally inadequate RDEIR/SDEIS).

As discussed earlier, what is needed is an inclusive process – one that involves local agencies and other Bay-Delta stakeholders –to seriously consider new project alternatives that will actually solve rather than exacerbate the problems of the Delta, and that will sustain a healthy Delta ecosystem and a reliable water supply.

If you have any questions regarding Contra Costa County’s comments, please contact me at (510) 231-8686 or Ryan Hernandez at (925) 674-7824.

Sincerely,



John Gioia, Chair
Contra Costa County Board of Supervisors

Attachments

- A – Summary of CEQA/NEPA Comments
- B – Detailed Comments on BDCP/CWF RDEIR/SDEIS
- C – Detailed Analysis Of WaterFix Project Impacts based on Water Fix Modeling and Sensitivity Analysis Data
- D – Recent Contra Costa County correspondence regarding BDCP and WaterFix

Cc: Governor Jerry Brown
U.S. Secretary of Commerce, Jenny Pritzker
U.S. Secretary of Interior, Sally Jewell
U.S. Deputy Secretary of Interior, Michael Connor
Senator Diane Feinstein
Senator Barbara Boxer
Congressman Mark DeSaulnier
Congressman Mike Thompson
Congressman Eric Swalwell

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Congressman John Garamendi

Congressman Jerry McNerney

Congressman Jared Huffman

Congresswoman Nancy Pelosi

Christy Goldfuss, Managing Director, Council on Environmental Quality

Will Stelle, Regional Administrator, NOAA Fisheries, West Coast Regional Office

Ren Lohoefener, Regional Director, USFWS, Pacific Southwest Region

Jared Blumenfeld, Region 9 Administrator, U.S. Environmental Protection Agency

Brigadier General Mark Toy, South Pacific Region, U.S. Army Corps of Engineers

Charlton H. Bonham, Director, California Department of Fish and Wildlife

Mark W. Cowin, Director, California Department of Water Resources

Felicia Marcus, Chair, State Water Resources Control Board

Contra Costa County Board of Supervisors

Attachment A**Summary of Contra Costa County's CEQA/NEPA Comments**

The following is a summary of Contra Costa County's comments regarding the California WaterFix (CWF) Partially Recirculated Draft Environmental Impact Report / Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS). Contra Costa County hereby incorporates by reference all of its previously-submitted comments on the BDCP EIR/EIS, and reiterates those comments to the extent that they apply to the RDEIR/SDEIS. Unless noted otherwise, comments in the July 2014 summary remain relevant to review of the RDEIR/SDEIS.

Contra Costa County provided extensive and constructive comments on the November 2013 Bay Delta Conservation Plan (BDCP) Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS) but the County's comments do not appear to have been thoughtfully considered. None of the County's constructive suggestions were incorporated into the RDEIR/SDEIS. This new environmental document perpetuates the flawed BDCP DEIR/EIS, and another 20 months or more have been wasted – time that the dramatically declining fish populations, and Californians with insufficient water supply don't have.

Unfortunately, it is clear from the commitment of resources to, and support of, the proposed project, and from the degree of specificity with which the proposed project has already been planned, the lead agencies have predetermined what would be the preferred project before undertaking adequate environmental review. The proposed project was not analyzed under CEQA and NEPA at the earliest possible time. Moreover, the proposed project was not described in such a way that would allow for flexibility to respond to changes arising during environmental review. Instead, the lead agencies' favoring towards the proposed project ripened into commitment to a definitive course of action (*i.e.*, a commitment to the proposed project, without any variation) well before meaningful environmental review was performed; and, consequently, the power to influence key public decisions about the project was lost at the outset. (See, e.g., *Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116, 130-131.) What followed was inadequate environmental review and the preparation of a flawed environmental document.

Contra Costa County also has identified the following specific defects with the RDEIR/SDEIS:

1. The **Project Need** acknowledges there is an urgent need to improve the conditions for threatened and endangered fish species within the Delta. (ES.1.2.2.3 Project Need, Page ES-6). However, the RDEIR/SDEIS is inadequate because it narrowly confines the Project Need statement to improvements in the conveyance system. As described in detail in the January 2014 California Water Action Plan and the 2009 Delta Reform Act, additional storage and actions to conserve water and reduce demand are also needed “*to respond to increased demands upon and risks to water supply reliability, water quality, and the aquatic ecosystem.* (Page ES-6).
2. The RDEIR/SDEIS is inadequate because the preferred alternative (Alternative 4A) and the other BDCP and WaterFix alternatives are not consistent with the Project Objectives (Executive Summary, Page ES-5)

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- The proposed physical and operational improvements would not help to restore and protect ecosystem health, water supplies of the State Water Project (SWP) and Central Valley Project (CVP) south of the Delta, and water quality in the Delta.
- The proposed changes to the operation of existing SWP Delta facilities are not adequate to address the existing adverse effects of the SWP on state and federally listed species.
- The SWP and CVP south Delta intakes would still be used for 50% of exports, and the intake to Clifton Court Forebay would remain unscreened.
- Most of the exports during dry years, when the Delta is most stressed, would be from south Delta.
- The lead agencies are assuming the Army Corps of Engineers' limits on inflow to Clifton Court Forebay will no longer apply, and the lead agencies have improperly redefined the SWRCB's export/inflow standards to allow increased exports from the Delta, especially during drier months when the Delta ecosystem is most stressed.

The proposed new facilities and operations for diverting water entering the Delta from the Sacramento Valley and conveying it to existing SWP and CVP pumping plants in the southern Delta will harm and impair, rather than improve, conditions for state and federally listed species. To restore and sustain the Delta ecosystem and also improve water supply reliability, it will be necessary to develop new facilities to capture and store water when there are high flows in the Delta (wet months) and convey that water to south-of-Delta groundwater storage. The RDEIR/SDEIS is inadequate because the proposed project does not meet any of California's urgent ecosystem and water needs.

3. The RDEIR/SDEIS states that the **NEPA Purpose statement** reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem (Page ES-6, Line 21). The RDEIR/SDEIS is inadequate because the project alternatives would hinder rather than advance achievement of the coequal goals.
 - a. Both the unscreened south Delta intakes and the new north Delta intakes on the pathway of migrating anadromous fish would significantly harm key fish species.
 - b. The project proponents have not incorporated increased Delta flow criteria considered by the SWRCB and Department of Fish and Wildlife to be necessary to restore and sustain fish populations.
 - c. The project proponents continue to oppose increased flows in the Fall to protect key fish species (*i.e.*, maintaining Fall X2) and they still include alternatives with no Fall X2 (see Appendix F).
 - d. The project would increase exports from the Delta during dry months when outflows are lowest and the Delta ecosystem is most stressed.
4. The unseemly rush to “*get stuff done*,” and the export contractors’ mandate to remain within the BDCP \$250 million planning budget, meant that no detailed modeling was done of the new alternatives before the RDEIR/SDEIS was released. The RDEIR/SDEIS is

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woefully inadequate under CEQA and NEPA because the preferred alternative and other new alternatives were not actually modeled. In other words, there was no objective analysis of project alternatives. This is unacceptable for any project, not to mention a \$15 billion project that would likely significantly harm key fish species; and this is not worthy of State agencies tasked with managing California's water and fish resources.

- a. There are major differences in acreage of habitat restoration and compliance with the Emmaton water quality standard between new alternatives (4A, 2D, and 5A) and the alternatives that were analyzed in the BDCP DEIR/EIS.
 - b. In addition, in response to extensive comments by Contra Costa Water District, the City of Antioch, the North Delta Water Agency and others, the CALSIM II and DSM2 models have been recently corrected and updated to correct problems with the original BDCP Draft EIR/EIS modeling. The lead agencies decided to use the flawed modeling "as is" in the RDEIR/SDEIS (RDEIR/SDEIS Appendix B, page B-3).
 - c. The RDEIR/SDEIS is "*sufficiently incomplete and opaque to deter its evaluation and use by decision makers, resource managers, scientists and the broader public*" (Delta Independent Science Board. September 30, 2015 comment letter).
 - d. Even DWR agrees that the "sensitivity analyses" **are not full model runs**. Minor changes were made to the full model runs performed for the BDCP Public Draft to assess the effects of individual changes to the Emmaton compliance location, the amount of habitat restoration, etc. CALSIM II sensitivity model runs were not rebalanced to address any new or modified effects (as would be done for a full model run) that may be a result of the minor changes. The sensitivity analyses are only valid to assess the impacts of the minor changes. CALSIM II and DSM2 results from the sensitivity runs should only be used to answer the specific questions for which the runs were performed (WaterFix Modeling Data Disclaimer provided to Contra Costa County with the electronic versions of the "sensitivity analysis" data).
 - e. The Alternative 4 CALSIM II models from BDCP Draft EIR/EIS were used, as is, for the Alternative 4A sensitivity analysis, without including any recent updates to the CALSIM II since the draft EIR/EIS was completed. The RDEIR/SDEIS states that this was done "*to remain consistent with the draft EIR/EIS modeling*" (Appendix B, Page B-3, Line 6). Because there were serious problems with the Draft EIR/EIS modeling, the models had to be updated. It is unacceptable to use these flawed analyses for the RDEIR/SDEIS. Relying on these models results in inaccurate estimates of changes in flows, exports and water quality caused by the proposed project and does not provide a reasoned analysis of environmental impacts.
5. The preferred alternative (Alternative 4A) and the other BDCP and WaterFix alternatives would seriously harm key fish species and the Delta ecosystem. The RDEIR/SDEIS is inadequate because it fails to avoid or mitigate these significant adverse impacts to the Bay and Delta ecosystems.
 - a. The unscreened south Delta intakes will continue to be used for 50% of the SWP and CVP exports and the WaterFix project would implement new operations rules that would increase rather than decrease south Delta exports.

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- b. The new north Delta intakes on the pathway of migrating anadromous fish would significantly harm key fish species, as acknowledged in the BDCP Draft EIR/EIS Executive Summary.
 - c. The north Delta intakes will impact flows in Sutter and Steamboat Sloughs reducing survival of key anadromous fish species.
 - d. The elimination of almost all habitat restoration projects in WaterFix means that there will be no ecosystem offset (*i.e.*, no mitigation) for these substantial, adverse impacts on fish.
 - e. The project alternatives are contrary to State and Federal law (Public Law 112-74) because they fail to contribute to achievement of both of the coequal goals.
6. The RDEIR/SDEIS is inadequate because the preferred alternative (Alternative 4A) and the other BDCP and WaterFix alternatives would not result in any significant increase in **water supply** to exports areas. This therefore fails to meet the project purpose and fails to help achieve the coequal goal of improving water supply reliability for California (2009 Delta Reform Act).
7. The RDEIR/SDEIS is inadequate because the preferred alternative (Alternative 4A) and the other BDCP and WaterFix alternatives fail to analyze and disclose the potentially significant adverse impacts on **water quality** in the Delta. The RDEIR/SDEIS is inadequate because: the water quality changes due to the preferred alternative have not been modeled using full DSM2 runs; the sensitivity analyses are not the same as actual model runs; and any conclusions about water quality impacts in the RDEIR/SDEIS are, therefore, purely speculative.
- a. The BDCP Draft EIR/EIS showed significant adverse water quality impacts throughout the Delta that were described by the BDCP proponents as unavoidable.
 - b. The RDEIR/SDEIS now attempts to demonstrate through sleight of hand (but no actual modeling) that the new project proposal will not result in any water quality impacts.
 - c. The failure to do actual water quality model runs means that the RDEIR/SDEIS relies on speculative language that is not based on fact, or good science. With respect to Barker Slough, the RDEIR/SDEIS states: "Because new alternatives 4A, 2D, and 5A contain a lower acreage of tidal restoration, significant impacts with regard to bromide are not expected under these alternatives (Page ES-28, Line 19). With respect to Suisun Marsh water quality, the RDEIR/SDEIS states: "the results of sensitivity analyses performed indicate that chloride increases in Suisun Marsh predicted via the modeling would not occur, For these reasons, any changes in chloride in Suisun Marsh are expected to have no adverse effect on marsh beneficial uses."
 - d. Fostering further degradation of Delta water quality is poor public policy and contrary to the statutory requirements of the 2009 Delta Reform Act (Cal. Water Code 85020(e));
8. The BDCP Draft EIR/EIS signaled DWR's intent to shift the compliance point for the SWRCB's **Emmaton water quality standard** from Emmaton to Three Mile Slough. This

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has been dropped from the RDEIR/SDEIS preferred alternative because it caused significant degradation of water quality in the Delta. This significant adverse impact on Delta water quality is apparently avoidable, despite assertions made in the BDCP Draft EIR/EIS. Because DWR intends to shift the Emmaton compliance point, but after certification of the Final EIR, this represents piecemealing of a project under CEQA (*California Code of Regulations, Section 15126*). **All** phases of a project must be considered when evaluating its impact on the environment: planning, acquisition, development, and operation.

9. The RDEIR/SDEIS does not comply with CEQA because additional storage will be needed to meet the project need of improving CVP and SWP water supply. Increase Delta flows are also needed to restore and sustain the Delta ecosystem. Apparently this will not be addressed by the SWRCB until after the SWRCB issues water right and Clean Water Act Section 401 approvals for the WaterFix project. Because both additional storage and increased Delta outflows are necessary to achieve the project goals and comply with the 2009 Delta Reform Act, this also represents piecemealing of the project under CEQA (*California Code of Regulations, Section 15126*).
10. The RDEIR/SDEIS is inadequate because it fails to analyze a reasonable range of alternatives, as required under CEQA and NEPA, as well as the 2009 Delta Reform Act. The nature and scope of the alternatives analyzed in the RDEIR/SDEIS do not satisfy the “rule of reason” and do not enable the lead agencies to make a “reasoned choice” regarding the project.
 - a. Fourteen (14) of the 15 alternatives in the BDCP Draft EIR/EIS were essentially the same alternative (an isolated facility and north Delta intakes). The three new alternatives in the RDEIR/SDEIS have the same basic infrastructure as the original 14. Only BDCP Draft EIR/EIS Alternative 9, through-Delta conveyance only, is different from the others. None contributes to achievement of the coequal goals.
 - b. Previous commenters on the BDCP have suggested alternatives that incorporate a portfolio of actions, such as water conservation, desalination, and local water supply reliability to reduce demand for water from the Delta. Commenters have also suggested adding new storage to allow water to be captured during periods of high flow into the Delta and through into San Francisco Bay, as well as alternative locations for the new intakes, such as the western Delta at Sherman Island. Commenters and the SWRCB have also requested alternatives that include significant increases in Delta outflows, but these were not taken seriously by the WaterFix lead agencies. Therefore, the lead agencies have failed to comply with CEQA by failing to provide a good faith, reasoned analysis of comments and suggested project alternatives. Moreover, although commenters have proposed alternatives that would reduce significant environmental impacts and achieve most project objectives, the lead agencies have excluded those suggestions from the alternatives analysis, thereby violating CEQA.

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- c. No actions to reduce reliance on the Delta, such as regional supplies, conservation or water use efficiency, are considered. (2009 Delta Reform Act, Cal. Water Code Section 80521);
 - d. No screening of the Clifton Court Forebay even though screening of other Delta diversions is proposed as a conservation measure, and the Conceptual Engineering Report for a through-Delta alternative shows that constructing a screened intake off Victoria Canal is indeed feasible.
11. The analysis of water quality impacts in the BDCP Draft EIR/EIS used computer models that contained significant errors. These models have since been updated. The analysis for the RDEIR/SDEIS was based only on “sensitivity analyses” which DWR acknowledges are not actual model runs. The RDEIR/SDEIS is woefully inadequate because it:
- a. Fails to accurately model and disclose the magnitude of adverse Delta water quality impacts;
 - b. Fails to disclose adverse water quality impacts that would occur in subsequent months once the BDCP modeling errors were corrected;
 - c. Fails to meet required SWRCB standards such as the Rock Slough chloride standards, even in the base cases (i.e., without BDCP);
 - d. Fails to apply consistent flow inputs to the water quality models. The use of daily variations in Sacramento River inflows to the Delta but monthly variations in Delta exports in the BDCP modeling studies caused large unrealistic spikes in water quality that distort the impact analyses. It is reasonably feasible to evaluate the true environmental impacts of the proposed project using accurate modeling; the lead agencies just choose not to do that. And the lead agencies have failed to provide a reasoned basis for not analyzing these impacts.
12. The analysis of environmental impacts in the RDEIR/SDEIS includes a number of significant changes to existing facilities and existing Delta operation standards (e.g., State Water Resources Control Board Water Rights Decision 1641 (“D-1641”)). The RDEIR/SDEIS is inadequate because it hides and fails to disclose the individual adverse impacts of each individual change. These changes are:
- a. Adding new diversion intakes in the north Delta on the Sacramento River;
 - b. Adding a permanent operable flow barrier at the Head of Old River;
 - c. Eliminating or ignoring the existing U.S. Army Corps limits of the inflow from the south Delta into Clifton Court Forebay;
 - d. Relaxing the SWRCB’s D-1641 export/inflow standards to allow increased exports;
 - e. Ignoring the current biological opinion limits on the ratio of San Joaquin inflow to south Delta exports.
13. The RDEIR/SDEIS assumes new limits on operation of the south Delta export pumps in the fall (September-November) and the spring (March-May), which when combined with existing Delta standards in the spring (February-June X2 limits) will shift the existing impacts of reduced flows and export diversions to July-August. Unless enhanced protections for fish are also set during July and August along with Fall X2 limits in critical,

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dry and below normal years, the proposed project will put other fish species, not currently listed or in decline, at risk. The RDEIR/SDEIS is inadequate because it fails to protect resident fish species from redirection of adverse impacts to the summer months.

- a. The WaterFix operations criteria need to include Old and Middle River flow limits for July- September. This is consistent with the original objectives of reducing (not increasing) exports from the south Delta;
 - b. The BDCP operational criteria needs to have Fall X2 limits for critical, dry and below normal years, as well as corresponding Delta outflow, X2 and Rio Vista flow requirements for July-August;
 - c. The proposed WaterFix north Delta intake would need to include more protective limits for July- September to avoid shifting adverse impacts to these three months.
14. The RDEIR/SDEIS fails to fully analyze alternatives with increased flows as a percentage of unimpaired flow as informed by the SWRCB's 2010 Delta Flow Criteria Report and corresponding California Department of Fish and Wildlife (formerly Fish and Game) 2010 Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta Report. The RDEIR/SDEIS is also inadequate because it fails to present modeling study flow results as percentages of unimpaired flow to allow comparison with the SWRCB and DFW recommendations. By not presenting this essential information, the RDEIR/SDEIS hides significant adverse environmental impacts from decision makers, regulators, and the public, in violation of CEQA and NEPA. Once again, it is reasonably feasible to evaluate the true environmental impacts of the proposed project using accurate modeling; the lead agencies just choose not to do that. And the lead agencies have failed to provide a reasoned basis for not analyzing these impacts.
15. The RDEIR/SDEIS fails to optimize reservoir operation rule curves to represent realistic reservoir and export operations by the SWP and CVP in response to new conveyance facilities, global climate change and enhanced Delta flow requirements.

Because of these and other WaterFix RDEIR/SDEIS inadequacies, a new Draft EIR/EIS must be prepared that addresses all of these important issues. A broad group of Delta stakeholders must be invited by the California Natural Resources Agency and the U.S. Department of Interior to engage in this process of getting the development of a viable solution to the ecosystem, water quality, levee, groundwater, instream flow, and water supply reliability problems of the Bay-Delta system back on track. The new Draft EIR/EIS must then be released for detailed public review and comment.

Attachment B**Contra Costa County Comments on WaterFix RDEIR/SDEIS****General Comment on the Inadequacy of All BDCP Alternatives**

The Draft Bay-Delta Conservation Plan (BDCP)/California WaterFix (WaterFix) partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) focuses on the WaterFix preferred alternative (Alternative 4A), a 9,000 cfs isolated facility with continued use of the south Delta export intakes. However, most of the flaws identified by Contra Costa County and others with respect to this preferred alternative also apply to the other new alternatives and those in the BDCP Draft EIR/EIS.

All of the alternatives analyzed in the RDEIR/SDEIS are inadequate. A new Draft EIR/EIS must be prepared that analyzes new alternatives incorporating increased Delta flows to restore and sustain fish populations (consistent with the State Water Resources Control Board's (SWRCB) 2010 Delta Flow Criteria), new storage, other potential intake locations, actions to reduce demand for water from the Delta, levee strengthening, and groundwater recharge and management actions. The new Draft EIR/EIS must include actual modeling studies of the alternatives, not brief sensitivity analyses, with water quality analyses for the full period of the operations studies (1922-2003, preferably extended through 2014). The new Draft EIR/EIS should then be released for public review and comment.

The County's comments focus on the WaterFix preferred alternative 4A, Scenario H3. The County is still very concerned that the alternatives still include elimination of the Army Corps limits on inflow to Clifton Court Forebay, and fail to comply with the Central Valley Project (CVP) and State Water Project (SWP) biological opinion limits on the San Joaquin inflow to south Delta exports ratio. The preferred alternative includes Fall X2, but the project proponents are still leaving open the possibility of operating the WaterFix preferred alternative without Fall X2 (see RDEIR/SDEIS Appendix F).

Considering the significant historical reduction of flows and degradation of water quality in the Delta in the fall, as well as the scientific relationships between fish abundance and X2 in the Fall, it is outrageous that the Natural Resources Agency, the Department of Water Resources, and the U.S. Bureau of Reclamation continue to fail to accept the need for increased outflows in the Fall and decreased Fall X2.

It is also appalling that these agencies with responsibilities to contribute to protecting fish in the Delta, have failed to analyze alternatives designed to adapt to reasonably foreseeable SWRCB increased Delta flow requirements (consistent with the 2010 Delta Flow Criteria developed by the SWRCB and Department of Fish and Wildlife). An alternative (4H3) that responds to a SWRCB request for analysis of increased Delta flow requirements is discussed in Appendix C, but no attempt was made modify the proposed project, e.g., by adding storage, to optimize this potentially more viable alternative.

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Most of the serious flaws identified by Contra Costa County and others with the WaterFix preferred alternative remain, such as the harm caused to key fish species, degradation of Delta water quality, increasing rather than decreasing total exports and even south Delta exports during drier months (relative to existing conditions), and the failure to increase water supply reliability, also apply to the other WaterFix and BDCP alternatives.

A new Draft EIR/EIS must be prepared that includes alternatives that commit to actions that actually achieve the co-equal goals of improving water supply reliability and restoring the Delta ecosystem, while improving Delta water quality and protecting the Delta as a place. The new Draft EIR/EIS must then be released for public review and comment.

General Comment – The WaterFix preferred alternative hinders rather than contributes to meeting coequal goals and the needs of California

The RDEIR/SDEIS preferred alternative is significantly flawed and is not in the interest of California. The latest WaterFix proposal is the result of the state and federal administrations ceding their responsibilities to the export water contractors. The proposed north Delta intakes and operating rules will harm key fish species by reducing flows downstream of the intakes which also increases predation and reduces survival, altering the olfactory cues for returning salmon and steelhead, and impinging and entraining fish at the new screened intakes. The preferred alternative will continue to rely on south Delta exports for 50% of the total exports and will increase rather than decrease exports in drier months, will not minimize reverse flows in many months and will increase reverse flows in some, and Clifton Court Forebay will remain unscreened. The south Delta exports will, therefore, continue to harm key fish species.

The BDCP proposed project was found to significantly degrade water quality in the Delta and impair drinking water, agriculture, recreation and fish and wildlife beneficial uses in the Delta. No full model runs were performed to determine the water quality impacts of the new WaterFix alternatives, only “brief sensitivity analyses” with incomplete information and based on earlier flawed BDCP model runs for entirely different amounts of habitat restoration and sea level rise (late long term instead of early long term) have been run. The WaterFix proponents now speculate that the water quality impacts identified in the Draft BDCP EIR/EIS are now avoidable, but present no model run data to support this claim.

Depending on how much habitat restoration is done for WaterFix and EcoRestore and the locations of that habitat restoration, the adverse water quality impacts in some areas of the Delta such as Barker Slough and Suisun Marsh could be extremely large. The habitat restoration under WaterFix and EcoRestore is not specified or analyzed in the RDEIR/SDEIS.

The BDCP proponents have refused to seriously consider alternatives that incorporate actions identified in the January 2014 California Water Action Plan and requested repeatedly by commenters on the BDCP Administrative Draft EIR/EIS and Public Draft EIR/EIS, *e.g.*, additional storage and other infrastructure to allow the project to capture additional water in wet months, and water use efficiency and demand reduction actions. This would make more water available in an environmentally responsible way that could then be used to improve water supply

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reliability and improve the Delta ecosystem by reducing exports in drier periods. The current drought emergency has demonstrated the need for ways to capture water in wet months and store it for later use during drier periods.

The WaterFix preferred alternative also hinders and delays California's efforts to increase California's water supply reliability. The proposed north Delta intake and tunnel project fails to produce any significant increase in water supply from the Delta.

The WaterFix and BDCP alternatives fail to achieve either of the coequal goals set by the legislature, and endorsed by Congress in 2009 (Public Law 112-74). The immense financial and human resources cost of the proposed project will prevent other more viable actions to address California's water problems from being realized.

The RDEIR/SDEIS must be withdrawn, new alternatives developed and analyzed in detail, and a new Draft EIR/EIS must be released for public comment and review.

General Comment – The WaterFix proposed project is seriously flawed because it will harm rather than benefit listed fish species

The WaterFix proposed project is seriously flawed. The original basis for the Bay-Delta Conservation Plan was to obtain regulatory assurance (50 years) by improving and restoring the ecosystem in the Delta for key fish species. The WaterFix project will no longer restore the promised 65,000 acres of habitat, instead only a small amount of restoration is proposed by the project proponents to be enough to mitigate impacts from the WaterFix project.

However, the conveyance component of the BDCP proposal, adding new export intakes in the north Delta on the Sacramento River, was retained. This was recommended by the fish agencies many years ago as a means of reducing the impacts of south Delta exports on fish. Detailed review of the analyses performed for the BDCP and WaterFix environmental documents reveal that the impacts of the south Delta exports will remain significant.

The WaterFix preferred alternative would:

- (a) Eliminate or ignore existing U.S. Army Corps of Engineers limits on inflow to Clifton Court Forebay which would result in increases in the maximum inflows from 6,680-7,180 cfs up to 10,300 cfs (BDCP Draft EIR/EIS, page 3-32, line 12 and not disclosed in the RDEIR/SDEIS);
- (b) Fails to screen the intake to the Forebay (even though DWR's November 2009 Conceptual Engineering Report – Through-Delta Facility Conveyance Option contains feasible examples of how this could be done, see Fig. 7-5 of the CER);
- (c) Creates reverse flows in Old and Middle River (OMR) that are even worse at certain times of the year relative to existing conditions, and fail to minimize reverse flows in many other months;

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- (d) Ignore the biological opinion limits on the ratio of San Joaquin inflow to south Delta exports;
- (e) Still use the south Delta for 50% of the total SWP and CVP exports.

As revealed in the November 2013 Draft BDCP, the north Delta intake would also harm key fish species by reducing flows on the Sacramento River below the new intakes which will reduce the survival of anadromous fish heading to and from the ocean, change the olfactory cues used by the salmon to return to their native spawning grounds, and increase predation (see BDCP pages 3.2-8, 5.5.3-32 and 5.5.3-39).

The three new WaterFix intakes will be upstream of the entrances to Sutter and Steamboat Sloughs. Reductions in flows in the Sacramento River below the intakes will likely reduce the percentage of out-migrating salmon using the safer Sutter-Steamboat route to the ocean. The project proponents considered locating the north Delta intakes downstream of the entrances to Sutter and Steamboat to reduce this significant adverse impact on these key fish species (BDCP Draft EIR/EIS, Appendix 3F, page 3F-6), but the intakes are now proposed to be located upstream. The BDCP also assumed that tidal restoration in the Cache Slough complex could modify flows and tidal variations and reduce the impacts of the north Delta intakes on fish passage through Sutter and Steamboat. However, this tidal habitat restoration is no longer part of the WaterFix project.

The proposed WaterFix new intake and tunnel facilities and continued use of the inadequately screened south Delta export intakes are likely to seriously harm key fish species and fail to contribute to restoring and sustaining the Delta ecosystem. A new Draft EIR/EIS must be prepared that includes new alternatives incorporating new storage, other possible intake locations in the Delta, that would benefit threatened and endangered species and other resident fish in the Delta. The new Draft EIR/EIS must then be recirculated for public review and comment.

General Comment – The impacts of the WaterFix plan to increase the inflow to the unscreened Clifton Court Forebay from the south Delta are not disclosed, analyzed or permitted

A detailed review of the WaterFix sensitivity analyses data for Alternative 4A reveals that the monthly exports from the south Delta exceeded the U.S. Army Corps of Engineers (USACE) limits on inflow to Clifton Court Forebay from the south Delta. See Attachment C to this letter.

As described on page 5A-B6, per U.S. Army Corps of Engineers Public Notice 5820A (13 October 1981), the USACE determined that DWR would not require additional USACE permitting for the SWP's diversions from the Delta as long as the SWP is limited to daily diversion into Clifton Court Forebay that would not exceed 13,870 acre-feet and the 3-day average diversions into Clifton Court Forebay would not exceed 13,250 acre-feet (about 6,680 cfs). In addition, the SWP can increase diversions into Clifton Court Forebay by one third of the

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San Joaquin River flow at Vernalis during the period from mid-December to mid-March when the flow of the San Joaquin River at Vernalis exceeds 1,000 cfs.

As also described on page 5A-B3 of the BDCP Draft EIR/EIS, an additional capacity of 500 cfs (up to 7,180 cfs) is allowed into Clifton Court Forebay for July–September for reducing impact of NMFS biological opinion (June 2009) Action IV.2.1 Phase II on the SWP.

During April–November when inflows are limited 6,680 – 7,180 cfs, the sensitivity analyses for Alternative 4A, and BDCP modeling studies suggest inflows to Clifton Court (SWP through-Delta exports) will be as high as 9,750 cfs with total south Delta exports as high as 14,350 cfs. This is not consistent with the claimed benefit of the north Delta intakes of reducing exports from the south Delta.

The WaterFix RDEIR/SDEIS is inadequate because it fails to clearly disclose to the public and to decision makers like the Army Corps that DWR is proposing to eliminate existing limits on the inflow to Clifton Court. In several locations in the BDCP Draft EIR/EIS, it was noted that pumping at Banks Pumping Plant is assumed to be up to the installed capacity of 10,300 cfs. In Table 3-6 on page 3-36 of the BDCP Draft EIR/EIS, it is stated that Alternatives 1-4 and Alternatives 6-8 do not incorporate the operational rule related to the permitted limit on Clifton Court Forebay inflow (6,680 cfs plus 1/3 of San Joaquin River Dec 15–March 15). Therefore, it is not clear whether the operation rule is in fact 10,300 cfs. The revisions to BDCP Draft EIR/EIS Chapter 3 in the RDEIR/SDEIS (Appendix A, Chapter 3) no longer include reference to the limits on Clifton Court inflow, nor are there any tracked change deletions.

DWR also failed to disclose its intent to eliminate the limits on inflow to Clifton Court in its Section 404 application to the Army Corps. Nowhere is it disclosed whether this is DWR’s intent or not, but the sensitivity analysis data in the RDEIR/SDEIS contains frequent willful exceedances of this limit.

This proposal to increase SWP exports from the south Delta is a major change that could have significant impacts on the Delta ecosystem and Delta water quality. It is also contrary to the stated project goal of reducing the existing adverse impacts of south Delta diversions. A new Draft EIR/EIS must be prepared that fully discloses DWR’s intent to increase south Delta exports and to disclose the environmental impacts of eliminating the current U.S. Army Corps limits. This will enable the public and regulatory agencies to assess the adverse environmental impacts of this proposed change.

General Comment – RDEIR/SDEIS is inadequate because it fails to describe and analyze alternatives that would improve rather than degrade water quality in the Delta

CEQA requires that an “*EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible*

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alternatives that will foster informed decision making and public participation.” (CEQA Guidelines, 14 CCR § 15126.6(a))

The RDEIR/SDEIS is inadequate because it fails to consider and analyze feasible alternatives that incorporate additional storage and new infrastructure to capture “new” water during periods of high flow in the Delta, as well as other more viable intake locations that would not harm key fish species. Both the south Delta and north Delta intake locations would significantly harm fish species. The south Delta export intakes are unscreened or inadequately screened and cause reverse flows that increase entrainment and mortality of fish species in the Delta.

The north Delta intakes will reduce flow into and through the Delta, cause reverse flows in the north Delta and reduce migrating fish survival, and increase predation impacts. The November 2013 Draft BDCP acknowledged that the north Delta intakes will have an adverse impact on key fish species. This is not offset by reducing exports from the south Delta because the south Delta export intakes will continue to be used for 50% of the total exports and most of the exports will still be from the south Delta in dry periods.

The RDEIR/SDEIS also fails to seriously analyze alternatives that incorporate increased Delta flows consistent with the Delta Flow Criteria developed by the SWRCB and Department of Fish and Wildlife in 2010. The analyses that were done (BDCP Alt. 8 and WaterFix Alt. 4H3) used the same configuration as the proposed project without incorporating any infrastructure such as new storage that would allow “new” water to be captured to offset the water being made available to help restore and sustain the Delta ecosystem. New alternatives involving higher Delta flows during dry periods and new storage will help to improve water quality in the Delta, as required by the 2009 Delta Reform Act, rather than degrade it.

The RDEIR/SDEIS must be withdrawn immediately and additional more viable, less costly, alternatives developed. A new Draft EIR/EIS must then be prepared and released for public review and comment.

General Comment – RDEIR/SDEIS is inadequate because it assumes away significant adverse impacts on water quality without doing any detailed modeling runs

The November 2013 BDCP Draft EIR/EIS disclosed significant adverse impacts on water quality in the Delta. The BDCP Draft EIR/EIS described these significant adverse impacts as unavoidable, despite State policy and antidegradation statutes requiring that Bay-Delta projects not only contribute to achieving the both coequal goals, but also contribute to improving water quality in the Delta (2009 Delta Reform Act, Cal. Water Code § 85020(e)). The BDCP Draft EIR/EIS failed to offer any meaningful, binding, or effective mitigation for these significant adverse impacts.

Incomprehensibly, the July 2015 California WaterFix RDEIR/SDEIS states that the new alternatives (4A, 2D and 5A) do not have any significant impacts on water quality in the Delta. Apparently, the lead agencies new position is that the significant adverse impacts in the Draft EIR/EIS were avoidable after all.

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The July 2015 RDEIR/SDEIS assumes away these significant adverse impacts without supporting those assumptions with any detailed model runs, and only using “brief sensitivity analyses” (Appendix B, page B-1) based on BDCP Draft EIR/EIS modeling studies that were flawed. Comments on the BDCP Draft EIR/EIS by Contra Costa Water District, the City of Antioch, North Delta Water Agency and others identified significant problems with those studies and the modeling tools that were used. The RDEIR/SDEIS acknowledges the CALSIM II model has since been updated (Appendix B, page B-3) but the lead agencies apparently did not consider it was necessary to provide the public and regulatory agencies with new, corrected, detailed model runs. The CALSIM II model runs from the Draft EIR/EIS were “*used as is to remain consistent with the draft EIR/EIS modeling*” (Page B-3) so errors with the original modeling are also in the RDEIR/SDEIS sensitivity analyses.

The claims, in the RDEIR/SDEIS, that there are no significant adverse water quality impacts are purely speculative and optimistic, without any accurate analysis to support them. A new Draft EIR/EIS must be prepared with input from a wide stakeholder group that analyzes and discloses the water quality and other environmental impacts of Alternatives 4A, 2D and 5A and new alternatives that actually contribute to achieving both coequal goals. The new Draft EIR/EIS should then be released for public review and comment.

General Comment – Sensitivity Analyses based on completely different operating rules and climate change conditions are not a substitute for full model runs

The lead agencies used “brief sensitivity analyses” that DWR acknowledges are not full model runs.

The RDEIR/SDEIS in revised language states (Appendix A, Appendix 8G, page 8G-1): “*Understanding the uncertainties and limitations in the modeling and assessment approach is important for interpreting the results and effects analysis, including assessment of compliance with water quality objectives. In light of these limitations, the assessment of compliance is conducted in terms of assessing the overall direction and degree to which Delta chloride would be affected relative to a baseline, and discussion of compliance does not imply that the alternative would literally cause Delta chloride to be out of compliance a certain period of time. In other words, the model results are used in a comparative mode, not a predictive mode.*” The RDEIR/SDEIS is inadequate because it fails to carry out full model runs that simulate the absolute impacts of the proposed project.

DWR included the following Disclaimer with its transmittal of the RDEIR/SDEIS “sensitivity analyses” data to the public.

Sensitivity analyses are not full model runs! Minor changes (as summarized below) have been made to the full model runs performed for the BDCP Public Draft to assess the effects of the specific change. CALSIM II sensitivity model runs were not re-balanced to address any new or modified effects (as would be done for a full model run) that may be a result of the minor changes. The

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sensitivity analyses are only valid to assess the impacts of the minor changes. CALSIM II and DSM2 results from the sensitivity runs should only be used to answer the specific questions for which the runs were performed.

The RDEIR/SDEIS (Appendix B, Page B-3) states that Alternative 4 CALSIM II models from draft EIR/EIS were used, as is, for the Alternative 4A sensitivity analysis, without including any recent updates to the CALSIM II. The RDEIR/SDEIS says the reason for not using the most recent, corrected, versions of the CALSIM II flow operations model was “*to remain consistent with the draft EIR/EIS modeling.*” As discussed in detail in comments by Contra Costa Water District, the City of Antioch, the North Delta Water Agency, and others on the November 2013 Draft EIR/EIS, the draft EIR/EIS modeling was seriously flawed, and the models themselves have since had to be updated.

The sensitivity analyses are also unacceptable for a CEQA/NEPA analysis of environmental impacts because only minor changes were made to the flawed draft EIR/EIS model runs and the CALSIM II runs were not rebalanced or optimized to take into account other changes to the alternatives (DWR Modeling Data Disclaimer).

The sensitivity analyses approach in the RDEIR/SDEIS is not valid and does not inform the Alternative 4A impact analysis.. In fact, it may result in misleading results. For example, the water quality sensitivity analyses were carried out using BDCP proposed project Alternative 4 at late long term (year 2060 future conditions, 65,000 acres of habitat restoration and 45 cm of sea level rise) but the impact analysis in the RDEIR/SDEIS is done at the early long term (year 2025, 25,000 acres of habitat restoration and 15 cm of sea level rise) conditions. Because the water quality analyses still included sea level rise, the effect of seawater is simulated to be much greater at late long term than at early long term.

The RDEIR/SDEIS is inadequate because it uses flawed draft EIR/EIS modeling and a “*brief sensitivity analysis*” (RDEIR/SDEIS Appendix B, page B-1) to analyze and disclose the environmental impacts of a project of statewide importance that is likely to cause significant harm to the Delta ecosystem, and other Delta beneficial uses.

The RDEIR/SDEIS itself acknowledges that “*there is notable uncertainty in the results of all quantitative assessments that refer to modeling results, due to the differing assumptions used in the modeling and the description of the No Action Alternative (ELT)*” (Chapter 4, Page 4.2-18).

The RDEIR/SDEIS states that “*Based on the sensitivity analyses, optimizing the design and siting of restoration areas is expected to be able to reduce EC and chloride increases in Suisun Marsh, relative to Existing Conditions and the No Action Alternative, to levels that would be less than significant.*” (Page ES-27, Line 16) As discussed above, the sensitivity analyses were performed under quite different conditions (late long term with additional sea level rise and much more habitat restoration, 65,000 acres) than the preferred alternative, Alternative 4A (early long term, less sea level rise, no shift in the Emmaton compliance location, and no significant amount of habitat restoration). The RDEIR/SDEIS makes no firm commitments to mitigate the expected impacts by implementing habitat restoration at optimized sites. Only a small amount of

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habitat restoration is being considered as part of California EcoRestore and that is already required under the OCAP Biological Opinions. There is no commitment by the WaterFix lead agencies to site that habitat restoration to mitigate Suisun Marsh, Barker Slough or other expected Delta water quality impacts. There are no reliable “facts in evidence” to support the optimistic expectation that water quality impacts will be reduced to less than significant levels. The RDEIR/SDEIS must be withdrawn immediately and detailed modeling studies and analysis of Alternative 4A and additional more viable, less costly, alternatives must be carried out. A new Draft EIR/EIS must then be prepared and released for public review and comment.

General Comment – Sensitivity Analyses show a large range of potential water quality impacts at Barker Slough and in Suisun Marsh

The Sensitivity Analyses were based on the flawed modeling for Alternative 4, Scenario H3 at late long term, i.e., 2060 conditions with habitat restoration, and were not updated using the most recent versions of the CALSIM II and DSM2 models. Figures B-1 and B-2 show the range of EC at Barker Slough for some of the sensitivity analyses:

- SA1 BDCP Draft EIR/EIS Alternative 4, Scenario H3 at LLT
- SA2d Same as SA1 but with compliance at Emmaton and daily flow variations
- SA4 Same as SA1 but with Suisun Marsh Control Gate operations consistent with the NAA
- SA4a Same as SA4 but without the 65,000 acres of tidal habitat restoration

The sensitivity analysis data were provided to the County by DWR. Also plotted for comparison purposes is the No Action Alternative developed for the WaterFix RDEIR/SDEIS for late long term. The RDEIR/SDEIS only presented the water quality data as the averages for each month of the year for the short period modeled, water years 1976-1991, and for the water year 1987-1991 drought period. The 1976-1977 drought period was not included in the drought averaging.

As shown in Figure B-1 and Figure B-2, removing the 65,000 acres of habitat restoration could reduce EC at Barker Slough during drought periods (relative to the BDCP Draft EIR/EIS proposed project, SA1) but increases EC significantly in normal and wetter years.

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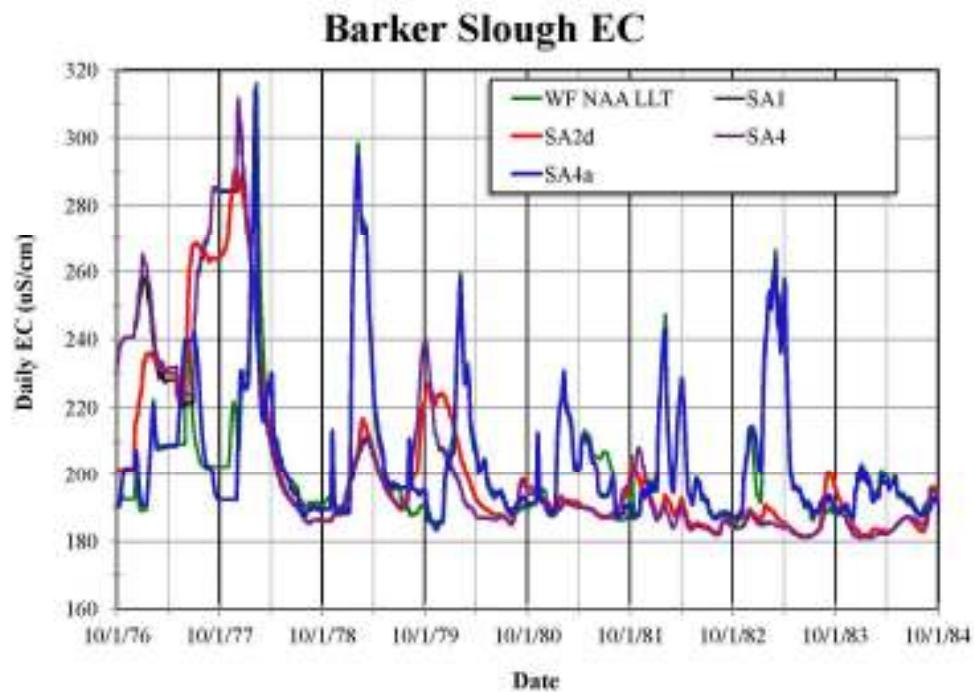


Figure B-1: Daily EC values at Barker Slough from the sensitivity analyses for the period October 1976 through September 1984.

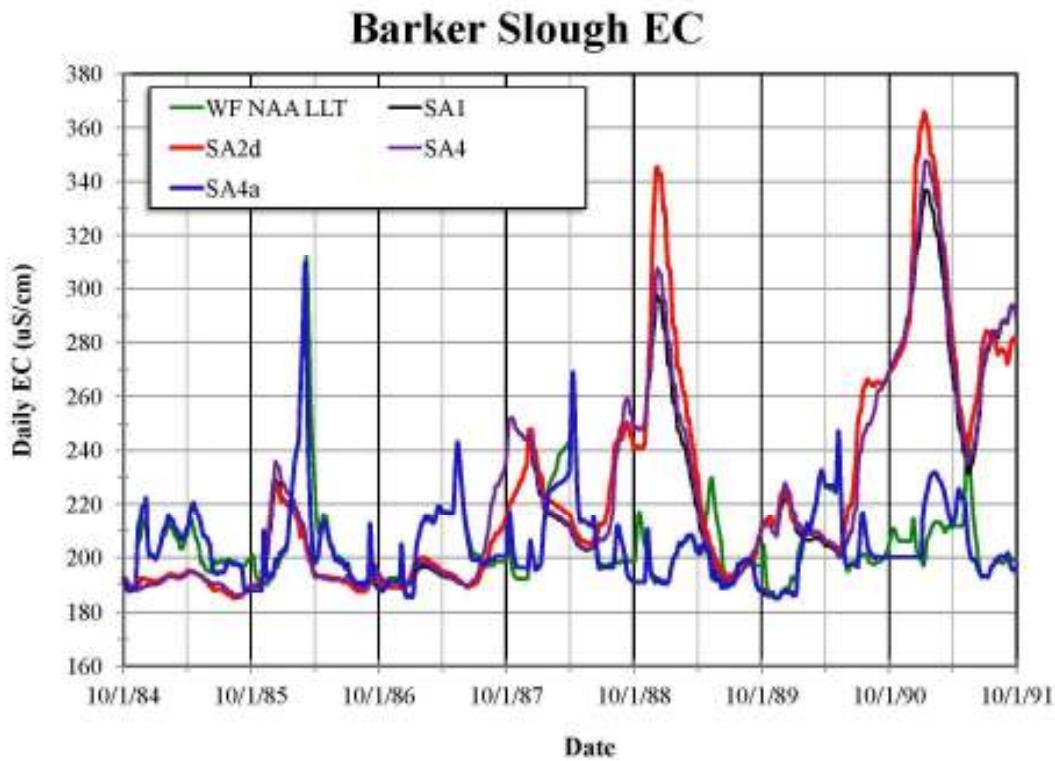


Figure B-2: Daily EC values at Barker Slough from the sensitivity analyses for the period October 1984 through September 1991.

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The RDEIR/SDEIS only presents bromide concentration changes at Barker Slough and Belden's Landing as period averages (Appendix B, Tables Br-1 and Br-2) but does present chloride concentration changes at these two locations as period averages for each month of the year (Tables Cl-6 and Cl-7). The bromide and chloride concentrations are derived from the simulated EC data using two different methods. However, the corresponding presentation of EC data (Table EC-8A) does not show the averages for Barker Slough or Belden's Landing. This is a major omission.

However, as noted by the Delta Independent Science Board in their September 30, 2015 review of the RDEIR/SDEIS, the presentation of data in this environmental document is "*sufficiently incomplete and opaque to deter its evaluation and use by decision makers, resource managers, scientists and the broader public.*" The use of long-term averages in the tables in Appendix B masks the significant changes in water quality at Barker Slough and Belden's Landing and fails to disclose significant adverse water quality impacts.

Depending on where the habitat restoration needed to mitigate the significant adverse impacts of the WaterFix preferred alternative is implemented, and where the habitat restoration for California EcoRestore is implemented, the water quality impacts at Barker Slough and in Suisun Marsh could be significant. The timing of those impacts will also vary depending on the degree of habitat restoration. It is crucial that these impacts be determined, analyzed using full model runs, disclosed and either avoided or mitigated defined, before decisions are made by regulatory agencies such as SWRCB and the Army Corps and the lead agencies regarding the WaterFix project.

Figures B-3 and B-4 show the EC data for each month of the 16-year sensitivity analysis simulation period (192 data points) in the form of scatter plots. The EC data for Barker Slough and Belden's Landing for Sensitivity Analysis #4 (no habitat restoration) are plotted as a function of the WaterFix No Action Alternative and both are at late long term.

Some peak ECs at Barker Slough are reduced relative to the No Action equivalent but significant adverse impacts occur at other times. There are some reductions in EC relative to the No Action equivalent at Belden's Landing but significant adverse impacts occur at other times. The presentation of water quality data must present the data in sufficient detail to fully disclose the daily or month to month variations in water quality, in particular the occasions when salinities increase significantly. It is not acceptable to only present long-term averages that obscure and reduce the significant impacts on urban and agricultural water users, and the Delta ecosystem.

The RDEIR/SDEIS is inadequate because it fails to present analyses data in a form that discloses the daily or month to month impacts of the proposed project on water quality and fails to avoid or provide definitive mitigation for these significant impacts on water quality.

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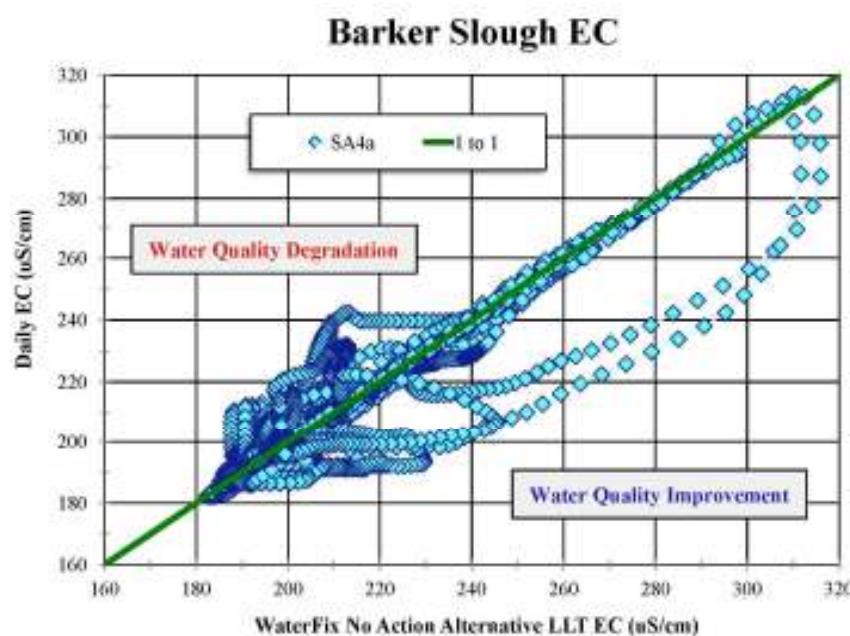


Figure B-3: Scatter plot of daily EC values at Barker Slough from the WaterFix sensitivity analyses with no restoration (SA4a, LLT) for the period October 1975 through September 1991. Some peak EC are reduced relative to the No Action equivalent but significant adverse impacts occur at other times.

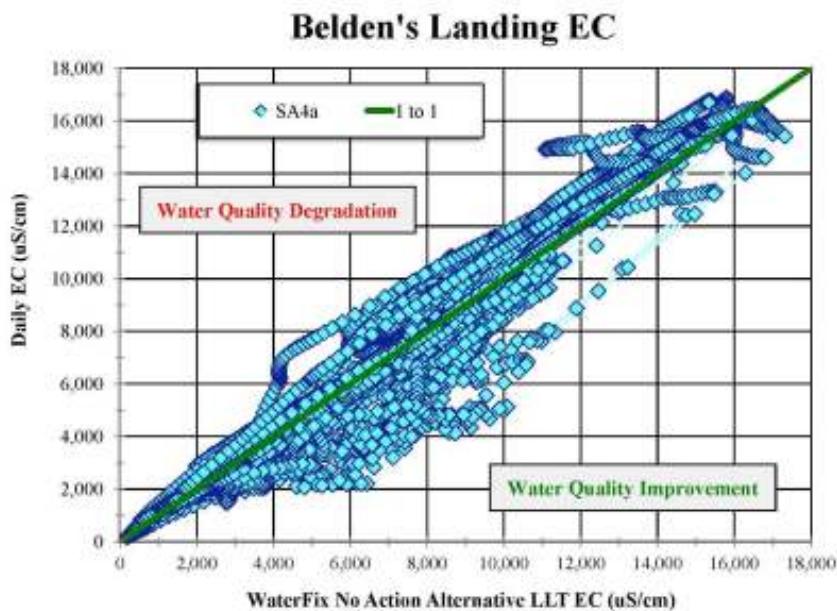


Figure B-4: Scatter plot of daily EC values at Belden's Landing from the WaterFix sensitivity analyses with no restoration (SA4a, LLT) for the period October 1975 through September 1991. There are some reductions in EC relative to the No Action equivalent but significant adverse impacts occur at other times.

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General Comment – The RDEIR/SDEIS appears to deceive the public and decision makers by presenting tabulated water quality data for the new alternatives when no modeling was done for these specific alternatives

The RDEIR/SDEIS appears to deceive the public and decision makers by claiming that Alternatives 4A, 2D and 5A were evaluated, and that the evaluation was at early long term. Of particular concern are the tables in Appendix B, Supplemental Modeling Results for New Alternatives that claim to present the water qualities for Alternative 4A for Scenario H3 and H4 at early long term when no full model runs or even sensitivity runs were performed for those cases.

A new Draft EIR/EIS must be prepared that performs full modeling of the operations and water quality with the proposed project and new alternatives designed to actually help achieve both coequal goals. Revised modeling results, not based on speculated or assumed values must be presented in the water quality tables. A new Draft EIR/EIS must then be prepared and released for public review and comment.

General Comment – The assumptions in the CALSIM II modeling regarding Delta outflows required to meet Fall X2 may exaggerate the amount of flow needed and reduce the actual water quality impacts of the proposed project

Under existing conditions, the equivalent steady-state Delta outflows required to meet the D-1641 estuarine habitat standards (X2) at Chipps Island (aka Mallard Island) and Collinsville are defined as 11,400 cfs and 7,100 cfs, respectively. By 2025 (early long term) and 2060 (late long term), sea level rise will mean that the amount of Delta outflow needed to meet X2 will increase.

The outflows required to meet the Fall X2 requirement in September and October in the WaterFix analyses using CALSIM II, however, are very much larger. As shown in Figure B-5, the assumed minimum Delta outflows to meet X2 at Mallard Island (in wet years) and Collinsville (above normal years) are about 19,500 cfs and 11,500 cfs, respectively. These flows seem to be too high and may be artificially freshening the Delta during September and underestimating the water quality impacts of the proposed project. The reason for these high flows may be because the CALSIM II only attempts to meet September X2 requirements at the last minute, whereas increasing Delta outflows earlier will require much less Delta outflow.

Figure B-6 shows the corresponding Delta outflows and minimum required Delta outflows for October. The October outflows are governed by the need to meet Fall X2 in wet and above normal years. Otherwise the D-1641 requirement of 3,000 cfs in critical years and 4,000 cfs in other water years applies. The flows assumed to be required to meet Fall X2 are consistent with the existing X2 outflow requirements. However, excess Delta outflows are occurring in many below normal, dry and critical years, which may underestimate the actual water quality impacts of the proposed project.

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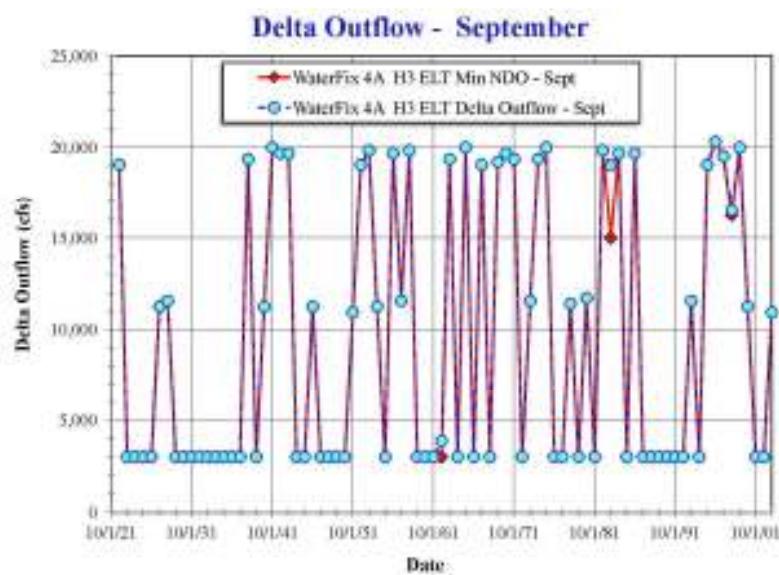


Figure B-5: Delta outflows and minimum required outflows for September for the WaterFix operations modeling to represent the preferred alternative 4A at early long term. The outflows are governed by the need to meet Fall X2 in wet and above normal years. Otherwise, the D-1641 requirement of 3,000 cfs applies. The flows assumed to meet Fall X2 are much higher than the outflow requirements for existing conditions, i.e., 11,400 and 7,100 cfs, respectively.

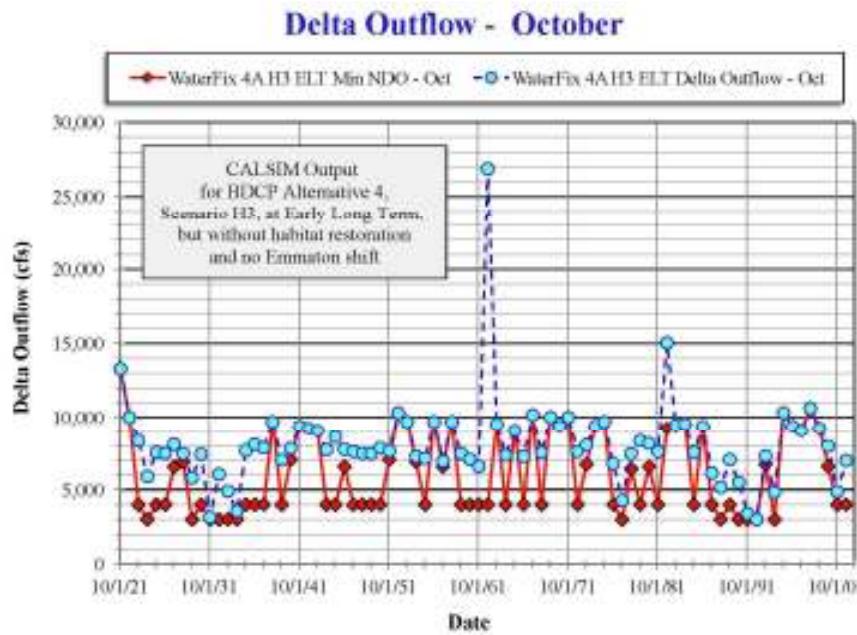


Figure B-6: Delta outflows and minimum required outflows for October for the WaterFix operations modeling to represent the preferred alternative 4A at early long term. The outflows are governed by the need to meet Fall X2 in wet and above normal years. Otherwise, the D-1641 requirement of 3,000 cfs in critical years and 4,000 cfs in other water years applies. The flows

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assumed to be required to meet Fall X2 are consistent with the existing X2 outflow requirements, but excess Delta outflows are occurring in drier years which may underestimate the actual water quality impacts of the proposed project.

The limited analysis of water quality impacts in the RDEIR/SDEIS is also inadequate because the reason for unexpectedly high Delta outflows in September to meet Fall X2 is not explained or justified. The real time operations of the proposed project would likely call for the start of increased flows to begin in August to meet the September Fall X2 requirements (to account for the delayed response between outflow and salinity in the western Delta) and require much less total outflow. The actual water quality impacts in September are likely to be higher than presented in the RDEIR/SDEIS so the real adverse impacts are not fully disclosed. Similarly, excess Delta outflows are being provided by the CALSIM II model in drier years in October which also underestimates the potential adverse water quality impacts in October.

A new Draft EIR/EIS must be prepared that corrects or justifies through detailed modeling and detailed data presentations, the apparent excessive Delta outflows in both September and October which cause water quality impacts to be under predicted. The new Draft EIR/EIS must then be released for public review and comment.

General Comment – The 1976-1991 period used for the water quality modeling is too short and not representative of (much drier than) the full historical period

The water quality analyses are only performed and presented for the period October 1975 through September 1991 (16 years). This period contains two major droughts (1976-1977 and 1987-1991) but only the latter is used to represent the water quality changes under drought conditions. When the data are categorized by month and by water year type, the amount of data available to be averaged can be as few as 2-5 months of data. That is not sufficient data to develop a statistically significant representation of the variations by month and water year type.

Also as shown in Figure B-7, the water year 1976-1991 period is considerably drier than the full historical record (1906-2014) and the 1922-2003 period used for the Central Valley operations modeling using CALSIM II.

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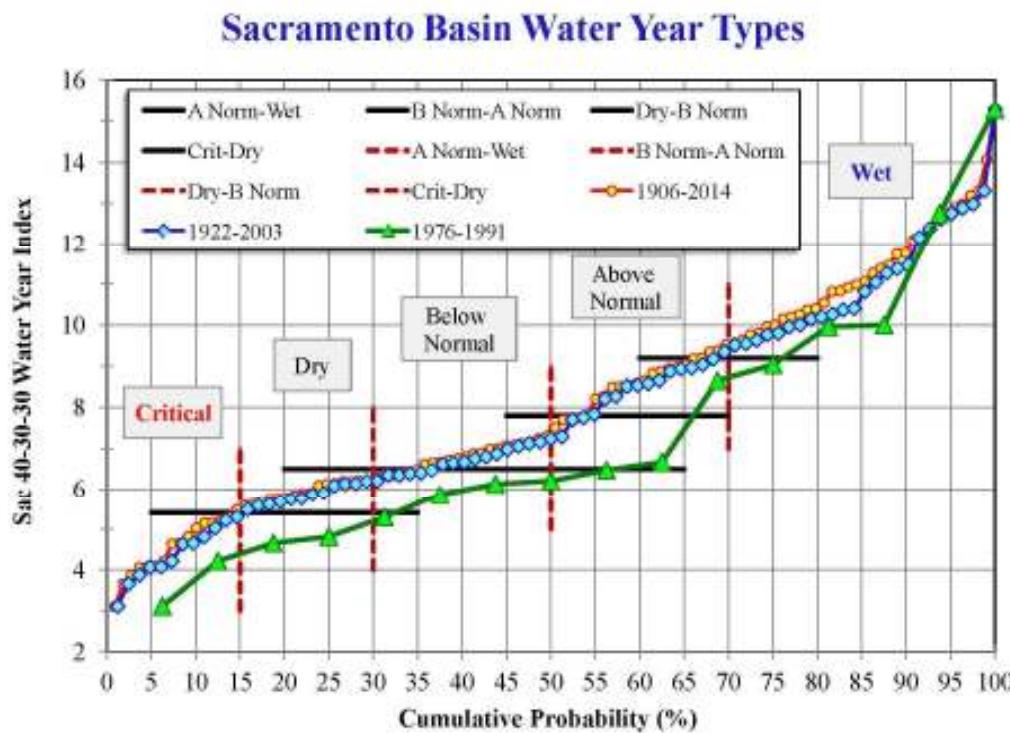


Figure B-7: Cumulative probability distributions of the Sacramento 40-30-30 water year indices for the available historical record (1906-2014), the period used for the CALSIM II operations studies (1922-2003) and the WaterFix water quality analyses (1976-1991). The 16-year period used for reporting water quality impacts is much drier and not representative of the range of variations in the operations studies or historical record.

Detailed Comments

Executive Summary

Page ES-3, Line 9

The RDEIR/SDEIS states that the new WaterFix “sub-alternatives address the reverse flow problem by focusing on the construction and operation of new north Delta intakes and on habitat restoration commensurate with the footprint of these new facilities.” The construction of north Delta intakes only reduces south Delta exports and minimize reverse flows in the south Delta some of the time. The WaterFix sensitivity analysis data show that many other times south Delta exports and reverse flows actually increase. Reverse flows in the south Delta remain significant (e.g., more negative than -2,000 cfs) 55% of the time during the simulation period.

A new Draft EIR/EIS must be prepared that fully discloses in clear, understandable and detailed tables and graphs the actual changes in reverse flows as a result of the WaterFix preferred

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alternative. This lack of clarity and transparency has been identified on numerous occasions by the Delta Independent Science Board, most recently in its September 30, 2015 review comments. The new Draft EIR/EIS must then be released for public review and comment.

Page ES-4, Line 14

The new WaterFix sub-alternatives, Alternatives 4A, 2D, and 5A, do not “ensure a reasonable range of alternatives.” These new alternatives do not include increased flows in the Delta consistent with the SWRCB’s 2010 Delta Flow Criteria and are unable to capture “new” water during wet periods, so are unable to help achieve the coequal goals or provide the ecosystem improvements necessary to achieve federal and state endangered species act compliance. A new Draft EIR/EIS must be prepared that analyzes and discloses alternatives that will actually achieve the coequal goals, and released for public review and comment.

Page ES-5, Line 22**ES.1.2.2.1 Project Objectives**

The WaterFix preferred alternative fails to satisfy DWR’s fundamental purpose in proposing the proposed project which is “*to make physical and operational improvements to the SWP/CVP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta, and water quality within a stable regulatory framework, consistent with statutory and contractual obligations.*” The WaterFix project will harm the Delta ecosystem, degrade Delta water quality, and fails to improve water supply reliability for CVP and SWP export contractors. It is also very expensive.

A new Draft EIR/EIS must be prepared that analyzes and discloses alternatives that will actually comport with DWR’s fundamental purpose and help achieve the coequal goals. The new Draft must then be released for public review and comment.

Page ES-8, Line 33

The RDEIR/SDEIS states that “*the other alternatives evaluated in the RDEIR/SDEIS, Alternative 4A, 2D, and 5A, are evaluated at the Early Long-Term (ELT) timeframe because the project implementation period is anticipated to be shorter.*” This is not correct. No full model runs for these three alternatives were carried out and the “brief sensitivity analyses” of water quality impacts that were performed were at late long term (2060 rather than 2025 conditions). The sensitivity analyses were based on flawed Alternative 4 model runs from the BDCP Draft EIR/EIS, never included all the components of the preferred alternative 4A, and most included 65,000 acres of habitat restoration and much greater sea level rise and seawater intrusion.

The RDEIR/SDEIS deceives the public and decision makers by claiming that Alternatives 4A, 2D and 5A were evaluated, and that the evaluation was at early long term. Of particular concern are the tables in Appendix B, Supplemental Modeling Results for New Alternatives that claim to present the water qualities for Alternative 4A for Scenario H3 and H4 at early long term when no full model runs or even sensitivity runs were performed for those cases.

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A new Draft EIR/EIS must be prepared that carries out full model runs for the preferred alternative, the other WaterFix alternatives, as well as new alternatives that actually help to achieve the coequal goals. The new Draft must then be released for public review and comment.

Page ES-9**ES.1.3 Areas of Known Controversy**

The RDEIR/SDEIS identifies as one known area of controversy the insufficient range of alternatives. The range and adequacy of alternatives is an issue of concern to the public as well as to governmental agencies. Of the 15 alternatives in the BDCP Draft EIR/EIS, only one (Alternative 9) was substantially different in terms of infrastructure than the others. The others all involved new intakes in the north Delta with an isolated conveyance system linking these 3-5 intakes to the SWP and CVP export pumps in the south Delta. The adverse environmental impacts on aquatic species in the Delta and water quality were not significantly different whether the isolated conveyance was a canal, pipeline or tunnel or whether it followed an eastern or western alignment. The three new “sub-alternatives” added in the RDEIR/SDEIS are very similar to the earlier 14 in terms of intake location and isolated conveyance and again fail to reduce exports during drier months and capture more water when it is surplus to the needs of the Delta in wetter months, or otherwise contribute to achievement of the coequal goals.

A new Draft EIR/EIS must be prepared that includes new alternatives that are substantially different than those already studied, e.g., incorporating new storage, actions to reduce demand on the Delta especially during drier periods, levee strengthening, etc., and fully analyzes and discloses, avoids and mitigates their impacts. The Draft EIR/EIS must then be released for public review and comment.

Page ES-12**ES.1.4.3 Cumulative Impact Analyses**

The RDEIR/SDEIS includes additional reasonably foreseeable proposed projects that, when considered together with the action alternatives, could have a significant cumulative effect. The analysis includes a discussion of the California Water Action Plan, California EcoRestore, and the Sustainable Groundwater Management Act to better describe the roles of the new Delta conveyance facilities and habitat restoration in the context of the state’s comprehensive vision for water management.

The proposed project fails to produce any significant improvement in water supply reliability, degrades rather than improves water quality in the Delta, harms key fish species (BDCP Executive Summary), and otherwise fails to meet the state and federal statutory requirements to contribute to achieving the coequal goals. The California Water Action Plan includes additional actions such as new storage that will be necessary in the future to actually achieve what BDCP was originally intended to do. As such the RDEIR/SDEIS should have analyzed operations of the preferred alternative in the future with new storage, actions to reduce demand, and the long overdue habitat restoration required by the SWP and CVP biological opinions (Cal. EcoRestore).

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DWR also indicated, in the BDCP Draft EIR/EIS, its intent to request that the compliance location for the Emmaton standard be moved to Three Mile Slough. The new alternatives do not include this change in compliance location to reduce the significant adverse water quality impacts of the BDCP alternatives, but a future request that this compliance location be shifted is reasonably foreseeable and should also be modeled as a cumulative impact.

The RDEIR/SDEIS also notes that the SWRCB is working on revising its Water Quality Control Plan to increase flows on the San Joaquin River (Phase 1) and in the Delta and the other tributaries. The cumulative impact of these flow increases on the proposed project and the viability of the new intakes and twin tunnels once the increased flows are implemented by the SWRCB must be fully analyzed. A new Draft EIR/EIS that performs these revised cumulated impact analyses must be prepared and released for public review and comment.

Page ES-15

The RDEIR/SDEIS says their alternative implementation strategy (Alternatives 4A, 2D, and 5A) focuses on the conveyance facility improvements necessary for the SWP to address more immediate water supply reliability needs, and allows for other state and federal programs to address the long-term conservation efforts for species recovery through programs separate from the proposed project. This is further confirmation that the WaterFix proposal is contrary to the 2009 Delta Reform Act because it only attempts to achieve one of the coequal goals.

The new conveyance facilities will not improve conditions for endangered and threatened aquatic species in the Delta. Instead reverse flows in the south Delta will continue, exports from the south Delta will actually increase during drier months, Clifton Court Forebay will remain unscreened, and the new north Delta intakes will harm key fish species (Draft BDCP Executive Summary). Implementing the conveyance facilities alone will exacerbate rather than help resolve many of the concerns with the current south Delta conveyance system. The RDEIR/SDEIS also fails to present any evidence or arguments why implementing new conveyance separately will somehow allow for implementing habitat restoration projects on an expedited schedule through the state's EcoRestore program. These are restoration projects required under the biological opinions that are already long overdue, and there is no guarantee that the funding or will is there to complete these programs.

A new Draft EIR/EIS must be prepared that includes alternatives that address and help achieve both coequal goals and the other inherent State objectives, and released for public review and comment.

Page ES-26

The RDEIR/SDEIS states that "*the cause of the modeled increases in bromide in Barker Slough, which was driving the impact conclusion for almost all alternatives, is due to the assumptions regarding tidal habitat restoration not due to conveyance facility operations.*" No full model runs were performed for the preferred alternative 4A to support that statement, only brief sensitivity analyses that cannot be depended upon for decision making on a more than \$15

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billion project. There are also no full model runs to support the speculation that “*because new alternatives 4A, 2D, and 5A contain a lower acreage of tidal restoration, significant impacts with regard to bromide are not expected under these alternatives.*”

A new Draft EIR/EIS must be prepared that models, analyzes, discloses and avoids or mitigates the impacts of the new alternatives and habitat restoration on water quality in the north Delta. The new Draft EIR/EIS must then be released for public review and comment.

Page ES-27, Line 16

The RDEIR/SDEIS speculates that “based on the sensitivity analyses, optimizing the design and siting of restoration areas is expected to be able to reduce EC and chloride increases in Suisun Marsh, relative to Existing Conditions and the No Action Alternative, to levels that would be less than significant.” The brief sensitivity analyses are not full model runs and were not even carried out for the preferred alternative configuration and operations. The CEQA requirement to avoid or mitigate significant adverse impacts requires more than an expectation that as yet specified habitat restoration will not result in significant adverse water quality impacts. The full, albeit flawed, model runs for Alternative 4 clearly indicate the impacts of habitat restoration on water quality at Barker Slough and in Suisun Marsh. The habitat restoration to be done as part of WaterFix and eventually as part of EcoRestore must be analyzed in the environmental documentation from the proposed WaterFix project and disclosed, not piecemealed and postponed.

A new Draft EIR/EIS must be prepared that establishes a best estimate of the habitat restoration under WaterFix, and as part of the Cumulative Analysis for EcoRestore, and full model runs and analysis of the water quality impacts analyzed and disclosed. The new Draft EIR/EIS must then be released for public review and comment.

Page ES-27, Line 36

Because Alternatives 4A, 2D, and 5A were not fully modeled for the RDEIR/SDEIS, it is not possible to be certain that they would not result in significant impacts for EC related to objective exceedance in the Sacramento River at Emmaton, or would not result in substantial degradation in the western Delta due to increased chloride concentrations, or would have less adverse water quality effects in the western Delta related to EC, or would have fewer exceedances of the fish and wildlife EC objective between Prisoners Point and Jersey Point. The same applies to speculation regarding bromide concentration impacts at Barker Slough (Page ES-28, Line 18).

The RDEIR/SDEIS contains inadequate information to support this speculation regarding water quality impacts. A new Draft EIR/EIS must be prepared that models, analyzes, discloses and avoids or mitigates the impacts of the new alternatives and habitat restoration on water quality in the western Delta. The new Draft EIR/EIS must then be released for public review and comment.

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Section 1: Introduction***Page 1-5, Line 34***

The RDEIR/SDEIS discusses State CEQA Guidelines § 15088.5 which provides examples of disclosure that constitute “significant new information” for purposes of requiring recirculation of a revised EIR. Because the WaterFix RDEIR/SDEIS is so fundamentally and basically inadequate and conclusory in nature, meaningful public review and comment has been precluded. As found by the Delta Independent Science Board (September 30, 2015 review comments), the RDEIR/SDEIS is “sufficiently incomplete and opaque to deter its evaluation and use by decision makers, resource managers, scientists, and the broader public.”

There are also feasible project alternatives considerably different from the two types of alternatives previously analyzed that would clearly lessen the environmental impacts of the proposed WaterFix project, but the project proponents have declined to consider or adopt them. Project components that increase Delta flows to restore and sustain fish populations (2010 Delta Flow Criteria), new storage to allow new water to be captured, stored, and conveyed to the California Aqueduct and Delta Mendota Canal, levee strengthening to protect the Delta and export water supply and water quality, and actions to reduce demand for water from the Delta should have been considered as part of a holistic solution. Most of these are identified in the July 2014 California Water Action Plan which DWR helped prepare, and some are required by the 2009 Delta Reform Act.

A new revised Draft EIR/EIS must be prepared that models, analyzes, discloses and avoids or mitigates the impacts of these feasible project components that will help rather than hinder achievement of the coequal goals. The new Draft EIR/EIS must then be released for public review and comment.

Page 1-20, Line 35**San Joaquin Delta Estuary Water Quality Control Plan (Bay-Delta WQCP).**

The 2009 Delta Reform Act states that an order by the SWRCB approving any change petitions for the proposed project shall include appropriate Delta flow criteria and shall be informed by the analysis performed in Section 85086 of the Water Code (Cal. Water Code § 85086(c)(2)). The intent of the 2009 Delta Reform Act was that development of the BDCP and WaterFix project alternatives would also be informed by the Delta flow criteria developed by the SWRCB and Department of Fish and Wildlife.

It is not relevant to the environmental review in the RDEIR/SDEIS whether would be fully or only partially responsible for meeting new increased flow requirements, only that the flows in the Delta under the proposed project alternatives be consistent with the 2010 Delta Flow Criteria.

The RDEIR/SDEIS is totally inadequate because it fails to present alternatives compatible with, and including, increased Delta flow requirements consistent with the 2010 Delta Flow Criteria as required by State statutes. The legal reasoning for this is contained in the September 29, 2015

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letter from NRDC et al. sent to Tom Howard at the SWRCB¹. This letter is hereby incorporated into the County's comments by reference.

A new Draft EIR/EIS must be released that analyses and discloses the environmental benefits and impacts of alternatives that incorporate increased Delta flow requirements. The new Draft should then be released for public review and comment.

Page 1-35, Line 4**1.4.2 Additional Alternatives**

The RDEIR/SDEIS states that other than revisions to Alternative 4 and new sub-alternatives, Alternatives 4A, 2D, and 5A, “*no other alternatives are included in the RDEIR/SDEIS because the original 15 action alternatives, along with Alternatives 4A, 2D, and 5A and the no action/no project alternative, meet CEQA and NEPA requirements to present and consider a reasonable range of alternatives to the proposed action.*”

This is completely false. Of those 18 alternatives, only one is substantially different than the other, i.e., Alternative 9 for isolated through-Delta conveyance. The other 17 alternatives are merely variations on the same theme, a Peripheral Canal-like configuration of new intakes in the north Delta on the Sacramento River near Hood, with twin tunnels (rather than a single open channel) to convey the water to Clifton Court Forebay in the south Delta.

The 18 alternatives fail to achieve the coequal goals, fail to contribute to solving California's urgent water and ecosystem problems, and do not enough meet the lead agencies needs. The range of alternatives (i.e., two) is not reasonable and none of the alternatives analyzed are viable.

A new Draft EIR/EIS must be prepared that analyses new viable alternatives that will help achieve the coequal goals. The increased Delta flow requirements in SWRCB alternative (4H3 discussed in Appendix B), or something similar, must be incorporated into at least some of these alternatives. The new Draft must model, analyze, disclose and avoid or mitigate the impacts of these new alternatives. The new Draft EIR/EIS must then be released for public review and comment.

Section 2: Substantive Draft EIR/EIS Revisions***Page 2-6, Line 31***

The sensitivity analyses conducted by the lead agencies are interesting but were performed at late long term (2060) rather than early long term (2025) which is the chosen future reference time for the WaterFix RDEIR/SDEIS. The sensitivity analyses were based on and relative to earlier

1

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/early_petition_comments/docs/nrdc_obegi093015.pdf

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modeling of BDCP Alternative 4 at late long term. This alternative is very different than the WaterFix preferred alternative and the earlier BDCP modeling has been determined to be flawed and the CALSIM II and DSM2 models have since been updated. The sensitivity analyses did not include these updates and corrections.

A new Draft EIR/EIS must be prepared that incorporates full model runs for the alternatives. The statewide importance of the proposed project and high level of controversy requires that the modeling results be disclosed in a new Draft rather than slipped into a Final EIR/EIS leaving little chance for serious regulatory agency and public review and discussion. The new Draft should then be released for public review and comment.

Page 2-8, Line 19

The RDEIR/SDEIS states that the “*SWP and CVP operations have relatively little influence on salinity levels at these locations, and the elevated salinity in south Delta channels is affected substantially by local salt contributions discharged into the San Joaquin River downstream of Vernalis.*” This is not correct. The SWP and CVP control operations in the Delta to maintain Delta water quality and they, therefore, control the quality of the water exported to farms in the San Joaquin Valley. Some of this water ends up as agricultural return flows in the San Joaquin River. This is acknowledged on page 8-227 of the RDEIR/SDEIS: “*Chloride concentrations would be reduced under all of the H1–H4 Scenarios in water exported from the Delta to the CVP/SWP Export Service Areas, thus reflecting a potential improvement to chloride loading in the lower San Joaquin River.*” This statement was intended to highlight possible benefits of the proposed project, but also acknowledges that the SWP and CVP do control to some extent the water quality at Vernalis.

The CVP also controls operation of Friant Dam and New Melones Dam on the Stanislaus River, both of which can and should be used to control water quality in the San Joaquin River and at Vernalis. The high salinities in the south Delta and the San Joaquin River downstream of Vernalis are affected by operations of both the CVP and SWP. By maintaining higher Delta outflows and San Joaquin flows (as is being considered by the SWRCB), the CVP and SWP can and should improve the quality of water diverted onto south and central Delta farms and avoid exceedances of the Old River at Tracy Bridge EC objective for the protection of agricultural beneficial uses and the other south Delta agricultural water quality objectives.

The DSM2 water quality model must be revised to better simulate water qualities in the south and central Delta and then be used to analyze new WaterFix alternatives involving increased Delta outflows and San Joaquin flows. A new Draft EIR/EIS should then be prepared and released for public review and comment.

Page 2-8, Line 2-9

It is not acceptable to merely anticipate that the new alternatives 2D, 4A, and 5A, will contain much lower acreage of tidal restoration, and therefore the new alternatives will not have significant impacts with respect to EC and chloride in Suisun Marsh. A range of reasonably

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expected habitat restoration projects and acreages in the north Delta and Suisun Marsh under WaterFix and EcoRestore must be analyzed using full detailed model runs to quantify and disclose the potential significant adverse impacts to water quality in this region.

A new Draft EIR/EIS must then be prepared and released for public review and comment.

Page 2-10, Line 1

Climate change assumptions will alter the timing and magnitude of unimpaired runoff estimates. The RDEIR/SDEIS notes that 3 of the 16 water years in the simulation change their type in the late long term as a result of climate change. However, with the climate change it will also be necessary to change the form of the Sacramento 40-30-30 index. The first 30% represents the April-July runoff due to melting of the snow pack. With less snow pack in the future, that will be less representative of the water supply availability. A smaller percentage, say 20% might be more appropriate. Similarly, with more intense runoff, more flood control storage space will be needed and carryover storage from the previous water year may also be less representative of water supply. The Sacramento index in the future may need to be changed to, say, 60-20-20.

Any classification of wet, normal and dry years in the future should retain the original SWRCB percentages: 30% wet, 20% above normal, 20% below normal, 15% dry and 15% critical.

Page 2-13

The RDEIR/SDEIS claims that “*it is now known that the cause of the modeled increases in bromide in Barker Slough, which was driving the impact determinations for almost all alternatives, is assumptions regarding CM4 implementation, not operations in CM1.*” The RDEIR/SDEIS fails to perform full model runs to determine whether this is correct. It is also not sufficient to speculate that “*because the new alternatives (2D, 4A, and 5A) contain a lower acreage of tidal restoration, significant impacts with regards to bromide are not expected under these alternatives.*”

A new Draft EIR/EIS must be prepared that performs full model runs to analyze the range of possible habitat restoration that will occur under WaterFix and EcoRestore to determine the actual water quality changes when restoration is reduced and disclose whether the significant water quality impacts indeed shift from drier years to wetter years. The new Draft EIR/EIS must then be released for public review and comment.

Section 4: New Alternatives: Alternatives 4A, 2D, and 5A***Page 4.1-1, Line 35***

The proposed new WaterFix conveyance facilities will not “*improve conditions for endangered and threatened aquatic species in the Delta while at the same time improving water supply reliability.*” Implementing the conveyance facilities alone will not “*help resolve many of the*

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concerns with the current south Delta conveyance system” and would not “help reduce threats to endangered and threatened species in the Delta.”

As proposed in the RDEIR/SDEIS, the new dual conveyance system would increase exports in dry periods and fail to regularly capture more water for export in wet months (see Attachment C to this letter). It is therefore completely false to claim that the new conveyance system will “align water operations to better reflect natural seasonal flow patterns by creating new water diversions in the north Delta equipped with state-of-the-art fish screens, thus reducing reliance on south Delta exports.”

A new Draft EIR/EIS must be prepared that honestly assesses, clearly discloses and honestly characterizes the proposed project. The new Draft should then be released for public review and comment.

Page 4.1-10

The D-1641 export/inflow (E/I) ratio calculation was designed to protect fish from the significant adverse impacts of the inadequately screened SWP and CVP export intakes in the south Delta. Those impacts include entrainment of fish, drawing fish out of the Sacramento River system into the south Delta, and general ecosystem impacts that result from diverting too much of the inflow to an estuary. The new north Delta intakes will also impact the health of the Sacramento-San Joaquin Delta estuary by diverting inflow that otherwise would be available for fish, to restore water quality and otherwise reduce the impacts of Other Stressors. The SWRCB export inflow ratio must remain as defined in D-1641.

A new Draft EIR/EIS must be prepared that analyze alternatives that comply with the SWRCB’s export/inflow standards as well as the existing Army Corps limits on inflow to Clifton Court and the San Joaquin inflow to export ratios in the biological opinions. Additional full model runs could still be included to disclose individually the impacts to the Delta ecosystem and water quality if those legal requirements were not met. The new Draft must then be released for public review and comment.

Page 4.2-4, Line 14**Change in Delta Outflow**

The increase in Delta outflow in September and October in wet and above normal years is primarily due to increased outflow to meet Fall X2. However, as discussed in Attachment C to this letter, the outflows assumed to be required to meet Fall X2 with sea level rise are much higher than existing values. The justification for these high outflows needs to be included in a new Draft EIR/EIS, along with detailed plots of EC at Mallard Island and Collinsville during the Fall for each case. The new Draft must then be released for public review and comment.

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Page 4.2-18 (see also Page 4.3.4-1)**4.2.7 Water Quality**

The RDEIR/SDEIS states that: “*In general, the significance of this difference is the assessment of bromide, chloride and EC for the No Action Alternative (ELT), relative to Existing Conditions, likely underestimates increases in bromide, EC, and chloride that could occur, particularly in the west Delta. Nevertheless, there is notable uncertainty in the results of all quantitative assessments that refer to modeling results, due to the differing assumptions used in the modeling and the description of the No Action Alternative (ELT).*”

Because of the statewide importance of developing a Delta solution that achieves both coequal goals, the controversy surrounding the WaterFix project, the extremely high cost of the new intakes and tunnels, it is very important that the models and modeling be refined, e.g., by using daily rather than monthly time steps in the CALSIM II model, and the differing assumptions be reconciled to reduce the “*notable uncertainty*.” A great deal of uncertainty was purposely created by choosing to use “*brief sensitivity analyses*” based on earlier flawed modeling runs instead of performing full model runs.

A new Draft EIR/EIS must be prepared that performs full model runs for all alternatives with refined models. The new Draft EIR/EIS must then be released for public review and comment.

Page 4.3.4-1**4.3.4 Water Quality**

We agree that “*there is notable uncertainty in the results of all quantitative assessments that refer to modeling results, due to the differing assumptions used in the modeling and the description of Alternative 4A and the No Action Alternative (ELT).*” A new Draft EIR/EIS must be prepared that includes full model runs for each alternative. The new Draft EIR/EIS must then be released for public review and comment.

Page 4.3.4-17, Line 6 (see also Page 4.3.4-17, Line 14)

The RDEIR/SDEIS speculates that “*sensitivity analyses conducted of Alternative 4 Scenario H3 without restoration areas indicated lower chloride levels in the western Delta than with the restoration areas. It is thus likely that modeling of Alternative 4A that does not include restoration areas would show lower levels of chloride at Antioch in April, and at Contra Costa Pumping Plant #1 in September and October than is shown herein using the Alternative 4 (ELT) modeling.*”

The current RDEIR/SDEIS is woefully inadequate. A new Draft EIR/EIS must be prepared that relies on full revised model runs rather than sensitivity analyses and speculations of what is likely or “*not expected*.” The new Draft EIR/EIS must then be released for public review and comment.

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Page 4.3.4-24, Line 4

Delta

The RDEIR/SDEIS notes the significant differences between Alternative 4A and the modeling conducted for Alternative 4 in the early long term. The RDEIR/SDEIS also claims “there are several factors related to the modeling approach that may result in modeling artifacts that show objective exceedance, when in reality no such exceedance would occur.

The County agrees with the subsequent statement that: “*The result of all of these factors is that the quantitative modeling results presented in this assessment is not entirely predictive of actual effects under Alternative 4A, and the results should be interpreted with caution.*”

The rush to release the RDEIR/SDEIS without performing full model runs of the new alternatives or correcting the model runs for the earlier BDCP alternatives is unacceptable, inconsistent with good science, and contrary to the requirements of CEQA and NEPA. It is not acceptable to presenting tables of water quality impacts in Appendix B for Alternative 4A at early long term when no such analyses were actually performed.

A new Draft EIR/EIS must be prepared that relies on full revised model runs rather than sensitivity analyses and speculation. The new Draft EIR/EIS must then be released for public review and comment.

Section 5: Revisions to Cumulative Impacts Analyses

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5.1.2.2 California Water Action Plan

The WaterFix and BDCP alternatives do not contribute to achievement of the coequal goals. New alternatives must be developed that incorporate actions outlined in the January 2014 California Water Action Plan, such as “*expand water storage capacity and improve groundwater management.*”

A new Draft EIR/EIS must be prepared that analyses these new alternatives and fully discloses, mitigates or avoids any adverse environmental impacts. The new Draft EIR/EIS must then be released for public review and comment.

Page 5-2, Line 39

The RDEIR/SDEIS states that: “*Delta outflow requirements also are considered in the determination of the ability to divert water at the SWP and CVP south Delta intakes to minimize reverse flow conditions. Reverse flow conditions in Old and Middle Rivers occur when exports exceed the amount of inflow from the San Joaquin River. Limiting reverse flows in Old and Middle Rivers reduces fish exposure and entrainment at the south Delta intakes.*”

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The WaterFix and BDCP alternatives fail to minimize reverse flows sufficiently to restore and sustain key fish species (see Attachment C to this letter). In addition, the WaterFix proponents propose blocking the head of Old River for extended periods. The significant historical reduction in San Joaquin inflows to the Delta is also a major contributor to reverse flows in the south and central Delta. Blocking what little inflow there is from reaching the south Delta will further exacerbate reverse flows and increase entrainment of fish.

A new Draft EIR/EIS must be prepared that analyses alternatives that will actually minimize reverse flows in all months to protect fish species including not yet threatened resident species. The new Draft must fully disclose, mitigate or avoid any adverse environmental impacts. The new Draft EIR/EIS must then be released for public review and comment.

Page 5-38**Table 5.2.2.1-1. Effects on Water Supplies from Additional Plans, Policies, and Programs Considered for Cumulative Analysis**

The proposed WaterFix preferred alternative will not be viable once the SWRCB has established higher flow requirements in the Delta under Phase 1 and 2. The very expensive new intakes and twin tunnels will not be able to be used as much as assumed in the RDEIR/SDEIS and these facilities will become a stranded asset.

A new Draft EIR/EIS must be prepared that assumes higher SWRCB flow requirements are in place and develop alternatives that are viable under those conditions, and also contribute to achieving the coequal goals, and improving water quality in the Delta. The new Draft must fully model, disclose, and mitigate or avoid any adverse environmental impacts. The new Draft EIR/EIS must then be released for public review and comment.

Page 5-54 and elsewhere

The RDEIR/SDEIS makes a number of claims regarding future projects and how they will or will not impact the Delta. Many of these future projects are included in the California Water Action Plan and are necessary components for a sustainable solution to the problems of the Delta ecosystem and California's water supply reliability. The WaterFix alternatives fail to meet the needs of the project and will hinder rather than help meet the needs of California.

New alternatives must be developed that incorporate these necessary elements of a viable solution, such as new storage. The cumulative analysis can instead include other very foreseeable actions such as shifting the compliance location of the Emmatton standard further inland.

A new Draft EIR/EIS must be prepared that includes alternatives that include the portfolio of elements described in the California Water Action Plan and suggested by many commenters on the BDCP. The new Draft must fully model these new alternatives and disclose, and mitigate or avoid, any adverse environmental impacts. The new Draft EIR/EIS must then be released for public review and comment.

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Page 5-78, Line 23
Electrical Conductivity

The RDEIR/SDEIS claims that: “*Implementation of facilities operations and maintenance under these action alternatives, along with Mitigation Measure WQ-11, would not be expected to contribute substantially to this adverse cumulative condition for EC, because no additional exceedance of Bay-Delta WQCP EC objectives would be expected, and substantial long-term degradation with respect to EC would be avoided.*”

Degradation of water quality in the Delta cannot be judged in terms of exceedance of the SWRCB’s Bay-Delta water quality standards. Significant impacts can occur to urban and agricultural water uses even when water quality standards are not exceeded. Farmers in the north Delta, e.g., have developed farming practices and crops that rely on very fresh water. Increasing salinities in this area will have a significant adverse impact on this senior beneficial use, even if SWRCB chloride standards are not exceeded.

The environmental documentation must be revised to acknowledge that increasing salinities (by say more than 5%) can still represent a significant adverse water quality impact.

RDEIR/SDEIS Appendix A

Appendix A, Chapter 8, Page 8-53
Real-Time Operations of the SWP and CVP

The RDEIR/SDEIS states that: “*Environmental conditions arise that cannot be foreseen or simulated in the model that can affect compliance with water quality objectives. These include unpredictable tidal and/or wind conditions, gate failures, operational needs to improve fish habitat/conditions, and prolonged extreme drought conditions, among others. At times, negotiations with the State Water Resources Control Board occur in order to effectively maximize and balance protection of beneficial uses and water rights. These activities are expected to continue to occur in the future. Thus, it is likely that some objective exceedances simulated in the modeling would not occur under the real-time monitoring and operational paradigm that will be in place to prevent such exceedances.*”

The 2009 Delta Reform Act and the State and Federal coequal goal statutes changed the responsibilities of the SWRCB, DWR, Reclamation and other agencies from merely balancing beneficial uses to helping to achieve the coequal goals. The WaterFix RDEIR/SDEIS is inadequate because neither of the two types of alternatives contribute to achieving either of the coequal goals. The SWRCB now has the responsibility of setting higher flow requirements for the Delta and reducing exports from the Delta in drier periods, which will render the new north Delta intakes and twin tunnels virtually inoperable and a stranded asset. The SWRCB permits

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for the proposed project should also include terms that stop use of the new north Delta intakes if water quality standards are being exceeded.

It is not sufficient to speculate “*it is likely that*” some exceedances will not occur in reality. The additional flows or reduced exports necessary through real time operations to ensure the objectives are met, will increase exports and reduce flows in subsequent months which could cause adverse impacts that are not disclosed in the RDEIR/SDEIS.

The model analyses performed for the RDEIR/SDEIS environmental documents are so flawed and inadequate that it is also highly likely that actual WaterFix operations will be very different than simulated and other factors such as the amount and location of tidal habitat restoration will have greater adverse effects. It is then highly likely that objective exceedances will occur with the project, despite any real-time operations that might be in place.

The County requests that Delta interests be represented in an official, full voting, capacity, on any adaptive management and real-time operations entities that might be established for the proposed project. This should not be left under the water project and export contractor control.

The RDEIR/SDEIS is inadequate because it fails to analyze and disclose, using actual water quality model runs, the significant adverse impacts of the proposed project and provide reasonable estimates of the frequency of water quality objective exceedances, and disclose how the project will likely operate in real time.

A new Draft EIR/EIS must be prepared that carries out full modeling analyses of alternatives capable of helping to achieve both coequal goals and improve water quality in the Delta. The Draft EIR/EIS should also refine the Real Time Operations Team proposal and other management entities to include a full-voting representative from the Delta Counties and urban and agricultural water agencies in the Delta. The new Draft EIR/EIS should then be released for public review and comment.

Appendix A, Chapter 8, Page 8-54 et seq.

The RDEIR/SDEIS uses two methods to estimate chloride and bromide concentrations from DSM2 simulations of EC: Mass-Balance Method; and Regression Method for Chloride and Bromide. The latter approach uses two different regression equations depending upon whether seawater intrusion dominates (typically during low Delta outflow periods) or whether agricultural drainage conditions dominate (typically during wet periods). Sometimes the chloride and bromide concentration are influenced by both sources of salinity.

The DSM2 model can separately simulate the contributions to water quality from different sources of inflow to the Delta (seawater, Sacramento, Yolo, San Joaquin, eastside tributaries, and local agricultural drainage). This is often referred to as “fingerprinting.” The fingerprinting data could be converted for each source using the appropriate EC to chloride regression equation and summed to estimate the chloride and concentrations. That would be more accurate than guessing which regression equation applies at each Delta location.

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Appendix A, Chapter 8, Page 8-67, Line 31

The RDEIR/SDEIS states: “*Some of the EC objectives are dependent on water year type. It must be noted that 3 of the 16 water years in the simulation change in the late long term, as compared to Existing Conditions, as a result of climate change.*”

Climate change assumptions will alter the timing and magnitude of unimpaired runoff estimates. Because of climate change, it will also be necessary to change the form of the Sacramento 40-30-30 index. The first 30% represents the April-July runoff due to melting of the snow pack. With less snow pack in the future, that will be less representative of the water supply availability. A smaller percentage, say 20% might be more appropriate. Similarly, with more intense runoff, more flood control storage space will be needed and carryover storage from the previous water year may also be less representative of water supply. The Sacramento index in the future may need to be changed to, say, 60-20-20. The classification of wet, normal and dry years in the future should still retain the original SWRCB percentages: 30% wet, 20% above normal, 20% below normal, 15% dry and 15% critical. That will ensure, e.g., that the transition from below normal to above normal actual occurs at the 50-percentile.

Appendix A, Chapter 8, Page 8-71, Line 30

The RDEIR/SDEIS states that “*there are several factors related to the modeling approach that may result in modeling artifacts that show objective exceedance, when in reality no such exceedance would occur in reality.*” This is another example of unsubstantiated optimism on behalf of the project proponents. The limited nature of the sensitivity analysis modeling runs and the major flaws in the Draft EIR/EIS runs on which they were based, also means that more exceedances could occur in the future than shown by the sensitivity analyses. Rather than speculating, CEQA and NEPA statutes require that full model runs be performed to identify, disclose, and avoid or mitigate all significant adverse impacts of the project such as degradation of water quality and exceedences of water quality objectives.

A new Draft EIR/EIS must be prepared based on full model runs and released for public review and comment.

Appendix A, Chapter 8, Page 8-110, Line 21

The RDEIR/SDEIS correctly notes that “*the timing, location, and specific design of habitat restoration will have effects on Delta hydrodynamics, and any deviations from modeled habitat restoration and implementation schedule will lead to different outcomes.*” A new Draft EIR/EIS must be prepared that makes reasonable estimates of the timing, magnitude and location of habitat restoration to be implement by both WaterFix and EcoRestore and models and discloses the significant adverse impacts of these actions on water quality, fish and other beneficial uses. It is not sufficient to simply argue, e.g., with respect to Barker Slough water quality, that “*the estimates are not predictive of the bromide levels that would actually occur in Barker Slough or elsewhere in the Delta.*”

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This comment also applies to other sections within the RDEIR/SDEIS that refer to bromide, chloride and EC concentration increases at certain locations that could be substantial, depending on siting and design of restoration areas. The new Draft EIR/EIS must avoid or mitigate all significant adverse impacts and then be released for public review and comment.

Appendix A, Chapter 8, Page 8-219

The RDEIR/SDEIS discusses the effects of site-specific restoration areas proposed under CM4 on bromide concentrations in Barker Slough. The lead agencies state: “*It is anticipated that these efforts will be able to reduce the level of projected increase, though it is unknown whether it would be able to completely eliminate any increases.*” The RDEIR/SDEIS further states: “*If sufficient operational flexibility to offset bromide increases is not practicable/feasible under Alternative 4 operations, and/or siting and design of restoration areas cannot feasibly reduce bromide increases to a less than significant level without compromising the benefits of the proposed areas, achieving bromide reduction pursuant to this mitigation measure would not be feasible under this alternative.*”

If Mitigation Measure WQ-5 (Avoid, Minimize, or Offset, as Feasible, Adverse Water Quality Conditions; Site and Design Restoration Sites to Reduce Bromide Increases in Barker Slough) is insufficient to fully mitigate the significant adverse bromide impacts in the Barker Slough region, additional mitigation measures must be developed and incorporated into a new Draft EIR/EIS.

Appendix A, Chapter 8, Page 8-225**303(d) Listed Water Bodies—Relative to No Action Alternative**

The RDEIR/SDEIS states that: “*Modeling results indicated that monthly average chloride concentrations at source water channel locations for the Suisun Marsh (Appendix 8G, Figures Cl-5, Cl-7 and Cl-8) would increase substantially in some months during October through May compared to the No Action Alternative conditions, but sensitivity analyses suggest that operation of the Salinity Control Gates and restoration area siting and design considerations could reduce these increases. However, the chloride concentration increases at certain locations could be substantial, depending on siting and design of restoration areas. Thus, these increased chloride levels in Suisun Marsh are considered to contribute to additional, measureable long-term degradation in Suisun Marsh that potentially would adversely affect the necessary actions to reduce chloride loading for any TMDL that is developed.*”

It is not sufficient to merely do sensitivity analyses, especially when even the sensitivity analyses indicate that the proposed project will cause significant adverse impacts to water quality in Suisun Marsh. These significant impacts must be avoided or fully mitigated. A new Draft EIR/EIS must be prepared that (a) carries out full model runs of the flows and exports in the Delta and corresponding water quality variations, and (b) incorporates mitigation measures that full mitigate for these avoidable water quality impacts. The new Draft EIR/EIS must then be released for public review and comment.

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Appendix A, Chapter 8, Page 8-227, Line 12

The RDEIR/SDEIS states that “*chloride concentrations would be reduced under all of the H1–H4 Scenarios in water exported from the Delta to the CVP/SWP Export Service Areas, thus reflecting a potential improvement to chloride loading in the lower San Joaquin River.*” This is an attempt by the project proponents to claim additional WaterFix project benefits. However, it is also an acknowledgement that the SWP and CVP can and do affect water quality in the San Joaquin River and at the south Delta agricultural water quality compliance locations.

A holistic solution to the current acute problems with the Delta ecosystem and California’s water supply must include improved flows in the San Joaquin River, including below Friant Dam, and improvement of water quality in the San Joaquin River and the Delta. Improvements in the San Joaquin watershed should also include new infrastructure to capture storm flows and increase recharge of the severely overdrafted aquifers. Most of these actions are within the control of DWR and Reclamation, and are called for in the January 2014 California Water Action Plan.

A new Draft EIR/EIS must be prepared that includes holistic alternatives that not only address the needs of the export contractors but also work to achieve the coequal goals. The new Draft EIR/EIS should then be released for public review and comment.

Appendix A, Chapter 8, Page 8-228

The RDEIR/SDEIS continues to propose water quality mitigation measures that postpone developing and specifying actual mitigation until after the project is completed. There are no commitments on behalf of the lead agencies that any mitigation will actually be implemented. Mitigation Measure WQ-7 (Conduct Additional Evaluation and Modeling of Increased Chloride Levels and Develop and Implement Phased Mitigation Actions) and Mitigation Measure WQ-7c (Consult with Delta Water Purveyors to Identify Means to Avoid, Minimize, or Offset for Reduced Seasonal Availability of Water That Meets Applicable Water Quality Objectives) are open ended and puts much of the onus on the impacted parties.

The significant water quality impacts of the proposed project must be avoided or fully mitigated by the project proponents at no financial or resource cost to the impacted parties. A new Draft EIR/EIS that incorporates measures to avoid or fully mitigate all adverse water quality impacts, and contributes to improvement of water quality in the Delta (Cal. Water Code § 85020) must then be released for public review and comment.

Appendix A, Chapter 8, Page 8-237

The revised language in the RDEIR/SDEIS states that: “*As discussed in Chapter 5, Water Supply, Section 5.3.1, Methods for Analysis, under extreme hydrologic and operational conditions where there is not enough water supply to meet all requirements, CALSIM II uses a series of operating rules to reach a solution that is a simplified version of the very complex decision processes that SWP and CVP operators would use in actual extreme conditions. Thus, it is unlikely that the Emmaton objective would actually be violated due to dead pool conditions.*

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However, these results indicate that water supply conditions could be either under greater stress or under stress earlier in the year, and levels at Emmaton and in the western Delta may increase as a result, leading to EC degradation and increased possibility of adverse effects to agricultural beneficial uses.”

It does not necessarily follow that because the CALSIM II model is not able to handle extreme conditions that exceedances of the Emmaton objective are unlikely. Limitations in the CALSIM II model could result in exceedances being underestimated. Because of the statewide importance of finding a solution to the drastic problems of the Delta and the huge cost of the proposed project, it is imperative that the CALSIM II model be upgraded to better deal with extreme conditions, such as the current drought situation, and to simulate daily rather than monthly time steps. The adverse impacts to agricultural beneficial uses indicated by the results must also be fully mitigated. A new Draft EIR/EIS must be prepared that analyzes project operations using an upgraded CALSIM II model and full model runs for flow and export operations and water quality over the full simulation period, 1922-2003 (or better still, 2014). The new Draft EIR/EIS must then be released for public review and comment.

Appendix A, Chapter 8, Page 8-238

The RDEIR/SDEIS, in revised language, claims that the brief sensitivity analyses performed indicated that many of the exceedances of the south Delta agricultural standards are modeling artifacts, and modeling barrier installation assumptions consistent with historical dry year practices of installing barriers earlier in the year could resolve these additional exceedances.

The RDEIR/SDEIS also argues that SWP and CVP operations have relatively little influence on salinity levels at these locations, and the elevated salinity in south Delta channels is affected substantially by local salt contributions discharged into the San Joaquin River downstream of Vernalis.

SWP and CVP operations do impact water quality at the south delta agricultural water quality compliance locations. In fact, on page 8-227, Line 12, the RDEIR/SDEIS argues that improvements in the chloride concentrations of water exported from the Delta to the CVP/SWP Export Service Areas reflects a potential improvement to chloride loading in the lower San Joaquin River.

Historical export operations by the SWP and CVP have degraded water quality in the south Delta and that higher salinity water was then exported to farms in the San Joaquin Valley. That, and the failure to maintain instream flows downstream of the CVP's Friant Dam, combined with operation of the CVP's New Melones Dam, has contributed to degraded water quality in the lower San Joaquin River at Vernalis. The salinity of the water diverted onto islands in the south and central Delta by in-Delta farmers is directly affected by seawater intrusion and changes in residence time (controlled by the SWP and CVP) and the quality of the inflow to the Delta at Vernalis (controlled by the CVP and to a lesser extent by the SWP). That influences the salinity of the agricultural discharges back into the Delta by the in-Delta farmers.

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Barrier installations by DWR have not always been able to avoid exceedances of the south Delta water quality standards. The SWP and CVP can control and avoid these adverse water quality impacts by improving water quality generally in the Delta and in the San Joaquin River. The SWRCB's proposed Delta Flow Criteria and Phase 1 and 2 of the revision of the Water Quality Control Plan will help by increasing Delta and San Joaquin River flows. A new RDEIR/SDEIS must be prepared that avoids or fully mitigates the significant impacts to agricultural water quality in the south Delta, and released for public review and comment.

Appendix A, Chapter 19, Page 19-125

Mitigation Measure TRANS-1c: This section states that to mitigate the transportation impacts of each alternative, project proponents will undertake ‘good faith’ efforts to enter into mitigation agreements with local jurisdictions to verify the location, extent, timing, and fair share cost to be paid for reducing congestion to the identified roadway segments in the project area. However, the EIR states that “*if an improvement that is identified in any mitigation agreement(s) contemplated by Mitigation Measure TRANS-1c is not fully funded and constructed before the project’s contribution to the effect is made, an adverse effect* (in the form of unacceptable LOS) *would occur.*” Details of good faith efforts should be identified to ensure that project proponents sufficiently engage with local jurisdictions when attempting to enter into mitigation agreements.

Mitigation Measure TRANS-1c: The body of this section has strikethroughs through the term ‘enhance capacity,’ and is replaced with ‘reduce congestion,’ to incorporate other congestion reduction strategies. However, the title still says ‘Enhance Capacity’ and should be replaced as well.

General Comments

Throughout the DEIR, construction activities, congestion, and other impacts are characterized as temporary. However, given the duration of these activities (5+ years), the intensity of the impacts, and the lasting effect on nearby communities, they should be characterized as permanent. (See *Handler v. United States* for the definition of ‘permanent.’)

Since activities are considered permanent, the mitigation measures to be implemented should be more permanent in nature. For example, “*Use of flag people or temporary traffic signals/signage as necessary to slow or detour traffic,*” would not be practical as a permanent solution.

Level-of-service (LOS) is an entirely inadequate measure of traffic impacts for this project. Extraordinary in its size and scope, this project would incur major and significant traffic impacts that an LOS analysis alone may not identify. A traffic impact analysis that incorporates other methods in addition to LOS that accurately captures the broader traffic impacts of this project may be more appropriate. (See *Mejia v. City of Los Angeles*, *City of Antioch v. the City Council of the City of Pittsburg*, and *Oro Fino Gold Mining Corporation v. El Dorado County* regarding fair argument for significant impacts vs. established traffic standards.)

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In the previous version of the DEIR, it was stated that the project's construction period would be approximately nine years. In Alternative 4A, the duration was changed to five years, but no explanation was given for the drastic shortening of the construction time. It seems unrealistic that a project of this size and complexity could have a construction schedule cut in half without substantial changes or initial errors in the estimate in the schedule. The DEIR should identify the details of the five-year construction schedule and how it was reduced from nine years.

Comments from the Previous BDCP DEIR/DEIS that Remain Unaddressed***General Comments***

The applicant shall include the County early in the planning and design process to coordinate property rights, agreements, and to coordinate this project with the County's adjacent capital improvement projects. DWR must address any impacts that could potentially increase costs or constrain the County's future capital road improvements.

The applicant will be required to execute an agreement, in addition to the road encroachment permit, that specifies the land rights to be acquired as well as fiscal compensation to mitigate for increased cost related to bridge and road maintenance. The agreement should identify work to be completed by DWR to address impacts to County facilities or how the County will be compensated for impacts related to disruption during construction. This includes subsequent impacts after construction related to the constraints of operating roadways over bridges or roadways with significant infrastructure bored under existing roadway improvements. Ample time should be provided to execute this agreement(s).

The agreement should specify the terms related to the use of county land and the California Department of Water Resources (DWR) responsibility for perpetual maintenance and inspection of the bridge structures and associated approaches that lead up to the bridge. The agreement between DWR and the County must specify the agency responsible for the perpetual operation and maintenance of the bridge, including assumption of all liability. If the County will accept perpetual maintenance and ownership, DWR must address the anticipated increase in maintenance cost that will be experienced by the County.

Construction of the bridges and adjacent roadways shall meet County standards and include standard bike lane and pedestrian access that meets the requirements of the Americans with Disabilities Act (ADA). The bridge structures should provide adequate width for ultimate roadway configurations as identified by the Contra Costa County Public Works Department.

Appendix 22B in Appendix A

Table's 22B-5 through 22B-8 (Appendix 22B) give a full comprehensive list (well over 100 pages) of hundreds of equipment types and their anticipated hours of use for the entire project. However, no information is provided regarding how many of each piece of equipment will be used and where exactly within the Plan Area, other than the type of project they'll be used for

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(i.e. control structures, pipelines, forebays, etc.). Without this additional detail it is not possible to identify the impacts of the project and the EIR/EIS is therefore inadequate and incomplete.

Chapter 19 of Appendix A, Page 19-122 - Mitigation Measure TRANS-1a

The Traffic Mitigation Program (TMP) required under Mitigation Measure Trans 1-a will be "site-specific," and should consolidate the appropriate information from the referenced tables to indicate; 1) an estimate of how a specific site and transportation infrastructure in the vicinity will be affected, 2) by what types of equipment, and 3) to what degree (duration of days/hours, trips). It would not be reasonable to expect the reader to derive this information on their own based on what is presented in the referenced tables.

Appendix 3C in Appendix A - Construction Assumptions for Water Conveyance Facilities

The construction assumptions in Appendix 3C are very broad and do not give an indication as to what degree specific sites will be impacted (i.e. Byron and J4). Again, without this information detail it is not possible to identify the impacts of the project and the EIR is not complete.

Chapter 19 of Appendix A, Page 19-123, Line 26 - Mitigation Measure TRANS-1a

The DEIR/EIS Mitigation Measure TRANS-1a includes: "*Plans to relocate school bus drop-off and pick-up locations if they will be affected during construction.*" Altering school circulation patterns would have to be reviewed but would generally only be feasible or reasonable on a temporary basis. Again, 9 years of impacts should be treated as permanent. An "avoid" mitigation measure is the only appropriate measure in this case. Compromising a community fixture such as a school on a longer term basis is entirely inappropriate and unacceptable.

Appendix 3B in Appendix A - Environmental Commitments, AMMs, and CMs

Since Appendix 3B does not contain environmental commitments specific to school circulation patterns. Assuming MM TRANS 1-a (develop a TMP) will cover this, consultation with County (Public Works and Conservation and Development Departments), the School District, the County Office of Education, and the Parent Teacher Association will be required in the development of the TMP.

Appendix A, Attachment 3B, Page 3B-2

The RDEIR/SDEIS discusses the California Court of Appeal decision in January 2014 known as Lotus v. Department of Transportation. The RDEIR/SDEIS states: "*In general, lead agencies must not simply assume, without analysis, that such project features will be effective in avoiding or minimizing significant environmental effects.*"

Because the RDEIR/SDEIS includes no full model runs for the new WaterFix alternatives, DWR and Reclamation cannot simply assume or speculate about the environmental impacts of the preferred alternative. In addition, the lead agencies cannot assume that eliminating the originally

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proposed habitat restoration will eliminate many of the previous significant and “unavoidable” adverse water quality impacts without fully modeling operation of the proposed project with a reasonably foreseeable range of actual habitat restoration projects. The RDEIR/SDEIS acknowledges in a number of places that the eventual placement of the WaterFix, and EcoRestore tidal habitat will greatly affect water quality.

The changes to the environmental impacts of the WaterFix project with full model runs and specific habitat restoration actions will be significant enough, and the statewide importance of the project, warrant preparation of a new Draft EIR/EIS. The new Draft EIR/EIS should then be released for public review and comment.

Chapter 19 of Appendix A, Page 19-123, Line 33

“control for any temporary road closure...” Please be aware that the road network in the East Contra Costa Area is limited with little redundancy. Again, independent, secondary project supportive infrastructure may be necessary due to the limited ability of the surrounding area to support this industrial activity.

Additional Comments

There are additional roads which the aqueduct will cross that are not discussed in the DEIR. At a minimum, the roads impacted by the project should be listed in the programmatic DIER. In the future, the project specific DEIR should address each road and the associated impact by the project.

The future project specific DEIR should include information on detours and temporary/bypass roadways established during the construction period. The applicant shall provide detour plans and public notices well in advance of any proposed road closures.

The project specific DEIR should include a drainage study to ensure that the aqueduct does not increase flooding in the area.

Delta Road from Main Street (old SR4) to Sellers Avenue is under the jurisdiction of the City of Oakley. Delta Road from Sellers Avenue to Byron Highway is under the jurisdiction of Contra Costa County Public Works Department. Revise all tables and other references to reflect the jurisdictional segments.

All applicable maps should be revised to reflect the location of the Byron Airport.

The project shall comply with the Contra Costa Airport Land Use Compatibility Plan (ALUCP), Countywide and Byron Airport Policies. The basic function of the ALUCP is to promote compatibility between County Airports and the land uses surrounding them. The BDCP proposes an industrial land use, and should demonstrate how the selected project within the Byron Airport Influence Area complies with the aforementioned policies.

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Appendix A, Appendix 8G, Page 8G-1**8G.1 Chloride Methodology**

New language in the RDEIR/SDEIS stresses that understanding the uncertainties and limitations in the modeling and assessment approach is important for interpreting the results and effects analysis, including assessment of compliance with water quality objectives. The RDEIR/SDEIS then states that “*in light of these limitations, the assessment of compliance is conducted in terms of assessing the overall direction and degree to which Delta chloride would be affected relative to a baseline, and discussion of compliance does not imply that the alternative would literally cause Delta chloride to be out of compliance a certain period of time. In other words, the model results are used in a comparative mode, not a predictive mode.*”

The RDEIR/SDEIS is inadequate because it fails to perform full model runs for the new alternatives, but also because it uses the results from earlier flawed model runs in a comparative mode. If, for example, the input flows to a CALSIM II run were too high then conditions would be wetter than they should be, changes in water quality due to operations of a new project would be underestimated. This error would then propagate into the subsequent DSM2 model run. There would be less seawater intrusion and a reduction in Delta outflow caused by the new project would have less effect on Delta salinity. Subtracting the with-project run from the without-project run in this case would underestimate the real impacts. Subtracting one erroneous run from another does not necessarily get rid of the inherent modeling errors.

If the DSM2 simulations of EC, chloride and bromide do not comply well with historical data, then the DSM2 model, and if necessary, the CALSIM II model, need to be corrected. If there are errors in the predictions of salinity at Barker Slough or at the south Delta agricultural compliance stations in the base case, looking at the results in a comparative mode will not correct those errors. Similarly, if the Rock Slough or Emmaton standards are exceeded in the base case, the predicted changes in salinity with the project will also be incorrect.

Because of the statewide importance of developing a solution to the Delta problems, it is not good enough to accept these large errors in the model predictions. The models and their input files must be revised, including using a daily rather than monthly time step in CALSIM II to eliminate the problems with standards that begin and end within months. A new Draft EIR/EIS should then be prepared with full updated model runs and released for public review and comment.

Appendix A, Appendix 8H, Page 8H-1

The RDEIR/SDEIS states that “*The sensitivity analysis modeling runs were limited to the Existing Conditions, No Action Alternative, and Alternative 4 Scenario H3, but the findings from these analyses can generally be extended to other scenarios of Alternative 4 and the other project alternatives.*” Because the sensitivity analyses were applied to Alternative 4 at late long term, they are not at all representative of the preferred alternative, Alternative 4A, at early long term, which has almost no habitat restoration and significantly less sea level rise and seawater

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intrusion. A new Draft EIR/EIS must be prepared that carries out full model runs for Alternative 4A and the other alternatives at early long term and late long term.

The RDEIR/SDEIS also states that “*DWR and USBR have every intention of operating SWP and CVP facilities by fine tuning reservoir storage and exports in real time to meet D-1641 standards, and any changes to D-1641 as adopted by the SWRCB. Actual operations are continuously adjusted to respond to reservoir storages, river flows, exports, in-Delta demands, tides, and other factors to insure compliance to regulatory requirements to the extent possible.*” Because of the failure of the RDEIR/SDEIS to actually model the new alternatives and revise the flawed modeling for the November 2013 Draft alternatives, the proposed project operations could be different than, poorly, presented in the RDEIR/SDEIS. Exports may need to be reduced in a given month and made up in a subsequent month thereby shifting impacts to other more critical months. A new Draft EIR/EIS must be prepared that carries out full model runs for Alternative 4A and the other alternatives at early long term and late long term. The new Draft EIR/EIS must then be released for public review and comment.

Appendix A, Appendix 8H – Attachment 1, Page 3
BDCP EIR/EIS Water Quality Sensitivity Analysis

The Draft Technical Memorandum, included as an attachment to the RDEIR/SDEIS, states: “*DSM2 sensitivity runs listed above were simulated at LLT conditions. NAA DSM2 run at LLT accounts for 45 cm sea level rise at the Golden Gate Bridge. Alt4 H3 DSM2 runs at LLT account for 65,000 acres of restoration in addition to the 45 cm sea level rise. Even though the sensitivity analyses were performed at LLT, the factors identified to explain modeled salinity exceedances at LLT are expected to be valid similarly at Early Long-term (ELT) conditions.*”

This speculation is not correct. The late long term conditions in the Delta will include a significant amount of additional seawater intrusion, especially at locations like Barker Slough (as shown by the sensitivity analyses). Comparing two simulations with a lot of seawater intrusion (subtracting one from the other) is very different from comparing two simulations under conditions with significantly less seawater intrusion (i.e., at early long term).

It is also incorrect to claim that “the Lead Agencies have determined that they may reasonably rely on the modeling conducted for Alternative 4 to accurately predict the environmental effects of Alternative 4A” (page 4.2-18).

As was acknowledged in the RDEIR/SDEIS on page 4.3.4-24, “*..... the quantitative modeling results presented in this assessment is(sp) not entirely predictive of actual effects under Alternative 4A, and the results should be interpreted with caution.*”

The result presented in Appendix 8H, Attachment 1, are very interesting but they are no substitute for full model runs. A new Draft EIR/EIS should then be prepared with full updated model runs and released for public review and comment.

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RDEIR/SDEIS Appendix B***Page B-1***

The WaterFix preferred alternative (Alternative 4A) includes a new minimum flow criterion at Rio Vista from January through August consistent with Alternative 4. This was apparently required to constrain the CALSIM II simulations from causing unrealistically low flows in the Delta. The SWRCB as part of its water right permitting process will need to include this same minimum flow criterion in the WaterFix permits to ensure that real-time operations also do not cause unrealistically low flows in the Delta and reverse flows in the north Delta that would adversely impact fish.

The RDEIR/SDEIS also states that “Alternative 4A would not include operational elements associated with Fremont Weir modifications as they would be assumed to occur as part of the No Action Alternative as may be required by the existing NMFS (2009) BiOp.” See also the related bullet on page B-2. This needs to be clarified. Does Alternative 4A not include Fremont weir modifications even though they are in the NAA?

A new RDEIR/SDEIS must be prepared that clearly states that the WaterFix real-time operations will also comply with these new proposed January through August Rio Vista flow requirements and whether the Fremont weir modifications will not be made if the WaterFix project is implemented. The new Draft EIR/EIS should then be released for public review and comment.

Page B-3

The RDEIR/SDEIS states that “*For the Alternative 4A sensitivity analysis Alternative 4 CALSIM II models from draft EIR/EIS were used as is, without including any recent updates to the CALSIM II since the draft EIR/EIS was completed, to remain consistent with the draft EIR/EIS modeling.*”

The environmental analyses and disclosures of impacts in the RDEIR/SDEIS are inadequate because of flaws identified for the earlier BDCP model runs and CALSIM II and DSM2 models, and the failure to include the recent updates to the models and revise the earlier modeling runs. The approach chosen by the lead agencies therefore did not allow any reliable verification of whether the draft EIR/EIS modeling could be used to inform Alternative 4A impact analysis in the REIR/EIS.

A new Draft EIR/EIS must be prepared that carries out full model runs for Alternative 4A and all other alternatives using updated and revised CALSIM II and DSM2 models. The new Draft EIR/EIS must then be released for public review and comment.

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Appendix F: Supplemental Modeling Results at ELT for 3 Alternative 4 at H1 and H2***Page F-1***

This RDEIR/SDEIS appendix presents the CALSIM water operations modeling results for Alternative 4 for operational scenarios referred to as “Scenarios H1 and H2” at early long term.

These two scenarios from the BDCP Draft EIR/EIS do not include the Fall X2 requirement in the biological opinions and found by the SWRCB to be necessary to restore and sustain recovery of fish species in the Delta. Recent court decisions confirmed the validity of the USFWS’s biological opinion requirement to meet Fall X2 in wet and above normal years.

It is very difficult to comprehend why the lead agencies, who purport to be developing a project to improve conditions for key fish species, are continuing to promote SWP and CVP operations that do not include Fall X2 operation required under their biological opinions, and would continue to harm key fish species. This is also contrary to the state and federal requirements (Public Law 112-74) to contribute to achieving the coequal goals.

RDEIR/SDEIS Appendix G***Page G-5, Line 31*****G.4.4 Reduce Reliance on the Delta through Improved Regional Water Self-Reliance**

The RDEIR/SDEIS states that “*DWR supports Demand Management Measures (DMM) which are tools to reduce reliance on imported water.*” However, the RDEIR/SDEIS argues that the urban and agricultural water management plans and the water conservation provisions of Senate Bill x7-7 and Assembly Bill 1420 and other programs do not give DWR authority to mandate or impose conservation requirements on suppliers or regional agencies. The current drought emergencies has shown that the State can indeed impose conservation requirements on water users statewide. The 2009 Delta Reform Act requirement to reduce dependence on diversions of water from the Delta means that new Bay-Delta projects, especially WaterFix, must include binding commitments that DWR and Reclamation’s export water contractors will reduce their water uses through water management and conservation actions. It is not sufficient to rely on suppliers becoming ineligible for state water management grant funds to reduce water demand.

A new Draft EIR/EIS must be prepared that includes holistic solution alternatives that include binding commitments for demand reduction and water conservation actions. The new Draft EIR/EIS should then be released for public review and comment.

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Page G-6, Line 34**G.4.6 Delta Flow Objectives**

The RDEIR/SDEIS states that “*DWR complies with Delta flow objectives by use of real time operating procedure and will continue to do so into the future when new objectives are set.*” If, as required by the 2009 Delta Reform Act, the SWRCB implements high Delta flow requirements, DWR and Reclamation may not be able to meet these new flow objectives without new infrastructure. The RDEIR/SDEIS is inadequate because it fails to analyze operation of CVP and SWP operations with existing Delta infrastructure and new flow objectives. It also fails to analyze alternatives that would allow the CVP and SWP to meet new SWRCB flow objectives and still meet water delivery goals to CVP and SWP water contractors.

A new Draft EIR/EIS must be prepared that assumes new SWRCB flow objectives will be in place in the immediate future and develops alternatives that are compatible with those new alternatives, e.g., holistic alternatives that include new storage to capture “new” water under high flow conditions in the Delta when flows are surplus to the needs of the Delta. The new Draft EIR/EIS should then be released for public review and comment.

Attachment C**Detailed Analysis Of WaterFix Project Impacts based on
Water Fix Modeling and Sensitivity Analysis Data**

The Delta Independent Science Board's (ISB) September 30, 2015 letter indicates in no uncertain terms that the BDCP/CWF is “*sufficiently incomplete and opaque to deter its evaluation and use by decision makers, resource managers, scientists and the broader public.*” The Delta ISB also found that the WaterFix RDEIR/SDEIS lacks “*concise summaries integrated with informative graphics.*” Contra Costa County agrees with these findings. The presentation of long-term averages without presentations of individual monthly flows and exports and daily water quality data hides many important details about the way the WaterFix preferred alternative could likely operate and misleads decision makers.

This attachment presents examples of the type of detailed graphics that must be included in the next Draft EIR/EIS, and discusses problems with preferred alternative 4A that these plots reveal. Contra Costa County presented similar attachments in our July 29, 2014 comments on the BDCP Draft EIR/EIS and in early comments to the BDCP proponents. Unfortunately, plots of these types were not incorporated into the RDEIR/SDEIS.

The Delta ISB has asked for over three years, for cogent summaries, clear comparisons, and informative graphics. We agree with the Delta ISB that “*three years is more than enough time to have developed them.*”

The graphical presentations in this attachment illustrate the inconsistencies between how the WaterFix project is portrayed in the RDEIR/SDEIS and how the CALSIM II and DSM2 simulations indicate it will more likely operate. For example neither the BDCP nor the WaterFix alternatives are capable of capturing water in the Delta during periods of high flow. This is not because of the Delta smelt or salmon biological opinions, but because there is no new infrastructure to store and convey the captured water to the California Aqueduct and Delta Mendota Canal. The graphs also indicate times when the computer models fail to meet the SWRCB water quality control plan standards and other regulatory requirements in the Delta.

Data Source

The data presented in this attachment were provided by DWR from the CALSIM II and DSM2 sensitivity analyses. As discussed in this comment letter, the sensitivity analyses do not actual represent the full details of the preferred alternative. The water quality data, in particular, were based on BDCP Alternative 4 at late long term, which included 65,000 acres of habitat restoration, and a shift in location of the Emmaton standard, whereas the preferred alternative 4A is evaluated at early long term (much less sea level rise) and has almost no habitat restoration. No actual full water quality model run was carried out for preferred alternative 4A. The water quality analyses were also only for 16-years which is insufficient to understand the full range of variability of Delta salinities resulting for project operations. Full water quality modeling should have been done for the full 82-year period (1922-2003) used for the CALSIM II operations analyses.

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DWR included a Disclaimer with the data that says the DWR released these data as preliminary modeling data and makes no representations or guarantees as to the completeness, accuracy or correctness of the data. DWR further emphasized that sensitivity analyses are not full model runs.

WaterFix preferred alternative will increase exports in the driest months when the Delta ecosystem is most stressed

The California WaterFix proponents claim that one of the benefits of the WaterFix conveyance proposal is that it will reduce the damaging effect of exports from the south Delta on key fish species. There is general agreement amongst Bay-Delta stakeholders that the location of the south Delta export locations (Clifton Court Forebay and the Jones Pumping Plant) cause reverse flows that direct fish toward the export pumps and adversely impact fish populations.

The Bay Delta Conservation Plan (BDCP) and WaterFix proponents also claim that the project will operate according to a Big Gulp, Little Sip principle. This principle was one of the original planning principles of the BDCP Steering Committee (BDCP March 2009 “An Overview and Update”) – *“Divert more water in the wetter periods and less in the drier periods.”*

It is important to realize that “wetter periods” applies to periods of high runoff and high Delta flows, which occur on the order of weeks or months. Wet periods usually occur during the winter and spring. The summer and fall are typically dry periods. There can be wet periods, albeit brief, during dry water years just as there can be dry periods during wet water years.

An inspection of the monthly Delta export data from the WaterFix analyses suggest that neither of these alleged benefits of the BDCP and WaterFix is true.

Currently, the maximum rate of exports from the Delta during drier periods is about 11,280 cubic feet per second (6,680 cfs at the SWP export facility plus 4,600 cfs at the CVP pumps.). As shown in Figure C-1, the WaterFix data for Alternative 4A, Scenario H3 at early long term, suggest that in many dry months when Delta outflows are very low, the combined SWP and CVP exports from the south Delta would be as high as 14,900 cfs. This is an increase in south Delta pumping of 3,600 cfs or about 24%.

Rather than diverting less in dry periods and reducing the CVP and SWP’s dependence on water from the Delta, the WaterFix project would increase exports.

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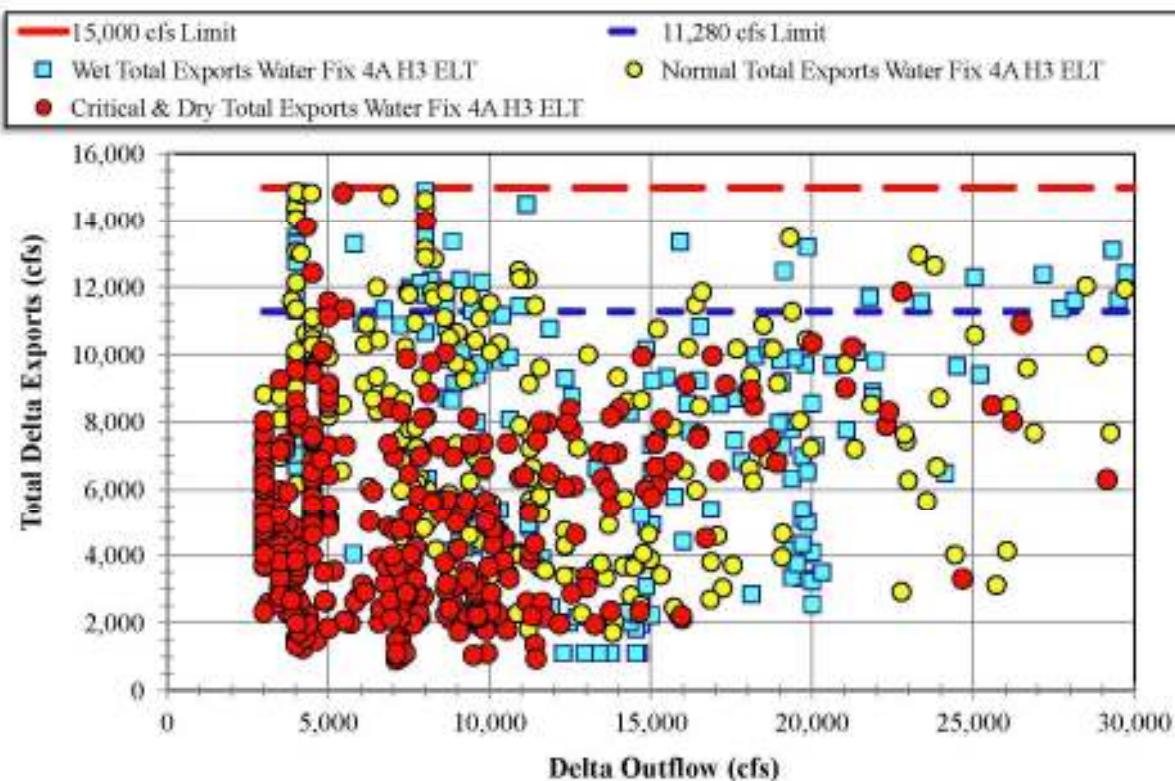
Total Delta Exports for WaterFix 4A H3 ELT

Figure C-1: Monthly total Delta exports as a function of Delta outflow for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term). Only months when outflows are less than 30,000 cfs are plotted.

The same WaterFix operations simulations show that during periods of high Delta outflow (say 30,000 cfs or greater), when water surplus to the needs of the Delta could be available for export, the WaterFix preferred alternative often fails to increase in export diversions above existing levels (Figure C-2). In other words, without new storage in or close to the Delta, the WaterFix preferred alternative is unable to capture this surplus flow. During wet periods, farmers' fields and urban landscapes are soaked reducing demand for water. The existing south-of-Delta reservoirs fill and there is nowhere else to quickly store the more water. The WaterFix preferred alternative will be unable to regularly take a "Big Gulp."

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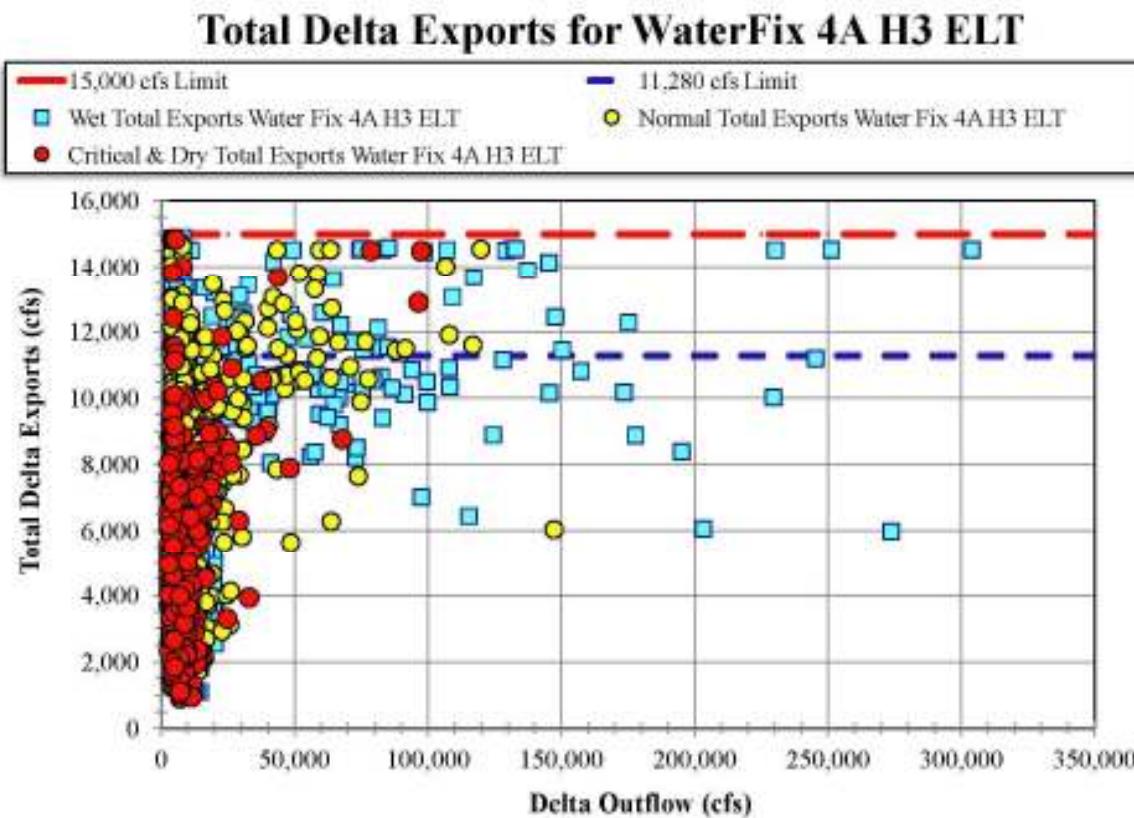


Figure C-2: Monthly total Delta exports as a function of Delta outflow for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term). All the months for the 1922-2003 simulation period are plotted. Without new storage, the WaterFix preferred alternative is unable to regularly capture water during wet periods.

Increasing exports from the Delta in the dry months is in direct conflict with the 2009 Delta Reform Act (Water Code Section 85021), which states that the policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency. The BDCP proposed project includes no actions to improve regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts.

The WaterFix preferred alternative will operate under conditions bracketed by Scenarios H3 and H4. Both include Fall X2 requirements in wet and dry years. Inconceivably, the RDEIR/SDEIS also indicates the lead agencies still desire to operate without Fall X2, i.e., Scenarios H1 and H2, which are analyzed and disclosed in Appendix F of the RDEIR/SDEIS.

To ensure that the WaterFix project actually operates as the lead agencies say it will, and to be consistent with the 2009 Delta Reform Act, it will be necessary for the fish agencies, the

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SWRCB, and other regulatory agencies to impose an additional export limit that ensures less water will be exported during the driest periods.

Figure C-3 shows the same data as Figure C-1 but this figure also shows a limit on total CVP and SWP exports of the form: total exports = 1.5 x Delta outflow.

This would mean that in the fall when outflows are only 3,000 cfs, only 4,500 cfs can be exported. The CVP and SWP would not be able to increase exports above existing levels unless Delta outflow was 7,500 cfs or greater. The resulting loss of export water would have to be made up during periods of higher Delta outflow. That will not be possible though without new storage and other infrastructure in the Delta to capture more water during higher flow periods.

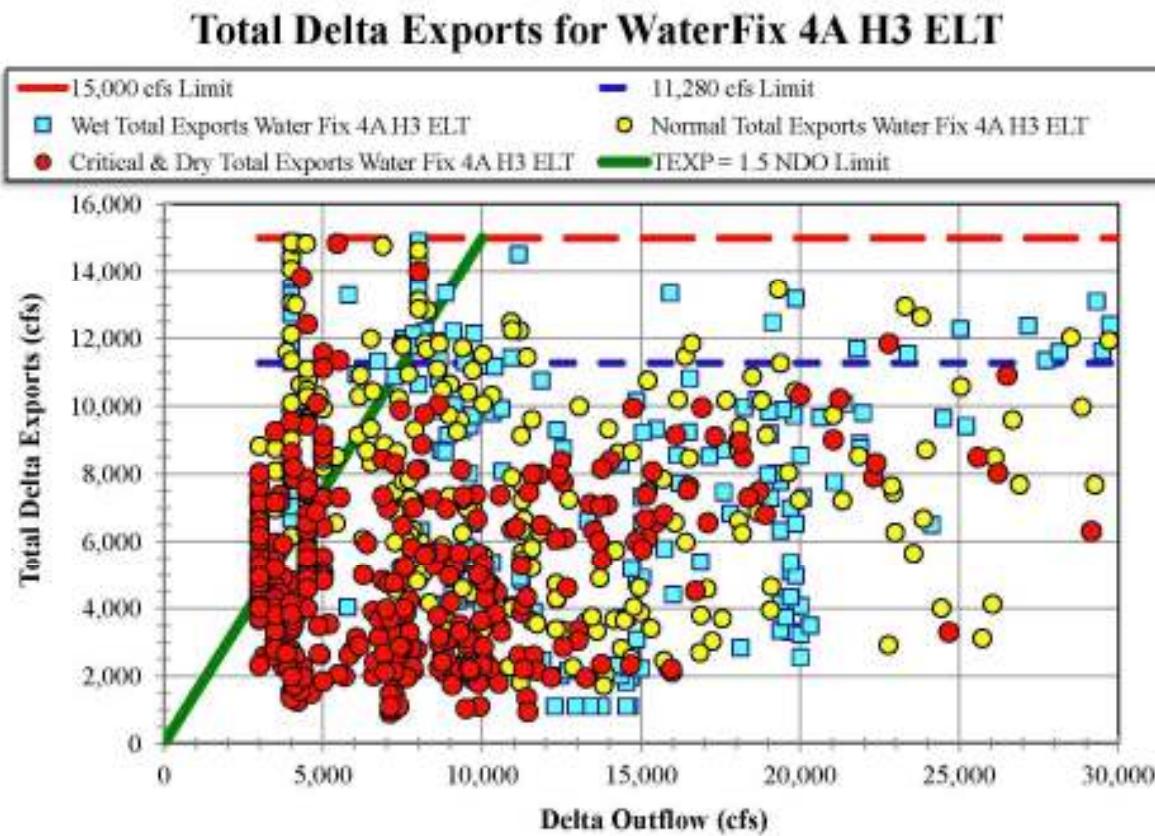


Figure C-3: Monthly total Delta exports as a function of Delta outflow for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term). The green diagonal line represents a limit on exports to ensure that less water is exported during dry months when Delta outflows are lowest.

According to Appendix C of the RDEIR/SDEIS, the SWRCB requested that an additional alternative be analyzed (4H3) which would be operated to much higher Delta outflow

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requirements specified by the SWRCB. Unfortunately, DWR and Reclamation did not modify the WaterFix infrastructure to adapt to these higher outflow requirements so the environmental benefits and viability (with respect to cost and water supply benefits) of a higher Delta flow alternative were not tested and disclosed. It is interesting, however, that the corresponding total exports versus Delta outflow graph for SWRCB Alternative 4H3 shown in Figure C-3 does represent less water being exported in drier periods. The reduced exports in this SWRCB alternative are consistent with the suggested low outflow export limit (total exports = 1.5 x Delta outflow).

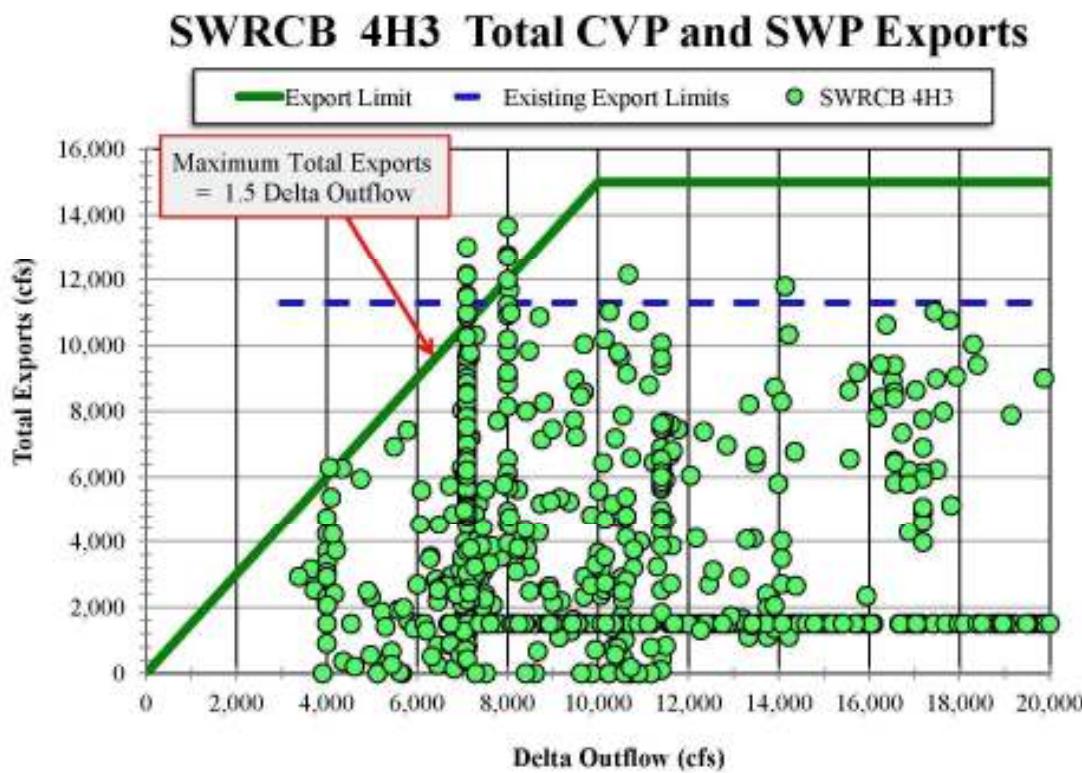


Figure C-4: Monthly total Delta exports as a function of Delta outflow for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term). All the months for the 1922-2003 simulation period are plotted. Without new storage, the WaterFix preferred alternative is unable to regularly capture water during wet periods.

A new Draft EIR/EIS should be prepared that includes more holistic alternatives that reduce exports during drier months (e.g., in a fashion similar to the suggested exports = 1.5 inflow limit) and are able to capture “new” water during periods of high Delta outflow. That would contribute to achieving the coequal goals as well as improving water quality in the Delta. The dismal WaterFix proposal hinders any progress to achieving these goals. The new Draft EIR/EIS should then be released for public review and comment.

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WaterFix preferred alternative exceeds existing Army Corps limits on inflow to Clifton Court

A detailed review of the WaterFix sensitivity analysis data for Alternative 4A reveals that the monthly exports from the south Delta exceeded the U.S. Army Corps limits on inflow to Clifton Court Forebay from the south Delta. As described on page 5A-B6 of the BDCP Draft EIR/EIS, the Army Corps limits to daily diversion into Clifton Court Forebay to 6,680 cfs (specified as a three-day average daily diversion of 13,250 acre-feet). Higher inflows are permitted from mid-December to mid-March when the flow of the San Joaquin River at Vernalis exceeds 1,000 cfs. An additional 500 cfs is also permitted for July–September to reduce NMFS biological opinion impacts.

Figure C-5 shows the WaterFix analysis SWP South Delta export data for Alternative 4A, Scenario H3, at early long term, for April through November when the Army Corps limits of 6,680 cfs apply. The simulated inflows to Clifton Court (SWP through-Delta exports) are as high as 9,750 cfs with total south Delta export as high as 14,350 cfs. This is well in excess of the permitted values for this period, and is inconsistent with the WaterFix project claim of ecosystem benefits because exports from the south Delta will be reduced.

The WaterFix RDEIR/SDEIS is inadequate because it fails to clearly disclose to the public and to decision makers like the Army Corps that DWR is proposing to eliminate existing limits on the inflow to Clifton Court, and that the analyses to support the Army Corps application violates that limit.

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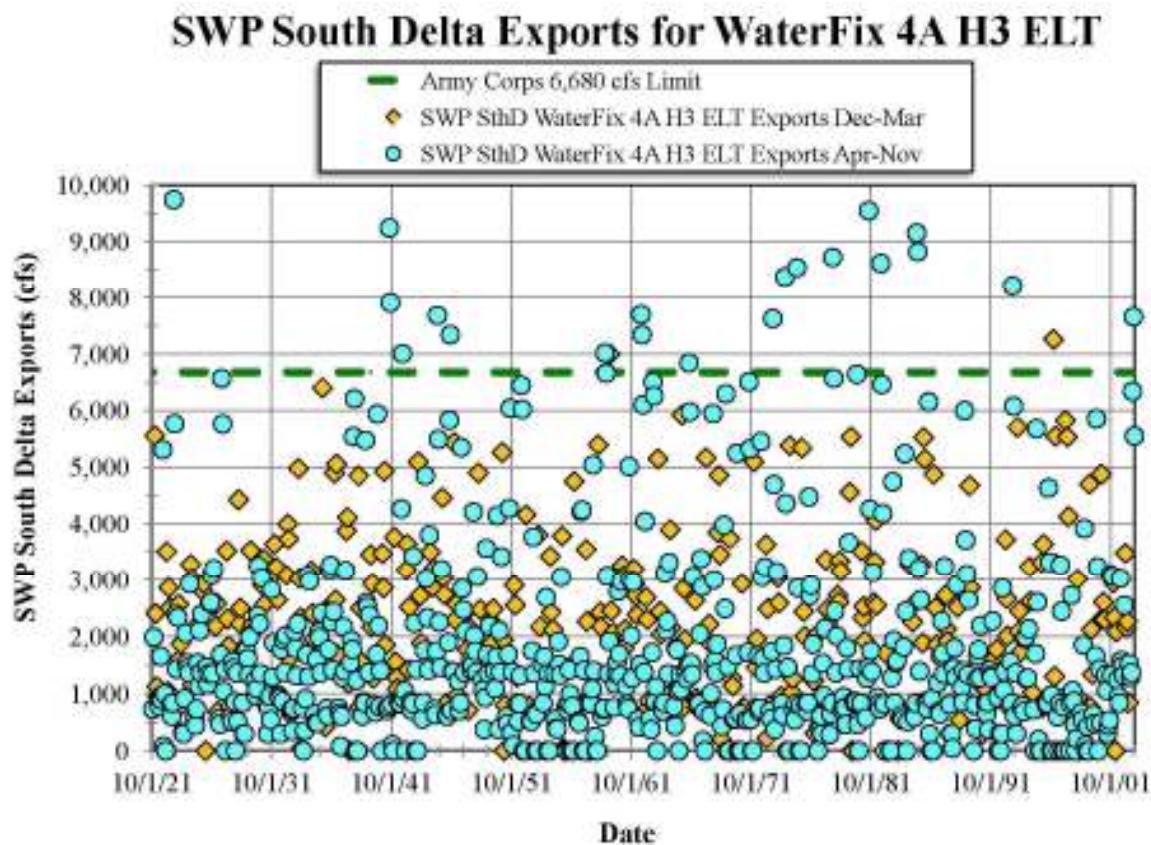


Figure C-5: Monthly SWP exports from the south Delta for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term) for the period October 1921 through September 2003. There are many exceedances of the Army Corps limit on inflow to Clifton Court. These were not disclosed in the RDEIR/SDEIS.

Figure C-6 shows the same SWP south Delta export data as Figure C-5, but this time plotted as a function of Delta outflow. The violations of the Army Corps limits occur during drier months when Delta outflows are lower. This is again directly contrary to the principle of taking a "Little Sip" during drier periods, *i.e.*, reducing exports relative to existing levels.

During high outflow periods (outflows > 15,000 cfs), inflows to Clifton Court are well below the maximum permitted inflow.

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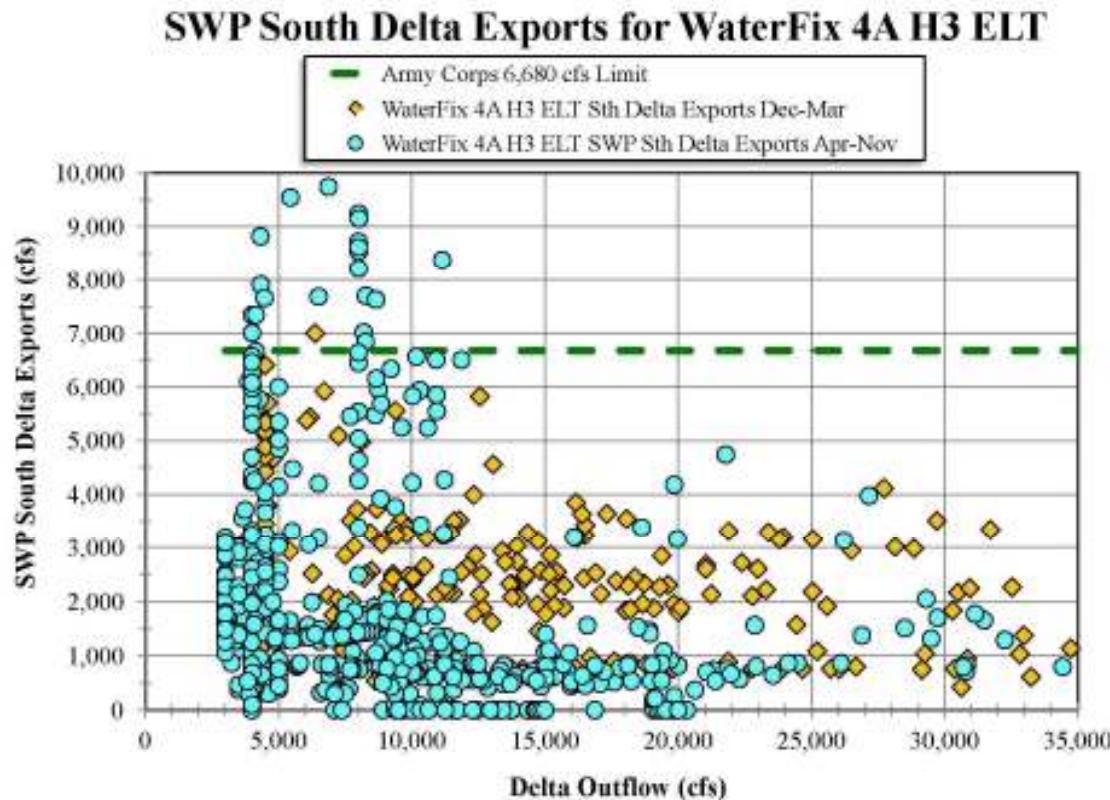


Figure C-6: Monthly SWP exports from the south Delta as a function of Delta outflow for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term). There are many exceedances of the Army Corps limit on inflow to Clifton Court. They occur during periods of lower Delta outflow.

A new Draft EIR/EIS must be prepared that includes new alternatives that comply with the U.S. Army Corps of Engineers limits on inflow to Clifton Court Forebay, and other legal requirements set by the SWRCB and the biological opinion, and released for public review and comment.

The WaterFix analyses violate the SWRCB D-1641 minimum Rio Vista flow requirements

SWRCB Water Rights Decision 1641 requires minimum Rio Vista flows be met in the fall (September through December). As shown in Figure C-7, the monthly Rio Vista flows for September and October for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term) fall well below the D-1641 requirements in a number of the drier years.

DWR and Reclamation's change of point of diversion petition to the SWRCB for the WaterFix project also fails to disclose to the SWRCB that the WaterFix proponents are either proposing to

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selectively ignore certain D-1641 standards or that the analyses used to support the petition are flawed and not acceptable for decision making.

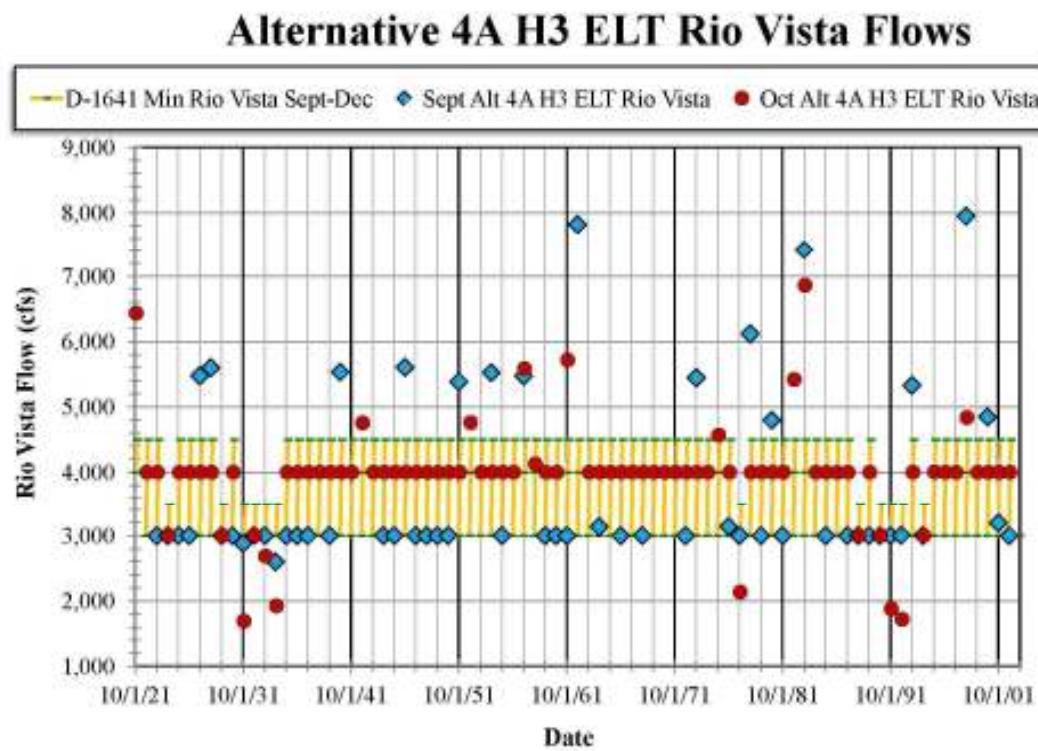


Figure C-7: Times series of monthly Rio Vista flows for September and October for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term) for water years 1922 through 2003. The CALSIM II model fails to meet the D-1641 minimum flow requirements in a number of drought years.

The WaterFix RDEIR/SDEIS is inadequate because it fails to comply with the SWRCB minimum flow requirements at Rio Vista and fails to clearly disclose these significant violations to decision makers and the public. A new Draft EIR/EIS must be prepared which includes new alternatives that comply with all legal requirements including the Rio Vista minimum flow standards and then be released for public review and comment.

WaterFix project does not minimize reverse flows in the south Delta – Large reverse flows remain – OMR sometimes increases

The discussion of Old and Middle River flows (OMR) in the RDEIR/SDEIS fails to clearly disclose whether reverse flows in the south Delta remain large in some months (*i.e.*, are far from minimized) and whether the WaterFix project will actually increase reverse flows in other months.

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Because the new north Delta intakes and isolated conveyance are being promoted as a providing ecosystem benefits by reducing the adverse impacts of SWP and CVP exports from the south Delta, the goal of the WaterFix project should be to eliminate reverse flows more negative than, say, -2,000 cfs, in all months.

There are resident fish in the Delta all year round that are not yet listed as threatened or endangered. Salvage of other species such as Striped bass, largemouth bass, white cat fish and Mississippi silversides is already large under existing conditions (see Grimaldo et al., "Factors affecting fish entrainment"). This is also likely to be a problem for sturgeon.

http://swrcb2.swrcb.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/sfwc/spprt_docs/sfwc_exh3_grimaldo.pdf

It is not sufficient to just improve OMR in a few key months when Delta smelt and other listed species are present and redirect reverse flow impacts to the subsequent months. If the months of July and August are in effect sacrificed with respect to control of reverse flows, the adverse impacts of Delta exports will shift to these two months and possibly September and new fish species are likely to decline. OMR has to be controlled in all months to avoid redirecting serious impacts to these months.

Figure C-8 shows simulated monthly Old and Middle River flows for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term) compared to the OMR flows for the existing basemode, as a scatter plot. Many of the monthly reverse flows are very large in the base case (x-axis) and would remain large even with implementation of the WaterFix preferred alternative with its new north Delta intakes. Some of the existing large reverse flows would get even worse with WaterFix. OMR values of -12,000 cfs in the basemode would worsen to -14,000 cfs and harm resident fish in the Delta. The published claims that the RDEIR/SDEIS and the proposed project will minimize reverse flows are untrue, and could be viewed as disingenuous.

By claiming the north Delta intakes benefit fish by minimizing reverse flows, the BDCP and WaterFix proponents are acknowledging the current level of exports from the south Delta exports adversely impact fish species. For a proposed Bay-Delta project to be able to contribute to meeting the coequal goals and help restore and sustain fish species, the project operating rules will need to effectively eliminate reverse flows in the critical months for the key fish species, but also significantly decrease (not increase) reverse flows in the south Delta in all the other months.

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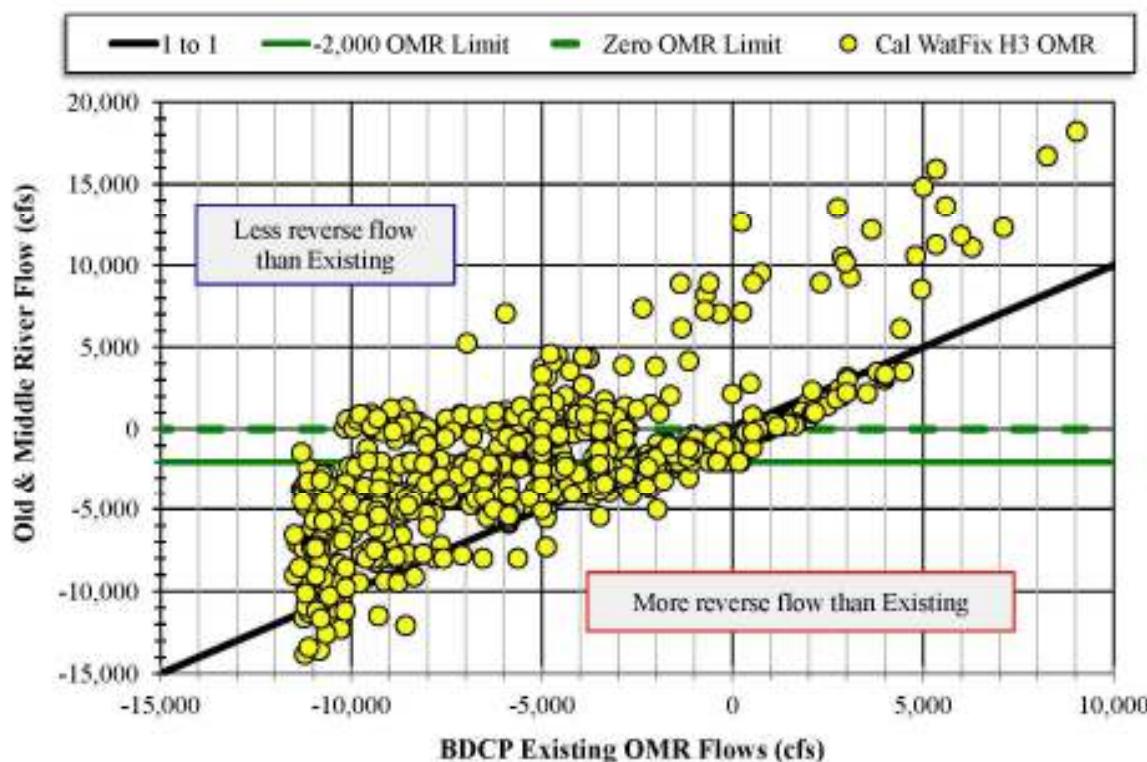
WaterFix 4A H3 ELT Old & Middle River

Figure C-8: Monthly Old and Middle River flows for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term) compared to the OMR flows for the existing basecase. Reverse flows still remain most of the time even with the proposed north Delta intakes.

The most negative reverse flows get even worse with WaterFix.

The WaterFix project and RDEIR/SDEIS is inadequate because it fails to minimize reverse flows in the Delta, and fails to clearly disclose these significant adverse impacts on fish in the Delta. A new Draft EIR/EIS must be prepared which includes new alternatives that significantly reduce or eliminate reverse flows and be released for public review and comment.

The Water Fix project fails to comply with the SWRCB Water Rights Decision 1641 export/inflow requirements.

The D-1641 export/inflow (E/I) ratio calculation was designed to protect fish from the significant adverse impacts of the inadequately screened SWP and CVP export intakes in the south Delta. Those impacts include entrainment of fish, drawing fish out of the Sacramento River system into the south Delta, and general ecosystem impacts that result from diverting too much of the inflow to an estuary. The new north Delta intakes will also impact the health of the Sacramento-San Joaquin Delta estuary by diverting inflow that otherwise would be available for fish, to restore water quality and otherwise reduce the impacts of Other Stressors. To restore and sustain the

Attachment C: Detailed Analysis Of WaterFix Project Impacts based on Water Fix Modeling

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Delta ecosystem and achieve the ecosystem coequal goal, it is important that the SWRCB export inflow ratio remain as defined in D-1641 and be met.

Figure C-9 shows the RDEIR/SDEIS simulations of monthly export/inflow ratios for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term). The export ratios are computed according to the correct SWRCB Water Rights Decision 1641 definition (yellow circles), as well as the faulty definition used in the RDEIR/SDEIS (green diamonds). During periods when the export/inflow is required by D-1641 to be 0.35 or less, the WaterFix project would export almost 50% more water than permitted (E/I as much as 0.5). During periods when an export/inflow ratio of 0.65 is required under D-1641, the WaterFix preferred alternative E/I ratio is as high as 0.71.

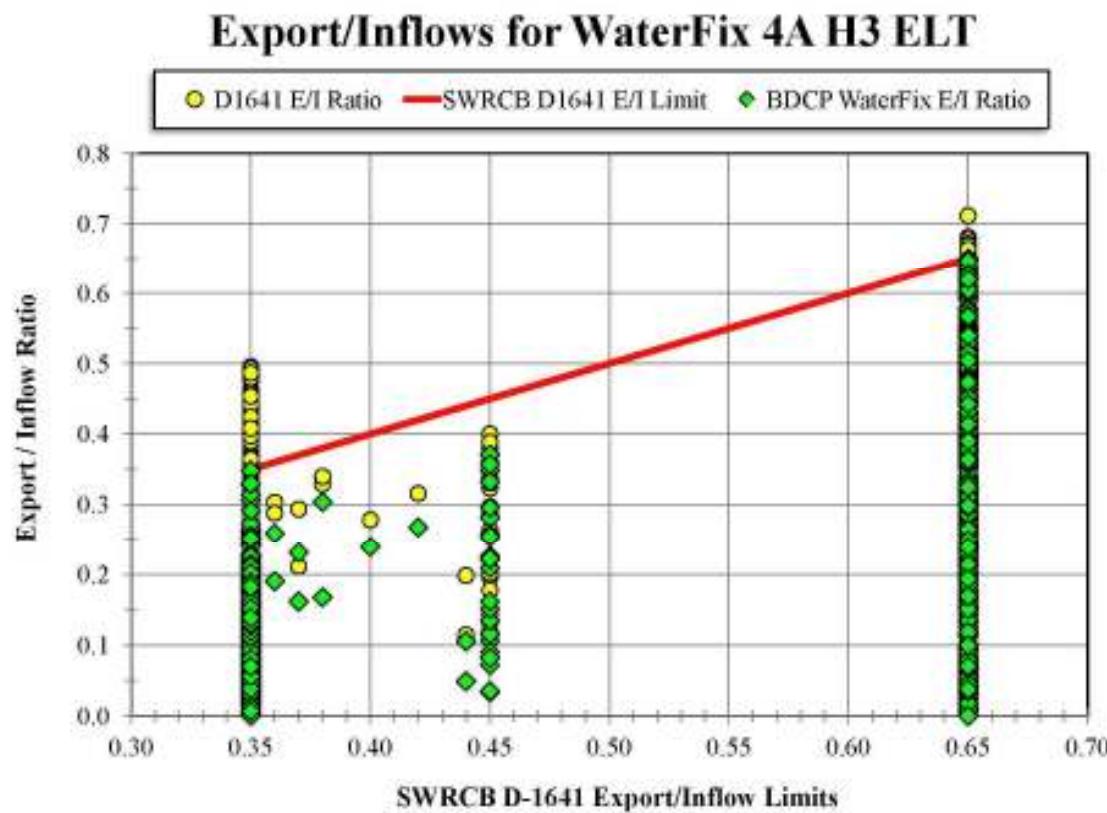


Figure C-9: Simulations of monthly export/inflow ratios for the WaterFix preferred alternative (Alternative 4A, Scenario H3 at Early Long Term). The export ratios are computed using according to the SWRCB Water Rights Decision 1641 definition, as well as the definition used in the RDEIR/SDEIS. The ratios are plotted as a function of the D-1641 maximum allowable ratio

A new Draft EIR/EIS must be prepared that analyze alternatives that comply with the SWRCB's export/inflow standards as well as the existing Army Corps limits on inflow to Clifton Court and the San Joaquin inflow to export ratios in the biological opinions. Additional full model runs could still be included to disclose individual impacts to the Delta ecosystem and water quality if

Attachment C: Detailed Analysis Of WaterFix Project Impacts based on Water Fix Modeling

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those legal requirements were not met. The new Draft must then be released for public review and comment.

The WaterFix preferred alternative fails to comply with existing limits on the ratio of San Joaquin inflow to South Delta exports.

The 2009 NMFS biological opinion sets limits on the ratio of San Joaquin inflow at Vernalis to south Delta exports in April and May. As was discussed in Contra Costa County's 2014 comments on the BDCP Draft EIR/EIS (Attachment F of that comment letter), modeling analyses for the BDCP proposed project failed to comply with this biological opinion requirement.

The RDEIR/SDEIS Appendix 8H, Attachment 1, confirms that the BDCP Draft EIR/EIS Alternative 4 did not include a requirement that the San Joaquin River inflow to export ratio action in the NMFS BiOp be met. However, the flawed BDCP modeling of Alternative 4 was the basis for the brief sensitivity analyses used in the RDEIR/SDEIS.

The RDEIR/SDEIS at page 6-20, Line 12 states: "Reverse flow conditions for Old and Middle River flows would be reduced under Alternative 4 on a long-term average basis except in May in scenarios H2 and H4 and in April and May in scenarios H1 and H3, compared to reverse flows under both Existing Conditions and the No Action Alternative, as shown in Figure 6-23. Compared to flows under the No Action Alternative, Old and Middle River flows would be less positive in April and May under scenarios H1 and H3 because these scenarios do not include inflow/export ratio criteria for the San Joaquin River in those months, although there are other criteria for Old and Middle River flows assumed in these scenarios."

The RDEIR/SDEIS is inadequate because the proposed project and analyses fail to comply with the San Joaquin inflow to export ratio. It is not up to DWR and Reclamation to decide not to bother to meet legal requirements and then fail to disclose these potential violations in the environmental documentation.

A new Draft EIR/EIS must be prepared that includes project alternative that meet all D-1641, and biological opinion and Army Corps inflow limit requirements. The new Draft EIR/EIS must also be clearly written with detailed graphs and tables so that it is clear to the public and decision makers what operating rules apply and whether some of these requirements are being exceeded or otherwise violated. The new Draft EIR/EIS must then be released for public review and comment.

Attachment D**Recent Contra Costa County Correspondence regarding BDCP and WaterFix**

- 1) Letter to California Water Resources Control Board dated September 23, 2015, regarding "Petition for Change of Point of Diversion submitted by DWR and Reclamation for Cal. WaterFix";
- 2) Email to John Laird, Secretary, California Natural Resources Agency from Dr. Richard A. Denton, Water Resources consultant to Contra Costa County dated October 8, 2015
- 3) California Water Action Plan and the Cal. Water Fix, dated August 19, 2015
- 4) Major Problems with Cal. WaterFix Preferred Alternative, dated August 19, 2015

Department of
Conservation and
Development

Water Agency

30 Muir Road
Martinez, CA 94553

Phone: 925-674-7824

Contra Costa County



September 23, 2015

Mr. Tom Howard
Executive Director
State Water Resources Control Board
1001 I Street
Sacramento, California 95814

Sent via email: tom.howard@waterboards.ca.gov

Re: Petition for Change of Point of Diversion submitted by DWR and Reclamation for Cal. WaterFix

Dear Mr. Howard:

Contra Costa County has reviewed the Petition for a Change of Point of Diversion and of Rediversion submitted by the California Department of Water Resources (DWR) and U.S. Bureau of Reclamation (Reclamation) for the California WaterFix project. It is our understanding that the three new points of diversion would be at a different location than the existing Hood diversion point for the earlier Peripheral Canal project. The Petition seeks approval of the operation of three new large water export intakes on the Sacramento River in the vicinity of Clarksburg (Alternative 4A, the preferred alternative in the State's "California WaterFix" project.)

Contra Costa County is bounded on its western, northern and eastern sides by the San Francisco Bay and the Sacramento-San Joaquin Delta, and these natural features are the basis for not only the County's identity and quality of life but also our economic vitality. The availability of good quality water in the Delta is essential for municipal drinking water for the residents of Contra Costa County as well as agriculture, recreation, and industry in this region. As a local agency responsible for land use, flood protection, and other services vital for protecting the Delta, Contra Costa County has a direct interest in any proposed solution to the current problems afflicting the Delta.

Contra Costa County agrees with the detailed concerns regarding this premature and incomplete Petition raised in the letters sent to you by the Local Agencies of the North Delta and Central Delta Water Agency (dated August 31, 2015) and the City of Antioch (dated September 2, 2015).

John Kopchik
Director

Mr. Tom Howard

Petition for Change of Point of Diversion submitted by DWR and Reclamation for Cal. WaterFix

September 23, 2015

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Petition misleads public and SWRCB

The Petition contains claims and statements that are incorrect, mislead the public and the State Water Resources Control Board (SWRCB), or are unrealistically optimistic. This proposed project will not put the State on a course to achieve the coequal goals (as claimed on page 2 of the submission letter). Instead, the Cal. WaterFix preferred alternative will hinder the State's statutory intent to enhance the Delta ecosystem, improve water quality in the Delta, and protect the Delta as a Place. It also fails to increase water supplies for California.

Project will not improve conditions in the Delta ecosystem

The WaterFix preferred alternative would not result in substantially improved conditions in the Delta for threatened and endangered species (bottom of page 2 of the submittal letter). It would continue use of the unscreened Clifton Court Forebay intake and the poorly screened Jones Pumping Plant for half of the future exports of water from the Delta, add new north Delta intakes directly along the migratory pathway of key anadromous fish species, would fail to sufficiently increase flows for fish, and would increase exports from the Delta in the driest months when Delta outflows are very low (i.e., up to 15,000 cfs). The WaterFix project will increase reverse flows in the Delta in some months relative to existing conditions, and OMR values will remain less than -2,000 cfs, 55% of the time (based on a detailed analysis of DWR's monthly CALSIM output data). Even during November-June, the period that the SWRCB's 2010 Delta Flow Criteria Report deemed more critical for regulating OMR, the WaterFix project would cause OMR values less than -2,000 cfs, 44% of the time. The worst OMR with the project is -13,800 cfs which is worse than under existing conditions. In addition, the November 2013 Draft BDCP Executive Summary acknowledged that the direct effect of the north Delta intakes would adversely impact many key fish species.

Unscreened Clifton Court Forebay still used to export 27% of total exports

A supposed benefit of the WaterFix project is that south Delta diversions would be replaced by north Delta diversions through state-of-the-art fish screens (page 3). However, the existing intake to Clifton Court Forebay, which would still be used to export 27% of the total south-of-Delta exports would remain unscreened (based on DWR's CALSIM modeling of Alternative 4A, Scenario H3, at Early Long Term). In fact, half of the total exports would still be diverted from the south Delta, including from the inadequately screened Jones Pumping Plant.

Project would increase rather than decrease exports during dry periods

The Cal. WaterFix would not advance the State's water supply goals by improving the ability to capture water during wet years ("Big Gulp") and store it for use during dry years. The key to improving California's water supply is to be able to opportunistically capture water when it is available, i.e., during periods of high, surplus flow in the Delta and upstream of the upstream reservoirs. The focus should be on weeks and months rather than years. Unfortunately, the proposed project fails to capture any significant surplus flow during wet months because it does not include any new storage. Instead it relies on increasing exports from the Delta during dry

Mr. Tom Howard

Petition for Change of Point of Diversion submitted by DWR and Reclamation for Cal. WaterFix
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months when Delta outflows are very low (Figure 1, below), i.e., by taking advantage of the increase in maximum export capacity from 11,280 cfs under typical flow conditions and the existing Delta infrastructure, to 15,000 cfs with the proposed 9,000 cfs twin tunnels. This is contrary to the 2009 Delta Reform Act (Water Code section 85021) and threatens already stressed fish species.

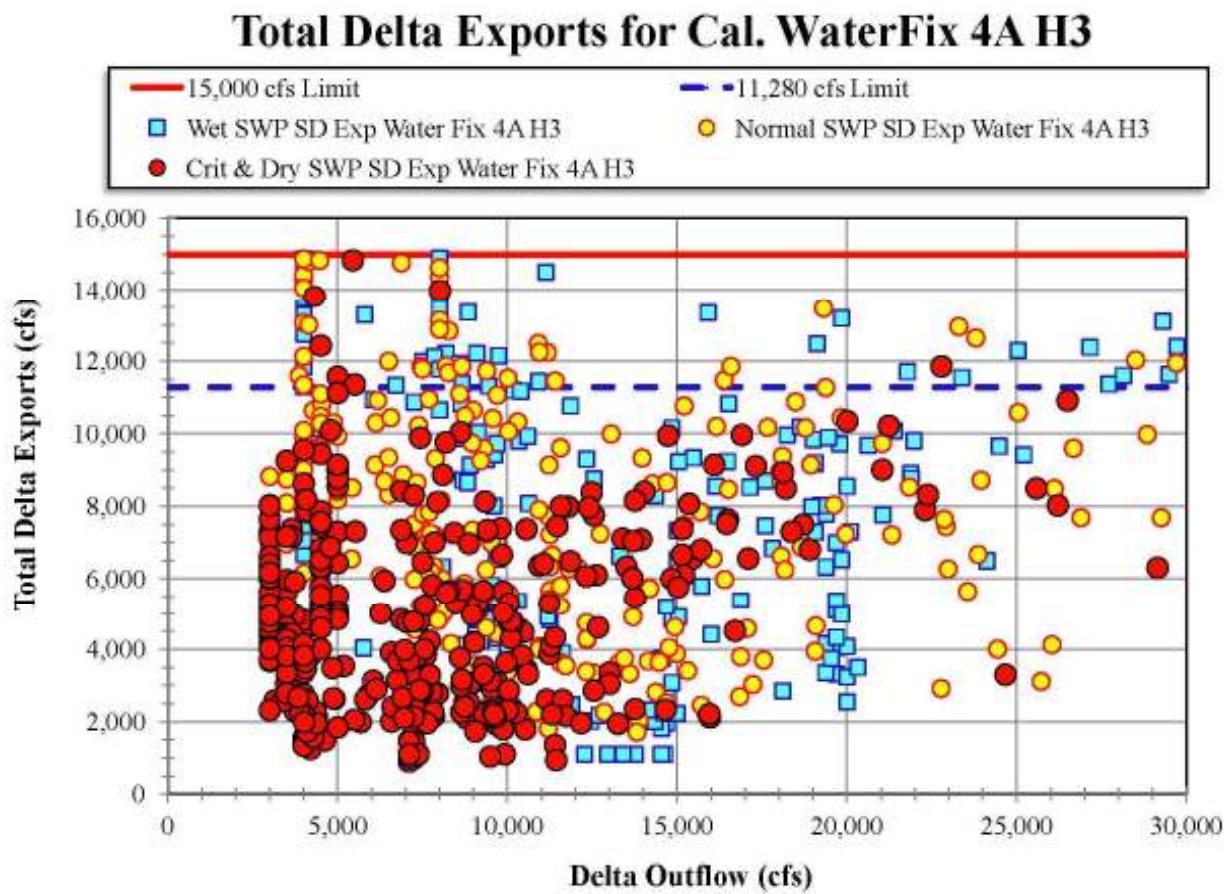


Figure 1: Monthly Total Delta exports (isolated facility and through-Delta) as a function of Delta outflow for outflows up to 30,000 cfs. These “sensitivity analysis” data for the California WaterFix Alternative 4A, Scenario H3, were provided to the County by DWR. The plotted data are categorized as (a) wet years, (b) above and below normal years, and (c) dry and critical water years. The Cal. WaterFix alternative 4A (9,000 cfs north Delta intakes plus through Delta) would allow exports up to 15,000 cfs. The existing limit on exports is typically 11,280 cfs. In drier periods (months) when Delta outflows are very low and the Delta ecosystem is stressed, the Cal. WaterFix alternative 4A would at times increase rather than reduce exports. This is the complete opposite of the **Little Sip** concept). These dry period increases occur in all water year types. Even in wet years there are months that can be considered dry, and vice versa. Unfortunately, the Cal. WaterFix preferred alternative also fails to capture much additional water (i.e., export more than existing exports) when Delta outflows are high (the opposite of the **Big Gulp** concept).

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Potentially more viable alternatives have not been considered

DWR and Reclamation have also failed to consider an adequate range of alternatives, as required under Water Code section 85320(b)(2). What California needs is a project that can capture large quantities of water when it is available and truly surplus to the needs of the Delta and Bay ecosystem and water quality. Seventeen of the eighteen BDCP and Cal. WaterFix alternatives are basically the same alternative – north Delta intakes linked to south Delta export pumps by isolated conveyance. There are no components for increasing regional self-reliance, conservation, desalination, and water use efficiency, and no infrastructure to capture and store “new” water during periods of high Delta flow. The South Delta export intakes are bad for the Delta ecosystem but so are north Delta intakes. The Cal. WaterFix project is inadequate because it has failed to seriously analyze the possibility of other locations for new intakes, e.g., in the western Delta.

SWRCB requested alternative not given serious consideration

According to the RDEIR/SDEIS (Appendix C), the State Water Board requested supplemental modeling related to increased Delta outflows (Alternative 4H3). Just because the WaterFix project infrastructure was not sufficient to achieve both coequal goals with these SWRCB-suggested Delta flow requirements does not mean the SWRCB was not on the right track. A new infrastructure alternative capable of capturing and storing water when there is surplus flow in the Delta would be able to support restoring higher flows for fish, improving water quality in the Delta and improving water supply reliability for California. Water Rights Decision 1641 is not sufficiently protective of fish and wildlife beneficial uses (despite the statement on page 11 of the supplemental information) because the populations of key fish species continue to dramatically decline. The statement on page 12 of the supplemental information that “*(f)lows presented by Alternative 4A, beyond those required by D-1641, satisfy appropriate Delta flow criteria to be considered by the Board under 85086(c)(2)*” is also incorrect. Alternative 4A is inconsistent with the urgent need to restore flows in the Delta to sustain the Delta ecosystem.

Project fails to support State’s comprehensive vision for the Delta

DWR and Reclamation attempt to justify their WaterFix preferred alternative as an integral part of the state’s comprehensive vision for the Delta (e.g., pages 2 - 4 of the supplemental material). However, the legislation and reports they cite in support of this all call for new storage. The WaterFix preferred alternative does not include any new storage so is unable to capture surplus flows when they are available during wet months. Without additional storage and a conveyance infrastructure to divert and convey the water to new storage within or close to the Delta and then to increased groundwater and surface storage south of the Delta, the WaterFix proposal cannot help achieve either of the coequal goals and will fail to improve water quality in the Delta.

Project fails to minimize, and sometimes increases, reverse flows in the south Delta

DWR and Reclamation suggest that their proposal “*would minimize environmental impacts commonly associated with the SWP and CVP*” by addressing the real problem of reverse flows in the south Delta (pages 4 and 5 of the supplemental information). However, the operating rules of

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the WaterFix preferred alternative and continued use of the south Delta export intakes for half of the SWP and CVP alternatives does not minimize reverse flows in the south Delta (see Figure 2 below). Fish are resident in the Delta year round. Salvage of other species such as Striped bass, largemouth bass, white cat fish and Mississippi silversides are already large under existing conditions (see Grimaldo et al., "Factors affecting fish entrainment"). This is also likely to be a problem for sturgeon¹. The WaterFix project sets OMR limits for some of the year and will redirect impacts to July, August, September and October. Fish that are resident in the Delta year round may not be declining now, but they will if that period is subjected to increased reverse flows because of the WaterFix project.

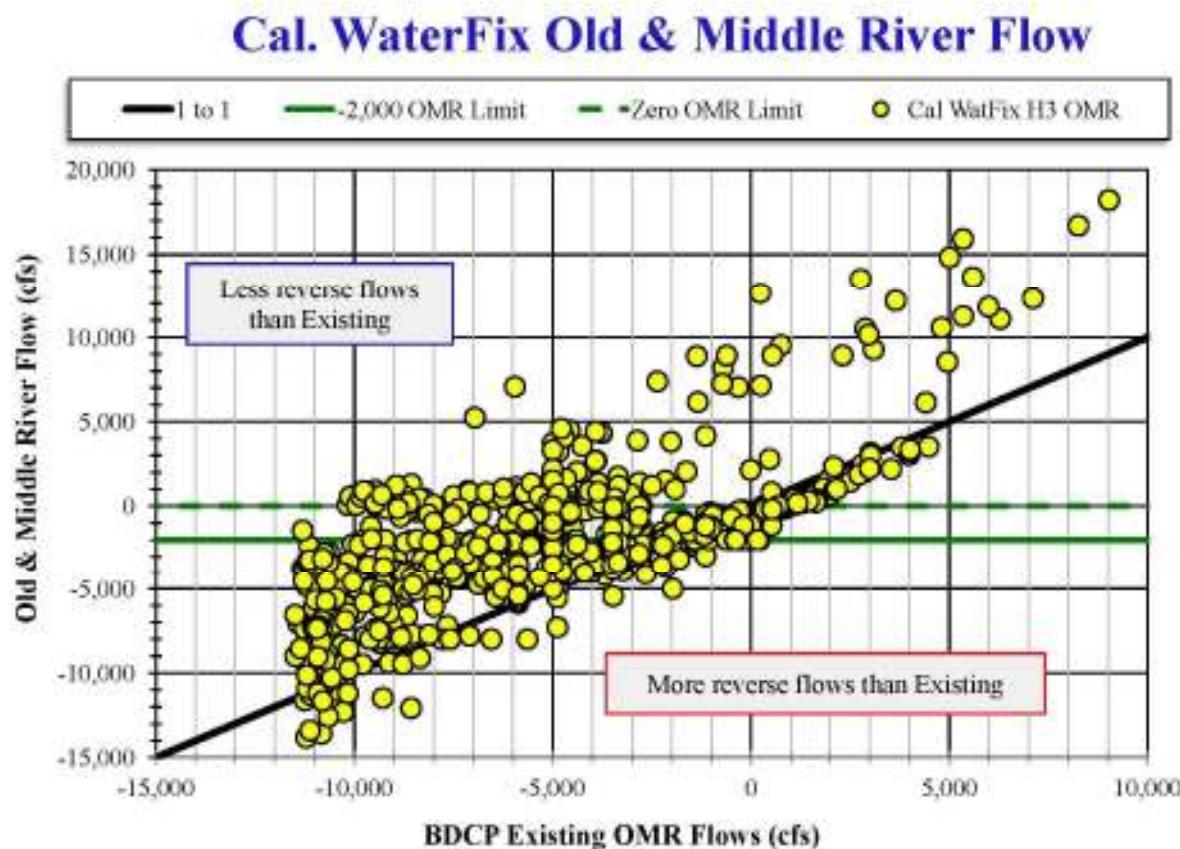


Figure 2: Old and Middle River (OMR) monthly flows for Cal. WaterFix Alternative 4A, Scenario H3, compared to monthly OMR data from the BDCP Existing Basecase. A stated benefit of the Cal. WaterFix project is to minimize reverse flows in the south Delta. With the Cal. WaterFix, reverse flows will remain in many months and in some cases get even worse. Even though there are specific months of the year when minimizing OMR is more crucial, there are resident fish in the Delta year round. Unless reverse flows are minimized in all months, the impacts of reverse flows will be redirected to other periods of the year and other Delta fish.

Mr. Tom Howard

Petition for Change of Point of Diversion submitted by DWR and Reclamation for Cal. WaterFix

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SWRCB should encourage achievement of the State's coequal goals

The County encourages the SWRCB to use this opportunity and responsibly contribute to the **achievement** of the coequals goals. In the past, the SWRCB has considered that its role is to **balance** competing beneficial uses. However, this merely perpetuates a lose-lose situation. There is no incentive for DWR to develop projects that create new water if the SWRCB approves projects that merely compete for our existing, limited water supplies. Reclamation is also required to contribute to achieving the State's coequal goals (Public Law 112-74, December 2011).

The 2009 Delta Reform Act has set a new standard for all state agencies to follow to help achieve both co-equal goals, including the inherent objectives of improving water in the Delta. The SWRCB's 2010 Delta Flow Criteria Report established the kind of flow increases and reverse flow reductions that will be necessary to achieve the ecosystem goal. The January 2014 California Water Action Plan, which the SWRCB helped develop, sets out the approach that needs to be taken to develop a sustainable solution to California's water and Bay-Delta ecosystem problems. This approach requires water use efficiency and other demand reduction actions, strengthening Delta levees, as well as new storage to capture and store "new" water, all of which will help to achieve the goal of water supply reliability.

Creating "new" water allows water to be used to increase flows and reduce Delta exports in drier months, while providing more stored water for municipal and industrial and agricultural use, especially during periods of drought. Part of this solution should also be actions to recharge depleted groundwater basins throughout the state, including rerouting flood waters to recharge areas.

The bottom line is that this WaterFix proposal does none of this, and represents a significant step backwards. It will harm the Delta ecosystem, degrade Delta water quality, impact the Delta as a Place and provide very little benefit to California's water supply reliability. It will eventually lead to a very expensive stranded asset, and hinder California's ability to develop a real, sustainable, solution to California's water issues and the effects of climate change.

Contra Costa County asks that the SWRCB take a leadership role in addressing California's water and ecosystem issues. The 9-year WaterFix process has been funded by, and, therefore, led (astray) by the export water contractors, with the lead agencies taking a subservient role.

The Petition that is being considered by the SWRCB should be sent back to DWR and Reclamation with a request that new alternatives be developed and analyzed that can capture new water and get it to new surface and groundwater storage be studied (consistent with Water Code Section 1701.3). These new alternatives need to be compatible with increased flow requirements in the Delta, consistent with the 2010 Delta Flow Criteria and the 2009 Delta Reform Act (Water Code Section 85086(c)(2)). The new alternatives must of course help achieve both coequal goals, while improving water quality in the Delta and protecting the Delta as a Place.

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Petition for Change of Point of Diversion submitted by DWR and Reclamation for Cal. WaterFix

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The SWRCB should also request that any new petition be supported by actual modeling of the proposed project, and not “sensitivity analyses” based on the flawed modeling for the BDCP Draft environmental documents. The modeling data also need to be presented as time series of monthly flows and exports and daily water quality data, and correlations between such parameters as total monthly exports and monthly-averaged Delta outflows so that the SWRCB and other regulators can fully understand how the proposed project would actually operate. For example, the Cal. WaterFix preferred alternative:

- increases exports when Delta outflows are lowest,
- assumes the Army Corps limits on inflows to Clifton Court Forebay no longer apply,
- exports more water by redefining the SWRCB’s D-1641 export/inflow limits (allowing more than 90% of total Delta inflow to be exported in many months), and
- makes reverse flows worse (more negative OMR) rather than better in some months.

None of these major flaws with the preferred alternative are easily discernible from the RDEIR/SDEIS or the modeling data presentations in the RDEIR/SDEIS.

If the SWRCB does decide to continue with the petition process, noticing of the petition and the deadline for submitting protests should be postponed until after detailed modeling of the preferred alternative has been completed and disclosed. We understand that this will not occur until a final, or preferable another revised Draft EIR/EIS, is released.

If you have any questions regarding this letter please contact me at (925) 674-7824.

Sincerely,



Ryan Hernandez

Manager

Contra Costa County Water Agency

Cc: Michael Lauffer, Chief Counsel, State Water Resources Control Board

Sally Jewell, Secretary of Interior

Estevan López, Commissioner, U.S. Bureau of Reclamation

Dan Ashe, Director, U.S. Fish and Wildlife Service

Dr. Kathryn D. Sullivan, NOAA Administrator

Gina McCarthy, Administrator, U.S. Environmental Protection Agency

John Laird, Secretary, California Natural Resources Agency

Mark Cowin, Director, California Department of Water Resources

David Murillo, Regional Director, U.S. Bureau of Reclamation

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Senator Diane Feinstein

Senator Barbara Boxer

Congressman Mark DeSaulnier

Congressman Mike Thompson

Congressman Eric Swalwell

Congressman John Garamendi

Congressman Jerry McNerney

Congressman Jared Huffman

Congresswoman Nancy Pelosi

Contra Costa County Board of Supervisors

John Kopchik, Director, Department of Conservation and Development

From: [Richard Denton](#)
Sent: Thursday, October 08, 2015 10:08 AM
To: john.laird@resources.ca.gov ; secretary@resources.ca.gov
Cc: [Karla Nemeth](mailto:Karla.Nemeth@water.ca.gov) ; Mark.Cowin@water.ca.gov ; Chuck.Bonham@wildlife.ca.gov
Subject: Major problems with WaterFix proposal

Dear Secretary Laird,

In your October 6, 2015 reply to the Congressional Representatives, you declined to extend the comment period for review of the Cal. WaterFix environmental document.

I ask instead that please you give serious consideration to immediately withdrawing the Cal. WaterFix RDEIR/SDEIS as well as the petition to the SWRCB and Clean Water Act applications.

The current California WaterFix proposal will not contribute to achieving the coequal goals or solving the serious and urgent problems of the Delta ecosystem and California's water supply reliability. Worse still WaterFix will actually hinder achievement of these coequal goals.

Allowing the export contractors to pay for the BDCP and WaterFix planning efforts has meant that a project of California-wide and national importance has only focused on what are essentially only two alternatives that would only benefit export water quality and fails to even increase export water supplies.

Because the export contractors control spending on the environmental review process, and the existing budget was pretty much spent, the RDEIR/SDEIS was released with no new modeling and only brief sensitivity analyses. As a result, the RDEIR/SDEIS is inadequate for use by decision makers such as the SWRCB, U.S. Army Corps or even the lead agencies. The Delta ISB in its latest comments on the RDEIR/SDEIS found that presentation of the impact analyses is also inadequate and hides actual impacts from decision makers. This is not what the Natural Resources Agency should be helping to support and rush through.

It is important that you, as a key decision maker, understand the serious problems with the current WaterFix proposal and the model analyses and environmental documents that were supposed to support that proposal.

A detailed analysis of the flawed RDEIR/SDEIS modeling data indicates that the project would actually increase exports during the driest months when Delta outflows are very low and the Delta ecosystem is most stressed. The modeling data also indicates that the Army Corps limits on inflows to Clifton Court would be regularly exceeded. The RDEIR/SDEIS and the Army Corps application make no mention of this. Reverse flows in the south Delta are not minimized as the public outreach claims and remain significantly reversed (OMR < -2,000 cfs) 55% of the time. The water quality impact analyses for the RDEIR/SDEIS were unexplainably performed for late long term (2060) conditions rather than early long term (2025). As a result, the greater amount of seawater intrusion (at 2060) masks the actual WaterFix impacts on water quality.

The flawed “brief sensitivity analyses” done to support the RDEIR/SDEIS still show a strong dependence on exports from the south Delta, despite the construction of very expensive new intakes in the north Delta. Strangely, a recently posted WaterFix animation proudly states that most of the exports during dry years will be from the south Delta, i.e., when the Delta is most stressed.

There are many other problems with the RDEIR/SDEIS and too much time will be wasted if you wait till the end of the comment period, and review of yet another round of comment letters, before realizing that WaterFix is way off track.

The 2009 Delta Reform Act requires that the SWRCB develop new Delta flow criteria before BDCP can be approved. Strong legal arguments in support of this statutory requirement are laid out in the September 29 letter from NRDC et al. to Tom Howard. BDCP Alternative 8 and WaterFix Alternative 4H3 demonstrate that the preferred alternative infrastructure will not be viable with these necessary increased flow requirements. Once the SWRCB sets new flow requirements, the north Delta intakes and twin tunnels would become a very expensive stranded asset.

The Natural Resources Agency and DWR must reclaim their leadership role and responsibility to protect Delta water resources and the Delta ecosystem. As outlined in the California Water Action Plan, there are more viable alternatives that need to be considered that incorporate new storage and conveyance to capture and store water during periods of high Delta flow, allow increased Delta flows in all months for fish, as well as actions to reduce water demand and increase local water supply reliability. These alternatives must be given serious consideration, and as soon as possible.

The WaterFix proposal would harm rather than improve the Delta ecosystem and fails to provide any significant increase in water supply reliability. Contrary to State and Federal statutes (2009 Delta Reform Act, Public Law 112-74), it fails to contribute to achieving either of the coequal goals.

The situation in the Delta ecosystem is dire and an effective sustainable solution is needed now. As Interior Deputy Secretary, Michael Connor, said in the September 30 press release regarding the new report on “Challenges facing the Sacramento-San Joaquin Delta,” we must adopt bold, new approaches and any necessary water infrastructure improvements should be accompanied by a portfolio of actions such as water conservation and efficiency measures, habitat improvements, and improved groundwater management and storage.

Just because the BDCP proponents have spent \$250 million on the BDCP and WaterFix planning and environmental documents, and have “put a million hours into it” (Governor Brown, May 6, 2015), does not mean that WaterFix has not gone seriously off track. The last nine years have been largely wasted, with no meaningful stakeholder participation since 2010. It is not too late to do the right thing.

It is time to acknowledge “*the emperor has no clothes*,” and invite wide-spread stakeholder involvement in developing a real solution, one that actually achieves both coequal goals. No one wants the Delta smelt or any other of the key fish species to go extinct on their watch.

Detailed graphs of the WaterFix sensitivity analysis data and other useful documents that highlight serious problems with the WaterFix proposal can be found on the SWRCB WaterFix petition page

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/early_petition_comments/

If you have any questions, please call me at (510) 339-3618.

Richard

Richard A. Denton
Richard Denton & Associates
6667 Banning Drive
Oakland, CA 94611

Natural Resources Agency Mission Statement: To restore, protect and manage the state's natural, historical and cultural resources for current and future generations using creative approaches and solutions based on science, collaboration and respect for all the communities and interests involved.

California Water Action Plan and the Cal. WaterFix

August 19, 2015

Released January 27, 2014

http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Plan.pdf

Agencies Involved

- California Natural Resources Agency
 - ❖ **Department of Water Resources**
 - ❖ **Department of Fish and Wildlife**
 - ❖ Delta Stewardship Council
- California Environmental Protection Agency
 - ❖ State Water Resources Control Board
- California Department of Food and Agriculture

Proposed Actions

1. Make Conservation a California Way of Life
2. Increase Regional Self-Reliance and Integrated Water Management Across All Levels of Government
- 3. Achieve the Co-Equal Goals for the Delta**
- 4. Protect and Restore Important Ecosystems**
5. Manage and Prepare for Dry Periods
- 6. Expand Water Storage Capacity and Improve Groundwater Management**
7. Provide Safe Water for All Communities
8. Increase Flood Protection
9. Increase Operational and Regulatory Efficiency
10. Identify Sustainable and Integrated Financing Opportunities

Water Action Plan Conclusions

- All Californians have a stake in our water future
- This is a path toward reliability, restoration, and resilience in California water.
- Must adapt to this “new normal” and recapture California’s resource management leadership and our economic and environmental resilience and reliability.
- No silver bullets or single projects that will “fix the problem.”

California Action Plan and Cal. WaterFix

August 19, 2015

Page 2

- **Must have a portfolio of actions** to comprehensively address the challenges this state faces.
- Some actions must be taken immediately to address current risks:
 - ❖ looming drought
 - ❖ inadequate safe drinking water
- Over the next five years, must address fundamental changes in our approach to water resource management and be prepared for the changes the future holds.

Cal. WaterFix Disconnect From Water Action Plan

- WaterFix lead agency DWR prepared this January 2014 Water Action Plan with help from DFW
- BDCP and WaterFix have yet to respond to numerous requests from Delta Interests, members of Congress and environmental groups to study a portfolio of actions including additional storage, water conservation, reuse and demand reduction
- DWR's Cal. WaterFix alternatives do not include these crucial Water Action Plan actions
- Water Action Plan calls for restoration of important ecosystems – WaterFix would restore minimal Delta habitat as mitigation for its adverse impacts on species– Cal. EcoRestore only restores 30,000 acres of habitat, most of which is already required to mitigate past and present impacts and is long overdue
- Delta interests have a key stake in California's water future but have not been included in development of BDCP or Cal. WaterFix, or in BDCP governance proposals

Major Problems with California WaterFix Preferred Alternative

August 19, 2015

- Fails to achieve either of the co-equal goals
 - ❖ Will only restore a minimal amount of Delta habitat in an attempt to mitigate the adverse project impacts
 - ❖ Fails to deliver any increase in water supplies
 - ❖ These are state and federal obligations under the 2009 Delta Reform Act and Public Law 112-74, respectively
- DWR and Reclamation have allowed the export water contractors to develop a flawed project design that only benefits the exporters
 - ❖ Agreed to export contractors' offer to pay because of state and federal budget crises
 - ❖ Those who pay the bills run the business
- DWR and Reclamation have failed to consider or analyze a reasonable range of alternatives
 - ❖ No programs for increased regional self-reliance, conservation, desalination, and water use efficiency.
 - ❖ No infrastructure to capture and store “new” water during periods of high Delta flow
 - ❖ No analysis of new intakes in the western Delta instead of the north Delta
 - ❖ The 17 of the 18 BDCP and Cal. WaterFix alternatives are basically the same alternative – north Delta intakes linked to south Delta export pumps by isolated conveyance
- New North Delta intakes will adversely impact key fish species by reducing inflows to the Delta and causing reverse flows – just as bad as the south Delta intakes.
- South Delta intakes will still be used for 51% of the total exports
- Significant adverse water quality impacts in the BDCP Draft EIR/EIS have been assumed away
 - ❖ Assume Emmaton compliance location will not be changed, but still intend to change it in the future (piecemealing under CEQA)
- Cal. WaterFix preferred alternative would increase exports in dry periods when Delta fish are most stressed, and would fail to capture more water when Delta flows are high

Major Problems with California Water Fix Preferred Alternative

August 19, 2015

Page 2

- No new detailed modeling has been done for the Draft REIR/SEIS despite significant changes
 - ❖ Greatly reduced ecosystem restoration so major changes in relationship between outflow and salinity
 - ❖ No longer asking for compliance location for Emmaton water quality standard to be changed
 - ❖ Relied instead on Operations and Water Quality modeling for draft BDCP EIR/EIS which contained major errors
 - ❖ Used crude sensitivity analyses based on Late Long Term (2060) studies to estimate Early Long Term (2025) impacts
 - ❖ CEQA requires, and \$15 billion cost demands, detailed modeling of each alternative
- Proposed \$15 billion Cal. WaterFix project likely be rendered obsolete once the State Water Resources Control Board adopts more stringent flow requirements to protect fish and other beneficial uses
 - ❖ Full capacity of tunnels was seldom used under BDCP operational rule assumptions
 - ❖ North Delta intakes would be used even less frequently once flow requirements and export limits are made more stringent
 - ❖ A completely different alternative, as yet ignored by the BDCP proponents, would likely prove more viable

Bottom Line

DWR and Reclamation need to step up and promote alternatives that actually achieve both coequal goals and will benefit all of California rather than merely facilitating a flawed WaterFix project being proposed and paid for by the export contractors.

Adding new storage to capture water in wet periods when it is available, and adding demand reduction and local water supply projects discussed in the California Water Action Plan (January 2014) could result in a project that meets the needs of all of California, not just the export water contractors.

The new alternative requested by the State Water Resources Control Board (RDEIR/SDEIS Appendix C, page C-1) looks like a good starting point for developing a real Delta Fix that restores and sustains the Delta and Bay ecosystem and improves California's water supply reliability.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OCT 30 2015

OFFICE OF THE
REGIONAL ADMINISTRATOR

David Murillo, Regional Director
Bureau of Reclamation, Mid-Pacific Region
2800 Cottage Way, MP-700
Sacramento, CA 95825

Subject: Supplemental Draft Environmental Impact Statement
Bay Delta Conservation Plan/California WaterFix CEQ# 20150196

Dear Mr. Murillo:

The U.S. Environmental Protection Agency has reviewed the Bay Delta Conservation Plan (BDCP)/California WaterFix Supplemental Draft EIS pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review responsibilities under Section 309 of the Clean Air Act. The San Francisco Bay/Sacramento-San Joaquin Delta is an important estuarine system, supporting over 750 species and supplying drinking water to 25 million people and irrigation water to 4 million acres of farmland.

Background

The WaterFix project evolved from the BDCP, which was proposed as a Habitat Conservation Plan (HCP) to support the issuance of a 50-year incidental take permit under Section 10 of the Endangered Species Act (ESA). A joint federal and state Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/DEIR) for the BDCP was released on December 13, 2013, with the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and Bureau of Reclamation (Reclamation) as joint federal lead agencies for the DEIS, and the California Department of Water Resources (DWR) as the State lead agency for the DEIR. The BDCP included a major habitat restoration program, targeting over 150,000 acres, as well as a proposed new conveyance facility (tunnels) to transport water from the Sacramento River to existing pumps in the South Delta.

In August 2014, the federal and State lead agencies committed to supplement/recirculate the DEIS/DEIR in response to public comments received on that document, including those submitted by EPA on August 26, 2014. In a collaborative effort to resolve the issues that we had raised, EPA met frequently with DWR and the original federal lead agencies for several months after submitting our comments on the DEIS, and we appreciate the attention given to the analysis of the proposed project's impacts on specific water quality parameters.

In April 2015, Reclamation and DWR announced fundamental changes to the proposed project and changed its name from BDCP to the California WaterFix. The WaterFix project focuses on the construction and operation of proposed new water export intakes on the Sacramento River to divert water into a proposed 40 mile twin tunnel conveyance facility. Reclamation is now the sole lead federal agency. The proposed federal action has changed from implementing a Habitat Conservation Plan under

Section 10 of the ESA to modifying operations of the federal Central Valley Project (CVP) in order to accommodate new water conveyance infrastructure.

Project Benefits

The proposed project and alternatives would provide greater water supply reliability for the users of exported Delta water and would reduce certain adverse impacts of the CVP and State Water Project (SWP) on fish. The SDEIS shows that transporting water in tunnels would reduce the risks to CVP/SWP exports in several ways. The proposed tunnel project would provide greater protection against sudden degradation of exported freshwater caused by the catastrophic failure of the earthen levees in the Delta and the consequent intrusion of saltwater that could foul supplies of water for municipal, agricultural and industrial consumption. Given the potential for earthquakes and floods in the region and the numerous earthen levees encircling the Delta islands, water supply security is a significant concern. Transporting water via tunnels would substantially address longer term threats to export water quality caused by sea level rise, with its concomitant salt water intrusion. The proposed project would also enhance CVP/SWP project flexibility by adding a northern diversion point. The current system, which relies solely on the southerly intakes, provides limited operational flexibility and at times results in reverse flows in Old and Middle Rivers which are associated with decreased survival of endangered fishes. Added flexibility would enable better real-time management of the export operations in response to observed movement of special status fish populations. Furthermore, the SDEIS predicts that flexible use of the proposed new intake facilities, combined with the establishment of biological criteria for operation, the installation of state-of-the-art fish screens, and the reduction of reverse flows in Old and Middle Rivers, would reduce the entrapment of certain fish species into poor habitats and the entrainment of fish into the CVP/SWP system. By making these physical and operational changes in the Delta, the proposed project would address some of the many identified stressors to aquatic resources in the Delta. In addition, although not part of the WaterFix project, the State of California has launched a separate EcoRestore initiative to pursue the restoration and stewardship of 30,000 acres of floodplains, riparian forests, and wetlands within the Delta over the next four years. As this significant conservation effort was not part of the SDEIS, it was not reviewed or rated as part of our NEPA review.

Project Purpose and Need

As stated in the SDEIS, the purpose and need for the WaterFix project, as was the case for the BDCP, is to advance the co-equal goals set forth in the Delta Reform Act of 2009. Those are (1) to provide a more reliable water supply for California, and (2) to protect, restore, and enhance the Delta ecosystem. EPA recognizes the crucial public health, economic, and ecological importance of both goals. The proposed project and the alternatives evaluated in the SDEIS support the water reliability component, but largely defer actions necessary to protect water quality and aquatic life to the future.

As has been discussed throughout the development of this project, the most essential decision for achieving the desired balance between water reliability and restoration of the Bay Delta ecosystem is how freshwater flows through the Delta will be managed. This key decision is not described in the SDEIS and is, instead, deferred to future regulatory processes administered by the State of California in consultation with federal resource and regulatory agencies. The decision by the State of California and Reclamation to defer these decisions means that the impacts of the WaterFix project on the Delta ecosystem cannot be fully evaluated at this time, and that any attempt to describe the environmental impacts of the project is necessarily incomplete. Once those decisions, described below, are concluded, the evaluation of possible impacts and consideration of alternatives can be completed.

Aquatic Habitat and Water Quality

As noted above, the project has been significantly revised since the initial DEIS, yet the SDEIS relies on modeling results that are based on the BDCP alternatives. Information in the SDEIS indicates that the modeling completed for the BDCP alternatives is not necessarily representative of the environmental effects resulting from the WaterFix alternatives. NMFS and FWS concluded in 2008 and 2009, respectively, that continued operation of the CVP/SWP would jeopardize the existence of delta smelt, winter-run Chinook salmon, green sturgeon and several other fish species. Even with the predictive limitations of the modeling, the SDEIS predicts a loss of valuable aquatic habitat for many fish species in the Delta and upstream tributaries due to the combined effects of the WaterFix project, CVP/SWP exports, climate change, and increased water diversions upstream of the Delta in the Sacramento River Basin. These species have experienced sharp population declines in the last decade and showed record low abundance over the last five years. Information presented in the SDEIS shows that the WaterFix project could reduce habitat conditions for delta smelt, winter-run Chinook salmon, green and white sturgeon, striped bass, and American shad, and result in a decline of longfin smelt abundance. For example, according to the SDEIS, winter-run Chinook salmon and sturgeon may be negatively impacted when migrating past new intakes, because significant volumes of freshwater flows are diverted at the intakes resulting in less water that is also of lower quality downstream of the intakes. The SDEIS also predicts that selenium concentrations in sturgeon would increase by 12-19% as a result of the proposed project, and would exceed the FWS and NMFS benchmark for adverse impacts to sensitive species.

The modeling results presented in the SDEIS show predicted exceedances of a salinity standard at both Prisoner's Point and Emmaton. The water quality modeling predicts that the Western Delta and Suisun Marsh will become saltier over time, which is likely to cause increased exceedances of chloride criteria near municipal water supply intakes. Mitigation actions are identified in the SDEIS to prevent exceedances, and the compliance history shows that salinity standards have rarely been exceeded in non-drought years. Nevertheless, if the proposed project operations contribute to a general increase in salinity in the Delta, the flexibility that Reclamation and DWR have to operate the system to ensure that water quality criteria are met will be seriously diminished, and the two agencies will have little room for error in operating the system to protect beneficial uses and achieve the co-equal goals.

While the impacts stated above may be mitigated by appropriately timed increased flows and habitat restoration, the WaterFix project does not propose additional flows in the Delta, nor does it propose significant habitat restoration (See EcoRestore above). CVP/SWP operation scenarios that propose additional outflow, such as BDCP Alternatives 7 and 8 from the DEIS, could provide substantially more water for resident and migratory fish and provide benefits to aquatic life; however, these were not evaluated as alternatives in the SDEIS.

Pending Regulatory Actions

Several pending regulatory actions are important to understanding the full impacts of the project. First, the State Water Resources Control Board (State Water Board) will be acting on Reclamation's and DWR's recent request to add points of freshwater diversion from the South Delta to the Sacramento River in the North Delta (at the northern end of the new conveyance facility). This State regulatory action is likely to include terms and conditions, including flow requirements, that could modify proposed WaterFix operations sufficiently to produce environmental and water supply effects that have not been analyzed in the SDEIS. Additionally, the State Water Board is in the midst of comprehensively updating water quality standards through the Bay Delta Water Quality Control Plan (Bay Delta WQCP). The updated standards could result in freshwater flow management provisions and corresponding changes to water supply diversions throughout the watershed that have not been analyzed

in the SDEIS. The Delta is listed as impaired for several water quality parameters under Section 303(d) of the CWA. EPA is working closely with the State Water Board to ensure that the revised standards are sufficient to address impaired water quality conditions in the Delta and reverse the declines in the fish species. The updated standards could result in altered environmental and water supply impacts that have not been analyzed in the SDEIS.

Second, ESA Section 7 consultation with FWS and NMFS regarding the construction and operation of new conveyance facilities is underway. We understand that the FWS and NMFS are not relying solely on the SDEIS for the Section 7 consultation process and that additional information is being generated to identify criteria for operating the new WaterFix facilities, to be included in the Biological Opinions and Incidental Take Permits. This information and such operating criteria could result in environmental impacts that have not been analyzed in the SDEIS.

Third, construction of WaterFix's new water intake and conveyance infrastructure would require authorization under Clean Water Act Section 404, as well as a Rivers and Harbors Act Section 14 modification of levees permit, from the U.S. Army Corps of Engineers. Water quality and aquatic life analyses in the SDEIS show that the proposed project may cause or contribute to violations of state water quality standards and significant degradation of waters of the U.S.; therefore, additional avoidance and minimization of environmental impacts and/or compensatory mitigation may be necessary in order to comply with CWA Section 404. It is also likely that additional information and analysis not included in the SDEIS will be required to support those permit decisions and that information and analysis will better inform the overall evaluation.

All of the above listed regulatory processes will develop new data and likely new compliance requirements beyond those provided in the SDEIS. EPA understands that these as yet incomplete regulatory requirements will be addressed through the pending actions by the State Water Resources Control Board, FWS, NMFS, and Corps of Engineers. These key decisions, and the analysis that will support them, are not yet done. Our statutory responsibility is to review the NEPA document that is in front of us at this time, however, the reality is that these future regulatory processes will have an important bearing on the project. Because these subsequent regulatory processes are likely to generate real world operational scenarios that are significantly different from the operations proposed in the SDEIS, the information is not yet available to reach definitive conclusions concerning the environmental impacts of the proposed project.

The tunnels that are discussed in detail in this draft NEPA document are an important improvement for water reliability, but the choices that will affect the operation of the tunnels, and thus the overall impacts of the project, will not be made until future regulatory actions are completed. These future decisions will supply the missing pieces necessary to determine the environmental impact of the entire project. The unusual circumstances of this project mean that the information is not yet available for a complete evaluation of environmental impacts – and for that reason a rating of “3” (*Inadequate*) for the SDEIS is required – but EPA expects that the project will continue to move forward, with those necessary additional pieces to be supplied as the later regulatory processes proceed. Under the unique circumstances of this case, the additional data, analysis and public input associated with these future regulatory processes are expected to provide the needed supplemental information to allow a full review of the environmental impacts without requiring another draft supplemental EIS. EPA will have the opportunity to support Reclamation, other federal agencies, and the State of California as they collectively continue to define an environmentally sound and effective project that would operate in a manner that simultaneously supports water supply reliability and enhances the Delta’s ecosystem. EPA

believes that the upcoming actions by USFWS, NMFS, the State Water Board, and the Corps of Engineers will be critical next steps in the design and review of the project, and EPA looks forward to continuing to work with these agencies as the project moves forward.

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,



A handwritten signature in black ink, appearing to read "Jared Blumenfeld".

Jared Blumenfeld



EDMUND G. BROWN JR.
GOVERNOR



MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

October 30, 2015

BDCP/California WaterFix Comments

P.O. Box 1919
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Comments on the Bay Delta Conservation Plan/California WaterFix Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS)

The State Water Resources Control Board (State Water Board) and the Central Valley and San Francisco Bay Regional Water Quality Control Boards (Regional Water Boards) (collectively Water Boards) appreciate the opportunity to comment on the public draft of the Bay Delta Conservation Plan/California WaterFix (BDCP/Cal WaterFix) Partially Recirculated Draft Environmental Impact Report/Environmental Impact Statement (RDEIR/EIS).

The mission of the Water Boards is to preserve, enhance, and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. The State Water Board administers water rights in California including water rights for the Department of Water Resources' (DWR) State Water Project (SWP) and the U.S. Bureau of Reclamation's (USBR) Central Valley Project (CVP). The Water Boards also have primary authority over the protection of California's water quality. The BDCP/Cal WaterFix will require both water right and water quality approvals from the Water Boards. Accordingly, the Water Boards are responsible agencies for the project pursuant to the California Environmental Quality Act (CEQA). Specifically, activities that may require approval by the Water Boards include, changes to the SWP's and CVP's points of diversion of water and other provisions of their water rights, water quality certifications pursuant to Clean Water Act section 401, National Pollutant Discharge Elimination System permits, and potentially other water quality approvals. The State Water Board has received and is currently processing the water right change petition and the water quality certification for the Cal WaterFix, the current preferred project. The RDEIR/EIS and Final EIR/EIS will inform these processes.

In our role as responsible agencies, the Water Boards previously reviewed and provided comments on the Notices of Preparation, administrative and public draft EIR/EISs, and provided other written and oral input over the course of the BDCP/Cal WaterFix development process. To the extent that previous comments from the Water Boards have not been fully addressed, they are incorporated by reference in this comment letter and are not reiterated. In addition, as discussed in the Water Boards' previous comment letters, additional information may be needed to support Water Board approvals beyond what is included in the above documents. Following are specific comments on the RDEIR/EIS.

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

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Optimization of Alternatives

As noted previously, only the preferred alternative for this project has been optimized to enhance the performance of the alternative for environmental and water supply purposes. The lack of optimization of the other alternatives should be noted and where possible addressed. For example, only Alternative 4A is modeled using the current Emmaton salinity compliance point while the other alternatives use a Threemile Slough compliance point. Additionally, while Cal WaterFix-specific alternatives 2D and 5A represent high and low levels of construction and infrastructure impacts, no alternative was proposed that would optimize operational conditions for environmental purposes. To illustrate that there is additional potential for providing environmental benefits without impacting cold water pool resources and compliance with water quality requirements, the State Water Board requested that a scenario that increases Delta outflows without impacting cold water pools be evaluated. This scenario illustrates that more outflow can be provided without impacting cold water pools. However, given the limited time for this scenario analysis, it was also not optimized or developed into an alternative.

Continued Involvement of the Water Boards

The descriptions of the various alternatives provides that flow requirements and other operational requirements may be set and modified during interim operations under the decision tree process, during initial operations after the north Delta diversions begin, during the Real-Time Operational Decision-Making Process, during ad hoc adaptive management actions, and within the context of a formal Adaptive Management and Monitoring Program. The document does not describe a role for the State Water Board, but the State Water Board will have a role in these decision-making processes, and may establish additional requirements through its water right authorities.

Water Transfer Assumptions The assumptions for potential water transfers that may occur due to the BDCP/Cal WaterFix should be reconsidered in the context of the current drought. The analysis should consider that the magnitude of transfers and other water exchanges that did or could have occurred in the drought would occur more often if there were more pumping capacity under the BDCP/Cal WaterFix.

Assumptions for Water Demand and Reliability

The Cal WaterFix baseline No Action Alternative (NAA)-2025 assumes increased north of Delta diversions of approximately 483 thousand acre-feet (TAF)/year and maximum contract amounts for SWP south of Delta municipal and industrial demands regardless of hydrological conditions without the project. The magnitude of those assumed demands is unlikely to be realized by 2025, and to some degree may occur because of the additional water supply reliability provided by the Cal WaterFix. To the extent that the magnitude of these factors is caused by the Cal WaterFix or the assumptions are simply too large, the effects of action alternative such as Alternative 4A will be underestimated and masked. These assumptions should be revisited.

Uncertainty and Scenario Analysis vs. Prediction of Outcome

The level of uncertainty associated with the modeling should be clearly articulated in the impacts analysis. There is a large degree of uncertainty regarding the exact effects of the project due to a number of factors. However, this is not always clear in the RDEIR/EIS. The effects analysis frequently does not follow the guidelines for use of output from physical and biological models. Generally, those issues arise either when a particular analysis fails to distinguish between modeling as a decision support tool versus modeling to establish predictive

point values or when the analysis rescales physical model output from a monthly time step to a daily or hourly time step for input to biological models. The comparative analysis approach should have been applied for every analysis.

Downstream Water Quality, Noncovered Fish, and Natural Communities

Downstream effects of the alternatives on Suisun Bay, Carquinez Straight, San Pablo Bay, and San Francisco Bay should be further analyzed and the methods used in the analyses should be consistent with accepted methods that have been used to model and measure the effects of changing water export timing, volume, and rate on salinity, water quality, and aquatic and terrestrial biological resources throughout the entire Bay-Delta ecosystem. The effects analysis conclusion that the change in Delta outflow under either Alternative 4 or Alternative 4A would have no measureable effect on San Francisco Bay salinity because the change would be two to three orders of magnitude lower than the tidal flow mischaracterizes the bidirectional flow of the tides and the unidirectional Delta outflow. Neither quantitative nor qualitative model results were provided to support the conclusion. The UnTrim model was developed specifically to conduct this type of analysis and was extensively used in the BDCP/Cal Water Fix analyses of water quality and X2.

Stockton Ship Channel Aeration Continued Funding

The staff report for the low dissolved oxygen Total Maximum Daily Load (TMDL) in the Stockton Ship Channel identified three causes for the impairment. One of these was the magnitude of San Joaquin River flow entering the channel. Alternative 4, the original preferred BDCP alternative, included Conservation Measure 14. Conservation Measure 14 committed to contribute funding to maintain and operate the experimental aeration device as mitigation for altering San Joaquin River flow. Alternatives 4A, 2D and 5A, while continuing to manipulate channel flow in a manner similar to Alternative 4, no longer includes a commitment to share in the cost of aeration. The RDEIR/EIS justifies this decision by noting that the impact of the project is less than significant because of the aerator. The aerator is being funded on a voluntary basis by others and may not be present in the future should they decide to stop contributing funds. If this occurs, then the lack of oxygen in the channel could again block the fall return of upstream migrating adult chinook salmon. We recommend that all alternatives commit to contributing funding for continued aeration or other measures to address any impacts of the project on dissolved oxygen conditions.

Cache Creek Settling Basin Improvements

The Water Boards understand that the BDCP Alternative 4 that includes habitat conservation measures beyond the mitigation needed for the Cal WaterFix is no longer the preferred project in the RDEIR/EIS. However, to the extent that this and other BDCP alternatives are still evaluated and may carry over into the EcoRestore effort, the Water Boards recommend that commitments to improve the Cache Creek Settling Basin be made to mitigate for expected increases in mercury fish tissue concentrations from restoration efforts. The Delta Methyl Mercury TMDL report estimated that 56 percent of all inorganic mercury loads entering the Delta came from the Cache Creek drainage. Half of this load is trapped in the Cache Creek Settling Basin while the rest is exported to the Yolo Bypass and downstream Delta. The Methyl Mercury TMDL Control Program recommended that improvements be made to the Cache Creek Settling Basin to increase the trapping efficiency and decrease mercury exports.

- 4 -

Thank you for the opportunity to comment on the RDEIR/EIS. If you have any questions concerning this matter, please contact me at diane.riddle@waterboards.ca.gov or (916) 341-5297.

Sincerely,

ORIGINAL SIGNED BY

Diane Riddle
Environmental Program Manager



Delta Independent Science Board

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Chair
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September 30, 2015

Chair Elect
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To: Randy Fiorini, Chair, Delta Stewardship Council
Charlton Bonham, Director, California Department
of Fish and Wildlife

Past Chair
Tracy Collier, Ph.D.

From: Delta Independent Science Board

Members
Brian Atwater, Ph.D.
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Harindra Fernando, Ph.D.
Richard Norgaard, Ph.D.
Vincent Resh, Ph.D.
John Wiens, Ph.D.
Joy Zedler, Ph.D.

Subject: Review of environmental documents for California WaterFix

We have reviewed the partially Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement for the Bay Delta Conservation Plan/California WaterFix (herein, "the Current Draft"). We focused on how fully and effectively it considers and communicates the scientific foundations for assessing the environmental impacts of water conveyance alternatives. The review is attached and is summarized below.

The Current Draft contains a wealth of information but lacks completeness and clarity in applying science to far-reaching policy decisions. It defers essential material to the Final EIR/EIS and retains a number of deficiencies from the Bay Delta Conservation Plan Draft EIR/EIS. The missing content includes:

1. Details about the adaptive-management process, collaborative science, monitoring, and the resources that these efforts will require;
2. Due regard for several aspects of habitat restoration: landscape scale, timing, long-term monitoring, and the strategy of avoiding damage to existing wetlands;
3. Analyses of how levee failures would affect water operations and how the implemented project would affect the economics of levee maintenance;
4. Sufficient attention to linkages among species, landscapes, and management actions; effects of climate change on water resources; effects of the proposed project on San Joaquin Valley agriculture; and uncertainties and their consequences;
5. Informative summaries, in words, tables, and graphs, that compare the proposed alternatives and their principal environmental and economic impacts.

The effects of California WaterFix extend beyond water conveyance to habitat restoration and levee maintenance. These interdependent issues of statewide importance warrant an environmental impact assessment that is more complete, comprehensive, and comprehensible than the Current Draft.

**Review by the Delta Independent Science Board of the
Bay Delta Conservation Plan/California WaterFix
Partially Recirculated Draft Environmental Impact Report/
Supplemental Draft Environmental Impact Statement**

September 30, 2015

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EXPECTATIONS FOR IMPACT ASSESSMENT OF CALIFORNIA WATERFIX

The Sacramento – San Joaquin Delta presents interconnected issues of water, biological resources, habitat, and levees. Dealing with any one of these problem areas is most usefully considered in light of how it may affect and be affected by the others. The effects of any actions further interact with climate change, sea-level rise, and a host of social, political, and economic factors. The consequences are of statewide importance.

These circumstances demand that the California WaterFix EIR/EIS go beyond legal compliance. This EIR/EIS is more than just one of many required reports. Its paramount importance is illustrated by the legal mandate that singles it out as the BDCP document we must review.

It follows that the WaterFix EIR/EIS requires extraordinary completeness and clarity. This EIR/EIS must be uncommonly complete in assessing important environmental impacts, even if that means going beyond what is legally required or considering what some may deem speculative (below, p. 4). Further, the WaterFix EIR/EIS must be exceptionally clear about the scientific and comparative aspects of both environmental impacts and project performance (p. 9).

These reasonable expectations go largely unmet in the Bay Delta Conservation Plan/California WaterFix Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement Draft (herein, “the Current Draft”). We do not attempt to determine whether this report fulfills the letter of the law. But we find the Current Draft sufficiently incomplete and opaque to deter its evaluation and use by decision-makers, resource managers, scientists, and the broader public.

BACKGROUND OF THIS REVIEW

The Delta Reform Act of 2009, in §85320(c), directs the Delta Independent Science Board (Delta ISB) to review the environmental impact report of the Bay Delta Conservation Plan (BDCP) and to provide the review to the Delta Stewardship Council and the California Department of Fish and Wildlife. On May 14, 2014, we submitted our review of the BDCP’s Draft Environmental Impact Report/Draft Environmental Impact Statement (herein, the “Previous Draft”), which had been posted for review on December 9, 2013. This review¹ contained three main parts: an extended summary, detailed responses to charge questions from the Delta Stewardship Council, and reviews of individual chapters. Although the Previous Draft considered vast amounts of scientific information and analyses to assess the myriad potential environmental impacts of the many proposed BDCP actions, we concluded that the science in the Previous Draft had significant gaps, given the scope and importance of the BDCP.

The proposed BDCP actions have now been partitioned into two separate efforts: water conveyance under California WaterFix² and habitat restoration under California EcoRestore³. Environmental documents in support of California WaterFix (the Current Draft) were made available for a 120-day comment period that began July 10, 2015. The Current Draft focuses on three new alternatives for conveying Sacramento River water through the Sacramento – San

¹ <http://deltacouncil.ca.gov/sites/default/files/documents/files/Attachment-1-Final-BDCP-comments.pdf>

² <http://www.californiawaterfix.com/>

³ <http://resources.ca.gov/ecorestore/>

Joaquin Delta. One of them, Alternative 4A, is the preferred alternative, identified as California WaterFix.

The Delta Stewardship Council asked us to review the Current Draft and to provide our comments by the end of September 2015. We are doing so through this report and its summary, which can be found in the cover letter.

The review began in July 2015 with a preliminary briefing from Laura King-Moon of California Department of Water Resources (three Delta ISB members present). The Delta ISB next considered the Current Draft in a public meeting on August 13–14 (nine of the ten members present)⁴. The meeting included a briefing on California EcoRestore by David Okita of California Natural Resources Agency and a discussion of the Current Draft and California WaterFix with Cassandra Enos-Nobriga of California Department of Water Resources (DWR) and Steve Centerwall of ICF International.

The initial public draft of this review was based on our study of Sections 1-4 of the Current Draft and on checks of most resource chapters in its Appendix A. This public draft was the subject of a September 16 meeting that included further discussions with Cassandra Enos-Nobriga⁵ and comments from Dan Ray of the Delta Stewardship Council staff. Additional comments on that initial draft were provided by DWR in a September 21 letter to the Delta ISB chair⁶. These discussions and comments helped clarify several issues, particularly on expectations of a WaterFix EIR/EIS.

This final version of the review begins with a summary in the cover letter. The body of the report continues first with a section on our understanding of major differences between the BDCP and California WaterFix. Next, after noting examples of improvement in the Current Draft, we describe our main concerns about the current impact assessments. These overlap with main concerns about the Previous Draft, which we revisit to consider how they are addressed in the Current Draft. Finally, we offer specific comments on several major Sections and Chapters.

DIFFERENCES BETWEEN THE BDCP AND CALIFORNIA WATERFIX

The project proposed in the Current Draft differs in significant respects from what was proposed as the BDCP in December 2013. Here we briefly state our understanding of some main differences and comment on their roles on this review:

- The time period for permitting incidental take under Section 7 of the federal Endangered Species Act (ESA) and Section 2081(b) of the California Endangered Species Act (CESA) is substantially less than the 50 years envisioned as part of a Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) in BDCP. As a result, the science associated with many impacts of climate change and sea-level rise may seem less relevant. The permitting period for the project proposed in the Current Draft remains in place unless environmental baseline conditions change substantially or other permit requirements are not met. Consequently, long-term effects of the proposed project remain important in terms of operations and expected benefits (p. 8).

⁴ <http://deltacouncil.ca.gov/docs/delta-isb-meeting-notice-meeting-notice-delta-isb/delta-independent-science-board-isb-august-13>

⁵ Written version at https://s3.amazonaws.com/californiawater/pdfs/63qnf_Delta_ISB_draft_statement_-_Enos_FINAL.pdf

⁶ <http://deltacouncil.ca.gov/docs/response-letter-dwr>

- In this shortened time frame, responsibility for assessing WaterFix's effects on fish and wildlife would fall to resource agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife). Other impacts would be regulated by a variety of federal and state agencies (Current Draft Section 1).
- The proposed habitat restorations have been scaled back. The Current Draft incorporates elements of 11 Conservation Measures from BDCP to mitigate impacts of construction and operations. Most habitat restoration included in the Previous Draft has been shifted to California EcoRestore. Our review of the Previous Draft contained many comments on the timing of restoration, species interactions, ecological linkages of conservation areas, locations of restoration areas and the science supporting the efficiency and uncertainty of effective restoration. Some of these comments apply less to the Current Draft because of its narrower focus on water conveyance.
- There remains an expected reliance on cooperative science and adaptive management during and after construction.
- It is our understanding that the Current Draft was prepared under rules that disallow scientific methods beyond those used in the Previous Draft. The rules do allow new analyses, however. For example, we noticed evidence of further analyses of contaminants, application of existing methods (e.g. particle tracking) to additional species (e.g., some of the non-covered species), and occasional selection of one model in place of the combined results of two models (e.g., fish life cycle models SALMOD and SacEFT).

IMPROVEMENTS ON THE PREVIOUS DRAFT

A proposed revamping of water conveyance through the Sacramento-San Joaquin Delta involves a multitude of diverse impacts within and outside of the Delta. Unavoidably, the EIR/EIS for such a project will be complex and voluminous, and preparing it becomes a daunting task in its own right. The inherent challenges include highlighting, in a revised EIR/EIS, the most important of the changes.

The new Sections 1 through 4 go a long way toward meeting some of these challenges. Section 1 spells out the regulatory context by discussing laws and agencies that establish the context for the Current Draft. Section 2 summarizes how the Previous Draft was revised in response to project changes and public input. Section 3 describes how the preferred alternative in the Previous Draft (Alternative 4) has been changed. Section 4 presents an impressive amount of detailed information in assessing the sources of habitat loss for various species and discussing how restoration and protection can mitigate those losses. Generally comprehensive lists of "Resource Restoration and Performance Principles" are given for the biological resources that might be affected by construction or operations. For example, page 4.3.8-140 clearly describes a series of measures to be undertaken to minimize the take of sandhill cranes by transmission lines (although the effectiveness of these measures is yet to be determined).

Section 4 also contains improvements on collaborative science (4.1.2.4, mostly reiterated in ES.4.2). This part of the Current Draft draws on recent progress toward collaborative efforts in monitoring and synthesis in support of adaptive management in the Delta. The text identifies the main entities to be involved in an expected memorandum of agreement on a monitoring and adaptive-management program in support of the proposed project.

Appendix A describes revisions to the resource chapters of the Previous Draft. Track-changed versions of the chapters simplify the review process, although this was not done for the

key chapter on aquatic resources (p. 17). We noticed enhanced analyses of contaminants and application of methods such as particle tracking to additional species, including some of the non-covered taxa; a detailed treatment of *Microcystis* blooms and toxicity; more information about disinfection byproducts; improved discussion of vector control arising from construction and operational activities; and revised depiction of surficial geology. Potential exposure of biota to selenium and methylmercury is now considered in greater detail. Evaluations will be conducted for restoration sites on a site-specific basis; if high levels of contaminants cannot otherwise be addressed, alternative restoration sites will be considered (page 4.3.8-118). Incidentally, this is a good example of adaptive management, although it is not highlighted as such. Explanations were provided for why the nitrogen-to-phosphorus ratio was not specifically evaluated, why dissolved vs. total phosphorus was used in the assessment, and how upgrades to the Sacramento Regional Wastewater Treatment Plant would eventually affect phosphorus concentrations.

CURRENT CONCERNS

These and other strengths of the Current Draft are outweighed by several overarching weaknesses: overall incompleteness through deferral of content to the Final EIR/EIS (herein, "the Final Report"); specific incompleteness in treatment of adaptive management, habitat restoration, levees, and long-term effects; and inadequacies in presentation. Some of these concerns overlap with ones we raised in reviewing the Previous Draft (revisited below, beginning on p. 10).

Missing content

The Current Draft lacks key information, analyses, summaries, and comparisons. The missing content is needed for evaluation of the science that underpins the proposed project. Accordingly, the Current Draft fails to adequately inform weighty decisions about public policy. The missing content includes:

1. Details on adaptive management and collaborative science (below, p. 5).
2. Modeling how levee failures would affect operation of dual-conveyance systems (below, p. 7). Steve Centerwall told us on August 14 that modeling of the effects of levee failure would be presented in the Final Report.
3. Analysis of whether operation of the proposed conveyance would alter the economics of levee maintenance (below, p. 7).
4. Analyses of the effects of climate change on expected water exports from the Delta. "[A]n explanation and analysis describing potential scenarios for future SWP/CVP system operations and uncertainties [related to climate change] will be provided in the Final Report" (p. 1-35 of the Current Draft).
5. Potential impacts of climate change on system operations, even during the shortened time period emphasized in the Current Draft (below, p. 8 and 11).
6. Potential effects of changes in operations of the State Water Project (SWP) and Central Valley Project (CVP), or other changes in water availability, on agricultural practices in the San Joaquin Valley (p. 12).
7. Concise summaries integrated with informative graphics (below, p. 9 and 13). The Current Draft states that comparisons of alternatives will be summarized in the Final Report (p. 1-35).

While some of the missing content has been deferred to the Final Report (examples 2, 4, and 7), other gaps have been rationalized by deeming impacts "too speculative" for assessment.

CEQA guidance directs agencies to avoid speculation in preparing an EIR/EIS⁷. To speculate, however, is to have so little knowledge that a finding must be based on conjecture or guesswork. Ignorance to this degree does not apply to potential impacts of WaterFix on levee maintenance (example 3; see p. 7) or on San Joaquin Valley agriculture (example 6; p. 12).

Even if content now lacking would go beyond what is legally required for an EIR/EIS, providing such content could assist scientists, decision-makers, and the public in evaluating California WaterFix and Delta problems of statewide importance (above, p. 1).

Adaptive management

The guidelines for an EIR/EIS do not specifically call for an adaptive-management plan (or even for adaptive management). However, if the project is to be consistent with the Delta Plan (as legally mandated), adaptive management should be part of the design.

The Current Draft relies on adaptive management to address uncertainties in the proposed project, especially in relation to water operations. The development of the Current Draft from the Previous Draft is itself an exercise in adaptive management, using new information to revise a project during the planning stage. Yet adaptive management continues to be considered largely in terms of how it is to be organized (i.e., coordinated with other existing or proposed adaptive-management collaborations) rather than how it is to be done (i.e., the process of adaptive management). Adaptive management should be integral with planned actions and management—the Plan A rather than a Plan B to be added later if conditions warrant. The lack of a substantive treatment of adaptive management in the Current Draft indicates that it is not considered a high priority or the proposers have been unable to develop a substantive idea of how adaptive management would work for the project.

There is a very general and brief mention of the steps in the adaptive management process in Section 4 (p. 4.1-6 to 4.1-7), but nothing more about the process. We were not looking here for a primer on adaptive management. Rather, we expected to find serious consideration of barriers and constraints that have impeded implementation of adaptive management in the Delta and elsewhere (which are detailed in the Delta Plan), along with lessons learned on how adaptive management can be conducted overcome these problems.

The Current Draft contains general statements on how collaborative science and adaptive management under California WaterFix would be linked with the Delta Collaborative Science and Adaptive Management Program (CSAMP) and the Collaborative Adaptive Management Team (CAMT). These efforts, however, have taken place in the context of regulations and permits, such as biological opinions and biological assessments required under the Endangered Species Act. We did not find examples of how adaptive management would be applied to assessing—and finding ways to reduce—the environmental impacts of project construction and operations.

Project construction, mitigation, and operations provide many opportunities for adaptive management, both for the benefit of the project as well as for other Delta habitat and ecosystem initiatives, such as EcoRestore. To be effective in addressing unexpected outcomes and the need for mid-course corrections, an adaptive-management management team should evaluate a broad range of actions and their consequences from the beginning, as plans are being developed, to facilitate the early implementation and effectiveness of mitigation activities.

⁷ https://s3.amazonaws.com/californiawater/pdfs/bo0lx_Delta_ISB_Draft_Statement_&_Response_Letter_-Enos - FINAL.pdf

The Current Draft defers details on how adaptive management will be made to work: “An adaptive management and monitoring program will be implemented to develop additional scientific information during the course of project construction and operations to inform and improve conveyance facility operational limits and criteria” (p. ES-17). This is too late. If adaptive management and monitoring are central to California WaterFix, then details of how they will be done and resourced should be developed at the outset (now) so they can be better reviewed, improved, and integrated into related Delta activities. The details could include setting species-specific thresholds and timelines for action, creating a Delta Adaptive Management Team, and capitalizing on unplanned experiments such as the current drought⁸. Illustrative examples could use specific scenarios with target thresholds, decision points, and alternatives. The missing details also include commitments and funding needed for science-based adaptive management and restoration to be developed and, more importantly, to be effective.

The protracted development of the BDCP and its successors has provided ample time for an adaptive-management plan to be fleshed out. The Current Draft does little more than promise that collaborations will occur and that adaptive management will be implemented. This level of assurance contrasts with the central role of adaptive management in the Delta Plan and with the need to manage adaptively as climate continues to change and new contingencies arise.

Restoration as mitigation

Restoration projects should not be planned and implemented as single, stand-alone projects but must be considered in a broader, landscape context. We highlighted the landscape scale in our review of the Previous Draft and also in an earlier review of habitat restoration in the Delta⁹. A landscape approach applies not just to projects that are part of EcoRestore, but also to projects envisioned as mitigation in the Current Draft, even though the amount of habitat restoration included (as mitigation) in the Current Draft has been greatly reduced. On August 13 and 14, representatives of WaterFix and EcoRestore acknowledged the importance of the landscape scale, but the Current Draft gives it little attention. Simply because the CEQA and NEPA guidelines do not specifically call for landscape-level analyses is not a sufficient reason to ignore them.

Wetland restoration is presented as a key element of mitigation of significant impacts (example below in comments on Chapter 12, which begin on p. 18). We noticed little attention to the sequence required for assessing potential impacts to wetlands: first, avoid wetland loss; second, if wetland loss cannot be avoided, minimize losses; and third, if avoidance or minimization of wetland loss is not feasible, compensate. Much of the emphasis in the Current Draft is on the third element. Sequencing apparently will be addressed as part of the permitting process with the US Army Corps of Engineers (USACE) for mitigation related to the discharge of dredged or fill material.¹⁰ However, it is difficult to evaluate the impacts on wetlands in advance of a clarification of sequencing and criteria for feasibility.

Mitigation ratios

Restoring a former wetland or a highly degraded wetland is preferable to creating wetlands from uplands¹¹. When an existing wetland is restored, however, there is no net gain of

⁸ <http://deltacouncil.ca.gov/docs/adaptive-management-report-v-8>

⁹ <http://deltacouncil.ca.gov/sites/default/files/documents/files/HABITAT%20RESTORATION%20REVIEW%20FINAL.pdf>

¹⁰ Letter from Cassandra Enos-Nobriga, DWR, September 21, 2015.

¹¹ <http://www.nap.edu/openbook.php?isbn=0309074320>

area, so it is unclear whether credits for improving existing wetlands would be considered equivalent to creating wetlands where they did not recently exist.

In view of inevitable shortcomings and time delays in wetland restorations, mitigation ratios should exceed 1:1 for enhancement of existing wetlands. The ratios should be presented, rather than making vague commitments such as “restore or create 37 acres of tidal wetland....” The Final Draft also needs to clarify how much of the wetland restoration is out-of-kind and how much is in-kind replacement of losses. It should examine whether enough tidal area exists of similar tidal amplitude for in-kind replacement of tidal wetlands, and whether such areas will exist with future sea-level rise. We agree that out-of-kind mitigation can be preferable to in-kind when the trade-offs are known and quantified and mitigation is conducted within a watershed context, as described in USACE’s 2010 guidance for compensatory wetland mitigation.¹² Since then, many science-based approaches have been developed to aid decision-making at watershed scales, including the 2014 Watershed Approach Handbook produced by the Environmental Law Institute and The Nature Conservancy¹³.

Restoration timing and funding

To reduce uncertainty about outcomes, allow for beneficial and economical adaptive management, and allow investigators to clarify benefits before the full impacts occur, mitigation actions should be initiated as early as possible. Mitigation banks are mentioned, but are any operational or planned for operation soon? The potential for landowners to develop mitigation banks could be encouraged so restoration could begin immediately, engendering better use of local knowledge, financial profit, and local support for the project. We are told that the timing of mitigation will be coordinated with other review processes that are currently ongoing.⁶

Levees

A comprehensive assessment of environmental impacts should relate California WaterFix to levee failure by examining the consequences each may have for the other. The interplay between conveyance and levees is receiving additional attention through the Delta Levee Investment Strategy.

On the one hand, the Current Draft fails to consider how levee failures would affect the short-term and long-term water operations spelled out in Table 4.1-2. A rough estimate was proposed under the Delta Risk Management Study¹⁴ and another is part of a cost-benefit analysis for the BDPCP¹⁵. The Final Report should provide analyses that incorporate these estimates.

On the other hand, the Current Draft also fails to consider how implementing the project would affect the basis for setting the State’s priorities in supporting Delta levee maintenance. This potential impact is illustrated by a recent scoring system of levee-project proposals that awards points for expected benefits to “export water supply reliability”¹⁶. Further efforts to quantify these benefits have been recommended as part of a comprehensive risk assessment that

¹² http://www.sac.usace.army.mil/Portals/43/docs/regulatory/Guidelines_for_Preparing_a_Compensatory_Mitigation_Planf.pdf

¹³ https://www.eli.org/sites/default/files/eli-pubs/watershed-approach-handbook-improving-outcomes-and-increasing-benefits-associated-wetland-and-stream_0.pdf

¹⁴ http://www.water.ca.gov/floodmgmt/dsmo/sab/drmsp/docs/Delta_Seismic_Risk_Report.pdf

¹⁵ http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Draft_BDPCP_Statewide_Economic_Impact_Report_8513.sflb.ashx

¹⁶ http://www.water.ca.gov/floodsafe/fessro/docs/special_PSP14_final.pdf

would guide the Delta Levees Investment Strategy¹⁷. Public safety, a focus of the Delta Flood Emergency Management Plan,¹⁸ is just one asset that levees protect. The Current Draft does not evaluate how the proposed project may affect estimates of the assets that the levees protect.

The Current Draft cites levee fragility mainly as a reason to build isolated conveyance for Sacramento River water (examples, p. 1-1, 1-7, 1-9). In a similar vein, the California WaterFix website states, “Aging dirt levees are all that protect most of California’s water supplies from the affects [sic] of climate change. Rising sea levels, intense storms, and floods could all cause these levees to fail, which would contaminate our fresh water with salt, and disrupt water service to 25 million Californians”¹⁹. Neither the Previous Draft nor the Current Draft, however, provides a resource chapter about Delta levees. Such a chapter would be an excellent place to examine interacting impacts of conveyance and levees.

Long-term effects

With the shortened time period, several potential long-term impacts of or on the proposed project no longer receive attention. While these effects may not become problematic during the initial permit period, many are likely to affect project operations and their capacity to deliver benefits over the long operational life of the proposed conveyance facilities. In our view, consideration of these long-term effects should be part of the evaluation of the science foundation of the proposed project.

The No-Action alternative establishes the baseline for evaluating impacts and benefits of the proposed alternative(s). It is therefore important to consider carefully how the baseline is established, as this can determine whether particular consequences of the alternatives have costs or benefits. Climate change, for example, is considered under the No-Action alternative in the Current Draft, as is sea-level rise. Climate change is expected to reduce water availability for the proposed northern intakes, and both climate change and sea-level rise are expected to influence tidal energy and salinity intrusion within the Delta²⁰. Changes in water temperature may influence the condition of fishes that are highly temperature-dependent in the current analyses. These environmental effects, in turn, are likely to influence environmental management and regulation; from the standpoint of water quality they may even yield environmental benefits if agricultural acreage decreases and agricultural impacts are reduced.

Rather than consider such effects, however, the Current Draft focuses on how the proposed project would affect “the Delta’s resiliency and adaptability to expected climate change” (Current Draft section 4.3.25). Quite apart from the fact that “resiliency” and “adaptability” are scarcely operational terms, the failure to consider how climate change and sea-level rise could affect the outcomes of the proposed project is a concern that carries over from our 2014 review and is accentuated by the current drought (below, p. 11).

The Current Draft states that “Groundwater resources are not anticipated to be substantially affected in the Delta Region under the No Action Alternative (ELT) because surface water inflows to this area are sufficient to satisfy most of the agricultural, industrial, and municipal water supply needs” (p. 4.2-16). This conclusion is built on questionable assumptions; the current drought illustrates how agriculture turns to groundwater when surface-water availability diminishes. Groundwater regulation under the recently enacted Sustainable

¹⁷ <http://deltacouncil.ca.gov/docs/delta-levee-investment-strategy/dlis-peer-review-technical-memorandum-31>

¹⁸ <http://www.water.ca.gov/floodmgmt/haf00/fob/drepprr/InterdepartmentalDraftDFEMP-2014.pdf>.

¹⁹ <http://www.californiawaterfix.com/problem>

²⁰ <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0024465>

Groundwater Management Act (SGMA) can also be expected to have long-term effects on the proposed project—effects that the Current Draft does not assess. Ending of more than a million acre-feet of overdraft in the southern Central Valley under the SGMA is likely to increase demand for water exports from the Delta in the coming decades. The Current Draft discusses the potential effects of the project on groundwater (for example, in Sections 4.3.3 and 5.2.2.3), but we found only two brief, descriptive mentions of SGMA in the 235 pages of Section 5. The implications of prolonged droughts (e.g., on levee integrity) and of the consequences of SGMA receive too little attention in the Current Draft.

The Current Draft suggests that unnamed “other programs” that are “separate from the proposed project” will use elements of the Previous Draft to implement long-term conservation efforts that are not part of California WaterFix (Current Draft, p. 1-3). The Final Report should provide assurances that such other programs will step in, and could go further in considering their long-term prospects.

Informative summaries and comparisons

According to guidance for project proponents, “Environmental impact statements shall be written in plain language and may use appropriate graphics so that decision-makers and the public can readily understand them” (Code of Federal Regulations, 40 CFR 1502.8). Far-reaching decisions should not hinge on environmental documents that few can grasp.

This guidance applies all the more to an EIR/EIS of the scope, complexity, and importance of the Current Draft. It demands excellent comparative descriptions of alternatives that are supported by readable tables and high-quality graphics, enumeration of major points, well-organized appendices, and integration of main figures with the text. For policy deliberations, the presentation of alternatives should include explicit comparisons of water supply deliveries and reliabilities as well as economic performance. For decision-makers, scientists, and the public, summaries of impacts should state underlying assumptions clearly and highlight major uncertainties. The Current Draft is inadequate in these regards.

The Previous Draft provided text-only summaries for just the two longest of its resource chapters (Chapters 11 and 12). A fragmentary comparison of alternatives was buried in a chapter on "Other CEQA/NEPA required sections" (part 3 of Chapter 31) but fell far short of what was needed. Both the Previous and Current Drafts have been accompanied by a variety of outreach products for broad audiences (e.g., the descriptive overview of the BDCP Draft EIR/EIS²¹). These products do little to compensate for the overall paucity of readable summaries and comparisons in the Previous and Current Drafts.

For over three years, the Delta ISB has been specifically requesting summaries and comparisons: first in June 2012²², then in June 2013²³, and again in a review of the Previous Draft in May 2014 (footnote 1, p. 1). Appallingly, such summaries and comparisons remain absent in the Current Draft. The generally clear writing in Sections 1 through 4 shows that the preparers are capable of providing the requested summaries and comparisons. Prescriptions in CEQA and NEPA in no way exclude cogent summaries, clear comparisons, or informative graphics. And three years is more than enough time to have developed them.

²¹ Highlights+of+the+Draft+EIS-EIR+12-9-13.pdf

²² http://deltacouncil.ca.gov/sites/default/files/documents/files/DISB_Letter_to_JMeral_and_DHoffman-Floerke_061212.pdf

²³ http://deltacouncil.ca.gov/sites/default/files/documents/files/DISB%20Comments%20on%20Draft%20BDCP%20Document.doc_.pdf

On August 14, 2015, representatives of California WaterFix assured us that this kind of content would eventually appear, but only in the Final Report. That will be far too late in the EIR/EIS process for content so critical to comprehending what is being proposed and its potential impacts.

PRIOR CONCERNS AND THEIR RELEVANCE TO THE CURRENT DRAFT

The Delta ISB review of May 14, 2014 emphasized eight broad areas of concern about the scientific basis for the Previous Draft. Each is summarized below, followed by a brief appraisal of how (or whether) the concern has been dealt with in the Current Draft. While the reduced scope of the proposed project has reduced the relevance of some issues, particularly habitat restoration and other conservation measures, other concerns persist.

Our persistent concerns include the treatment of uncertainty, the implementation of adaptive management, and the use of risk analysis. These topics receive little or no further attention in the Current Draft. We also found few revisions in response to points we raised previously about linkages among species, ecosystem components, or landscapes; the potential effects of climate change and sea-level rise; and the potential effects of changes in water availability on agricultural practices and the consequent effects on the Delta. Our previous comments about presentation also pertain.

Effectiveness of conservation actions

Our 2014 review found that many of the impact assessments hinged on optimistic expectations about the feasibility, effectiveness, or timing of the proposed conservation actions, especially habitat restoration.

This is arguably less of a concern now, given the substantially shorter time frame of the revised project and narrower range of conservation actions designed for compensatory restoration. Nonetheless, the Current Draft retains unwarranted optimism, as on page 4.3.25-10: “By reducing stressors on the Delta ecosystem through predator control at the north Delta intakes and Clifton Court Forebay and installation of a nonphysical fish barrier at Georgiana Slough, Alternative 4A will contribute to the health of the ecosystem and of individual species populations making them stronger and more resilient to the potential variability and extremes caused by climate change.” A scientific basis for this statement is lacking, and an adaptive or risk-based management framework is not offered for the likely event that such optimism is unfulfilled.

Is it feasible for even the reduced amounts of mitigation and restoration to be completed within the time period proposed? Perhaps yes. Is it feasible that these actions will mitigate impacts over the long term? This is more problematic. To be effective, mitigation actions should deal with both the immediate and long-term consequences of the project. The proposed permitting should allow for monitoring long enough to assess the effectiveness of habitat restoration measures, which will need to extend beyond the initial permitting period.

Uncertainty

The 2014 review found the BDCP encumbered by uncertainties that were considered inconsistently and incompletely. We commented previously that modeling was not used effectively enough in bracketing uncertainties or exploring how they may propagate or be addressed.

In the Current Draft, uncertainties and their consequences remain inadequately addressed, improvements notwithstanding. Uncertainties will now be dealt with by establishing “a robust program of collaborative science, monitoring, and adaptive management” (ES 4.2). No details about this program are provided, so there is no way to assess how (or whether) uncertainties will be dealt with effectively. Although sensitivity modeling was used to address the effects of changes in the footprint and other minor changes of the revised project, full model runs were not carried out to assess the overall effects of the specific changes. Consequently, modeling that would help to bracket ranges of uncertainties or (more importantly) assess propagation of uncertainties is still inadequate.

Many of our prior concerns about uncertainties pertained to impacts on fish. If those uncertainties have now been addressed in Chapter 11, they are difficult to evaluate because changes to that chapter have not been tracked in the public draft (below, p. 17).

There are also uncertainties with the data generated from model outputs, although values are often presented with no accompanying error estimates. This situation could be improved by presenting results from an ensemble of models and comparing the outputs.

Effects of climate change and sea-level rise on the proposed actions

Our 2014 review stated concerns that the Previous Draft underestimated effects of climate change and sea-level rise across the 50-year timeline of the BDCP. With the nominal duration shortened substantially, most of the projected impacts of climate change and sea-level rise may occur later. But climate-related issues remain.

First, the Current Draft is probably outdated in its information on climate change and sea-level rise. It relies on information used in modeling climate change and sea-level rise in the Previous Draft, in which the modeling was conducted several years before December 2013. The absence of the climate-change chapter (Chapter 29) in the Previous Draft from Appendix A in the Current Draft indicates that no changes were made. In fact, the approaches and assumptions in the Current Draft remained unchanged from the Previous Draft in order to ensure consistency and comparability across all the Alternatives, even though newer scientific information had become available.⁶ Yet climatic extremes, in particular, are a topic of intense scientific study, illustrated by computer simulations of ecological futures²⁴ and findings about unprecedented drought²⁵. The Current Draft does not demonstrate consideration of recently available climate science, and it defers to the Final Report analysis of future system operations under potential climate and sea-level conditions. In fact, the Current Draft generally neglects recent literature, suggesting a loose interpretation of “best available science.”

Second, climate change and sea-level rise are now included in the No-Action Alternative, as they will transpire whether or not WaterFix moves forward. A changed future thus becomes the baseline against which Alternative 4A (and the others) are compared. Changes in outflow from the Delta due to seasonal effects of climate change and the need to meet fall X2 requirements are considered in Section 4.3.1. The difference in outcomes then depends on assumptions about the facility and operations of Alternative 4A and the other Alternatives. Sensitivity analyses indicate that the impacts of the different Alternatives are generally similar in comparison to the No Action Alternative under the range of climate projections considered.⁶ Thus, “Delta exports would either remain similar or increase in wetter years and remain similar

²⁴ <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0024465>

²⁵ Cook, B.I., Ault, T.R., and Smerdon, J.E., 2015, Unprecedented 21st century drought risk in the American Southwest and Central Plains: *Science Advances*, v. 1, doi:10.1126/sciadv.1400082.

or decrease in the drier years under Alternative 4A as compared to the conditions without the project.” (p. 4.3.1-4). Such an inconclusive conclusion reinforces the need to be able to adapt to different outcomes. Simply because the Alternatives are expected to relate similarly to a No Action Alternative that includes climate change does not mean that the Alternatives will be unaffected by climate change.

Interactions among species, landscapes, and the proposed actions

The Previous Draft acknowledged the complexities produced by webs of interactions, but it focused on individual species, particular places, or specific actions that were considered in isolation from other species, places, or actions. Potential predator-prey interactions and competition among covered and non-covered fish species were not fully recognized. Confounding interactions that may enhance or undermine the effectiveness of proposed actions were overlooked. In our 2014 review we recommended describing and evaluating the potential consequences of such interactions, particularly in Chapters 11 (Fish and aquatic resources) and 12 (Terrestrial resources).

The Current Draft recognizes that mitigation measures for one species or community type may have negative impacts on other species or communities, and mitigation plans may be adjusted accordingly. But the trade-offs do not seem to be analyzed or synthesized. This emphasizes the need for a broader landscape or ecosystem approach that comprehensively integrates these conflicting effects.

Effects on San Francisco Bay, levees, and south-of-Delta environments

In 2014 we pointed to three kinds of impacts that the Previous Draft overlooked: (1) effects on San Pablo Bay and San Francisco Bay in relation to Delta tides, salinity, and migratory fish; (2) effects of levee failures on the proposed BDCP actions and effects of isolated conveyance on incentives for levee investments; and (3) effects of increased water reliability on crops planted, fertilizers and pesticides used, and the quality of agricultural runoff. The Current Draft responds in part to point 1 (in 11.3.2.7) while neglecting point 2 (above, p. 7) and point 3.

On point 3: Although the Current Draft considers how the project might affect groundwater levels south of the Delta (7.14 to 7.18), it continues to neglect the environmental effects of water use south of (or within) the Delta. Section 4.3.26.4 describes how increased water-supply reliability could lead to increased agricultural production, especially during dry years. Elsewhere, a benefit-cost analysis performed by ICF and the Battle Group²⁶ calculated the economic benefits of increased water deliveries to agriculture in the Delta. The Current Draft does not fully consider the consequences of these assumptions, or of the projections that the project may enhance water-supply reliability but may or may not increase water deliveries to agriculture (depending on a host of factors). We have been told that to consider such possibilities would be “too speculative” and that such speculations are explicitly discouraged in an EIR/EIS. Yet such consequences bear directly on the feasibility and effectiveness of the project, and sufficient information is available to bracket a range of potential effects. Our previous concerns are undiminished.

The impacts of water deliveries south of the Delta extend to the question of how each intake capacity (3,000, 9,000, or 15,000 cfs) may affect population growth in Southern

²⁶ Hecht, J., and Sunding, D., Draft Bay Delta Conservation Plan statewide economic impact report, August 2013.

California. Section 4.4.1-9 treats the growth-enabling effects of alternative 2D lightly, saying that additional EIS review would be needed for future developments.

Implementing adaptive management

In the Previous Draft, details about adaptive management were to be left to a future management team. In our 2014 review we asked about situations where adaptive management may be inappropriate or impossible to use, contingency plans in case things do not work as planned, and specific thresholds for action.

Although most ecological restoration actions have been shifted to California EcoRestore (p. 5), we retain these and other concerns about adaptive management under California WaterFix. If the mitigation measures for terrestrial resources are implemented as described, for example, they should compensate for habitat losses and disturbance effects of the project. The test will be whether the measures will be undertaken as planned, be as effective as hoped, and continue long enough to fully mitigate effects. This is where adaptive management and having contingency plans in place becomes critically important. It is not apparent that the mitigation plans include these components.

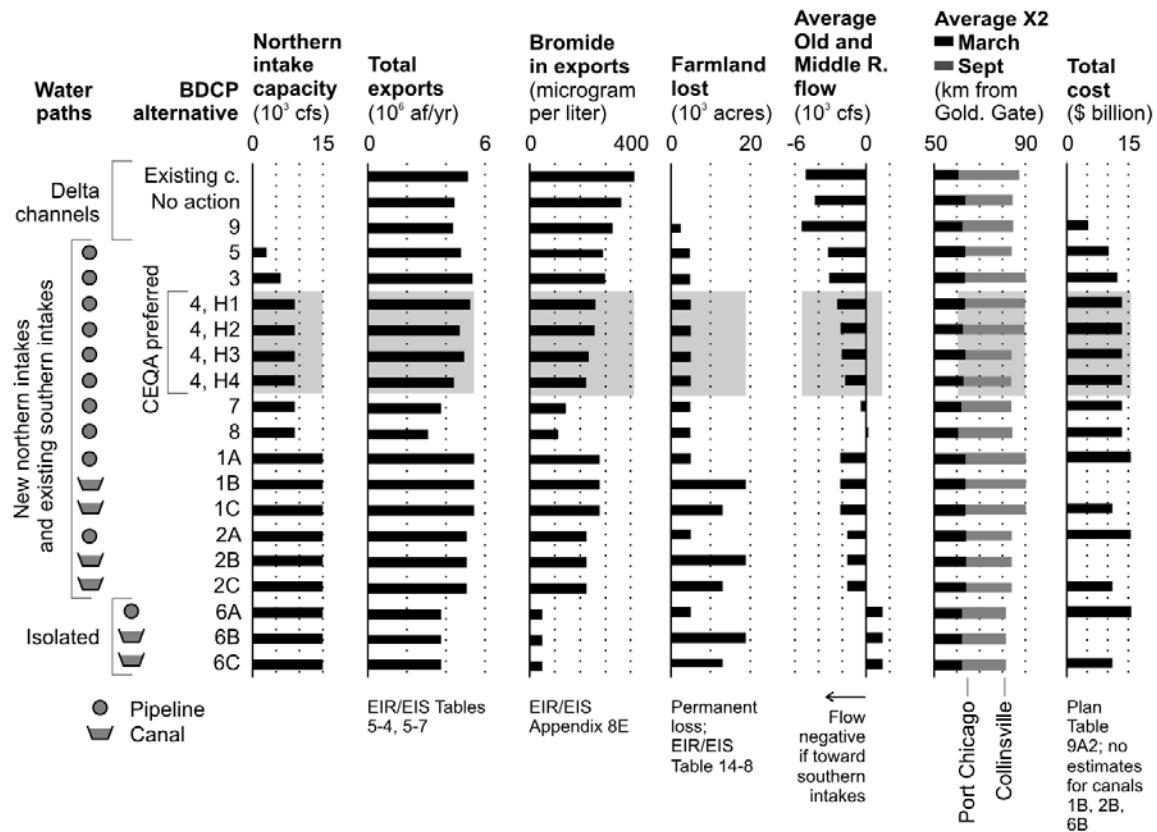
Reducing and managing risk

Our 2014 review advised using risk assessment and decision theory in evaluating the proposed BDCP actions and in preparing contingency plans. We noticed little improvement on this issue, just a mention that it might be considered later. This is not how the process should be used.

Comparing BDCP alternatives

The Previous Draft contained few examples of concise text and supporting graphics that compare alternatives and evaluate critical underlying assumptions. Rudimentary comparisons of alternatives were almost entirely absent. The Current Draft retains this fundamental inadequacy (p. 9).

Our 2014 review urged development and integration of graphics that offer informative summaries at a glance. We offered the example reproduced below. If the Current Draft contains such graphics, they would need to be ferreted out from long lists of individual pdf files. Because they are not integrated into the text where they are referenced in the Current Draft, the figures cannot readily illustrate key points.



COMMENTS ON INDIVIDUAL SECTIONS AND CHAPTERS

This final section of the review contains minimally edited comments on specific points or concerns. These comments are organized by Section or Chapter in the Current Draft. Many are indexed to pages in the section or chapter named in the heading.

Alternatives 4A, 2D, and 5A (Section 4)

It is good that the proposed alternatives are seen as flexible proposals, as it is difficult to imagine that any proposal for such a complex and evolving system could be implemented precisely as proposed. Some initial and ongoing modifications seem desirable, and unavoidable.

The operating guidance for the new alternatives seems isolated from the many other water management and environmental activities in and upstream of the Delta likely to be important for managing environmental and water supply resources related to Delta diversions. While it is difficult to specify detailed operations for such a complex system, more details on the governance of operations (such as the Real Time Operations process) would be useful. The operational details offered seem to have unrealistic and inflexible specificity. Presentations of delivery-reliability for different alternatives remain absent. Environmental regulations on Delta diversions have tended to change significantly and abruptly in recent decades, and seem likely to change in the future. How sensitive are project water supply and environmental performance to changes in operating criteria?

The collaborative science ideas seem philosophically attractive, but are not given much substance. Monitoring is mentioned, but details of organization, intent, and resources seem

lacking. Adequate funding to support monitoring, collaborative science, and adaptive management is a chronic problem. Section ES.4.2 states that “Proponents of the collaborative science and monitoring program will agree to provide or seek additional funding when existing resources are insufficient.” This suggests that these activities are lower in priority than they should be.

The three new alternatives, 4A, 2D, and 5A, seem to have modest changes over some previous alternatives, with the exception of not being accompanied by a more comprehensive environmental program. In terms of diversion capacities, they cover a wide range, 3,000 cfs (5A), 9,000 cfs (4A), and 15,000 cfs (2D). The tables comparing descriptions of the new alternatives to previous Alternative 4 are useful, but should be supplemented by a direct comparison of the three new alternatives.

The new Sustainable Groundwater Management Act (SGMA) seems likely to increase demands for water diversions from the Delta to the south to partially compensate for the roughly 1.5-2 maf/year that is currently supplied by groundwater overdraft.

The State seems embarked on a long-term reduction in urban water use, particularly outdoor irrigation. Such a reduction in urban water use is likely to have some modest effects on many of the water-demand and scarcity impacts discussed.

The climate change analysis of changes in Delta inflows and outflows is useful, but isolating the graphs in a separate document dismembers the discussion. The fragmentation of the document by removing each Section 4 figure into a separate file is inconvenient for all, and makes integrated reading practically impossible for many.

The details of the alternative analyses seem mostly relevant and potentially useful. Much can be learned about the system and the general magnitude of likely future outcomes from patient and prolonged reading of this text. An important idea that emerges from a reading of the No Action Alternative is that the Delta, and California water management, is likely to change in many ways with or without the proposed project. The No Action and other alternatives also illustrate the significant inter-connectedness of California’s water system. The range of impacts considered is impressive, but poorly organized and summarized.

The discussion of disinfection by-product precursor effects in Delta waters is improved significantly, but could be made more quantitative in terms of economic and public-health impacts.

The discussion on electromagnetic fields is suitably brief, while the tsunami discussion could be condensed.

The effects of the likely listing of additional native fish species as threatened or endangered seems likely to have major effects on project and alternative performance. These seem prudent to discuss, and perhaps analyze.

Is Alternative 2D, with 15,000 cfs capacity, a serious alternative? Does it deserve any space at all?

Table 4.1-8 implies that tidal brackish/*Schoenoplectus* marsh. Should some of this be considered tidal freshwater marsh?

The dynamics of the Delta are largely determined by water flows. The Current Draft acknowledges that water flows and salinity will change in complex ways. There are statements about how inflows, outflows, and exports will change in Alternative 4A in relation to baseline (No-Action) conditions (p. 4.3.8-13). What is the scientific basis on which these changes will be managed? Will models be used? What confidence should we have in current projections? Have the effects of droughts or deluges been considered?

4.3.7-10, line 13: Text on disturbing sediments and releasing contaminants needs to add nitrogen and phosphorus to the concerns.

Water quality (Chapter 8)

8-3, line 13: *Microcystis* is singled out as a cyanobacterium that can (but doesn't always) produce the toxin, myrocytin; however, there are other cyanobacteria that sometimes produce other toxins. Different genera can differ in the nutrient that limits their blooms (see 2014 letter by Hans Paerl in Science 346(6406): 175-176). For example, *Microcystis* blooms can be triggered by N additions because this species lacks heterocysts, while toxin-producing *Anabaena* blooms can be triggered by P additions, because *Anabaena* has heterocysts and can fix N. The frequently repeated discussion of cyanobacteria blooms needs to be updated. Also cite Paerl on page 8-45 line 8. Ditto on page 8-103 and 8-106 line 34.

8-8. In our earlier comments, we recommended that carbon be separated into its dissolved and particulate forms for consideration of water quality impacts because dissolved organic carbon (DOC) is the form most likely to react with chloride and bromide and result in formation of disinfection by-products. The section on bromide focuses on interactions with total organic carbon (TOC), rather than DOC. Carbon is primarily considered with respect to formation of disinfection by-products but carbon plays a central role in the dynamics of the Delta, affecting processes such as metabolism, acidity, nutrient uptake, and bioavailability of toxic compounds. Carbon cycling determines ecosystem structure and function in aquatic systems. It also modifies the influence and consequences of other chemicals and processes in aquatic systems. Dissolved organic carbon (DOC), for example, influences light and temperature regimes by absorbing solar radiation, affects transport and bioavailability of metals, and controls pH in some freshwater systems. Respiration of organic carbon influences dissolved oxygen concentrations and pH.

8-18, line 12 says that salt disposal sites were to be added in 2014; were they?

8-19 and 8-20: "CECs" is not defined and seems to be used incorrectly. Change "CECs" to "EDCs" on page 8-19 and to "PPCPs" on page 8-20.

8-21, line 18-19: Such a statement should be qualified. The conclusion that marine waters are N-limited and inland waters are P-limited is outdated. Recent papers, including the above, find more complex patterns.

8-22, lines 18 and 30: Choose either "cyanobacteria" or "blue-green algae;" using both will confuse readers who may perceive them as different.

8-23, lines 15-16: Say how the N:P ratio changed composition, not just that it did change composition.

8-23 through 8-25: Uncertainties (e.g., standard deviation or standard error of the mean) associated with the mean concentrations of DOC should be presented. It is impossible to interpret differences between the values that are presented without knowledge of the variation around the mean values (e.g., without knowledge of variation around the mean, it is difficult to evaluate whether DOC concentrations at south vs. north-of-Delta stations and Banks headworks differ from one another; 3.9 to 4.2 mg/L vs. 4.3 mg/L).

8-65, line 12: Specify if DO is for daytime or night, and for surface, bottom or mid-water column.

8-75, line 6: The failure to consider dissolved P (DP) should be addressed; there is much greater uncertainty. The adherence of some P to sediment does not prevent considerable

discharge of P as DP. Also on page 8-95 line 40, qualify predictions due to lack of consideration of DP.

8-82, line 4-5: It seems unlikely that current levels of *Microcystis* growth in the Delta are dependent on the exclusive uptake of ammonia. Temperature is one of the primary factors driving *Microcystis* blooms and global warming could promote bloom occurrence. Consider revising this section to, “Because it seems unlikely that current levels of *Microcystis* growth in the Delta are dependent on the exclusive uptake of ammonia, the frequency, magnitude and geographic extent of *Microcystis* under future scenarios is difficult to predict.”

8-105, line 8: Would total nitrogen be dominated by nitrate just by increasing ammonia removal? Depending on redox and microbiota, why wouldn't nitrate be converted to ammonium?

A lot of attention is given to factors controlling *Microcystis* blooms in this chapter but little attention is given to its toxicity. Just as factors controlling blooms are not fully understood, the regulating factors of cellular toxin contents remain poorly understood. As a result, the impact of blooms on the environment can vary (e.g., large blooms of non-toxic or low toxin organisms may have impacts on environmental variables such as nutrient uptake and dissolved oxygen consumption while small blooms of highly toxic organisms could impact food webs) [see: Ma et al. (2015) Toxic and non-toxic strains of *Microcystis aeruginosa* induce temperature dependent allelopathy toward growth and photosynthesis of *Chlorella vulgaris*. Harmful Algae 48: 21–29].

Fish and aquatic resources (Chapter 11)

We found individual conclusions or new analyses difficult to identify in this key chapter because changes to it were not tracked in the public version of the Current Draft and there was no table of contents that could have assisted in side-by-side comparison with the Previous Draft.

Effects of temperature

We noticed more emphasis on temperature concerning the fish ‘downstream’ impacts (but without tracked changes this becomes difficult to document).

The main temperature variable used expresses the percentage of time when monthly mean temperatures exceed a certain rate or fall within a certain boundary. The biological impact, however, is difficult to assess with these numbers. If all of the change occurred just during operations or just during one day, the biological impact could be much different than a small change every day (provided by using means). Graphs of changes and listing of extreme highs and lows during a model run would have more biological meaning. Also, comparisons were made using current baseline conditions and did not consider climate change effects on temperatures.

Fish screens

It is unclear how (and how well) the fish screens would work. The description of fish screens indicates that fish >20 mm are excluded, but what about fish and larvae that are <20 mm, as well as eggs? Table 11-21 seems out of date, because some fish screens appear to have been installed, but data on their effects are not given. Despite the lack of specific data on how well screens function, the conclusion that there will be no significant impact is stated as certain (e.g., page 1-100 line 38).

Here, as in many other places, measures are assumed to function as planned, with no evidence to support the assumptions. The level of certainty seems optimistic, and it is unclear whether there are any contingency plans in case things don't work out as planned. This problem persists from the Previous Draft.

Invasive plants

Cleaning equipment is mentioned, but it is not specifically stated that large machinery must be cleaned before entering the Delta. Section 4.3.8-358 says equipment would be cleaned if being moved within the Delta. Cleaning is essential to reduce transfer of invasive species; a mitigating measure is to wash equipment, but it must also be enforced.

Weed control (fire, grazing) is suggested, but over what time frame? It may be needed in perpetuity. That has been our experience at what is considered the world's oldest restored prairie (the 80-yr-old Curtis Prairie, in Madison, WI).

Weed invasions can occur after construction is completed; how long will the project be responsible for weed control? 3-5 years won't suffice.

4.3.8-347. Herbicides are prescribed to keep shorebird nesting habitat free of vegetation, but toxic effects of herbicides on amphibians etc. are not considered.

4.3.8-354. Impacts of invasive plants seem underestimated. Impact analysis implies that the project disturbance area is the only concern, when dispersal into all areas will also be exacerbated. At the Arboretum, a 1200-ac area dedicated to restoration of pre-settlement vegetation, invasive plants are the main constraint. A judgment of no significant impact over just the disturbance area is overly optimistic.

4.3.8-356. Does not mention need to clean equipment to minimize import of seeds on construction equipment.

Cryptic acronym and missing unit

Figure 2: SLR x year: y axis lacks units; reader has to continue on to table 11-20 to find that it is cm.

Terrestrial biological resources (Chapter 12)

Effects on wetlands and waters of the United States (WOTUS)

Page 12-1, line 18-19 says: "Under Alternatives 2D, 4 , 4A , and 5A, larger areas of non-wetland waters of the United States would be filled due to work in Clifton Court Forebay; however, the Forebay would ultimately expand by 450 acres and thus largely offset any losses there." Is the assumption that, acre for acre, all jurisdictional waters are interchangeable, whether of different type or existing vs. created? The literature does not support this assumption.

The text argues that the wetlands would be at risk with levee deterioration, sea-level rise, seismic activity, etc. But the solution is for "other programs" to increase wetlands and riparian communities. What if this project causes the problem, e.g. via vibration?

CM1 alternative 4A would fill 775 acres of WOTUS (491 wetland acres); Alt 2D would fill 827 (527 wetland) + 1,931 ac temporary fill at Clifton Court Forebay; Alt 5A would fill 750 (470 wetland). That's a lot of area. The timing and details of mitigation measures are not provided. References to the larger Delta Plan suggest that compensations would come at unknown times. Piecemeal losses such as indicated here: "Only 1% of the habitat in the study area would be filled or converted" (Chapter 12, line 29, page 12-22) is how the US has lost its historical wetlands. What are the overall cumulative impacts of wetland losses in the Delta? What is the tipping point beyond which further wetland losses must be avoided? The proposed project is one part of the broader array of management actions in the Delta and should be considered in that broader context.

Habitat descriptions

How will mudflats be sustained for shorebirds? Exposed mud above half-tide can become vegetated rapidly. In the Delta, the bulrush *Schoenoplectus californicus* tolerates nearly continuous tidal submergence.

Are soils clayey enough for the proposed restoration of up to 34 acres of vernal pool and alkali seasonal wetland near Byron? These areas will need to pond water, not just provide depressions.

12-243, line 18: How would adding lighting to electrical wires eliminate any potential impact to black rails? This mitigation is overstated.

Several of the species accounts (e.g., bank swallow) indicate that there is uncertainty about how construction or operations will impact the species. In most cases, monitoring is proposed to assess what is happening. But to be effective, the monitoring results need to be evaluated and fed into decision-making, as visualized in the adaptive-management process. There is little explicit indication of how this will be done or funded.

Land use (Chapter 13)

Alternative 4A would allow water diversion from the northern Delta, with fish screens, multiple intakes, and diversions limited to flows that exceed certain minima, e.g., 7000 cfs. This would reduce flood-pulse amplitudes and, presumably, downstream flooding. How does this alter opportunities for riparian restoration? Which downstream river reaches are leveed and not planned to support riparian restoration? Where would riparian floodplains still be restorable?

Over what surface area does the pipeline transition to the tunnel? At some point along the pipeline-tunnel transition, wouldn't groundwater flow be affected?

Up to 14 years of construction activities were predicted for some areas (e.g., San Joaquin Co.); this would have cumulative impacts (e.g., dewatering would affect soil compaction, soil carbon, microbial functions, wildlife populations, and invasive species). What about impacts of noise on birds; e.g., how large an area would still be usable by greater sandhill cranes?

State how jurisdictional wetlands have been mapped and how the overall project net gain or net loss of wetland area has been estimated. If mitigation consists only of restoration actions in areas that are currently jurisdictional wetlands, then there would be an overall net loss of wetland area due to the project. A mitigation ratio >1:1 would be warranted to compensate for reduced wetland area. This was also a concern for Chapter 12.

Up to 277 ac of tidal wetlands are indicated as restorable; text should indicate if these are tidal freshwater or tidal brackish wetlands (or saline, as is the typical use of "tidal wetlands").

13-19. On the need to store removed aquatic vegetation until it can be disposed: there are digesters for this purpose, and they might be efficient means of mitigation if management of harvested aquatic plants will be long-term. A waste product could be turned into a resource (methane fuel).

13-19, line 12: Text says that "predator hiding spots" will be removed. What are these?

13-19, line 20: What are the E16 nonphysical fish barriers? An electrical barrier?

13-20, line 19: Boat-washing stations are mentioned; would these discharge pollutants (soap, organic debris?)



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October 30, 2015

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VIA EMAIL

BDCP/WaterFix Comments
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**Re: Partially Recirculated Draft Environmental Impact Report /
Supplemental Draft Environmental Impact Statement
(RDEIR/SDEIS) for the Bay Delta Conservation Plan/WaterFix**

Please find enclosed comments by the Contra Costa Water District on the RDEIR/SDEIS for the proposed BDCP/WaterFix project. In addition to the attached comments on the 2015 RDEIR/SDEIS, our prior comments dated July 25, 2014 on the 2013 BDCP Draft Environmental Impact Report/Environmental Impact Statement still apply to the environmental analysis of the proposed BDCP/WaterFix. These prior comments should be included in the administrative record for this matter and should be carefully reviewed by appropriate agency staff and the decision-makers as the environmental review process moves forward.

The environmental review for the proposed BDCP/WaterFix lacks definition and analysis of many key aspects of the project, including how the project will be operated and how it will be integrated with the statewide water supply system. The RDEIR/SDEIS indicates that some of these issues will be decided during the consultation process for the project pursuant to Section 7 of the federal Endangered Species Act. We understand that modeling has been conducted as part of that consultation process, and we request that those model runs and any future runs that are done for the Section 7 consultation be provided to CCWD and other interested stakeholders. This will ensure that public participation and input on the BDCP/WaterFix are fully informed and meaningful.

To further promote meaningful public participation and informed decision-making and meet the fundamental purposes of CEQA and NEPA, we strongly encourage the California Department of Water Resources and the Bureau of Reclamation to incorporate the necessary revisions to the RDEIR/SDEIS analysis, as indicated in our attached comments, and recirculate the document.

BDCP/WaterFix Comments
October 30, 2015
Page 2

We appreciate your consideration of CCWD's comments in this matter. If you have any questions, please call Marguerite Patil at CCWD at (925) 688-8018 or email her at mpatil@ccwater.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "BJS".

Barbara J. Schussman

Attachments

Electronic copies to: Mark Cowin, California Department of Water Resources
David Murillo, U.S. Bureau of Reclamation

Contra Costa Water District

Comments on the July 2015
Bay Delta Conservation Plan / California WaterFix
Partially Recirculated Draft Environmental Impact Report /
Supplemental Draft Environmental Impact Statement

October 30, 2015

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Contra Costa Water District
Comments on the July 2015 RDEIR/SDEIS for the
Proposed Bay Delta Conservation Plan / California WaterFix

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Contra Costa Water District
Comments on the July 2015 RDEIR/SDEIS for the
Proposed Bay Delta Conservation Plan / California WaterFix

1. Executive Summary

Contra Costa Water District (CCWD) serves 500,000 people in Contra Costa County with water diverted at its four drinking water intakes in the San Francisco-San Joaquin Delta (Delta). The environmental analysis in the Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for the proposed Bay Delta Conservation Plan/California WaterFix (BDCP/CWF) is flawed in ways that obscure and underestimate the potentially significant impacts of the proposed project on Delta water quality at CCWD's intakes.

In particular, the environmental analysis obscures and underestimates Delta water quality impacts in the following ways:

- The project description lacks vital information, making it impossible to determine whether the full range of potential impacts has been evaluated.
- The analysis does not adequately evaluate the impacts of the new alternatives (including Alternative 4A, the new Preferred Alternative) beyond 2025, resulting in a failure to inform the decision-makers and the public of the proposed project's long-term effects.
- The analysis improperly conflates project impacts with the separate and distinct effects of climate change, thereby obscuring the impacts that are attributable to the proposed BDCP/CWF.
- The environmental analysis is based on modeling that does not accurately portray either the baseline conditions or the elements of the proposed BDCP/CWF, which results in significantly understating the project's impacts. There are numerous flaws in the modeling used for the environmental analysis, including the following:
 - The CEQA baseline overestimates existing Delta salinity, which results in understating the salinity impacts that would be caused by the proposed project.
 - The impact analysis for the new Preferred Alternative (Alternative 4A) is based on modeling conducted for the former Preferred Alternative (Alternative 4), despite significant differences in project components and operations. The failure to use modeling that actually represents the project that is being proposed for approval results in a further underestimation of environmental impacts.

- The RDEIR/SDEIS presents sensitivity studies to support use of the old modeling from the 2013 BDCP Draft EIR/EIS for the newly presented alternatives, but these studies do not provide credible evidence that the impacts of the new alternatives have been adequately disclosed and evaluated. To the contrary, the studies reveal water quality impacts that have not been revealed in the RDEIR/SDEIS.
- The modeling could not simulate a set of conditions in the project description that is physically impossible to achieve: namely, simultaneous closure of a barrier at the head of Old River and northward net flow in Old and Middle Rivers. The resulting workaround in the modeling leads to a significant underestimation of the potential water quality impacts of the barrier operations.

Water quality mitigation measures are inadequate, both for impacts found to be significant and for impacts that should have been identified as significant but were underestimated and found to be less than significant due to flaws in the analysis.

This letter addresses two further issues with the RDEIR/SDEIS analysis in addition to CCWD's water quality concerns:

- The change in the project objectives, which eliminated the goal of having the proposed project serve as a habitat conservation plan and natural community conservation plan (HCP/NCCP), should have triggered a reevaluation of alternatives previously eliminated from detailed consideration on the ground that they did not meet the original project objectives. The “Portfolio” alternative, which has been recommended by a broad range of water districts, municipalities, environmental organizations, business groups, and elected officials, was previously eliminated from detailed consideration as beyond the scope of an HCP/NCCP. Now that the project is no longer proposed as an HCP/NCCP, the Portfolio alternative must be reconsidered.
- The analyses are presented in the RDEIR/SDEIS in a confusing manner that does not allow the reader to readily understand the analyses themselves or the environmental findings. As a result, the document fails to provide information that will be meaningful and useful to the decision-makers and the public.

These flaws must be fixed in a revised environmental analysis. Given the number and magnitude of the flaws, and of the revisions needed to address them, this revised analysis must be recirculated for another round of public review and comment. Otherwise, the fundamental goals of CEQA and NEPA – which are designed to ensure that the environmental impacts of a proposed project are accurately disclosed, adequately evaluated, and properly mitigated, so that the decision-makers and the public can meaningfully weigh the project’s benefits against its impacts – will not be achieved.

2. Introduction

This introduction summarizes the following sections of these comments, which explain each major flaw in the RDEIR/SDEIS.

Section 3: The Project Description Is Incomplete and Impedes an Adequate Impact Analysis

The RDEIR/SDEIS analysis of impacts to water supply, surface water, water quality, and aquatic resources relies upon quantitative modeling tools to predict how the Department of Water Resources (DWR) and Bureau of Reclamation (Reclamation) will jointly operate the State Water Project (SWP) and Central Valley Project (CVP) to manage the statewide water supply system under varying hydrological and environmental conditions, consistent with the applicable regulatory requirements. Figure 2-1 provides a schematic illustration of the impacts assessment framework.

To use these modeling tools effectively to assess impacts from the proposed BDCP/CWF, a complete and accurate project description is required. This includes the criteria for operating new water conveyance facilities and a description of how operation of existing facilities will be modified (i.e., how the facilities will be “reoperated”) to integrate the new facilities into the statewide water supply system. However, as the RDEIR/SDEIS acknowledges, the models do not accurately reflect the physical elements of the new alternatives (including Alternative 4A, the new Preferred Alternative) and are not based on a clear and complete plan for how these alternatives would be operated. The result is an insufficient project description, which precludes an adequate impact analysis. The following examples illustrate this problem:

- The determination of initial operating criteria for Alternative 4A, the new Preferred Alternative, is deferred until the future permitting process when the Lead Agencies will consult with the National Marine Fisheries Service (NMFS), the U.S. Fish & Wildlife Service (USFWS), and the California Department of Fish & Wildlife (CDFW) regarding the effects of the project on listed species. Identifying the sources of water to meet the proposed flow criteria for Alternative 4A is also deferred. Yet this information is critical to analyzing the impacts of the project on water supply, surface water, water quality and aquatic resources. Without this information, the conclusions in the RDEIR/SDEIS are suspect. This deficiency is further evaluated in Section 3.1.
- The project descriptions for revised Alternative 4 and new Alternative 4A do include some operating criteria, although they fall well short of complete and adequate operations plans. However, key operating criteria are internally inconsistent. For example, the project descriptions include a requirement for net positive flow in Old and Middle River at times when the Head of Old River Barrier is closed, which is not physically possible. This inconsistency calls the credibility of the modeling results into serious question and is discussed in Section 3.2.

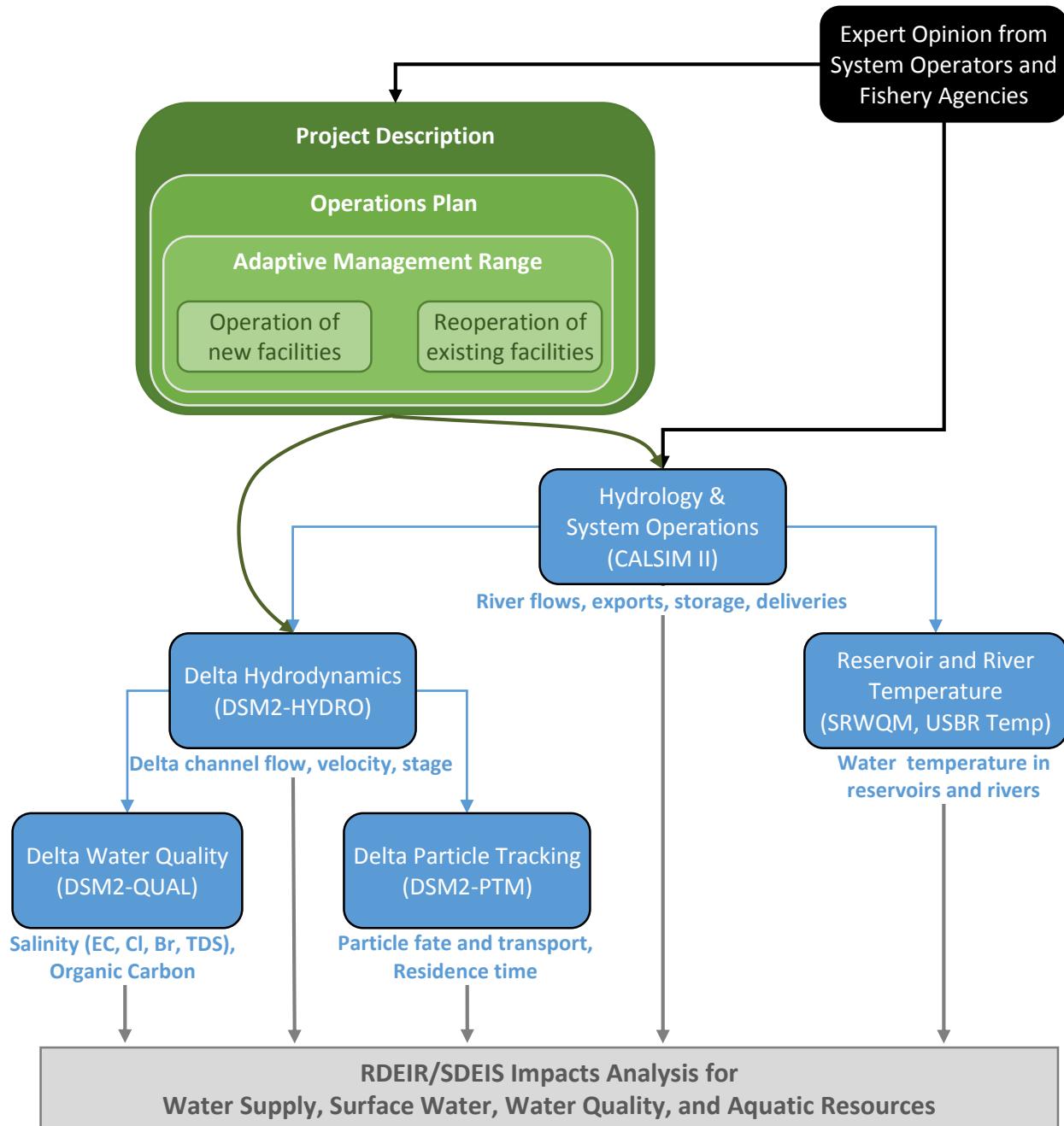


Figure 2-1. Analytical Framework Used to Evaluate Environmental Impacts

Adapted from 2013 BDCP Draft EIR/EIS, Appendix 5A, Section A, Figure A-1, by adding the expert knowledge and project description upon which the models rely.

- The lack of a complete and adequate operations plan results in unrealistic assumptions that skew the impact analyses. For example, the modeling for Alternative 4A assumes unrealistic excess Delta outflow, which results in the prediction of better Delta water quality than would actually occur. The excess outflow is based on assumed project operations that differ significantly from the current practice of the CVP and SWP, and that are contrary to the interests of the Lead Agencies. In the absence of an operations plan that sets forth a reasoned, strategic basis for taking actions that are detrimental to the interests of the project proponents, there is no basis for relying on this assumption of excess Delta outflow for purposes of the impact analysis. This problem is explained in Section 3.3.

Section 4: The Early Long Term Analysis for the New Alternatives Does Not Adequately Evaluate and Disclose the Project’s Impacts

The impact analysis for the new alternatives presented in the RDEIR/SDEIS is based on “Early Long Term” (ELT) conditions that are projected to occur in the year 2025. This ELT analysis suffers from two significant deficiencies:

- By focusing on the year 2025 – which is less than ten years after any project approval, and at around the same time as the completion of construction and the onset of most of the project’s operational impacts – the RDEIR/SDEIS fails to present an adequate evaluation of the project’s long-term impacts. This inadequacy is detailed in Section 4.1.
- Under the Early Long Term approach, the CEQA analysis compares impacts in the year 2025 to the 2009 existing conditions baseline, without distinguishing between the 2025 effects of implementing the project from the separate and independent effects caused in that year by sea level rise, climate change and future water demands. This has the result of obscuring the impacts that are specifically attributable to the project as well as the mitigation measures needed to address those impacts. This deficiency is further evaluated in Section 4.2.

Section 5: The Modeling Used in the RDEIR/SDEIS Does Not Accurately Portray Either the Actual Baseline Conditions or the Elements of the Proposed Project, Resulting in an Analysis that Obscures and Underestimates Impacts

As explained above, proper quantitative modeling is crucially important to assess the impacts of the proposed BDCP/CWF. But the modeling used for the RDEIR/SDEIS is deficient in a number of key respects. As a result of these deficiencies, the RDEIR/SDEIS does not provide a clear, complete or accurate picture of the project’s significant adverse impacts. Some examples of the deficient modeling are as follows:

- The modeling used in the impact analysis does not accurately portray either the baseline conditions or the descriptions of the new alternatives in the RDEIR/SDEIS. For example, the modeling for the new alternatives includes 25,000 acres of tidal

marsh restoration, but according to the RDEIR/SDEIS the three new alternatives actually include only 55-65 acres of tidal marsh restoration. The large scale tidal marsh restoration in the modeling has the effect of reducing salinity in the western Delta, which in turn masks the real effect of the alternatives on Delta salinity. This and other examples of modeling flaws in the water quality analysis are discussed in Section 5.1.

- To support the Lead Agencies' decision to use modeling from the 2013 BDCP Draft EIR/EIS to evaluate impacts of the new alternatives, two sensitivity analyses are presented in the RDEIR/SDEIS. However, neither of the sensitivity analyses provides credible evidence that the old modeling adequately identifies the impacts of the new alternatives. In fact, additional impacts are revealed in the sensitivity analyses that are not included in the RDEIR/SDEIS, such as increases in Delta salinity in fall and winter. Section 5.2 explains why the sensitivity studies fail to support the flawed conclusions in the RDEIR/SDEIS.
- Two important elements of the project description, the operation of the Head of Old River Barrier (HORB) and south Delta flow requirements, are internally inconsistent. In particular, according to the project description, there will be positive net flows in Old and Middle River at a time when the HORB is closed. But this is not physically possible, and the quantitative models used in the impact analysis cannot be configured to meet both of these conditions. To enable the model to work, the Lead Agencies included an assumption that the HORB would be partially open when the project description indicates that the HORB would be completely closed. With this new assumption, the model projects better water quality than would actually occur with the HORB closed as described. CCWD conducted its own sensitivity analysis to evaluate the degree to which this problem in the RDEIR/SDEIS impact analysis results in underestimating the project's negative water quality effects. CCWD's analysis of this issue is presented in Section 5.3.

Section 6: The Mitigation in the RDEIR/SDEIS Is Inadequate

One of the key objectives of conducting an environmental review is to identify the mitigation measures that are needed to eliminate or substantially reduce a project's potentially significant impacts. But the RDEIR/SDEIS fails to achieve this objective, as the mitigation for water quality impacts suffers from two important flaws, as described in Section 6 of these comments:

- First, significant impacts that should be mitigated have, through flawed analyses, been underestimated, obscured and erroneously identified as less than significant, with the result that no mitigation has been included for those impacts.
- Second, the only water quality mitigation measures (WQ-11a and WQ-11b) that have been proposed for the new alternatives, including Alternative 4A, do not include measurable performance standards and are therefore inadequate.

Section 7: Alternatives Previously Eliminated from Detailed Consideration Need to be Reevaluated Given the Change in Project Objectives

The project objectives are an important factor in defining the reasonable range of alternatives that must be examined. Here, the original project objectives included designing the BDCP as a habitat conservation plan under the federal Endangered Species Act and a natural community conservation plan under California law (the Natural Community Conservation Planning Act or NCCPA). The environmental analysis conducted in 2013 explained that while the “Portfolio” alternative had much merit, this alternative was eliminated from detailed consideration on the ground that it was beyond the scope of an HCP/NCCP. But now that the objective of having the project serve as an HCP/NCCP has been abandoned, the Lead Agencies need to reevaluate the alternatives that were previously screened out from the analysis. This issue is addressed in Section 7 below.

Section 8: The Presentation of Information in the RDEIR/SDEIS Is Highly Confusing, Precluding Informed Decision-Making and Meaningful Public Participation

Both CEQA and NEPA instruct that environmental analyses should be clearly presented so that they can be readily understood. The RDEIR/SDEIS fails to adhere to this instruction. The presentation of information in the RDEIR/SDEIS is convoluted and confusing, and the Executive Summary – the only part of this lengthy document that many are likely to read – often contradicts the actual impact analysis in the body of the document, repeatedly identifying as less than significant impacts that the document’s environmental analysis acknowledges are significant. These defects thwart the important goal of adequately informing the decision-makers and public about the project and its adverse environmental impacts so that they can meaningfully weigh the project’s benefits against its detriments.

* * * * *

Any one of these flaws standing alone would require revision and recirculation of the environmental analysis. Taken together, the various flaws in the RDEIR/SDEIS point to a critical need to revisit the environmental analysis, to ensure that the project’s adverse impacts are thoroughly and accurately disclosed, adequately evaluated, and properly mitigated.

3. The Project Description Is Incomplete and Impedes an Adequate Impact Analysis

The project description lacks vital information, making it impossible to determine whether the full range of potential impacts has been evaluated.

A complete and finite project description is the basis of a legally adequate EIR/EIS. As discussed in Section 1 of CCWD's July 25, 2014 comment letter in this matter, the project description in the 2013 BDCP Draft EIR/EIS omits critically important information, precluding an accurate and thorough environmental assessment. These defects remain in the 2015 RDEIR/SDEIS, and the revised environmental analysis in the document gives rise to three additional flaws:

- First, the new Preferred Alternative, Alternative 4A, improperly defers the determination of criteria that will govern the operation of the project until after the public review of the environmental analysis.
- Second, the operational criteria for the south Delta facilities and the proposed Head of Old River Barrier are internally inconsistent and cannot be implemented as described.
- Third, by failing to describe how existing SWP and CVP facilities would operate in coordination with the proposed new water conveyance facilities of the BDCP/CWF, the revised analysis relies upon modeling results that include unrealistic assumptions that obscure and underestimate impacts.

Each of these flaws is described separately in the sections that follow.

3.1. Operational Criteria for the New Preferred Alternative Are Improperly Deferred

The lack of information about the proposed project's initial operating criteria and the range of operational adjustments and adaptive management makes it impossible to determine whether the analysis presented in the RDEIR/SDEIS captures the full range of potential project impacts.

The determination of initial operating criteria for Alternative 4A, the new Preferred Alternative, is deferred until the future permitting process when the Lead Agencies will consult with the federal and state fishery agencies (NMFS, USFWS and CDFW) regarding the project's effects on listed species. RDEIR/SDEIS, Executive Summary at p. ES-21 and Section 4.1.2.2 at p. 4.1-5.

As illustrated in Figure 2-1, consultation with the fishery agencies is a necessary step to define criteria for operation of the project. At the same time, a defined set of operating

criteria is necessary for a complete and accurate project description, which in turn is necessary for a complete and accurate evaluation of the environmental effects of the project. Further, an open and public review of the operating criteria, and of how these criteria affect the analysis of environmental impacts, is a critical part of the CEQA and NEPA review process.

But under DWR's schedule for project review and permitting, the operating criteria will not be determined until after the public review and comment period on the RDEIR/SDEIS has closed. According to DWR's Office of the Chief Counsel, consultation with the fishery agencies is occurring during the CEQA review; the Lead Agencies anticipate the following schedule:

- Final EIR/EIS completed in May-June 2016.
- USFWS and NMFS biological opinions issued in April-June 2016.
- CDFW permit issued after DWR completes the CEQA process.

(Bogdan, K.M., 2015)

This schedule does not allow for adequate analysis of the project's effects, or for a meaningful public review of that analysis, once the operational criteria are determined. The operational criteria are an integral piece of the project description that is necessary for an adequate evaluation of the environmental impacts to water supply, surface water, water quality, and aquatic resources. Modifications to the assumed operational criteria will modify the resulting impacts.

The Lead Agencies cannot rely on the future permitting process to fill in gaps in their own environmental analysis. The permitting agencies will require conditions and mitigation consistent with their statutory responsibilities, but these agencies will not consider the potentially significant impacts caused by these permit conditions and mitigation on environmental resources that are outside their regulatory purview. Thus, the fisheries permitting process has a much narrower focus than the Lead Agencies' obligations under NEPA and CEQA, which require a complete analysis of *all* of the project's impacts on the environment.

As a result, the environmental analysis in the RDEIR/SDEIS must be revised to define the full range of possible operating criteria that may result from the permit process in order to bracket the full range of potential project impacts, or alternatively, this environmental analysis must be revised once the operational criteria have been determined. And in either case, the revised analysis must be recirculated for public review and comment.

Another problem is that the RDEIR/SDEIS defers the determination of the source of water to meet proposed flow criteria for the new Preferred Alternative, Alternative 4A. As discussed in CCWD's July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS, failure to disclose the source of the water omits an important element of the project description and results in an inadequate environmental analysis. The RDEIR/SDEIS suffers from the same deficiencies described in Section 1.1.5 of CCWD's July 25, 2014 comment letter. Further, the RDEIR/SDEIS compounds the problem by stating that if sufficient water transfers from willing sellers cannot be identified to meet the spring Delta outflow criteria,

“the spring outflow criteria will be accomplished through operations of the SWP and CVP to the extent an obligation is imposed on either the SWP or CVP under federal or applicable state law.” RDEIR/SDEIS, Section 4.1.2.2 at p. 4.1-6. This implies that a key element of the project description is dependent on yet-to-be-determined legal obligations. The end result is that the RDEIR/SDEIS fails to present the full range of impacts that may result from the future determination of this key project element.

In sum, the RDEIR/SDEIS must be revised to provide a complete and accurate project description, and to provide a full and adequate impact analysis based on that project description, so that decision-makers and the public can understand the true extent of the project’s potential adverse effects on water quality, water supply and other environmental resources.

3.2. Operational Criteria for the New Preferred Alternative Are Internally Inconsistent

The description of the revised Alternative 4 and new Alternative 4A includes requirements for positive net flows in Old and Middle Rivers at times when the Head of Old River Barrier (HORB) is closed, although positive net flows are not physically possible when the barrier is closed. The hydrodynamic and water quality modeling, which is based upon numerical formulations of real-world physical processes, thus cannot match the unrealistic project description. As discussed in Section 5.3 below, this inconsistency results in an inadequate and inconsistent project description and an insufficient evaluation of the project’s water quality impacts.

Old River and Middle River are natural distributaries of the San Joaquin River. Figure 3-1 shows the head of Old River where Old River branches off from the San Joaquin River near Lathrop in the South Delta. Downstream of the head of Old River, Middle River branches off from Old River. Water entering the Delta via the San Joaquin River (orange arrows on Figure 3-1) would naturally split at the head of Old River junction, feeding a northerly flow into Old and Middle Rivers; this is the only source of northerly net flow in Old and Middle Rivers (OMR). Net southerly flow in Old and Middle Rivers is caused by water diversions at intakes located south of the flow gages on Old and Middle Rivers. The CVP and SWP pumping plants in the south Delta (Jones and Banks, respectively) are the dominant cause of net southerly flow. Northerly net flow is positive OMR, while southerly net flow is negative OMR.

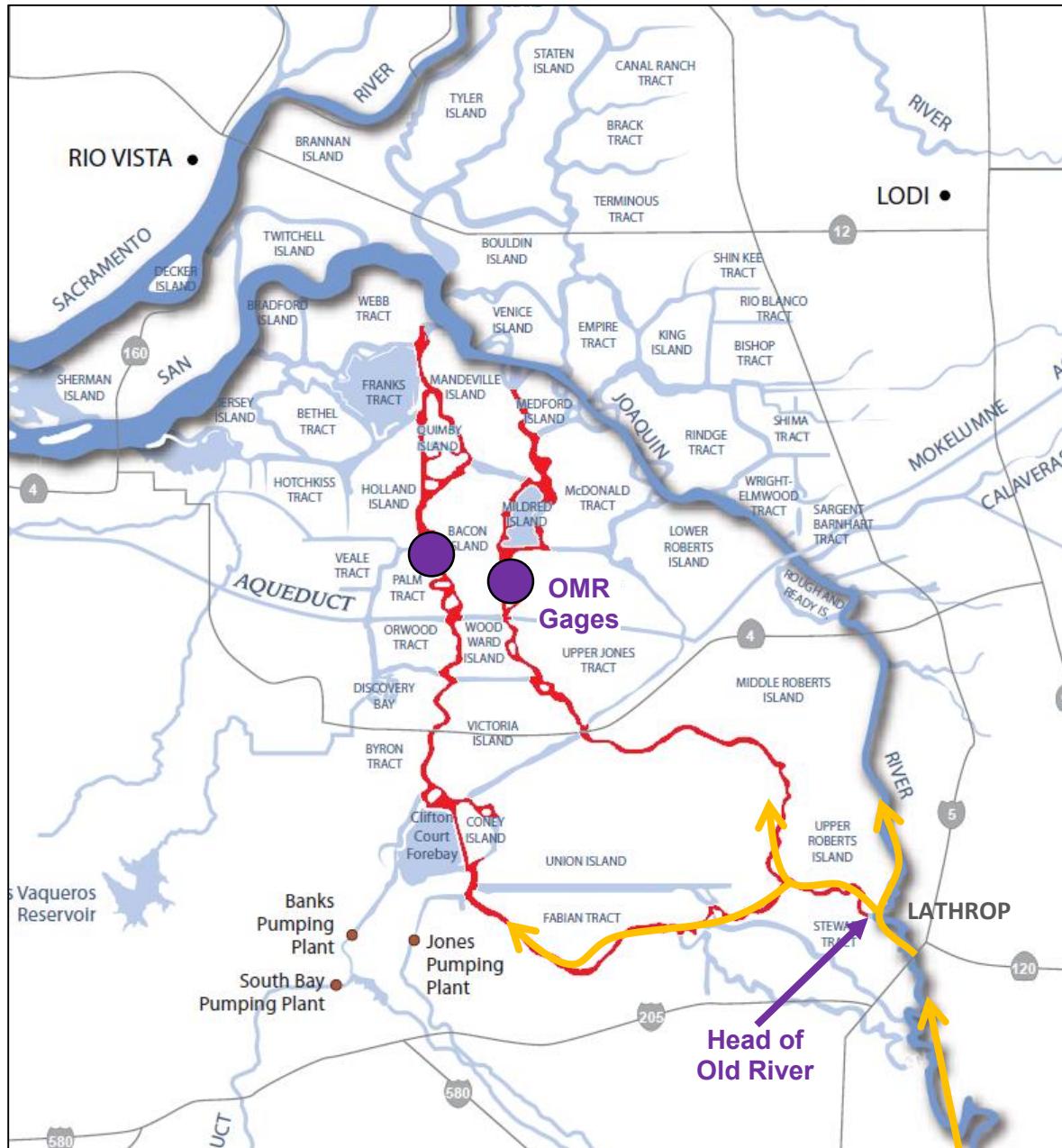


Figure 3-1. Regional map of the South Delta

The San Joaquin River bifurcates at the head of Old River, splitting flow between the San Joaquin River and Old River. Old River subsequently bifurcates into Old and Middle Rivers (highlighted in red). Water entering the Delta via the San Joaquin River (orange arrows) splits at the head of Old River junction, feeding a northerly flow into Old and Middle Rivers.

The project description in the RDEIR/SDEIS indicates that the HORB will be closed from the start of the San Joaquin River salmon migration in January (assumed to be January 1 in the modeling) through June 15 except for real time operational (RTO) decisions for flooding, water stage, and water quality concerns. RDEIR/SDEIS, Section 4.1.2.2 at

p. 4-1-13. Of these potential RTO modifications, only flooding concerns are quantified in the RDEIR/SDEIS; to alleviate the flooding concerns, the HORB will be opened when San Joaquin River flow as measured at Vernalis is greater than 10,000 cfs. RDEIR/SDEIS, Section 4.3.7 at p. 4.3.7-180; *see also* 2013 BDCP Draft EIR/EIS, Chapter 3 at pp. 3-203 and 3-205.

During this same time period each year from January to June, positive OMR is required in each month as follows:

- January – Wet* years
- February – Wet* years
- March – Wet* and Above Normal* years
- April – when Vernalis flow > 5,666 cfs
- May – when Vernalis flow > 5,666 cfs
- June – when Vernalis flow > 3,500 cfs

* Wet and Above Normal water year types are defined by the Sacramento River 40-30-30 index.

RDEIR/SDEIS, Section 4.1.2.2 at p. 4.1-8.

Table 3-1 below indicates the percent of time that positive OMR is required, the percent of time that the HORB may be closed without flood concerns (i.e., Vernalis flow is less than 10,000 cfs), and the combined occurrence of these two conditions for Alternative 4A. OMR is required to be positive when the HORB may be closed without flood concerns in a significant portion of the 82-year simulation period in all months from January through June.

Table 3-1. Frequency of OMR and HORB operating criteria for Alternatives 4 and 4A

Frequency of occurrence of OMR and HORB operating criteria based upon the project description for Alternatives 4 and 4A. Source: Determined from modeling results for Alternative 4/4A H3 ELT, provided by DWR (DWR, 2013)

<i>Month</i>	Percent of Years with Required OMR ≥ 0	Percent of Years that HORB may be closed without flood concerns	Percent of Years with Required OMR ≥ 0 and HORB may be closed without flood concerns
<i>January</i>	32	88	26
<i>February</i>	32	82	17
<i>March</i>	48	83	32
<i>April</i>	61	85	46
<i>May</i>	55	84	39
<i>June</i>	26	90	16

Overall, positive OMR is required when the HORB may be closed for at least one month between January and June in 67% of the years that were analyzed. However, as explained below, it is physically impossible for OMR to be positive with the HORB closed.

Closure of the HORB blocks flow in the San Joaquin River from entering Old River which, as discussed above, is the only source of positive OMR; closure of the HORB thus prevents OMR from being positive. As a result, the project description for OMR flow requirements is internally inconsistent with the project description for HORB operation in two-thirds of the analysis period.

This inconsistency is demonstrated by reviewing measurements of OMR flows at times when a barrier has been installed at the head of Old River in the past. Historically, a temporary barrier of rocks at the head of Old River has been constructed in the fall or spring¹. Review of OMR flows that were measured when the HORB was installed confirms that OMR is never positive with the HORB installed (Figure 3-2).

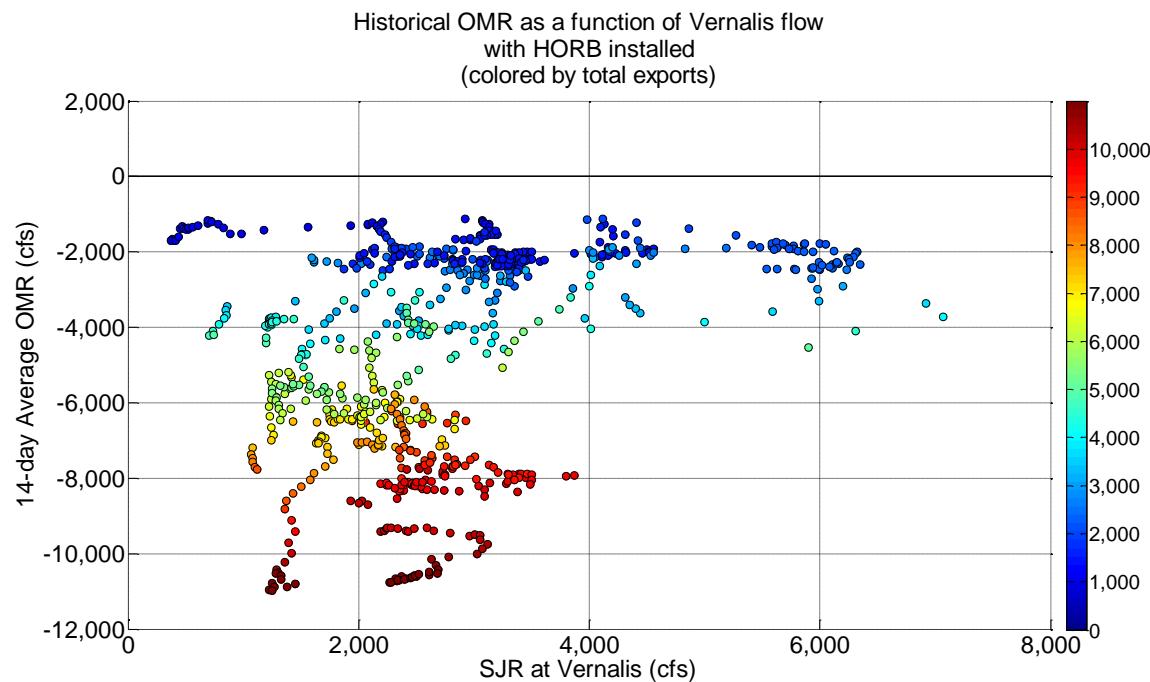


Figure 3-2. Old and Middle River flow when HORB is closed

Historical measurements of 14-day averaged tidally filtered net flow in Old and Middle Rivers when the HORB is installed plotted against the flow in the San Joaquin River at Vernalis and colored by the total pumping at the existing south Delta export facilities.

¹ Revised Alternative 4 and new Alternatives 4A and 2D propose to replace this temporary rock barrier with a permanent operable barrier that will be opened and closed as indicated in the project description. Where the temporary barrier is typically installed for no more than 3 months a year (2 months in the fall and 1 month in the spring), the permanent barriers is proposed to be closed for over 7 months of the year (2 months in the fall and 5 ½ months in the winter and spring), which would dramatically alter Delta water quality.

Pumping at the existing CVP and SWP export facilities in the south Delta (Jones and Banks, respectively) contributes to negative OMR – the greater the total pumping at the existing south Delta facilities, the more negative OMR (Figure 3-2). Limiting pumping at the south Delta facilities limits the negative OMR but cannot create positive OMR. Positive OMR can only occur with inflow from the San Joaquin River when the HORB is *not* installed.

Since the project description for OMR flow requirements is internally inconsistent with the project description for HORB operation, the modeling cannot be configured to meet both requirements. Instead, the RDEIR/SDEIS modeling assumes that the HORB would be 50% open at times when the project description indicates that the HORB would be closed. RDEIR/SDEIS, Section 4.1.2.2, Table 4.1-2, at p. 4.1-9. This partial opening in the modeling allows water to enter the south Delta through the HORB, which would not be possible if the HORB is closed as described in the project description. This inconsistency results in an underestimation of water quality impacts, as described in Section 5.3 below.

3.3. Failure to Describe How New Facilities Would be Integrated into the Statewide Water Supply System Results in Unrealistic Operations and Underestimates Impacts

The project description lacks an operations plan with information regarding how operation of existing water supply facilities will be modified (i.e., how the facilities will be “reoperated”) to integrate the new facilities that are proposed by the BDCP/CWF into the water supply system. Consequently, the modeling utilized in the impacts assessment did not include reasonable logic for reoperation of existing facilities, resulting in unrealistic operations and an underestimation of water supply and water quality impacts.

The SWP and CVP coordinate operation of their facilities, including operation of reservoirs located upstream of the Delta and operation of the diversion facilities within the Delta that export water to the San Joaquin Valley and southern California. The system is connected by natural waterways such as the Sacramento River and man-made canals such as the Delta-Mendota Canal. Operations in one location can affect operations throughout the system. For example, the amount of water released from the upstream storage reservoirs is inextricably tied to the amount of water pumped out of the Delta at the export facilities.

The RDEIR/SDEIS fails to give adequate consideration to the changes to existing facilities operations that would necessarily occur due to implementation of the Preferred Alternative. This creates flaws in the analysis of water supply, water quality, and fisheries impacts. CCWD’s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS provides examples of these flaws (e.g., Sections 1.1.2, 2.3.2.1, and 2.3.2.2). These flaws remain in the RDEIR/SDEIS, and the revised environmental assessment gives rise to an additional flaw as described below.

Delta outflow in October is typically regulated by the Bay-Delta Water Quality Control Plan, with water released from upstream CVP and SWP reservoirs to meet minimum Delta outflow requirements or salinity standards. There is seldom enough precipitation in the watershed in October for natural Delta outflow to be in excess of these requirements.

However, the BDCP modeling indicates that Delta outflow would exceed the amount necessary to meet minimum outflow requirements and salinity standards over 66% of the time in the early long term (ELT) for Alternatives 4/4A² H3 and H4 (Figure 3-3). In comparison, the No Action Alternative³ has excess Delta outflow in October only 2% of the time in the ELT.

The dramatic increase in the occurrence of excess flow under Alternatives 4/4A H3 and H4 in the ELT is not as substantial in the late long term (LLT) and is probably the cause for the different impact determinations between the ELT (as analyzed in the RDEIR/SDEIS) and the LLT (as analyzed in the 2013 BDCP Draft EIR/EIS). Although excess October Delta outflow occurs less often in the Alternative 4/4A LLT modeling than in the Alternative 4/4A ELT modeling, the frequency of occurrence in the LLT modeling is also unrealistic.

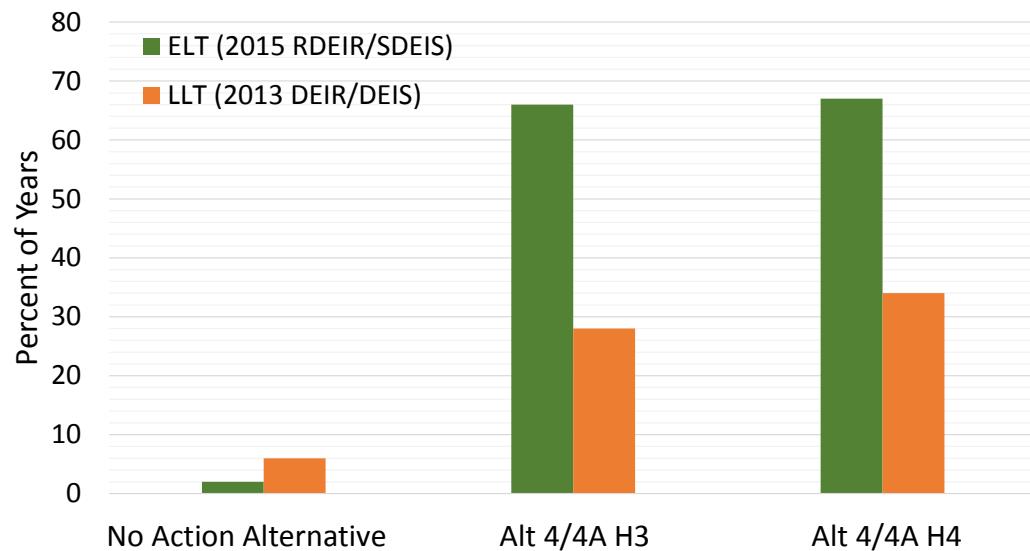


Figure 3-3
Percent of Years with Excess Delta Outflow
Source: BDCP Draft EIR/EIS

² The RDEIR/SDEIS uses modeling for Alternative 4 under ELT conditions to assess impacts for Alternative 4A for both the H3 and H4 operational scenarios.

³ The No Action Alternative is used for comparison because it includes the same assumptions for hydrology and water demands, which have a direct effect on Delta outflow, as Alternative 4/4A. In contrast, the CEQA baseline includes different assumptions for hydrology and water demands than the No Action Alternative and Alternative 4/4A.

The excess Delta outflow simulated in Alternative 4/4A is due to the lack of a coherent operations plan. In particular, operational requirements for the new project facilities and modified operational criteria for the existing south Delta facilities were specified for the operational model (CALSIM II) without recognizing that these new criteria for the proposed BDCP/CWF would upset the operations of the larger water supply system.

In this instance, the modeling projects that Water Quality Control Plan requirements for flow in the Sacramento River at Rio Vista would cause releases from upstream reservoirs that cannot be captured at the south Delta facilities and instead become excess Delta outflow. This seldom happens in the No Action Alternative because there are no OMR requirements in October under the No Action Alternative, so that flow released to meet the Rio Vista requirements can be exported at the south Delta facilities.

The project descriptions for the revised Alternative 4 and the new Alternative 4A indicate that the south Delta facilities will be shut down for 14 days in October. The 14-day shut-down requirement is modeled as a requirement for OMR to be greater than -5,000 cfs for the entire month of October – even though there are no OMR requirements in the project description for October. When OMR is regulated, pumping at the CVP and SWP south Delta export facilities is limited. Since the modeling assumes OMR is regulated for the entire month of October, the water released from reservoirs to meet Rio Vista flow requirements cannot be fully captured at the south Delta facilities.

In reality, the south Delta facilities would probably be able to capture the additional flows for the 17 days during which export pumping is permitted. For the remaining 14 days when the south Delta export facilities are shut down, the CVP and SWP, rather than increasing reservoir releases, are far more likely to limit the amount of reservoir releases that flow out to the San Francisco Bay by closing the Delta Cross Channel to meet Sacramento River flow requirements at Rio Vista flow requirements without creating excess Delta outflow.

When the Delta Cross Channel gates are open, a portion of the Sacramento River flow enters the central Delta, reducing flow in the Sacramento River downstream of the Delta Cross Channel (Figure 3-4). To meet flow requirements in the Sacramento River at Rio Vista, DWR and Reclamation have two options: (1) increase reservoir releases to increase the Sacramento River flow entering the Delta, or (2) close the Delta Cross Channel gates to increase the amount of flow that reaches Rio Vista without increasing Sacramento River inflow.

The operational strategy to close the Delta Cross Channel to meet Rio Vista flows without unnecessary reservoir releases has been implemented recently in November of 2009 and in October of 2013 and 2014 (Reclamation, 2015). This is the realistic operational strategy that should have been used in the modeling. Failure to model this operational strategy, when it has in fact been implemented repeatedly in recent years, biases the salinity results in the water quality impacts analysis, showing reduced salinity with the project. In reality, when the Rio Vista flow requirements are met by closing the Delta Cross Channel instead of by releasing flow from upstream reservoirs, interior Delta salinity will increase with the project.

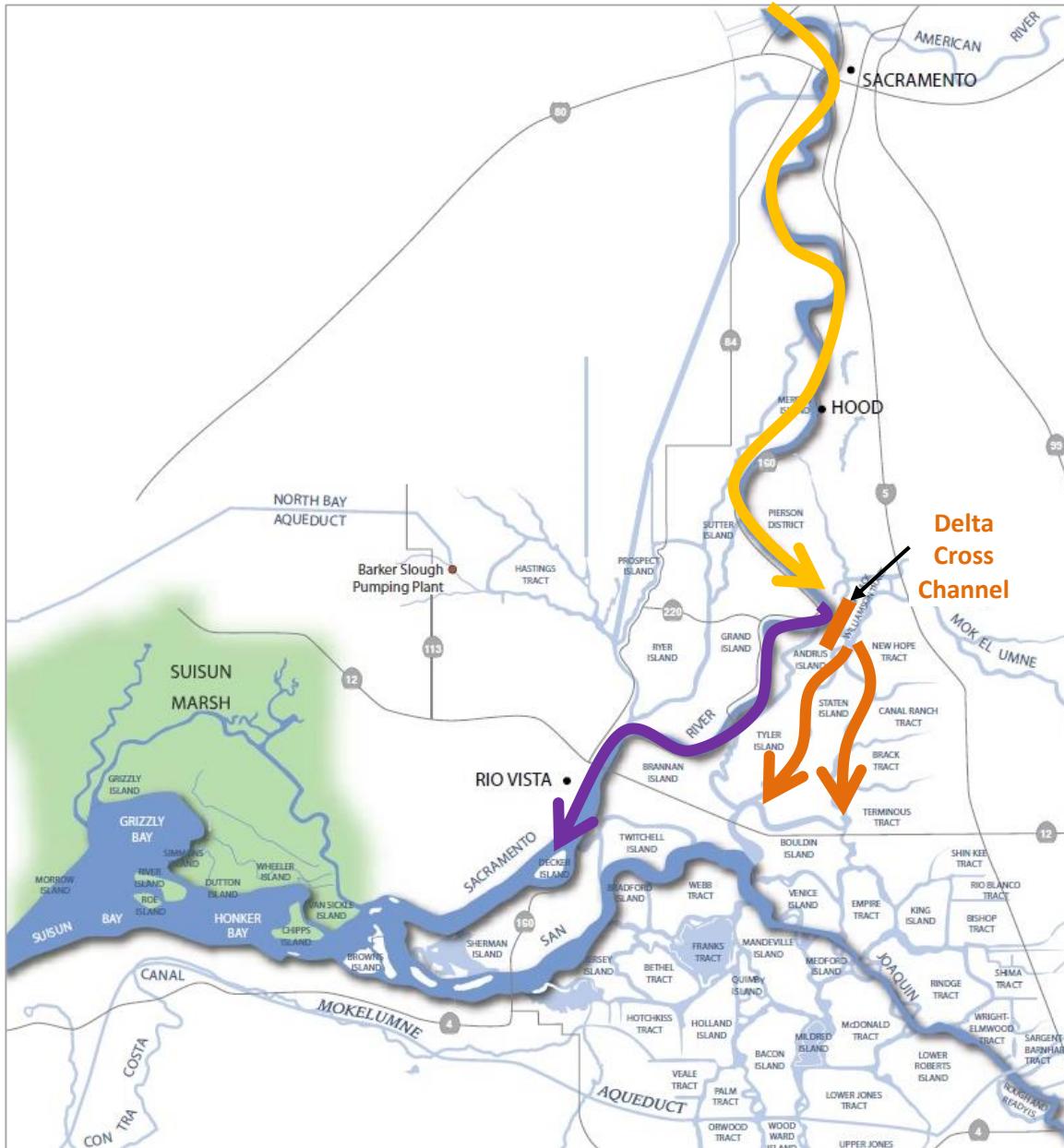


Figure 3-4. Closure of the Delta Cross Channel maintains higher flow in the Sacramento River

With the Delta Cross Channel gates open, a portion of the Sacramento River flow (orange arrow) enters the central Delta (dark orange arrows), reducing flow in the Sacramento River downstream of the Delta Cross Channel (purple arrow).

The unrealistic excess Delta outflow in October freshens the modeled interior Delta salinity for many months. This is illustrated in Figure 3-5, which shows that excess Delta outflow in October freshens the water at CCWD's Old River Intake in October and that the freshening effect is maintained through December (blue bars in Figure 3-5). In contrast, during years without excess Delta outflow in October, Alternative 4/4A H3 increases the salinity at CCWD's Old River Intake in October, November, and December (orange bars in Figure 3-5). Further, averaging salinity over all years (green bars in Figure 3-5) underestimates the impacts that would occur.

This discussion serves to show that the unrealistic assumption of excess Delta outflow results in a significant underestimation of salinity impacts as a result of the proposed project. Conversely, implementing and modeling an operations plan that corrects this unrealistic excess Delta outflow assumption would reveal greater salinity impacts due to the project.

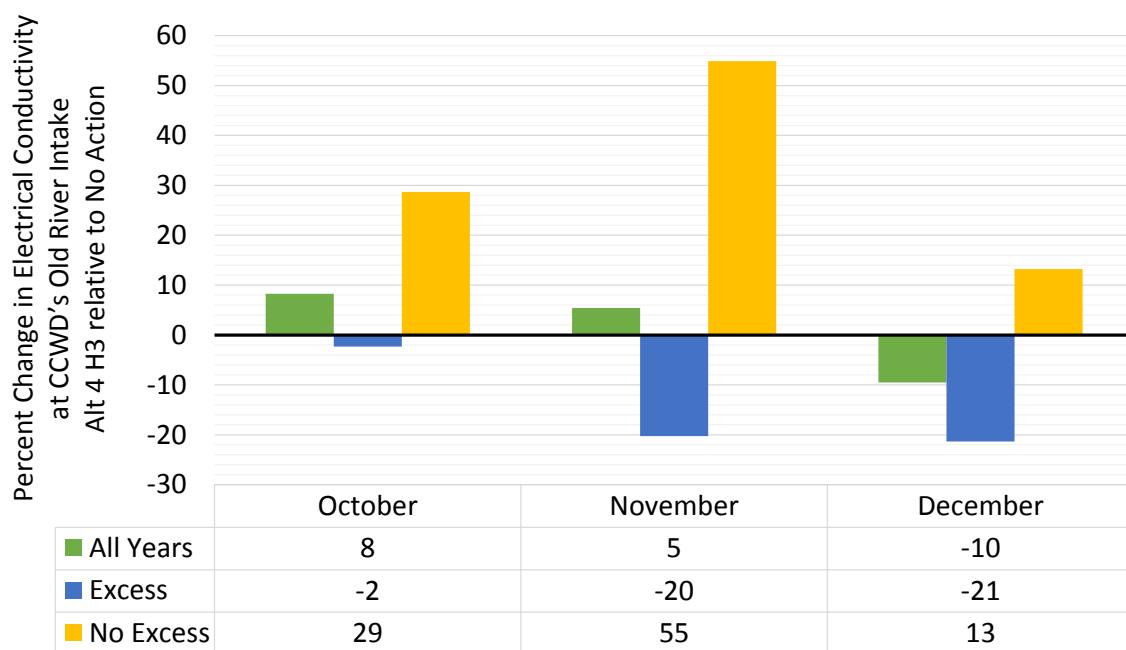


Figure 3-5 illustrates the impact of the proposed project on salinity at CCWD's Old River Intake for the entire 82-year study period.

4. The Early Long Term Analysis for the New Alternatives Does Not Adequately Evaluate and Disclose the Project’s Impacts

The environmental analysis in the RDEIR/SDEIS for the new alternatives (Alternatives 2D, 4A and 5A) compares 2009 baseline conditions to future cumulative conditions that are projected to occur in the year 2025 (the “Early Long Term” or ELT) with the proposed project in place. As explained in CCWD’s July 25, 2014 comment letter, the 2009 baseline, and the comparison of project impacts against that baseline, are inadequate for a number of reasons. The environmental analysis in the RDEIR/SDEIS gives rise to two additional flaws:

- First, by focusing on the year 2025, which will be less than ten years after project approval, the analysis of the new alternatives does not adequately describe the impacts of the alternatives over the longer term.
- Second, the analysis of the new alternatives obscures what the impacts of the alternatives will be even in the year 2025. Instead of comparing the impacts of the alternatives to the existing conditions baseline, the analysis compares future cumulative conditions that will occur in the year 2025 to the existing conditions baseline. But these future cumulative conditions include the effects of the proposed project, plus the anticipated effects from climate change and sea level rise in the year 2025. As a result, it is not possible to distinguish the impacts that would be caused by the proposed project in relation to the CEQA baseline from the impacts that would be caused by climate change in relation to that baseline. The analysis is therefore confusing and inconsistent, obscuring the environmental impacts attributable to the approval and implementation of the proposed project.

Each of these flaws is described separately in the two sections that follow.

4.1. *The Analysis Does Not Adequately Evaluate the Impacts of the New Alternatives Beyond 2025*

The environmental analysis for the new alternatives (Alternatives 4A, 2D and 5A) does not comply with the requirements under CEQA and NEPA to assess both short-term and long-term impacts. More specifically, the analysis for the new alternatives contains an evaluation of short-term effects projected to occur in the year 2025, but does not adequately evaluate the environmental impacts that could occur over the long term.

The CEQA Guidelines make clear that the direct and indirect environmental effects of a proposed project “shall be clearly identified and described, giving due consideration to both the short-term and long-term effects.” CEQA Guidelines § 15126.2(a); *see also Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, 57 Cal. 4th 439, 454 (2013). The NEPA regulations echo this requirement, stating that, in assessing the significance of an impact, “[b]oth short- and long-term effects are relevant.” 40 C.F.R. §

1508.27(a). Thus, under both statutes, the environmental analysis must assess short-term **and** long-term impacts.

As CCWD noted in its July 25, 2014 comments, the analysis in the 2013 BDCP Draft EIR/EIS of the initial set of alternatives for the proposed project violates these requirements by limiting the impact analysis to the year 2060, thus failing to evaluate the impacts over the short and medium term. The analysis in the RDEIR/SDEIS of the new alternatives (Alternatives 2D, 4A and 5A) creates the opposite problem, by failing to present an adequate evaluation of impacts beyond the year 2025.

The analysis for the new alternatives states that the “early long term” – which is based on conditions projected to occur in the year 2025 – is used for evaluating the impacts of the new alternatives. RDEIR/SDEIS, Section 4.1.6 at p. 4.1-42; *see also id.*, Section 4.1.2.1 at p. 4.1-5 (describing Alternative 4A and noting that operations are evaluated at the early long term, “which is associated with conditions around 2025”); Section 4.1.3.1 at p. 4.1-22 (Alternative 2D); Section 4.1.4.1 at p. 4.1-30 (Alternative 5A). The document goes on to explain that “because the project would continue indefinitely, the analysis qualitatively examines impacts at the Late Long-Term timeframe for Alternatives 4A, 2D, and 5A, but does not make a CEQA or NEPA conclusion....” *Id.* Section 4.1.6 at p. 4.1-42.

In other words, for impacts beyond the year 2025 – which will be less than 10 years after project approval, and at around the same time as the onset of most of the project’s operational impacts⁴ – the analysis does not fulfill its critical role as an informational document, because it does not quantify the impacts and does not make a conclusion on whether the impacts are significant or not. And without a significance conclusion, it cannot be ascertained whether mitigation should be evaluated for the long-term effects and, if so, what mitigation measures would be feasible. This is a critical omission for a project of this magnitude, which will have a wide array of lasting impacts on water quality, water supply, surface and ground water, and aquatic resources.

The environmental analysis should be revised to present an evaluation of both short-term and long-term effects, as required under CEQA and NEPA. This analysis should make findings on whether the long-term effects are considered to be significant, so that the decision-makers and the public are fully apprised of what the project’s effects will be and whether measures are needed to mitigate those effects over the full life of project operations, not just the first few years.

⁴ According to the RDEIR/SDEIS, construction is anticipated to last about a decade and operation of the project could begin as early as 11 years after permits are issued. RDEIR/SDEIS, Appendix A, Revised Chapter 3 at p. 3-6 (Alternative 4) and Executive Summary at p. ES-17 (Alternative 4A - stating that all aspects of construction would be identical to Alternative 4).

4.2. The Analysis Improperly Conflates the Impacts of the New Alternatives with the Impacts from Climate Change and Sea Level Rise in 2025

The analysis in the RDEIR/SDEIS for the new alternatives recognizes that the “early long term” scenario used to evaluate the impacts of the new alternatives includes the effects of climate change and sea level rise projected to occur in the year 2025. In other words, for purposes of the CEQA evaluation, the environmental impacts of the alternatives in 2025 – plus the impacts of climate change in that year – are compared to the 2009 baseline conditions. RDEIR/SDEIS, Section 4.1.6 at p. 4.1-42; and Section 4.2 at p. 4.2-1. As the analysis recognizes, “[t]he effects of climate change and sea level rise will foreseeably have some effect on the Delta environment during the ELT time period.” *Id.*, Section 4.2 at p. 4.2-1.

Thus, under the CEQA approach used to evaluate the new alternatives, project impacts are lumped together with the future effects of climate change. The analysis concedes this point, stating on numerous occasions: “Because the action alternative modeling does not partition the effects of implementation of the alternative from the effects of sea level rise, climate change, and future water demands, the comparison to Existing Conditions *may not offer a clear understanding of the impact of the alternative on the environment.*” See, e.g., RDEIR/SDEIS, Section 4.3.7 at pp. 4.3.7-24, 4.3.7-41, 4.3.7-60, 4.3.7-73, etc. (emphasis added). By failing to offer this clear understanding, the impacts that are specifically attributable to the proposed project are obscured.

The environmental analysis attempts to address this issue by explaining that the comparison under NEPA between the new alternatives and the 2025 No Action Alternative “is a better approach,” on the ground that it isolates the effects of the alternatives from the effects of sea level rise, climate change and future water demands. *See id.* But according to the environmental analysis, the CEQA conclusions for the new alternatives, like the CEQA conclusions for the initial set of alternatives, are made in comparison to the 2009 existing conditions baseline. As the RDEIR/SDEIS explains: “The same ‘Existing Conditions’ baseline defined in the [2013 BDCP] Draft EIR/EIS applies to Alternatives 4A, 2D, and 5A, for the purposes of CEQA impact analysis. Therefore, all CEQA conclusions associated with Alternative 4A, 2D, and 5A are made in comparison to the same Existing Conditions baseline applied for all other alternatives.” RDEIR/SDEIS, Section 4.1.6 at p. 4.1-42.

Thus, the CEQA analysis admittedly is unclear in depicting the impacts of the new alternatives. This problem in the CEQA analysis cannot be fixed by pointing the reader to the different approach used for the federal NEPA evaluation, which compares project impacts against future no project conditions. As the California Supreme Court explained in the *Neighbors for Smart Rail* case, the CEQA Guidelines make clear that when the existing conditions baseline is used to determine a project’s significant adverse impacts, as is the case here, this baseline “is **not** the same as the no project alternative, which takes into account future changes in the environment reasonably expected to occur if the project is not approved.” 57 Cal. 4th at 454 (Supreme Court’s emphasis); *see* CEQA Guidelines § 15126.6(e)(1) (“The no project alternative analysis is not the baseline for determining

whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline..."). This confirms that the RDEIR/SDEIS cannot use the no project/no action scenario to cure the defects in its CEQA baseline evaluation. To provide a clear picture of the CEQA analysis and conclusions, the RDEIR/SDEIS needs to be revised to compare the project's impacts against the CEQA baseline, without using future effects that are not attributable to the project to obscure the analysis.

The lumping together of project impacts with the future effects of climate change not only obscures what impacts are attributable to the proposed BDCP/CWF, it also obscures the mitigation that should be evaluated to address those impacts. To make matters worse, the project proponents assert that they are not obligated to make any contribution to mitigation that is needed "solely or substantially" to address adverse water quality effects due to sea level rise or changed precipitation patterns attributable to climate change. RDEIR/SDEIS, Appendix A, Revised Appendix 3B at p. 3B-73. Thus, including future climate change effects as part of the project impact analysis allows the project proponents to disavow obligations to mitigate impacts.

5. The Modeling Used in the RDEIR/SDEIS Does Not Accurately Portray Either the Actual Baseline Conditions or the Elements of the Proposed Project, Resulting in an Analysis that Obscures and Underestimates Impacts

The RDEIR/SDEIS uses quantitative modeling to assess the potential impacts of the project alternatives on water supply, surface water, water quality, and aquatic resources. But this modeling suffers from several significant flaws. As a result of these modeling flaws, the environmental analysis understates and obscures the true extent of the adverse impacts that the proposed project would cause.

This is not a dispute among experts over the appropriate model or methodology to use in the environmental analysis. Rather, this is a situation where the inputs to the model simply fail to represent the actual baseline conditions and the basic elements of the project alternatives. This results in an inherently flawed and unreliable environmental impact analysis.

This section discusses three core deficiencies in the modeling:

- Section 5.1 documents the discrepancies between the modeling assumptions used on the one hand, and the actual baseline conditions and project elements as described in the project description on the other. This section also provides examples of specific flaws in the environmental analysis that result from these discrepancies.
- Section 5.2 evaluates the sensitivity studies that the RDEIR/SDEIS uses to justify the reliance on the prior modeling assumptions used in the 2013 BDCP Draft EIR/EIS to evaluate the three new alternatives, including the Preferred Alternative (Alternative 4A). This evaluation reveals project impacts that are not disclosed and evaluated in the RDEIR/SDEIS.
- Section 5.3 provides an example to demonstrate that the proposed project cannot be operated as described in the project description. This section then describes how this inconsistency results in the underestimation of the adverse water quality impacts that the proposed project would cause.

5.1. The Modeling Assumptions Are Not Realistic and Result in Significant Inaccuracies in the Environmental Impact Analysis

This section outlines the various ways in which the modeling used in the RDEIR/SDEIS is unrealistic and results in an environmental analysis that systematically masks and understates the project's impacts:

- As discussed in Section 5.1.1 below, the modeling used to represent the baseline conditions omits a currently effective regulatory flow requirement (the “Fall X2”

requirement) that was adopted by the U.S. Fish & Wildlife Service in 2008. Compliance with this mandatory requirement freshens the Delta in the fall, so omitting it from the modeling makes the baseline water quality appear worse than it actually is. Further, the RDEIR/SDEIS includes the Fall X2 requirement in the modeling for the alternatives, so that the difference in water quality between the alternatives and the baseline conditions appears less adverse than it actually is. By excluding the positive salinity effects of the Fall X2 requirement from the modeling for the baseline, while including these positive effects in the modeling for the alternatives, the analysis masks the true extent of the project's salinity impacts.

- As discussed in Section 5.1.2 below, the modeling for the No Action Alternative does not match the description of this alternative in the RDEIR/SDEIS. As a result of this discrepancy, the environmental impact analysis is inaccurate and unreliable, and the true effects of the project alternatives in comparison to the No Action Alternative cannot be determined.
- As discussed in Section 5.1.3 below, the RDEIR/SDEIS makes it clear that the new alternatives, unlike the initial set of alternatives, are not designed to serve as a habitat conservation plan under the federal Endangered Species Act. As a result, the project description indicates that the new alternatives include only a small portion of the habitat restoration acreage included in the initial set of alternatives. Yet the modeling for the new alternatives – including Alternative 4A, the new Preferred Alternative – still includes the extensive habitat restoration from the prior modeling used for the initial alternatives. This is another flaw in the modeling that results in underestimating the project's adverse salinity impacts.
- Section 5.1.3 discusses another flaw in the modeling: For the three new alternatives in the RDEIR/SDEIS, the information in the project description regarding project components and operations is incomplete, but even the limited information that is provided is not adequately reflected in the environmental analysis. The three new alternatives are significantly different than any of the alternatives analyzed in the 2013 BDPC Draft EIR/EIS. Nonetheless, the analysis of the three new alternatives in the RDEIR/SDEIS uses, without change, the operations, hydrodynamic, and water quality modeling from the 2013 BDPC Draft EIR/EIS. As a result of this major disconnect, the RDEIR/SDEIS acknowledges that there is “notable uncertainty in the results of all quantitative assessments that refer to modeling results, due to the differing assumptions used in the modeling.” Yet the RDEIR/SDEIS relies on the outdated modeling to make incorrect determinations that the project does not have significant water quality impacts.

To inform the discussion in the following sections, Table 5-1 below presents key discrepancies between the modeling assumptions used to assess the impacts of the proposed project and (1) the actual baseline conditions; (2) the description in the RDEIR/SDEIS of the No Action Alternative; and (3) the description in the RDEIR/SDEIS of the three new alternatives (Alternatives 2D, 4A and 5A).

Table 5-1. Comparison of Modeling Assumptions vs. Actual Baseline Conditions, Project Description of No Action Alternative & Project Description of New Alternatives.

		Existing Conditions (CEQA baseline)		No Action Alternative (NEPA baseline)		Alternatives 2D, 4A, and 5A	
		Actual Conditions	Model	RDEIR / SDEIS Discussion	Model	Project Description	Model
Climate Change	Hydrology	historical	historical	2025 forecast	2025 forecast	2025 forecast	2025 forecast
	Sea Level Rise	none	none	15 cm	15 cm	15 cm	15 cm
2008 USFWS / 2009 NMFS BiOp Requirements	Fall X2	yes	no	yes	yes	yes	yes
	Tidal Marsh Restoration	8,000 acres required by 2018	0 acres	8,000 acres	0 acres	described as part of the NEPA baseline	modeled as part of each alternative
	Flood Plain Restoration	17,000 to 20,000 acres required as initial target	0 acres	implemented via Yolo Bypass enhancements	0 acres; no Yolo Bypass enhancements	described as part of the NEPA baseline	modeled as part of each alternative
Project Components	Tidal Marsh Restoration	None	0 acres	EcoRestore (1,000 ac. above the BiOp requirements)	0 acres	55 to 65 ac.	25,000 ac. (inc. BiOp, EcoRestore and add'l 16,000 ac.)
	Salinity objective compliance location	Emmaton	Emmaton	Emmaton	Emmaton	Emmaton	Three Mile Slough
	Suisun Marsh Salinity Control Gates	operated	operated	operated	operated	operated	not operated
	Head of Old River Barrier ^a	installed / operated Apr-May; Sept-Nov	partial closure Sept 16 to Nov 30	installed / operated Apr-May; Sept-Nov	partial closure Sept 16 to Nov 30	potential closure Oct-Nov and Jan-June 15	50% open during the times assumed to be closed
	Clifton Court Forebay Inflow ^a	6,680 cfs (plus 1/3 of San Joaquin River flow Dec 15 to March 15)	6,680 cfs (plus 1/3 of San Joaquin River flow Dec 15 to March 15)	not mentioned in RDEIR / SDEIS	6,680 cfs (plus 1/3 of San Joaquin River flow Dec 15 to March 15)	not mentioned in RDEIR / SDEIS	10,300 cfs

^a Modifications to the Head of Old River Barrier and Clifton Court Forebay Inflow do not apply to Alternative 5A.

5.1.1. Flaws in the Modeling for the CEQA Baseline Skew the Water Quality Impacts Analysis

The CEQA baseline used in the RDEIR/SDEIS omits a current regulatory flow requirement that maintains relatively low salinity in the Delta in the fall of relatively wet years. This requirement is included in the alternatives modeling. Since the impacts of the alternatives are measured under CEQA against the baseline conditions, excluding the salinity benefits from the baseline, while including them in the evaluation of the alternatives, serves to mask the true extent of the project's negative effects on salinity.

The 2008 USFWS Biological Opinion (BiOp) specifies that during the months of September, October, and November that follow a relatively wet year⁵, operation of the CVP and SWP must be modified to reduce salinity in the western Delta as indicated by the location of the two parts per thousand isohaline (i.e., X2); this action is commonly referred to as “Fall X2.” Although the Fall X2 requirement was adopted in 2008, Fall X2 was not modeled as part of the CEQA baseline. By modeling Fall X2 as part of the alternatives but not the baseline, the benefits in water quality that are due to implementation of Fall X2 appear as benefits attributable to the project in the impacts analysis, which underestimates the project’s true salinity effects. *See* Section 2.1.1.2 of CCWD’s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS.

5.1.2. Differences between the Description and Modeling of the No Action Alternative Contribute to Obscuring Water Quality Impacts

The modeling for the No Action Alternative reveals an additional problem: this modeling does not match the description in the RDEIR/SDEIS of the No Action Alternative so that the true extent of the project’s impacts as measured against the No Action Alternative cannot be determined, affecting both the CEQA and the NEPA analysis. Under NEPA, the No Action Alternative serves as the baseline for measuring the impacts of the project alternatives. Therefore, without accurate modeling of No Action Alternative, the impact assessment for the project alternatives is faulty and unreliable. Under CEQA, the No Action (or No Project) Alternative provides a different – but no less important – function, which “is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” CEQA Guidelines § 15126.6(e)(1); *see also Neighbors for Smart Rail*, 57 Cal. 4th at 454. But if the impacts of the No Action/No Project Alternative are not accurately depicted, then this comparison is not accurate and does not inform the decision-makers as it should.

The underlying problem is that the No Action Alternative was substantially reformulated in the 2015 RDEIR/SDEIS, yet the modeling was not updated to reflect this new formulation.

⁵ Specifically, “wet” or “above normal” water years as defined by the Sacramento Valley 40-30-30 index.

The 2008 USFWS Biological Opinion specifies that 8,000 acres of tidal marsh must be restored within 10 years (i.e., by 2018) and the 2009 NMFS Biological Opinion requires floodplain habitat restoration with an initial target of 17,000 to 20,000 acres. Many tidal marsh restoration projects are in the planning stages and DWR and Reclamation are preparing a draft EIR/EIS for the Yolo Bypass Salmonid Habitat Restoration and Fish Passage project to satisfy the floodplain habitat restoration targets.

As explained in CCWD's July 25, 2014 comment letter, the 2013 BDCP Draft EIR/EIS improperly excluded these required habitat restoration actions from the No Action Alternative. The RDEIR/SDEIS changes course, specifying that "enhancements to the Yolo Bypass and 8,000 acres of tidal habitat restoration areas would be developed under the No Action Alternative (ELT)." RDEIR/SDEIS, Section 4.2.7 at pp. 4.2-19; *see also id.*, Section 4.1.2.3 at p. 4.1-15; Section 4.1.6 at p. 4.1-42. However, modeling conducted for the ELT No Action Alternative assumed no implementation of Yolo Bypass improvements or tidal habitat restoration. *Id.*, Section 4.2.7 at pp. 4.2-18 to 4.2-19. After acknowledging this discrepancy, the RDEIR/SDEIS states:

In general, the significance of this difference is the assessment of bromide, chloride and EC for the No Action Alternative (ELT), relative to Existing Conditions, likely underestimates increases in bromide, EC, and chloride that could occur, particularly in the west Delta.

Id., Section 4.2.7 at p. 4.2-19.

But there is no evidence presented in the RDEIR/SDEIS to support this conclusion. As discussed in Section 1.2.2 of CCWD's July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS, the effect of habitat restoration on water quality depends on the location, timing, and design of the habitat restoration actions. Without this information, it is not possible to determine if the failure to model the habitat restoration actions required in the USFWS and NMFS Biological Opinions underestimates or overestimates salinity for the No Action Alternative, to what extent salinity levels might differ, and where in the Delta these effects would be realized. With an uncertain baseline, the impacts of the project cannot be ascertained.

5.1.3. Differences between the Description and Modeling of the Proposed Project Contribute to Obscuring and Underestimating Water Quality Impacts

5.1.3.1. The project modeling includes habitat restoration that is not part of the project description, thereby underestimating salinity impacts

Unlike the initial set of alternatives discussed in the 2013 BDCP Draft EIR/EIS, the new alternatives (including Alternative 4A, the new Preferred Alternative) would not serve as habitat conservation plans and do not include a significant habitat restoration component. RDEIR/SDEIS, Executive Summary at p. ES-3. This is a dramatic change in approach for implementing the project and a major impetus for preparing the RDEIR/SDEIS. But despite

this significant change in the project, the modeling used to evaluate the impacts of the new alternatives still includes the extensive habitat restoration that is part of the alternatives set forth in the 2013 BDCP Draft EIR/EIS. As discussed below, this has the effect of underestimating the project salinity impacts.

The tidal marsh habitat and flood plain enhancements that are required by the 2008 USFWS and 2009 NMFS Biological Opinions – which the RDEIR/SDEIS describes as being developed under the No Action Alternative at ELT but does not model as part of the NAA ELT – are modeled as part of each of the new project alternatives that are analyzed in the RDEIR/SDEIS. Furthermore, even though the new alternatives would no longer serve as a habitat conservation plan, the modeling includes 17,000 acres of tidal marsh in addition to the requirements in the USFWS and NMFS Biological Opinions, for a total of 25,000 acres of tidal marsh. As the environmental analysis explains,

[I]mpact analyses reliant on physical modeling apply results consistent with an “Early Long-Term” timeframe. Based on the assumptions used for the original purposes of these model runs, these results also assume implementation of two elements, Yolo Bypass improvements and 25,000 acres of tidal wetland restoration. These two elements were included in the modeling because they were components of Alternative 4, for which the modeling was originally conducted. These two elements, however, are not proposed as part of Alternatives 4A, 2D, or 5A.

RDEIR/SDEIS, Section 4.1.6 at p. 4.1-43. Thus, while Alternative 4A, the new Preferred Alternative, actually includes only 59 acres of tidal wetland restoration (*id.*, Section 4.1.2.1 at p. 4.1-5), the impact assessment is modeled on the assumption that this alternative has more than 400 times this acreage of tidal wetland restoration.

As a result of this failure of the modeling to capture the actual habitat restoration components of the new alternatives, the impacts of the alternatives are conflated with the effects of the assumed habitat restoration actions that were developed for the original alternatives in the 2013 BDCP Draft EIR/EIS. Section 2.1.5.1 of CCWD’s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS explains how this conflation obscures and underestimates water quality impacts of operation of the proposed water supply facilities.

After acknowledging that the Yolo Bypass improvements and tidal restoration are not part of the new project alternatives even though these features were included in the modeling, the RDEIR/SDEIS concludes that the inclusion of these features in the modeling probably overestimates salinity in the west Delta.

The analysis of boron, bromide, chloride, Dissolved organic carbon (DOC), electrical conductivity (EC), and nitrate under Alternative 4A in the ELT is based on modeling conducted for Alternative 4 in the ELT, which assumes implementation of Yolo Bypass Improvements and 25,000 acres of tidal natural communities restoration. As described above, Yolo Bypass

Improvements are not a component of Alternative 4A and the amount of tidal habitat restoration (i.e. Environmental Commitment 4) would be significantly less than that represented in the modeling. *In general, the significance of this difference is that the assessment of bromide, chloride, and EC for Alternative 4A, relative to Existing Conditions and the No Action Alternative (ELT), likely overestimates increases in bromide, EC, and chloride that could occur, particularly in the west Delta.*

RDEIR/SDEIS, Section 4.3.4 at p. 4.3.4-1 (emphasis added). Similar statements are made in the evaluation of water quality impacts for Alternative 2D (*id.*, Section 4.4.4 at p. 4.4.4-1) and Alternative 5A (*id.*, Section 4.5.4 at p. 4.5.3-1).

However, there is no evidence presented in the RDEIR/SDEIS to support this conclusion. To the contrary, the analysis in the 2013 BDCP Draft EIR/EIS clearly indicates that the particular configuration of tidal marsh included in the modeling *underestimates* salinity impacts, since the modeled restoration reduces salinity in the western Delta. For example, Figure 5-1 below is a reproduction of a figure from the 2013 BDCP Draft EIR/EIS that shows the incremental change in electrical conductivity (EC) due to the ELT tidal marsh configuration (25,000 acres) that was assumed in the models; the locations in the west Delta are boxed for easy identification. At every location analyzed in the west Delta, the mean incremental change in EC due to the ELT tidal marsh is negative, indicating that the incorporation of the ELT tidal marsh reduces salinity at these locations for both models that are used to simulate salinity in the Delta (i.e., DSM2 and RMA). Multiple figures in the 2013 BDCP Draft EIR/EIS illustrate that the ELT tidal marsh configuration reduces salinity in the west Delta. *See, e.g., 2013 BDCP Draft EIR/EIS, Appendix 5A, Section D, Attachment 2, Figures 6-26, 6-29, 6-32, 6-35, and 6-41 and Attachment 4, Figures 1-69 to 1-72.*

In short, the tidal marsh assumed for the ELT reduces salinity in the west Delta. Thus, including the ELT tidal marsh in the modeling to simulate the project alternatives, when in fact the tidal marsh will not be constructed as part of the alternatives, *underestimates* the impacts to salinity in the west Delta that would be caused by the alternatives.

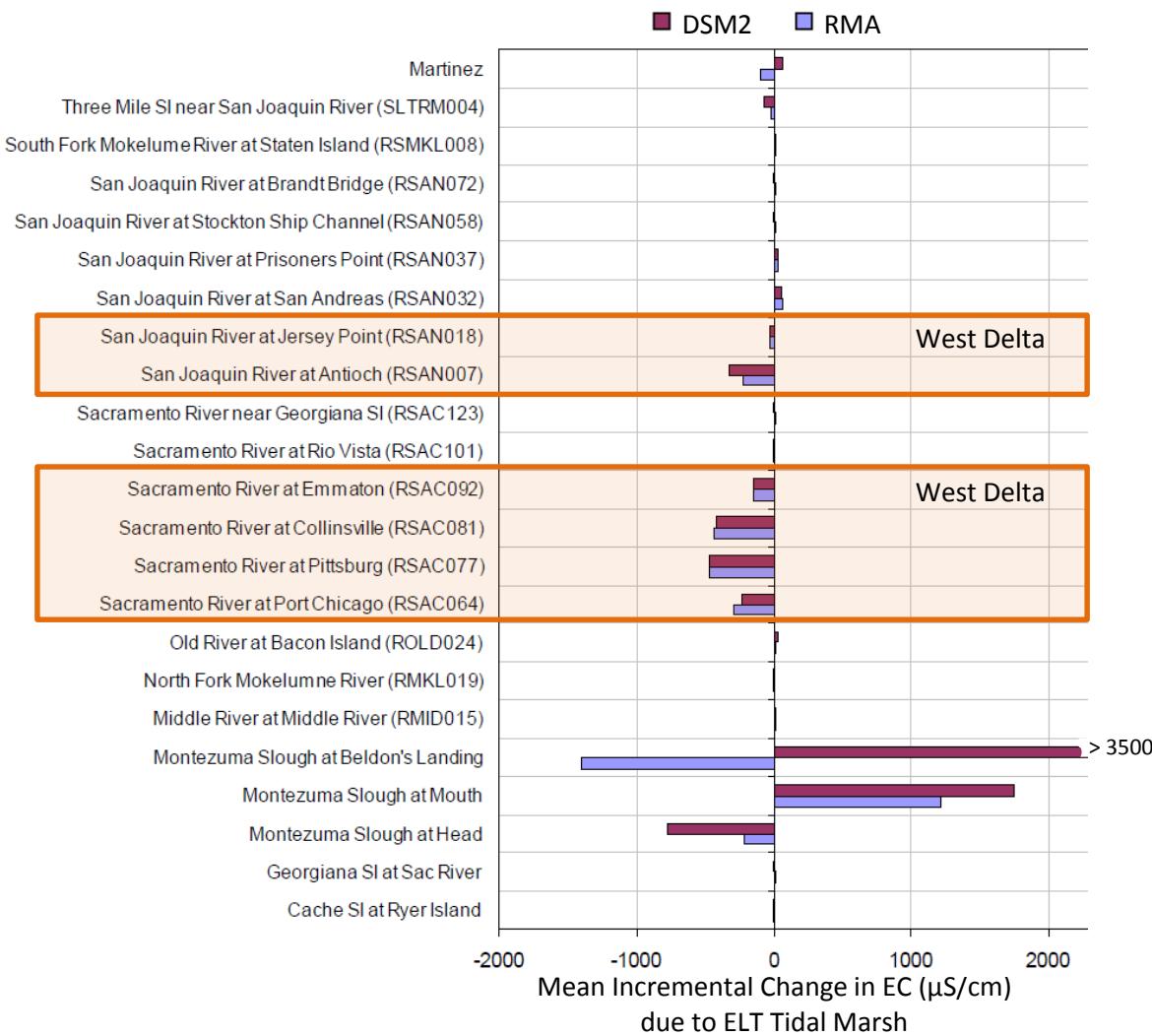


Figure 5-1. Change in Salinity due to the ELT Tidal Marsh

Source: Adapted from 2013 BDCP Draft EIR/EIS, Appendix 5A, Section D, Attachment 4, Figure 22 to highlight the stations located in the West Delta.

5.1.3.2. The project modeling includes operational criteria that do not apply to the new alternatives, thereby obscuring and underestimating impacts

The new alternatives presented in the RDEIR/SDEIS would operate under a very different regulatory regime and in a very different manner than the initial set of alternatives studied in the 2013 BDCP Draft EIR/EIS. But the modeling used in the RDEIR/SDEIS to assess the impacts of the new alternatives has not been updated to reflect these important differences and still includes the same assumptions used in the 2013 analysis. As a result of this significant discrepancy, the RDEIR/SDEIS acknowledges that “there is notable uncertainty in the results of all quantitative assessments that refer to modeling results, due to the

differing assumptions used in the modeling and the description of Alternative 4A and the No Action Alternative (ELT).” RDEIR/SDEIS, Section 4.3.4 at pp. 4.3.4-1 to 4.3.4-2; *see also id.*, Section 4.4.4 at p. 4.4.4-1 (Alternative 2D), and Section 4.5.4 at p. 4.5.4-1 (Alternative 5A).

Despite acknowledging this “notable uncertainty,” the RDEIR/SDEIS nevertheless relies upon the old modeling inputs and assumptions to assess the impacts of the new alternatives. This causes the RDEIR/SDEIS to underestimate the true extent of the project’s adverse water quality impacts. The 2013 BDCP Draft EIR/EIS impacts analysis was based upon modeling of Alternatives 2A, 4, and 5 at the late long term (LLT) time period, which includes climate change forecast for the year 2060, sea level rise of 45 centimeters, improvements to the Yolo Bypass and 65,000 acres of tidal marsh. During development of the 2013 BDCP Draft EIR/EIS, modeling was also performed for each of the alternatives at the early long term (ELT) time period, which includes climate change forecast for the year 2025, sea level rise of 15 centimeters, improvements to the Yolo Bypass and 25,000 acres of tidal marsh. The ELT modeling for Alternative 4 was included in the 2013 Draft BDCP, and DWR released the ELT modeling for the No Action Alternative and all project alternatives to interested stakeholders (DWR, 2013).

The problem now is that the modeling for the new alternatives has not been updated, so the project descriptions of the new alternatives do not match the modeling used to determine the impacts of those alternatives, as shown in Table 5-1. For example, the new alternatives, as described in the RDEIR/SDEIS, maintain the salinity objective in the Bay-Delta Water Quality Control Plan at Emmaton, but the modeling used to analyze the new alternatives includes the modification of that objective that was part of the original Alternative 4. The new alternatives, as described in the RDEIR/SDEIS, maintain the existing operations of the Suisun Marsh Salinity Control Gates but the modeling does not include any operation of the gates. New Alternatives 4A and 2D, as described in the RDEIR/SDEIS, include significantly more closure of the proposed channel barrier located at the head of Old River than the initial alternatives, but the modeling continues to allow flow through the barrier. All of these differences between the way the proposed project is described and is planned to operate, and the way the project was modeled for purposes of the environmental impact analysis, contribute to incorrect findings in the RDEIR/SDEIS that the project’s water quality impacts in the Delta are less than significant.

Furthermore, inflow requirements to the Clifton Court Forebay in the new alternatives may also be incorrectly reflected in the modeling, but this is unclear as the RDEIR/SDEIS provides inconsistent information on this point. Inflow to the Clifton Court Forebay is currently limited to 6,680 cubic feet per second (cfs) plus one-third of the San Joaquin River flow as measured at Vernalis from December 15 to March 15. The 2013 BDCP Draft EIR/EIS proposed to relax this restriction and allow inflow to be 10,300 cfs at all times. 2013 BDCP Draft EIR/EIS, Chapter 3, Table 3-6 at p. 3-36. This table is not redlined in Appendix A of the current RDEIR/SDEIS, leaving the reader to assume that this relaxation is still sought for the revised Alternative 4. Also, the modeling used for the impacts analysis of the revised Alternative 4 and the new Alternatives 4A and 2D includes this relaxation. However, the RDEIR/SDEIS does not mention any changes regarding the inflow restrictions (RDEIR/SDEIS, Sections 4.1.2.2, 4.1.3.2, and 4.1.4.2), which would appear to indicate that

the modification to Clifton Court Forebay inflow restrictions is not proposed as part of the new alternatives. If the relaxation of inflow requirements is indeed part of the new alternatives, it must be defined and consistently documented throughout the RDEIR/SDEIS. If the relaxation of inflow requirements is not part of the new alternatives, the modeling must be revised to reflect this fact.

Finally, the mere acknowledgement that there is “notable uncertainty” in the impact assessment due to the differences between the modeling assumptions and the way the alternatives are described and actually designed to operate is not sufficient to fix the problems in the RDEIR/SDEIS. Rather, to truly fix these problems, the modeling must be adjusted to align with the project that is being modeled, so that the impact assessment is accurate and reliable.

5.2. Sensitivity Studies to Address the Mismatch between the Project Description and the Modeling Assumptions Are Inadequate and Incomplete

To address the fact that the modeling used for the impact assessment does not match the actual project alternatives, the RDEIR/SDEIS includes two sets of “sensitivity studies.” The first set of sensitivity studies is intended to support the propriety of relying on the modeling conducted for the 2013 alternatives to analyze the substantially different new alternatives; as discussed in Section 5.2.1, the sensitivity studies are inadequate for this purpose. The second set of sensitivity studies is intended to address whether the reported exceedances of salinity objectives identified in the 2013 BDCP Draft EIR/EIS are in fact impacts of the proposed project or only appear to be impacts because of limitations of the modeling tools; as discussed in Section 5.2.2, these sensitivity studies actually reveal additional adverse impacts to Delta water quality that are not disclosed in the RDEIR/SDEIS.

5.2.1. The Determination that the Modeling Previously Conducted for Alternative 4 will Accurately Predict the Environmental Effects of New Alternative 4A Is Unsubstantiated.

The sensitivity studies intended to support the use of outdated modeling to analyze the impacts of the new alternatives (including Alternative 4A, the new Preferred Alternative) do not address key aspects of the new project as proposed and do not account for the water quality effects that would be caused by the differences between the new and old alternatives. Thus the sensitivity studies do not support use of the old modeling.

The RDEIR/SDEIS states that “the Lead Agencies have determined that they may reasonably rely on the modeling conducted for Alternative 4 to accurately predict the environmental effects of Alternative 4A.” RDEIR/SDEIS, Section 4.1.6 at p. 4.1-43. While there are no similar determinations that the Lead Agencies may rely upon the modeling conducted for Alternative 2A at ELT to predict the effects of new Alternative 2D, and upon

the modeling conducted for Alternative 5 at ELT to predict the effects of new Alternative 5A, it is evident that the RDEIR/SDEIS relies on the prior modeling to evaluate these new alternatives as well.

The determination that modeling for Alternative 4 will accurately predict the environmental effects of Alternative 4A is based upon Appendix B.1 of the RDEIR/SDEIS, which presents a “brief sensitivity analysis” using the CALSIM II operations model. RDEIR/SDEIS, Appendix B at p. B-1. The sensitivity study incorporates *some* corrections to the modeling assumptions to be consistent with the project description as shown in Table 5-2 below, specifically, removing the 25,000 acres of tidal marsh restoration, removing the Yolo Bypass enhancements, and removing the relaxation of the Emmaton salinity objective. However, the sensitivity study did not correct the modeling assumptions to make them consistent with the project description for the Head of Old River Barrier or the Clifton Court Forebay inflow restrictions. As a result, the sensitivity study does not represent a complete and accurate depiction of the project as it is currently described and proposed in the RDEIR/SDEIS.

Table 5-2. Comparison between project description of Alternative 4A, the modeling assumptions used for the impact analysis (Alternative 4 at ELT), and the modeling assumptions in the sensitivity study.

		Alternative 4A		
		Project Description	Model used for Impact Analysis (Alternative 4 ELT)	Model used for Sensitivity Study in Appendix B.1
Climate Change	Hydrology	2025 forecast	2025 forecast	2025 forecast
	Sea Level Rise	15 cm	15 cm	15 cm
2008 USFWS / 2009 NMFS BiOp Requirements	Fall X2	yes	yes	yes
	Tidal Marsh Restoration	described as part of the No Action baseline and not as part of Alternative 4A	modeled as part of Alternative 4A	not modeled as part of the No Action baseline or Alternative 4A
	Flood Plain Restoration	described as part of the No Action baseline and not as part of Alternative 4A	modeled as part of Alternative 4A	not modeled as part of the No Action baseline or Alternative 4A
Project Components	Tidal Marsh Restoration	59 ac.	25,000 ac. (inc. BiOp, EcoRestore and add'l 16,000 ac.)	0 acres
	Salinity Objective Compliance Location	Emmaton	Three Mile Slough	Emmaton
	Head of Old River Barrier	potential closure Oct-Nov and Jan-June 15	50% open during the times assumed to be closed	50% open during the times assumed to be closed
	Suisun Marsh Salinity Control Gates	operated	not operated	not applicable because no Delta modeling was performed
	Clifton Court Forebay Inflow	not mentioned in RDEIR / SDEIS	10,300 cfs	10,300 cfs

Furthermore, the sensitivity study only examined the results of the water supply operations model (CALSIM II) and did not evaluate the changes in Delta flows or water quality that would result from these changes. Since the Delta modeling tools (DSM2 HYDRO, DSM2 QUAL, and DSM2 PTM) were not employed for the sensitivity study, the study does not correct the modeling assumptions to make them consistent with the project description for the operation of the Suisun Marsh Salinity Control Gates.

As a result of all of these factors, the sensitivity study does not support using the old modeling for Alternative 4 to predict the effects on Delta water quality or aquatic resources for Alternative 4A.

In fact, the second set of sensitivity studies presented in the RDEIR/SDEIS (discussed in Section 5.2.2 below) utilized the Delta modeling tools and show that the operational changes in the revised project description do affect water quality. This second set of studies therefore confirms that the outdated modeling used for the 2013 BDCP Draft EIR/EIS cannot be used to accurately reflect the impacts of revised Alternative 4 and the new alternatives.

Furthermore, as discussed in Section 5.3 below, these problems are compounded by the inaccurate representation of Head of Old River Barrier operations in the modeling used for the impacts analysis, which masks potentially significant water quality impacts of the new Preferred Alternative.

5.2.2. Water Quality Sensitivity Studies Do Not Demonstrate that Water Quality Impacts Are Less Than Significant

The second set of sensitivity studies to assess water quality impacts was used only to determine whether the project would exceed water quality standards, and does not address the provisions of the CEQA Guidelines specifying that significant water quality impacts can occur even without violating water quality standards, when the project would “otherwise substantially degrade water quality.” The studies themselves demonstrate this problem by revealing that the Preferred Alternative will in fact substantially degrade water quality and have significant water quality impacts that were not reported in the RDEIR/SDEIS.

The RDEIR/SDEIS repeatedly relies on sensitivity studies (presented in RDEIR/SDEIS, Appendix A, Appendix 8H, Attachment 1) for the water quality impacts analysis of Alternatives 2D, 4A, and 5A. For example, in discussion of water quality impacts in the Delta due to changes in electrical conductivity (EC), the RDEIR/SDEIS states:

[T]he analysis of EC under Alternative 4A is based on modeling conducted for Alternative 4 in the ELT, which assumes implementation of Yolo Bypass Improvements and 25,000 acres of tidal natural communities restoration. Also, the modeling was originally performed assuming the Emmaton compliance point shifted to Threemile Slough. However, Yolo Bypass Improvements are not a component of Alternative 4A and the amount of tidal habitat restoration (i.e., Environmental Commitment 4) would be significantly less than that represented in the Alternative 4A modeling. Also, Alternative 4A does not include a change in compliance point from Emmaton to Threemile Slough. Furthermore, there are several factors related to the modeling approach that may result in modeling artifacts that show objective exceedance, when in reality no such exceedance would

occur. The result of all of these factors is that the quantitative modeling results presented in this assessment is not entirely predictive of actual effects under Alternative 4A, and the results should be interpreted with caution. In order to understand the significance of all of these factors on the results, sensitivity analyses and other analyses were performed to evaluate the impact of maintaining the compliance point at Emmaton, the impact of having substantially less restoration than included in the modeling that was analyzed, and whether exceedances were indeed modeling artifacts or were potential alternative-related effects that may actually occur. For more information on these sensitivity analyses, refer to Chapter 8, Section 8.3.1.7, Electrical Conductivity, and Appendix 8H Attachment 1, both in Appendix A of the RDEIR/SDEIS.

In this assessment, the modeling results are described and then in most cases are qualified in light of findings from the sensitivity analyses. Conclusions thus represent assessment of the combination of the modeling results and sensitivity analysis findings.

RDEIR/SDEIS Section 4.3.4 at p. 4.3.4-23.

The referenced sensitivity studies evaluate whether changes to the project description for Alternative 4 (such as operation of Suisun Marsh Salinity Control Gates) would reduce the water quality impacts associated with exceedances of salinity objectives. The studies are limited to this one issue and are not used to evaluate any other water quality impacts that could be caused by the new alternatives. But under CEQA, significant water quality impacts can occur without exceeding water quality objectives. This is why the CEQA Guidelines, in assessing whether a project's impacts are significant or not, ask both whether a project would result in a violation of any water quality standards and whether a project would "otherwise substantially degrade water quality." CEQA Guidelines, Appendix G, § IX (Hydrology & Water Quality). In fact, as shown below, the sensitivity studies themselves reveal a substantial degradation of water quality and thus adverse water quality impacts in addition to exceedances of salinity objectives.

The RDEIR/SDEIS' discussion of the sensitivity studies in Appendix A, Appendix 8H, Attachment 1 is limited to analysis of compliance with salinity objectives at the following locations and times:

- Sacramento River at Emmaton (April through August)
- San Joaquin River at San Andreas Landing (April through August)
- Old River at Tracy Road Bridge (year round)
- San Joaquin River at Prisoners Point (April and May)
- Suisun Marsh (year round)

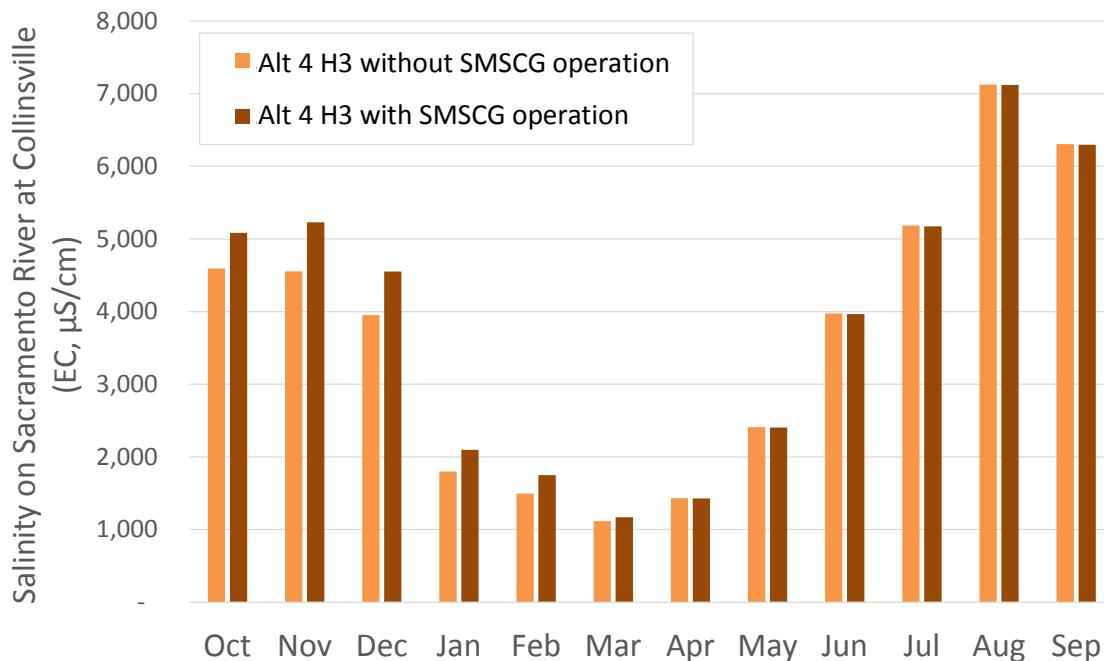
CCWD obtained the complete results of the sensitivity studies from DWR (DWR, 2015) to examine the effects of the project modifications presented in the studies at broader spatial and temporal scales. The results indicate that while these modifications may have the desired effect of reducing violations of salinity standards, they also creates additional impacts that are not disclosed in the RDEIR/SDEIS. Two examples are provided below: (1) Suisun Marsh Salinity Control Gate operations, which keep Suisun March fresh but increase salinity in the Delta; and (2) maintaining the salinity objective at Emmaton, which keeps salinity low in the summer when the Emmaton objective governs operations but raises Delta salinity in the fall and winter.

1. Suisun Marsh Salinity Control Gate Operations

The project description for the revised Alternative 4 and the new alternatives includes operations of the Suisun Marsh Salinity Control Gates (SMSCG). However, the modeling that is used as the basis for the impacts analysis assumes no operation of the SMSCG. The RDEIR/SDEIS presents limited results from a sensitivity study that was designed to determine how operation of the SMSCG would alter Delta salinity. The study found that SMSCG operation freshens Suisun Marsh. However, the RDEIR/SDEIS does not disclose the effects that SMSCG operation would have outside of Suisun Marsh, in Suisun Bay and the Delta. The results of the sensitivity studies provided by DWR indicate that operating the SMSCG as proposed for the new alternatives is likely to create water quality impacts by increasing salinity throughout the Delta from October through March.

Operation of the gates creates a net flow of fresh water from the Sacramento River near Collinsville into Suisun Marsh equivalent to about 2,800 cubic feet per second (cfs), thus reducing salinity within Suisun Marsh (Enright, 2008, slide 40). The RDEIR/SDEIS contains graphs showing the reduction in salinity within Suisun Marsh in response to operation of the gates. RDEIR/SDEIS, Appendix A, Appendix 8H, Attachment 1 at p. 10 (Figures 9 and 4).

However, diversions of the freshwater into Suisun Marsh via operation of SMSCG *increase* salinity in Suisun Bay and the western Delta (Enright, 2008, slides 43 and 44). The RDEIR/SDEIS does not disclose the degradation in water quality that SMSCG operation would have within Suisun Bay or the Delta. Figure 5-2 below shows changes in salinity in the western Delta at Collinsville that are caused by SMSCG operations. The increase in salinity from October through March is an effect of project operations that is not captured by the outdated modeling that was used to evaluate water quality impacts.



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Appendix A, Appendix 8H, Attachment 1 and provided by DWR (DWR, 2015).

Table 5-3 below illustrates the average monthly change in salinity at locations throughout the Delta due to operation of the SMSCG as specified in the sensitivity studies provided by DWR. The table is modeled after the tables in Appendix B to the RDEIR/SDEIS that are referenced in the water quality impacts sections, and provides a summary of the changes for each month at multiple locations within the Delta.

In sum, the results of the sensitivity studies provided by DWR indicate that operating the SMSCG as proposed for the new alternatives is likely to increase salinity throughout the Delta from October through March relative to not operating the SMSCG. But as noted above, the modeling used in the impacts analysis for the new alternatives did not include operation of the SMSCG. As a result, the modeling underestimates the project's impacts to salinity throughout the Delta, with the greatest underestimation occurring in the western Delta.

Table 5-3. Effect of operating the Suisun Marsh Salinity Control Gates.

Average monthly change in salinity (indicated by modeled electrical conductivity in $\mu\text{S}/\text{cm}$) and average monthly percent change for all 16-years of model results for Alt 4 H3 at LLT using the monthly model inputs. Red shading indicates increases in the average percent change. Source: Results from the sensitivity studies described in RDEIR/SDEIS Appendix A, Appendix 8H, Attachment 1 and provided by DWR (DWR, 2015).

Region	Location	Monthly Average (all years)											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Western Delta	Sacramento River at Mallard Slough	Change 703	817	777	462	369	75	1	0	4	5	16	11
	% Change 10%	12%	10%	10%	8%	2%	(-0%)	(-0%)	0%	0%	0%	0%	0%
	Sacramento River at Collinsville	Change 489	674	600	298	255	55	-3	-6	-7	-11	-7	-7
	% Change 12%	15%	13%	12%	10%	3%	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)
	Sacramento River at Emmaton	Change 78	191	141	48	44	12	0	-2	-3	-5	-6	-4
	% Change 6%	11%	11%	7%	6%	2%	0%	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)
Lower Sac	San Joaquin River at Antioch	Change 217	435	409	174	136	43	-1	-4	-7	-13	-13	-10
	% Change 9%	14%	13%	12%	9%	4%	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)
	San Joaquin River at Jersey Point	Change 14	98	120	47	21	10	2	0	-1	-4	-5	-3
	% Change 1%	6%	10%	7%	4%	2%	1%	0%	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)
	Sacramento River at Three Mile Slough	Change 39	112	78	24	22	7	0	-1	-2	-3	-3	-2
	% Change 4%	9%	9%	5%	4%	2%	0%	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)
Lower SJR	Sacramento River at Rio Vista	Change 4	19	14	4	3	1	0	0	0	0	0	0
	% Change 1%	4%	3%	1%	1%	0%	0%	0%	(-0%)	(-0%)	(-0%)	(-0%)	(-0%)
	San Joaquin River at San Andreas Landing	Change -1	17	34	18	7	3	1	1	0	-1	-2	-2
	% Change (-0%)	2%	6%	4%	2%	1%	0%	0%	0%	(-0%)	(-0%)	(-0%)	(-0%)
	San Joaquin River at Prisoner's Point	Change -1	7	23	14	5	2	1	0	0	0	-1	-1
	% Change (-0%)	1%	4%	3%	1%	0%	0%	0%	0%	(-0%)	(-0%)	(-0%)	(-0%)
CCWD Intakes	Sacramento River at Mallard Slough	Change 703	817	777	462	369	75	1	0	4	5	16	11
	% Change 10%	12%	10%	10%	8%	2%	(-0%)	(-0%)	0%	0%	0%	0%	0%
	Old River at Rock Slough	Change -1	11	37	28	10	5	2	1	0	0	-1	-2
	% Change (-0%)	1%	5%	5%	2%	1%	0%	0%	0%	(-0%)	(-0%)	(-0%)	(-0%)
	Old River at Highway 4	Change -1	5	24	21	9	4	2	1	0	0	-1	-1
Victoria Canal	Change 0	1	5	8	5	3	2	1	1	0	0	0	0
	% Change (-0%)	0%	1%	2%	1%	0%	0%	0%	0%	(-0%)	(-0%)	(-0%)	(-0%)

2. Salinity Objective at Emmaton

As discussed above, the project descriptions for the revised Alternative 4 and the new alternatives includes maintaining compliance with the salinity objective at Emmaton. However, the modeling that is used as the basis for the impacts analysis does not maintain compliance of the salinity objective at Emmaton, but rather moves the salinity objective upstream to Three Mile Slough. The RDEIR/SDEIS discusses the reductions in Delta salinity in the summer that are expected due to maintaining compliance at Emmaton, but does not disclose the resulting increase to salinity in the fall and winter.

Maintaining compliance at Emmaton (consistent with the project description) instead of moving the salinity objective to Three Mile Slough (consistent with the impacts analysis), would reduce salinity at Emmaton from April through August when the salinity objective is assumed to be in effect each year. Maintaining compliance also reduces yield of the project during those months, triggering operational changes during other months to recover the lost yield. The net effect of maintaining compliance with the salinity object at Emmaton is a reduction in salinity in the spring and summer, which is illustrated in the RDEIR/SDEIS, with an increase in salinity in the fall and winter, which is not disclosed in the RDEIR/SDEIS.

Table 5-4 below shows the average monthly change in salinity at locations throughout the Delta from the sensitivity studies provided by DWR (DWR, 2015). The results confirm that maintaining compliance of the salinity objective at Emmaton as proposed for the new alternatives is likely to increase salinity throughout the Delta from October through March while reducing salinity from April through September. The RDEIR/SDEIS refers to the expected reduction in salinity in the summer to dismiss water quality impacts identified in the modeling results; however, the RDEIR/SDEIS does not disclose the expected increase in salinity in the fall and winter.

By not including the salinity objective at Emmaton, the modeling for the new alternatives understates the salinity impacts from the project throughout the Delta from October to March. This is the same period that the project's salinity impacts are also underestimated due to the failure of the modeling to include operation of the Suisun Marsh Salinity Control Gates, as described above. Each modeling error thus compounds the other, resulting in a deficient analysis that fails to disclose or evaluate the true magnitude of the project's impacts on salinity levels.

Table 5-4. Effect of not relaxing the salinity objective compliance location at Emmaton.
 Change in salinity (indicated by modeled electrical conductivity in $\mu\text{S}/\text{cm}$) and percent change for (a) all 16-years of model results; (b) dry years (water years 1987 to 1991) for Alt 4 H3 at LLT using the monthly model inputs. Source: Results from sensitivity studies described in RDEIR/SDEIS Appendix A, Appendix 8H, Attachment 1 and provided by DWR (DWR, 2015).

(a)		Monthly Average (all years)											
Region	Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Western Delta	Sacramento River at Mallard Slough	Change 221 % Change 4%	173 2%	246 4%	415 13%	226 5%	14 1%	-55 (-1%)	-307 (-6%)	-435 (-7%)	-208 (-3%)	-282 (-2%)	-127 (-1%)
	Sacramento River at Collinsville	Change 179 % Change 6%	111 3%	169 5%	290 15%	144 5%	2 1%	-40 (-1%)	-199 (-8%)	-335 (-8%)	-147 (-4%)	-288 (-4%)	-113 (-1%)
	Sacramento River at Emmaton	Change 61 % Change 9%	16 5%	26 6%	86 15%	34 4%	-5 0%	-10 (-2%)	-34 (-8%)	-123 (-11%)	-57 (-4%)	-197 (-7%)	-58 (-1%)
	San Joaquin River at Antioch	Change 113 % Change 4%	45 3%	95 4%	161 11%	89 6%	-5 1%	-20 (-1%)	-99 (-9%)	-215 (-10%)	-83 (-4%)	-209 (-4%)	-113 (-1%)
	San Joaquin River at Jersey Point	Change 24 % Change 2%	-20 3%	37 4%	27 4%	23 4%	3 1%	0 (-0%)	-10 (-3%)	-48 (-7%)	-7 (-2%)	-33 (-2%)	-47 (-1%)
	Sacramento River at Three Mile Slough	Change 33 % Change 9%	3 5%	9 5%	51 12%	19 3%	-3 (-0%)	-5 (-1%)	-15 (-6%)	-79 (-10%)	-40 (-4%)	-142 (-8%)	-41 (-1%)
	Sacramento River at Rio Vista	Change 2 % Change 2%	-2 2%	-1 1%	11 4%	3 1%	0 (-0%)	0 (-0%)	-1 (-1%)	-20 (-5%)	-20 (-3%)	-13 (-8%)	-13 (-1%)
	San Joaquin River at San Andreas Landing	Change 2 % Change 0%	-10 1%	11 3%	15 3%	11 3%	4 1%	1 0%	-3 (-1%)	-12 (-3%)	-11 (-2%)	-14 (-2%)	-15 (-1%)
Lower SJR	San Joaquin River at Prisoner's Point	Change 1 % Change 0%	-11 (-1%)	11 3%	11 2%	12 3%	5 1%	0 0%	-1 (-0%)	-6 (-1%)	-8 (-2%)	3 1%	-8 (-1%)
	Sacramento River at Mallard Slough	Change 221 % Change 4%	173 2%	246 4%	415 13%	226 5%	14 1%	-55 (-1%)	-307 (-6%)	-435 (-7%)	-208 (-3%)	-282 (-2%)	-127 (-1%)
	Old River at Rock Slough	Change -2 % Change 1%	-3 1%	0 2%	11 2%	14 3%	8 2%	2 0%	0 0%	-6 (-2%)	-14 (-3%)	4 1%	-19 (-2%)
	Old River at Highway 4	Change -5 % Change (-0%)	-1 0%	4 2%	11 2%	14 3%	9 2%	3 1%	2 0%	-3 (-1%)	-11 (-2%)	6 1%	-9 (-1%)
	Victoria Canal	Change -4 % Change (-1%)	-3 (-1%)	12 3%	6 2%	1 0%	4 1%	4 1%	2 0%	-1 (-0%)	-11 (-3%)	-2 (-0%)	-3 (-0%)

(b)		Monthly Average (drought years)											
Region	Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Western Delta	Sacramento River at Mallard Slough	Change 482 % Change 5%	518 5%	138 2%	307 5%	284 4%	44 3%	10 0%	-252 (-5%)	-243 (-3%)	-146 (-1%)	-401 (-3%)	-336 (-3%)
	Sacramento River at Collinsville	Change 453 % Change 7%	461 7%	81 3%	257 7%	224 5%	24 2%	8 0%	-171 (-7%)	-191 (-4%)	-145 (-2%)	-428 (-5%)	-313 (-3%)
	Sacramento River at Emmaton	Change 200 % Change 12%	217 10%	2 5%	103 9%	78 7%	5 1%	2 0%	-34 (-7%)	-84 (-5%)	-112 (-5%)	-309 (-11%)	-161 (-5%)
	San Joaquin River at Antioch	Change 356 % Change 8%	403 9%	34 3%	170 8%	176 7%	22 3%	6 1%	-88 (-7%)	-122 (-4%)	-75 (-1%)	-309 (-5%)	-310 (-4%)
	San Joaquin River at Jersey Point	Change 94 % Change 6%	169 13%	49 5%	30 5%	48 7%	10 3%	3 1%	-9 (-3%)	-28 (-4%)	18 2%	-35 (-2%)	-154 (-6%)
	Sacramento River at Three Mile Slough	Change 126 % Change 12%	146 11%	-3 6%	65 9%	47 6%	3 1%	1 0%	-16 (-5%)	-59 (-6%)	-84 (-13%)	-224 (-5%)	-111 (-5%)
	Sacramento River at Rio Vista	Change 22 % Change 7%	36 8%	-2 2%	16 4%	9 3%	1 0%	0 0%	-1 (-1%)	-19 (-4%)	-28 (-6%)	-67 (-14%)	-30 (-5%)
	San Joaquin River at San Andreas Landing	Change 23 % Change 4%	56 10%	50 9%	17 4%	15 4%	4 1%	1 0%	-1 (-0%)	-8 (-2%)	-8 (-1%)	-21 (-3%)	-47 (-5%)
Lower SJR	San Joaquin River at Prisoner's Point	Change -1 % Change (-0%)	28 6%	57 11%	24 5%	8 2%	1 0%	1 0%	1 0%	-5 (-1%)	0 0%	9 1%	-30 (-4%)
	Sacramento River at Mallard Slough	Change 482 % Change 5%	518 5%	138 2%	307 5%	284 4%	44 3%	10 0%	-252 (-5%)	-243 (-3%)	-146 (-1%)	-401 (-3%)	-336 (-3%)
	Old River at Rock Slough	Change -22 % Change (-2%)	46 8%	62 9%	20 4%	10 3%	7 2%	3 1%	3 1%	-3 (-1%)	-4 (-0%)	6 1%	-42 (-5%)
	Old River at Highway 4	Change -22 % Change (-3%)	24 4%	65 11%	34 6%	7 2%	6 1%	6 1%	5 1%	-3 (-0%)	-4 (-1%)	11 2%	-23 (-3%)
	Victoria Canal	Change -8 % Change (-1%)	-2 (-0%)	50 10%	21 5%	17 3%	9 2%	7 1%	5 1%	0 0%	-13 (-3%)	1 0%	-1 (-0%)

5.3. The Descriptions of Head of Old River Barrier Operation and South Delta Flow Requirements Are Internally Inconsistent and the Modeling Workaround to Address this Inconsistency Underestimates the Project’s Impacts

As discussed in Section 3.2 above, the description of the revised Alternative 4 and the new Preferred Alternative, Alternative 4A, includes requirements for positive net flows in Old and Middle River at times when the Head of Old River Barrier is closed, even though this is not physically possible. As described below, as a result of this consistency, the project’s water quality impacts are not adequately disclosed and evaluated.

Closure of the HORB impacts the water quality in the south and central Delta; Figure 5-3 shows the geographical extent of the impacts in wet and dry years.

When the HORB is closed, flow from the San Joaquin River is prevented from entering the south Delta at Old River. During wet years, the project description specifies that OMR should be positive for much of the winter and spring. However, as discussed above, OMR cannot be positive with HORB closed; in order to prevent negative OMR during HORB closure, the south Delta export facilities would reduce diversions beyond what is modeled for Alternatives 4/4A and 2A/2D. With no positive flow into Old and Middle Rivers from the San Joaquin River and no negative flow in Old and Middle Rivers caused by operation of the south Delta export facilities, OMR would approach zero, creating stagnant conditions in the south and central Delta (indicated by the green shading in Figure 5-3(a)) and depriving these areas of water from the San Joaquin River, which during wet years is typically of very good quality.

During dry years, the project as described in the RDEIR/SDEIS allows OMR to be negative while the HORB is closed. With no flow entering Old River from the San Joaquin River at the HORB, and with the export pumps operating, the San Joaquin River would flow north past the HORB, then turn south entering Old and Middle Rivers from the north and creating negative OMR (Figure 5-3(b)). The central Delta would receive this water heading from the north, and thus would receive a greater proportion of San Joaquin River water as compared to baseline conditions. This is an important consideration for water quality in the central Delta, since during dry years, San Joaquin River flows are generally low and the water quality is poor. Further, with the HORB closed, stagnant conditions would be created in the south Delta.

For both wet and dry years, impacts would be greater than what is modeled. In the stagnant regions, flow in the channels would oscillate with the tides, but without net flow, the residence time would be very long. (Residence time is estimated by the volume of water in a region divided by the net flow through the region, so as the net flow approaches zero, the residence time approaches infinity.) Long residence times provide optimal conditions for harmful algal blooms as discussed in Section 2.2.1.2 of CCWD’s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS.

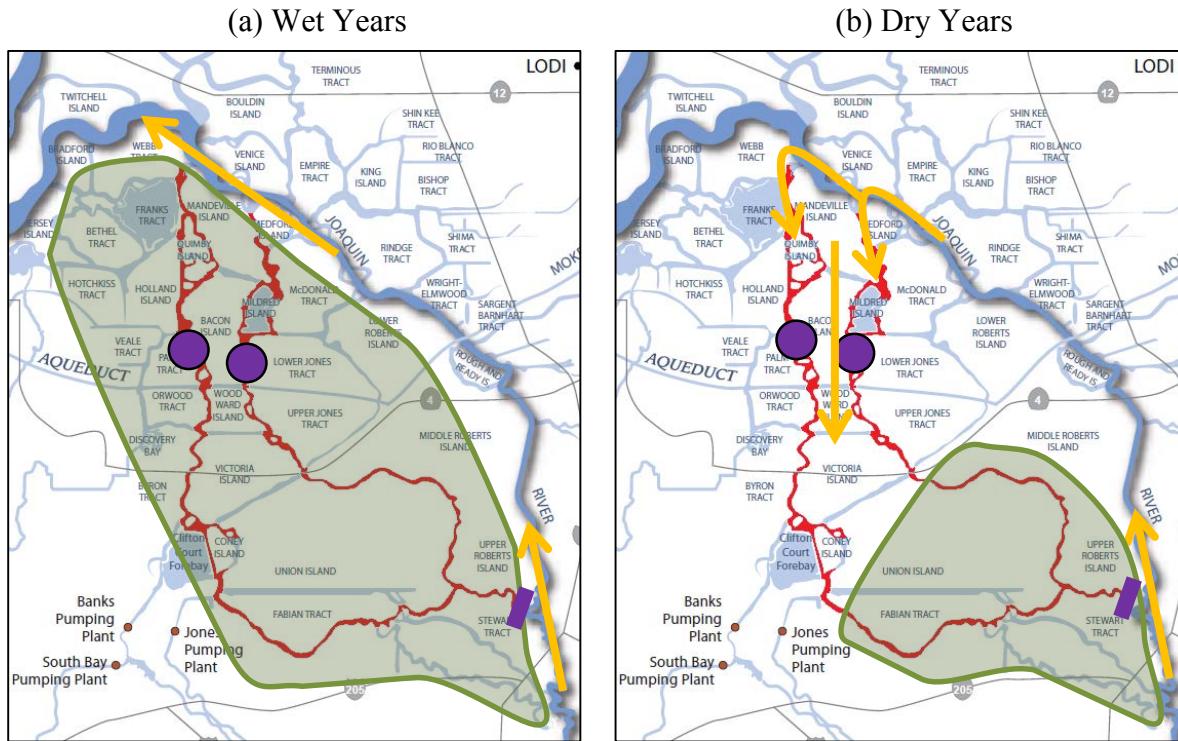


Figure 5-3. HORB affects water quality in the south and central Delta

Closure of the HORB prevents the San Joaquin River from entering Old River in the south Delta, creating a stagnant region to the west of the HORB (green shading). The extent of the stagnant region is dependent on the OMR regulations. In relatively wet years (a), the project description often requires OMR to be positive, preventing any flow from the north from entering the region and expanding the stagnant zone throughout the south and central Delta southwest of the San Joaquin River. In relatively dry years (b), the project description allows OMR to be negative, allowing CVP and SWP pumping in the south Delta and causing the San Joaquin River to turn south and enter Old and Middle Rivers from the north.

CCWD conducted a sensitivity study to evaluate the degree to which the analysis in the RDEIR/SDEIS underestimates the impacts of the new alternatives. Unlike the modeling used for the impact analysis in the RDEIR/SDEIS, CCWD's sensitivity study assumes that the HORB is closed when the project description indicates it should be closed. The CCWD study also reduced south Delta exports if necessary to attempt to meet the OMR requirement. Note that because no parameters are indicated in the project description to open the HORB for water quality or water stage concerns, this was not simulated in the CCWD study. Figure 5-4 illustrates the results for three wet years (Figure 5-4(a)) and three dry years (Figure 5-4(b)). In all six years, the negative water quality effects of the proposed project are greater than what is disclosed and evaluated in the RDEIR/SDEIS.

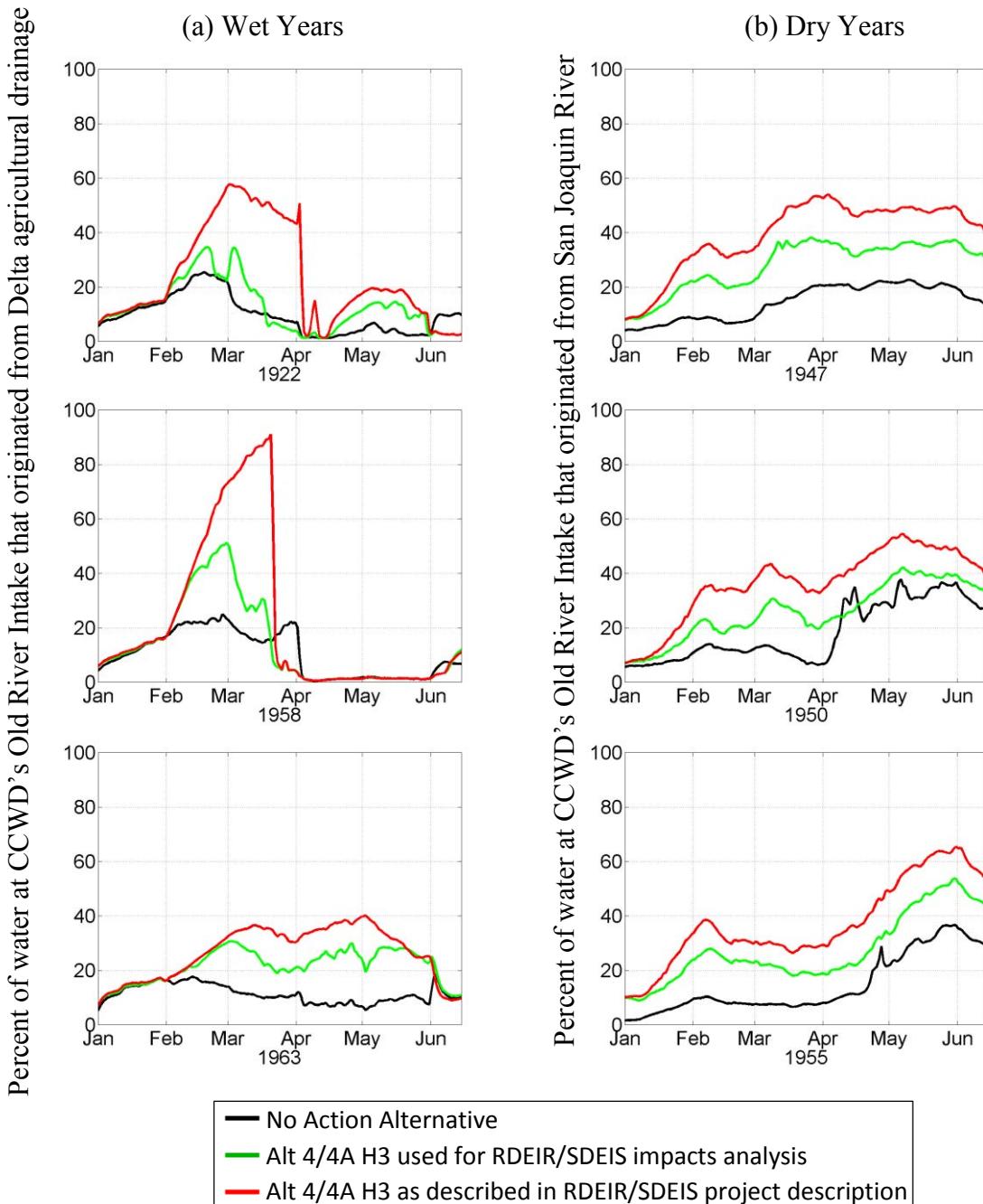


Figure 5-4. HORB affects water quality in the south and central Delta, sensitivity study results

Results of CCWD's sensitivity study (red lines) indicate that the modeling used for the RDEIR/SDEIS impacts analysis (green lines) underestimate the project's adverse impacts on water quality relative to the baseline (black lines). In relatively wet years (a), an increase in percent of water from Delta agricultural drainage would increase salinity, nutrients, algal biomass, and pesticides at CCWD's intakes. In relatively dry years (b), an increase in the percent of water from the San Joaquin River would increase salinity, nutrients, and pesticides at CCWD's intakes.

During wet years, the percent of water diverted at CCWD's Old River Intake that would originate from Delta agricultural drainage increases with the project, reaching as high as 90%. When there is net flow – either positive or negative – in Old River, the agricultural drainage that enters the river is carried away from the south Delta. Conversely, the buildup of agricultural drainage is an indicator of a lack of flow with increased residence time, which is likely to lead to increased algal growth with its attendant operational, taste and odor, and public health impacts as discussed in Section 2.2.1.2 of CCWD's July 25, 2014 comment letter.

During dry years, the percent of water diverted at CCWD's Old River Intake that would originate from the San Joaquin River increases, increasing CCWD's source water salinity. The modeling for the RDEIR/SDEIS, which does not include HORB operations that match the project description, misses this effect and underestimates water quality impacts.

6. The Mitigation in the RDEIR/SDEIS Is Inadequate

The RDEIR/SDEIS states that the new alternatives (Alternatives 4A, 2D and 5A) would eliminate almost all of the significant environmental impacts associated with Alternative 4, the previous Preferred Alternative. For the new alternatives, the RDEIR/SDEIS identifies only one significant water quality impact, from increased concentrations of electrical conductivity (EC), and two water quality mitigation measures, WQ-11a and WQ-11b. RDEIR/SDEIS, Sections 4.3.4 (Alternative 4A), 4.4.4 (Alternative 2D) and 4.5.4 (Alternative 5A). This approach is incorrect for several reasons.

First, as described in detail in Section 5 of these comments, the modeling that forms the basis of the impact analyses is fundamentally flawed. The inputs to the modeling of the three new alternatives do not match the descriptions of those alternatives in crucial respects. The result is an analysis that systematically obscures and underestimates impacts.

Therefore, the project proponents have no basis to conclude that Alternatives 4A, 2D and 5A would not have significant water quality impacts. As described in the sections above, the new alternatives would in fact have significant water quality impacts. Accordingly, legally adequate mitigation must be identified for the true water quality impacts of Alternatives 4A, 2D and 5A as well as Alternative 4; the defects in the mitigation proposed in the 2013 BDCP Draft EIR/EIS were described in detail in Section 3 of CCWD's July 25, 2014 comment letter.

With respect to bromide, the analysis of Alternatives 4A, 2D and 5A contains the same error as the analysis of Alternative 4. Specifically, the analysis assumes that because water purveyors' use of the Mallard Slough intake is "opportunistic," the alternatives' impact on the number of days when the intake is unavailable does not constitute a significant environmental impact. RDEIR/SDEIS, Section 4.3.4 at pp. 4.3.4-9 to 4.3.4-10 (Alternative 4A); Section 4.4.4 at p. 4.4.4-9 (Alternative 2D); and Section 4.5.4 at p. 4.5.3-9 (Alternative 5A). For the reasons described in Section 3 of CCWD's July 25, 2014 comment letter, this conclusion is inaccurate and adequate mitigation must be identified for the significant bromide impacts of the new alternatives.

Finally, the RDEIR/SDEIS identifies two new mitigation measures for the one acknowledged water quality impact of new Alternatives 4A, 2D and 5A. The EC water quality mitigation measures for Alternative 4A are WQ-11a (Adaptively Manage Diversions at the North and South Delta Intakes to Reduce or Eliminate Water Quality Degradation in Western Delta) and WQ-11b (Adaptively Manage Head of Old River Barrier and Diversions at the North and South Delta Intakes to Reduce or Eliminate Exceedances of the Bay-Delta WQCP Objective at Prisoners Point). RDEIR/SDEIS, Section 4.3.4 at pp. 4.3.4-30 to 4.3.4-31. Because these mitigation measures do not set performance standards for water quality at or near CCWD intakes that meet CEQA or NEPA requirements (*see* Section 3 of CCWD's July 25, 2014 comment letter), they must be revised to provide such actual mitigation.

7. Alternatives Previously Eliminated from Detailed Consideration Need to be Reevaluated Given the Change in Project Objectives

The revised environmental analysis includes a change in the project objectives. *Compare* the 2013 BDCP Draft EIR/EIS, Chapter 2 at p. 2-2 to 2-4 *with* the July 2015 BDCP RDEIR/SDEIS, Section 1.1.4 at pp. 1-8 to 1-9. In particular, the initial project objectives cited the need to comply with Section 10(a)(1)(B) of the Endangered Species Act (ESA), 16 U.S.C. § 1539(a)(1)(B), which authorizes the U.S. Fish & Wildlife Service to issue an incidental take permit for listed species pursuant to a habitat conservation plan. 2013 BDCP Draft EIR/EIS, Chapter 2 at p. 2-3. The initial project objectives also cited the goal of ensuring that “the BDCP meets the standards for an NCCP [natural communities conservation plan].” *Id.* For these reasons, the 2013 environmental analysis made clear that “the BDCP is a joint HCP/NCCP intended to address ESA [Endangered Species Act] and NCCPA [Natural Community Conservation Planning Act] compliance...” *Id.*, Executive Summary at p. ES-13.

But under the revised project objectives, there is no longer any reference to the HCP provisions of Section 10 of the ESA. RDEIR/SDEIS, Section 1.1.4.1 at pp. 1-8 to 1-9. Similarly, the revised objectives no longer refer to the goal of ensuring that “the BDCP meets the standards for an NCCP.” *Id.* Consistent with this substantial change in the project objectives, the revised environmental analysis explains that the three new alternatives (Alternatives 4A, 2D and 5A) “would not serve as habitat conservation plans/natural community conservation plans (HCPs/NCCPs) under ESA Section 10 and the NCCPA,” and would not include the extensive set of habitat restoration actions that have been proposed as part of the other 15 alternatives. *Id.*, Section 4.1 at pp. 4.1-1.

The revision of the project objectives in the RDEIR/SDEIS should have led to a reconsideration of those alternatives that previously were eliminated from the analysis on the ground that they did not meet the prior project objectives. For example, the “Portfolio” alternative – the consideration of which has been urged by a broad range of water districts, municipalities, environmental organizations, business groups, and elected officials – was excluded from the initial environmental analysis on the ground that it was beyond the scope of the former project objective of developing a Delta-focused habitat conservation plan and natural communities conservation plan. 2013 BDCP Draft EIR/EIS, Appendix 3A at p. 3A-81. In particular, the prior analysis stated that while there is “much merit” to the Portfolio alternative, this alternative “does not qualify as an EIR/EIS alternative for the BDCP, as its scope is far greater than can be achieved through a *Delta-focused HCP/NCCP*.” *Id.* (emphasis added).

But the project objective of developing an HCP/NCCP has now been abandoned. As a result, the environmental analysis needs to reexamine the Portfolio alternative, and other previously screened out alternatives, in light of the change in project objectives.

The Portfolio alternative would involve a 3,000 cfs north Delta intake and a single tunnel sized for 3,000 cfs gravity flow, with increased water storage south of the Delta, enhanced

water recycling and conservation, and improvements to Delta levees (The Bay Institute et al., 2013). The alternative could substantially improve the reliability of water supplies for those who depend on Delta exports, while at the same time significantly reducing the environmental impacts of the proposed project and its enormous financial costs.

One of the fundamental purposes of the project objectives is to assist in defining the range of alternatives that must be studied. As the CEQA Guidelines explain, an EIR must evaluate a range of reasonable alternatives that would feasibly attain most of the basic objectives of the project while avoiding or substantially lessening the project's significant impacts.

CEQA Guidelines § 15126.6(a), (c). Here, the Portfolio alternative was eliminated from detailed consideration on the ground that it did not conform to the project objective of the BDCP serving as a habitat conservation plan and natural communities conservation plan. But now that this objective has changed, the Portfolio alternative must be reexamined in light of the new project objectives. Without this reexamination, the decision-makers and the public lack sufficient information to assess whether there are feasible ways of achieving the new objectives while reducing the BDCP's significant impacts.

The failure to conduct this reexamination is compounded by the fact that the RDEIR/SDEIS does not clearly identify the revisions to the project objectives. While the document presents redlined versions of the various environmental analyses to show what the text changes are compared to the 2013 BDCP Draft EIR/EIS, no such redline is presented to show the change in the project objectives. Instead, the reader must compare the two different versions of the project objectives to ascertain what the specific text changes are. This has the effect of masking the important changes to the objectives, which further hampers informed governmental decision-making and public participation on the critical issue of alternatives, which constitutes the heart of the environmental analysis.

8. The Presentation of Information in the RDEIR/SDEIS Is Highly Confusing, Precluding Informed Decision-Making and Meaningful Public Participation

CEQA states that an EIR should be organized and written in a manner that will make the information “meaningful and useful to the decision-makers and to the public.” Pub. Res. Code § 21003(b). The CEQA Guidelines reinforce this principle, stating that EIRs should be written in plain language “so that decision-makers and the public can rapidly understand the documents. CEQA Guidelines § 15140. Similarly, under NEPA, federal agencies are directed to use plain language and to follow a clear format when preparing an EIS, so that the environmental analyses can be readily understood by the public. 40 C.F.R. §§ 1500.4(d), (e), 1502.8.

The RDEIR/SDEIS fails to comport with these important principles. The presentation of information is confusing and is not susceptible to being readily understood even by experts, let alone by members of the general public.

The water quality impact analysis is one example of this problem. Chapter 8 of the 2013 BDCP Draft EIR/EIS contains a water quality analysis for the initial set of alternatives. Some portions of this analysis have been revised, while other portions have not changed. Appendix A to the RDEIR/SDEIS contains a partial version of Chapter 8, which shows those parts of the chapter that have been revised. This version of Chapter 8, however, does not contain the parts of the chapter that have not been revised. Further, there is no way of knowing in advance – without actually reviewing the new partial version of Chapter 8 – which specific portions of the analysis have been revised and which portions have not changed. In addition, some of the section numbers have been modified; for instance, Section 8.2 of the 2013 document (“Environmental Setting/Affected Environment,” *see* 2013 BDCP Draft EIR/EIS, Chapter 8, Section 8.2 at p. 8-5) is now Section 8.1 (*see* RDEIR/SDEIS, Section 8.1 at p. 8-3). Moreover, there is an entirely new chapter of the RDEIR/SDEIS, entitled “Section 4,” that contains the evaluation of all of the environmental impacts for the three new alternatives, including water quality effects.

The result is that if a reader wishes to conduct a comparative review of the water quality impacts of the different alternatives, he or she must first review the revised version of Chapter 8 to ascertain which portions of the prior water quality analysis have been revised; then review the old version of Chapter 8 to read the portions that have not changed, while accounting for the different section numbers between the two versions of the chapter to piece them together in a coherent fashion; then review the water quality portions of the environmental analyses in Section 4 for the three new alternatives.

The RDEIR/SDEIS contains a one-page “Document Review Road Map,” but this brief diagram does little to help the reader to decipher this extraordinarily complicated format. Rather, to truly understand the water quality analysis for this project, an intensive side-by-side review of three different voluminous documents (old Chapter 8, revised Chapter 8, and the water quality portions of new Section 4) is required. And this discussion is limited to

one impact – water quality. The various other discussions and analyses in the environmental document suffer from similar problems.

Indeed, the same problem exists for the draft BDCP document itself: Appendix D to the RDEIR/SDEIS shows the revisions to the 2013 draft of the BDCP, but as with the environmental analyses, this appendix does not contain portions of the draft BDCP document that have not been revised. So, again, if a reader wishes to engage in a thorough review of the project that is being proposed for approval, he or she must sift through two different documents (the initial draft BDCP and Appendix D to the RDEIR/SDEIS), side by side, to determine what the details of the proposed project are.

Not surprisingly, this complicated presentation format has generated substantial confusion among those trying to ascertain the details of the proposed project and its environmental impacts. This substantial confusion impedes a fundamental goal of the environmental review – to present a clear and cogent analysis so that the decision-makers and the public can readily understand it. This is another flaw in the RDEIR/SDEIS warranting revision and recirculation.

The Executive Summary of the RDEIR/SDEIS also is problematic. Under CEQA, an EIR must include a summary. CEQA Guidelines § 15123. NEPA contains a similar requirement. 40 C.F.R. § 1502.12 (“Each environmental impact statement shall contain a summary which adequately and accurately summarizes the statement.”). Given the length, complexity and confusing organization of the RDEIR/SDEIS, the 105-page “Executive Summary” is especially important; in all likelihood, this is the only section of the RDEIR/SDEIS that most reviewers will read. Nevertheless, even looking at only one environmental topic – water quality – when the Executive Summary is compared to the impact analysis in the remainder of the document, it becomes clear that the Executive Summary is not accurate and consistently understates the significance of the environmental impacts.

For example, whereas the Executive Summary states that the impact of Alternative 4 on bromide concentrations is less than significant and no mitigation is proposed, the actual impact analysis in the RDEIR/SDEIS states that the impact is significant, identifies revised Mitigation Measure WQ-5 for that impact, and concludes that the impact is significant and unavoidable even with the mitigation. *Compare* RDEIR/SDEIS, Executive Summary at p. ES-43 (Impact WQ-5) with RDEIR/SDEIS, Appendix A, Revised Chapter 8 at pp. 8-217 to 8-219. Similarly, the Executive Summary states that Alternative 4’s chloride impacts are less than significant and that no mitigation is proposed, whereas the actual impact analysis in the RDEIR/SDEIS finds a significant impact, identifies revised mitigation measures WQ-7a through WQ-7d, and concludes that the impact is significant and unavoidable even with the mitigation. *Compare* RDEIR/SDEIS, Executive Summary at p. ES-43 (Impact WQ-7) with RDEIR/SDEIS, Appendix A, Revised Chapter 8 at pp. 8-226 to 8-230. For electrical conductivity, the Executive Summary correctly reports the determination in the RDEIR/SDEIS that the impacts of Alternatives 2D, 4, 4A and 5A all would be significant, but fails to report that the mitigation identified for Alternative 4 differs from the mitigation identified for the new alternatives. *See* RDEIR/SDEIS, Executive Summary at p. ES-44 (Impact WQ-11, erroneously summarizing mitigation for EC impacts); Section 4.3.4 at pp.

4.3.4-30 to 4.3.4-31 (EC mitigation for Alternative 4A); and Appendix A, Revised Chapter 8 at pp. 8-244 to 8-246 (EC mitigation for Alternative 4). And whereas the Executive Summary reports that the significant EC impacts of Alternatives 2D, 4, 4A and 5A all would be mitigated to a less than significant level, the actual impact analysis in the RDEIR/SDEIS states that the EC impact of Alternative 4 would be significant and unavoidable even with mitigation. RDEIR/SDEIS, Appendix A, Chapter 8 at p. 8-243.

Thus, for three acknowledged significant and unavoidable impacts to water quality near CCWD intakes, the mandatory Executive Summary of the RDEIR/SDEIS contradicts the impact analysis that it is supposed to be summarizing. The RDEIR/SDEIS must be revised and recirculated with an Executive Summary that is accurate and does not disavow the significant impacts that are identified in the actual environmental impact analysis.

9. Conclusion

In light of these various flaws, the RDEIR/SDEIS fails to fulfill its basic function of promoting informed public decision-making and meaningful public participation. The analysis needs to be revised to conform to the requirements of CEQA and NEPA and it needs to be recirculated for another round of public review and comment.

10. Exhibits

Bogdan, K.M., 2015. "Schedule Information Related to California WaterFix." Email to Dana Heinrich and Diane Riddle at the State Water Resources Control Board. September 22, 2015. Accessed online on October 11, 2015 at http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/docs/dwr_kenbogdan092215.pdf.

DWR, 2013. Modeling files from CALSIM II, DSM2, and SRWQM developed as the basis for the BDCP Draft EIR/EIS for the Existing Conditions with Fall X2, No Action Alternative with Fall X2, and Alternatives 1 through 9. Provided by Department of Water Resources to CCWD on an external hard drive on March 28, 2013.

DWR, 2015. Modeling files from CALSIM II and DSM2 developed to support sensitivity studies in the 2015 RDEIR/SDEIS Appendix A, Appendix B, and Appendix C. Provided by Department of Water Resources to CCWD on September 4, 2015.

Enright, C., 2008. "Suisun Marsh Salinity Control Gate: Purpose, Operation, and Hydrodynamics/Salinity Transport Effect" Presented at the annual meeting of the California Water Environmental Modeling Forum, Sacramento, California. February 28, 2008.

Reclamation, 2015. U.S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, Central Valley Operation. Delta Cross Channel Operations. Accessed online July 1, 2015 at <http://www.usbr.gov/mp/cvo/vungvari/Ccgates.pdf>.

The Bay Institute, NRDC, Planning and Conservation League, Environmental Entrepreneurs, Defenders of Wildlife, Contra Costa Council, 2013c. "New Plan Offers an Effective, Affordable Package of California Water Supply and Bay-Delta Fisheries Solutions." Press Release. January 16, 2013.

From: Pallick, Kimberly@CNRA <Kimberly.Pallick@resources.ca.gov>
Sent: Thursday, November 12, 2015 9:09 AM
To: BDCPcomments
Subject: FW: Contra Costa County Comment Letter re: CalWaterFix to USACE 9Nov15 - with attachments
Attachments: CCC Comment Letter re CalWaterFix to USACE 9Nov15full.pdf

FYI—

From: Griffin, Rebecca@CNRA
Sent: Thursday, November 12, 2015 8:30 AM
To: Pallick, Kimberly@CNRA
Subject: FW: Contra Costa County Comment Letter re: CalWaterFix to USACE 9Nov15 - with attachments

From: Anna Battagello [<mailto:Anna.Battagello@dcd.cccounty.us>]
Sent: Tuesday, November 10, 2015 5:11 PM
To: Ryan A. Hernandez
Cc: Anna Battagello
Subject: Contra Costa County Comment Letter re: CalWaterFix to USACE 9Nov15 - with attachments

Good afternoon,

Please note the attached Contra Costa County Comment Letter re: CalWaterFix to USACE, November 9, 2015, with attachments.

Thank you,

Anna Battagello, Secretary
Contra Costa County – Water Agency
Department of Conservation and Development
30 Muir Road
Martinez, CA 94553-4601
(925) 674-7884