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October 30, 2015

VIA U.S. MAIL and ELECTRONIC MAIL

BDCP/WaterFix Comments
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The Honorable John Laird, Secretary
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Michael Tucker
National Marine Fisheries Service (NMFS)
Delta Policy and Restoration Branch
650 Capitol Avenue, Suite 5-100
Sacramento, CA 95814

The Honorable Sally Jewell, Secretary
U.S. Department of the Interior
1849 C Street, NW
Washington, D.C. 20240

Re: Sacramento County Comments on the Bay Delta Conservation Plan/California WaterFix Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement

Dear Secretaries Jewell and Laird and Mr. Tucker:

The County of Sacramento and Sacramento County Water Agency (collectively, "County" or "Sacramento County") provide the attached detailed comments on the Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement ("RDEIR/SDEIS") for the Bay Delta Conservation Plan ("BDCP")/California WaterFix ("CalWaterFix") Project.

In its July 28, 2014 comments on the BDCP, the County expressed grave concerns about the devastating and irreversible effects the proposed new water intake and conveyance structures and operations would have on the socioeconomic fabric, physical landscape, and water supplies of the Delta. The County devoted countless hours of technical staff and legal counsel review of the DEIR/DEIS and submitted extensive comments focusing on a wide range of near and long-term impacts and issues relating to water operations, flood control, water supply, land use, agricultural sustainability, socioeconomic effects, and governance. The County has expended substantial resources, at considerable cost, to review the extensive collection of new and revised documents circulated for public review.

To the County's dismay, virtually none of the issues raised in its 2014 comments were addressed in the RDEIR/RDEIS, nor were such issues substantially ameliorated by the changes to the proposed project. While the revised environmental documents state the new preferred alternative ("4A") would result in reduced visual impacts related to the elimination of the above-ground pumping stations, the bulk of the unchanged Project – the proposed diversions, associated forebay, conveyance facilities, associated above-

ground and subsurface disturbances--continue to create unacceptable significant and unavoidable impacts to the physical, cultural, socioeconomic, and water supply environs of the Delta community.

Despite its re-branded moniker, the "CalWaterFix" Project (Project) does not "fix" the overarching scientific, environmental, and public policy problems associated with the draft BDCP or the siphoning of Delta water supplies for the benefit of south of Delta agricultural and urban interests. The CalWaterFix Project and RDEIR/RDEIS, like the BDCP and DEIR/DEIS, are fatally flawed and both the current and previous preferred alternatives are an unacceptable policy choice because they: (1) are based on flawed hydrologic modeling, and erroneous, incomplete and biased scientific analysis; (2) impose a disproportionate burden of the impacts of a project designed to benefit agricultural and urban water users south of the Delta on County residents and the local environment; and (3) fail to demonstrate that such impacts will be sufficiently mitigated. With its repeated, fundamentally defective environmental review and scientific support, the Project remains an unjustified and deceptive strategy that will fail the Delta Reform Act's mandated coequal goals.

The Project shifts fish impacts from the South Delta to the North Delta while increasing the severity of the impacts in the process. To the extent the Project denigrates conditions for protected fish species by impacts from the diversion facilities and decreased water quality, the Project compromises the reliability of the County's water supply. Degradation of existing Delta water and fish habitat by the Project creates conditions that lead to potentially more stringent restrictions on existing diversions upstream and downstream of the Project intakes. For these reasons, and those stated in the County's July 28, 2014 comments on the DEIR/DEIS, and herein, and as amply demonstrated by the comments and criticism levied on the BDCP and CalWaterFix Project by federal resource agencies, the Delta Independent Science Board, local governments and nongovernmental organizations, the Project and accompanying environmental studies demonstrably fail to satisfy the requirements of CEQA and NEPA or the coequal goals as established by the Delta Reform Act.

Clearly much technical effort has been invested by the BDCP/CalWaterFix proponents to try to demonstrate that the twin tunnel project somehow provides a benefit to water supply reliability and management for the entire State. However, it does not recognize or respect the true human and habitat values of the Delta in its analysis. Despite the compendium of reports, studies and data produced, it has failed miserably to prove itself out. At the end of the day, quantity of information is simply not a substitute for quality.

The project proponents continue to ignore the true nature of the project, leave unaddressed the disproportionate impacts that will be felt by the Delta community and the Northern California region, and point to hollow promises for the future to justify moving ahead now. If this project was to be approved, there is little doubt that those promises would remain unfulfilled long after it has left an indelible scar across the Delta and the State. If this project will not help leave the Delta a better place, it has no place in the Delta.

The County remains committed to reasonable, collaborative actions and alternatives based on the best available science which address the statutory mandate for a more reliable water supply for California. However, to be viable, any solution must be achieved in a manner that protects and enhances the Delta ecosystem and the Delta as a unique and irreplaceable cultural, recreational, agricultural and environmental resource. Because the BDCP/CalWaterFix fails to meet these standards, the County

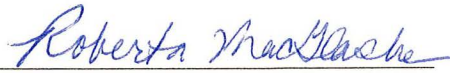
remains adamantly opposed to both the original project and the new alternatives, including the new preferred alternative 4A.

Should you have questions regarding our comments or concerns, please contact Michael Peterson, Director, Department of Water Resources at (916) 874-8913 or Don Thomas, Senior Planner, Department of Water Resources at (916) 874-5140. In addition, please continue to send the County any new or updated documents prepared pursuant to CEQA or NEPA, and any notices filed pursuant to those statutes, including any Notice of Determination. (Pub. Resources Code §21092.2.)

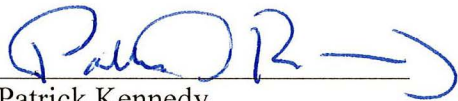
Sincerely,



Phil Serna, Chair
District 1



Roberta MacGlashan, Vice Chair
District 4



Patrick Kennedy
Board Member, District 2



Susan Peters
Board Member, District 3



Don Nottoli
Board Member, District 5

**Sacramento County Comments on
BDCP/CalWaterFix RDEIR/SDEIS
October 30, 2015**

The County of Sacramento and Sacramento County Water Agency (collectively, County or Sacramento County) provide these comments on the Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) for the Bay Delta Conservation Plan (BDCP)/California WaterFix (CalWaterFix) Project (Project). We first summarize our major concerns with the document. We then present our detailed comments on the RDEIR/SDEIS.

Significantly, the RDEIR/SDEIS fails to adequately address or answer basic questions regarding short- and long-term protection, enhancement, and mitigation for the loss of the many values and resources unique to the Sacramento River Delta (e.g., agriculture, recreational, cultural/tourism, and critical natural habitat). The unwieldy and complex structure and sheer size of the RDEIR/SDEIS is virtually unusable to the average citizen or expert alike. It does not provide meaningful information about many of the Project's adverse effects and it omits consideration of many impacts of concern to the County. In these ways the RDEIR/SDEIS fails to summarize and convey information essential to the understanding of Project impacts in a manner reasonably calculated to inform the readers and decision makers, in violation of NEPA's readability requirement and CEQA.

Given these shortfalls (not an all-inclusive list), the RDEIR/SDEIS fails to adequately provide the requisite, accurate environmental documentation necessary for the local citizenry and public decision makers to reach an informed and thoughtful determination on whether the Project will realistically address the statutory "coequal goals" mandate of "providing a reliable water supply for the State while restoring the Delta's ecosystem," without destroying its existing fragile and irreplaceable socioeconomic and ecosystem framework.

I. The RDEIR/SDEIS Fails to Address the County's Prior Comments on the Effects of the Proposed North Delta Diversions & Conveyance

The County provided extensive comments on the DEIR/DEIS – a total of 73 pages of detailed comments supported by comprehensive attachments. It appears that most of the concerns raised in these comments were not addressed in the supplemental or revised analyses included in the RDEIR/SDEIS, including the new evaluation of Alternative 4A and Alternatives 2D and 5A. For example, the County commented on the Project's impacts to agricultural resources, including impacts from loss of agricultural productivity and prime farmlands, changes to water quality, and groundwater-related water supply impacts to Delta communities. The County also commented that the failure to include a defined operational plan for the new diversion makes it impossible to understand the Project or its effects on flows, water quality and water supply. These

comments remain unaddressed in the RDEIR/SDEIS. More unaddressed comments are described later in these comments. Because no changes were made to the Project or RDEIR/SDEIS that would address the vast majority of these concerns, to the extent new alternatives, including Alternative 4A, are similar to the previously proposed BDCP CM1, the County's prior comments apply to the CalWaterFix Project and RDEIR/SDEIS, and the County reasserts its prior comments here and incorporates them by reference as comments on the RDEIR/SDEIS and CalWaterFix Fix Project alternatives.

II. The RDEIR/SDEIS Omits or Buries Essential Information, Violating CEQA and NEPA Requirements that It Actually Inform the Reader

A major criticism of the DEIR/DEIS was that it failed to summarize and convey information essential to the understanding of Project impacts in a manner reasonably calculated to inform the readers and decision makers, in violation of NEPA's readability requirement and CEQA. The RDEIR/SDEIS repeats and compounds these problems. The RDEIR/RDEIS contains a confusing mix of new, old and partially edited impact sections; lack of clear and concise summary tables; omission of blocks of text from the revised impact chapters (without any strikeout to inform the reader which sections were deleted from the prior draft); failure to integrate figures into text; reliance on multiple appendices and appendices and exhibits to appendices; and cross references to old (DEIR/DEIS and BDCP) and new (RDEIR/SDEIS) documents. The foregoing all force the reader to juggle and page through multiple lengthy documents to attempt to piece together all the information the RDEIR/SDEIS contends supports its impact assessments and determinations.

As but one example noted by County staff, the RDEIR/SDEIS states: "Appendix A does not include Draft EIR/EIS text that was not changed or that may be modified in the Final EIR/EIS in a non-substantive manner, and is focused primarily on impact analysis revisions to Alternative 4, though other BDCP alternatives are addressed for some of the resources for various reasons." (Executive Summary, p. ES-11, lines 37-40.) However, substantive sections were removed from Appendix A, Chapter 18 Cultural Resources, particularly sections 18.1.1.1 – 18.1.1.3; 18.2.1.1 – 18.2.1.2; and 18.3.5.1 – 18.3.5.8. Re-issuing a misleading and incomplete document precluded meaningful review and comment, particularly because the document relied heavily on the impact analysis of the original DEIR/DEIS.

The County is not the only entity to identify significant problems with the readability and presentation of information in the RDEIR/SDEIS. The Delta Independent Science Board (ISB), which is comprised of 10 PhD experts in the areas of hydrodynamics and fisheries biology, found the RDEIR/SDEIS "sufficiently incomplete and opaque to deter its evaluation and use by decision makers, resource managers, scientists and the broader public." (September 30, 2015 correspondence to R. Fiorini et al from Delta Independent Science Board Re. Review of environmental documents for California WaterFix ("2015 ISB Report", attached as Exhibit A, at p. 1.) The ISB cited "overarching weaknesses" in the RDEIR/SDEIS including, but not limited to, "overall incompleteness through deferral of content to the Final EIR/EIS . . . ; specific

incompleteness in treatment of adaptive management, habitat restoration, levees and long-term effects; and inadequacies in presentation.” (Id. at p. 4). As a result of these overwhelming structural, organizational and content flaws, the ISB concluded that the RDEIR/SDEIS “fails to adequately inform weighty decisions about public policy.” (Id.) The County agrees.

A draft EIR must be recirculated when it is “so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.” (CEQA Guidelines, § 15088.5(a)(4).) An EIR that is a “mass of flaws” must be redone completely and recirculated. (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 741-742.) The RDEIR/SDEIS is a mass of flaws. Only if the significant flaws in the CalWaterFix Fix Project are addressed and the Project EIR completely rewritten and recirculated for public review and comment will the County, and the rest of the public, be able to understand the true impacts of the Project -- and in turn, provide detailed, consequential comments to help inform the Project and EIR/EIS.

III. The RDEIR/SDEIS Fails to Summarize or Resolve Disagreements Among Technical and Scientific Experts Regarding its Underlying Data and Methodologies

The CEQA Guidelines specify that when experts disagree about an EIR’s data or methodology, the EIR should summarize the main points of disagreement. (CEQA Guidelines, §15151.) When the EIR’s discussion and analysis is not modified to incorporate the suggestions made in comments on the draft document, the EIR must acknowledge the conflict in opinions and explain why they have been rejected, supporting its statements with relevant data. (*Berkeley Keep Jets Over the Bay Comm. v. Bd. of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1367, 1371.) An EIR that fails to explain major discrepancies in critical data and fails to resolve the conflict with substantial evidence is legally inadequate. (*Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260.) Likewise, CEQ Guidelines state that “[a]ccurate scientific analysis” is essential to implementing NEPA. (40 C.F.R. §1500.1(b).) Agencies must ensure the scientific integrity of analyses in environmental impact statements. (40 C.F.R. §1502.24.) In doing so they must discuss any responsible opposing view and indicate the agency’s response to the issues raised. An EIS “must respond explicitly and directly to conflicting views in order to satisfy NEPA’s procedural requirements.” (*Earth Island Institute v. Carlton* (9th Cir. 2010) 626 F.3d 462, 472.) Here, qualified experts (including, but not limited to, the Delta ISB, MBK Engineers, Dave Vogel and Robert Latour) provided detailed comments constituting substantial evidence that showed why and how the DEIR/DEIS’s hydrologic modeling and fisheries analyses were flawed and inadequate to support the DEIR/DEIS’s analysis, impact determinations, public participation or agency decision making. These expert comments raised issues of such significance regarding the fundamental assumptions, data and methodology used in the DEIR/DEIS as to merit discussion in a revised and recirculated Draft EIR/EIS. The RDEIR/SDEIS does not address these fundamental expert criticisms of the DEIR/DEIS.

By deferring any discussion of these issues to the Final EIR/EIS, the lead agencies have effectively precluded informed public participation on some of the most important aspects of the environmental review documents. Post hoc peer review of foundational scientific and technical methodology and data does not allow evaluation of alternatives, examine or validate the data of the analysis, nor generate new analysis or assessment. Preventing peer review as part of the EIR/EIS development process will push decisions on scientific merit to judges instead of scientists, and does not comport with the use of “best available science” as contemplated by the Delta Reform Act and required for Endangered Species Act consultation. Given the magnitude of the criticisms levied at the DEIR/DEIS data and methodologies, and the fact that the same errors appear to have been repeated in the RDEIR/SDEIS, it was an abuse of discretion for the lead agencies to fail to directly address the key expert criticisms in the RDEIR/SDEIS so the public and decision makers could understand and weigh the agencies’ views and supporting evidence in their evaluation of the RDEIR/SDEIS.

IV. Fundamental Flaws in the Technical Analyses Supporting the RDEIR/SDEIS Fatally Undermine Its Conclusions

The County and others, including the Delta ISB, commented previously on the numerous errors and omissions in the BDCP and DEIR/DEIS’s modeling of Bay Delta hydrology. The RDEIR/SDEIS fails to correct these problems, as demonstrated by the expert report prepared by MBK Engineers and submitted on behalf of the North State Water Alliance (NSWA), of which the County is a member. The County also commented on the DEIR/DEIS’s failure to adequately analyze Project impacts to endangered and threatened Sacramento River fish. Expert reports evaluating the RDEIR/SDEIS submitted on behalf of the NSWA demonstrate that the same questions and concerns about the impacts of the previously preferred project apply to the new alternatives, including Alternative 4A.

CEQA requires that an EIR analysis and impact determinations be based on substantial evidence. CEQA “[c]ase law defines ‘substantial evidence’ supporting an agency’s decision as ‘relevant evidence that a reasonable mind might accept as adequate support for a conclusion’” [citation] or ‘evidence of “ponderable legal significance . . . reasonable in nature, credible, and of solid value”’ [citation].” (*Banker’s Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 26, fn. 10.) NEPA likewise requires a record of sufficiently detailed information to fully assess significant environmental impacts so as to allow determinations by informed, reasoned choice. “Accurate scientific evidence remains essential to an Environmental Impact Statement...[and] an agency [can] not rely on ‘stale’ scientific evidence or ‘ignore reputable scientific criticism’” in its Environmental Impact Statement.” (*City of Carmel-By-The-Sea v. U.S. Dept. of Transp.* (9th Cir. 1997) 123 F.3d 1142, 1151, quoting *Seattle Audubon Soc. v. Espy* (9th Cir. 1993) 998 F.2d 699). The technical analyses supporting the RDEIR/SDEIS do not meet this standard; their flaws are so substantial as to invalidate the RDEIR/SDEIS analysis and impact determinations upon which they are based.

V. The EIR is Inadequate to Support Responsible Agency Decision Making

The numerous flaws with the DEIR/DEIS and RDEIR/SDEIS, including but not limited to the lack of essential information about the Project's effects on upstream and Delta water supplies and impacts to threatened and endangered fish species, render the document inadequate to meet the needs of the state responsible agencies and federal agencies with permitting jurisdiction over the Project. For example, as a CEQA responsible agency the State Water Resources Control Board (SWRCB) must rely on the Project EIR when considering the required water rights changes necessary to implement the Project. The DEIR/RDEIR/DEIS/SDEIS cannot support the SWRCB's required findings for petitions to change because there is insufficient evidence to conclude the Project will not injure other legal users of water. The specific bases for this concern have been stated previously in the July 2014 comments of Sacramento County and the NSWA, among many others. With respect to the current RDEIR/SDIES, for example, to the extent the new preferred project (Alternative 4A) includes provisions for additional Delta outflow, the effect of that component on upstream hydrology, and the ability of upstream water users to exercise their water rights, has not been evaluated. Similarly, substantial flaws in the analysis of impacts to threatened and endangered fish species fail to satisfy the informational requirements necessary to support issuance of a Clean Water Act section 404 permit for the proposed diversion structures. For these reasons the DEIR/RDEIR provides no substantial evidence to support a finding the Project will not injure other legal users of water and is inadequate to support the subsequent approvals required to implement the Project.

VI. The Project is Inconsistent with the Delta Plan

The Project is a "covered action" under the Delta Plan and must demonstrate consistency with *each applicable* regulatory policy of the Plan. Where full consistency with all relevant regulatory policies is not feasible, a project proponent must clearly identify areas where consistency is not feasible, explain why it is not feasible and explain how the covered action nevertheless, on the whole, is consistent with the coequal goals. The County lacks the resources to do a complete analysis of the Project's consistency with every relevant policy of the Delta Plan at this time. However, even a cursory review (along with the public comments on BDCP and CalWaterFix CEQA and NEPA documents) demonstrates that the Project is inconsistent with numerous key Delta Plan policies, and the coequal goals, and thus a finding of consistency cannot be made.

A. The BDCP/CalWaterFix Fix Project, DEIR/DEIS and RDEIR/SDEIS Fail to Document Use of the Best Available Science

Delta Plan Policy G P1, Detailed Findings to Establish Consistency with the Delta Plan requires that all covered actions "document use of best available science." (2013 Delta Plan, p. 53.) The 2015 ISB Report along with the ISB's May 2014 review of the DEIR/DEIS are highly critical of the data and methodologies supporting the Project and its environmental studies. The ISB's detailed comments lament the RDEIR/SDEIS's "missing content," including key information about adaptive management an

collaborative science, how levee failures would affect operation of dual conveyance systems, the effect of climate change on expected water exports from the Delta and system operations, and effects of changes in operations of the State Water Project and Central Valley Project or other changes in water availability, on agricultural practices in the San Joaquin Valley. (See 2015 ISB Report at p. 4 et seq.) The 2015 ISB Report is substantial evidence of the RDEIR/RDEIS's failure to document the use of best available science. Additionally, the expert reports of MBK Engineers, Dave Vogel, Robert Latour and others who commented on the DEIR/DEIS and/or the RDEIR/RDEIS provide additional substantial evidence to demonstrate that the Project and its environmental review documents do not document the use of best available science. In this critical respect the CalWaterFix and its EIR/EIS are inconsistent with both the language and intent of the Delta Reform Act and Delta Plan.

B. The Project Fails to Properly Define Adaptive Management

Delta Plan Policy G P1 requires that water management covered actions include adequate provisions appropriate to the scope of the covered action, to assure continued implementation of adaptive management. This requirement shall be satisfied through both of the following: (A) An adaptive management plan that describes the approach to be taken consistent with the adaptive management framework in Appendix 1B, and (B) Document of access to adequate resources and delineated authority by the entity responsible for the implementation of the proposed adaptive management process. (2013 Delta Plan, p. 53.)

An essential element of an adequate adaptive management process as defined in Appendix 1B of the Delta Plan is the establishment of concrete performance measures against which impacts and mitigation, and the success of the adaptive management process itself, can be measured. (See, e.g., Appendix 1B, pp. 1B-3-1B4.) The RDEIR/SDEIS, like the DEIR/DEIS before it, relies heavily on vague and undefined "adaptive management" processes to quantify and mitigate the Project's many significant environmental impacts. The lack of specified thresholds for action was criticized by the SWRCB in its July 29, 2014 comments on the BDCP and DEIR/DEIS¹, and this error has not been corrected in the revised Project or RDEIR/SDEIS.

The ISB, too, was highly critical of the RDEIR/SDEIS's treatment of adaptive management. (See 2015 ISB Report at pp. 5-6.) The ISB was unable to "find examples of how adaptive management would be applied to assessing – and finding ways to reduce – the environmental impacts of project construction and operations." (Id. at p. 5.) The ISB found the project proponents' continued deferral of development of information about adaptive management to project construction and operations to be inexcusable. Specifically, the ISB opined that "if adaptive management and monitoring are central to California WaterFix, then details of how they will be done and resourced should be

¹ See July 29, 2014 letter to Ryan Wulff by Diane Riddle, Environmental Program Manager, SWRCB re. Comments on BDCP, Draft BDCP EIR/EIS and BDCP Implementing Agreement.

developed at the outset (now) so they can be better reviewed, improved and integrated into related Delta activities.” (Id. at p. 5.) The ISB concluded:

The protracted development of the BDCP and its successors has provided ample time for an adaptive management plan to be fleshed out. The [RDEIR/SDEIS] 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. (Id. at p. 6.)

The Project’s lack of a scientifically and legally adequate adaptive management process is inconsistent with Delta Plan Policy GP 1.

C. The Project Increases, Rather than Reduces Reliance on the Delta as a Water Source

Delta Plan Policy WP P1. Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance, provides, among other things, that “water shall not be exported from, transferred through, or used in the Delta if: . . . (3) The export, transfer or use would have a significant adverse environmental impact in the Delta.” (Delta Plan, 2013, pp. 102-203.) The Project not only increases reliance on the Delta, through the expenditure of massive amounts of public funds and construction of permanent facilities dedicated to increasing the frequency and reliability of Delta diversions, but it also will result in numerous significant unavoidable permanent environmental impacts. Moreover, given the scale of known adverse effects (and not even accounting for the many unevaluated and likely substantial adverse effects), including but not limited to impacts to fish and water quality, there is no credible basis for finding that the Project furthers the coequal goal of “protecting, restoring, and enhancing the Delta ecosystem.” In this way the Project is inconsistent with Delta Plan Policy PF P2.

D. The Project Fails to Respect Local Land Use

Delta Plan Policy DP P2. Respect Local Land Use When Siting Water or Flood Facilities or Restoring Habitat, requires that water management facilities respect local land use and be sited to avoid or reduce conflicts with existing uses or those uses described or depicted in city and county general plans. (2013 Delta Plan, p. 194.) As described in detail in the County’s July 28, 2014 comments on the DEIR/DEIS, the proposed diversion facilities and associated infrastructure fail to respect local land use and will conflict with and irreparably damage the existing Delta communities of Hood, Clarksburg and Courtland by permanently altering the physical landscape, including agricultural and cultural/historic uses, substantially degrading its unique scenic qualities and cultural/historical and economic values in perpetuity. In this way the Project is fundamentally inconsistent with Delta Plan Policy DP P2.

E. The Project Fails to Protect Beneficial Uses of Water

Delta Plan Policy WQ R1. Protect Beneficial Uses, provides that water quality in the Delta be “maintained at a level that supports, enhances and protects beneficial uses identified in the applicable State Water Resources Control Board or regional water quality control board water quality control plans.” (2013 Delta Plan, p. 230.) The Project will have significant adverse effects to Delta water quality, including salinity, that threaten beneficial uses identified in the applicable water quality control plans, including agricultural irrigation water, fisheries and drinking water for Delta communities. By degrading Delta water quality to levels that threaten existing beneficial uses, the Project is inconsistent with Delta Plan Policy WQ R1.

VII. Comments on Specific Chapters of the RDEIR/SDEIS

Due to the length and complexity of the RDEIR/SDEIS and number of related documents (including numerous appendices and ancillary studies), it was not feasible for County staff to conduct a comprehensive, detailed review of all alternatives in the time provided for public review and comment. Therefore the County’s comments focus largely on the analysis and impacts of the new preferred project, Alternative 4A. To the extent other alternatives are the same or substantially similar to Alternative 4A, the County’s comments on the RDEIR/SDEIS and/or its objections to Alternative 4A apply equally to those other analyses and alternatives. Similarly, the County’s discussion of proposed mitigation measures focuses on language used in mitigation as presented to mitigate impacts of Alternative 4A. To the extent that the same or substantially similar mitigation measures are proposed for other alternatives, these comments apply equally to that mitigation.

As an overarching comment, County staff found the RDEIR/SDEIS tediously lengthy, confusing, unorganized, and lacking in appropriate data and analysis, which made it extremely difficult to provide thoughtful and meaningful comments on the document. CEQA requires that an EIR “be organized and written in a manner that will be meaningful and useful to decision makers and the public.” (Pub. Resources Code, § 21003(b).) Likewise, NEPA requires an EIS be “concise, clear, and to the point”, with a “clear format”, “which will encourage good analysis and clear presentation of the alternatives”. (40 C.F.R. §1502.1, Id. §1500.4(e), and Id. §1502.10, respectively). The RDEIR/SDEIS, like the prior DEIR/DEIS, does not fulfill this requirement. The following are just a few of the major flaws in the document.

Incomplete analysis of impacts: The County is unable to effectively determine impacts to our residents and resources when the analysis is incomplete. County staff identified numerous instances where analysis of key issues was incomplete or entirely deferred.

Confusing terminology and mistakes in references: The original BDCP alternatives still include the BDCP component; however, the new alternatives 4A, 2D and 5A (analyzed in RDEIR/SDEIS Section 4) do not include the BDCP as a part of the project and (for the most part) should not include references to the “BDCP”. Numerous

references to the BDCP throughout Section 4 added to the confusion over which BDCP project elements were being retained in the new CalWaterFix project.

Missing sections and removed text: In some of the chapters within Appendix A there are missing sections as well as removed text and tables. These omissions prevented County staff from understanding the full analysis or commenting meaningfully on impacts to the County. The omission of blocks of text without explanation made the document confusing and difficult to review, obfuscating project impacts and failing to fulfill the RDEIR/SDEIS's essential purpose as an informational document.

Deferred mitigation: The County identified numerous instances in which mitigation is incomplete or deferred. As with incomplete analysis, the County is unable to effectively determine whether impacts to our residents and resources are mitigated adequately when the mitigation is not clearly defined or quantified.

The County submits the following comments on specific new and revised sections of the RDEIR/SDEIS:

Revised Chapter 3: Description of Alternatives

Reusable Tunnel Material: According to revised Chapter 3 (p. 3-43), as much as 31 million cubic yards of soil/material will be excavated to make way for the proposed twin tunnels. Excavated material will be placed/stored on sites scattered along the proposed alignment. Storage sites (characterized as “temporary” but actually in use for many years) will range between 100 acres to 1,100 acres in size; a total of 1,600 acres will be used for excavated material storage.

Much of the Delta is located within a FEMA special hazard area. The placement of huge volumes of material in the floodplain (even on a temporary basis) has the potential to significantly impact drainage conveyance and floodplain storage at critical locations in the Delta. For example, the placement of such a large volume of fill could block historical overland release paths and displace areas of floodplain storage, resulting in significant property damage and losses. The RDEIR/SDEIS does not analyze or describe appropriate mitigation for potentially significant drainage-related impacts. The placement of fill requires a detailed evaluation of potential impacts to the floodplain and its base flood elevation (BFE).

New Chapter 4: New Alternatives 4A, 2D, 5A

With the elimination of the ecosystem and habitat restoration elements of the BDCP, the project no longer meets the definition of a “program” but rather is just one very large water intake and delivery project. Because impacts are limited to construction and operation of the facility, impacts related to water conveyance, including new alternatives 4A, 2D, 5A, can and should be analyzed on a project-level basis.

Traffic

Section 4.3.15 (pages 4.3.15-1 through 4.3.15-14): Since it appears the new alternatives will have impacts similar, if not identical, to those previously analyzed, the County's July 28, 2014 comments are still applicable for each new alternative.

Water Supply

It is the County's understanding that the CalWaterFix technical group has yet to complete a comprehensive update to the water quality/flow model. Without this data it is not possible to determine whether any of the new alternatives would modify water deliveries to non-State Water Project (SWP) and non-Central Valley Project (CVP) water rights holders, including in-Delta water rights holders. It appears the current water supply impact analysis is focused solely on the Department of Water Resources, U.S. Bureau of Reclamation, SWP water users and CVP water service contractors, as opposed to "other water rights holders." It is critical that the RDEIR/SDEIS include a holistic water supply impact analysis and, as need needed, include a list of actions that mitigate any adverse impacts for all water rights holders.

Biological Resources

Comment: The size, overall disorganization, and incompleteness of the recirculated document preclude the public from conducting meaningful review and consideration of the environmental consequences of the proposed actions.

Recommendation: The alternatives analysis should include a complete project description, determination of impacts, and associated mitigation for each new alternative without referencing multiple different drafts, appendices, and revisions for explanation. The public should be able to understand and consider the details and environmental consequences of each alternative independently.

Comment: Removing the BDCP from the project description necessitates substantial changes to the type and extent of impact analysis and mitigation, and warrants completion of an entirely new document. Impacts to biological resources related to the WaterFix project are not clearly identified on a project level. Impacts are analyzed on a programmatic level and analysis is deferred to the "project planning phase" of future "projects." Mitigation is also deferred to future "projects."

Examples: "AMM13- During the project planning phase, identify suitable habitat within 1.3 miles of the project footprint, ash (sic) survey aquatic habitats in potential work areas for California tiger salamander. If California tiger salamander larvae or eggs are found, implement prescribed mitigation." (RDEIR/SDEIS Appendix 3B (Environmental Commitments) of Appendix A, p. 3B-79.)

AMM12 – "Vernal Pool Crustaceans includes provisions to require project design to minimize indirect effects on modeled habitat, avoid effects on core recovery

areas, minimize ground-disturbing activities or alterations to hydrology, conduct protocol-level surveys, and redesign projects to ensure that no suitable habitat exists within these areas.”

AMM10 – “Measures will be incorporated into restoration and monitoring plans...”

Recommendation: Impacts related to the WaterFix project should be analyzed at the project-level. Project level impacts and associated compensatory mitigation should be clearly identified, or the document should be considered programmatic.

Comment: The analysis fails to clearly define the project and extent required mitigation. Thresholds of significance and performance standards for mitigation of significant impacts are not identified or defined. In addition, the method for developing the acreages associated with the “Environmental Commitments” listed in Table 4.1-3 is not identified.

Example: RDEIR/SDEIS, Section 4 (New Alternative: Alternatives 4A, 2D, and 5A), page 4.1-1 line 27: “The originally proposed BDCP habitat restoration measures and related Conservation Measures (CMs) (i.e., CM2 through CM21) would not be included as parts of Alternatives 4A, 2D, and 5A, *except to the extent required to mitigate significant environmental effects under CEQA and meet the regulatory standards of ESA Section 7 and California Endangered Species Act (CESA) Section 2081(b).*” (emphasis added)

Recommendation: This discussion lacks meaningful information about the degree of habitat restoration that will be included. The statement “to the extent required to mitigate significant environmental effects” associated with the WaterFix project does not constitute an identifiable performance standard against which impacts can be measured and should be defined. Impacts and associated compensatory mitigation should be clearly identified for each alternative, and it should be made clear at what ratio the impacts are being mitigated.

Comment: The RDEIR/SDEIS states in several locations that “The originally proposed BDCP habitat restoration measures and related Conservation Measures (CMs) (i.e., CM2 through CM21) would not be included as parts of Alternatives 4A, 2D, and 5A.” However, throughout Section 4 (New Alternatives) of the recirculated document the reader is referred to “Conservation Measures” included in the previously circulated draft. In addition, the “Limited elements of the previously proposed Conservation Measures” that will be used to mitigate for significant environmental effects are not defined. The removal of the BDCP from the project description results in substantial changes to the type and extent of impact analysis and mitigation and warrants completion of an entirely new document. Vague cross-references do not clearly or adequately describe the new proposed project, its impacts or mitigation and generally create an inference that a broader set of the elements of the originally proposed CMs are still associated with the WaterFix.

Examples: RDEIR/SDEIS, Executive Summary, page ES-13 states: “Because Alternatives 4A, 2D, and 5A do not include components of a HCP/NCCP, these alternatives do not include Conservation Measures (which are specifically required under Section 10 of the Federal ESA). Rather, limited elements of the previously proposed Conservation Measures are included as “Environmental Commitments” under Alternative 4A to mitigate significant environmental effects under CEQA and meet the regulatory standards of ESA Section 7 and CESA Section 2081(b). To aid reviewers, the Environmental Commitments are numbered to parallel the BDCP (Alternative 4) Conservation Measures....”

RDEIR/SDEIS, Section 4 (New Alternative: Alternatives 4A, 2D, and 5A), page 4.1-16 line 1: “This action would consist of the acquisition of lands for protection and restoration of listed species habitat in perpetuity and would be implemented in the same way as described in Conservation Measure 3 in the Draft BDCP but over less area...”

Recommendation: The “Limited elements of the previously proposed Conservation Measures” that will be used to mitigate for significant environmental effects need to be clearly defined and accurately referenced throughout the document. The new alternatives, which do not include elements of a conservation plan, should not reference the previously circulated Draft BDCP or associated conservation elements.

Energy

Comment: The analysis of energy (Chapters 4.3.17, 4.4.17, and 4.5.17 and Appendix A Chapter 21, Pages 21-1 – 21-15) does not include clear sources for energy estimates, which is vital to the methodology of the analysis. Also, it is worth noting that DEIR/DEIS Table 21-12, which provided energy use estimates, has been removed from the RDEIR/SDEIS, although it is referenced in the analyses of Alternatives 4A, 2D, and 5A in Chapter 4, Sections 4.3.17, 4.4.17, and 4.5.17 of the RDEIR/SDEIS. In addition, operational energy impacts are only provided for Alternative 4. The remaining alternatives only include analyses of construction impacts. Furthermore, the cumulative analysis is insufficient as it does not actually address cumulative impacts at all, and it only addresses construction impacts.

Comment: RDEIR/SDEIS, Chapter 4, Section 4.3.17, page 4.3.17-1, lines 5-8 state that Construction BMPs would ensure that only high-efficiency equipment is used during construction and refers the reader to Appendix 3B, Environmental Commitments, Section 3B.5.3, in Appendix A for those BMPs. The RDEIR/SDEIS asserts the referenced BMPs would ensure that construction activities for Alternative 4A would not result in an adverse effect on energy resources. First, the cross-reference to the construction BMPs is inaccurate, as Section 3B.5.3 actually refers to Environmental Commitment CM6 Channel Margin Enhancement, which is not relevant to the analysis of energy use. This type of incorrect cross referencing on key issues such as identification of mitigation measures occur throughout the document in the analyses of several

alternatives and make it difficult for the reader to accurately assess whether the document actually considers ways to ensure that each alternative would not result in the wasteful use of energy.

Second, the Construction BMPs (BMPs 7-15) contained in Appendix 3B of Appendix A (in Section 3B2.10.2) include standard construction measures such as encouraging carpooling and alternative transportation to job sites for construction workers, keeping construction equipment maintained, using Energy Star equipment, and ensuring that equipment in construction offices is turned off at the end of the work day. While all of these measures do provide energy savings, those savings are never quantified or analyzed. Further, for a project of this scale with the potential for statewide impacts, it is reasonable to expect that more could be done to ensure that project construction does not result in wasteful energy use than the implementation of simple, standard BMPs that include the use of Energy Star appliances and turning off lights at job site offices. These measures alone do not assure the reader that construction of any of the alternatives would not result in the wasteful or inefficient use of energy for large-scale construction activities. Further, the analysis provides an estimate for construction energy use, the source of which is unclear, but it does not compare the estimate to a threshold that could be used to determine the significance of the impact. What would constitute excessive or inefficient energy usage? The RDEIR/SDEIS contains no standards against which to compare the estimated impact or assess its significance.

This inadequate analysis also occurs on pages 4.4.17-1 for the analysis of Alternative 2D and 4.5.17-1 for the analysis of Alternative 5A. RDEIR/SDEIS, Chapter 4, Section 4.3.17, page 4.3.17-1, lines 18-20 direct the reader to Table 21-12 in Appendix A of the RDEIR/SDEIS for the operational energy use expected under Alternative 4 Operational Scenarios H3 and H4, estimated at between 150 to 170 GWh per year. However, there is no Table 12-21 in the Appendix A, and Impact ENG-2 for Alternative 4 states different energy usage amounts (161 GWh/year for Scenario H1 and 140 GWh/year for Scenario H4). The Alternative 4 Impact Summary does not reference Scenario H3, at all, despite the cross-reference in the RDEIR/SDEIS. Impact ENG-2 under Alternative 4 also refers the reader to Table 21-12, which, as stated above, is not included in the document. Furthermore, the RDEIR/SDEIS includes no discussion of methodology or references to studies describing the energy usage analysis or how energy usage was estimated.

The analysis on RDEIR/SDEIS page 4.3.17-1 goes on to say that energy use under Alternative 4A would be slightly higher than estimated for Alternative 4, but operation of the water conveyance facility would be managed to maximize efficient energy use, so there would be no adverse effect. The analysis does not estimate how much higher the estimated energy usage would be under Alternative 4A, nor does it provide any details to demonstrate how water conveyance facilities would be managed to maximize efficient energy use. By failing to provide meaningful data or analysis of this issue, the RDEIR/SDEIS's cursory treatment of energy impacts is inadequate and does not provide any evidence to support its determination that operations would not result in wasteful or inefficient use of energy. The same inadequate analysis also occurs on page 4.4.17-1 for the analysis of Alternative 2D and page 4.5.17-1 for the analysis of Alternative 5A.

Revised Chapter 6: Surface Water

The County's July 28, 2014 comments on DEIR/DEIS Chapter 6 still apply, and apply to the new alternatives presented in the RDEIR/SDEIS, based on the fact that no revisions in this chapter indicate any changes were made that would address these original comments.

Revised Chapter 7: Groundwater

The County's July 28, 2014 comments on DEIR/DEIS Chapter 7 still apply, and apply to the new alternatives presented in the RDEIR/SDEIS, based on the fact that no revisions in this chapter indicate any changes were made that would address the original comments. In addition, the County offers the following comments on the RDEIR/SDEIS.

Comment: Chapter 7 describes existing groundwater conditions in the Delta Region, the Suisun Marsh, the region Upstream of the Delta, and the SWP/CVP Export Service Areas. Further, this chapter includes a discussion of the environmental consequences (Section 7.3) associated with potential changes resulting from the construction of the Project's water conveyance component and related facilities in the Delta Region, as well as other indirect effects on groundwater resources stemming from the long-term operations and existence of these facilities and restored areas, under the various identified alternatives.

There will be more than 1,500 exploratory borings and monitoring wells (including piezometers) being constructed as part of the geotechnical study for the proposed tunnels, many of them in Sacramento County. As a result, the following comments are applicable to the RDEIR/SDEIS's discussion of wells, including all associated appendices:

Comment: The RDEIR/SDEIS continues to include mitigation that references "implementation of Conservation Measures (CM) 2-21" (e.g., Impact GW-6 and GW-7). Given the CalWaterFix is no longer defined as habitat conservation plan, referencing past BDCP-related CMs is very confusing. Any references to mitigation applicable to Alternatives 4A, 2D and 5A should clearly link to the retitled and applicable "environmental commitments" as defined in the RDEIR/SDEIS.

Comment: The RDEIR/SDEIS does not identify or adequately describe the local agency permitting process, construction standards, and site inspection requirements for all associated wells (excluding temporary dewatering wells or exploratory borings not within 10 feet of groundwater). Further, a description of relevant county ordinances is completely absent from the discussion (Chapter 6.28 (Wells)).

Comment: Re. the Geotechnical Exploration Plan: DWR and/or the U.S. Bureau of Reclamation (as applicable) should provide local agencies, including the Sacramento County Environmental Management Department, with copies of groundwater contour maps based on the findings of the plan.

Revised Chapter 13: Land Use

Comment: Unfortunately, the State does not have to comply with the County's local regulations and thresholds of significance. However, the lead agency's failure to fully comply with local land use regulations and improvement standards is substantial evidence that the CalWaterFix water conveyance project will result in significant and unavoidable land use impacts and therefore require appropriate mitigation. As described in the RDEIR/SDEIS, under Alternative 4A, individual pumping plants at the three intake locations will not be included, thereby eliminating the need for three (3) 46,000-square-foot buildings (to house the pumping plants) and the permanent transmission lines, substations, and surge towers. Elimination of these infrastructure/facility features reduces some of the visual intrusion/impact issues presented by the original preferred project. However, the massive and intrusive project footprint remains essentially unchanged. As a result, the land use issues and concerns cited in the County's July 28, 2014 comments still apply based on the fact that no revisions in this section showed any changes were made that would address these original comments.

Revised Chapter 14: Agricultural Resources

Comment: As described in our July 28, 2014 comments on the DEIR/DEIS, protection of existing agricultural resources and operations and promoting long-term agricultural sustainability in the Delta are especially important issues for Sacramento County. Thus the County was deeply disappointed that none of its original comments on the DEIR/DEIS was addressed in the RDEIR/SDEIS. Because no changes were made that address the County's previous comments, the same comments apply to the RDEIR/SDEIS, including our objection that it is inaccurate to characterize the Project's decade-long significant impact to agriculture as "temporary." Subjecting farmers, who make their living from the affected agriculture, to a decade of significant and unavoidable impacts will bring the primary economic driver in the Delta to a grinding halt. The proposed mitigation measures included in the RDEIR/SDEIS fail to adequately address the issue of lost agricultural production on prime farmland and how/if farmers will be fairly compensated for lost revenues while the land is out of production.

Revised Chapter 15: Recreation

The County's July 28, 2014 comments on DEIR/DEIS Chapter 15 still apply, and apply to the new alternatives presented in the RDEIR/SDEIS, based on the fact that no revisions in this chapter indicate any changes were made that would address the original comments.

Revised Chapter 18: Cultural Resources

The County's July 28, 2014 comments on DEIR/DEIS Chapter 18 still apply, and apply to the new alternatives presented in the RDEIR/SDEIS, based on the fact that no revisions in this chapter indicate any changes were made that would address these

original comments. In addition, the County has the following comment on the RDEIR/SDEIS's evaluation of Alternatives 4A, 2D and 5A:

Comment: The RDEIR/SDEIS states: "Appendix A does not include Draft EIR/EIS text that was not changed or that may be modified in the Final EIR/EIS in a non-substantive manner, and is focused primarily on impact analysis revisions to Alternative 4, though other BDCP alternatives are addressed for some of the resources for various reasons." (Executive Summary, ES-11, lines 37-40.) However, substantive sections were removed from Appendix A, Chapter 18 Cultural Resources, particularly sections 18.1.1.1 – 18.1.1.3; 18.2.1.1 – 18.2.1.2; and 18.3.5.1 – 18.3.5.8. Re-issuing an incomplete document precluded meaningful review and comment, particularly because the RDEIR/SDEIS relies heavily on the impact analysis of the original DEIR/DEIS.

Comment: The RDEIR/SDEIS, Section 4, Cultural Resources 4.2-62, lines 23-25 states: "Land use changes within the Plan Area, including habitat restoration projects, could result in loss of these cultural resources, although to a lesser degree than under the No Action Alternative (LLT) because fewer acres would be disturbed." Alternative 4 and the new project alternatives, 4A, 2D, and 5A, do not analyze impacts at the project-level. The analysis is based solely on the footprint of the project area, but does not discuss the number, type or severity of impacts to cultural resources under one alternative versus another. Analysis has been conducted based on the size of the overall project footprint rather than on survey and analysis. The RDEIR/SDEIS thus fails to provide a meaningful evaluation of cultural resource impacts based on substantial evidence. Due to the changed nature of the project, there is no justification for the failure to evaluate impacts to cultural resources on a project-level basis using site-specific information. Without such information the County is unable to understand the scope and magnitude of potential significant effects to cultural resources.

Comment: RDEIR/SDEIS Appendix A, Chapter 18 Cultural Resources, 18-24, lines 23-28 states: "The Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the U.S. Army Corps of Engineers are entering into a Programmatic Agreement with the California State Historic Preservation Officer for the implementation of NHPA Section 106 for their undertakings associated with the BDCP. The effects of Federal undertakings (actions) on historic properties (eligible for or listed on the National Register of Historic Places) will be taken into account through the implementation of this programmatic agreement." The RDEIR/SDEIS lacks an analysis of the effects of Federal undertakings on historic properties. The Project has not been evaluated at the programmatic level or at the project level. The RDEIR/SDEIS is deficient because analysis of cultural resource impacts has been deferred; instead, analysis is proposed as a mitigation measure. It is impossible to understand the impacts of the preferred project or select an environmentally superior alternative because the necessary evidence, analysis and determinations for all project alternatives have been impermissibly deferred.

Comment: The document inaccurately documents consultation efforts to date. The RDEIS/SDEIS states: "DWR sent letters to 23 potentially interested parties, including

local historical societies, local ethnic history groups, and local agencies on March 11, 2015.” (Chapter 18 Cultural Resources – Appendix A: p. 18-2, lines 13 -15.) On Appendix A page 18-3, line 14 the RDEIR/SDEIS states, “No responses have been received to date.” On June 4, 2015, Sacramento County received a request to participate in the Section 106 process for the BDCP. On June 23, 2015, the County requested to participate in the Section 106 process as an interested party. Under 36 CFR Part 800, Section 800.2(c)3, “a representative of a local government with jurisdiction over the area in which the effects of an undertaking may occur is entitled to participate as a consulting party.” On July 16, 2015, DWR acknowledged receipt of the County’s letter and indicated that the Corps had been notified of the County’s interest in participating in the Section 106 consultation process and draft PA. (See Exhibit B.)

Comment: The document fails to directly acknowledge that the Project will have disproportionate and adverse effects on the communities in the Delta, particularly the National Landmark District of Locke, and National Register Historic Districts in Walnut Grove. According to RDEIR/SDEIS Appendix A, Chapter 18 Cultural Resources, 18-17, lines 11-16: “Some of resources [sic] are considered historic properties for the purposes of this analysis because they meet the criteria in the NRHP regulations (36 CFR 60.4), as described below. For the similar reasons [sic], some are considered historical resources under CEQA. As identified in Appendix 18B, Table 18B-9, a total of 10 built-environment resources have the potential to be directly or indirectly affected by construction of this alternative. Some of these resources have multiple contributing elements, as described in Appendix 18B. The specific nature and location of the impact mechanism for each affected resource is also described in Table 18-9.” The impact discussion is inadequate and downplays Project impacts because it does not clearly identify the nature and extent of impacts under the proposed alternatives. Some of the resources that have “multiple contributing elements” are the historic districts in Walnut Grove and Locke, which are listed on the National Register of Historic Places and represent entire communities. As briefly noted in the RDEIR/SDEIS Section 4, Environmental Justice 4.3.24-4, “The impacts on cultural resources have the potential to disproportionately affect minority or low-income populations.” The RDEIR/SDEIS acknowledges that cultural resource mitigation measures for the Project will not minimize effects to a less than significant level; effects will remain adverse. Therefore, effects on minority and low-income populations would remain disproportionate and adverse.

Comment: The RDEIR/SDEIS relies on the Built Historical Resources Evaluation Report for the BDCP (September 2012). The Findings for that document (page 57) state: “Because there was no federal lead agency to fulfill the statutory requirements of Section 106 at the time of this survey and evaluation effort, the resulting determinations of eligibility and ineligibility have not been reviewed by the California State Historic Preservation Office (SHPO). Section 106 review will be performed for relevant federal actions that qualify as undertakings and that are necessary to implement the BDCP.” A lead agency for the project has been identified, but the technical reports in support of the RDEIR/SDEIS have not been revised. The Built Historical Resources Evaluation Report for the BDCOP (September 2012) does not contain determinations that have been vetted

through the State Historic Preservation Office. SHPO's input is an important component of the information needed to support an adequate evaluation of cultural resource effects, and the failure to include this information in the RDEIR/SDEIS, which was prepared almost three years after the Built Historical Resources Evaluation Report was completed, deprived Sacramento County and the public of meaningful information that was important to evaluate the Project's effect on significant cultural resources.

Revised Chapter 19: Transportation

The County's July 28, 2014 comments on DEIR/DEIS Chapter 19 still apply, and apply to the new alternatives presented in the RDEIR/SDEIS, based on the fact that no revisions in this chapter indicate any changes were made that would address these original comments.

Revised Chapter 20: Public Services and Utilities

The County's July 28, 2014 comments on DEIR/DEIS Chapter 20 still apply, and apply to the new alternatives presented in the RDEIR/SDEIS, based on the fact that no revisions in this chapter indicate any changes were made that would address these original comments. In addition, the County has the following comment on the RDEIR/SDEIS's evaluation of Alternative 4A:

Comment: RDEIR/SDEIS section UT-2 (p. 4.3.16-2; 20-10) discusses Alternative 4A's disruption of public service utilities (also Section 4). The analysis looks at the effects of constructing two 9-foot diameter pipes 100-feet below the surface of Hood (also shown on Figure M12-4) and concludes under both CEQA and NEPA that there would be than significant effects, or no adverse effects, and therefore no mitigation is necessary. The determination is incorrect because it does not take into consideration Project effects on Hood's two main drinking water wells, one of which is located on 3rd street and the other on Hood Franklin Road. These 12-inch wells are within close vicinity of the proposed alignment of the 9-foot diameter pipes and are between 200 and 340 feet deep, penetrating the proposed construction depth. Because of the close vicinity of the wells and proposed pipe alignment, an analysis of construction and operation activities with regards to the aquifer stability and effects of the Hood wells is needed along with mitigation to address significant impacts associated with the wells' failure due to Project construction.

Revised Chapter 22: Air Quality and Greenhouse Gases

Comment: The RDEIR/SDEIS fails to evaluate project-level air quality and GHG emission-related impacts specific to Alternatives 2D and 5A but instead relies heavily on analogies and extrapolation from the original DEIR/DEIS. Incomplete analysis of the impacts of these new alternatives prohibits reviewers from adequately assessing impacts to their communities and from providing meaningful comments. For example, the RDEIR/SDEIS concludes that the air quality impacts of Alternative 2D would range from those calculated for Alternative 1A and Alternative 4. (RDEIR/SDEIS, Section 4 New

Alternatives: Alternatives 4A, 2D, and 5A, page 4.4.18-1, lines 4-9.) Similarly, on page 4.5.18-1 lines 4-9, the conclusion is made that the air quality impacts of Alternative 5A would range from those of Alternative 4 and Alternative 5. Additional impact discussions throughout the rest of the Air Quality and Greenhouse Gases sections of Alternative 2D and 5A utilize this same technique of omitting alternative-specific evidence and analysis in favor of blending and cross referencing the analysis prepared for the original DEIR/DEIS alternatives. While analysis has been focused on the preferred alternative (Alternative 4A), Sacramento County is concerned that additional project-level analysis should be completed in the event that either Alternative 2D or Alternative 5A were to move forward as the preferred alternative. Moreover, cross referencing analysis and conclusions for different alternatives that was presented in a different draft EIR makes it inordinately difficult for the public to find and understand the impacts of the new alternatives that are the subject of the revised and recirculated EIR.

Comment: (RDEIR/SDEIS, Appendix A, Chapter 22 Air Quality and Greenhouse Gases and Section 4 New Alternatives: Alternatives 4A, 2D, and 5A): While it is understood that the preparers of the document have made good faith efforts to coordinate with air districts and to quantify, to a certain extent, impacts and associated mitigation measures, it is still not clear whether the proposed project would allow Sacramento County to meet Federal General Conformity de minimis thresholds in the future (in particular, with regards to NOx and PM). Impacts (Impact AQ-20, pp 22-314 through 22-315) and mitigation (Mitigation Measure AQ-1a, pp. 22-289 through 22-291 and Mitigation Measure AQ-1b, p. 22-291 through 22-293) for the proposed Project would occur as far out into the future as 2029, at which point it becomes difficult to predict both mitigation feasibility and adequacy. In the event that the air quality impacts of the proposed Project prevent Sacramento County from meeting Federal General Conformity requirements in the future, Sacramento County's ability to receive Federal funding for infrastructure projects, such as bridges and roads, will be limited, and the resulting economic impact may contribute to significant impacts to local infrastructure by delaying or preventing necessary safety and circulation improvements.

Comment: RDEIR/SDEIS, Appendix A, Chapter 22 Air Quality and Greenhouse Gases, page 22-97, lines 4-5: lines 4-5 of Mitigation Measure AQ-21 mistakenly refer to Mitigation Measure AQ-15 rather than AQ-21.

Revised Chapter 23: Noise

The County's July 28, 2014 comments on DEIR/DEIS Chapter 23 still apply, and apply to the new alternatives presented in the RDEIR/SDEIS, based on the fact that no revisions in this chapter indicate any changes were made that would address the original comments. In addition, the County provides the following comments on the RDEIR/SDEIS.

Comment: The noise-related impacts associated with the construction of Alternative 4 (outlined on p. 23-65) and Alternative 4A (assumed to be identical to Alternative 4) represent unacceptable impacts to the residents of the Delta Community within

Sacramento County. Mitigation Measures NOI-1a and NOI-1b (p. 23-66) are not sufficient to adequately mitigate impacts, especially considering the fact that the construction of the proposed Project is anticipated to take years (intake construction alone is anticipated to take 3.5 to 4.5 years each according to Appendix 3C: Construction Assumptions). Such a lengthy construction period cannot appropriately be described as “temporary” or “short-term.”

Comment: RDEIR/SDEIS, Appendix A, Chapter 23 Noise, page 23-15, lines 4-10: The text states that if construction noise exceeds 50 dBA (interior), 70 dBA (exterior) or 5 dB above the ambient noise level, the contractor must implement mitigation until the noise is “reduced to a level of 50 dBA (70 dBA exterior) or 5 dB above ambient noise” (p. 23-15, lines 4-10). However, the significance threshold being used is an increase in ambient noise of “5 dB or more” (p. 23-12 lines 27-32). Thus in order to effectively reduce impacts below the significance threshold, the mitigation must be revised to provide that the contractor must implement mitigation until the increase in ambient noise is less than 5 dB. Please revise the Environmental Commitment accordingly.

Comment: RDEIR/SDEIS, Section 4 New Alternatives: Alternatives 4A, 2D, and 5A, page 4.3.19-1: The CEQA impact conclusion references an increase in noise levels of 12 dB as a traffic noise threshold. However, the analysis in Appendix A, Chapter 3 utilizes FHWA methodology to define a substantial increase as 5 dB. Text including the 12 dB increase in traffic noise as a threshold (from Caltrans Protocol) is depicted as redlined text that has been struck-through in Appendix A Chapter 23. The argument is being made that the construction-related noise impacts of Alternative 4A are identical to those of Alternative 4, so these two alternatives must be evaluated consistently with the same thresholds.

Comment: RDEIR/SDEIS, Section 4 New Alternatives: Alternatives 4A, 2D, and 5A, page 4.4.19-1, lines 4-11: On page 4.4.19-1 lines 4-11, the conclusion is made that the impacts resulting from Alternative 2D would range from those calculated for Alternative 1A and Alternative 4. In addition, on page 4.5.19-1, rather than quantifying the noise-related impacts specific to Alternative 5A, the preparers conclude that the impacts would range from those calculated for Alternative 4 and Alternative 5. The RDEIR/SDEIS’s failure to provide meaningful information about the noise impacts specific to these alternatives precluded the County from understanding the actual impacts of these alternatives and from making meaningful comments on the RDEIR/SDEIS.

Comment: As discussed above, the NEPA Effects and CEQA Conclusion discussions for both Alternatives 2D and 5A include the outdated 12 dB traffic noise threshold again instead of using the 5 dB threshold consistent with FHWA methodology.

Comment: RDEIR/SDEIS, Errata Sheet, Appendix 23A, Noise Contours: Noise contours are provided for the original alternatives but not for the new alternatives (Alternatives 4A, 2D, and 5A). Project noise effects in the established rural communities of Hood, Clarksburg and Courtland, as well as noise effects to recreationalists and wildlife, are a significant concern to the County and its residents. As discussed above,

the failure to provide sufficient detail and analysis specific to the new alternatives prevents the Sacramento County from assessing impacts to its residents or natural resources. Please provide the requested noise contours.

Comment: RDEIR/SDEIS, Appendix A, Chapter 23 Noise, page 23-7: On page 23-7 the document skips from Section 23.3.1.2 (Traffic Noise Modeling) to Section 23.3.1.4 (Operations). There is no longer a Section 23.3.1.3 and there is no track changes text to show what Section 23.3.1.3 was previously. This happens in several other locations (including between Section 23.3.3.4 and 23.3.3.9 and again between Section 23.3.3.9 and 23.3.3.16). It is unclear whether these omissions signify that the section was removed or whether no changes to this section were made to this section and the text of the original document is still applicable. This is one of several instances of missing sections and removed text. Missing or misnumbered sections are confusing and make the document difficult to review and impossible to apprehend the full scope of analysis and Project impacts.

Revised Chapter 24: Hazards and Hazardous Materials

The County's July 28, 2014 comments on DEIR/DEIS Chapter 24 still apply, and apply to the new alternatives presented in the RDEIR/SDEIS, based on the fact that no revisions in this chapter indicate any changes were made that would address the original comments.

VIII. Conclusion

It is well established that “[T]he purpose of an EIR is not only to protect the environment but to demonstrate to the public that it is being protected. (*County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.) As explained in the County's comments, the RDEIR/SDEIS, like the DEIR/DEIS before it, does not provide sufficient information, nor does it present information in a way that allows the public a meaningful opportunity to understand and comment on the CalWaterFix Project's substantial adverse impacts. To date, the DEIR/EIS and RDEIR/SDEIS have failed to demonstrate to the citizens of Sacramento County that they, and the unique Delta environment, will be protected from the significant impacts of constructing and operating the CalWaterFix Project. Due to the fundamental changes in the project since publication of the DEIR/DEIS, the significant changes needed to the underlying technical studies and analyses, and the extensive comment and criticism of these documents, further edits and revisions or partial recirculation of the current DEIR/DEIS or RDEIR/SDEIS will not satisfy CEQA and NEPA's informational mandate. The state and federal lead agencies must start over and prepare a new draft EIR/EIS that addresses the concerns raised in comments on the DEIR/DEIS and RDEIR/SDEIS.

Exhibits: Exhibit A: 2015 Delta ISB Report

Exhibit B: July 16, 2015 Letter from DWR to County Re. Section 106 Process



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September 30, 2015

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

From: Delta Independent Science Board

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 BDCP¹⁵. 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](http://www.sac.usace.army.mil/Portals/43/docs/regulatory/Guidelines%20for%20Preparing%20a%20Compensatory%20Mitigation%20Planf.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/drmisp/docs/Delta_Seismic_Risk_Report.pdf

¹⁵ http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Draft_BDCP_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/hafoo/fob/drepprp/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.

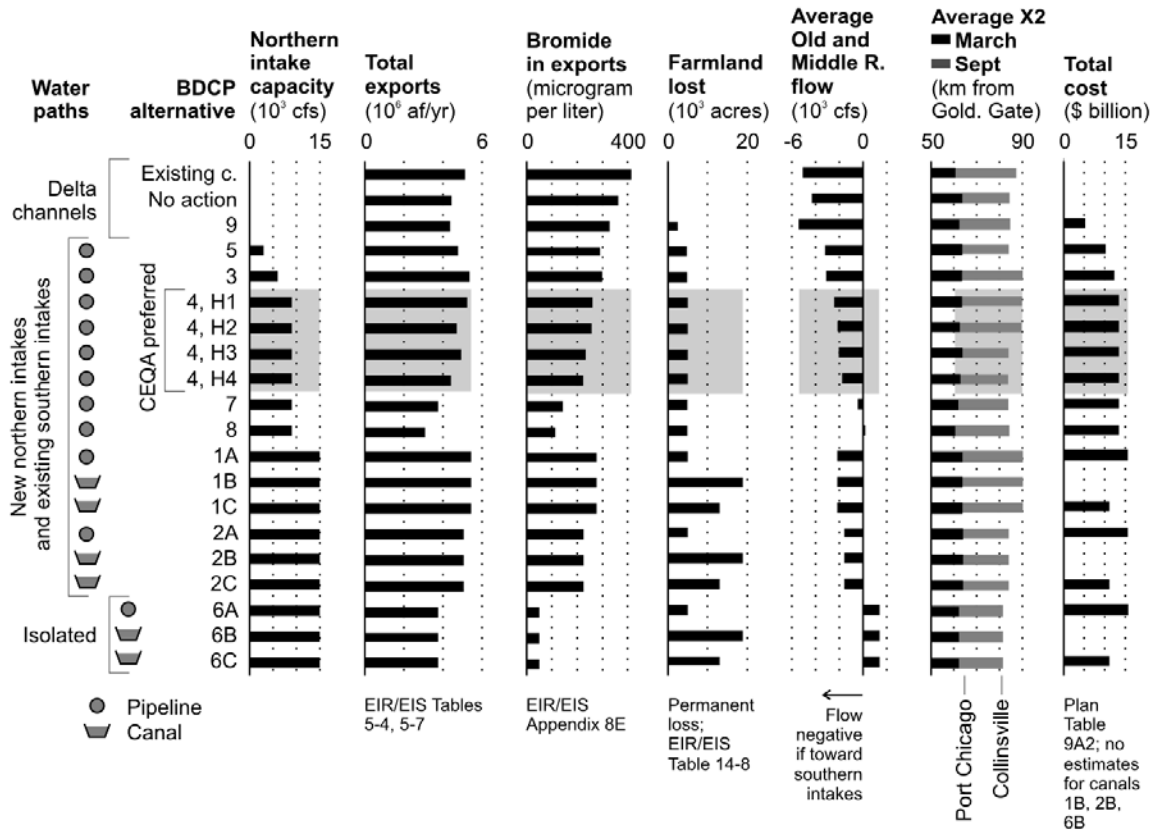
Reducing and managing risk

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 disembodies 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, microcystin; 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?)

DEPARTMENT OF WATER RESOURCES

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RECEIVED

JUL 21 2015

County Of Sacramento
Department of Community Development
Planning and Environmental Review Division

July 16, 2015

Catherine Hack
Environmental Coordinator
Sacramento County Department of Community Development
827 7th Street, Room 225
Sacramento, CA 95814

Coordination with Historic Interest Groups and Local Agencies about Historic-Period Cultural Resources under Section 106 of the National Historic Preservation Act for the California Water Fix Project

To Ms. Hack:

Thank you for responding to our letter of June 4, 2015, in which we inquired about your knowledge of historic resources within the California Water Fix Project (CWFP) study area, and your interest in the Programmatic Agreement (PA) that is being developed by the California Department of Water Resources (DWR) and the U.S. Army Corps of Engineers (Corps) for the CWFP.

If you have requested copies of the built historical resources reports, you should have received an email from the DWR with a link to our share file site, Aconex, to access the the documents. Please let us know if you did not receive the email.

We have notified the Corps of your interest in the Corps' Section 106 consultation and the draft PA. Nikki Polson from the Corps will contact you with further information about next steps in Section 106 consultation.

If you have any additional questions or comments, please contact Jackie Wait, Senior Environmental Planner, at (916) 916-376-9777 or jwait@water.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Gail Kuenster".

Gail Kuenster
Environmental Program Manager
Division of Environmental Services
Department of Water Resources