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Zachary Simmons, Project Manager
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
Zachary.M.Simmons@usace.army.mil

RE: Public Notice SPK-2008-00861, California Waterfix Project, Application for RHA Section 10/404 Permit

Dear Mr. Simmons:

The California Sportfishing Protection Alliance, California Water Impact Network and AquAlliance (hereinafter, CSPA) have reviewed the California Department of Water Resources' (DWR) request to the U.S. Army Corps of Engineers (Corps or Army Corps) for Clean Water Act (CWA) Section 404 and Rivers and Harbors Act of 1899 Section 10 permits necessary for construction and operation of the proposed California WaterFix project (SPK-2008-00861) to be operated in coordination with the U.S. Bureau of Reclamation (USBR) and have the following comments. A public hearing in this matter is both warranted and requested.

INTRODUCTION

The essential feature of the project is the Delta Water Tunnels that would divert enormous quantities of freshwater that presently flow through the Sacramento River, sloughs, and the Delta before being diverted for export from the South Delta. Due to the new points of diversion north of the Delta, freshwater flows that presently contribute to water quality, water quantity, fish, fish habitat, and other benefits by flowing through the Delta would instead flow through massive Tunnels no longer providing benefits within the lower River, sloughs, and the Delta.

The project remains a triumph of project advocacy over sound science. Proposed revisions in the project were made only after the U.S. Environmental Protection Agency (EPA), the Delta Independent Science Board (Science Board), and other scientific reviewers undermined the notion that BDCP met the federal and state requirements for a "conservation" plan. EPA indicated that BDCP's massive conveyance system could negatively impact Delta water quality and may violate the Clean Water Act. The Science Board in 2014 compared the EIR-EIS's water analysis to "an orchestra playing music without a conductor and with the sheets of music sometimes shuffled." In its 2015 report on the Partially Recirculated Draft EIR-Supplemental

Draft EIS (RDEIR-SDEIS), the Science Board reconfirmed that, despite recent reshuffling, the project and its environmental review continue to flout major scientific criticisms.

The revised project relies on and compounds a deceptive, incomplete and piecemealed program assessment. It removes conservation measures and drastically reduces habitat restoration and species protection, consigning many major efforts to a vague parallel program, "Eco-Restore," and to poorly defined "environmental commitments." Yet the project also inconsistently relies upon many of these future efforts for mitigation of project harm. As revised, the project still lacks crucial details and complete study, which the proponent agencies seek to defer until after the twin tunnels are approved and built.

A Legislative Analyst's Office report underscored BDCP's fragile economic and fiscal footing, noting the likelihood of significant cost overruns and uncertain continued financial support from water contractors. As revised, the project further complicates BDCP's shaky economic foundations. It abandons efforts to obtain long-term regulatory assurances of water deliveries, one of the cornerstones of its earlier economic assessment, and risks major costs being shifted to taxpayers.

According to the public notice (posted September 9, 2015) on the Corps' website:

> This application is being evaluated under Section 10 of the Rivers and Harbors Act of 1899 for structures or work in or affecting navigable waters of the United States and Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. (Corps Notice).

The RDEIR-SDEI fails federal and state requirements for environmental review. It relies on a defective baseline for evaluation, fails to properly study direct and cumulative impacts, and lacks an adequate range of alternatives and meaningful mitigation measures. It improperly consigns mitigation to vague programmatic analysis, and improperly precludes site-specific assessment of conveyance infrastructure. It fails to fully address a host of new impacts from the revised project, such as large new areas of Reusable Tunnel Material (RTM) that could result in significant truck traffic. Rather than analyzing a reasonable range of project alternatives, the RDEIR-SDEIS focuses on multiple versions of tunnels. As confirmed by the Science Board, this review also fails to fairly test project performance in the context of climate change and other conditions affecting future conditions in the Delta.

With the RDEIR-SDEIS's addition of more than 8,000 new pages to an earlier 40,000 pages of poorly organized supporting documents, the project EIR-EIS is among the least user-friendly environmental reviews in history. It buries essential information in technical appendices, and fails to fully inform the reader about the project's environmental consequences.

The Army Corps must conduct scoping under the NEPA process and prepare a Draft and then Final Environmental Impact Statement (EIS) to form a basis for informed review of the application for the permits. The notice explains that in December 2013, DWR along with the Bureau of Reclamation, and U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) published a Draft Bay Delta Conservation Plan (BDCP) and Draft

Environmental Impact Report (DEIR/DEIS). The notice explains that now, the project will no longer be a part of a Habitat Conservation Plan and that "A Partially Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS) was released for public review and comment in July 2015, ending on October 30, 2015."

CSPA commented on the Draft BDCP Plan/ DEIR/DEIS and the RDEIR/SDEIS and those comments are incorporated into these comments and enclosed herein as Attachments A (RDEIR/SDEIS), B (DEIR/SDEIS, Letter 1, Habitat), C (DEIR/DEIS, Letter 2, Water Quality), D (DEIR/DEIS, Letter 3, Delta Smelt) and E (G. Fred Lee on RDEIR/SDEIS). CSPA also incorporates the comments by the Environmental Water Caucus on the DEIR/DEIS and the RDEIR/SDEIS and they are enclosed herein as Attachments F (DEIR/DEIS, 11 June 2014 Letter), G (DEIR/DEIS, 28 June 2014 Letter) and H (RDEIR/SDEIS, 30 October 2015 Letter). CSPA further incorporates the comments submitted on the RDEIR/SDEIS by the Delta Independent Science Board (Attachment I) and the U.S. Environmental Protection Agency (EPA) (Attachment J). CSPA additionally incorporates by reference the comments by Friends of the River and Environmental Water Caucus on the present Corps proceeding (SPK-2008-00861). The comments in the attached or referenced letters are incorporated herein as if fully laid out in this comment letter.

None of the deficiencies found last year by the Army Corps or EPA have been corrected. All that has happened is that the adverse impacts of the Water Tunnels have been worsened by the deletion of mitigation in the switch from the BDCP Habitat Conservation Plan to the Water Fix Tunnels only project. The plan to provide "*65,000 acres* of tidal wetland restoration" has been slashed down to merely "*59 acres* of tidal wetland restoration." (RDEIR/SDEIS ES–17 (emphasis added)). Consequently, the current Water Tunnels project is *even more of a threat* to water quality, Clean Water Act standards, fish species and their habitat compared to the previous version that resulted in the concerns raised last year by the EPA, Army Corps, SWRCB, and NMFS and USFWS scientists.

EPA's August 26, 2014 letter addressing BDCP and its environmental review (page 2) underscored major environmental risks from BDCP, and emphasized "the need for water availability and greater freshwater flow through the Delta." Similarly, the State Water Resources Control Board's July 29, 2014 BDCP and EIR/EIS comments (page 12) noted that the justification for this limited range of Delta outflow scenarios is not clear, given that significant information supports the need for more Delta outflow for the protection of aquatic resources, and the substantial uncertainty that other conservation measures will be effective in reducing the need for Delta outflow. "For this reason a broader range of Delta outflows should be considered for the preferred project." Other commenters, last year and in previous reviews, have expressed similar concerns after reviewing relevant scientific research. (See, e.g., United States Army Corps of Engineers' comment letter, July 16, 2014, (impacts to United States waters); comment letter of the Environmental Water Caucus, June 11, 2014 (scientific analysis of BDCP and Delta flow issues); National Marine Fisheries Service's Progress Assessment and Remaining Issues Regarding the Administrative Draft BDCP Document, April 4, 2013 (BDCP impacts on Delta flows.

The RDEIR/SDEIS indicates that the revised project, like BDCP earlier, would fail to improve Delta flows, would increase average exports, and would risk further deterioration of flows, making them worse during critical time periods. (See, e.g., RDEIR/SDEIS, 2015, section 4.3.1, Figures 4.3.1-15, -16, -18, -19, -20, and -21; Figures 4.3.2-7 and 4.3.2-8; Appendix B, tables B7-28 to B7-34; pp. B-357 to B-370.)

Again, the EPA has given the SDEIS a failing grade in terms of providing an adequate environmental analysis for public and decision-maker review of the environmental impacts of the Water Tunnels. That failing grade is consistent with the determinations made by the Army Corps in its letter of July 16, 2014. Since then, things have gotten worse, not better. As the Delta Independent Science Board (DISB) more charitably characterized it in its review of the RDEIR/SDEIS, "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." (Delta ISB review of the RDEIR/SDEIS, 30 September 2015, page 1)

The WaterFix agencies have continued to simply ignore the comments of the EPA and Army Corps, as well as the comments of organizations such as Friends of the River and the Environmental Water Caucus. Consequently, the Army Corps cannot rely on the BDCP Draft EIR/EIS and/or RDEIR/SDEIS in its review of DWR's permit application. The Army Corps must instead, if it is to process the permit application, conduct NEPA scoping and prepare a Draft EIS and then Final EIS on the permit application. The Corps cannot adopt the BDCP Draft EIR/EIS and/or RDEIR/SDEIS for its permit decisions on the DWR application for permit. Instead, if the Corps is going to proceed with processing the permit application, the Corps must conduct NEPA scoping and then proceed to prepare a Draft EIS and ultimately Final EIS with respect to the permit application.

The EPA reviewed the RDEIR/SDEIS as required by Section 309 of the Clean Air Act. The EPA has given a rating of "3" or Inadequate for the SDEIS. (EPA letter at p. 4, October 30, 2015). Consequently, the Army Corps cannot rely on the environmental documents prepared during the BDCP/Water Fix process to comply with NEPA because those documents have been determined to be inadequate by another federal agency and the Corps has done no independent analysis, nor even formulated and made new comments that would make the previous Corps comments inapplicable to the present situation.

THE CORPS MUST CONDUCT SCOPING AND PREPARE A DRAFT AND FINAL EIS TO COMPLY WITH NEPA

As shown above, EPA has failed the BDCP/WaterFix environmental documents giving them a rating of "'3' (*Inadequate*)" (emphasis in original). On page 4 they give it a rating of "3 Inadequate." EPA's *Policy and Procedures for the Review of Federal Actions Impacting the Environment* (10/3/84) in section 4(b) of that document entitled "Adequacy of the Impact Statement" EPA explains what that means:

> '3' = (Inadequate). The draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the

> draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. (p. 4-6).

On July 16, 2014, the Army Corps, having reviewed the Draft EIS/EIR for the BDCP Water Tunnels project determined the…

> …EIS/EIR was not sufficient in meeting the Corps' needs under the National Environmental Policy Act (NEPA) and 404(b)(1) Guidelines, in particular with regard to the incomplete description of the proposed actions, alternatives analysis, impacts to navigation, impacts to federal flood control and navigation projects, and impacts to waters of the United States and navigable waters, as well as the avoidance and minimization of, and compensatory mitigation for, impacts to waters of the United States. Without incorporation of the changes recommended in our comments on administrative and public drafts, the Corps will not be able to adopt the EIS/EIR for any of our permit decisions...

The Corps' October 28, 2015 comments on the Water Fix RDEIR/SDEIS identify a fundamental deficiency of the Water Fix RDEIR/SDEIS: it does not describe how the projects will be operated if constructed: how much water the new project will divert, where it will divert it, or what the source of the diverted water will be. The Corps comments:

> Clearly address early in the document how much water will be diverted, and from where, once there are two points of diversion. The document should identify a purpose of the project as providing operational flexibility. Our understanding is that this project would not increase the diversions, but allow the water to be withdrawn from either location or a combination of the two, based on conditions. (Corps' comments on Water Fix RDEIR/SDEIS, p. 1, item 4)

However, the RDEIR/SDEIS provides no basis for an "understanding" that the project "would not increase diversions," let alone what the basis of comparison for "increase[ing] diversions" might be. Any additional "operational flexibility" would certainly have as a primary purpose the flexibility to divert water through the tunnels that regulatory constraints precluded from diversion from the south Delta. The Water Fix RDEIR/SDEIS is deficient not only because it does not clearly describe how the project would be operated if constructed, it is also misleading if even the Corps can neither discern the purpose of increasing diversions nor quantify that potential increase.

The Water Fix statement of project objectives continues to rely upon a fictitious and unattainable ambition to "restore and protect" the SWP and CVP's non-existent ability to deliver "up to full contract amounts…." (RDEIR/SDEIS, p. 1-8) The revised/supplemental draft actually exposes the fallacy of this vaunted rationale by reducing it to impotency with qualifiers: (1) "when hydrologic conditions result in the availability of sufficient water," and (2) "consistent

with the requirements of state and federal law and the terms and conditions of water delivery contracts and other existing applicable agreements." (*ibid*)

In contrast to the unqualified statement linking the project to delivery of "full contract amounts," these tautological qualifiers lack critical details. First, they fail to disclose that the SWP and CVP cannot capably or consistently deliver these contractual amounts, even under relatively favorable hydrologic conditions. Second, they fail to mention or meaningfully address problems of over-subscription and potentially conflicting claims on supply affecting the state and the Delta region in particular.[1] Lastly, the RDEIR/ SDEIS, like its predecessor, lacks substantive analysis of potential conflicts between downstream users seeking deliveries of "full" contract amounts and allocations to instream uses and senior water rights holders.

The project cannot credibly base its water supply contributions on "paper water" contract amounts exceeding reliable deliveries. (See, e.g., *Planning and Conservation League v. Department of Water Resources* (2000) 83 Cal.App.4th 892, 912 (criticizing the resulting "aura of unreality"); *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 432 ("speculative sources and unrealistic allocations are insufficient bases for decision-making under CEQA.")) Thus, neither the project's underlying plan nor the EIR/EIS analyze the expectations stemming from over-reliance on water contract amounts (either permanent or "interruptible" allocations), or the environmental consequences of furthering that expectation. Overreaching assumptions from Central Valley Project contracts were recently rejected in *San Luis & Delta-Mendota Water Authority v. Jewell* (9th Cir. 2014) 747 F.3d 581, cert. denied (2015) 135 S. Ct. 948, 950 (*San Luis v. Jewell*); this ruling vindicated the reliance of the U.S. Fish and Wildlife Service (USFWS) and Bureau of Reclamation (BOR) on the 2008 biological opinion (2008 BiOp) to which the Central Valley Project contracts must conform. (*Id*. at 640, fn. 45.)

Additional Army Corps findings set forth in the July 16, 2014 letter included: the absence in the EIR/EIS of "an acceptable alternatives analysis" (comment 4), no showing on which alternative may contain the Least Environmentally Damaging Practicable Alternative (LEDPA) for section 404, Clean Water Act purposes (Comment 5), "the document needs a clear explanation of a reasonable range of alternatives and a comparison of such, including a concise description of the environmental consequences of each" (comment 19), and "new conveyance was not a part of the preferred alternative for CalFed. Does this EIS/EIR describe why the reasons for rejecting new conveyance in CalFed are no longer valid?" (Comment 22). The Delta Fix RDEIR/SDEIS did not deal with these concerns in any meaningful way.

In its 28 October 2015 review of the RDEIR/SDEIS, the Army Corps noted, "As acknowledged in the RDEIR/SDEIS, there is a significant amount of additional engineering analysis required as part of our review under 33 USC 408. We anticipate there will be a need for a supplemental NEPA document(s) once the additional engineering analysis, specifically hydraulic modeling, is developed" and requested "its comments for both the Draft EIS/EIR and RDEIR/SDEIS be included and addressed in the Final EIS/EIR. In addition, before the Final

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[1] See, e.g., T. Grantham and J. Viers, 100 years of California's water rights system: patterns, trends and uncertainty, 9 ENVIRON. RES. LETT. 084012 (2014), available at https://watershed.ucdavis.edu/files/biblio/WaterRights_UCDavis_study.pdf.

EIS/EIR is released, we request a formal letter from the US Bureau of Reclamation responding specifically to the comments and how they are/will be addressed in the Final EIS."

Not only has the Army Corps been deprived of necessary information, the public has also been deprived of information crucial to informed commenting and decision-making, including the hydrologic modeling. The missing information is fundamental to numerous elements of the project and, consequently, a major rewrite of the environmental document is likely necessary: the present patchwork RDEIR/SDEIS is already internally inconsistent.

The Corps cannot adopt the BDCP Draft EIR/EIS and/or RDEIR/SDEIS for its permit decisions on the DWR application for permit. Instead, if the Corps is going to proceed with processing the permit application, the Corps must conduct NEPA scoping and then proceed to prepare a Draft EIS and ultimately Final EIS with respect to the permit application.

MATTERS TO INCLUDE IN SCOPING THE CORP PERMIT

The Delta is the terminus for the largest watershed in California and is the hub of the State's water supply system. Some of the water flowing from the Delta watershed is diverted before it reaches the Delta (approximately 31%), is used in the Delta (about 4%), and is also exported from the Delta via the Central Valley Project (CVP) and the State Water Project (SWP). The amount exported varies from year-to-year depending on whether it is a wetter or drier year, but on average it represents about 24% of Delta inflows.

The CVP and SWP were originally engineered to deliver water to water contractors and water rights holders with little consideration or understanding of the potential impacts to the environment. Operation of the system in this manner resulted in a decline of key Delta ecosystem health indicators. With the passage of environmental laws in the 1970s, their operation began to be regulated by various entities including the State Water Resources Control Board (SWRCB) for water quality and inflow standards, the U.S. Army Corps of Engineers (USACE) setting "rule curves" for reservoir operation for flood protection, and due to species listed as threatened and endangered by the California Department of Fish and Wildlife (CDFW), the U.S. Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS). The challenges today are to deliver water from the Delta to meet California's water needs without further degradation (and/or risk of degradation) of the Delta ecosystem.

The RDEIR/SDEIS fails to apply the detailed regulatory standards for adherence to the "best available science" in the context of BDCP review. In either the Alternative 4 or Alternative 4A variations, the project constitutes a "covered action" under Water Code § 85057.5 for purposes of determining consistency with the Delta Plan, whose prerequisites include use of a "best of available science" standard. (Wat. Code § 85302(g).) The Delta Stewardship Council has adopted a definition and guidelines to clarify the steps needed to adhere to this standard and the relevant criteria, including relevance, inclusiveness, objectivity, transparency, timeliness, and peer review. (23 Cal. Code Regs. § 5001(f), appx. 1A.) Instead of applying these regulatory standards, the RDEIR/SDEIS uses "best available science" as if it were a marketing term, rationalizing a review that has often lacked transparency and has thus far failed to adhere to the best available science.

Adherence to laws protecting species and communities, and environmental review requirements under NEPA and CEPA, first requires complete and accurate disclosure of the entire project under review, and avoidance of segmented analysis. (See, e.g., *Great Basin Mine Watch v. Hankins* (9th Cir. 2006) 456 F.3d 955, 969; 40 C.F.R. 1508.25 (NEPA); *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 654; CEQA Guidelines § 15124.) Had the BDCP agencies sought to candidly pursue priority for additional exports over the Delta ecosystem and its farms and communities, they might at minimum have acknowledged this would require legal changes and sought legislative and voter approval. The RDEIR/SDEIS follows a more convoluted path, adding new layers of unlawful segmentation and inconsistent description to an already disjointed project assessment. For example:

The RDEIR/SDEIS indicates that Alternative 4A transforms some of BDCP's remaining conservation provisions – CM 3, 4, 6-12, 15, 16 – from "conservation measures" (a term that retains legal accountability under HCP and NCCP laws) to "environmental commitments," a more ambiguous term lacking commensurate accountability.

The RDEIR/SDEIS refuses to analyze these "environmental commitments" with anything more than an opaque program overview, and concedes that "[s]pecific locations for implementing many of the activities associated with these commitments have not been identified at this time." (RDEIR/SDEIS, 4.1-15.)

On average, exports from the Delta have increased during the last 40 years with record exports occurring during the 10 years (2002-2011 according to Figure 3-5) prior to adoption of the Delta Plan. Yet factors such as land subsidence on agricultural Delta islands, rising sea level, the threat of earthquakes, fish entrainment at the pumps, fish migration issues due to reverse flows in the southern Delta, and salinity increases due to reduced outflows to San Francisco Bay continue to plague the system. Due to environmental regulations to protect drinking and irrigation water quality as well as other beneficial uses, combined with increased delivery demands, CVP and SWP have rarely delivered 100% of the contracted water allocations since 1990. This has resulted in many complex and often bitter legal conflicts among water users. The greatest conflicts occur during dry years when regulations constrain exports to protect drinking and irrigation water quality from excessive salinity and other public trust resources.

Current water supplies have been affected by four years (2012-2015) of drought and warmer temperatures, both associated with a changing climate.[2] This has resulted in increased groundwater pumping, which in turn resulted in increased land subsidence (currently 2 inches per month in the Central Valley) (Farr et al. 2015) and substantially higher energy costs for water supply.[3]

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[2] Williams, A. P., R. Seager, J. T. Abatzoglou, B. I. Cook, J. E. Smerdon, and E. R. Cook. 2015. (Contribution of anthropogenic warming to California drought during 2012–2014). Geophysical Research Letters 42:6819-6828. doi:10.1002/2015GL064924.

[3] Medellín-Azuara, J., D. MacEwan, R. E. Howitt, G. Koruakos, E. C. Dogrul, C. F. Brush, T. N. Kadir, T. Harter, F. Melton, and J. R. Lund. 2015. Hydro-economic analysis of groundwater pumping for irrigated agriculture in California's Central Valley, USA. *Hydrogeology Journal* 23: 1205-1216.

Climate change will bring altered precipitation patterns thereby affecting the hydrology in California's streams and rivers.[4] Due to a warming climate, more precipitation is occurring in the form of rain rather than snow and evapotranspiration (return of precipitation to the atmosphere via evaporation and transpiration) is increasing resulting in additional water losses.[5] All these factors influence Bay/Delta water supply.

Changes in precipitation patterns and vegetation distribution patterns due to warming will result in altered hydrology in streams and rivers. It is also expected that the spring peak flow would come earlier in the season due to more rain and earlier snowmelt. A climate change scenario with a temperature rise of 2.4 °C and an average 40% decrease in the relative proportion of snowfall is projected to result in a 12% reduction in overall stream flow.[6] As the federal agency with responsibility to approve the permit, the Corps also bears the burden to protect and preserve the most important estuary on the west coast of the Americas.

In California, evapotranspiration (ET) comprises the largest consumptive use of California Department of Water Resources (CDWR) and (Central Valley Project) project water, excluding water needed to maintain water quality and environmental needs. Climate change could potentially affect ET in several complex ways, which makes it challenging to quantify overall changes in ET. Increasing air temperature by 3°C with current CO2 concentrations (360 ppm) is estimated to yield an 18.7 % increase in ET in the Central Valley Basin.

A recent study using the current precipitation regime in Kings River Basin (California) and a mean projected temperature increase of 1.3 – 4.1 °C by the year 2100 found that that there would be a 10-28% increase in ET and 9-26% decrease in stream flow.[7]

Using current management practices and existing system facilities, shifts in precipitation and runoff will directly affect deliveries and reservoir storage levels for the SWP and CVP. Lower carryover storage is projected for both SWP and CVP, which indicates the projects are operating at a higher water supply risk and lower head for hydropower production and less cold water pool storage for fish protection. The warmer climate and significant shift in seasonal runoff will result in consistently lower water delivery capability.[8]

End-of-September storage (carryover storage) will decrease due to climate change in the 21st century. CDWR predicts that by the end of the 21st century the median end-of-September storage in Lake Shasta, Trinity Lake, Lake Oroville, and Folsom Lake, in terms of

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[4] Van Lienden et al. 2014). Van Lienden, B., A. Munévar, and T. Das. 2014. *West-Wide Climate Risk Assessment: Sacramento and San Joaquin Basins Climate Impact Assessment*. P. 1–66. US Bureau of Reclamation

[5] Pierce, D. W., and D. R. Cayan. 2013. The uneven response of different snow measures to human-induced climate warming. *Journal of Climate* 26:4148–4167. doi:10.1175/JCLI-D-12-00534.1.

[6] Berghuijs, W. R., R. A. Woods, and M. Hrachowitz. 2014. A precipitation shift from snow towards rain leads to a decrease in streamflow. *Nature Climate Change* 4: 583-586. doi:10.1038/nclimate2246.

[7] Goulden, M. L., and R. C. Bales. 2014. Mountain runoff vulnerability to increased evapotranspiration with vegetation expansion. *PNAS* 111: 14071-14075.

[8] Anderson, J., F. Chung, M. Anderson, L. Brekke, D. Easton, M. Ejeta, R. Peterson, and R. Snyder. 2008. Progress on incorporating climate change into management of California's water resources. *Climatic Change* 87:S91-S108. DOI 10.1007/s10584-007-9353-1.

quantity, will be reduced by 33% (95% confidence range: 21-45%) and 38% (95% confidence range: 24-51%) in IPCC Climate Change Scenarios B1 (low greenhouse gas emission scenario) and A2 (high emission scenario) by the end of the 21st century.[9]

A flexible framework for assessing reservoir operations risk under climate change has been developed focusing on the CVP and SWP systems. The risk metrics selected were related to deliveries and carryover storage. Notable impacts to operation of the CVP and SWP systems included increased winter runoff, reduced spring-summer reservoir inflows, and a net annual reduction in surface water supply. Under future climate change (2041-2070) conditions: (1) reservoir operations would mitigate the effects of runoff variability on water deliveries by increasing reservoir flexibility and depleting carryover storage; (2) operational impacts, including mean annual delivery and carryover storage, would be more sensitive to change in annual precipitation than mean annual temperature change; and (3) SWP export would be affected less and have greater conveyance flexibility due to its larger pumping capacity than the CVP system.[10]

Operations of storage facilities could be facilitated by adopting and providing a functional flow regime for downstream ecosystems (Grantham et al. 2014). The "natural stream flow" needed to support native species includes the volume (magnitude) of flow, direction of flow, timing of flow, frequency of specific flow conditions, duration of various flows, and the rate of change in flows with sufficient physical (e.g., temperature) and chemical qualities (e.g., dissolved oxygen, pH, conductivity, etc.). Such a functional flow regime should be designed to enhance the survival and migration of species of concern. For example, several studies have demonstrated the importance of pulse flows (or high discharge events during wet years) for the outmigration and survival of salmon in the Sacramento and San Joaquin River systems.[11] Such flows could also provide water to floodplain habitats that are important habitat for fish rearing and migration.

Operation of storage facilities to achieve the coequal goals (water supply reliability and ecosystem benefits) is needed. California contains more than 1,400 large dams (greater than 1.8 m in height and storing more than 60,000 cubic meters of water) and tens of thousands of smaller impoundments, many of them operated with little consideration for their effects on aquatic ecosystems. This situation is a dominant factor responsible for the rapid

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[9] California Department of Water Resources (CDWR). 2009. *Using Future Climate Projections to Support Water Resources Decision Making in California.*

[10] Brekke, L. D., E. P. Maurer, J. D. Anderson, M. D. Dettinger, E. S. Townsley, A. Harrison, and T. Pruitt. 2009. Assessing reservoir operations risk under climate change. *Water Resources Research* 45: W04411. doi:10.1029/2008WR006941.

[11] Kiernan, J. D., P. B. Moyle, and P. K. Crain. 2012. Restoring native fish assemblages to a regulated California stream using the natural flow regime concept. *Ecological Applications* 22: 1472-1482; Pyper, B., T. Garrison, S. Cramer, P. L. Brandes, D. P. Jacobson, and M. A. Banks. 2013. Absolute abundance estimates of juvenile spring-run and winter-run Chinook salmon at Chipps Island. Report to the Delta Science Program, Delta Stewardship Council and Sturrock, A. M., J. D. Wikert, T. Heyne, C. Mesick, A. E. Hubbard, T. M. Hinkelman, P. K. Weber, G. E. Whitman, J. J. Glessner, and R. C. Johnson. 2015. Reconstructing the migratory behavior and long-term survivorship of juvenile Chinook salmon under contrasting hydrologic regimes. *PLoS ONE* 10: e01223.

decline of the state's native fish fauna.[12] Of the 1,440 large California dams, 753 were identified that could be used for environmental flow implementation. Of the 753 dams, 181 dams were further identified for which improved environmental flow releases may be warranted based on hydrologic alteration and fish population impairment.

Manipulating stream flows at biologically important times of the year can facilitate native fish population expansions. Naturally occurring high discharge events during winter and spring can facilitate creation of favorable spawning and rearing conditions (e.g., elevated springtime flow), cooler water temperatures, maintenance of flow conditions over the length of the stream, and displacement of alien species. Pulse flows in early winter and spring were artificially provided to the lower Putah Creek to mimic the natural flow regime and promote native fish spawning as mandated by the Putah Creek Accord. After implementation of the Accord (2000-2008), the mean monthly stream flow was increased during eight months of the water year; with the greatest percentage gain occurring in the spring (47% gain in April and 63% gain in May). The mean annual flow was increased by 21% compared to previous years (1979-1999). The proportion of native fish to alien fish greatly increased in the affected reach.

The success of Chinook salmon populations is strongly influenced by appropriate flows during the outmigration periods; wetter hydrologic years resulted in higher survivorship of outmigrating juveniles and a larger number of returns from the cohort. In 2011 (a wet year), overall outmigration survival of acoustically tagged hatchery origin Sacramento River late-fall run Chinook salmon smolts was two to three times higher (15.7%) than the previous four dry years (2007-2010) (2.8%-5.9%). The overall higher survival in the high-discharge year (2011) was due mainly to increased survival and faster migration rate (36 km per day in 2011 compared to 17.5 – 23.5 km per day in other years) in the riverine reaches (upstream of Freeport; approximately 169 km above the Golden Gate Bridge) portion of the outmigration corridor, while survival in the brackish portions of the estuary did not significantly differ among the five years.[13]

THE CORPS MUST DEVELOP AND CONSIDER THE REQUIRED RANGE OF REASONABLE ALTERNATIVES

Development of alternatives increasing flows through the Delta has always been a direct and obvious first step to complying with California's public trust doctrine protecting Delta water quantity and quality. Instead of complying with the Delta Reform Act, the Endangered Species Act (ESA), the Clean Water Act and applying the public trust doctrine, all of the so-called BDCP/Water Fix alternatives involve new conveyance as opposed to consideration of any through-Delta conveyance alternatives reducing exports.

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[12] Grantham, T. E., J. H. Viers, and P. B. Moyle. 2014. Systematic screening of dams for environmental flow assessment and implementation. *BioScience* 64: 1006-1018, proposed a systematic, data-driven approach to screen and select dams that may require managed environmental flows to sustain freshwater biodiversity based on indicators of hydrological and ecological impairment.

[13] Michel, C. J., A. J. Ammann, S. T. Lindley, P. T. Sandstrom, E. D. Chapman, M. J. Thomas, G. P. Singer, A. P. Klimey, and R. B. MacFarlane. 2015. Chinook salmon outmigration survival in wet and dry years in California's Sacramento River. *Canadian Journal of Fisheries and Aquatic Sciences*. DOI: 10.1139/cjfas-2014-0528.

The alternatives section (Chapter 3) of the Draft EIR/EIS and the ESA-required Alternatives to Take section (Chapter 9) of the BDCP Draft Plan failed to include even one alternative that would increase water flows through the San Francisco Bay-Delta by reducing exports, let alone the NEPA, California Environmental Quality Act (CEQA), and ESA required range of reasonable alternatives. Instead, all BDCP alternatives including new RDEIR/SDEIS alternatives 4 modified, 4A, 2D and 5A would do the opposite of increasing flows, by reducing flows through the Delta by way of new upstream diversion of enormous quantities of water for the proposed Water Tunnels. These intentional violations of law require going back to the drawing board to prepare a new Draft EIR/EIS that would include a range of real alternatives, instead of just replicating the same conveyance project dressed up in different outfits. To be clear, 14 of the so-called 15 "alternatives" in the Draft EIR/EIS, 10 of the so-called 11 "take alternatives" in the Draft Plan (Chapter 9) and the 4 "alternatives" in the new RDEIR/SDEIS are all peas out of the same pod. They would create different variants of new upstream conveyance to divert enormous quantities of freshwater away from the lower Sacramento River, sloughs, and San Francisco Bay-Delta for export south.

The BDCP/WaterFix omission of alternatives reducing exports to increase flows has been deliberate. A claimed purpose of the BDCP is "Reducing the adverse effects on certain listed [fish] species due to diverting water." (BDCP Draft EIR/EIS Executive Summary, p. ES-10). "[H]igher water exports" are among the factors the RDEIR/SDEIS admits "have stressed the natural system and led to a decline in ecological productivity." (RDEIR/SDEIS 1-10). "There is an urgent need to improve the conditions for threatened and endangered fish species within the Delta." (Draft EIR/EIS ES-10*;* RDEIR/SDEIS ES-6). The new RDEIR/SDEIS admits that "the Delta is in a state of crisis" and that "Several threatened and endangered fish species . . . have recently experienced the lowest population numbers in their recorded history." (RDEIR/SDEIS ES-1). Alternatives reducing exports are the obvious direct response to claimed BDCP purposes of "reducing the adverse effects on certain listed [fish] species due to diverting water" and "to improve the conditions for threatened and endangered fish species within the Delta." The way to increase Delta flows is to take less water out.

Reclamation and DWR must develop and consider an alternative that would increase flows by reducing exports in order to satisfy federal and California law. If the proponent agencies continue to refuse to do what the law requires of them, then the task of completing environmental review under the NEPA statutes and the Corps environmental guidelines is clear. The Corps must require them to do a legally sufficient document, or do it itself. California law is clear even if California politics is not. The Delta Reform Act establishes that "The policy of the State of California is to *reduce reliance on the Delta in meeting California's future water supply needs* through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency." Cal. Water Code § 85021 (emphasis added). The Act also mandates that the BDCP include a comprehensive review and analysis of "A reasonable range of flow criteria, rates of diversion, and other operational criteria . . . necessary for recovering the Delta ecosystem and restoring fisheries under a reasonable range of hydrologic conditions, which will identify the remaining water available for export and other beneficial uses." Cal. Water Code § 85320(b)(2)(A). And, the Act requires: "A reasonable range of Delta conveyance alternatives, including through-Delta," as well as new dual or isolated conveyance alternatives. Cal. Water Code § 85320(b)(2)(B). In addition, the Act mandates that

"The long-standing constitutional principle of reasonable use and the public trust doctrine shall be the foundation of state water management policy and are particularly important and applicable to the Delta." Cal. Water Code § 85023.

The California Supreme Court last visited public trust law in the seminal case of National Audubon Society v. Superior Court of Alpine County, 33 Cal.3d 419 (1983) in which the court said: "The state has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust whenever feasible." The Supreme Court also said, quoting now Justice of the 3rd Appellate District Ron Robie, that "the requirements of the California Environmental Quality Act (Public Resources Code 21000 et seq.) imposes a similar obligation." We can find no credible analysis of whether or not Article 10, Section 2 (the reasonable use, and unreasonable method of diversion provisions) was analyzed for consistency with the WaterFix tunnel project or with the public trust doctrine. We request that you do so before approving the tunnels and the new diversions that will lessen presently inadequate flows in the rivers and Bay/Delta. This is surprising because the Delta Reform Act also required the State Water Board to provide the Delta Stewardship Council with recommendations as to the amount of flow necessary to recover the estuary:

> For the purpose of informing planning decisions for the Delta Plan and the Bay Delta Conservation Plan [BDCP], the board shall, pursuant to its public trust obligations, develop new flow criteria for the Delta ecosystem necessary to protect public trust resources. In carrying out this section, the board shall review existing water quality objectives and use the best available scientific information. The flow criteria for the Delta ecosystem shall include the volume, quality, and timing of water necessary for the Delta ecosystem under different conditions. The flow criteria shall be developed in a public process by the board within nine months of the enactment of this division. The public process shall be in the form of an informational proceeding...and shall provide an opportunity for all interested persons to participate. The flow criteria shall not be considered pre-decisional with regard to any subsequent board consideration of a permit, including any permit in connection with a final BDCP." (Water Code § 85086)

The State Board, after extensive hearing, found that the public trust needs of the Bay/Delta required increased outflow from the Delta into Suisun Bay and then into the San Francisco Bay. The State Board recommended that 75% of unimpaired flow be required in the winter and spring months for this purpose. Among the key points made regarding necessary Delta environmental flows for the State Water Board hearing in 2010, the Delta Environmental Flows Group (DEFG) testified that the recent flow regimes both harm native species and encourage non-native species and provided the following justification for that scientific opinion:

> The major river systems of the arid western United States have highly variable natural flow regimes. The present-day flow regimes of western rivers, including the Sacramento and San Joaquin, are highly managed to increase water supply reliability for agriculture, urban use, and flood protection. Recent Delta inflow and outflow regimes appear to both harm native species and encourage non-native species. Inflow patterns from the Sacramento River may help riverine native species in the north Delta, but inflow patterns from the San Joaquin River encourage non-native species. Ecological theory and

> observations overwhelmingly support the argument that enhancing variability and complexity across the estuarine landscape will support native species. High winter-spring inflows to the Delta cue native fish spawning migrations, improve the reproductive success of resident native fishes, increase the survival of juvenile anadromous fishes migrating seaward, and disperse native fishes spawned in prior years.

In response to this evidence, the RDEIR/SDEIS weaves an artificial reality: an omelet of distortion and half-truth crafted to support a preordained conclusion. It is the most deficient EIR/EIS we have reviewed in more than three decades of analyzing environmental documents. As the Delta Independent Science Board (DISB) more charitably characterized it in its review, "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." (Science Board review of the RDEIR/SDEIS, 30 September 2015, page 1)

The RDEIR/SDEIS is needlessly complex, is based upon outdated and incomplete information, is internally inconsistent in its analyses and its conclusions are irreconcilable with the facts and analyses. It fails to provide comprehensible summaries of environmental impacts. It ignores U.S. EPA's request to analyze an alternative that would comply with water quality standards, as it ignores the State Water Resources Control Board's (SWRCB) request to analyze an alternative with higher Delta outflows. Indeed, it hides the modeling results requested by the State Water Board in Appendix C, without subsequent discussion or analysis because those modeling results demonstrate that fisheries criteria and water quality standards can be significantly met by reductions in water exports.

The RDEIR/SDEIS fails to analyze and discuss alternatives that include higher Delta flows coupled with reduced exports. The 2009 Delta Reform Act required the SWRCB to conduct an extensive public proceeding to determine flow criteria necessary to protect public trust resources and the California Department of Fish and Wildlife (CDFW) to conduct a public proceeding to determine quantifiable biological objectives and flow criteria to protect Delta species of concern. Both the SWRCB and CDFG found that, based upon best available science, significant increases in Delta flows are necessary to protect public trust resources. Given the accelerating collapse of Delta fisheries since release of those reports, it is likely that increased flows will be required to protect fisheries. The failure of the RDEIR/SDEIS to analyze and discuss alternatives requiring increased flow/reduced exports because such an alternative would not meet project goals renders the document legally inadequate and virtually useless for decision-makers and the public.

The RDEIR/SDEIS disingenuously represents that already degraded fisheries and impaired water quality can be protected by diverting additional millions of acre-feet of water from an estuary whose environmental tapestry has already been shredded by the diversion of half its inflow. Diverting prodigious quantities of the least contaminated water around the Delta, the California WaterFix will increase the concentration of pollutants in the estuary and lead to significantly increased violations of water quality standards. Further, these additional diversions will degrade critical habitat for endangered species already tottering on the precipice of extinction by depriving it of crucially needed inflow identified as necessary for species survival.

The RDEIR/SDEIS ignores and fails to adequately analyze the trend, extent and magnitude of continuing declines in pelagic and anadromous fisheries. Since 1967, the CDFW's Fall Midwater Trawl abundance indices for striped bass, Delta smelt, longfin smelt, American shad, splittail and threadfin shad have declined by 99.7, 97.8, 99.9, 91.9, 98.5 and 97.8 percent, respectively.[14] Every single survey of Delta smelt in late 2014 through mid-2015 identified new historic lows in species abundance[15] and the species is now close to extinction. The U.S. Fish and Wildlife's (USFWS) Anadromous Fisheries Restoration Program (AFRP) documents that, since 1967, in-river natural production of Sacramento winter-run Chinook salmon and spring-run Chinook salmon have decline by 98.2 and 99.3 percent, respectively, and are only at 5.5 and 1.2 percent, respectively, of doubling levels mandated by the Central Valley Project Improvement Act, California Water Code and California Fish & Game Code.[16] For example, population year classes of naturally reproducing Sacramento River winter-run, spring-run and fall-run Chinook salmon were virtually destroyed by lethal temperatures in 2014[17] and, as of 15 October, the 2015 winter-run year class numbers are 22% below last years decimated levels.[18]

The RDEIR/SDEIS's analyses are predicated upon assumptions of compliance with existing water quality standards contained in State Water Resources Control Board's (SWRCB) D-1641 and the reasonable and prudent measures contained in the biological opinions issued by the USFWS and National Marine Fisheries Service (NMFS). However, it grievously fails to acknowledge, discuss or analyze the fact that the SWRCB has adopted a pattern and practice of serially weakening compliance with adopted water quality standards and the fact that the biological opinions have failed to slow the continued decline of listed species.

The RDEIR/SDEIS fraudulently claims that fish screens on the new diversion will be protective of aquatic life but fails to acknowledge and discuss the fact that the proposed screens are highly experimental and many of the studies required to determine if the screens will actually work are proposed post-construction. As the DISB observed, these "measures are assumed to function as planned, with no evidence to support the assumptions." (Delta ISB review of the RDEIR/SDEIS, 30 September 2015, page 17) Nor does the RDEIR/SDEIS discuss or analyze the fact that the new screens will be located in close proximity to critical spawning and rearing habitat areas and will not prevent entrainment of eggs or larval Delta smelt, longfin smelt, Sacramento splittail and smaller lamprey ammocetes that will be present during periods of diversion or prevent the massive entrainment of primary production and lower trophic orders that form the base of the food web. And the RDEIR/SDEIS is silent on the need to retrofit the

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[14] http://www.dfg.ca.gov/delta/projects.asp?ProjectID=FMWT

[15] See Bibliography: https://www.wildlife.ca.gov/Conservation/Delta/20mm-Survey;
https://www.wildlife.ca.gov/Conservation/Delta/Spring-Kodiak-Trawl;
https://www.wildlife.ca.gov/Conservation/Delta/Townet-Survey.

[16] *See*, http://www.fws.gov/lodi/afrp/.

[17] State Water Resource Control Board, *Order Conditionally Approving a Petition for Temporary Urgency Changes in License and Permit Terms and Conditions Requiring Compliance with Delta Water Quality Objectives in Response to Drought Conditions*, 3 July 2015, pp. 15,16:
http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/tucp_order070315.pdf
And
NRDC, TBI, *Drought Operations Will Cause Additional Unreasonable Impacts on Fish and Wildlife in 2015,* 20 May 2015, slide 2:
http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/workshops/nrdc_tbi_pres.pdf

[18] http://www.sacbee.com/news/state/california/water-and-drought/article41684160.html.

obsolete South Delta fish screens to state-of-the-art standards, despite the fact that half of Delta exports (more in drier periods) will continue to be diverted via those inadequate facilities.

The RDEIR/SDEIS erroneously assumes that habitat losses can be simply mitigated by purchases of additional habitat acreage. This betrays a fundamental misunderstanding of aquatic habitat. Aquatic habitat comprises the physical and chemical parameters necessary for renewable fisheries. Present habitat restoration efforts have largely failed and become habitat for invasive species because they failed to reproduce the conditions necessary for native species to thrive. The RDEIR/SDEIS also ignores the historical record of habitat mitigation: required habitat mitigation in the CalFed Record of Decision and the various biological opinions has never been completed, and there are no assurances that the tunnel project's promised habitat mitigation will not suffer a similar fate.

The RDEIR/SDEIS is focused on maximizing water contract deliveries but neglects to include adequate discussion and analyses of California's over-appropriated water rights system, the fact that Delta exports are limited to water surplus to the needs of the Delta and areas of origin, and the implications of impending climate change. For example, reduced runoff caused by climate change would draw the critical low salinity zone eastward necessitating an increase in Delta outflow to protect Delta and longfin smelt. But any increased outflow would decrease exports turning the economic analysis of the project on its head.

The RDEIR/SDEIS' fantasy conclusion that the project's additional diversions of water around the Delta will not significantly harm the estuary's aquatic ecosystem and water quality and can receive legally required permits reflects an arrogant assumption that the broad suite of promulgated environmental statutes simply does not apply to project proponents. Reality is likely to provide a different answer.

Among other fisheries issues inadequately addressed, the analysis of water temperatures in Chapter 11 lacks a credible assessment of extreme highs and lows, and relies on comparisons that use current baseline conditions that did not consider climate change exaggerated confidence in the absence of significant impact even though the draft lacks specific data on "how well screens function" and it is "unclear how, and how well, fish screens would work (2015 Science Board report p. 15) But the most outrageous failure of the RDEIR/SDEIS is the fact that while the proposed operating plan would use the existing south Delta project pumps to export most of water in low water years, there is no environmental analysis at all about screening those pumps.

WHEN WILL NECESSARY STATE-OF-THE-ART FISH SCREENS BE REQUIRED ON SOUTH DELTA EXPORT PUMPS?

New fish screens at the existing South Delta state and federal export pumps would drastically reduce entrainment of virtually all of the pelagic and salmonid listed pursuant to state and federal endangered species acts. The screening project was mothballed after MWD and the State Water Contractors, the beneficiaries of the SWP and CVP, stated that they would not pay for them. The BDCP/WaterFix RDEIR is required to disclose and analyze the impacts of the continued use of the South Delta project pumps since they will be used in low water years to

provide the largest amount of water diverted from the Bay/Delta under the new project operational plans. The RDEIR/SDEIS should disclose and analyze the following facts:

a. New state-of-the-art fish screens were required mitigation measures in the CalFed ROD. Evaluation of the success of the INSTALLED new fish screens was to occur BEFORE further consideration of a peripheral canal.

b. Screening of agricultural diversions accomplishes little if the CVP/SWP pumps subsequently destroy fish that bypass agricultural screens.

c. The new screens at the Contra Costa intake have only taken a couple of smelt since they were constructed (much different than the 26,000 Delta smelt killed by the project pumps between June 1 and June 24 of 2007).

d. The first units of the new screens would have been in place today had the water contractors not refused to pay for them.

e. The required state-of-the-art screen project also encompassed improved new salvage facilities, transportation methods and improved release methods and new release areas. The new screens would have significantly reduced the approach velocity of water and new screen openings would have been reduced from the present one-inch to a couple of millimeters (thereby preventing most smelt from going down the DMC to Los Angeles).

f. The mandated new fish screens would have been in front of Clifton Court Forebay, which would have eliminated most of the current predation occurring in the Forebay (Forebay predation is the largest cause of mortality for most species "taken" by the pumps).

g. A component of the new screen project would have been an accelerated and intensified effort in improving survivability of smelt. Indeed, survival rates of salvaged Delta smelt are improving. Recent results from Pit-tag (passive integrated transponder tags) monitoring show that approximately 33.3% of Delta smelt salvaged survives collection, transport and release back into the Delta (14% at the CVP). Unfortunately, most smelt that reach the present screens pass through them and are never diverted to the salvage buckets.

h. The Fish Facilities Team effort was probably the finest multidisciplinary interagency study, with high synergies, that CSPA's screen expert witnessed in his decades of service with DFG/NOAA.

i. Had the new screens been installed, as mandated, they would also have largely eliminated Clifton Court predation and significantly improved salvage and survivability of many other species presently in precipitous decline, including salmon, steelhead, splittail, threadfin, American shad, longfin, striped bass, etc.

j. As previously noted, under CalFed, an evaluation of the success of the installed new fish screens was to occur before further consideration of a

peripheral canal. Clearly, it cannot be claimed that money is an obstacle to construction of new screens, considering the estimated costs of proposed new reservoirs and peripheral tunnels.

NEITHER THE EIR/EIS NOR RDEIR/SDEIS PROVIDE SCIENTIFIC SUPPORT FOR THE DELTA TUNNELS PROJECT

On September 30, 2015, the Delta Independent Science Board released its final report, entitled Review by the Delta Independent Science Board of the Bay Delta Conservation Plan / California Water Fix Partially Recirculated Draft Environmental Impact Report / Supplemental Draft Environmental Impact Statement (2015 Science Board Report). The 2015 report, like its predecessors addressing earlier drafts, was submitted to the Delta Stewardship Council (DSC) and California Department of Fish and Wildlife (DFW) as directed under the 2009 Delta Reform Act (Wat.Code § 85320(c).)

Noting the profound statewide importance of the project's environmental review, the Science Board found that "reasonable expectations" for completeness and clarity remained "largely unmet." (2015 Science Board report, p. 1.) The Science Board found the current draft "sufficiently incomplete and opaque to deter its evaluation and use by decision-makers, resource managers, scientists, and the broader public." *(ibid*.) Despite identifying a short list of items deemed improvements over the preceding draft *(id*., pp. 3-4), the Science Board found the RDEIR/SDEIS's strengths "outweighed by several overarching weaknesses: 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*., p. 4) The 2015 Science Board report found the current draft lacking in "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." (2015 Science Board report, p. 4.)

As elaborated further below, the 2015 Science Board report identified numerous specific areas of missing content needed to properly inform decision-makers and the public, including: (1) Details on adaptive management and collaborative science (2015 Science Board report, p. 5); (2) Modeling how levee failures would affect operation of dual-conveyance systems (p. 7); (3) Analysis of whether operation of the proposed conveyance would alter the economics of levee maintenance (p. 7); (4) Analysis of the effects of climate change on expected water exports from the Delta (p. 35); (5) Potential impacts of climate change on system operations, even during the shortened time period emphasized in the Current Draft (pp. 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 (pp. 9, 13).

These essential missing items underscore the need for an environmental review that is "more complete, comprehensive and comprehensible" than the current draft. (2015 Science Report (introductory letter).) Moreover, as the Science Board has clarified, the reviewing agencies must also still address continuing problems detailed in its May 15, 2014 report on BDCP and the EIR/EIS (2014 Science Board Report). The 2014 Science Board report followed

a similarly critical review prepared by the Delta Science Program's Independent Science Review Panel (Panel), which analyzed the "Effects Analysis" (BDCP, chapter 5) prepared in connection with requirements of endangered species law. The 2014 reports of the Science Board and the Panel were sharply critical of the tendency in BDCP and its review documents to tilt the analysis in favor of the proposed project and avoid sound science.

As noted in the 2015 Science Board report, the RDEIR/SDEIS places heavy reliance on "adaptive management" to address uncertainties and finesse crucial missing details relating to project impacts and mitigation. (2015 Science Board report, pp. 5-6.) However, despite "ample time" since release of the Draft EIR/EIS, 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." (*ibid,* p. 6.)

Despite the "very general and brief" reference to adaptive management in section 4 of the RDEIR/SDEIS (pp. 4.1-6 to 4.1-7), the Science Board determined that the analysis in the current draft lacks "serious consideration" of the barriers that have impeded implementation of adaptive management in the Delta and elsewhere, as detailed in the Delta Plan, or of "lessons learned" on how these problems can be overcome. (2015 Science Board report, p. 5.) To be effective, adaptive management needs to be "integral with planned actions and management – the Plan A rather than a Plan B to be added later if conditions warrant." By contrast, the draft fails to provide a "substantive" analysis of adaptive management for the Delta tunnels project.

NEGLECTED NEPA REQUIREMENTS FOR ENVIRONMENTAL REVIEW

NEPA requires federal agencies to articulate the "purpose and need" for a proposed action for which environmental review is required. (40 C.F.R. § 1502.13.) That articulation is crucial for the "heart" of NEPA, the alternatives analysis, which enables the EIS to provide "a clear basis for choice among options by the decision-maker and the public." (40 C.F.R. § 1502.14.) NEPA prohibits the use of a truncated "purpose and need" statement, in which the articulation of objectives is defined in a manner that curtails full assessment of the project and alternatives. (*City of Carmel-by-the-Sea v. United States Department of Transportation* (9th Cir. 1997) 123 F.3d 1147, 1155; *Friends of Southeast's Future v. Morrison* (9th Cir. 1998) 153 F.3d 1059, 1066.)

The description of project operation improperly assumes the protection of beneficial uses and meeting of other regulatory requirements, without consistently analyzing hydrologic constraints over the project term. (See, e.g. RDEIR/SDEIS 16-19.) The project assessment therefore improperly continues to seek insulation of permit holders from further responsibility to meet federal and state environmental laws, as well as other legal standards and permit requirements. This prejudicial assumption runs counter to the RDEIR/SDEIS's recognition that the "system" as presently operated does not sustainably protect the Delta. (ES, 1-5.) In addition to skewing the present project review in favor of conveyance, the EIR/EIS's misguided analysis of existing regulatory standards should not be used in other settings to prejudice other efforts to

improve conditions for the Delta ecosystem and protect the health and well being of communities in Delta counties.

The same disjointed approach to regulatory compliance is also evident in the RDEIR/SDEIS's statements referring to the balance of water supply and endangered species objectives. (See, e.g., ES-18, 19.) Although the discussion is vague, it appears to contemplate precisely the sort of balancing rejected by Congress in the ESA. (See *Tennessee Valley Authority v. Hill* (1978) 437 U.S. 153, 174.) Moreover, even if Congress had permitted the general approach to balancing described in the BDCP, it would fail in light of the overwhelming scientific evidence that the twin tunnel-driven project will not meaningfully protect endangered and threatened species, and will likely harm them instead.

The RDEIR/SDEIS concedes that the "ecological health of the Delta continues to be at risk," and acknowledges the growing tension between Delta water exports and special protection. (1-7.) It also recognizes that "systemic change" is necessary because the present design and operation of the "overall system" is no longer environmentally sustainable. (ES-5.) Faced with these systemic problems, agency reviewers examining BDCP and its EIR/EIS last year issued blistering science-based critiques, raising major concerns affecting the project's ability to comply with numerous legal requirements, including federal and state laws protecting species, water quality, and wetlands. These agency reviewers, building on concerns expressed earlier by the NAS and the Science Board, underscored the need to better address the project's consequences for Delta flows and the need for better analysis of mitigation and alternatives. (See, e.g., EPA review (August 26, 2014); State Board review (July 29, 2014); United States Army Corps of Engineers review (July 16, 2014).) Unfortunately the RDEIR/SDEIS fails to provide or even fairly summarize these agency critiques, as well as similar concerns expressed by the Science Board and other commenters.

The 2015 Science Board report noted the current draft's continuing failure, despite three years of its requests, to consistently provide "cogent summaries, clear comparisons, or informative graphics" in the report. (2015 Science Board report, p. 9, citing to 40 CFR 1502 (calling for plain language and appropriate graphics "so that decision-makers and the public can readily understand them").) The report noted that "[f]or 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." (*ibid.,* p. 9.)

The RDEIR/SDEIS fails to sharply distinguish between alternatives and evaluate their comparative merits, as required under 40 CFR 1502.14(b). The alternatives analysis continues to rely upon a narrow and outmoded conception of water supply reliability, which presumes in favor of using water exports to meet the contract amounts referenced in the SWP and CVP contracts. However, a far wider range of options can be utilized to meet supply needs in the future, including water conservation, re-operation, water markets, alternative conveyance, wastewater reuse, water storage, desalination, and efforts toward achieving regional self-sufficiency. Reports of the National Research Council, the Delta Plan (2013), and the California Water Action Plan (2013), among others, discuss a far broader range of available options.

A crucial deficiency in the RDEIR/SDEIS is that it fails to establish the absence of a "reasonable and prudent alternative" to avoid species jeopardy or adverse modification of critical habitat, and consequently cannot qualify for an incidental take permit under section 7 of the federal Endangered Species Act and section 2081(b) of the California Endangered Species Act. Having repeatedly sidestepped key scientific criticisms discussed above, the review does not come close to adequate study of the range of alternatives for survival and recovery of affected species.

CONCLUSION

For all of the reasons previously stated, the RDEIR/SDEIS is fundamentally inadequate as a NEPA document and cannot serve as the basis for issuing CWA Section 404 and RHA Section 10 permits for California WaterFix. Its flaws are so basic and pervasive that it is unlikely that another supplemental EIS can correct its myriad deficiencies. Consequently, the Army Corps must develop its own EIS if it intends to issue the permits.

Thank you for considering these comments. If you have questions or require clarification, please do not hesitate to contact us.

Respectfully submitted,

Bill Jennings
Executive Director
California Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, CA 95204
209.464.5067
deltakeep@me.com

Carolee Krieger
Executive Director
California Water Impact Network
808 Romero Canyon Road
Santa Barbara, CA 93108
805.969.9565
caroleekrieger7@gmail.com

Barbara Vlamis
Executive Director
AquAlliance

530.895.9420
Barbara@aqualliance.net

/S/ Mike Jackson
Counsel to CSPA, C-WIN
P.O. Box 207
75 Court Street, Ste. 1
Quincy, CA 95971
530.283.1007
mjatty@sbcglobal.net

Attachments: A, B, C, D, E, F, G, H, I and J