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October 30, 2015

VIA E-MAIL AND U.S. MAIL

BDCP/WaterFix Comments
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Re: Bay Delta Conservation Plan/California WaterFix Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement

Director Cowin and Regional Director Murillo:

The San Luis & Delta Mendota Water Authority (Water Authority)[1] and Westlands Water District (Westlands) appreciate the opportunity to comment on the Bay Delta Conservation Plan (BDCP) / California WaterFix Partially Recirculated Draft Environmental Impact Report / Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS) released by the Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Reclamation) (collectively, the "lead agencies").[2]

Reflecting back on the past twenty five years, if not more, of regulatory decisions concerning the Bay-Delta ecosystem, financial investments in the environment, and countless reports and plans by federal, state, and local agencies, we all find ourselves in a rather frustrating position. In excess of forty million acre-feet have been reallocated or reserved from human use to environmental purposes. Over $3 billion has been invested in ecosystem improvement projects. Yet, despite all these efforts, the ecosystem and fisheries of concern are still at risk. Indicators of improved population levels and stability are few. The status quo for both water management and ecosystem health remains unacceptable and the coequal goals put into law are still far from being realized. This entire work effort that began many years ago with the BDCP, may well be the last best hope for this generation of responsible agency managers to make and implement decisions so vitally needed for the next generation of Californians.

[1] The Water Authority presents additional comments in a separate letter it filed with the State Water Contractors.

[2] See Attachment 1 for information on the Water Authority and Westlands. Attachment 1 is hereby incorporated into this comment letter by this reference.

For these reasons among others, the Water Authority and Westlands support the core concepts embodied in the planning process – improving the ability of the Central Valley Project (CVP) and State Water Project (SWP) to meet their purposes, by constructing and operating new facilities and improving the operation of existing facilities. These improvements in water infrastructure could allow Reclamation and DWR to protect and restore the water supply across central and southern California for millions of individuals, farmers, and businesses, as well as the member agencies of the Water Authority, including Westlands. The improvements in infrastructure could also allow for important ecological benefits to the Delta. The manner in which the infrastructure is regulated—the operating criteria for the infrastructure—will determine if those core concepts will be achieved.

Water Supply: The benchmark to measure whether water supply will be restored and protected was set in 2006, when federal, state, and local agencies, including Westlands and other members of the Water Authority, along with non-governmental organizations, executed the planning agreement for the BDCP ("Planning Agreement"). (Planning Agreement, § 3.) At that time, the signatories to the Planning Agreement agreed that improvements to water infrastructure must provide water supplies at least to those levels available under State Water Resources Control Board Decision 1641 (D-1641) and up to full contract amounts when hydrology allows. The full contract amounts would require Reclamation to deliver approximately 3.3 million acre-feet of water. Under D-1641, their contract allocations under average hydrology were approximately 75% for the agricultural contractors, 95% for municipal and industrial water service contractors, 100% for San Joaquin River Exchange Contractors, and 100% for wildlife refuges. Those allocations require Reclamation to deliver approximately 2.9 million acre-feet of water annually, under average hydrologic conditions. The range from 2.9 (reduced per D-1641) to 3.3 (full contract) million acre-feet is in addition to transfer and exchange water and Section 215 water.

Ecological Benefits: Significant uncertainty associated with science applicable to the Delta underlies the necessity for and efficacy of the operating criteria. As an example, one premise underlying the existing operating criteria is that drawing water from the north Delta to the south Delta through existing channels has significant adverse effects on fish species in the Delta. Indeed, hundreds of thousands of acre-feet of CVP and SWP pumping has been foregone based on this premise, even though the science underlying the premise and the specific prescriptions imposed based thereon are open to substantial and reasonable question. Assuming it is a valid premise, operations with the new conveyance facilities should provide substantial benefits for protected fish species compared to existing facility operations. Notwithstanding these benefits, the operational criteria that exist to guide today's facilities are proposed for operation with the proposed new conveyance. Additional criteria are also identified. These proposed operational criteria appear to be advanced, at least in part, based on "precautionary principles." Ongoing and collaborative scientific inquiry over the next decade should improve our understanding. Today's premise regarding the effects of operations should be displaced through new or refined knowledge and more informed policy decisions on the criteria required to avoid operations jeopardizing species or adversely modifying critical habitat.

Approach to Environmental Review: As detailed in the RDEIR/SDEIS, the lead agencies advance an alternative approach to obtain authorization for take of species protected under federal and state laws. Through the RDEIR/SDEIS, the lead agencies provide options for obtaining necessary approvals under Section 7 of the federal Endangered Species Act (ESA) and permitting under the California Endangered Species Act (CESA), Fish and Game Code Section 2081, rather than by implementing a 50-year, joint Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP). The RDEIR/SDEIS includes several additional sub-alternatives under this alternative permitting structure, with the preferred sub-alternative being Alternative 4a (WaterFix). This alternative permitting structure and narrow sub-alternatives were developed after receiving extensive public comments and input from the United States Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife. The comments highlighted the complexities with implementing an expansive 50-year habitat conservation plan, given limits on our scientific understandings, the uncertainties associated with the science, and the assurances provided with conservation planning. The lead agencies have prepared the narrower sub-alternatives, including the preferred Water Fix, based on the premise that federal and state agencies will continue to develop actions to provide for conservation of species while protecting and restoring water supply, including, on a case-by-case basis, actions considered in Conservation Measures 3-21.

Importantly, this approach taken by the lead agencies complies with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). The RDEIR/SDEIS provides the necessary supplementary data to satisfy fully the requirements of NEPA and CEQA. Indeed, in this document, the lead agencies have done what administrative agencies should do when faced with a complex set of issues such as those presented by this effort – they have listened to comments on the first public review Draft EIR/S and addressed those comments in accordance with NEPA and CEQA through proposed project modifications, additional data and analysis. We urge the agencies to move promptly to a Final EIR/S.

The Final EIR/S, nonetheless, should better present the current state of the science and better explain how that science is being used to inform policy decisions. Specifically, the document should make clearer that scientific information concerning the Delta ecosystem is limited and often uncertain. As a result, decisions intended to protect fish and wildlife are often intuitive or taken as "precautions" but at great expense to the people of California. It is important for informed decisionmaking that the Final EIR/S provides more complete discussion of the limits of available scientific information. It supports including as part of the project a program that will advance the science as the construction on the conveyance proceeds.

I. The approach to achieving complementary goals of water supply and ecosystem improvements is environmentally appropriate and legally permissible.

A. WaterFix is consistent with statewide policy objectives.

As noted above, restrictions on CVP operations have seriously harmed the communities, farms, refuges, and businesses served by the Water Authority member agencies, including

Westlands, and other public water agencies.[3] To avoid further harm and to improve the ecological health of the Bay-Delta, the fundamental purpose of the planning effort was initially to make physical and operational improvements in the conveyance systems for the SWP and CVP, while allowing for restoration and protection of the ecosystem, water quality, and the water supplies. (Draft EIR/S at pp. 2-2, 2-5.) The alternate implementation approach embodied in WaterFix reflects the same fundamental purpose and reflects a continued commitment to furthering the coequal goals set forth in state law.

A comprehensive statewide approach, of which improvements to the delivery system are only one part, reflects practical realities and broad consensus concerning the many challenges facing California's current water management system. The California Water Action Plan explains:

> [T]he state's water management system is currently unable to satisfactorily meet both ecological and human needs, too exposed to wet and dry climate cycles and natural disasters, and inadequate to handle the additional pressures of future population growth and climate change. Solutions are complex and expensive, and they require the cooperation and sustained commitment of all Californians working together. To be sustainable, solutions must strike a balance between the need to provide for public health and safety (e.g., safe drinking water, clean rivers and beaches, flood protection), protect the environment, and support a stable California economy.

(California Water Action Plan: Actions for Reliability, Restoration and Resilience at p. 1; see also *id.* at pp. 1-19.)[4]

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[3] See, e.g., Letter from D. Nelson, T. Birmingham to R. Wulff, Comments of San Luis & Delta-Mendota Water Authority and Westlands Water District on the Draft EIR/S at pp. 3-6 (July 29, 2014).

[4] See also 2009 Delta Reform Act and 2010 Flow Criteria Report. Many factors contribute to the complexity and challenges of California water management, and no one aspect of the California Water Action Plan's solutions is sufficient to address them. (See, e.g., Challenges Facing the Sacramento-San Joaquin Delta, Delta Science Program, Delta Stewardship Council, September 28, 2015.) The Water Authority and Westlands agree that, on a statewide basis, water supply reliability should also be addressed through conservation, desalination, water recycling, and other tools in the water management portfolio. Those measures alone are not enough, however, to resolve the state's water management challenges when "the very cornerstones of the water supply system are changing" due to complex factors associated with climate change, aging infrastructure, seismic and flood risks, population growth, and environmental sustainability. (See *id.* at p. 4; California Water Action Plan: Actions for Reliability, Restoration and Resilience at p. 1; see also *id.* at pp. 1-19.) As the RDEIR/SDEIS recognizes, "[f]or both environmental and economic reasons, there is an urgent need to improve and modernize the existing SWP/CVP conveyance system." (RDEIR/SDEIS at pp. ES-1, ES-3, ES-5 - ES-6.)

The public anticipates, and indeed expects, that the agencies will consider and implement a comprehensive statewide strategy to address water supply reliability and habitat restoration that not only is consistent with California's overall planning framework, but also is prudent, realistic, science-driven, and achievable. The proposal set forth in WaterFix meets this expectation and takes significant steps toward achieving the coequal goals by protecting state water supplies from climate change and seismic risk, improving operational flexibility to respond to variable and changing circumstances, and implementing other measures (such as screened diversions) to benefit fish species. (See, e.g., RDEIR/SDEIS at pp. 3-1 – 3-11, 4.1-2 – 4.1-4; see also *id*. at pp. 1-1 – 1-12.)

B. Analyzing the environmental impacts of WaterFix without comprehensive habitat restoration is permissible under NEPA and CEQA.

Although the BDCP and other alternatives included in the Draft EIR/S include conservation measures that address conveyance *and* comprehensive ecosystem restoration, the lead agencies have the legal authority to add alternatives that narrow the effort and continue with this ongoing NEPA and CEQA process. The fundamental purpose of both the alternatives in the Draft EIR/S and those alternatives added through the RDEIR/SDEIS is to make physical and operational improvements to the water delivery system in the Delta, necessary to "[r]estore and protect the ability of the SWP and the CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of State and federal law and the terms and conditions of water delivery contracts and other existing applicable agreements." (RDEIR/SDEIS at pp. 1-8.)

The adjusted approach reflects realigning the permitting options from ESA Section 10 and the California Natural Community Conservation Planning Act (NCCPA) to ESA Section 7 and Fish and Game Code Section 2081. The adjusted approach allows decisionmakers to choose an alternative that is focused on the necessary physical and operational improvements to the water delivery system in the Delta that are fundamental to the purpose of the project. The quantity and reliability of water deliveries have been significantly eroded over approximately the past 25 years. WaterFix will allow the return of thousands of jobs and tens to hundreds of thousands of acres of fallowed croplands to production. (Sunding, Modeling the Economic Impact of Changes in Delta Water Supplies, 2012.)

Repairing and improving water delivery infrastructure will also have important ecological benefits. The increased operational flexibility afforded by a "dual conveyance" system will reduce pumping from the south Delta, which will minimize hydrodynamic changes associated with that pumping and improve water quality in export service areas.[5] Also, the new conveyance will be protected from the impacts of climate change and seismic events, while being constructed in a way that improves conditions for aquatic life. The new diversion facilities will be located

[5] See Letter from C. Enos (DWR) to M. Jewell (ACOE) (August 24, 2015) (transmitting 404 permit application).

outside of the primary habitat for Delta Smelt and Longfin Smelt, and state-of-the-art fish screens at each intake will reduce entrainment.

NEPA does not require each alternative that seeks improvements in conveyance to include habitat restoration. Instead, NEPA requires that only "connected actions" be reviewed together. WaterFix (or other alternatives that focus on conveyance) and habitat restoration efforts are not "connected actions." Courts have defined "connected actions" to be those where "it would be irrational, or at least unwise, to undertake the first phase if subsequent phases were not also undertaken." (*Trout Unlimited v. Morton* (9th Cir. 1974) 509 F.2d 1276, 1285.) As already shown, when proceeding under Section 7 and Section 2081, each action has independent utility and one can be constructed and operated without relying on the other project's construction. (See *Thomas v. Peterson* (9th Cir. 1985) 753 F.2d 754, 760 [projects with "independent utility" should be examined separately under NEPA].)

CEQA likewise utilizes the "independent utility" test in determining whether two projects may be analyzed separately. (See *Del Mar Terrace Conservancy, Inc. v. City Council* (1992) 10 Cal.App.4th 712, 736 [a proposal that is related to a project but has independent utility and is not necessary for the project to proceed need not be included as part of the project description and may be reviewed in its own CEQA document, as a separate project]; *Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1224 [same].) In fact, some that commented on the alternatives that included both conveyance improvements and habitat restoration demanded the consideration of new alternatives that would actually forego the construction of any conveyance and *reduce* water deliveries from the Delta while the ecosystem restoration efforts would proceed. (See, e.g., Envt'l Water Caucus Comment Letter (June 11, 2014) at p. 150.) Such alternatives are neither acceptable nor legally necessary under CEQA. They do show, however, that interested parties understand actions to improve conveyance improvements and actions to restore habitat have independent utility.

CEQA also allows alternatives that result in separate consideration of infrastructure improvements (WaterFix) and ecosystem restoration efforts in response to public comments and new information. Under CEQA, public agencies are expected to respond to and account for information developed throughout the environmental review process that may guide and shape their proposed actions. (Pub. Resources Code, § 21091(d); CEQA Guidelines, § 15088.5; *City of Maywood v. Los Angeles Unified School District* (2012) 208 Cal.App.4th 362, 391.) Agencies are encouraged to make changes to projects to respond to new information revealed during the ongoing CEQA process or to address concerns raised in comments. (See *Citizens for a Sustainable Treasure Island v. City & County of San Francisco* (2014) 227 Cal.App.4th 1036, 1055, 1062 [project description may be flexible as needed to respond to conditions and events that affect its final configuration]; *South County Citizens for Smart Growth v. County of Nevada* (2013) 221 Cal.App.4th 316, 331-335 [project description and range of alternatives may evolve in response to information developed in the course of the agencies' review].) A project may change as it proceeds through CEQA review and other stages of the approval process. (*Ibid*.; see also *Western Placer Citizens v. County of Placer* (2006) 144 Cal.App.4th 890, 898; *Kings*

County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 692, 736.) As the Court of Appeal has observed:

> The CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal.

(*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 199.)

Such insights may lead to consideration of a smaller project or revised configuration of the original proposal, and EIRs often include options for reducing the scope of the project or eliminating or reducing the size of various project components. (See CEQA Guidelines, § 15126.6; *Western Placer Citizens*, *supra*, 144 Cal.App.4th at p. 898 [changes to project phasing and implementation strategy were of the type anticipated by the CEQA process].) CEQA gives the lead agency authority to approve a project alternative rather than the proposed project, as well as "the flexibility to implement that portion of a project that satisfies their environmental concerns." (*Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 533; see also *South County Citizens*, *supra*, 221 Cal.App.4th at pp. 331-335; *Dusek v. Redevelopment Agency* (1985) 173 Cal.App.3d 1029, 1040-1041.)

In sum, continuing the existing NEPA and CEQA environmental review process with additional alternatives that focus on conveyance improvements, without simultaneously assessing ecosystem restoration, is sensible, responds to public comments and is well within the lead agencies' discretion under the "independent utility" test. Further, the maximum environmental impacts of conveyance and habitat together have already been analyzed in the Draft EIR/S through the action alternatives contained therein. And, to find that the lead agencies must begin the process anew for solely WaterFix and other conveyance improvements focused sub-alternatives would not only be contrary to the law, but would needlessly waste resources and unduly postpone a decision on critical infrastructure improvements.

II. An implementation strategy focused on conveyance improvements comports with the project's purpose/need and objectives under NEPA and CEQA.

Likewise, the lead agencies' determination to add alternatives that focus on water infrastructure conforms fully with NEPA and CEQA requirements. The RDEIR/SDEIS revises the purpose and need / objectives but retains fundamental principles that have guided the planning process. (Compare BDCP Draft EIR/S at pp. 2-5 with RDEIR/SDEIS at p. ES-6.) Adding sub-alternatives that are focused on conveyance improvements meets the lead agencies' fundamental principles and the purpose and need / objectives.

Under NEPA, an environmental impact statement must include a purpose and need statement that helps begin the process of identifying a reasonable range of alternatives to be evaluated in detail. (See 40 C.F.R. § 1502.13.) NEPA regulations provide that an EIS "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." (*Ibid.*) Similarly, under CEQA, an

environmental impact report must contain a "Statement of Objectives." (See CEQA Guidelines, § 15124(b).) The CEQA Guidelines explain: A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision-makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project. (*Ibid*.) Because the agencies are preparing a joint CEQA/NEPA document, it contains both "Project Objectives" under CEQA and a "Purpose and Need Statement" under NEPA. (Draft EIR/S at pp. 2-1–2-7.)

Within that regulatory framework, it is well established that lead agencies have discretion under NEPA and CEQA to define the purpose and need / objectives for proposed projects. (See *Friends of Southeast's Future v. Morrison* (9th Cir. 1998) 153 F.3d 1059, 1066 [lead agencies have "considerable discretion" in establishing the purpose and need for a proposed project]; *City of Angoon v. Hodel* (9th Cir. 1986) 803 F.2d 1016, 1021 [reversing district court decision that "restated the purpose" of a proposed timber sale "in terms of a broad, generic public benefit"].) The lead agencies' exercise of "considerable discretion" in establishing the purpose and need is evaluated under a general standard of reasonableness. (*Friends of Southeast's Future*, *supra*, 153 F.3d at pp. 1066-67; see also CEQA Guidelines, § 15124(b); *California Oak Foundation v. University of California* (2010) 188 Cal.App.4th 227, 272-274; *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1164.)[6]

Here, consistent with established case law, the lead agencies have soundly exercised their "considerable discretion" under NEPA and CEQA. Indeed, the purpose and need / objectives have been revised but the fundamental project purpose remains unchanged. The revisions to the purpose and need / objectives are lawful. (See *City of Carmel-By-The-Sea v. U.S. Department of Transportation* (9th Cir. 1997) 123 F.3d 1142, 1156; *Habitat & Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1299.) And, as discussed above, the lead agencies have quite properly proposed additional alternatives based on a different implementation strategy expressly in response to public comments. (RDEIR/SDEIS at pp. ES-2 – ES-3.) Thus, based on the technical expertise of the lead agencies and public concern, WaterFix or other conveyance-based sub-alternatives may be pursued, and done so separately from comprehensive ecosystem restoration efforts.

[6] Agencies can only abuse this "considerable discretion" when they "define the objectives of [their] action in terms so unreasonably narrow that only one alternative … would accomplish the goals of the agency's action." (*Citizens Against Burlington, Inc. v. Busey* (D.C. Cir. 1991) 938 F.2d 190, 196); see also *City of Carmel-By-The-Sea v. U.S. Department of Transportation* (9th Cir. 1997) 123 F.3d 1142, 1155 [Ninth Circuit's adoption of the Citizens Against Burlington standard].) Clearly, the RDEIR/SDEIS here does not suffer from a lack of alternatives.

III. WaterFix and other sub-alternatives focused on conveyance were developed in response to public comments; they provide clear statements of the scope and nature of the proposal, major components, and environmental consequences.

As discussed above in Section I, the environmental review processes under NEPA and CEQA anticipate that the characteristics of a proposed project may change in response to public comments and other information obtained during the environmental review process. WaterFix (and the other new sub-alternatives) were developed consistent with this expectation. (See, e.g., RDEIR/SDEIS at pp. ES-1 – ES-40, 1-1 – 1-12, 3-1 – 3-11.) Information developed in the environmental review process suggested the lead agencies may be unable to obtain permits with desired assurances for alternatives proposed under Section 10 or the NCCPA due to strong opposition from the public or questions raised by permitting agencies regarding the effects of the conservation measures over a 50-year timeframe. For these reasons, among others, a new implementation strategy is proposed within a set of new sub-alternatives.

Questions regarding the biological resources effects of conservation measures resulted in the sub-alternative approach, which appropriately "de-links" from the conveyance improvements the non-flow conservation measures. The addition of sub-alternatives would allow for a different permitting approach for take authorization to the "Section 7" process under the federal ESA, and the "Section 2081" process under CESA. (RDEIR/SDEIS at pp. 1-4 – 1-5, 4.1-1.) This is the process currently used to authorize the state and federal water projects. Habitat and other measures would be considered on a case-by-case basis as separate projects with separate environmental review and approvals. (RDEIR/SDEIS at pp. 1-13 – 1-29, 2-21 – 2-22, 4.1-1 – 4.1-4.) Additionally, other non-conveyance related water supply projects and programs could be aggressively pursued as stand-alone separate projects with separate environmental review and approvals under the umbrella of the California Water Action Plan – as is the case with all alternatives, not only the new sub-alternative implementation approach.

IV. The Draft EIR/S and RDEIR/SDEIS evaluate a reasonable range of alternatives.

The lead agencies have likewise conducted the alternatives analysis as required by NEPA and CEQA. Indeed, between the fifteen alternatives considered in the prior Draft EIR/S, and the additional three alternatives in the RDEIR/SDEIS, the federal and state decision makers and the public have a reasonable and abundant range of alternatives to consider. Through a three-step screening process, the lead agencies identified for detailed consideration nine different conveyance configurations at different locations with differing capacities and six different operating scenarios. After the lead agencies received public comments on the Draft EIR/S and input from permitting agencies, the legal agencies determined the conveyance improvements and more extensive habitat restoration might need to proceed on separate tracks. The lead agencies thus identified in the RDEIR/SDEIS three additional sub-alternatives, but which carry forward the same conveyance Alternatives 2, 4, and 5 that were selected through an exhaustive screening process. The lead agencies' responsiveness to public comments and sensitivity to concerns should be commended.

A. The RDEIR/SDEIS provides a reasonable range of appropriate alternatives under NEPA.

NEPA requires a lead agency to "study, develop, and describe appropriate alternatives to recommend courses of action." (42 U.S.C. § 4321(2)(E); see also 40 C.F.R. § 1502.1 [the lead agency must identify and analyze "reasonable alternatives" to the proposed project "which would avoid or minimize adverse impacts…."].) In developing the range of alternatives, the number of, and differences between, the alternatives "depends on the nature of the proposal and the facts in each case." (CEQ, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations (Mar. 21, 1981) ("CEQ Forty Questions"), at p. 1.b.) The Ninth Circuit has described the obligation to produce a range of alternatives as being "governed by a 'rule of reason' that requires an agency to set forth only those alternatives necessary to permit a 'reasoned choice.'" (*California v. Block* (9th Cir. 1982) 690 F.2d 753, 767.) All contemplated alternatives should be "derive[d] from an Environmental Impact Statement's 'Purpose and Need' section" which defines the goals of the project. (*Carmel-By-The-Sea, supra*, 123 F.3d at p. 1155.) The range of reasonable alternatives provided to decision makers and the public need not be "infinite" in number (CEQ Forty Questions at 1.b.), or contrary to the purpose and need of the proposed project. (*Friends of the Southeast's Future v. Morrison* (9th Cir. 1998) 153 F.3d 1059, 1067.)

Because of the potential shift from the Section 10/NCCPA to Section 7/Section 2081, the conservation measures (CM3-21) found in the Draft EIR/S are no longer germane to sub-alternatives narrowed to conveyance improvements focused on protecting and restoring water supply. (RDEIR/SDEIS at p. ES-6.) These sub-alternatives include different conveyance configurations, intakes, capacities, operational scenarios, and mitigation measures. (See Table 4.1-4 [comparing basic configurations of each alternative].) Standing alone, the array of three sub-alternatives, plus the No Action Alternatives, provides the decision makers and the public a reasonable range of choices for how to meet the stated purpose and need. Combined with the original fifteen alternatives and the historical context, in which hundreds if not thousands of conveyance alternatives have been explored, unquestionably there is a wide array of options for how best to meet the need for improved water reliability, while allowing for protection and restoration of fish and wildlife.

Given the existing 18 alternatives and sub-alternatives, each with differing configurations, intakes, capacities, and operating scenarios, there is no legal basis for the lead agencies to add even more alternatives for consideration, as some have suggested. Additional water conveyance alternatives would likely add little in the way of significant options for public consideration. Nor do the lead agencies have any obligation to consider alternatives that would not construct new water conveyances or would reduce water deliveries. Although the No Action Alternative must be analyzed, NEPA does not require the lead agencies to consider alternatives that are actually *counterproductive* in executing the purpose and need of the project. (See, e.g., *Seattle Audubon Scty. v. Moseley* (9th Cir. 1996) 80 F.3d 1401, 1404 [an EIS need not "consider alternatives that are unlikely to be implemented or those inconsistent with its basic policy objectives"]; *Headwaters, Inc. v. Bureau of Land Mgmt.* (9th Cir. 1990) 914 F.2d 1174, 1180

["Nor must an agency consider alternatives that are infeasible, ineffective, or inconsistent with the basic policy objectives…."].) Given the complexity of the Delta, the eighteen alternatives and sub-alternatives provide more than a reasonable range of alternatives for implementing the proposed project and the lead agencies should be lauded for the significant effort required to present such a variety of options to the public.

B. The RDEIR/SDEIS provides a reasonable range of potentially feasible alternatives under CEQA.

Under CEQA, the EIR must describe a reasonable range of potentially feasible alternatives to the proposed project that could attain most of the project's basic objectives while reducing or avoiding any of its significant effects. (CEQA Guidelines, § 15126.6(a)-(f).) An environmental impact report need not, however, present alternatives that are incompatible with fundamental project objectives. (*California Oak Foundation v. Regents* (2010) 188 Cal.App.4th 227, 275.) "There is no ironclad rule governing the nature or scope of the alternatives to be discussed." (CEQA Guidelines, § 15126.6(a).) The agency's alternatives analysis will be upheld as long as there is a reasonable basis for the choices it has made. (*City of Maywood v. Los Angeles Unified School Dist.* (2012) 208 Cal.App.4th 362, 414, 416.) The selection of alternatives discussed in an EIR will be overturned only if the alternatives "are manifestly unreasonable and they do not contribute to a reasonable range" of options. (*Town of Atherton v. California High Speed Rail Authority* (2014) 228 Cal.App.4th 314, 353; *Cherry Valley Pass Acres & Neighbors v. City of Beaumont* (2010) 190 Cal.App.4th 316, 355.) The RDEIR/SDEIS, particularly when read with the Draft EIR/S, complies fully with these principles and fosters informed public participation and informed decision-making in accordance with CEQA. (RDEIR/SDEIS, Section 4.) Indeed, the evaluation of alternatives in the Draft EIR/S and RDEIR/SDEIS is more than "reasonable" as required under CEQA; it is exhaustive. (*Ibid*.)

Several comments on the Draft EIR/S nevertheless suggested that the lead agencies had to evaluate various additional alternatives to the conveyance project as proposed. The lead agencies have considered a wide range of alternatives to the conveyance throughout the long history of the proposed project, and evaluated the potential feasibility of each suggested alternative in detail. As explained in the Draft EIR/S, the alternatives suggested by commenters are not feasible. (See, e.g., Draft EIR/S at pp. 3A-12, 3A-49.) The fact that commenters may continue to disagree with the agencies' conclusions does not render the range of alternatives considered "manifestly unreasonable." (*Town of Atherton*, *supra*, 228 Cal.App.4th at p. 353; see also *Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 475.)[7]

[7] Broad considerations of policy come into play when an agency decides whether to approve a proposed project. (*Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 948-949.) If the agency determines that the proposed action will best achieve project objectives taking account of relevant economic, environmental, social, technological, legal, and other factors, it may approve the project and find the alternatives "infeasible." (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 982, 1000-1001; *Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 596-598.)

The RDEIR/SDEIS need not consider additional alternatives, including alternatives that are not potentially feasible and/or are contrary to the project's fundamental purpose. (*In re Bay-Delta, supra*, 43 Cal.4th 1143.)

V. Mitigation measures must comply with all applicable laws, but measures that exceed the applicable requirements under NEPA and CEQA for mitigation or state and federal Endangered Species Acts should either be identified as doing such or not discussed in the Final EIR/S.

Under CEQA, an EIR must propose and describe mitigation measures to lessen or avoid the potentially significant environmental impacts of a proposed project. (Pub. Resources Code, §§ 21002.1(a), 21100(b)(3); CEQA Guidelines, § 15126.4.) The mitigation requirement implements CEQA's policy—sometimes called its "substantive mandate"—that requires agencies to take feasible steps to minimize environmental harm. (Pub. Resources Code, §§ 21002, 21081(a).) Mitigation measures are designed to lessen the severity of the project's impacts to the extent reasonably feasible, not necessarily to eliminate them. ((Pub. Resources Code, § 21100(b)(3); CEQA Guidelines, § 15126.4(a)(1).) Any action designed to minimize, reduce, or avoid a significant environmental impact, or to rectify or compensate for the impact, qualifies as a mitigation measure. (CEQA Guidelines, §§ 15126(a)(1), 15370.)

Likewise under NEPA, the discussion of potential mitigation measures is an important part of the decision-making process, and each EIS should include "appropriate mitigation measures not already included in the proposed action or alternatives." (40 C.F.R. § 1502.14(f); see also *id*., § 1502.16(h); *Carmel-By-The-Sea*, *supra*, 123 F.3d at p. 1154 [to meet the "action forcing goals" of NEPA, an agency must include "a reasonably thorough discussion of mitigation measures" in an EIS].) As under CEQA, "mitigation" is defined under NEPA as "Avoiding," "Minimizing," "Rectifying," "Reducing or eliminating" or "Compensating for" the impact of "the action" under consideration. (See NEPA regulations, 40 C.F.R. § 1508.20; see also CEQA Guidelines, § 15370 [same].) Hence, mitigation need not address unrelated or pre-existing federal or private actions. (See 16 U.S.C. § 1536(a)(2) [under the ESA, federal agencies must "insure that *any action authorized, funded, or carried out by such agency* is not likely to jeopardize" endangered or threatened species or their habitat].) NEPA differs from CEQA, however, in that it imposes no substantive mitigation requirement.[8]

The RDEIR/SDEIS identifies mitigation measures for the new sub-alternatives drawing from the same framework as in the conservation plan by keeping the mitigation portions of CM3-21. (RDEIR/SDEIS at pp. 4.1-1, 4.1-5.) The conservation plan (CM3-21) addressed two functions: 1) mitigation for direct impacts of the project; and 2) species conservation and management to meet conservation plan requirements to assist in species recovery. (See 16

[8] *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council* (1978) 435 U.S. 519, 588.) An EIS need only describe potential environmental impacts from contemplated major agency actions in order to inform the federal decision maker and the public. (*Methow Valley*, *supra*, 490 U.S. at p. 350.)

U.S.C. § 1539(a)(2)(B)(iv); Fish & G. Code, § 2820(a)(3).) All told, the mitigation measures in the RDEIR/SDEIS include 11 environmental commitments[9] and 27 avoidance and minimization measures.[10] Together, the project description, mitigation measures, environmental commitments, and avoidance and minimization measures for the new sub-alternatives all have elements intended to avoid or lessen adverse environmental impacts. (RDEIR/SDEIS at Appendix 3B.)[11] These descriptions enable decisionmakers and the public to understand how anticipated environmental impacts will be avoided or substantially lessened through implementation of effective and enforceable mitigation measures.

However, with regard to WaterFix, and other new sub-alternatives, some of the proposed environmental commitments for the new sub-alternatives in the RDEIR/SDEIS go beyond impact mitigation and the requirements of the state and federal Endangered Species Acts and provide for habitat enhancement.[12] For example, the RDEIR/SDEIS includes commitments to "improve conditions for endangered and threatened aquatic species in the Delta," such as requiring higher outflows in relation to existing conditions to improve/restore the Delta estuary and improve habitat/conditions for fish.[13] The lead agencies or other project proponents should not be expected to fund measures that constitute a general public benefit, that go beyond what is needed to mitigate the impacts of the project under NEPA, CEQA or to address requirements of the state and federal Endangered Species Acts.[14] Alternatively, they should be excluded from the Final EIR/S and the approved project.

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[9] See RDEIR/SDEIS at pp. 4.1-14 – 4.1-18; 4.1-24 – 4.1-29; 4.1-32 – 4.1-36; Appendix 3B.

[10] See RDEIR/SDEIS at pp. 3B-77 – 3B-81 [summary table]; 3B-81 – 3B-148 [describing each mitigation measure in detail].

[11] For WaterFix, the RDEIR/SDEIS identifies mitigation measures that reduce most environmental impacts to a less than significant level. (See SDEIS Table ES-9.)

[12] See, e.g., Environmental Commitment 11, Natural Communities Enhancement and Management – at sites protected or restored under Environmental Commitments 3-10; Environmental Commitment 12, Methylmercury Management – at sites restored under Environmental Commitment 4. Moreover, at least one other environmental commitment is identified as necessary to address effects that are not clearly shown to be impacts from WaterFix. (See RDEIR/SDEIS at p. 4.1-18 [Environmental Commitment 16, Nonphysical Fish Barrier – to address "effects related to survival of outmigrating salmonids"].)

[13] See, e.g., RDEIR/SDEIS at pp. ES-18 – ES-21.

[14] Similarly, suggestions that proponents provide "assurances" that unspecified long-term conservation will be implemented to manage potential future effects of climate change are also misplaced. (See 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 (Sept. 30, 2015) (Delta ISB Comments).) Neither NEPA nor CEQA require such "assurances." Mitigation measures are necessary to off-set the potential environmental effects of the project itself, not other potential causes of

VI. The RDEIR/SDEIS cumulative impacts analysis complies with NEPA and CEQA and accounts for the potential cumulative impacts of ecosystem restoration efforts.

The RDEIR/SDEIS includes an improved cumulative impacts analysis that appropriately accounts for the potential cumulative impacts of "past, present, and reasonably foreseeable future actions." (40 C.F.R § 1508.7; see also Pub. Resources Code, § 21083(b)(2); CEQA Guidelines, §§ 15065(a)(3), 15130(a), 15355(b).) The improved cumulative impacts analysis provides important updates to the prior cumulative impacts analysis and, importantly, accounts for the projected impacts associated with ecosystem restoration. Taken as a whole, the cumulative impacts analysis is comprehensive and allows the agencies—as well as the public—to take a hard look at the potential impacts of the proposed action in combination with other existing or reasonably foreseeable projects.

A critical limit in NEPA cumulative impacts analysis is that agencies are only required to consider "*reasonably foreseeable* future actions." (40 C.F.R § 1508.7 [italics added]; see also CEQA Guidelines, § 15065(a)(3) [cumulative effect is determined based on an assessment of the project's incremental impact "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of *probable future projects*" (italics added)].) Thus, agencies are not required to evaluate the potential cumulative impacts of future actions that are "too speculative at the time the EIS was prepared." (*Coalition for Canyon Preservation v. Bowers* (9th Cir. 1980) 632 F.2d 774, 783.) "Ninth Circuit precedent defines a 'reasonably foreseeable' action, for which cumulative impacts must be analyzed, to include 'proposed actions,' such as actions for which an agency has issued a press release or a notice of intent. (*Northern Alaska Environmental Center v. Kempthorne* (9th Cir. 2006) 457 F.3d 969, 980.) Conversely, other potential future projects which have not yet reached the formal proposal stage need not be included in a cumulative impacts analysis. CEQA Guidelines impose similar limitations on cumulative impact analysis, where an assessment of the project's incremental impact is "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of *probable future projects*." (CEQA Guidelines, § 15065(a)(3) [italics added]; see also *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 934-931 [cumulative impacts analysis under CEQA does not require speculation].)

Additionally, under NEPA and CEQA, lead agencies have discretion in determining which potential impacts must be analyzed as cumulative impacts. For a NEPA analysis, the Ninth Circuit has "recognize[d] that 'the determination of the extent and effect of [cumulative impact] factors, and particularly identification of the geographic area in which they may occur, is a task assigned to the special competency of the appropriate agencies.'" (*Blue Mountain Biodiversity Project v. Blackwood* (9th Cir. 1998) 161 F.3d 1208, 1215, quoting *Kleppe v. Sierra Club* (1976) 427 U.S. 390, 414; see also *Kleppe*, *supra*, 427 U.S. at p. 412 ["Resolving these

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environmental impacts. At the same time, NEPA and CEQA seek to examine the total impact of a project. Hence, it remains prudent for the lead agencies to also consider the "late long-term" climate change analysis in the Final EIR/S when evaluating the effects of the new sub-alternatives.

issues requires a high level of technical expertise and is properly left to the informed discretion of the responsible federal agencies"].) Thus, in the context of a cumulative impacts analysis, the Ninth Circuit has cautioned that "[i]t is not for this court to tell the [agency] what specific evidence to include, nor how specifically to present it." (*League of Wilderness Defenders-Blue Mountains Biodiversity Project v. U.S. Forest Service* (9th Cir. 2008) 549 F.3d 1211 [italics in original].) Applying this standard, the Ninth Circuit has cautioned against "fly-speck[ing]" an EIS to identify errors and missing information. (*Churchill County v. Norton* (9th Cir. 2001) 276 F.3d 1060, 1081.) Rather than second-guessing the agency, the court's role is limited to determining whether an agency has "taken the requisite 'hard look' at the cumulative environmental impacts of the action alternatives." (*Ibid*.)

CEQA provides similar deference to agencies in determining which impacts must be included in a cumulative impacts analysis. (See CEQA Guidelines, §§ 15126 (a), 15126.2(a), 15130(a), (b).) This includes the discretion to determine whether the substance and location of a potential impact qualifies as a cumulative impact. (*City of Long Beach v. Los Angeles Unified School District* (2009) 176 Cal.App.4th 889, 906-912 [agency has discretion to apply its expertise in selecting an appropriate scope of assessment]; *Ebbetts Pass Forest Watch v. Department of Forestry & Fire Protection* (2004) 123 Cal.App.4th 1331, 1352 [same].) Thus, CEQA provides discretion to agencies in defining the scope of both the projects and the impacts analyzed under a cumulative impacts analysis.

For those projects and impacts that are included in a cumulative impacts analysis, the lead agencies need only provide "quantified or detailed information" about potential effects to provide the requisite "hard look" under NEPA. (See *Klamath-Siskiyou v. Bureau of Land Management* (9th Cir. 2004) 387 F.3d 989, 994.) It need only provide "sufficient detail to assist the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts." (*Churchill County v. Norton* (9th Cir. 2001) 276 F.3d 1060, 1080.) CEQA imposes a similar requirement, describing cumulative impacts assessments as "need not provid[ing] as great detail as is provided for the effects attributable to the project alone." (CEQA Guidelines, § 15130(b).) A cumulative effects discussion should provide a level of detail that corresponds to the severity of the impact and the likelihood that it will occur, "guided by standards of practicality and reasonableness. (CEQA Guidelines, § 15130(b).) Exhaustive analysis is not required. (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1404.)

The lead agencies properly exercised their discretion under NEPA and CEQA to determine the proper scope of the cumulative impacts assessment and which impacts to describe and analyze in detail. Moreover, the level of detail is more than sufficient to inform the public and the agency's decisionmaking process as required under NEPA and CEQA. The revisions and updates to the cumulative impact analysis in the RDEIR/SDEIS evaluate the potential effects of concurrent projects. They consider potential additive effects of project components that are constructed during the same time period, as well as describing the revisions to the cumulative analysis under each resource topic and the effects of these revisions on the cumulative impact analysis when considered in concert with the effects of the concurrent project effects.

(RDEIR/SDEIS at p. 5-1.) Detailed assessment of cumulative effects is made for each of the project alternatives, at a level of detail more than sufficient to satisfy NEPA and CEQA requirements. (RDEIR/SDEIS at pp. 5-1 – 5-235 [Section 5].)

Building on the cumulative impacts analysis in the Draft EIR/S, the RDEIR/SDEIS provides a quantified and detailed analysis of cumulative impacts that will allow the agencies to take the requisite hard look at the proposed action. For example, due to the passage of time, the lead agencies updated the proposed future actions that should be included in the analysis. (See RDEIR/SDEIS at p. 5-2 ["Proposed future projects, that have since become more defined or developed since 2011, have been added into the cumulative impacts analysis as appropriate in either a qualitative or quantitative fashion"].) The lead agencies also made a number of changes to reflect the revised nature of the proposed action. For example, impacts associated with the California EcoRestore program are now addressed in the cumulative impacts analysis. (*Id*. at pp. 5-3 – 5-4.) Further, in addition to the red-lined changes to the initial cumulative impacts analysis, the agencies provided more than 200 additional pages dedicated to cumulative impacts in the RDEIR/SDEIS.

An example of the detail included in the revised cumulative impacts analysis can be seen in the section addressing Fish and Aquatic Resources. (RDEIR/SDEIS at pp. 5-93 et seq.) Table 11-13 describes 55 individual programs, policies, and projects that could affect fish and aquatic resources. Further, for each specific cumulative impact associated with fish and aquatic resources, the RDEIR/SDEIS separately analyzes the potential cumulative impacts, evaluates their implications under NEPA and CEQA, and identifies potential mitigation measures. (See, e.g., RDEIR/SDEIS at pp. 5-101 – 105 [addressing Impact AQUA-CUM1: Effects of Construction of Facilities on Covered Fish Species].) This detailed and comprehensive analysis is precisely the type of evaluation contemplated by NEPA and CEQA.

VII. Using adaptive management to address potential impacts from construction is appropriate under NEPA and CEQA given the complexities and uncertainties of the Delta environment and the long timeframe for constructing the project.

The RDEIR/SDEIS addresses fully the quantifiable construction impacts of this proposed action. Extensive data and information are provided to the lead agencies' decision makers who will evaluate the effects the conveyance. Moreover, the Draft EIR/S and RDEIR/SDEIS appropriately incorporate adaptive management to allow for more informed decision-making prior to the conveyance improvements becoming operational. "Adaptive management is an approach to natural resources management . . . . As each choice is made, data on the effects of these choices are collected and analyzed in order to assess whether to retain, reverse, or otherwise alter the policy choice." (*In re Operation of the Missouri River System Litig.* (D. Minn. 2004) 363 F.Supp.2d 1145, 1163-64, *aff'd*, (8th Cir. 2005) 421 F.3d 6189.) Adaptive management has been used by federal agencies for over 20 years. It adopts a "predict-mitigate-implement-monitor-adapt" methodology consistent with 40 C.F.R. §§ 1505.2(c) and 1503.3, which recommend that lead agencies implement monitoring and enforcement mechanisms for mitigation measures when warranted. (See *Save Panoche Valley v. San Benito County* (2013)

217 Cal.App.4th 503, 524 [lead agency may rely on future studies to devise the specific design of mitigation measures when results of future studies are used to tailor mitigation measures to fit on-the-ground environmental conditions].) The adaptive management approach is an appropriate and well-established tool to monitor and adjust mitigation measures as they are implemented. This flexibility is greatly needed when undertaking actions in an environment as complex as the Delta and where there may be significant data but there is limited science and a degree of uncertainty associated with that science exists.

Contrary to the impression of some, adaptive management is not an exercise in simply deferring the details of mitigation to a later date while avoiding public scrutiny under NEPA or CEQA. Such misrepresentations have commonly been the basis for unsuccessful challenges to adaptive management plans in similar situations. (See *Defenders of Wildlife v. Salazar* (D.D.C. 2010) 698 F.Supp.2d 141 [rejecting plaintiffs' contention that adaptive management plan in EIS is "a 'plan to make a plan'" that is "insufficiently detailed to allow for a reasonably complete discussion of mitigation measures"]; *In re Operation of the Missouri River System Litig.*, *supra*, 363 F.Supp.2d at pp. 1163-1164 [rejecting plaintiffs' claim that adaptive management planning avoids NEPA obligations]; see also *North Coast Rivers Alliance v. Marin Municipal Water District* (2013) 216 Cal.App.4th 614, 647 [mitigation plan is sufficient under CEQA if it identifies methods that will be used to mitigate impacts and sets out standards the agency commits to meet].)

Instead, adaptive management planning is a system of informed adjustment so that implementation is more successful. This technique has an extensive history and been endorsed by federal wildlife agencies for use in complex environments or when uncertainty exists. (See Council on Environmental Quality, N. Sutley, Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact at p. 9 (January 14, 2011) ("Sutley Memo") ["Adaptive management can help an agency take corrective action if mitigation commitments originally made in NEPA and decision documents fail to achieve projected environmental outcomes …."]; U.S. Fish & Wildlife and Nat'l Marine Fisheries Serv., Habitat Conservation Planning Handbook (1996) at pp. 3-24 ["When significant scientific uncertainty exists, it can be addressed through the incorporation of adaptive management measures…."]; Press Release, Interior Department Publishes New Guide on Use of Adaptive Management in Natural Resource Decision-Making, U.S. Department of Interior (Apr. 20, 2012) ["Natural resource managers are increasingly using adaptive management as a tool in making complex decisions whether to protect eagles, set waterfowl harvest limits or manage the flow of rivers to meet recreational, agricultural and other needs"].)

Department of Interior guidance identifies adaptive management as an effective implementation tool where (1) there is "a mandate to take action in the face of uncertainty" and (2) there is "the institutional capacity and commitment to undertake and sustain an adaptive program," including "an institutional stability for long-term measurement and evaluation of outcomes." (Dep't of Interior, Adaptive Management Technical Guide (2009) at p. 9.) Both of these requirements are met here. All stakeholders would agree that any actions within the Delta environment entail significant uncertainty and lead agencies have committed to provide for long-

term adaptive planning to meet identified performance standards. Under these conditions, adaptive management is preferable to the traditional "predict, mitigate and implement" environmental management model which "does not account for unanticipated changes in environmental conditions, inaccurate predictions, or subsequent information that might affect the original environmental protections." (CEQ NEPA Task Force, Modernizing NEPA Implementation (2003) at p. 44.) Instead, it assures the project is successfully implemented. This is especially valuable in the complex Delta environment where accurate predictions are difficult, making effective implementation of monitoring uncertain.

Adaptive management planning at the EIR/EIS stage does not require significantly detailed descriptions of substantive work by the planning team. Some commenters would suggest that the lead agencies should have already begun assembling the adaptive management team and created species-specific thresholds; prepared timelines for actions, drafted plans for specific locations potentially impacted by the project, developed contingency plans, or implemented many other resource-intensive projects.[15] Nothing in NEPA or CEQA demands, or even encourages, lead agencies to commit resources to beginning work on the adaptive management program before a project has even been approved, and may still be either rejected or modified. In fact, beginning work before project approval could actually violate NEPA. (See 40 C.F.R. § 1506.1(a) [no action may be taken on the proposed project that could have an adverse environmental impact or limit the choice of reasonable alternatives].) As such, a lead agency need only "identify those mitigation measures that the agency is adopting and committing to implement," and specify "expected results, so as to establish clear performance expectations." (Sutley Memo at pp. 6-7 and 8; see also CEQA Guidelines, § 15126.4(a)(1)(B); *Defend the Bay v. City of Irvine* (2004) 119 Cal.App.4th 1261, 1275.) The RDEIR/SDEIS clearly meets these requirements.

Commenters have also mistakenly claimed that the lead agencies must provide some type of "assurances" that the adaptive management plan will be fully funded.[16] Rather, at the EIS stage, adaptive management plans require lead agencies only to ensure that there is "sufficient legal authorities … and necessary resources available to perform or ensure the performance of mitigation." (Sutley Memo at p. 5.) This may be satisfied through a lead "agency's own underlying authority." (*Ibid*.) CEQ recognized that it may not be possible to identify or commit funds from future budgets, *id*. at 9, but found that adaptive management should only be ruled out where "it is not reasonable to foresee the availability of sufficient resources." (*Id*. at p. 6.) Thus, a lead agency need only describe the reasonable likelihood of funding being available in the future from any source, including its own budget or from project proponents. (See *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2007) 157 Cal.App.4th 149, 163 [EIR is not required to discuss or evaluate funding of mitigation].) A more detailed funding plan is not required for adaptive management planning at this stage.

[15] E.g., Delta ISB Comments at p. 6.

[16] E.g., Delta ISB Comments at pp. 6, 9.

Adaptive management planning has been repeatedly upheld against legal challenges. (See, e.g., *Theodore Roosevelt Conservation Partnership v. Salazar* (D.C. Cir. 2010) 616 F.3d 497, 515 [rejecting plaintiffs' argument that an adaptive management plan violated NEPA's requirement to discuss mitigation measures in the EIS and to evaluate environmental impacts before action is taken]; *Sierra Nevada Forest Protection Campaign v. Rey* (E.D. Cal. 2008) 573 F.Supp.2d 1316, 1342 [rejecting plaintiffs' claim that adaptive management plan for reducing fire risk for owl habitat lacked "scientific utility"]; *High Sierra Hikers Ass'n v. Wiengardt* (N.D. Cal. 2007) 521 F.Supp.2d 1065, 1083 [rejecting plaintiffs' claims that adaptive management "allows improper modifications of standards and limits contained in the ROD without going through the process of formal plan amendment or compliance with NEPA"]; *In re Operation of the Missouri River System Litig.* (D. Minn. 2004) 363 F.Supp.2d 1145 [upholding adaptive management and noting that additional NEPA compliance will be required if "a major policy change results"].)

In *Theodore Roosevelt Conservation Partnership*, *supra*, 605 F.Supp.2d 263, a district court rejected many of the objections against adaptive management that have been raised by commenters here. According to the plaintiff in that case, "BLM's adaptive-management-mitigation plan [was] 'so amorphous and ill-defined' that the agency was unable to determine the environmental consequences of the project and thus unable to take the requisite 'hard look' at the project's effect on the environment." (*Id*. at p. 279 [footnote and citations omitted].) The court there noted that BLM was not relying on adaptive management to determine what mitigation measures should be, but was only using adaptive management to monitor and adjust the "numerous specific mitigation techniques" that had already been identified in the EIS. (*Ibid*.) Nor did the court accept plaintiff's claim that adaptive management is "equivalent to a decision to 'act now and deal with environmental consequences later....'" (*Id*. at p. 280.) It summarily dismissed this characterization of adaptive management by pointing out that "NEPA does not prevent agencies from adopting mitigation techniques and acknowledging they may be adjusted later depending on their effectiveness." (*Ibid*.) These determinations were upheld on appeal, where the circuit court determined that nothing in NEPA "force[s] agencies to make detailed, unchangeable mitigation plans for long-term development projects." (*Theodore Roosevelt Conservation v. Salazar* (D.C. Cir. 2010) 616 F.3d 517.) Indeed, the court found that "[a]llowing adaptable mitigation measures is a reasonable decision in light of the inherent uncertainty of environmental impacts, not a violation of NEPA." (*Ibid*.; see also *Save Panoche Valley*, *supra*, 217 Cal.App.4th at p. 524; *National Parks and Conservation Association v. County of Riverside* (1999) 71 Cal.App.4th 1341, 1366 [agency appropriately deferred details of species protection measures in order to further study migration patterns during project operation].) As with that case, the uncertainties inherent in the Delta environment make adaptive management a necessity to ensure that mitigation measures actually operate as anticipated.

The adaptive management approach also obviates any plan to over-compensate for potential mitigation failures. For example, one commenter urged that the Final EIR/S require wetlands restoration at a greater than 1:1 ratio, given the potential failure of some restoration projects, and otherwise claims other mitigation measures are overly optimistic. Adaptive management planning monitors the progress of mitigation projects to adjust implementation so

that mitigation goals are accomplished. Although some mitigation measures may fail at particular locations, without adaptive management, these failed mitigation projects would either be undocumented or simply be abandoned. Adaptive management allows a management team to diagnose reasons for mitigation measures that fail, and to undertake newer efforts having a greater chance of success. Thus, to use the example presented by a commenter, there is no need to require wetlands restoration at greater than a 1:1 ratio as the adaptive management team will continue the restoration work until the required 1:1 ratio is actually achieved.

VIII. The Final EIR/S should more explicitly reflect limits and uncertainties of science.

Although the RDEIR/SDEIS presents significant amounts of scientific information, the discussion of the science in the Final EIR/S should be enhanced. The Final EIR/S should better reflect the significant uncertainty that arises when considering how science should guide operations within environmental conditions at least ten years from now. It is impossible to predict precisely when specific fish species will be in the vicinity of the new infrastructure, and what operational criteria will apply at that point in time. There is additional uncertainty associated with decisions on operational criteria resulting from today's scientific knowledge. That said, decisions must be made, but those decisions are *policy* decisions, informed by the best available science. All would benefit if this were explained more explicitly in the Final EIR/S.

The RDEIR/SDEIS includes a Real Time Operations program. (See, e.g., RDEIR/SDEIS at pp. 4.1-7 – 4.1-10, Table 4.1-2.) It allows for operations that maximize water supplies, unless then-current conditions warrant restrictions needed to avoid jeopardizing species or adverse modification to critical habitat. Real Time Operations reflects inherent uncertainties noted above. The Collaborative Science and Adaptive Management Program included in the RDEIR/SDEIS also reflects existing uncertainty. It allows the lead agencies and others to use the years between project approval and operations of the new infrastructure to improve the science and decisionmaking and ultimately allow for maximized water supplies while not jeopardizing listed species or adversely modifying their critical habitat.

A. The Final EIR/S should acknowledge more completely the uncertainties surrounding future conditions and limitations in currently available science.

NEPA requires acknowledgment of incomplete or unavailable information regarding adverse effects on the human environment. (40 C.F.R. § 1502.22.) CEQA likewise requires the lead agency to acknowledge the limitations of its ability to forecast future conditions and to disclose areas of scientific uncertainty or disagreement. (CEQA Guidelines, §§ 15144, 15145, 15151.) Here, the RDEIR/SDEIS properly acknowledges limits or uncertainties associated with certain effects analyses (see, e.g., RDEIR/SDEIS at p. 2-4 [addressing uncertainty from contrasting model results]), but it can and should more fully and clearly disclose the limits of scientific certainty or areas of disagreement among researchers. In order to provide the entire picture for the decision makers, the lead agencies should use the Final EIR/S to disclose even more fully additional literature on critical issues. Moreover, where the agencies are making

policy judgments and drawing inferences from limited scientific knowledge, the Final EIR/S should better acknowledge those limitations.

Three key examples are:

1. Current Scientific Hypotheses Correlating Flows to Benefits to Native Delta Species Fail to Account for the Mechanisms those Flows Provide: The hypothesized benefit of Delta outflow is a critical assumption underlying prescriptive operating criteria now proposed for the new conveyance. Scientific hypotheses concerning the relationship between increased Delta outflow and fish abundance, however, have not been fully tested and the science cited to support criteria that increase Delta outflow is limited, uncertain, and debated. Hence, to better identify and disclose these limitations, the RDEIR/SDEIS should cite additional important science on the relationship between outflow and abundance, including Latour 2015 and Kimmerer et al. 2013. A recent report by the Delta Independent Science Board reinforces the fact there remains considerable uncertainty surrounding the relationship between flows and abundance. As that report highlights:

> Many studies – and management decisions – rely on correlations between water flows and fish populations. But the decisions warrant fuller understanding of precisely how the flows affect the fishes. Knowledge of these underlying mechanisms is likely to facilitate adaptive management by clarifying uncertainty and risk, by creating specific expectations for outcomes and by strengthening testable hypotheses. This report therefore recommends, first and foremost (there are other recommendations as well), redoubling effects [sic] to identify causes and effects concerning fishes and flows in the Delta.

(See Delta Independent Science Board, *Flows and Fishes in the Sacramento-San-Joaquin Delta, Research Needs in Support of Adaptive Management* at i (August 2015) (Delta ISB Report).)

As the Delta ISB Report points out, many of these mechanisms have neither been identified or studied. Rather, flows have often been used as a surrogate or tool intended to benefit native species without understanding the mechanisms various flow regimes serve across various species and life stages. For example, one mechanism a particular flow regime may provide is the transport of nutrients to important rearing areas for food production. In this case, the benefit is likely diminished due to alterations in nutrients being transported and the food biomass and species composition created by those nutrients in rearing areas (Jassby et al. 2002; Lehman 2000; Lehman et al. 2005; Lehman et al. 2010; Jassby et al. 2002; Sommer et al. 2007; Glibert et al. 2011; Winder and Jassby 2010). Additional flow in today's altered system may not improve the food web that native species have evolved to rely upon. Another mechanism a particular flow regime may provide is creation of additional floodplain habitat for splittail spawning and salmon rearing. There is an incremental threshold of flow necessary to inundate the floodplain whereby too little flow would not produce the benefit and too much would be unnecessary and potentially detrimental. As a result, use of flow / abundance relationships alone may result in too much or not enough water being dedicated for the desired result. It could also

cause water to be dedicated when there is a non-flow action that could improve fish conditions directly, for example notching a weir to cause floodplain inundation at lower flow levels.

This caution is reflected in Chapter 11 of the RDEIR/SDEIS. There, the RDEIR/SDEIS acknowledges that "appreciable uncertainty related to the significance of the [Low Salinity Zone] and fall outflow management efforts for delta smelt" has led to increased research. However, the chapter concludes that implementation of alternatives that do not include Fall X2 will have adverse effects on delta smelt. (See RDEIR/SDEIS at pp. 11-33, 11-205; see also RDEIR/SDEIS at pp. 4.3.7-25 -27.) However, if the Final EIR/S retains that conclusion, it should reflect that the conclusion is made out of an abundance of caution, in spite of the appreciable uncertainty. Similar statements should be included for other conclusions that are based on limited or uncertain science.

2. Uncertainty With Survey Data: As noted above, the RDEIR/SDEIS cites scientific hypotheses concerning Delta Smelt abundance that are based on correlations between environmental conditions and data from Delta Smelt surveys. At least some of those surveys were designed to sample very different fish species and may not be very efficient at sampling Delta Smelt. Bennett and Burau 2014 have shown that the tidal cycle significantly influences Delta Smelt catchability in the open water where the sampling occurs; this survey inefficiency may introduce bias in the data and potentially undermine other analyses dependent on the data from these surveys. Disclosure of survey efficiency and potential bias, as an example, is important when seeking to understand the strength and limit of the scientific support for actions and ultimately the impacts of actions.

3. Consider Fully the Effects of Other Stressors: The Final EIR/S should acknowledge more completely the effects of other significant stressors in the Delta. Researchers and policymakers have debated how changes in food supply, loss of habitat, predation by non-native species, and water quality (e.g. nutrients), among others, may impact species abundance as native listed species struggle to thrive in the altered Delta ecosystem. While these stressors and many others have been identified, in many cases projects and actions to address them have not been implemented. This despite, for example, an impressive list of over 200 pages of recovery actions identified in NMFS' 2014 Recovery Plan for Winter-Run, Spring-Run, and Central Valley Steelhead.[17] These recovery actions include efforts to address the adverse effects of loss of habitat, increased non-native fish predation, wildfire management, in-Delta unscreened diversions, and ocean harvest on these listed species. Perhaps most importantly, these recovery actions go so far as to identify those agencies and entities best-suited to implement the specific recovery action. This is precisely the kind of inter-agency implementation that is needed in the next decade to address the complex and interrelated suit of stressors and improve conditions for native fish, and so that decisions regarding operations are fully informed within the context of all stressors.

[17] National Marine Fisheries Service, *Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon and The Distinct Population Segment of California Central Valley Steelhead* (July 2014).

Distinguishing the impacts of proposed new facilities and operations from the impacts of the many other stressors on the Delta ecosystem is important for at least two reasons. First, doing so is necessary to understand the impacts of the proposed new facilities and operations. Absent such an effort, the true effect will be unknown. Second, understanding causation is essential to applying the standards of ESA section 7. A determination of whether the proposed action will jeopardize a species or adversely modify critical habitat must be based on the effects caused by that action, not the effects of all stressors generally. For consultation purposes, the effects of other stressors are part of the baseline to which the effects caused by the proposed action are added.

B. When rendering decisions in light of limited and uncertain science, the lead agencies should acknowledge that the decisions are policy driven.

Decisions made with limited and uncertain science ultimately are policy decisions, based on available science. While policy decisions must be made, they should be presented with full transparency; the Final EIR/S should better acknowledge that, in many areas, available science falls short of *requiring* specific operational criteria.

When scientific support is lacking because of either limited or uncertain information, the basis for decision is risk tolerance and intuition. In 2004, the National Research Council (NRC) observed that "even when a policy decision is made to apply the precautionary principle, the question of whether the decision is consistent with the available scientific information is important. . . . At some point [] erring on the side of protection in decision-making ceases to be precautionary and becomes arbitrary." (NRC 2004 at p. 315.) In its 2004 report, the NRC addressed the degree of scientific certainty, or lack thereof, regarding measures imposed under the ESA for the protection of listed fishes in the Klamath River basin.[18] The NRC developed "specific conventions for judging the degree of scientific support for a proposal or hypothesis," which are summarized in the following table:

[18] National Research Council, *Endangered and Threatened Fishes in the Klamath River Basin: Causes of Decline and Strategies for Recovery*. Washington, DC: The National Academies Press, 2004.

TABLE 1-2 Categories Used by the Committee for Judging the Degree of Scientific Support for Proposed Actions Pursuant to the Goals of the ESA

Basis of Proposed Action	Scientific Support	Possibly Correct?	Potential to be Incorrect
Intuition, unsupported assertion	None	Yes	High
Professional judgment inconsistent with evidence	None	Unlikely	High
Professional judgment with evidence absent	Weak	Yes	Moderately high
Professional judgment with some supporting evidence	Moderate	Yes	Moderate
Hypothesis tested by one line of evidence	Moderately strong	Yes	Moderately low
Hypothesis tested by more than one line of evidence	Strong	Yes	Low

The NRC explained that "[t]he scientific value of such a hypothesis ranges from negligible to very high, depending on the amount of testing to which it has been subjected. At the low end of the scale of scientific strength is an assertion or proposal that is entirely intuitive and thus without scientific support." (NRC 2004 at p. 35.) DWR and Reclamation should consider using these or similar criteria in the Final EIR/S to better inform the decisions that will necessarily be based on science.

C. The lead agencies should use the next decade to follow a collaborative process to expand the relevant science to allow for more informed judgment on how best to operate the new conveyance.

The RDEIR/SDEIS recognizes scientific uncertainty regarding the Delta ecosystem, including the effects of water deliveries and the related operating criteria. To address that uncertainty, the lead agencies have included a collaborative process to study further the potential impacts of implementing these infrastructure improvements. (RDEIR/SDEIS at p. 4.1-18) The Water Authority and Westlands support that effort.[19] The approach is sound for two particular reasons.

First, with a strong science program, uncertainties we see today can be reduced and the additional research can add granularity to today's knowledge. Much of today's science, for example, is premised on a single conveyance. Additional study focused on a dual conveyance

[19] *See* Delta Independent Science Board, *Flows and Fishes in the Sacramento-San-Joaquin Delta, Research Needs in Support of Adaptive Management* at p. i (August 2015) [concluding that "scientific findings that relate fishes and flows increasingly guide decisions on how to manage flows for the well being of threatened or endangered species" but that "the decisions warrant fuller understanding of precisely how the flows affect the fishes" and recommending "first and foremost" to redouble efforts "to identify causes and effects concerns fishes and flows in the Delta."]

could better inform decisionmakers on how to frame project operations using these new facilities. Targeted research and studies on this issue, and other issues raised above, can and should proceed until the new intakes become operational, with the results of those studies forming the basis for establishing the final range of operating criteria.

Second, the use of the Collaborative Science and Adaptive Management Program squares fully with NEPA and CEQA. Although future impacts from the long-term operational phase of the project carry some uncertainty, the RDEIR/SDEIS provides the information that NEPA and CEQA require by updating the pre-existing Draft EIR/S analyses for 23 different categories of reasonably foreseeable direct and indirect impacts. Moreover, the impact assessment requirements of NEPA and CEQA only require the lead agencies to provide sufficient information to inform the decision makers and the public of reasonably foreseeable direct and indirect effects. (40 C.F.R. 1502.16; CEQA Guidelines, § 15064(d).) This is particularly true with the revisions suggested herein. Neither statute requires the agencies to engage in speculation or conjecture about hypothetical impacts that may occur in the future. (See, e.g., *City of Davis v. Coleman* (9th Cir. 1975) 521 F.2d 661, 676 ["While 'foreseeing the unforeseeable' is not required, an agency must use its best efforts to find out all that it reasonably can"]; *Foundation for San Francisco's Architectural Heritage v. City and County of San Francisco* (1980) 106 Cal.App.3d 893, 910 [CEQA "does not demand what is not realistically possible given the limitation of time, energy, and funds. 'Crystal ball' inquiry is not required"].) This environmental review should depict the likely outer bounds of reasonably foreseeable impacts. That is all that the law requires.

In sum, to enable the lead agencies to make the best policy decision possible in light of existing uncertainties, the Final EIR/S should better acknowledge such uncertainties, and arm future decisionmakers with the tools necessary to respond to improved knowledge and new science in the intervening decade.

Thank you for the opportunity to comment on the RDEIR/SDEIS.

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Cited References

Cited references not previously provided with the Water Authority and Westlands' July 29, 2014 comments are being provided as attachments to these comments, mailed under separate cover letter on October 30, 2015.

Bennett, W.A. and J.R. Bureau. 2014. Riders on the Storm: Selective Tidal Movements Facilitate the Spawning Migration of Threatened Delta Smelt in the San Francisco Estuary. *Estuaries and Coasts*, May 2015, Volume 38, Issue 3, pp. 826-835, http://ca.water.usgs.gov/pubs/2014/BennettBurau2014.pdf.

California Natural Resources Agency, California Department of Food and Agriculture, California Environmental Protection Agency. 2014. California Water Action Plan: Actions for Reliability, Restoration and Resilience, http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Plan.pdf.

Delta Independent Science Board. August 2015. Flows and Fishes in the Sacramento-San-Joaquin Delta: Research Needs in Support of Adaptive Management, http://deltacouncil.ca.gov/sites/default/files/2015/09/2015-9-29-15-0929-Final-Fishes-and-Flows-in-the-Delta.pdf.

Delta Independent Science Board. Sept. 30, 2015. Letter to Fiorini, R. and C. Bonham re: Review of environmental documents for California WaterFix, http://deltacouncil.ca.gov/docs/final-delta-isb-comments-partially-recirculated-draft-environmental-impact-reportsupplemental.

Enos C. Aug. 24, 2015. Letter to M. Jewell re: 404 Permit Application.

Environmental Water Caucus. June 11, 2014. Letter re: Comments on the Draft BDCP and Draft BDCP EIR/EIS, http://restorethedelta.org/wp-content/uploads/2014/06/BDCP-Final-Comments-June-11.pdf.

Glibert, P.M., D. Fullerton, J.M. Burkholder, J.C. Cornwell, and T.M. Kana. 2011. Ecological stoichiometry, biogeochemical cycling, invasive species, and aquatic food webs: San Francisco Estuary and comparative systems. *Reviews in Fisheries Science* 19:4, 358-417, http://www.tandfonline.com/doi/abs/10.1080/10641262.2011.611916#preview.

Jassby, A.D., J.E. Cloern, and B.E. Cole. 2002. Annual primary production: Patterns and mechanisms of change in a nutrient-rich tidal ecosystem. Limnology and Oceanography 47(3): 698-712.

Kimmerer, W.J., M.L. MacWilliams, and E.S. Gross. 2013. Variation of fish habitat and extent of the low-salinity zone with freshwater flow in the San Francisco Estuary. *San*

Francisco Estuary and Watershed Science 11(4), http://escholarship.org/uc/item/3pz7x1x8.

Latour, R. 2015. Explaining patterns of pelagic fish abundance in the Sacramento-San Joaquin Delta. *Estuaries and Coasts*. Published online, http://link.springer.com/article/10.1007/s12237-015-9968-9.

Lehman, P.W. 2000. The influence of climate on phytoplankton community biomass in San Francisco Bay Estuary. *Limnology and Oceanography* 45:580-590.

Lehman, P.W., G. Boyer, C. Hall, S. Waller and K. Gehrts. 2005. Distribution and toxicity of a new colonial *Microcystis aeruginosa* bloom in the San Francisco Bay Estuary, California. *Hydrobiologia* 541:87-99.

Lehman, P.W., S.J. Teh, G.L. Boyer, M.L. Nobriga, E. Bass, and C. Hogle. 2010. Initial impacts of *Microcystis aeruginosa* blooms on the aquatic food web in the San Francisco Estuary. *Hydrobiologia* 637:229-248.

Luoma, S.N., C.N. Dahm, M. Healey, and J.N. Moore. 2015. Challenges Facing the Sacramento-San Joaquin Delta: Complex, Chaotic or Simply Cantankerous? *San Francisco Estuary and Watershed Science*, Volume 13, Issue 3, http://resources.ca.gov/docs/DeltaChallenges-v13.pdf.

National Environmental Policy Task Force. 2003. The NEPA Task Force Report to the Council on Environmental Quality: Modernizing NEPA Implementation, https://ceq.doe.gov/ntf/report/finalreport.pdf.

National Marine Fisheries Service. 2014. Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon and The Distinct Population Segment of California Central Valley Steelhead, http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/california_central_valley/final_recovery_plan_07-11-2014.pdf.

National Research Council. 2004. Endangered and Threatened Fishes in the Klamath River Basin: Causes of Decline and Strategies for Recovery. The National Academies Press, http://www.nap.edu/catalog/10838/endangered-and-threatened-fishes-in-the-klamath-river-basin-causes.

Nelson, D. and T. Birmingham. July 29, 2014. Letter to R. Wulff re: Comments of San Luis & Delta-Mendota Water Authority and Westlands Water District on the Draft Bay Delta Conservation Plan and Environmental Impact Report and Environmental Impact Statement.

Sommer, T., C. Armor, R. Baxter, R. Breuer, L. Brown, M. Chotkowski, S. Culberson, F. Feyrer, M. Gingras, B. Herbold, W. Kimmerer, A. Mueller-Solger, M. Nobriga and K. Souza. 2007. The collapse of pelagic fishes in the upper San Francisco Estuary. Fisheries 32(6): 270-277.

State Water Resources Control Board, California Environmental Protection Agency. Aug. 3, 2010. Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.

Sunding, D. 2012. Modeling the Economic Impact of Changes in Delta Water Supplies. Powerpoint presentation.

Sutley, N, Council on Environmental Quality. 2011. Memorandum re: Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact, http://energy.gov/sites/prod/files/NEPA-CEQ_Mitigation_and_Monitoring_Guidance_14Jan2011.pdf.

United States Department of the Interior. 2009. Adaptive Management: The U.S. Department of the Interior Technical Guide, http://www.usgs.gov/sdc/doc/DOI-%20Adaptive%20ManagementTechGuide.pdf.

United States Department of the Interior. Apr. 20, 2012. Press Release: Interior Department Publishes New Guide on Use of Adaptive Management in Natural Resource Decision-Making, https://www.doi.gov/news/pressreleases/Interior-Department-Publishes-New-Guide-on-Use-of-Adaptive-Management-in-Natural-Resource-Decision-Making.

United States Department of the Interior Fish and Wildlife Service and United States Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service. Nov. 4, 1996. Habitat Conservation Planning and Incidental Take Permit Processing Handbook, http://www.fws.gov/endangered/esa-library/pdf/HCPBKTOC.PDF.

Winder, M. and A.D. Jassby. 2010. Shifts in zooplankton community structure: Implications for food-web processes in the upper San Francisco Estuary. *Estuaries and Coasts*. 34:675-690.

Attachment 1

The Water Authority and Westlands have vital interests in seeing the lead agencies conclude their work and move forward with water infrastructure improvements that protect and restore water supplies while allowing for ecosystem improvements.

The Water Authority is a joint powers authority with 28 member agencies, 26 of which contract with the United States for supply of water from the federal Central Valley Project (CVP). The member agencies collectively hold contracts with the United States for the delivery of approximately 3.3 million acre-feet of CVP water. CVP water provided to the Water Authority's member agencies is currently conveyed through the Delta and used within areas of San Joaquin, Stanislaus, Merced, Fresno, Kings, San Benito, and Santa Clara Counties, California. The CVP water supports approximately 1.2 million acres of agricultural land, as well as more than 200,000 acres of managed wetlands, private and public, in California's Central Valley. The Water Authority's member agencies also use CVP water to serve approximately 2 million people in the Silicon Valley and the Central Valley.

Westlands encompasses approximately 600,000 acres, including some of the most productive agricultural lands in the world. A member agency of the Water Authority, Westlands is a California water district formed pursuant to California Water Code sections 34000 et seq. Westlands holds vested contractual water rights to receive water from Reclamation, through the San Luis Unit of the CVP, for distribution and consumption within areas of Fresno and Kings Counties. Westlands' total contractual entitlement for CVP water under this contract is 1.15 million acre-feet per year. In addition, Westlands holds 45,383 acre-feet of water entitlement in the form of contract assignments from other Water Authority member agencies. Most of Westlands' CVP water supply is used for irrigation.