State of California
State Water Resources Control Board
DIVISION OF WATER RIGHTS
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PROTEST– PETITION

PROTEST TO PETITION
REQUESTING CHANGES IN WATER RIGHTS OF THE DEPARTMENT OF WATER RESOURCES AND U.S. BUREAU OF RECLAMATION FOR THE CALIFORNIA WATERFIX PROJECT

California Department of Water Resources Permit Nos. 16478, 16479, 16481, 16482, (App. Nos. 5630, 14443, 14445A, 17512.)

United States Bureau of Reclamation Permit Nos. 12721, 12722, 12723, 11315, 11316, 11967, 11968, 11969, 11971, 11973, 12364, (App. Nos. 5626, 9363, 9364, 13370, 13371, 5628, 15374, 15375, 16767, 17374, 17376.)

We, Save the California Delta Alliance ("Delta Alliance"), P.O. Box 1760, Discovery Bay, CA 94505; Janet McCleery and Michael McCleery, 5672 Drakes Drive, Discovery Bay, CA 94505; Frank Morgan, 1700 Riverlake Rd., Discovery Bay, CA 94505; and Captain Morgan's Delta Adventures, LLC, 1700 Riverlake Rd., Discovery Bay, CA 94505, have carefully read Notice Of Petition Requesting Changes In Water Rights Of The Department Of Water Resources And U.S. Bureau Of Reclamation For The California Waterfix Project dated October 30, 2015 ("Notice"), Petition For Change dated August 25, 2015, and addendum and errata to Petition For Change, dated September 11, 2015.

Protest Based On Public Interest Considerations:

The proposed changes in the point of diversion / re-diversion will:

X Not best serve the public interest or conserve public trust uses,
X Be contrary to law, and
X Have an adverse environmental impact.

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I. Statement Of Facts.

A. Protestants To The Petition.

1. Save the California Delta Alliance. Delta Alliance was formed in 2010 and is a membership organization headquartered in Discovery Bay, California. We regularly turn out several hundred enthusiastic members at our town-hall style meetings that are held several times a year in Discovery Bay.

Several hundred Delta Alliance members own waterfront homes with attached docks in Discovery Bay. Our members possess riparian rights to Delta waters abutting their properties, including Kellogg Creek, Indian Slough, and the bays of Discovery Bay that are fed by the waters of Kellogg Creek and Indian Slough.

The waterfront lots of Discovery Bay, including those of our members, extend beyond the low tide line and embrace navigable waters of the United States. The navigable waters over the submerged lands owned by our members are subject to recreational use by the general public pursuant to the public trust doctrine. However, our members possess distinct riparian rights to recreation in the waters over and adjacent to their lands.

Our members recreate intensely in the waters of Kellogg Creek, Indian Slough, and the bays of Discovery Bay fed by Kellogg Creek and Indian Slough. Recreational activities include swimming, fishing, paddle boarding, and many other forms of recreation that include frequent and prolonged human contact with the waters of the Delta by children and adults.

In addition to representing the rights of waterfront homeowners in these proceedings, Delta Alliance members swim, fish, and engage in watersports throughout the Delta. Delta Alliance members also include water-related Delta businesses. Among Delta Alliance's organizational purposes is preservation and restoration of the Delta ecosystem. Delta Alliance members regularly boat throughout the Delta, San Francisco Bay, and the coastal waters of Northern California. Our members view and monitor the Delta ecosystem and will suffer injury as the result of harm to the Delta ecosystem.

Our members retain their riparian legal rights to put Delta waters to beneficial use by individually diverting small quantities of water for irrigation of gardens and other domestic uses.[1]

However, this Protest is based on public interest considerations.

2. Janet McCleery, Michael McCleery, And Frank Morgan. Janet and Michael McCleary own and reside at 5672 Drakes Drive, Discovery Bay ,CA 94505, which is a waterfront parcel with an attached dock abutting Marlin Bay. Marlin Bay is fed by the waters of Indian Slough.

The McCleerys exercise their riparian recreational rights by swimming and engaging in water sports in the waters overlying their submerged lands and abutting their riparian lands. The McClearys also dock their boat at their attached dock and exercise the navigational rights attendant upon riparian ownership.

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[1] Pursuant to their riparian rights, our members have a right to oppose a change in the point of diversion pursuant to Water Code section 1702:

> Accordingly, we must conclude that section 16 of the Water Commission Act allowed anyone who had a legal right to use water to oppose a change in the point of diversion of an appropriation on the ground the change would interfere with his or her legal right to use the water involved.

State Water Res. Control Bd. Cases, 136 Cal. App. 4th 674, 803, 804 (2006) (emphasis on *all* original).

The McClearys also boat and recreate throughout the Delta, including regularly swimming, fishing, and engaging in watersports in Delta waters.

Frank Morgan owns and resides at 1700 Riverlake Rd., Discovery Bay, CA 94505, which is a waterfront parcel with an attached dock abutting Sand Bay. Sand Bay is fed by the waters of Kellogg Creek.

Mr. Morgan exercises his riparian recreational rights by swimming and engaging in water sports in the waters overlying his submerged lands and abutting his riparian lands. Mr. Morgan also docks his boat at his attached dock and exercise the navigational rights attendant upon riparian ownership.

Mr. Morgan also boats and recreates throughout the Delta, including regularly swimming, fishing, and engaging in watersports in Delta waters.

The McCleery's and Mr. Morgan members retain their riparian legal rights to put Delta waters to beneficial use by individually diverting small quantities of water for irrigation of gardens and other domestic uses.

However, this Protest is based on public interest considerations.

3. Captain Morgan's Delta Adventures, LLC, Captain Morgan's Delta Adventures' business address is 1700 Riverlake Rd, Discovery Bay, CA 94505. Captain Morgan's Delta Adventures operates the 55' charter vessel Rosemarie, which is berthed in Discovery Bay. Rosemarie's cruises allow local and out-of-town guests to enjoy the beauty of the California Delta and to recreate in Delta waters. In 2015, Rosemarie made 136 cruises traveling as far upstream as Sacramento, as far west as Antioch, and as far east as the Port of Stockton. In December 2015 alone, Rosemarie cruised over 1,000 guests in and around Discovery Bay to view the annual holiday light displays.

B. The California WaterFix Project.

Begun in 2006, the Bay Delta Conservation Plan ("BDCP") was initially proposed with two basic components. The first was to build twin water diversion tunnels, each 40 feet in diameter, with a combined capacity large enough to divert 15,000 cfs from new points of diversion on the Sacramento River a few miles downstream of Sacramento. The second component was to restore or create up to 150,000 acres of wetland and other habitat in the Delta.

The foundation of the project was that operation of the tunnels, in conjunction with vast new areas of Delta habitat, would meet the "gold standard" of a habitat conservation plan ("HCP") pursuant to section 10 of the federal Endangered Species Act and a natural communities conservation plan ("NCCP") pursuant to the California Endangered Species Act. The high-capacity tunnels and new point of diversion would allow a "big gulp"/"little sip" approach to water diversion. Water for export would be diverted for storage at times of abundance and drawn from storage and used, as needed, at times of scarcity (big gulp). Diversions could thereby be minimized or eliminated at times of scarcity (little sip) and more freshwater would flow through the Delta. Creation of vast areas of habitat would remake the Delta into an ecosystem that would thrive under the new big gulp/little sip flow regime made possible by the tunnels.

After the BDCP planning process was well along in its commitment to restoring the Delta ecosystem, including the restoration of freshwater flows through the Delta, the Sacramento-San Joaquin Delta Reform Act of 2009, Water Code §§ 85000–85350 ("Delta Reform Act") recognized the potential benefits of the BDCP as an HCP and NCCP and placed certain restrictions and requirements on the Board and other state agencies with respect to the BDCP, with the understanding that the BDCP would be considered for various state approvals and state funding as an HCP and NCCP.

As an HCP, the BDCP would be a fifty-year plan for progressively and fundamentally restoring the Delta and conversely would benefit water system reliability by entitling the State Water Project ("SWP") and Central Valley Project ("CVP")

(collectively "projects") to fifty-year "no surprises" permits for Delta operations. The BDCP would therefor implement the Delta Reform Act's coequal goals of "providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem." Water Code § 85054.

The legislature had high expectations when it declared the goal of restoring the Delta as state policy, embracing the full potential of the largest and ecologically most important estuary on the west coast of the Americas. Restoration, in the context of the Delta and the BDCP, means returning the Delta "to a condition in which its biological and structural components achieve a close approximation to its natural potential … ." Water Code § 85066. The legislative expectation for a restored Delta was commensurate with the BDCP's promise to create vast new areas of habitat and return freshwater flows to an ecosystem that had been deprived of adequate seaward flows since inception of the projects.

However, in 2015, the California Department of Water Resources ("DWR") and its partners abruptly abandoned the habitat component and broke the foundational commitment to meeting the "gold standard" of an HCP and NCCP. What is left is a tunnels-only mega-diversion project, a resurrected underground version of the scientifically failed and voter-rejected 1982 Peripheral Canal. This is precisely what the legislature intended the BDCP would not be:

> This bill does NOT authorize 'the Peripheral Canal' … . Instead, it specifies certain requirements for BDCP in considering options for changing Delta water conveyance for the State Water Project (SWP) and federal Central Valley Project (CVP). First, BDCP must analyze certain factors in the CEQA process. Second, BDCP must meet 'the gold standard' of achieving approval as an NCCP, if it wants state funding … [including] adaptive management of BDCP projects and programs, which may include new Delta conveyance.

California Committee Report No. RN0925373 Senate Bill No. 1, November 4, 2009, California 2009–2010 Seventh Extraordinary Session (describing legislative intent in the Delta Reform Act) ("*SB1 Committee Report*") (Attachment One).

DWR has revised the project objectives section of the *2015 Public Draft Bay Delta Conservation Plan/California WaterFix Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement* ("*2015 RDEIR/S*") (SWRCB-3) to delete the habitat component and the HCP and NCCP permit objectives. *Compare* the *2013 Public Draft Environmental Impact Report/Environmental Impact Statement Bay Delta Conservation Plan* 2-3 ("*2013 Draft EIR/S*") (SWRCB-4) with *2015 RDEIR/S* 1-8. Re-branding the project as California WaterFix does not change its legal character or diminish the requirements of the Delta Reform Act applicable to the project. Nor does DWR's promotional re-branding effort change the underlying reality that the project has failed in its promise to restore Delta flows. "[T]he WaterFix project does not propose additional flows in the Delta" and alternatives that "could provide substantially more water for resident and migratory fish and provide benefits to aquatic life … were not evaluated as alternatives in the SDEIS." *Letter from Jared Blumenfeld, Regional Director USEPA Region 9 to David Murillo, Regional Director Bureau of Reclamation Mid-Pacific Region*, October 30, 2015, 3 ("*October 30, 2015, EPA Letter*") (Attachment Two). Rather than provide more flexibility for water system operations, as DWR claims for California WaterFix, "the flexibility that Reclamation and DWR have to operate the system to ensure that water quality criteria are met will be seriously diminished, and the two agencies will have little room for error in operating the system to protect beneficial uses and achieve the coequal goals." *October 30, 2015, EPA Letter* 3.

In casual shorthand, the Board refers to California WaterFix as a "portion of the former BDCP." Notice 3. However, California WaterFix *is* Alternative 4A of the BDCP.

*See 2015 RDEIR/S***.** DWR and its federal partner, the United States Bureau of Reclamation ("Reclamation"), are still proceeding under the BDCP *Notice of Intent to Prepare Environmental Impact Statement/Environmental Impact Report* ("*NOI*"), dated February 13, 2009, and *Revised Notice of Preparation of Environmental Impact Report and Environmental Impact Statement* ("*NOP*"), also dated February 13, 2009. The *NOI* announces "preparation of a joint EIS/EIR for the Bay Delta Conservation Plan (BDCP)." 74 Fed. Reg. 7257. The *NOP* is issued "For The Bay Delta Conservation Plan." NOP, State Clearinghouse No. 2008032062, February 13, 2009. (Attachments Three and Four).

It is still the BDCP, albeit in tunnels-only guise that does not meet the requirements of the Delta Reform Act. California WaterFix comes to the Board as a legislatively disfavored project. State funds may not be expended to build California WaterFix/BDCP Alternative 4A. *See* Water Code § 85320(b) ("The BDCP shall not be incorporated into the Delta Plan *and* the public benefits associated with the BDCP shall not be eligible for state funding, unless the BDCP does all of the following [including meeting the requirements of an NCCP]") (emphasis added). It is unclear how, if at all, the project could be financed and operated consistent with the Delta Reform Act.

The tunnels-only change in point of diversion provides no additional flows for the Delta. Failure of the habitat component removes the second flow-related justification for the project: that proponents could export more water with less harm because the Delta ecosystem would flourish even with diminished flows because the habitat-reformulated Delta would be an ecosystem that required less freshwater flow. The project failed in July of 2015 when that speculative and counterintuitive hypothesis proved false. They should have seen it coming: "One cannot substitute for the other; both flow improvements and habitat restoration are essential to protecting the public trust resources." *2010 SWRCB Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem* 7 ("*Flow Criteria Report")* (SWRCB-25). What is left is a mega-diversion project with no habitat restoration, no HCP, no capacity to restore Delta flows, and the capacity to further damage an already jeopardized ecosystem while decreasing water system flexibility and reliability.

C. Additional Facts Are Stated Within Each Section Below And Incorporated Into This Statement Of Facts In Support Of This Protest.

Pursuant to the Notice, Protestants have stated facts to support the grounds for this Protest. Additional facts are stated below in each section as needed to meet the requirements of supporting each ground for Protest.

II. The Proposed Changes In The Point Of Diversion/Re-Diversion Will Not Best Serve The Public Interest.

The proposed change will adversely affect the public because it will make California's water system more unreliable and will impede restoration of the Delta, including impeding restoration of freshwater flows through the Delta. The proposed changes will further damage the Delta ecosystem, including diminishing freshwater flows through the Delta and limiting operational flexibility of the projects to meet environmental and water supply needs.

The public has an interest in a reliable water system and restoring the Delta ecosystem as established by state policy in the Delta Reform Act. The proposed changes will therefore adversely affect the public interest.

A. California WaterFix Does Not Best Serve The Public Interest Because It Does Not Provide A More Reliable Water Supply And Does Not Restore The Delta Ecosystem.

The purpose and need for changes in operation of the SWP and CVP, as originally conceived by the BDCP and proffered on behalf of California WaterFix, were aptly described by the USEPA:

> As stated in the SDEIS, the purpose and need for the WaterFix project, as was the case for the BDCP, is to advance the co-equal goals set forth in the Delta Reform Act of 2009. Those are (1) to provide a more reliable water supply for California, and (2) to protect, restore, and enhance the Delta ecosystem.

October 30, 2015, EPA Letter 2. *See Also* Cal. Water Code § 85054 ("'Coequal goals' means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.").

DWR and Reclamation have repeatedly justified and described the project's broad overall purpose and public interest benefits in the same expansive terms summarized by the USEPA. "The overarching goals of the BDCP are to advance the restoration of the ecological functions and productivity in the Delta and restore and protect water supplies provided by the SWP and CVP … ." *2013 Public Draft Bay Delta Conservation Plan* 1-5 ("*Draft BDCP*")(SWRCB-5). Successful completion of the BDCP is intended to "afford regulatory stability with respect to the operation of the primary water delivery systems for the State of California." *Draft BDCP* 1-26. The BDCP "is intended to result in long-term regulatory stability for the state and federal water projects, while furthering the goals of the BDCP to restore and protect ecosystem health, water supply, and water quality." *Draft BDCP* 1-6. *See also Draft Implementing Agreement for the Bay Delta Conservation Plan* § 2.1.8 ("The overall goal of the BDCP is to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework.") (Attachment Five).

However, failure to address ecosystem needs in a systemic fashion, as was promised, portends more of the same instability for water system operations. The BDCP's ability to achieve regulatory stability for water system operations was premised on meeting the standards for an HCP and NCCP and concomitant ability to significantly restore freshwater flows through the Delta. In large measure, the reliability of CVP and SWP water deliveries are uncertain due to the projects' jeopardizing listed species (due to lack of freshwater flows) and resulting exposure to ESA curtailments of water deliveries and re-direction of stored project water to environmental flows. Failure to achieve the "gold standard" of an HCP removes an important pillar from the project's foundation: certainty and stability with regard to ESA demands on project operations over the next 50 years. WaterFix's failure to restore freshwater flows through the Delta diminishes, rather than enhances, the system's flexibility to simultaneously meet export and environmental needs.

The Board has recognized that current water quality objectives, including flow-dependent objectives, as implemented through the *SWRCB Revised Water Right Decision 1641,* March 15, 2000 ("*D-1641*") (SWRCB-21), are inadequate to protect public trust resources. *See generally Flow Criteria Report.* Existing standards are inadequate, in part, because there is a mismatch between export demands on the Delta and the system's ability to meet those demands in an ecologically responsible manner that protects public trust resources. The Board's duty to balance consumptive needs against the imperative to protect public trust resources in an oversubscribed watershed has led to a Delta ecosystem in crisis *and* an unreliable water supply. Even when current standards are being met, neither fish nor farmers are satisfied. However, the Board is repeatedly called upon, through temporary urgency change petitions ("TUCPs"), to allow the projects to

violate even the minimal protections offered by these standards. The current lack of system flexibility and mismatch between water supply demands on the Delta and the Delta's capacity to sustainably supply water for beneficial use make the Hobson's choice between maintaining minimal ecological standards and meeting the health and safety needs of underserved Central Valley communities a regular feature of the Board's deliberations.

The BDCP promised to address this systemic failure by providing critical infrastructure that would provide stability to the system, allowing reliable public trust environmental flows and reasonably certain export operations. However, it has failed to do so and changing the name of the project to California WaterFix does not excuse the failure.

B. California WaterFix Fails To Restore Delta Flows.

Restoring Delta flows is an irrefragable and inherent sub-goal of the legislative imperative to restore the Delta ecosystem. *See* Cal. Water Code § 85302(e)(4). Restoring Delta flows means allowing *substantially more freshwater to flow through the Delta.* The California Legislature directed the applicant to consider the *Flow Criteria Report*, which was legislatively commissioned. California Water Code § 85086(c)(1) provides that:

> For the purposes of informing planning decisions for the Delta Plan and the Bay Delta Conservation Plan, the board [SWRCB] shall, pursuant to its public trust obligations, develop new flow criteria for the Delta ecosystem necessary to protect public trust resources ["flow criteria report"].

The *Flow Criteria Report* concluded that restoring "75% of 14-day average unimpaired flow for January through June" was necessary to "halt the population decline and increase populations of native species as well as species of commercial and recreational importance." *Flow Criteria Report* 98. This flow criteria is "necessary to protect public trust resources … [because] flow modification is an action that can be implemented in a relatively short time in order to improve the survival of desirable species and protect the public trust resources … ." *Flow Criteria Report* 7.

The *Flow Criteria Report* repeatedly cautions the reader that it takes account only of environmental needs and cannot be directly translated into regulatory flow objectives because the needs of beneficial users, including export needs, have not been considered in formulating the flow criteria. *See Flow Criteria Report* cover sheet and *passim*. It is also possible that a metric of unimpaired flow may not be the best standard for environmental restoration when beneficial use needs and infrastructure constraints are taken into account, as they must be.

However, what the *Flow Criteria Report* confirms is that restoring Delta flows means allowing *substantially more freshwater to flow through the Delta*. *See also Letter from Jared Blumenfeld, Regional Administrator, Region 9 United States Environmental Protection Agency to Will Stelle, Regional Administrator, West Coast Region National Marine Fisheries Service* 1, August 26, 2014, 3 ("*August 26, 2014, EPA Letter*") (Attachment Six) ("We are concerned over the sole reliance on habitat restoration for ecosystem recovery, recognizing that existing freshwater diversions and significantly diminished seaward flows have played a significant role in precluding recovery of the Bay Delta ecosystem processes and declining fish populations.")

Restoring Delta flows, within the meaning of the *Flow Criteria Report*, was an overarching concern of the Delta Reform Act and is paramount in the Board's consideration of whether California WaterFix serves the public interest:

> One key "early action" is the SWRCB developing "flow criteria," which is

> a new legal concept … . This bill's "flow criteria" reflect a landmark concept of the state exercising its public trust authority to ask—FIRST—what the Delta needs, before completing plans for fundamental change to the nature of the Delta, as envisioned by the Bay Delta Conservation Plan.

SB1 Committee Report 9. What the Delta needs, subject to the Board's sound deliberations on exact metrics, is more freshwater flowing through the Delta.

The *Flow Criteria Report* identified the public interest "need for the BDCP to develop an integrated set of solutions, to address ecosystem flow needs, including flow and non-flow measures." *Flow Criteria Report* 7. California WaterFix does neither and does not serve flow restoration needs.

C. The Project Potentially Provides Only One Benefit, Avoiding Smelt Entrainment, That Is Outweighed By The Project's Adverse Effect On Delta Flows And Resulting Degradation Of The Aquatic Ecosystem.

The project has only one reasonably predictable benefit: that it could allow for a reduction in entrainment of the delta smelt. Currently, the south Delta points of diversion create reverse flows in Old and Middle River ("OMR reverse flows") that entrain smelt. If diversion could be shifted to the north Delta points of diversion when smelt are present in the south Delta, this entrainment could be avoided. This could allow exports to continue when they would otherwise be halted by federal Endangered Species Act requirements that pumping discontinue when smelt are jeopardized.

The applicant's originally proffered ability of north Delta points of diversion to help restore Delta flows has been proven false by the applicant's own modeling. The words "restore Delta flows" have taken on a new meaning for the applicant and now denote only a reduction in OMR reverse flows. *See, e.g., 2015 RDEIR/S* ES-1–2 (describing project benefits as avoiding reverse flows, smelt entrainment, and concomitant restrictions on exports). However, "because significant volumes of freshwater flows are diverted at the intakes resulting in less water that is also of lower quality downstream of the intakes," *October 30, 2015, EPA Letter* 3, California WaterFix actually impedes, rather than advances, restoration of Delta flows within the Meaning of the Delta Reform Act and the Board's broad factual findings in the *Flow Criteria Report*.

III. The Proposed Changes In The Point Of Diversion/Re-Diversion Will Have An Adverse Environmental Impact; The Proposed Changes In Points Of Diversion Will Alter Water Flows In A Manner That Unreasonably Affects Fish, Wildlife, And Recreational Uses Of Water.

Less water of lower quality downstream of the intakes will cause significant adverse environmental impacts and unreasonably affect fish, wildlife, and recreational users of water. Adverse effects include "loss of valuable aquatic habitat for many fish species in the Delta … [including] delta smelt, winter-run Chinook salmon, green and white sturgeon, stripped bass, and American shad," *October 30, 2015, EPA Letter* 3, "exceedances of chloride criteria near municipal water supply intakes … exceedances of salinity standard[s]" and other impacts. *Id*. These impacts might theoretically be mitigated or reduced by reducing diversions at the new intakes and "by appropriately timed increased flows." *Id*. However, the analysis that might support the Petitioner's reliance on altering tunnel operations has not yet been done and cannot be supported in the absence of an adaptive management plan. These impacts must therefore be considered to unreasonably affect fish, wildlife, and recreational users of water

Less water of lower quality downstream will increase the concentration of pollutants, aggravate water quality problems caused by invasive weeds, decrease hydraulic residence time, and increase algal blooms. All of these factors unreasonably

affect recreational uses of water, including recreational boating, swimming and other water contact sports.

Impacts on fish species will have an unreasonable affect on recreational fishing and an unreasonable affect on recovery of fish species in the Delta.

In addition, impacts GW-8, GW-9, AQUA-22, and AQUA-201 are admitted by the applicant to be adverse and unavoidable. Mitigation of impacts WQ-11 and AQUA-78 depend on an adaptive management plan that is impermissibly deferred and therefore must be considered to unreasonably affect fish, wildlife, and recreational uses. Mitigation of impacts WQ-7 and WQ-32 are unsupported and must be considered to unreasonably affect fish, wildlife, and recreational uses.

Merely avoiding or minimizing net adverse impacts (assuming, *arguendo*, that California WaterFix could avoid or minimize impacts) fails to meet the requirements of the public trust doctrine. The BDCP represents the joint, nearly decade-long effort of the combined resources of the state and federal governments, who operate and control the projects, in league with the state and federal water contractors, who collectively control most of the local and regional water supply systems in the state. Tremendous resources and capacity are available to the BDCP proponents. Portfolio alternative components, including integrated water management, integrated surface and groundwater storage, conjunctive use, and conservation were all readily available to BDCP planners. Yet, proponents rejected all of these alternatives and have painted themselves into the corner of a single-focus conveyance project that creates no new water and decreases system flexibility.[2] They promised better, the legislature expected better, and the public trust demands better.

Under these circumstances, the stewards of the public trust have an obligation to ensure that the resource is left in better condition for future generations. If the aim is only to prevent further harm, rather than promote restoration, then, as experience has shown, continued degradation over time will be the inevitable result.

A. Unmitigated Significant Adverse Impact/Effect GW-8: Statewide Long-Term Depletion Of Groundwater Supplies And Interference With Groundwater Recharge/Recharge Opportunities.

Under Alternative 4A surface water deliveries "may decrease by approximately 179 TAF per year depending on the range of spring Delta outflow requirements compared to Existing Conditions. A decrease in surface water deliveries could result in an increase in groundwater pumping and a decrease in groundwater levels, depending on the total water portfolio of the site-specific areas. Therefore, decreases in surface water deliveries would result in significant impacts on groundwater resources under Alternative 4A." *2015 RDEIR/S* 4.3.3-8. The "overall impact for Alternative 4A [on groundwater supplies and recharge is] considered significant and unavoidable." *Id.* 4.3.3-8.

B. Significant Unmitigated Adverse Impact/Effect GW-9 Degradation Of Statewide Groundwater Quality.

"If groundwater pumping is increased, there could be resulting changes in regional patterns of groundwater flow and a change in groundwater quality. Due to the uncertainty associated with these effects, this effect is considered adverse. For the same reasons discussed earlier in connection with the possibility of increased groundwater

[2] See *Comments of Save the California Delta Alliance SPK-2008-00861*, dated November 9, 2015, addressed to the Army Corps of Engineers 5–9 for a discussion of DWR's rejection of reasonable and feasible alternatives to California WaterFix (Attachment Seven hereto).

pumping in Southern California, there is no feasible mitigation available to mitigate any changes in regional groundwater quality." *2015 RDEIR/S* 4.3.3-8. Implementation "of Alternative 4A at ELT and LLT could degrade groundwater quality in portions of the Southern California SWP Export Service Areas; this impact is considered significant due to the possibility of increased groundwater pumping and the resulting effects on regional groundwater flow patterns. As discussed above, there is no feasible mitigation to address this significant impact. The impact would be considered significant and unavoidable in these areas." *Id*. 4.3.3-8–9. The "overall impact for Impact Gw-9 Alternative 4A is considered significant and unavoidable." *Id*. 4.3.3-9.

C. Significant Adverse Impact/Effect WQ 11: Increased EC.

"The increase in EC in the Sacramento River at Emmaton, particularly during summer months of dry and critical water years, and the additional exceedances of water quality objectives in the San Joaquin River at Prisoners Point constitute an adverse effect on Water Quality. Mitigation Measure WQ-11 would be available to reduce these effects." *2015 RDEIR/S* 4.3.4-28.

"Based on these findings, this impact in the Plan Area is considered to be significant. Implementation of Mitigation Measure WQ-11 would be expected to reduce these effects to a less-than-significant level." *Id*. 4.3.4-30.

Mitigation measure WQ-11, however, would not be applied when it is needed most: in critical water years. "These actions [comprising WQ-11] would not be required in critical water years, when the objective does not apply." *2015 RDEIR/S*. This constitutes a significant unmitigated negative impact/adverse effect because it exacerbates an already critical salinity problem when it is at its worst. The "objectives" that do not apply in critical years are SWRCB water quality objectives for salinity. However, regardless of the suspension of these regulatory requirements in critical years because current infrastructure cannot meet both these environmental needs and minimal export needs for the protection of human health and safety, the project *does* have a significant unmitigated effect on the environment. It increases salinity at Prisoners Point, Jersey Point, and Emmaton where it has adverse impacts on striped bass and other species.

Further, Mitigation Measure WQ-11 impermissibly defers formulation of the content of the mitigation measure to some future date. "Generally CEQA requires mitigation measures to be formulated in an EIR and not deferred to the development of future plans or measures" that are promised to mitigate impacts. *Center for Biological Diversity v. Dept. of Fish and Wildlife*, 183 Cal. Rptr. 3d 736, 754 (2015). The only exception is where the deferred mitigation measure provides a performance standard that will be met *and demonstrates that the impact can be mitigated in the manner described. Id.* (emphasis added). The deferred measures must "satisfy specific performance criteria *articulated at the time of project approval." Sacramento Old City Ass'n v. City Council*, 229 Cal. App. 3d 1011, 1028–29 (1991) (emphasis added). WQ-11 relies on commitments to "Adaptively Manage Diversions at the North and South Delta Intakes to Reduce or Eliminate Water Quality Degradation in Western Delta" as well as adaptively managing the head of Old River barrier and north and south Delta intakes to eliminate exceedances at Prisoners Point. *2015 RDEIR/S* 4.3.4-30. These measures depend on an impermissibly deferred adaptive management plan. The project proponents have steadfastly refused to articulate how the adaptive management plan will work and have not demonstrated it can be effective. *See, e.g. 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* 5 (*"2015 ISB DEIR Review"*) (Attachment Eight) (project proponents "have been unable to develop a substantive idea how adaptive management would work for the project." *See also* § V.B. below.

Increased EC will unreasonably affect fish, wildlife, and recreational uses of water.

D. Significant Adverse Impact/Effect WQ 7: Chloride Concentrations.

"All of the Alternative 4H1-H4 Scenarios would result in increased water quality degradation ... and could contribute measurable water quality degradation relative to the 303[d] impairment in Suisun Marsh ... ." *2015 RDEIR/S* 8-226. "Substantial long-term degradation may occur at Antioch under all of the H1-H4 Scenarios ... ." *Id*. 8-227.

However, the NEPA Effects and CEQA Conclusion sections at *2015 RDEIR/S* 4.3.4-18 conclude that there would be no adverse effect or significant adverse impact. These conclusions appear to be based on re-visiting the results of the original modeling and making additional assumptions, providing explanations, and re-visiting metrics.

It appears that after spending tens of millions of dollars on modeling of various BDCP scenarios, none of which could show any benefit to the Delta ecosystem, DWR did not bother to run *any* modeling on Alternative 4A that is now before the Board.

Questionable conclusions that cannot support Petitioners claim that the project will not unreasonable affect fish, wildlife, and recreational uses include the following:

1) The increase in long-term average chloride concentration at Staten Island would be 25%. *2015 RDEIR/S* 4.3.4-13. But this is dismissed as insignificant because it is "extremely small in absolute terms" relative to "applicable water quality objectives." *Id.* However, existing applicable water quality objectives (*D-1641*) are recognized by the Board as inadequate to protect public trust resources. Water quality for fish, municipal, and industrial uses suffers harm from excessive chloride concentrations under existing conditions. A 25% increase over existing conditions is an adverse effect and significant impact under these circumstances.

2) "In the Sacramento River at Emmaton, there would be an increase in chloride objective exceedance during the drought period modeled, from 55% to 57% under operations scenario H3, although these changes are within the uncertainty of the modeling approach; there would be no increase in objective exceedances under operations scenario H4." *2015 RDEIR/S* 4.3.4-14.

3) Changing assumptions about operations of the Montezuma Slough Salinity Gates. Original modeling assumed the gates would not be operated and showed adverse effects of Alternative 4A on chloride concentrations. When the model was changed to include operation of the gates, the adverse effect was diminished. However, operation of these Gates has its own negative effects and the wisdom of operating the gates at all has been questioned. The gates "did have a negative effect on salmon passage" and attempts at modifying the gates "did not improve salmon passage at the SMSCG." *Suisun Marsh Salinity Control Gates Salmon Passage Evaluation Report* 1 ("*Suisun Marsh Salmon Passage Report*") (Attachment Nine). Because of the opaque nature of the environmental documents, it is unknown if the gates were not included in original modeling in anticipation that they would not be operated because of their negative impact on salmon populations in view of recent crashes in salmon abundance. In any event, reliance on gate operation to find no adverse effect was an unreasonable assumption. There is a fair argument that locking gate operation in place to avoid salinity impacts of Alternative 4A itself may have a negative impact on salmon populations that must be analyzed.

Overall, the finding that there is no adverse effect/significant impact of WQ-11 is not supported.

E. Significant Adverse Effect/Impact WQ32: Microcystis.

The NEPA and CEQA conclusions that Alternative 4A would not have adverse effects is unsupported. "Modeling that adequately accounted for the effects of water conveyance facilities operations and maintenance and the hydrodynamic impacts of the environmental commitments on long-term average residence times in the six Delta sub-

areas was not available for Alternative 4A, so the hydrodynamic effects of this alternative on *Microcystis* were determined qualitatively." This amounts to unjustified speculation driven by a rush to push Alternative 4A to approval.

This impact will unreasonably affect fish, wildlife, and recreational uses by harming fish species and making water contact sports harmful to recreational users.

F. Significant Adverse Effect/Impact AQUA-22: Longfin Smelt.

Project operations of Alternative 4A will have an adverse effect on spawning, egg incubation, and rearing habitat for longfin smelt. *2015 RDEIR/S* ES-50. The proposed mitigation measure is "adjustment via adaptive management, which is intended to allow for further evaluation of spring outflow." This is an unlawful deferral of mitigation based on non-existent adaptive management as described above and at section VI. Below. The impacts on longfin smelt, therefore, must be considered adverse and significant.

This impact will unreasonably affect fish.

G. Significant Adverse Effect/Impact AQUA-78: Chinook Salmon Migration.

This impact is significant. *2015 RDEIR/S* ES-54. The proposed mitigation measure, AGUA-78D, states that "Whenever possible during real-time operations, project proponents will slightly adjust Shasta, Folsom and/or Oroville Reservoir operations to ensure that instream flows are sufficient to minimize or avoid migration-related effects to fall-run Chinook salmon." *2015 RDEIR/S* 4.3.7-193. This is an unlawful deferred mitigation. There is no "real-time operations" monitoring or adaptive management mechanism, and all indications are that project proponents either cannot or will not develop one. The preface of "[w]herever possible" is not quantified or analyzed as to when and under what conditions it will be possible.

The impacts on Chinook salmon migration, therefore, must be considered adverse and significant.

This impact will unreasonably affect fish. This impact violates the legislative imperative to double salmon populations and consequently violates the public trust doctrine.

H. Significant Unmitigated Impact/Adverse Effect AQUA-201: Striped Bass And American Shad.

This impact is significant and unmitigated for CEQA purposes. ES-59. Entrainment at the new north Delta intakes of early life stage striped bass and American shad would significant under CEQA and entrainment of early life state American shad would be adverse under NEPA. *2015 RDEIR/S* 4.4.7-213–214.

This impact will unreasonably affect fish and unreasonably affect recreational bass fishing.

I. Significant Impacts/Effects On Aesthetics, Delta-As-Place, Navigation, And Historic Resources.

Construction and operation of the north Delta intakes and associated infrastructure would existentially transform one of the most scenic and iconic sections of the Delta as viewed from both land and water. The industrial character of the facilities and restrictions on boating and land access are incompatible with the Delta Reform Act's requirements to preserve Delta-as-place and respect existing land uses. Under these circumstances these impacts are significant and adverse for purposes of NEPA and CEQA.

There are significant multi-year (permanent) impacts to recreational boating due

to construction activities at the intakes. The *2015 RDEIR/S* describes construction-related cofferdams sticking out 60 feet into the Sacramento River at three locations over about four miles on the east bank of the River between Elk Slough and Snodgrass Slough. The *2015 RDEIR/S* states that "warning signs and buoys would be posted upstream, downstream of, and at the construction sites" for the intakes. It also describes barge traffic servicing the intake construction sites. It is reasonably foreseeable that multiple barges with construction equipment and supplies will be anchored throughout this stretch of the river. Safety concerns will likely result in a five mile per hour zone along this entire stretch of river. Prudent boaters will feel compelled to slow to five miles per hour or avoid the area in any event.

This massive construction activity turns a four-mile stretch of the Sacramento River into a multi-year five mile per hour summer-season construction zone. The *2015 RDEIR/S* states that in-water construction activity will be limited to the period between June 1 and October 31 each season in order to minimize impacts to fish species. However, that limitation concentrates construction activities in the prime summer boating season, which is when recreational boat traffic is intense and impacts on boating are the greatest.

If the three large intakes proposed in Alternative 4A are to be constructed, this effect is adverse and unavoidable. The only way to avoid this impact is to consider alternatives that do not involve three large intakes at this location. For example, an alternative with one 3,000 cfs intake would lessen the impact.

The *2015 RDEIR/S* describes the cofferdams being replaced by permanent rock embankments when construction is completed. The drawings and description are very vague as to how far from the existing levees the permanent rock embankments will stick out and whether the rock embankments are underwater or rise to and above the surface. It is unknown whether promised "state of the art fish screens" will necessitate a five mile per hour zone. There is not enough information for the applicant to show that permanent impacts to recreational boating will not be adverse; its claims to the contrary are unsupported.

The intakes and associated industrial facilities, including gantry cranes looming over the river, scenic Highway 160, and the entire landscape, and forebays that look like sewage treatment plants (despite the applicant's best efforts to render them in a flattering light), alter a historic vernacular landscape by placing multiple large industrial facilities on an extensive stretch of peaceful boating and farming landscape. *See* Design Construction Enterprise, *Intake Design Review* (Attachment Ten) (gantry cranes at page MWD004398).

The intakes and associated industrial facilities are also in close proximity to the town of Locke and the Locke Historic District, which preserves the cultural and aesthetic history of Chinese immigrants to the Delta. The Locke Historic District is "the largest, most complete example of a rural, agricultural Chinese American community in the United States." National Park Service, *Locke Historic District*, *available at http://www.nps.gov/nr/travel/Asian_American_and_Pacific_Islander_Heritage/Locke-Historic-District.htm,* last visited November 7, 2015. The historic district exists in the context of the largely unaltered late nineteenth century landscape surrounding it. It is now, for the most part, as it was when the immigrants first settled here. The industrial forebay shown on sheet 6 of the figures attached to the Notice, as well as the dumping sites shown on sheet 6, are in very close proximity to the town of Locke. There are historic homes on the banks of the Sacrament River close to the intakes. Perhaps the only remaining example of a levee-side historic farmhouse is near one of the intakes. The nearby town of Hood is an iconic example of the Delta-as-place. The intake facilities change the character of the entire area and present an unavoidable adverse effect on the historic values of the area. The intake structures are existentially incompatible with maintaining the historical sense of the area.

Within Alternative 4A, this is an adverse unavoidable aesthetic impact to boaters,

users of scenic Highway 160, and the entire historic vernacular landscape that emanates from the Locke Historic District and the historically preserved character of the area.

J. Adverse Impacts Of Alteration Of Water Flows That Unreasonably Affect Recreational And Other Uses In Discovery Bay.

The bays of Discovery Bay are fed by Kellogg Creek and Indian Slough. The circulation of water in the bays of Discovery Bay is gravity fed and circulation is increased with increased currents in Indian Slough and Kellogg Creek. OMR reverse flows have adverse impacts on the Delta smelt. However, significant decreases in OMR reverse flows will also decrease flows in Kellogg Creek and Indian Slough, which are significantly affected by operation of the nearby Jones and Banks pumping stations. Decreased OMR flows will decrease circulation in the bays, increase hydraulic residence time, decrease dissolved oxygen, increase algal blooms, and increase concentrations of pollutants.

The bays of Discovery Bay are intensely used for water contact recreation by thousands of children and adults who live in Discovery Bay.

The unmitigated recreational and human health impacts of reductions in the circulation in the bays of Discovery Bay due to the proposed change in the point of diversion unreasonably affects Discovery Bay uses.

Adverse impacts on water quality and circulation in the bays of Discovery Bay also impairs the riparian rights of Protestants to put the waters over and abutting their lands to beneficial domestic use.

IV. Navigable Waters And Public Trust Values Affected By The Proposed Changes.

Navigable waters affected by the proposed change include all waters of the Delta downstream from the proposed point of diversion, including the central, south, and west Delta. Navigation, including recreational navigation, is a paramount public trust value. As described herein, recreational navigation will be adversely impacted at the new intakes during construction and during long-term operations. Recreational navigation will also be adversely impacted by construction of the new permanent gate at the head of Old River. The bays of Discovery Bay are navigable waters used for moorage of thousands of boats. The navigability of the bays of Discovery Bay is already impacted by the presence of invasive weeds, including Water Hyacinth, Egeria densa, and Curly-Leaf Pondweed. These plants become so dense at times that navigation is severely hindered. Reduction in freshwater flows downstream from the new points of diversion, changes in operation of the existing Jones and Banks pumping plants, and reductions in OMR reverse flows will all restrict circulation in the bays of Discovery Bay, which will make the bays more hospitable to invasive weeds and make portions of the bays un-navigable.

Decreased freshwater flows downstream of the intakes will also increase the presence of invasive weeds throughout the Delta. The presence of invasive weeds hinders navigation.

Aquatic recreation, including water contact sports, is a public trust value that will be adversely impacted by the change in the point of diversion by increasing the concentration of pollutants and adversely affecting water quality in the bays of Discovery Bay and throughout the Delta.

Protection of the Delta ecosystem is a public trust value. The proposed change in the point of diversion will harm the Delta ecosystem by adversely affecting native and valued species, adversely affecting aquatic habitat for native and valued species, decreasing freshwater flow through the Delta, and degrading water quality.

The Delta Reform Act declares restoration of the Delta ecosystem, including the restoration of freshwater flows through the Delta, and the doubling of Salmon

populations, as public trust values to be protected and advanced. As described herein, the change in the point of diversion will negatively affect these public trust values. The Board made a factual determination in the *Flow Criteria Report* that a substantial increase in the amount of freshwater flowing through the Delta is required to protect public trust resources, including the many species of threatened and endangered fishes dependent on Delta flows. California WaterFix fails to allow for adequate flows through the Delta to protect public trust resources commensurate with the findings of the *Flow Criteria Report.* In fact, the proposed changes in the points of diversion will foreclose restoration of adequate flows through the Delta in the foreseeable future and therefore violate the public trust doctrine.

V. The Proposed Changes In The Point Of Diversion/Re-Diversion Will Be Contrary To Law.

A. The Petition Should Be Rejected Because The Petition Fails To Comply With Water Code § 1701.1(d) & (e) And Approving The Petition Absent Recirculation Of A Second Revised Draft Environmental Impact Report Would Violate CEQA.

The Petition should be rejected and returned to the Petitioner because the Petition fails to "include sufficient information to demonstrate a reasonable likelihood that the proposed change will not injure any other legal user of water." Water Code § 1701.1(d). The Petition also fails to contain "other appropriate information" required to make a determination on the environmental effects of the proposed change. Water Code § 1701.1 (e).

It is beyond reasonable dispute that the current environmental documents for California WaterFix are inadequate to meet the requirements of CEQA and NEPA. They cannot demonstrate that the project will not injure legal users of water and will not have adverse environmental impacts. Recirculation of a second Draft EIR/ second Supplemental EIS is required before the Board can lawfully consider the Petition. Beginning the Board's consideration of the Petition on the basis of an inadequate draft EIR/S and then concluding the process on the basis of a final, yet to be produced, EIR/S, without allowing for intervening recirculation of second draft would fail to meet the requirements of CEQA—and make any approval of the Petition contrary to law.

The current *2015 RDEIR/S* fails as an informational document and, in particular, fails with regard to treatment of alternatives. The *2015 RDEIR/S* suffers from:

> overall incompleteness through deferral of content to the Final EIR/EIS (herein, "the Final Report"); specific incompleteness in treatment of adaptive management, habitat restoration, levees, and long-term effects; and inadequacies in presentation.
>
> ***
>
> The Current Draft lacks key information, analysis, 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.

ISB SDEIS Review 4. Despite sustained outcry from the public and peer reviewers, the *2015 RDEIR/S* still fails to comprehensibly compare the expected results of various courses of action:

> For over three years, the Delta ISB has been specifically requesting

> summaries and comparisons: first in June 2012, then in June 2013, and again in a review of the Previous Draft in May 2014 (footnote 1, p.1). Appallingly, such summaries and comparisons remain absent in the Current Draft. … Three years is more than enough time to have developed them.

Id. at 9.

With respect to the 2015 *RDEIR/S*'s omission of a comprehensible alternatives analysis, which is essential to the Boards' duty to determine if the project best serves the public interest:

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

Id. at 4. No peer reviewer has found the environmental documents to be adequate. The missing content is "critical to comprehending what is being proposed and its potential impacts." *Id.* at 10.

Awaiting preparation of the Final EIR/S is not a lawful option because "[t]hat will be far too late in the EIR/EIS process for content so critical to comprehending what is being proposed and its potential impacts." *ISB SDEIS Review* 10.

B. Approval Of The Petition Would Be Contrary To Law Because California WaterFix Fails To Include An Adaptive Management Plan And Real-Time Operational Decisionmaking Process As Required By The Delta Reform Act.

The Delta Reform Act provides that:

> Any order approving a change in the point of diversion of the State Water Project or the federal Central Valley Project from the southern Delta to a point on the Sacramento River shall include appropriate Delta flow criteria and shall be informed by the analysis conducted pursuant to this section. The flow criteria shall be subject to modification over time based on a science-based adaptive management program that integrates scientific and monitoring results, including the contribution of habitat and other conservation measures, into ongoing Delta water management.

Water Code § 85086(c)(1). The Act further provides that:

> The BDCP shall include a transparent, real-time operational decisionmaking process in which fishery agencies ensure that applicable biological performance measures are achieved in a timely manner with respect to water system operations.

Water Code § 85321.

Practice in the scientific community (which develops and implements adaptive management programs) has been to interpret the Delta Reform Act's adaptive management requirements to require "science-based adaptive management of all ecosystem and water management programs in the Delta." Saracino & Mount, LLC, *Panel review of the Draft Bay Delta Conservation Plan* 99 ("*Mount Report*") (citing Cal. Water Code § 85308(f)) (Attached to Comments of Save The California Delta Alliance on *2013 RDEIR/S*) (SWRCB-4).

The applicant acknowledges the central role of adaptive management in defining

California WaterFix operations. However, the applicant has not begun to develop an adaptive management plan for the operations of the tunnels and appears unequipped to undertake this complex task. Despite sustained outcry from the scientific community and the public about the Lead Agencies' chimerical treatment of adaptive management, the documents remain an exercise in specious deflection of calls for a real adaptive management program. As the Delta Independent Science Board put it, "We are not looking here for a primer on adaptive management." *2015 ISB SDEIS Review* 5. The project's "missing content includes: 1. Details about the adaptive-management process, collaborative science, monitoring, and the resources that these efforts will require." *Id*. 1

Further:

> The lack of a substantive treatment of adaptive management in the Current Draft indicates that it is not considered a high priority or the proposers have been unable to develop a substantive idea of how adaptive management would work for the project.

Id. 5.

The current state of vacuity in adaptive management is the progression of a process that sought to *frustrate* the ability of adaptive management to throttle back exports through the high-capacity tunnels no matter how dire or immediate the harm to the Delta ecosystem. From the outset, the regulated entities, including the water contractors whose self-interest is to derive as much water as possible from the Delta, have been given an illegitimate role in adaptive management. *See, e.g.*, *Mount Report* 100 (commenting on 2013 Administrative Draft) (noting that the adaptive management structure "confuses the roles of regulators and regulated entities" and will likely result in "rendering the concept of adaptive management moot"); *see also id.* at 83 (noting that adaptive management "is undermined by provisions in the draft Plan that grant the Authorized Entity Group [water contractors]—rather than regulatory agencies—veto authority over changes to the conservation measures [including CM1, operation of the tunnels themselves], biological objectives, and adaptive management strategies, as well as over amendments to the BDCP itself").

California WaterFix must develop an adaptive management and real-time operations plan that demonstrates that the project can be operated, controlled, and modified to meet all requirements of applicable law *before* any change in the point of diversion can be approved.

C. California WaterFix Fails To Comply With The Delta Reform Act.

As detailed above, California WaterFix does not comply with numerous aspects of the Delta Reform Act and must be disapproved unless and until it is modified to comply with the Act.

VI. Conditions Under Which This Protest May Be Dismissed.

Meeting the following conditions may allow for dismissal of the Protest:

A. Meeting The Original Promise Of The BDCP.

Meeting the original promise of the BDCP, the intent of the Delta Reform Act, and the requirements of the public trust doctrine to accomplish long-term restoration of the Delta, including freshwater flows through the Delta, would provide the prerequisite for conditions under which this petition could be dismissed. Meeting the promise of restoring the Delta would also involve providing a more reliable water supply for California, as one cannot be accomplished without the other.

Any order approving a change in the point of diversion should include flow criteria informed by the *Flow Criteria Report* such that substantially more freshwater flows through the Delta than under current conditions or as is currently proposed by California WaterFix operating scenarios. Restoring Delta flows within the meaning of the Delta Reform Act means providing more freshwater flow throughout the Delta. Addressing OMR reverse flows and smelt entrainment is inadequate to justify the project.

For example, restoring Delta flows to a substantially undiminished state could be accomplished over time with the implementation of a combination new surface and groundwater storage, integrated water management, and reduced reliance on the Delta through development of "regional supplies, conservation, and water use efficiency," as required by Water Code section 85021.

B. Substantial Reduction In Reliance On The Delta For Exports.

Any order approving a change in the point of diversion should be conditioned upon substantial reductions in reliance on the Delta for export needs on a firm schedule. Appropriate Delta flow criteria should not be based on the limitations of existing infrastructure to meet beneficial use needs. Rather, appropriate flow criteria should look to what is possible with an aggressive portfolio approach and should serve as an infrastructure and conservation forcing standard.

C. Full Mitigation For Impacts Of Reduced OMR Flows On Discovery Bay.

Full mitigations for any impacts of reductions in OMR reverse flows on the circulation of water in the bays of Discovery Bay, and water quality impacts on Discovery Bay, should be included in any order approving a change in the point of diversion.

D. Changes To The Project To Eliminate Or Minimize Impacts To Recreation And The Delta-As-Place.

All of the impacts on recreation and the Delta-as-place, from construction and operation of the tunnels, should be addressed in a way that minimizes or eliminates the impacts. For example, reduction from three 3,000 cfs intakes to one 3,000 cfs intake may adequately reduce impacts to an acceptable level.

E. Development Of An Adaptive Management Plan And Management Structure That Protects The Delta Environment And Delta Interests.

As outlined in section V.B. above, inclusion of an adaptive management and real-time operations plan is required before any change in the point of diversion can be approved.

F. The Board Should Update The 2006 WQCP Before Considering The WaterFix Change Petition.

In light of the incomplete nature of the WaterFix project and change petition, the serious flaws in the WaterFix environmental review process and environmental documents, and the existential nature of the changes proposed by the WaterFix project, we believe that the Board should first update the 2006 WQCP before considering any WaterFix application. Upon updating the 2006 WQCP, the Board will be in a better position to determine appropriate flow criteria to be included in any order approving a change in the point of diversion.

During the process of updating the 2006 WQCP, DWR and Reclamation would have time to develop a viable project. As discussed above, the BDCP failed when project proponents abruptly dropped the habitat component and abandoned the commitment to meet the standards of an HCP and NCCP.

Rather than devote the needed time and effort to developing a replacement strategy for restoring the Delta and obtaining regulatory stability for water system operations, proponents forged ahead with a tunnels-only proposal that accomplishes none of the goals of the BDCP.

Likely, project proponents need to pursue a portfolio approach, including some elements of storage, in order to make the project workable in the absence of the habitat component. Perhaps including the Sites Reservoir, or other North of Delta Offline Storage component, would allow a change in the point of diversion to avoid harming the public interest and work to the benefit of the Delta ecosystem and water system reliability. Water stored offline and upstream during times of peak flow could be released back into the Sacramento River at times of lower flow. A portion of this "new water" could be diverted by the tunnels (unhindered by smelt entrainment issues) and a portion could remain in-stream, benefitting the Delta ecosystem. This is only one of many possibilities that the Petitioner should consider in developing a viable project.

Promises to add such portfolio elements at some time in the future are not acceptable. The BDCP/California WaterFix must come to the Board as a complete project that meets the requirements of law without relying on unenforceable promises of future modifications to the water system.

Appropriate scoping, design, and modeling of a replacement for the failed BDCP should commence without further delay. Allowing a failed project to proceed through regulatory approvals is not in the public interest.

The Board has the authority to rescind acceptance of the Petition because the Petition admittedly does not comply with Water Code sections 1701(d) & (e). The environmental documents are grossly inadequate. *See October 30, 2015 EPA Letter* (rating of 3 "inadequate"); *ISB SDEIS Review* (environmental documents fail to inform weighty decisions of public policy). In light of the failure of the Petitioner to provide a complete description of the project and its impacts, the Board has elected to await preparation of a final EIS before making any decisions on the project because current documents are inadequate. Rather than proceeding before a complete project is presented, the Petition should be returned and a parallel process of updating the 2006 WQCP and reformulating the BDCP should be undertaken.

Pursuant to the Board's instructions on page 15 of the Notice, Protestants will submit a more detailed request for changes in the Board's procedures for considering California WaterFix. As per instructions in the Notice, the request will be submitted after the filing of Protestant's notice of intent to appear and before the pre-hearing conference so that the request can be discussed, as needed, at the pre-hearing conference and ruled upon by the hearing officers at the appropriate time.

VII. Reservation Of Rights To Amend Protest And Request For Board To Allow For Consideration Of Amendments To Protest At The Appropriate Time.

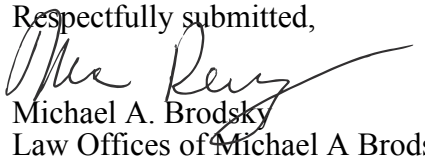
Because the description of the project is incomplete and environmental documents are inadequate, it is impossible for Protestants to know the full nature, scope, or extent of the effects of the project. However, failure to file this protest by the due date would forfeit important rights to protest. Therefore, Protestants have done the best they could, under the circumstances, to provide a complete and accurate protest.

The date for Phase II hearings, at which Protestants will present evidence, has not yet been set pending the Petitioners submission of complete environmental documents and a complete project description. Protestants have filed a notice of intent to appear at phase II today as required. However, the Board has required that the notice of intent to

appear at phase II be re-submitted at such time as the hearings are actually scheduled.

Under these circumstances, Protestants believe it is reasonable to allow amendment, supplementation, and revision of this Protest in response to fuller information about the project when such information becomes available. Protestants reserve the right to do so and will request that the Board consider a procedure for allowing amendment to Protests for discussion at the pre-hearing conference.

Respectfully submitted, Dated: January 5, 2016



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Certificate of Service. I declare under penalty of perjury that copies of this petition were served via email upon:

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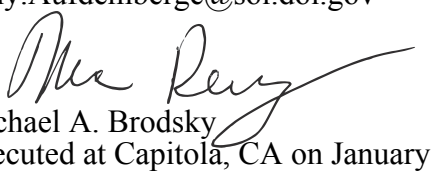
By:



Michael A. Brodsky
Executed at Capitola, CA on January 5, 2016

Attachments To Protest To Petition Requesting Changes In Water Rights Of The Department Of Water Resources And U.S. Bureau Of Reclamation For The California WaterFix

List of Attachments

Revised – As Amended RN0925376

SENATE THIRD READING
SB 1 X7 (Simitian and Steinberg)
As Amended November 3, 2009
Majority vote

SENATE VOTE: 29-5

SUMMARY: Reforms state policies, programs and governance for the Sacramento-San Joaquin Delta (Delta), and establishes guidelines for developing a new Delta Plan.

1) Expands the "basic goals" for the Delta and the DPC, to include achieving the two coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resources, and agricultural values of the Delta as an evolving place.

2) Adds Knightsen and Collinsville as "unincorporated towns" in the Delta.

3) Reconstitutes the Delta Protection Commission (DPC):

    a) Reduces membership of the DPC from 23 to 15, including:

        i) Five members from the five Delta county Boards of Supervisors;

        ii) Three elected city council members, from south, west and north Delta;

        iii) Three members representing reclamation (i.e., levee) districts in specified regions;

        iv) Secretary of Food and Agriculture, or sole designee;

        v) Executive Officer of State Lands Commission, or sole designee;

        vi) Secretary of Natural Resources Agency, or sole designee; and,

        vii) Secretary of Business, Transportation and Housing, or sole designee.

    b) Allows member appointments at the pleasure of the appointing entity;

    c) Designates DPC chair as a voting member of the Delta Stewardship Council (Council); and,

    d) Changes nature of DPC advisory committees, to have one with broader representation.

4) Requires DPC to create a regional economic sustainability plan, including creation of a Delta Investment Fund in the State Treasury.

5) Authorizes DPC to make recommendations to Council, including specified issues, and requires Council to consider DPC recommendations and determine, in Council discretion, if recommendations are feasible and consistent with the objectives of the Delta Plan.

6) Requires the DPC, by July 2010, to prepare and submit to the Legislature recommendations regarding the potential expansion of or change to the Delta's primary zone.

7) Requires DPC to report annually to the Governor and the Legislature on specified issues.

8) Creates a new Sacramento-San Joaquin Delta Conservancy (Conservancy):

   a) Authorizes Conservancy, as a primary state agency for ecosystem restoration, to support efforts that advance environmental protection and the economic well-being of Delta residents, including specified activities;

   b) Creates Conservancy board with 11 voting members of the board, including the Secretary of the Natural Resources Agency; Director of Finance; one member (or designee) of each of board of supervisors for Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties; two public members, appointed by the Governor; one public member appointed by the Senate Committee on Rules; and, one public member appointed by the Speaker;

   c) Designates nonvoting members of the board and nonvoting liaison advisers who would serve in an advisory, nonvoting capacity;

   d) Establishes terms of board members, from "at the pleasure" (for Governor and boards of supervisors) to four years (for legislative appointments) with 2-term limit;

   e) Requires voting members of the board to elect a chairperson and vice chairperson, and other officers as necessary, from among the voting members, but chairperson must be from among county supervisor members; and,

   f) Provides the Conservancy administrative powers, including authority to hire staff, adopt rules and procedures for conduct of the Conservancy's business, establish advisory committees, and enter into contracts.

9) Establishes and limits the Conservancy's powers and duties, including:

   a) Authorizes Conservancy, as a primary state agency for ecosystem restoration, to support efforts that advance environmental protection and the economic well-being of Delta residents, including specified activities;

   b) Limits the jurisdiction and activities of the Conservancy to the Delta and Suisun Marsh except if the board makes certain findings;

   c) Establishes the Sacramento-San Joaquin Delta Conservancy Fund in the State Treasury, which may provide funding for ecosystem restoration projects consistent with the Conservancy's strategic plan or for "regional sustainability" consistent with the DPC's "Regional Sustainability and Land Use Plan;"

d) Authorizes Conservancy, subject to specified conditions, to acquire, manage and transfer interests in property and water rights, with a preference for conservation easements;

e) Authorizes the Conservancy to accept funding from a broad range of sources, including creation and management of endowments;

f) Requires the Conservancy to develop a strategic plan consistent with the Delta Plan, DPC's Regional Sustainability and Land Use Plan, the Central Valley Flood Protection Plan, the Suisun Marsh Preservation Act, and the Habitat Management, Preservation and Restoration Plan for the Suisun Marsh;

g) Authorizes the Conservancy to collaborate with other organizations and impose certain conditions on any grants it makes; and,

h) Prohibits the Conservancy from regulating land-use, exercising power over water rights held by others, or exercising the power of eminent domain.

10) Repeals the California Bay-Delta Authority Act.

11) Establishes new legal framework for Delta management, which:

a) Sets the coequal goals of "providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem" as the foundation for state decisions as to Delta management;

b) Sets certain objectives as inherent in the coequal goals;

c) Sets state policy of reducing reliance on the Delta to meet future water supply needs through a statewide strategy of investing in improved regional supplies and conservation;

d) Requires the Delta Stewardship Council (Council) land-use decisions to be guided by certain findings, policies, and goals;

e) States certain "fundamental goals for managing land use in the Delta;"

f) Describes the longstanding constitutional principle of reasonable use and the public trust doctrine as the foundation of state water management policy;

g) Preserves procedural and legal protections under water rights law, as specified, and maintains scope of State Water Resources Control Board (SWRCB)/court jurisdiction;

h) Preserves specified statutes and legal doctrines as unaffected by this new division in the Water Code, including area-of-origin protections, water rights and public trust doctrine;

i) Establishes the Council as the successor to the California Bay-Delta Authority, and provides for the Council to assume its responsibilities;

j) Defines certain terms, including but not limited to the following key terms:

i) “Coequal goals” means "the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem," but those goals are achieved in a manner to protect the Delta as an evolving place;

ii) "Council" means the Delta Stewardship Council, as established in Part 3;

iii) "Covered action" means Delta-related plan or program that meets certain conditions, including significant impact on achievement of the coequal goals. Specifies exemptions and clarifies that the definition will not abrogate vested rights; and,

iv) "Restoration" means achieving a close approximation of the Delta's ecosystem's natural potential, given past physical changes and future impact of climate change.

12) Requires the Council, the Department of Water Resource (DWR) or the Department of Fish & Game (DFG) to take certain "early actions," including:

a) Appointment of Delta Independent Science Board;

b) Development of strategy to engage federal government in the Delta;

c) Development of DFG recommendations for in stream flow needs in the Delta; and,

d) Certain Delta near-term ecosystem restoration projects, including the "Two-Gates Fish Protection Demonstration Project."

13) Requires the State Water Resources Control Board (SWRCB) to develop new "flow criteria," to facilitate planning in Delta Plan and Bay Delta Conservation Plan, for the Delta ecosystem necessary to protect public trust resources;

a) Specifies process and substance for development of flow criteria;

b) Requires SWRCB approval of change in State Water Project (SWP) and Central Valley Project (CVP) point of diversion, as specified, to include "appropriate" flow criteria;

c) Requires SWRCB to enter agreement with SWP/CVP contractors to pay costs;

d) Preserves SWRCB authority to review water rights and impose terms and conditions on water right permits; and,

e) Requires SWRCB to submit flow criteria to Council, for information purposes.

14) Requires SWRCB to submit prioritized schedule and costs for instream flow studies for the Delta and other high priority streams, with completion by certain dates.

15) Prohibits DWR from commencing construction of any new Delta diversion, conveyance or other facility related a change in the point of diversion, until:

a) SWRCB issues an order approving a change in the point of diversion; and,

b) SWP/CVP contractors execute a contract to pay the costs for environmental review, planning, design, construction, and mitigation for the construction, operation, and maintenance of any new Delta water conveyance facility, including mitigation of property tax or assessments levied by local agencies for land used in such construction.

16) Creates the Council as an independent state agency;

a) Establishes a seven-member Council, with four appointments by the Governor, two by the Legislature, and the chair of the Delta Protection Commission;

b) Specifies both initial and subsequent staggered terms for Council members;

c) Provides for Council salaries, hiring of Council staff and headquarters;

d) Requires members to "possess diverse expertise and reflect a statewide perspective;" and,

e) Specifies Council administrative authorities (e.g., contracting) and hearing authority.

17) Authorizes Council to review "covered [in-Delta] actions" by state and local agencies for consistency with Delta Plan.

a) Requires state and local agencies that implement "covered [in-Delta] actions" to submit certification of project consistency with Delta Plan to Council;

b) Allows any person to appeal such certifications, within 30 days;

c) Requires Council to review certification and determine consistency;

d) Requires covered actions deemed inconsistent to be reviewed by proposing agency, which makes changes and resubmits a certification if it decides to proceed; and,

e) Specifies process for Council review of agency certifications.

18) Creates the "Delta Watermaster" as enforcement officer for SWRCB in the Delta.

a) Requires SWRCB to delegate certain enforcement – not adjudicatory – authorities; and,

b) Limits Delta Watermaster authority to in-Delta diversions and SWRCB orders and terms/conditions on water right permits that apply to conditions in the Delta.

19) Creates the Delta Independent Science Board (Science Board) and Delta Science Program.

20) Requires Council to develop, adopt, and commence implementation of the "Delta Plan" by January 1, 2012, with a report to the Legislature by March 31, 2012;

a) Requires Council to consider strategies and actions set forth in the Delta Vision Blue Ribbon Task Force Strategic Plan (Strategic Plan);

b) Allows Council to identify actions that state or local agencies may take to implement the sub-goals or strategies;

c) Requires Council to submit the Delta Plan to appropriate federal authorities for federal approval, if it complies with Coastal Zone Management Act;

d) Requires consultation and cooperation between the Council and federal, state and local agencies in developing the Delta Plan;

e) Requires Council to review the Delta Plan every five years, allowing the Council to request state agency recommendations for revisions;

f) Requires Council to develop the Delta Plan consistent with federal statutes, including the Coastal Zone Management Act, Clean Water Act and the Reclamation Act; and,

g) Requires "performance measurements" to allow Council to track Delta Plan progress.

21) Requires the Delta Protection Commission (DPC) to develop proposal to protect, enhance, and sustain the unique cultural, historical, recreational, agricultural, and economic values of the Delta as an evolving place, for consideration by the Council as part of Delta Plan, including proposals for:

a) Federal/state designation of the Delta as a place of special significance;

b) Regional economic plan to increase investment in agriculture, recreation, tourism and other resilient land uses in the Delta, including administration of Delta Investment Fund;

c) Expansion of state recreation areas in the Delta; and,

d) Market incentives and infrastructure to support Delta agriculture.

22) Requires the Delta Plan to further the coequal goals of Delta ecosystem restoration and a reliable water supply;

a) Limits geographic scope of ecosystem restoration projects to the Delta (defined separately as legal Delta and Suisun Marsh), except for ecosystem projects outside the Delta that contribute to achievement of coequal goals; and,

b) Requires Delta Plan to promote specified characteristics and include specified strategies for a healthy Delta ecosystem.

23) Requires the Delta Plan to promote a more reliable water supply to:

a) Assist in meeting the needs of reasonable and beneficial uses of water;

b) Sustain the economic vitality of the state; and,

c) Improve water quality to protect human health and the environment.

24) Requires the Delta Plan to promote statewide water conservation, water use efficiency, and sustainable use of water, as well as improvements to water conveyance/storage and operation of both to achieve the coequal goals.

25) Requires the Delta Plan to attempt to reduce risks to people, property, and state interests in the Delta by promoting effective emergency preparedness, appropriate land uses, and strategic levee investments;

a) Allows the Delta Plan to include actions outside the Delta that reduce flood risks, and local plans of flood protection;

b) Requires Council to recommend priorities for state investments in levee operation, maintenance, and improvements in the Delta;

c) Allows Council, in consultation with the California Department of Transportation, to address climate change effects on state highways in the Delta in the Delta Plan; and,

d) Allows Council, in consultation with the California Energy Commission, to address the needs of Delta energy development, storage and distribution in the Delta Plan.

26) Requires the Delta Plan to comply with the following requirements:

a) Be based on best available scientific information and advice from the Science Board;

b) Includes quantified targets for achieving the objectives of the Delta Plan;

c) Utilizes monitoring and analysis to determine progress toward targets;

d) Describes methods to measure progress; and,

e) Includes adaptive management strategy for ecosystem restoration and water management.

27) Requires DWR to prepare proposal to coordinate flood and water supply operations of the State Water Project and Central Valley Project, for Council consideration.

28) Requires Council to consider including the Bay Delta Conservation Plan (BDCP) under certain circumstances, including:

a) Conditions BDCP incorporation into Delta Plan and state funding for BDCP public benefits on compliance with the Natural Community Conservation Planning (NCCP) Act and California Environmental Quality Act (CEQA);

b) Requires certain analyses as part of CEQA compliance:

i) Reasonable range of flow criteria, rates of diversion and other operational criteria required to satisfy NCCP Act;

ii) Reasonable range of Delta conveyance alternatives, and capacity/design options for a lined canal, an unlined canal, and pipelines;

iii) Potential effects of climate change on conveyance and habitat restoration activities;

iv) Potential effects on migratory fish and aquatic resources;

v) Potential effects on Sacramento River/San Joaquin River flood management;

vi) Resilience/recovery of conveyance alternatives in event of natural disaster; and,

vii) Potential effects of each conveyance alternative on Delta water quality;

c) Requires DWR to consult with Council and the Science Board during development of BDCP;

d) Requires Council to have at least one public hearing and incorporate BDCP into Delta Plan if DFG approves BDCP as NCCP;

e) Requires annual report to Council on BDCP implementation;

f) Allows Council to make recommendations to BDCP implementing agencies;

g) Requires BDCP to include a transparent, real-time operational decision-making process in which fishery agencies ensure applicable biological performance measures are achieve in a timely manner; and,

h) Specifies that BDCP chapter does not amend or create any additional legal obligation or cause of action under NCCP Act or CEQA.

29) Allows Council to incorporate other completed Delta-related plans into the Delta Plan.

30) Makes legislative findings regarding the Delta and California water.

31) Conforms certain laws to provide for creation of the Council.

32) Appropriates $28 million for the "Two-Gates Fish Protection Demonstration Program."

33) Makes bill contingent on enactment of SB 6 X7 (Steinberg) and SB 7 X7 (Steinberg)

EXISTING LAW establishes the CALFED Bay-Delta Program and the California Bay-Delta Authority to implement programs and projects to improve conditions in the Delta.

FISCAL EFFECT: Unknown

COMMENTS: For several years, the Delta has suffered a crisis - ecosystem, water supply, levee stability, water quality, policy, program, and litigation. In June 2004, a privately owned levee failed and the state spent nearly $100 million to fix it and save an island whose property value was far less. In August 2005, the Department of Fish & Game (DFG) reported a trend showing severe decline in the Delta fishery. In 2006, the Legislature reorganized Delta programs and funding under the Resources Agency Secretary. In 2007, a federal judge, acting under the

federal Endangered Species Act, declared illegal certain federal biological opinions about near-extinct fish and restricted water exports from the Delta, to the San Francisco Bay Area, the San Joaquin Valley and Southern California. The Governor shortly thereafter called the Legislature into an extraordinary session on water.

Delta Vision: Through this enduring Delta crisis, the Legislature and the Governor initiated, in 2006, a process to develop a new long-term vision for the Delta. SB 1574 (Kuehl) of 2006 requires a cabinet committee to present recommendations for a Delta vision. The Governor created a Delta Vision Blue-Ribbon Task Force to advise the Cabinet Committee. The Task Force produced an October 2008 Strategic Plan, which the Cabinet Committee largely adopted and submitted the recommendations to the Legislature on January 3, 2009. This year, the Legislature held numerous hearings on Delta Vision and a set of five bills. In August, policy committees in both houses held hearings on the topics in these bills, and considered "pre-print" versions. A Conference Committee on these bills heard several issues arising out of these bills and substantially amended the pre-prints.

Delta Protection Commission (DPC): The DPC Delta Conservancy parts of this bill originated in a series of this year's bills by Senator Lois Wolk, who withdrew as an author of SB 458 this summer. Senator Wolk has authored several bills in recent years to reform DPC, giving DPC additional authority and balancing state and local representation on the Commission. The most significant recent change required, instead of allowed, local agencies to change a land-use decision to conform to a DPC appellate decision. DPC exercised this new authority in its 2007-08 review of the so-called "Sugar Mill" decision for a property in Clarksburg.

This bill reshapes DPC, to make it a stronger and clearer voice for the interests of those who live and work in the Delta. More than two-thirds of the membership comes from the Delta. The DPC chair, representing a county board of supervisors, sits on the Delta Stewardship Council, which adopts DPC recommendations under certain circumstances. It has responsibility for developing a Delta economic sustainability plan and the Delta Investment Fund. DPC also will study and recommend whether to change the boundaries of the Primary Zone. It retains its existing authority to consider appeals of Primary Zone land-use decisions. In the context of other new Delta governance, such as the Delta Stewardship Council, DPC will now contribute the local Delta voice to the broader State deliberations on Delta issues.

Delta Conservancy: In the last decade, several bills have been introduced to create a Delta conservancy. This conservancy proposal was developed in close cooperation with the in-Delta stakeholders, particularly the five Delta Counties. The board's makeup reflects the Delta Counties' request, that each board of supervisors have one representative, of the 11 members, just under a majority. This conservancy has the dual role of ecosystem restoration and economic development, which will require a delicate balance in expending its resources and reflects in-Delta interests in ensuring that the Delta economy will be sustainable as the Delta changes.

This bill creates the Delta Conservancy as a “state agency to work in collaboration and cooperation with local governments and interested parties.” The Legislature created most state conservancies with the primary purpose of conserving, restoring or enhancing natural resources. Delta Vision recommends creation of a conservancy “for implementing and coordinating Delta ecosystem enhancement and related revitalization projects.” This bill makes the conservancy "a primary state agency" for ecosystem restoration, but does not set ecosystem restoration as the conservancy's primary mission.

Legal Framework for the Delta: Since statehood, California has asked much of the Delta. Conflicting demands have led to crisis and conflict – between and among agencies, stakeholders and natural resources. The Delta Vision process spent more than 18 months, investigating the Delta, engaging agencies and stakeholders, and thinking carefully about the Delta's challenges and prospects for change. The Task Force's first recommendation was to change the fundamental legal framework for the state to make decisions as to its activities in the Delta – encapsulated in two "coequal goals" of "restoring the Delta ecosystem and creating a more reliable water supply for California." This bill sets a new legal and governance framework for the Delta's future, explicitly stating for the first time how the state should approach resolving the inherent conflicts in managing Delta resources. This framework includes legislative findings, policies and definitions, which provides the foundation for new governance in the Delta. This framework, however, does not counteract long-standing legal principles, such as the public trust and reasonable use, because those and other legal protections are preserved in the framework's "savings clauses" (as discussed below).

Scope of "Delta": This bill defines the "Delta" to include both the legally defined Delta as well as the Suisun Marsh. While both currently have separate legal protections in the Public Resources Code, they, in fact, operate as a single system, particularly for ecosystem purposes. The bill preserves Suisun Marsh's statutory protection, but brings public agency activities under the auspices of the Delta Council and the Delta Plan, in order to ensure that the two areas act as the natural estuary system they comprise. While conflicts between competing purposes may arise, this bill establishes a framework for resolving those conflicts in state policy.

Given this broader definition of the Delta, SB 1 X7 nevertheless limits the scope of most of its program and the Delta Plan to this Delta (including Suisun Marsh). The bill narrows the focus of the ecosystem restoration to the Delta, allowing ecosystem projects outside the Delta only if the Council finds the project contributes to the achievement of the coequal goals. The Delta Conservancy is similarly limited in its focus. Some criticized the CALFED Bay-Delta Program for the breadth of both its "problem area" (the Central Valley) and its even broader "solution area" (including Southern California and San Francisco Bay Area that rely on exports from the Delta Watershed). That criticism suggested that the breadth of the CALFED program led to CALFED losing its focus on fixing the Delta. This bill will restore the spotlight to the legal Delta and Suisun Marsh, as an estuary system.

Protection for Existing Law: When the August pre-print versions of the Delta bills came out, some questioned whether the Delta bills would change existing legal protections for water rights/quality and the environment. This bill includes several "savings" sections that protect certain statutes, water rights and other legal protections from any implied changes by this bill. These sections have been expanded to ensure the continued effectiveness of various water law principles that protect other water right holders, particularly upstream in the Delta watershed. Those principles preserve procedural and substantive legal protections that include, but are not limited to: "area of origin" protections, the "no injury" rule for all "legal users of water," and the domestic-use preference. These sections also maintain SWRCB jurisdiction and preserve regulatory authority generally, in order to clarify that the new Delta Stewardship Council is NOT a super-regulatory agency that trumps other regulatory agencies, such as SWRCB and DFG. These sections were written, and should be interpreted, to broadly protect legal rights of all.

Early Actions: This bill identifies a series of actions that existing and new agencies need to take as soon as possible – before the Council completes its new Delta Plan. Some actions are administrative. Others are substantive projects for the Delta ecosystem and/or water supply reliability. The early actions part communicates the urgency of responding to the Delta crisis, without waiting for the completion of the new Delta plan.

Flow Criteria: One key "early action" is the SWRCB developing "flow criteria," which is a new legal concept. The bill requires SWRCB to adopt such flow criteria within nine months, pursuant to a specified "informational proceeding" under existing SWRCB regulations. Those regulations provide an opportunity for all interested persons to submit comments and evidence, as part of the proceeding. SWRCB staff indicated that, in order to accomplish the 9-month deadline, they would use this established process.

Such "flow criteria" are neither federal water quality "criteria," nor state "flow objectives." In 1994, the United States Supreme Court held that the federal Clean Water Act may not provide explicitly for setting flow standards, but states may do so consistent with certain provisions in that federal statute. *PUD No. 1 of Jefferson County v. Washington Dep't of Ecology*, 511 U.S. 700 (1994). This bill's "flow criteria" reflect a landmark concept of the state exercising its public trust authority to ask – FIRST – what the Delta needs, before completing plans for fundamental change to the nature of the Delta, as envisioned by the Bay Delta Conservation Plan.

Water Code Section 85086(c)(1) specifies that the flow criteria for the Delta ecosystem developed under that subdivision shall not be considered "predecisional" in a subsequent SWRCB proceeding. In this context, the word "predecisional" means that the flow criteria do not predetermine how any issue will be decided in any later proceeding before SWRCB. Nor will the flow criteria, at the conclusion of the nine-month process, establish any obligations on other parties outside the Bay Delta Conservation Plan process as described in paragraph (c)(2) and below.

Transforming these criteria into "flow objectives," which is the term used in the state Porter-Cologne Water Quality Control Act, would require further proceedings, pursuant to existing law. In a landmark decision on Delta water quality issues, *United States v. State Water Resources Control Board*, 182 Cal.App.3d 82 (1986), the state court established a two-step process required to set water quality objectives and then – subsequently and separately – allocate responsibility for those objectives among water right holders. These flow criteria will not constitute even the first step in that process. While state and local agencies may use the flow criteria for other purposes in the Delta and the SWRCB may use the "flow criteria" as the foundation for developing new water quality "objectives" in a new Delta Water Quality Control Plan, SWRCB will need a complete record, as required by existing law, from a subsequent proceeding to adopt them as "flow objectives."

The flow criteria do not require a particular outcome in such further proceedings. Their development does not have the effect of a regulatory standard or precedential decision, and they do not affect the legal burden of proof in the later SWRCB proceeding. Also, because the development of the flow criteria does not amount to a determination as to how any issues will be decided in a later proceeding, a board or staff member is not be required to avoid participation in the development of the criteria in order to avoid the appearance of prejudging issues that may be presented in the later proceeding.

The flow criteria adopted under Water Code Section 85086(c)(2) may differ from the flow criteria developed under Water Code Section 85086(c)(1), and their legal effect is very different. Paragraph (c)(2) specifies that certain water right change orders, involving specified changes in the points of diversion for the Central Valley Project or the State Water Project, must include "appropriate" Delta flow criteria. While the analysis used in developing flow criteria under paragraph (c)(1) will be considered in setting flow criteria under paragraph (c)(2), neither the analysis nor the criteria themselves predetermine the outcome of the later proceeding to determine what criteria are "appropriate" for inclusion in the water right change order. In addition, while the flow criteria developed under paragraph (c)(1) do not have regulatory effect – they serve instead as recommendations for consideration in the Delta Plan and the Bay Delta Conservation Plan – the flow criteria set under paragraph (c)(2) are included in the water right change order, and have the effect of terms and conditions of that order.

This requirement for flow criteria should also be read in the context of the savings clauses in Water Code Sections 85031-32, which ensure protection for all water rights holders as the Bay Delta Conservation Plan and the Delta Plan develop. Several upstream parties have raised concerns about these flow criteria, suggesting that they will be held responsible for complying with these flow criteria. The combination of the focus on use of flow criteria early in Delta planning efforts, specified process for developing flow criteria, and the savings clauses ensure consistent legal protection for upstream water users without rewriting water law to focus protections on specific concerns.

Council Membership: The foundation of this bill's change in Delta governance is the new Delta Stewardship Council, which this bill creates with seven members. Council members would be required to possess diverse expertise and reflect a statewide perspective. However, this bill would also designate the chair of the Delta Protection Commission as a voting member of the Council *ex officio*. The bill now specifies that the Governor's appointments have either four or six-year terms, with subsequent four-year terms, to allow some staggering of terms over the long-term. The legislative appointments have four-year initial and subsequent terms.

Delta Vision suggested the Council should have no slots set aside for persons with specific characteristics, all appointed by the governor. Others suggest that there must be slots for persons with specific characteristics, such as representation or expertise. This bill appears to be a hybrid of the two approaches. It requires members "with diverse expertise and a statewide perspective," appointed by several different entities and one regional representative from the Delta, but no other specified slots. This approach relies on the Senate confirmation process to ensure the Governor's appointments fairly balance different interests and reflect different expertise. This bill provides the Senate and Assembly an additional method to ensure balance, at least from the Senate and Assembly's perspectives, by allowing each to appoint a member.

Science Program: This bill establishes a "Delta Independent Science Board" and science program, using the CALFED Bay-Delta Program science program as its model. The CALFED science program has received broad acclaim for success as an effective *independent* science program, while CALFED now receives intense criticism for its alleged failure to address the Delta's crises. The science program in this bill therefore adopts and succeeds the CALFED science program.

Delta Watermaster: This bill includes a provision that requires SWRCB to appoint a Delta Watermaster. This version, however, is much narrower than the proposal in the August pre-print

version, which had broader authority. The Watermaster in this bill acts by delegation of authority from the SWRCB. It is SWRCB's enforcement – not adjudicatory – officer, with specified delegated authorities. The Watermaster's jurisdiction is limited to diversions in the Delta and conditions on permits that relate to conditions in the Delta.

Federal Government Participation: In order to encourage federal government participation under the state's leadership, this bill requires the Delta Plan to be developed consistent with certain statutes that allow for certain state discretion over federal activities. These statutes include the Coastal Zone Management Act (CZMA), the Reclamation Act of 1902 (which governs the Bureau of Reclamation's Central Valley Project), and the Clean Water Act. If the Council decides to adopt the Delta Plan pursuant to the CZMA, then the bill requires submission to the Secretary of Commerce for approval, so the state may exercise certain authority over federal agency actions. It is widely anticipated that California may need Congress to enact laws to protect the Delta consistent with the state's plan – perhaps a "Delta Zone Management Act." This bill allows for that eventuality, by providing for submission of the Delta Plan to whatever federal official a subsequent federal statute identifies.

Delta Plan/Balancing Coequal Goals: This bill includes substantial detail as to the nature of the Delta Plan, focusing on balancing the two coequal goals of ecosystem restoration and water supply reliability. It specifies certain elements, strategies for incorporation into the Delta Plan. It also includes several standards for completion of the plan, such as use of best available science. All these requirements still connect back to the fundamental "co-equal goals."

Levees/Flood Protection: The bill requires the Delta Plan to reduce risks to people, property and state interests in the Delta with emergency preparedness, appropriate land uses and strategic levee investments. The Delta Plan will include recommendations for priorities for state investments in levees. These recommendations, in combination with the Council's authority to ensure that state agencies act consistently with the Delta Plan, will ensure that levee spending by DWR and the Central Valley Flood Protection Board (CVFPB) reflects these priorities. The Legislature generally does not appropriate funding to specific Delta levee projects, and has not succeeded in imposing priorities on state levee spending in the Delta. Instead, the State Budget leaves the discretion to DWR and the CVFPB to determine how to spend state money on both levees in the State Plan of Flood Control and non-project levees. These priorities will affect both the Delta levee subvention program (non-project levees) and the special projects program (levees with a State interest).

Consistency Review: One of the cornerstones of the fundamental change that this bill portends is the development and enforcement of a unified state plan for the Delta. The bill ensures consistency with the state's Delta Plan by requiring state and local agencies that propose to implement "covered actions" to submit consistency certifications and subjecting those certifications to appeal to the council. The Council reviews the certification and issues raised by an appellant and determines whether the project is consistent with the Delta Plan, with specific findings. If not, then the proponent must determine whether to proceed with the project, but must amend and submit a new certification if it decides to proceed with the project.

The Council's role in developing and enforcing consistency with the Delta Plan will provide a critical component of crafting a coherent and sustainable long-term state policy for the Delta. As the Delta Vision Task Force noted, more than 200 federal, state and local agencies have authority in the Delta. State policy often has made competing demands on Delta resources, leading to the

current crisis. State agencies often have reached gridlock, allowing the Delta to collapse as they dispute how to proceed. While the CALFED Bay-Delta Program had the noble goal of coordinating state and federal policy in the Delta, the Bay-Delta Authority lacked the authority to resolve conflicts among agencies and set a unified direction. When the Delta ecosystem crisis arose, CALFED agencies degenerated into interagency conflict and could not respond adequately to the mounting evidence of crisis, even to complete the Legislature's requirement to develop a short-term response to stabilize the Delta ecosystem. The Council can provide some coherence to how the State manages important water and environmental resources in the Delta.

Covered Actions: The threshold for certification of consistency and Council review requires the action to fall within the scope of "covered actions." Determining whether a particular project is a "covered action" requires review of both the definition's four factors as well as the exemptions in that definition. The first, and possibly the most central, factor for that determination is that the project "will occur, in whole or in part, within the boundaries of the Delta or Suisun Marsh." Actions that outside the legal boundaries of the Delta (including Suisun Marsh), such as upstream diversions, will not be covered actions and, therefore, not subject to certification or the Council's consistency review. The existing diversions by the San Francisco Public Utilities Commission from the upper reaches of the Tuolumne River, for example, do not constitute "covered actions."

If the project "occurs" in the Delta, it still may not be a "covered action" because an exemption may apply. The first exemption applies to "regulatory actions," in order to clarify that the Council does not have authority to countermand a regulatory determination, such as a water right or water quality order or a determination under the California Endangered Species Act. This exemption reaffirms, combined with the savings clauses, the overall intent of the bill that the Council does not become a super-regulator that can trump regulatory decisions of other agencies. Recent changes have added several new exemptions that:

1) Exempt regional transportation plans.

2) "Grandfather" certain existing activities in the Delta, or activities that have completed the CEQA process by the time the Council adopts the Delta Plan.

3) Allow continued "routine maintenance and operation" of Delta facilities.

4) Support sustainable land-use planning under state law.

Bay Delta Conservation Plan: This bill requires Council consideration of the BDCP for incorporation into the larger Delta Plan, but conditions state funding and incorporation of BDCP on DFG's approval as a Natural Community Conservation Plan (NCCP) and completion of robust investigation and analysis pursuant to CEQA. While some agencies have asserted that BDCP would be an NCCP, the December 2006 planning agreement specifically provided that the signatories were not committed to achieving the higher ecosystem recovery standard for an NCCP. This bill sets the higher NCCP standard ("the gold standard") as the threshold for state funding of the public benefits of BDCP activities, while relying on existing law. The specified issues that will be analyzed under CEQA add credibility to the outcome of BDCP, but also rely on the context of existing CEQA law to ensure an impact on the ultimate BDCP decisions.

Delta Conveyance: This bill does NOT authorize "the Peripheral Canal." There has been a

debate about DWR's legal authority to construct a new Delta water conveyance system, and this bill does not address that issue. Instead, it specifies certain requirements for BDCP in considering options for changing Delta water conveyance for the State Water Project (SWP) and federal Central Valley Project (CVP). First, BDCP must analyze certain factors in the CEQA process. Second, BDCP must meet "the gold standard" of achieving approval as an NCCP, if it wants state funding and incorporation into the long-term Delta Plan. NCCP requirements include both public process and adaptive management of BDCP projects and programs, which may include new Delta water conveyance. Third, BDCP must include a "transparent, real-time operational decision-making process" that includes fishery agencies. Fourth, construction of any new conveyance facility may not start until SWRCB issues the necessary water rights change permits and the water project contractors have agreed to pay the costs of environmental review, planning, design, construction and mitigation of the conveyance facility.

These requirements ensure that any decision as to a new conveyance system for Delta water will consider all the necessary factors, and CEQA requirements will ensure that environmental impacts will be resolved. Construction does not start until cost and permitting issues are resolved. The requirements appear to balance the competing interests in "setting a clear path" to new Delta water conveyance, ensuring restoration of the Delta ecosystem, and providing comprehensive analysis of alternatives that address issues unique to the Delta.

Delta Finance: SB 1 X7 states legislative intent to rely on past water bond funding for the costs of developing the new Delta Plan required by this bill. Previous proposals to charge fees to fund Delta programs have been deleted. The bill does require, however, that water users pay the costs of building any new conveyance facility, as well as the costs of any necessary mitigation for such facilities.

Two-Gates Project: This bill promotes implementation of the Federal Government's proposed "Two-Gates Fish Protection Demonstration Program." This project would experiment with certain flow gates in the Delta to see if it improves conditions for certain at-risk fish species. The bill identifies this project as an "early action" and appropriates $28 million, from bond funding, as the State's contribution to the experiment.

Recent Changes: Since the Assembly Water, Parks and Wildlife (WP&W) Committee considered the Delta governance and planning provisions, as part of SB 68 (the regular session version of this bill), on September 11, this portion of the 2009 Delta/Water legislative package has changed in limited ways, to address certain concerns.

- **Governor's Council Appointments:** This bill restructures the original proposal for staggering the Governor's initial appointments to the Council. Instead of staggering the Governor's first appointments by one to four years, two initial gubernatorial appointees will have four-year terms and two will have six-year terms. After those initial appointments both gubernatorial and legislative appointees to the Council will have four-year terms.

- **Delta Water Quality:** This bill amended SB 68's original findings and state policies to incorporate water quality concerns for human health and the environment.

- **Savings Clauses:** This bill expanded the provisions that preserve legal protections in existing law, to assure that water rights are respected and water right holders receive the

procedural and substantive protections of existing law.

- **"Covered Actions" Exemptions/Grandfather Clause:** The definition of "covered actions" sets the scope of what agency actions may be appealed to the Council as inconsistent with the Delta Plan. This bill includes exemptions to the definition for: 1) regulatory actions; 2) regional transportation plans; 3) local plans or projects that comply with Government Code provisions for sustainable communities; 4) routine maintenance and operation of federal, state and local government facilities in the Delta; 5) local agency projects that are either "fully permitted" or have completed the CEQA process by September 30, 2009; and 6) certain projects in the Delta's secondary zone finalized before adoption of the Delta Plan.

- **Flow Criteria:** This bill – like SB 68 – requires SWRCB to exercise its public trust authority to develop new "flow criteria" to inform planning decisions for the Delta Plan. Recent changes have added some additional specificity as to the purpose of these flow criteria and the process for SWRCB to develop them. Specifically, the new language accomplishes two things: 1) focuses this effort on informing planning decisions for the Delta Plan and the Bay Delta Conservation Plan; and, 2) specifies the procedure for SWRCB to develop the flow criteria, relying on an "informational proceeding," not a regulatory proceeding. Savings clauses also were expanded to ensure protection for water rights.

- **Watermaster Authority:** This bill specifies the scope of the Delta Watermaster's authority as applying to diversions in the Delta and board orders that apply to conditions in the Delta. This further specification is consistent with the original definition of the "Delta Watermaster." It ensures that the Watermaster has authority over both in-Delta water diversions and water project operations outside the Delta where SWRCB has conditioned the water right permits based on conditions in the Delta. The CVP permits for New Melones Reservoir, for example, are conditioned on compliance with certain Delta water quality requirements, leading to reservoir releases to dilute salinity in the San Joaquin River.

Analysis Prepared by: Alf W. Brandt / W., P. & W. / (916) 319-2096

FN: 0003494

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

OCT 30 2015

OFFICE OF THE
REGIONAL ADMINISTRATOR

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

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

Dear Mr. Murillo:

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

Background

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

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

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

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

Project Benefits

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

Project Purpose and Need

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

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

Aquatic Habitat and Water Quality

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

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

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

Pending Regulatory Actions

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

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

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

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

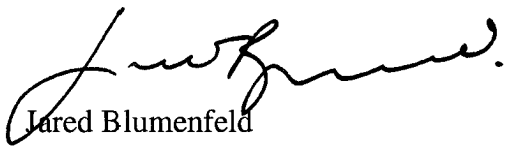
All of the above listed regulatory processes will develop new data and likely new compliance requirements beyond those provided in the SDEIS. EPA understands that these as yet incomplete regulatory requirements will be addressed through the pending actions by the State Water Resources Control Board,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

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

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

If you have any questions, please contact me at 415-947-8702. Alternatively, your office may contact Kathleen Johnson, Enforcement Division Director. Ms. Johnson can be reached at 415-972-3873.

Sincerely,



Jared Blumenfeld

74 FR 7257-01
NOTICES
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Bureau of Reclamation
DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
[FWS-R8-2008-N0345; 1112-0000-80221-F2]

Bay Delta Conservation Plan for the Sacramento-San Joaquin Delta, CA

Friday, February 13, 2009

AGENCIES: Fish and Wildlife Service, Interior; Bureau of Reclamation, Interior; National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Commerce.

***7257** ACTION: Notice of Intent (NOI) to prepare an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and notice of public scoping meetings.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, the Fish and Wildlife Service (FWS), the Bureau of Reclamation (Reclamation), and the National Marine Fisheries Service (NMFS) will serve as co-lead agencies in the preparation of a joint EIS/EIR for the Bay Delta Conservation Plan (BDCP). The California Department of Water Resources (DWR) will serve as the lead agency under the California Environmental Quality Act (CEQA), which requires the preparation of the EIR component of the EIS/EIR. FWS will serve as the administrative lead for all actions related to this Federal Register Notice (Notice). The Federal co-lead agencies have requested that the U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) participate in the EIS/EIR as cooperating agencies for the purposes of their regulatory programs. The Corps and EPA have indicated that they will participate in such a role.

This Notice revises and updates the Notices of April 15, 2008 and January 24, 2008. In these previous Notices the description of the proposed action and possible alternatives were preliminary in nature and relied upon initial BDCP planning documents which describe the overall intent and direction of potential actions. Following publication of these previous Notices, preliminary scoping comments were submitted in writing and provided at preliminary scoping meetings. Some of the scoping comments indicated that more detailed descriptions of the proposed actions and alternatives are needed to allow specific comments on the range of alternatives and issues and levels of detail to be considered in the analyses of environmental consequences. Public comments received during this scoping period plus the previous two preliminary scoping periods will be considered during the preparation of the EIS/EIR. Comments submitted in response to the previous notices will be considered and do not need to be resubmitted.

The BDCP is a conservation plan being prepared to meet the requirements of the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and the State of California's Natural Communities Conservation Planning Act (NCCPA). DWR (and potentially State and Federal water contractors) intends to apply for ESA and CESA incidental take permits (ITP) for water operations and management activities in the Sacramento-San Joaquin Delta. These incidental take authorizations would allow the incidental take of threatened and endangered species resulting from covered activities and conservation measures that will be identified through the planning process, including those associated with water operations of the Federal Central Valley Project (CVP), as operated by Reclamation, the California State Water Project (SWP), as operated by DWR, as well as operations of certain Mirant Delta LLC (Mirant Delta) power plants. Additionally, if feasible, the BDCP will be used as the basis for ESA compliance by Reclamation, including compliance with Section 7 of ESA in coordination with FWS and NMFS. Ultimately, the BDCP is intended to secure authorizations that

would allow projects that restore and protect water supplies, water quality, and ecosystem health to proceed within a stable regulatory framework.

DATES: Ten public scoping meetings, open house format, will be held at various times and locations throughout California. See SUPPLEMENTARY INFORMATION section for public scoping meeting dates.
Written comments on the scope of the BDCP or issues to be addressed in the EIS/EIR must be received no later than May 14, 2009.

ADDRESSES: Send written comments to Lori Rinek, Sacramento Fish and Wildlife Office, 2800 Cottage Way, W-2605, Sacramento, CA 95825, e-mail to lori—rinek @fws.gov, or fax to (916) 414-6713. See SUPPLEMENTARY INFORMATION section for public scoping meeting addresses.

FOR FURTHER INFORMATION CONTACT: Lori Rinek, FWS, 916-414-6600; Patti Idlof, Reclamation, 916-978-5056; or Rosalie del Rosario, NMFS, 916-930-3600.

SUPPLEMENTARY INFORMATION:

Public Scoping Meeting Dates
Public scoping meetings will be held on the following dates and times:

• Monday, March 9, 2009, 6 p.m. to 10 p.m., Chico, CA.

• Tuesday, March 10, 2009, 6 p.m. to 10 p.m., San Jose, CA.

• Wednesday, March 11, 2009, 6 p.m. to 10 p.m., Bakersfield, CA.

• Thursday, March 12, 2009, 1 p.m. to 4 p.m., Los Angeles, CA.

• Monday, March 16, 2009, 6 p.m. to 10 p.m., San Diego, CA.

• Tuesday, March 17, 2009, 6 p.m. to 10 p.m., Merced, CA.

• Wednesday, March 18, 2009, 6 p.m. to 10 p.m., Davis, CA.

• Thursday, March 19, 2009, 1 p.m. to 4 p.m., Sacramento, CA.

• Monday, March 23, 2009, 6 p.m. to 10 p.m., Brentwood, CA.

• Tuesday, March 24, 2009, 6 p.m. to 10 p.m., Stockton, CA.

• Wednesday, March 25, 2009, 6 p.m. to 10 p.m., Fairfield, CA.

• Thursday, March 26, 2009, 6 p.m. to 10 p.m., Clarksburg, CA.

Public Scoping Meeting Addresses
Public scoping meetings will be held at the following locations:

• Chico—Masonic Family Center, 1110 West East Avenue, Chico, CA 95926.

• San Jose—San Jose Marriott, 301 South Market Street, Blossom Hill and Almaden Rooms, San Jose, CA 95113.

• Bakersfield—Bakersfield Marriott at the Convention Center, 801 Truxtun Avenue, Salon A and Hammons Rooms, Bakersfield, CA 93301.

• Los Angeles—Junipero Serra State Building, 320 West Fourth, Los Angeles, CA 90013.

• San Diego—Marina Village Conference Center, 1936 Quivera Way, Captains Room and Room C8, San Diego, CA 92109.

• Merced—Merced High School, 205 West Olive Avenue, Merced, CA 95344.

• Davis—Veterans Center, 203 East 14th Street, Davis, CA 95616.

***7258** • Sacramento—Hyatt Regency, 1209 L Street, Sacramento, CA 95814.

• Brentwood—Brentwood Community Multipurpose Room, 730 Third Street, Brentwood, CA 94513.

• Stockton—Stockton Civic Memorial Auditorium, 525 North Center Street, Stockton, CA 95202.

• Fairfield—Hilton Garden Inn, 2200 Gateway Court, Willow and Larkspur Rooms, Fairfield, CA 94533.

• Clarksburg—Clarksburg Community Church, 52910 Netherlands Avenue, Clarksburg, CA 95612.

Reasonable Accommodation

Persons needing reasonable accommodations in order to attend and participate in the public meeting should contact Lori Rinek at (916) 414-6600 as soon as possible. In order to allow sufficient time to process requests, please call no later than one week before the public meeting. Information regarding this proposed action is available in alternative formats upon request.

Background Information

The BDCP is being prepared through a collaboration of State, Federal, and local water agencies, and Mirant Delta, an electric power generating facility located in West Pittsburg, California in Contra Costa County, under: (1) Section 10(a)(1)(B) of the ESA of 1973, as amended, and (2) the NCCPA, California Fish and Game Code, Section 2800 et seq., or Fish and Game Code Section 2081 of CESA. The BDCP is intended to provide (1) Reclamation the ability to obtain a Biological Opinion and incidental take statements (ITS) pursuant to Section 7 of ESA, and (2) the basis for the DWR (and potentially State and Federal water contractors) to apply for ITPs pursuant to Section 10 of ESA and California Fish and Game Code Section 2835 or 2081 for implementation of the BDCP.

DWR and Reclamation, along with the Metropolitan Water District of Southern California (MWD), the Kern County Water Agency (KCWA), the Santa Clara Valley Water District (SCVWD), Alameda County Flood Control and Water Conservation District, Zone 7 Water Agency (Zone 7), the San Luis and Delta-Mendota Water Authority (SLDMWA), the Westlands Water District (WWD), and Mirant Delta (known collectively as the "Potentially Regulated Entities" or PREs) are currently preparing the BDCP for existing and proposed covered activities within the Statutory Delta. Some elements of the BDCP will complement the actions identified in the State of California's Delta Vision process, which was a process convened by Governor Schwarzenegger to provide advice with respect to how to improve environmental conditions in the Delta while rendering it a more reliable source of water supply.

It is the goal of the PREs that the BDCP meets:

(1) The requirements of Section 10(a)(1)(B) of the ESA for the non-federal PREs and result in the issuance of ITPs from the FWS and NMFS to those PREs;

(2) The requirements of an ITP under the California fish and wildlife protection laws, either pursuant to Section 2835 or Section 2081 of the Fish and Game Code, resulting in take authority under either one of those statutes; and

(3) The requirements of the Section 7 consultation process under the ESA, resulting in the issuance of Biological Opinions, and ITSs, from the NMFS and FWS on specific activities of certain members of the PREs.

Purpose and Need for Action

Background
This EIS is being developed for the following proposed actions and federal regulatory agency responses:

(1) DWR, Reclamation, other PREs, and possibly other persons or entities implementing the BDCP;

(2) DWR and possibly other PREs applying to the FWS for incidental take permits pursuant to the ESA section 10(a)(1)(B); and

(3) DWR and possibly other PREs applying to the NMFS for incidental take permits pursuant to the federal ESA section 10(a)(1)(B).

The proposed federal actions that are being evaluated in this EIS are:

(1) FWS issuing an ESA Section 10(a)(1)(B) permit(s);

(2) NMFS issuing an ESA Section 10(a)(1)(B) permit(s); and

(3) Reclamation's implementation of one or more components of the BDCP.

Reclamation, as a federal agency, obtains incidental take authorization through consultation with FWS and NMFS under Section 7 of the ESA. Reclamation will initiate Section 7 consultation with FWS and NMFS for any BDCP components to be implemented by Reclamation. Additionally, in a parallel yet separate process, Reclamation will be required to reinitiate Section 7 consultation on the long-term operation of the CVP, as coordinated with the SWP, to the extent that such coordinated operations may be modified to effectively be integrated with any operational or facility improvements that may occur from implementation of the BDCP.

Purpose
The purposes of the proposed actions are to achieve the following:

Respond to the applications for incidental take permits for the covered species that authorize take related to:

(1) The operation of existing SWP Delta facilities and construction and operation of facilities for the movement of water entering the Delta from the Sacramento Valley watershed to the existing SWP and CVP pumping plants located in the southern Delta;

(2) The implementation of any conservation actions that have the potential to result in take of species that are or may become listed under the ESA, pursuant to the ESA at section 10(a)(1)(B) and its implementing regulations and policies;

(3) The diversion and discharge of water by Mirant LLC for power generation in the Western Delta.

Improve the ecosystem of the Delta by:

(1) Providing for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species; and

(2) Protecting, restoring, and enhancing certain aquatic, riparian, and associated terrestrial natural communities and ecosystems.

(3) Reducing the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP;

Restore and protect the ability of the SWP and 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 held by SWP contractors and certain members of SLDMWA.

Need

Water for a wide range of in-stream, riparian and other beneficial uses, including drinking water for over 25 million Californians and irrigation water for agricultural lands in the Delta and the San Joaquin Valley, is currently routed through the Delta. While some beneficial water users depend on the Delta for only a portion of their water needs, others are highly or totally dependent on supplies from the Delta. Conflicts have arisen and intensified among users of Delta water as total volume of water used and competition for the finite quantity of water available to be applied among those uses has increased over time. Such conflicts are magnified in years with reduced ***7259** precipitation in the watershed of the Sacramento and San Joaquin valleys.

Requirements have been established for the direction and magnitude of water flows moving through the Delta, and the volume of water and the timing requirements for its release associated with meeting the habitat requirements for threatened and endangered fish species. There exists a need to protect and recover these species. However, these requirements alone are unlikely to recover the species and they have also reduced the ability of the CVP and SWP to meet the quantity and timing of water delivered from the Delta for beneficial consumptive uses. Additionally, the levees in the Delta are at constant risk of failure from a number of causes, including seismic activity and sea level rise associated with global climate change. The ability to export water from the Delta for beneficial use would be compromised should one or more of these levees fail, resulting in an interruption of water supply for both urban and agricultural uses, as well as cause severe degradation of water quality in the Delta with potential adverse impacts upon the aquatic ecosystem and the ability to apply water from the Delta to beneficial use. Improvements to the conveyance system are needed to respond to these increased demands upon and risks to water supply reliability, water quality, and the aquatic ecosystem.

The EIS provides analysis for alternatives developed to address the purpose and needs identified above.

Project Area

The planning area for the BDCP will consist of the aquatic and terrestrial ecosystems and natural communities and, potentially, the adjacent riparian and floodplain natural communities within the Statutory Delta. The Statutory Delta includes parts of Yolo, Solano, Contra Costa, San Joaquin, and Sacramento counties. However, it may be necessary for the BDCP to include conservation actions outside of the Statutory Delta that advance the goals and objectives of the BDCP within the Delta, including as appropriate, conservation actions in the Suisun Marsh, Suisun Bay, and areas upstream of the Delta. Any conservation actions outside the Statutory Delta would be implemented pursuant to cooperative agreements or similar mechanisms with local agencies, interested non-governmental organizations, landowners, and others. The EIS/EIR project area for which impacts are evaluated may be different than the BDCP geographic scope.

Covered Activities

The BDCP covered activities may include, but are not limited to, existing or new activities related to:

(1) Existing Delta conveyance elements and operations of the CVP and SWP;

(2) New Delta conveyance facilities (including power line alignments) and operations of the CVP and SWP generally described in the BDCP November 2007 Points of Agreement (http://resources.ca.gov/bdcp/);

(3) Operational activities, including emergency preparedness of the CVP and SWP in the Delta;

(4) Operational activities in the Delta related to water transfers involving water contractors or to serve environmental programs;

(5) Maintenance of the CVP, SWP, and other PREs' facilities in the Delta;

(6) Facility improvements of the CVP and SWP within the Statutory Delta (California Water Code Section 12220);

(7) Ongoing operation of and recurrent and future projects related to other Delta water users, as defined by the BDCP Planning Agreement (http:// resources.ca.gov/bdcp/);

(8) Projects designed to improve Delta salinity conditions; and

(9) Conservation measures included in the BDCP, including, but not limited to, fishery related habitat restoration projects, adaptive management, and monitoring activities in the Delta.

Covered Species

Species proposed for coverage in the BDCP are species that are currently listed as Federal or State threatened or endangered or have the potential to become listed during the life of the BDCP and have some likelihood to occur within the project area. The covered species that are the initial focus of the BDCP include certain aquatic species such as:

(1) Central Valley steelhead Oncorhynchus mykiss;

(2) Central Valley Chinook salmon Oncorhynchus tshawytscha (spring-run and fall/late fall-runs);

(3) Sacramento River Chinook salmon Oncorhynchus tshawytscha (winter-run);

(4) Delta smelt Hypomesus transpacificus;

(5) Green sturgeon Acipenser medirostris;

(6) White sturgeon Acipenser transmontanus;

(7) Splittail Pogonichthys macrolepidotus; and

(8) Longfin smelt Spirinchus thaleichthys.

Other species that will be considered for inclusion in the BDCP include, but may not be limited to:

(1) Swainson's hawk Buteo swainsoni;

(3) Bank swallow Riparia riparia;

(4) Giant garter snake Thamnophis gigas; and

(5) Valley elderberry longhorn beetle Desmocerus californicus dimorphus.

This list identifies the species that will be evaluated for inclusion in the BDCP as proposed covered species; however, the list may change as the planning process progresses. The participants anticipate that species may be added or removed from the list once more is learned about the nature of the covered activities and the impact of covered activities on native species within the planning area.

Alternatives

The BDCP will likely consist of three major elements: (1) Actions to improve ecological productivity and sustainability in the Delta; (2) potential capital improvements to the water conveyance system, and; (3) potential changes in Delta-wide operational parameters of the CVP and SWP associated with improved water conveyance facilities.

Potential habitat restoration measures that could improve ecological productivity and sustainability in the Delta may involve the restoration of floodplain; freshwater intertidal marsh; brackish intertidal marsh; channel margin, and riparian habitats. Floodplain restoration opportunities exist in the North Delta/Yolo Bypass and upper San Joaquin River areas; intertidal marsh restoration opportunities exist throughout the Delta and in Suisun Marsh. Channel margin habitat restoration opportunities exist for improving habitat corridors and as a component of floodplain restoration. Riparian habitat restoration opportunities exist as a component of floodplain, freshwater intertidal marsh, and channel margin habitat restoration.

Three general alternatives are being considered as they relate to the potential changes in the water conveyance system and CVP/SWP operations. These include: (1) A through-Delta alternative; (2) a dual conveyance alternative; and (3) an isolated facility alternative. In addition, the implications of taking no action, the No Action alternative, will be considered in the analysis. The dual conveyance alternative may include potential new points of diversion at various locations in the North Delta, facilities to move water from new points of diversion to the existing SWP and CVP pumping facilities in the South Delta, and continued use of the existing ***7260** diversions in the South Delta. The fully isolated facility alternative would include potential new points of diversion at various locations in the North Delta and facilities to move water from new points of diversion to the existing SWP and CVP pumping facilities in the South Delta. The improved through-Delta alternative could include new temporary or permanent barriers to modify existing hydraulics or fish movement within the Delta, armoring of levees along Delta waterways to ensure continued conveyance capacity, and/or actions to improve conveyance capacity in existing Delta waterways.

New points of diversion could be located along the Sacramento River between South Sacramento and Walnut Grove. The new conveyance facility could extend from the new points of diversion to the existing SWP and CVP pumping facilities in the South Delta and be located either to the west or east of the Sacramento River. Potential CVP/SWP operations changes include the seasonal, daily, and real time amounts, rates, and timing of water diverted through and/or around the Delta. Potential corresponding changes to water exports could also be developed.

Other actions to reduce threats to listed fish that may be evaluated for implementation by the BDCP include measures to minimize other stressors. These other stressors may include: (1) Non-native invasive species; (2) toxic contaminants; (3) other water quality issues; (4) hatcheries; (5) harvest; (6) non-project diversions; and (7) commercial/recreational activities. Implementation of potential habitat restoration activities and measures to minimize other stressors will be evaluated throughout the Delta, and possibly upstream and downstream of the Delta, as appropriate to meet the objectives of the plan.

Preliminary locations, alignments, and capacities of new conveyance facilities, as well as habitat restoration activities and actions to address other stresses, to be evaluated in the EIS/EIR will be informed by the scoping process. In addition to the alternatives described above, other reasonable alternatives identified through the scoping process will be considered for potential inclusion in the alternatives analysis.

Statutory Authority

NEPA (42 U.S.C. 4321 et seq.) requires that Federal agencies conduct an environmental analysis of their proposed actions to determine if the actions may significantly affect the human environment. Under NEPA and its implementing regulations (40 CFR part 1500 et seq.; NOAA Administrative Order 216-6) (43 CFR Part 46), a reasonable range of alternatives to the proposed action are to be developed and considered in an EIS/EIR prepared by the FWS and NMFS. Alternatives considered for analysis in an EIS/EIR may include variations in the scope or types of covered activities; variations in the location, amount, and types of conservation measures and the timing of project activities; variations in permit duration; or a combination of these or other elements. In addition, as required by NEPA, the EIS will identify significant direct, indirect, and cumulative effects, and possible mitigation for those significant effects, on biological resources, land use, air quality, water quality, water resources, socioeconomics, environmental justice, cultural resources, and other environmental issues that could occur with the implementation of the proposed action and alternatives.

Request for Comments

The purpose of this notice is to advise other Federal and State agencies, affected Tribes, and the public of our intention to continue to gather information to support the preparation of an EIS/EIR, to obtain suggestions and information from other agencies and the public on the scope of alternatives and issues to be addressed in the EIS/EIR, and to identify important issues raised by the public related to the development and implementation of the BDCP. Written comments from interested parties are invited to ensure that the full range of alternatives and issues related to the development of the BDCP is identified. Comments during this stage of the scoping process will only be accepted in written form. You may submit written comments by mail, facsimile transmission, or in person (see ADDRESSES). All comments received, including names and addresses, will become part of the official administrative record and may be made available to the public. Comments and participation in the scoping process are encouraged.

Before including your name, address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Ken McDermond,

Deputy Regional Director, Pacific Southwest Region, U.S. Fish and Wildlife Service, Sacramento, CA.

Mike Chotkowski,

Acting Regional Environmental Officer, Mid-Pacific Region, Bureau of Reclamation.

Russ Strach,

Assistant Regional Administrator, Protected Resources, Southwest Region, National Marine Fisheries Service.

[FR Doc. E9-3103 Filed 2-12-09; 8:45 am]

BILLING CODE 4310-55-P

Notice of Preparation

To: State Clearing House, Governor's Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044
(Address)

From: California Department of Water Resources
901 P. Street, Bonderson BLDG, 4th Floor, PO Box 942836
Sacramento, CA 95814
(Address)

Subject: Notice of Preparation of a Draft Environmental Impact Report

Department of Water Resources will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☐ is ☒ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Delores Brown, Division of Environmental Services at the address shown above. We will need the name for a contact person in your agency.

Project Title: Bay Delta Conservation Plan EIR/EIS

Project Applicant, if any:

RECEIVED
FEB 13 2009
STATE CLEARING HOUSE

Date 2/13/09

Signature Barbara J McDonnell

Title Chief, Division of Environmental Services

Telephone 916-376-9700

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

DEPARTMENT OF WATER RESOURCES
DIVISION OF ENVIRONMENTAL SERVICES
3500 INDUSTRIAL BOULEVARD
WEST SACRAMENTO, CA 95691

REVISED NOTICE OF PREPARATION

REVISED NOTICE OF PREPARATION OF ENVIRONMENTAL IMPACT REPORT AND ENVIRONMENTAL IMPACT STATEMENT FOR THE BAY DELTA CONSERVATION PLAN

(State Clearinghouse Number: 2008032062)

February 13, 2009

INTRODUCTION

Pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), the California Department of Water Resources (Department), National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and the U.S. Bureau of Reclamation (Reclamation) will initiate the preparation of a joint Environmental Impact Report and Environmental Impact Statement (EIR/EIS) for the Bay Delta Conservation Plan (BDCP) for the Sacramento-San Joaquin Delta, California.

The Department is the lead agency under CEQA, Reclamation is the lead agency under NEPA for the proposed BDCP, and NMFS and USFWS are co-lead agencies under NEPA. The Federal co-lead agencies have requested that the U.S. Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) participate in the EIR/EIS as cooperating agencies for the purposes of compliance with their regulatory programs, including the Clean Water Act. EPA and the Corps have agreed to participate.

The BDCP is being prepared through a collaboration of state, federal, and local agencies pursuant to authority provided in: (1) Section 10(a)(1)(B) of the Federal Endangered Species Act (ESA) of 1973, as amended, and (2) the Natural Community Conservation Planning Act (NCCPA), California Fish and Game Code, Section 2800 et. seq. or Section 2081 of the California Endangered Species Act (CESA), California Fish and Game Code 2050 et. seq. The BDCP process may provide the basis for the Department to apply for incidental take permits (ITP) pursuant to Section 10 of the Federal Endangered Species Act and California Fish and Game Code Section 2835, while Reclamation will obtain Biological Opinions and incidental take statements (ITS) pursuant to Section 7 of the Federal Endangered Species Act. These incidental take authorizations will allow the incidental take of threatened and endangered species resulting from certain covered activities and conservation measures associated with water operations of the California State Water Project (SWP), as operated by the Department, and the federal Central Valley Project (CVP), as operated by Reclamation. Such measures will be identified through the planning process.

BACKGROUND INFORMATION

The Department and Reclamation, along with the Metropolitan Water District of Southern California (MWD), the Kern County Water Agency (KCWA), the Santa Clara Water District (SCVWD), Alameda County Flood Control and Water Conservation District, Zone 7 (Zone 7), the San Luis and Delta Mendota Water Authority (SLDMWA), the Westlands Water District (WWD), and Mirant Delta (known collectively as the "Potentially Regulated Entities" or PREs), are preparing the BDCP for their covered activities within the Geographic Scope described below. It is the goal of the PREs that the BDCP follow a process that meets:

1. The requirements of Section 10(a)(1)(B) of the ESA for non-federal PREs and result in the issuance of ITPs from the U.S. Fish and Wildlife Service and National Marine Fisheries Service (collectively the Services) to certain of the PREs;
2. The requirements of an ITP under the California fish and wildlife protection laws, either pursuant to the NCCPA, Section 2835 and/or Section 2081 of the Fish and Game Code; and
3. The requirements of Section 7 of the ESA related to consultation with other federal agencies, resulting in the issuance of Biological Opinions, including ITSs, from the NMFS and or USFWS on specific activities of certain members of the PREs.

Since the first set of scoping meetings that occurred from April 28th, 2008 to May 14th, 2008, the planning efforts for the BDCP have advanced. All comments from the first set of scoping meetings will be taken into consideration for the development of the EIR/EIS. A preliminary scoping report has been completed; all comments from the first set of scoping meetings are available online (http://www.water.ca.gov/deltainit/comments.cfm). The BDCP has also released a document entitled, "Overview of the Draft Conservation Strategy for the Bay Delta Conservation Plan" which is also available online (http://resources.ca.gov/bdcp/docs/12.19.08_HO_BDCP-Overview_of_Conservation_Strategy_With_Core_Elements.pdf). Formal preparation of the draft EIR/EIS is commencing and is incorporating all necessary information as it is created in connection with, and as part of the BDCP process. The BDCP process is continuing with the cooperation of the Services, the California Resources Agency, California Department of Fish and Game (CDFG), the PREs, including Mirant Delta, and various stakeholders, including the Nature Conservancy, Environmental Defense, Defenders of Wildlife, the California Farm Bureau, the Natural Heritage Institute, The Bay Institute, Contra Costa Water District, and American Rivers. All of these organizations are participants in the Steering Committee and guide the preparation of the BDCP. Friant Water Authority and the North Delta Water Agency became Steering committed members on October 17, 2008. The Services and CDFG are participating in the Steering Committee's efforts in an ex-officio basis, providing technical input and guidance in support of the Steering Committee's efforts. CDFG will be a responsible agency under CEQA for this EIR/EIS process. The participants are undertaking these planning efforts pursuant to: (1) the Planning Agreement that was signed October 2006 and amended April 2007 to guide the BDCP process; and (2) the Points of Agreement dated November 2007 (see Resources Agency website, http://resources.ca.gov/bdcp/ for Planning Agreement). This website http://www.water.ca.gov/deltainit/bdcp.cfm provides open access to comprehensive documentation of the planning process, and a detailed schedule of past and future planning activities.

PROJECT DESCRIPTION

Purpose and Project Objectives

The purpose and project objectives of the proposed actions are to achieve the following:

To be granted incidental take permits for the covered species that authorize take related to:

1. The operation of existing State Water Project Delta facilities and construction and operation of facilities for the movement of water entering the Delta from the Sacramento Valley watershed to the existing State Water Project (SWP) and Federal Central Valley Project (CVP) pumping plants located in the southern Delta;
2. The implementation of any conservation actions that have the potential to result in take of species that are or may become listed under the ESA, pursuant to the ESA at §10(a)(1)(B) and its implementing regulations and policies;
3. The diversion and discharge of water by Mirant LLC for power generation in the Western Delta.

To improve the ecosystem of the Delta by:

1. Providing for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species; and
2. Protecting, restoring, and enhancing certain aquatic, riparian, and associated terrestrial natural communities and ecosystems.
3. Reducing the adverse effects to certain listed species of diverting water by relocating the intakes of the SWP and CVP;

Restore and protect the ability of the SWP and 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.

Need

The Delta is currently a conduit for water that is used for a wide range of in-stream, riparian and other beneficial uses, including drinking water for over 25 million Californians and irrigation water for agricultural lands in the Delta and the San Joaquin Valley. While some beneficial water users depend on the Delta for only a portion of their water needs, others are highly dependent on supplies from the Delta. While overall water supplies have remained finite, conflicts have arisen and intensified among Delta Water users as total demands have increased for various users and regulatory requirements for rare, threatened or endangered species have also increased. With the forecast of reduced precipitation in the Sacramento and San Joaquin valley watersheds, the struggle to meet these demands will be magnified.

The recent regulatory requirements to protect Delta smelt and longfin smelt have taken a more

ecosystem approach to minimizing effects of water project operations than past regulatory requirements. These requirements affect the timing of flow restrictions associated with meeting the habitat requirements for threatened and endangered species. There exists a need to protect and recover these species in order to reduce conflicts and provide for healthy ecosystems.

The levees in the Delta are at risk of failure from a number of causes, including seismic activity and sea level rise associated with global climate change. The ability of the Department and Reclamation to export water from the Delta would be compromised should one or more of these levees fail. Such levee failure would result in an interruption of water supply for both urban and agricultural uses. Another impact of levee failure would be severe degradation of water quality in the Delta with potential adverse impacts upon the aquatic ecosystem. Improvements to the conveyance system are needed to respond to these increased demands upon water supply reliability, water quality, and the aquatic ecosystem. Improvements to the conveyance system will also respond to risks on water supply reliability due to a levee failure.

The EIR/EIS will analyze a reasonable range of alternatives developed to address the purposes identified above.

Covered Activities

The BDCP covered activities may include, but are not limited to:

1. Existing Delta conveyance elements and operations of the CVP and SWP;
2. New Delta conveyance facilities (including power line alignments) and operations of the CVP and SWP generally described in the BDCP November 2007 Points of Agreement (http://resources.ca.gov/bdcp/);
3. Operational activities, including emergency preparedness of the CVP and SWP in the Delta;
4. Operational activities in the Delta related to water transfers involving water contractors or to serve environmental programs;
5. Maintenance of the CVP, SWP, and other facilities in the Delta;
6. Facility improvements of the CVP and SWP within the Statutory Delta (California Water Code Section 12220);
7. Ongoing operation of and recurrent and future projects related to other Delta water users, as defined by the BDCP Planning Agreement (http://resources.ca.gov/bdcp/);
8. Projects designed to improve Delta salinity conditions; and
9. Conservation measures included in the BDCP, including, but not limited to, fishery related habitat restoration projects, adaptive management, and monitoring activities in the Delta.

Covered Species

Species proposed for coverage in the BDCP are species that are currently listed as Federal or State threatened or endangered or have the potential to become listed during the life of the BDCP and have some likelihood to occur within the project area. The covered species that are the initial focus of the BDCP include certain aquatic species such as:

1. Central Valley steelhead *Oncorhynchus mykiss;*

2. Central Valley Chinook salmon *Oncorhynchus tshawytscha* (spring-run and fall/late fall-runs);
3. Sacramento River Chinook salmon *Oncorhynchus tshawytscha* (winter-run);
4. Delta smelt *Hypomesus transpacificus;*
5. Green sturgeon *Acipenser medirostris;*
6. White sturgeon *Acipenser transmontanus;*
7. Splittail *Pogonichthys macrolepidotus;* and
8. Longfin smelt *Spirinchus thaleichthys.*

Other species that will be considered for inclusion in the BDCP include, but may not be limited to:

1. Swainson's hawk *Buteo swainsoni;*
2. Bank swallow *Riparia riparia;*
3. Giant garter snake *Thamnophis gigas;* and
4. Valley elderberry longhorn beetle *Desmocerus californicus dimorphus.*

This list identifies the species that will be evaluated for inclusion in the BDCP as proposed covered species, but the list may change as the planning process progresses. The participants anticipate that species may be added or removed from the list once more is learned about the nature of the covered activities and the impact of covered activities on native species within the planning area.

Planning Goals

The BDCP will include goals and objectives for the management of Covered Activities and conservation of Covered Species. As proposed in the Planning Agreement, the planning goals include:

1. Provide for the conservation and management of covered species within the planning area;
2. Preserve, restore, and enhance aquatic, riparian, and associated terrestrial natural communities and ecosystems that support covered species within the planning area through conservation partnerships;
3. Allow for projects that restore and protect water supply, water quality, and ecosystem health to proceed within a stable regulatory framework;
4. Provide a means to implement covered activities in a manner that complies with applicable State and federal fish and wildlife protection laws, including the NCCPA or CESA, FESA, and other environmental laws, including CEQA and NEPA;
5. Provide a basis for permits necessary to lawfully take covered species;
6. Provide a comprehensive means to coordinate and standardize mitigation and compensation requirements for covered activities within the planning area;
7. Provide a less costly, more efficient project review process which results in greater conservation values than project-by-project, species-by-species review; and
8. Provide clear expectations and regulatory assurances regarding covered activities occurring within the planning area.

PROJECT AREA

The planning area for the BDCP will consist of the aquatic ecosystems and natural communities, and potentially adjacent riparian and floodplain natural communities, within the Statutory Delta (California Water Code Section 12220), The Statutory Delta includes parts of Yolo, Solano, Contra Costa, San Joaquin, and Sacramento counties. However, it may be necessary for the BDCP to include conservation actions outside of the Statutory Delta that advance the goals and objectives of the BDCP within the Delta, including as appropriate, conservation actions in the Suisun Marsh, Suisun Bay, and areas upstream of the Delta (Figure 1). Any conservation actions outside the Statutory Delta would be implemented pursuant to cooperative agreements or similar mechanisms with local agencies, interested non-governmental organizations, landowners, and others. The EIR/EIS project area for which impacts are evaluated may be different than the BDCP geographic scope.

ENVIRONMENTAL BASELINE

CEQA Guidelines Section 15125 states that an EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Preparation (NOP) is published, or if no Notice of Preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant. Normally, the environmental baseline is the same as existing conditions.

Alternatives

The BDCP will likely consist of three major elements: 1) actions to improve ecological productivity and sustainability in the Delta; 2) potential capital improvements to the water conveyance system; and 3) potential changes in Delta-wide operational parameters of the CVP and SWP associated with improved water conveyance facilities.

Potential habitat restoration measures that could improve ecological productivity and sustainability in the Delta may involve the creation and/or restoration of floodplain; freshwater intertidal marsh; brackish intertidal marsh; channel margin; and riparian habitats. Floodplain restoration opportunities exist in the North Delta/Yolo Bypass and upper San Joaquin River areas; and intertidal marsh restoration opportunities exist throughout the Delta and in Suisun Marsh. Channel margin habitat restoration opportunities exist for improving habitat corridors and as a component of floodplain restoration. Riparian habitat restoration opportunities exist as a component of floodplain, freshwater intertidal marsh, and channel margin habitat restoration.

Three general alternatives are being considered as they relate to the potential changes in the water conveyance system and CVP and SWP operations. These include: 1) a through Delta alternative; 2) a dual conveyance alternative; and 3) an isolated facility alternative. The dual conveyance alternative may include use of existing points of diversion during some circumstances and potential new points of diversion at various locations in the North Delta, as well as facilities to move water from new points of diversion to the existing SWP and CVP pumping facilities in the South Delta. The fully isolated facility alternative would include

Legal Delta Boundary

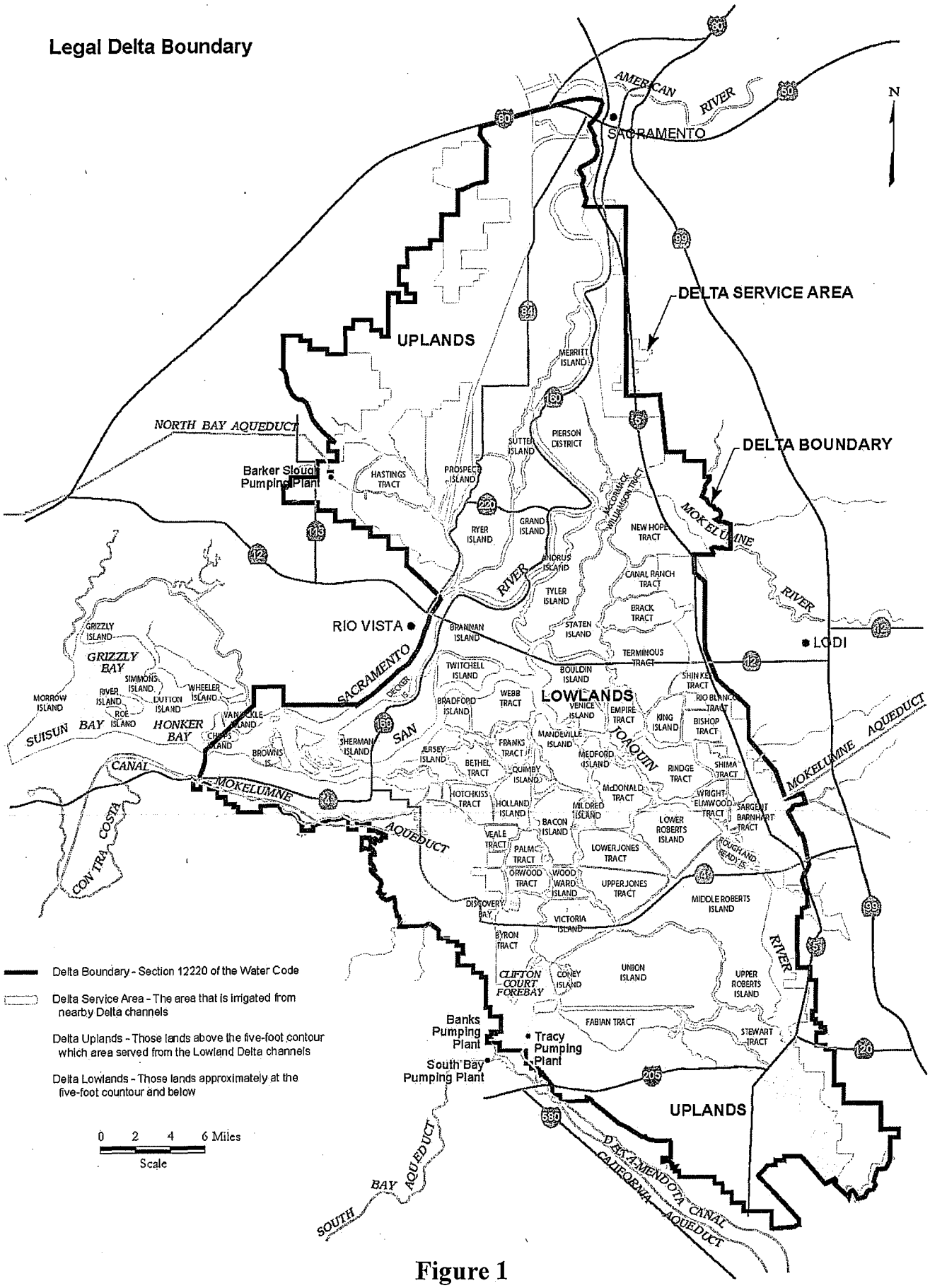


Figure 1

potential new points of diversion at various locations in the North Delta and facilities to move water from new points of diversion to the existing SWP and CVP pumping facilities in the South Delta. The improved through-Delta alternative could include new temporary or permanent barriers to modify existing hydraulics or fish movement within the Delta, armoring of levees along Delta waterways to ensure continued conveyance capacity, and/or actions to improve conveyance capacity in existing Delta waterways.

New points of diversion could be located along the Sacramento River between South Sacramento and Walnut Grove. The new conveyance facility could extend from the new points of diversion to the existing SWP and CVP pumping facilities in the South Delta and be located either to the west or east of the Sacramento River. Potential CVP/SWP operations changes include the seasonal, daily, and real time amounts, rates, and timing of water diverted through and/or around the Delta. Potential corresponding changes to water exports could also be developed.

Other actions to reduce threats to listed fish that may be evaluated for implementation by the BDCP include measures to minimize other stressors. These other stressors may include: (1) non-native invasive species; (2) toxic contaminants; (3) other sources of impairment of water quality; (4) hatcheries; (5) harvest; (6) non-project diversions; and (7) commercial and recreational activities. Implementation of potential habitat creation and restoration activities and measures to minimize other stressors will be evaluated throughout the Delta, and possibly upstream and downstream of the Delta, as appropriate to meet the objectives of the plan.

Preliminary locations, alignments, and capacities of new conveyance facilities, as well as habitat restoration activities and actions to address other stressors, to be evaluated in the EIS/EIR will be informed by the scoping process. In addition to the potential alternatives described above, other reasonable alternatives identified through the scoping process will be considered for potential inclusion in the alternatives analysis.

POTENTIAL ENVIRONMENTAL EFFECTS

The EIR/EIS will analyze resources that could be affected by the project, including but not limited the covered species listed above, as well as:

1. Aquatic Environment
2. Potentially Affected Wetlands and Terrestrial Habitat
3. Surface and Groundwater Hydrology
4. Geology and Soils
5. Water Quality
6. Water Rights
7. Seismic Stability
8. Aesthetics
9. Air
10. Land Use
11. Historic and Cultural Resources
12. Environmental Health and Safety
13. Public Services and Utilities
14. Energy and Natural Resources

15. Effects of Climate Change Including Sea Level Rise
16. Greenhouse Gas Emissions

Potential adverse effects are likely in each category, though it is premature to determine whether or not such effects, in a particular category, will be significant for purposes of CEQA.

Subsequent comments on the Notice of Preparation, comments from the scoping meetings, and ensuing analyses will identify additional environmental impacts, if any.

SCOPING MEETINGS

The schedule for this EIR/EIS depends upon the development of the draft BDCP, which is expected to occur in early 2009. The federal Notice of Intent (NOI) for the BDCP was published in the federal Register on February 13, 2009. Joint Public Scoping meetings for the Federal NOI and this NOP are scheduled to take place at the following times and locations:

- March 9, 2009 at 6-10 pm. Chico Masonic Family Center, 1110 West East Avenue, Chico, CA 95926.
- March 10, 2009 at 6-10 pm. San Jose Marriott, Blossom Hill Room and Almaden Room, 301 South Market Street, San Jose, CA 95113.
- March 11, 2009 at 6-10 pm. Bakersfield Marriott at the Convention Center, Salon A and Hammons Room, 801 Truxtun Avenue Bakersfield, CA 93301.
- March 12, 2009 at 1-4 pm. Los Angeles Junipero Serra State Building, 320 West Fourth, Los Angeles, CA 90013.
- March 16, 2009 at 6-10 pm. San Diego Marina Village Conference Center, Captains Room and Room C8, 1936 Quivera Way San Diego, CA 92109.
- March 17, 2009 at 6-10 pm. Merced High School, 205 West Olive Avenue Merced, CA 95344.
- March 18, 2009 at 6-10 pm. Davis Veterans Center, 203 East 14th Street, Davis CA 95616.
- March 19, 2009 at 1-4 pm. Sacramento Hyatt Regency, 1209 L Street Sacramento, CA 95814.
- March 23, 2009 at 6-10 pm. Brentwood Community Multipurpose Room 730 Third Street, Brentwood CA 94513.
- March 24, 2009 at 6-10 pm. Stockton Civic Memorial Auditorium 525 North Center Street, Stockton, CA 95202.
- March 25, 2009 at 6-10 pm. Fairfield Hilton Garden Inn, Willow and Larkspur Rooms, 2200 Gateway Court, Fairfield, California 94533.
- March 26, 2009 at 6-10 pm. Clarksburg Community Church, 52910 Netherlands Avenue, Clarksburg, CA 95612.

Anyone interested in more information concerning the EIR/EIS process, or anyone who has information concerning the study or suggestions as to significant issues, should contact Delores Brown as provided below.

WRITTEN COMMENTS

This notice is being furnished to obtain suggestions and information from other agencies and the public on the scope of issues and alternatives that will be addressed in the EIR component of the joint EIR/EIS. The primary purpose of the scoping process is to identify important issues raised by the public and affected agencies related to the issuance of ITPs for the BDCP. Written comments from interested parties are invited to ensure that the full range of issues related to the development of the BDCP and issuance of the ITPs are identified. All comment received, including names and addresses, will become part of the official administrative record and may be made available to the public. Written comments on this part of the Scoping process will be accepted until May 14, 2009.

Within 30 days after receiving the Notice of Preparation, each Responsible Agency and Trustee Agency shall provide the Lead Agency with specific detail about the scope, significant environmental issues, reasonable alternatives, and mitigation measures related to the Responsible Agency's or Trustee Agency's area of statutory responsibility that will need to be explored in the EIR/EIS. In accordance with CEQA Guidelines Section 15082(b)(1)(B), responsible and trustee agencies should indicate their respective level of responsibility for the project in their response.

Department practice is to make comments, including names, home addresses, home phone numbers, and email addresses of respondents, available for public review. Individual respondents may request that we withhold their name and/or home addresses, etc., but if you wish us to consider withholding this information you must state this prominently at the beginning of your comments. In addition, you must present a rationale for withholding this information. This rationale must demonstrate that disclosures would constitute a clearly unwarranted invasion of privacy. Unsupported assertions will not meet this burden. In the absence of exceptional, documentable circumstances, this information will be released. The Department will always make submissions from organizations or businesses, and from individuals identifying themselves as representatives of or officials of organizations or businesses, available for public inspection in their entirety.

Written comments on the scope of the EIR/EIS should be sent to Ms. Delores Brown, Chief, Office of Environmental Compliance, Department of Water Resources, P.O. Box 942836, Sacramento, CA 94236 or by email at BDCPcomments@water.ca.gov.

Barbara J McDonnell

Barbara McDonnell
Chief, Division of Environmental Services
Department of Water Resources

Date 2/13/09

IMPLEMENTING AGREEMENT

for the

BAY DELTA CONSERVATION PLAN

by and among

THE UNITED STATES FISH AND WILDLIFE SERVICE

THE NATIONAL MARINE FISHERIES SERVICE

THE CALIFORNIA DEPARTMENT OF WATER RESOURCES

THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

AND

STATE WATER PROJECT/CENTRAL VALLEY PROJECT CONTRACTORS

DRAFT

Table of Contents

Exhibits

1.0 PARTIES TO THIS AGREEMENT

This Implementing Agreement (Agreement) is made and entered into by and among the State of California, acting through the California Department of Water Resources (DWR) and the California Department of Fish and Wildlife (CDFW) of the State of California Natural Resources Agency, certain State Water Project and Central Valley Project contractor water agencies (SWP/CVP Contractors), and the United States, acting through the Fish and Wildlife Service (USFWS) of the United States Department of the Interior and the National Marine Fisheries Service (NMFS) of the United States Department of Commerce. This Agreement governs the implementation of the joint habitat conservation plan (HCP) and natural community conservation plan (NCCP) for the Sacramento–San Joaquin Delta (Bay Delta Conservation Plan, Plan, or BDCP). [Note to Reviewers: the parties will further consider the level of agency signatory prior to the release of the final Implementing Agreement].

The United States Bureau of Reclamation (Reclamation) of the United States Department of the Interior is not a Party to this Agreement. References to Reclamation's roles and responsibilities in this Agreement reflect those as set forth in the BDCP. There are no obligations on behalf of Reclamation established in this Agreement.

2.0 RECITALS AND PURPOSES OF THE AGREEMENT

2.1 Recitals

The Parties have entered into this Agreement in consideration of the following facts:

2.1.1 The DWR is a State agency within the California Natural Resources Agency charged with responsibility for operating and maintaining the State Water Project's existing facilities, including the Clifton Court Forebay and the Banks Pumping Plant. DWR enters into this Agreement pursuant to the Burns–Porter Act and other applicable laws of the State of California.

2.1.2 The SWP/CVP Contractors receive water under contract from the State Water Project and the Central Valley Project. The SWP/CVP Contractors will participate in various aspects of the implementation of the BDCP, including the funding and implementation of certain portions of the Conservation Measures.

2.1.3 The USFWS is a federal agency within the United States Department of the Interior charged with responsibility for administering the federal Endangered Species Act (ESA) and providing for the conservation of federally listed fresh water aquatic and terrestrial species and their habitat. USFWS is

authorized to issue take permits under Section 10(a)(1)(B) of the ESA for the incidental take of federally listed fresh water aquatic and terrestrial species provided that applicants for such permits submit an HCP that meets permit issuance criteria set forth in Section 10 of the ESA and its implementing regulations. USFWS enters into this Agreement pursuant to the ESA, the Fish and Wildlife Coordination Act, and the Fish and Wildlife Act of 1956.

2.1.4 The NMFS is a federal agency within the United States Department of Commerce charged with responsibility for administering the ESA and providing for the conservation of federally listed anadromous and marine species and their habitat. NMFS is authorized to issue take permits under Section 10(a) of the ESA for the incidental take of federally listed anadromous and marine species provided that applicants for such permits submit an HCP that meets permit issuance criteria set forth in Section 10 of the ESA. NMFS enters into this Agreement pursuant to the ESA and its implementing regulations.

2.1.5 CDFW is a State agency within the California Natural Resources Agency charged with responsibility for administering the Natural Community Conservation Planning Act (NCCPA). CDFW is authorized to issue permits under Section 2835 of the Fish & Game Code to authorize the take of any species, whether or not it is listed as an endangered, threatened, candidate, or fully protected species under State law, where the conservation and management of the species is provided for in an NCCP approved by CDFW. CDFW enters into this Agreement pursuant to the NCCPA.

2.1.6 The U.S. Bureau of Reclamation (Reclamation) is a federal agency within the United States Department of the Interior charged with responsibility for operating and maintaining the Central Valley Project's existing Delta facilities, including the Jones Pumping Plant and Delta Cross Channel. Reclamation is not a permit applicant for the BDCP under the ESA or NCCPA. However, Reclamation is a participant in the BDCP.

2.1.7 In October 2006, Reclamation, the Parties and several other entities entered into a Planning Agreement that identified the goals, objectives, guidelines, criteria and procedures for the preparation of a joint HCP and NCCP (Planning Agreement). A First Amendment to the Planning Agreement was executed in 2009. The BDCP and this Agreement have been prepared in accordance with the Planning Agreement.

2.1.8 The overall goal of the BDCP is to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework. To accomplish this goal, the Plan:

- Provides for the conservation and management of Covered Species within the Plan Area through the preservation, restoration, and enhancement of aquatic, riparian and associated terrestrial natural communities and ecosystems that support these Covered Species and through other conservation actions.

- Includes measures to minimize and mitigate to the maximum extent practicable the effects on the Covered Species.

- Provides a means by which Covered Activities and Associated Federal Actions can be carried out in a manner that complies with applicable State and federal environmental laws.

- Sets out a comprehensive approach to coordinating and standardizing applicable requirements for Covered Activities and Associated Federal Actions within the Plan Area.

- Provides an allocation of responsibility among the Parties for BDCP requirements, taking into account the impacts of the Covered Activities and Associated Federal Actions.

- Establishes a more efficient and effective approach to regulatory compliance with State and federal endangered species laws than through project-by-project, species-by-species permitting.

- Provides clear expectations and Assurances and Protections.

2.1.9 The provisions of the BDCP were developed to satisfy the requirements of the Sacramento–San Joaquin Delta Reform Act of 2009, California Water Code (Water Code) § 85300 *et seq.*

2.1.10 DWR and the participating SWP/CVP Contractors have submitted the BDCP to USFWS and NMFS for the purpose of obtaining incidental take authorizations under Section 10(a)(1)(B) of the ESA for the species covered by the BDCP, as appropriate, within the Plan Area.

2.1.11 Reclamation has incorporated the BDCP into a biological assessment to support a Section 7 consultation for Reclamation's

actions within the Plan Area and the resulting Integrated Biological Opinion and related Incidental Take Statement that will be issued prior to the execution of this Agreement.

2.1.12 DWR and the SWP/CVP Contractors have submitted the BDCP to CDFW for the purpose of obtaining a permit for take of the Covered Species within the Plan Area pursuant to Section 2835 of the NCCPA.

2.1.13 DWR and the participating SWP/CVP Contractors are agreeing to substantial commitments of water, land, other natural resources, financial resources, human resources and other assets to provide for the conservation and management of the Covered Species, their habitats and other natural communities, in exchange for the Fish and Wildlife Agencies providing take authorizations, and the Assurances.

2.2 Purposes

The purposes of this Agreement are to:

- Clarify the provisions of the BDCP and the processes the Parties intend to follow to ensure successful implementation of the BDCP in accordance with the take authorizations and applicable law.

- Ensure that each of the terms and conditions of the BDCP, this Agreement, the Permits, and the Incidental Take Statement are properly implemented.

- Set forth the remedies and recourse should any Party fail to perform its obligations.

- Delineate the responsibilities, financial or otherwise (including the commitment and management of resources), among the entities responsible for the financing and/or implementation of the BDCP.

- Satisfy the requirement that an NCCP include an implementation agreement containing provisions described in the NCCPA.

- Set out the Assurances and Protections provided to the Authorized Entities.

3.0 DEFINITIONS

The following terms as used in this Agreement will have the meanings set forth below. Terms specifically defined in State or Federal statutes, including the ESA or the NCCPA, or the regulations adopted under those statutes, shall have the same meaning when used in this Agreement. Where such terms are defined in this Section 3.0, those definitions may elaborate on, but are not intended to conflict with, such statutory or regulatory definitions.

3.1 "Adaptive Management Team" means the team that will have primary responsibility for the development of performance measures, effectiveness monitoring and research plans; analysis, synthesis and evaluation of monitoring and research results; solicitation of independent scientific review; development of proposals to modify Conservation Measures and biological objectives and other actions set out in Chapter 3.6. The Adaptive Management Team will be chaired by the Science Manager, and will consist of representatives of DWR, Reclamation, the two participating SWP/CVP Contractors (a single representative of the SWP Contractors, a single representative of the CVP Contractors), CDFW, USFWS and NMFS as voting members. Advisory, non-voting members will be the Lead Scientist for the Interagency Ecological Program, the Lead Scientist for the Delta Science Program or a designee, and the Director of the NOAA Southwest Fisheries Science Center.

3.2 "Agreement" means this Implementing Agreement, which incorporates the BDCP by reference.

3.3 "Annual Progress Report" means the annual report prepared by the Implementation Office, as provided in Section 16.3.1.

3.4 "Associated Federal Actions" means the otherwise lawful activities and projects described in Chapter 4 that may be implemented in the Plan Area by Reclamation for which Incidental Take is authorized by USFWS and NMFS pursuant to the Incidental Take Statement in the Integrated Biological Opinion.

3.5 "Assurances and Protections" shall mean (1) the assurances provided to the Permittees by USFWS and NMFS pursuant to the "No Surprises" rule and by CDFW pursuant to Fish & Game Code Section 2820(f); and (2) the procedural mechanisms provided to Reclamation by USFWS and NMFS pursuant to the terms of the Memorandum and as described in this Agreement.

3.6 "Authorized Entities" means DWR, Reclamation, and those SWP/CVP Contractors that receive take authorizations pursuant to the BDCP.

3.7 "Authorized Entity Group" means the group established to provide program oversight and general guidance to the Program Manager regarding the implementation of the Plan. The Authorized Entity Group will consist of the Director of DWR, the Regional Director for Reclamation, a representative of the participating SWP Contractors, and a representative of the participating CVP Contractors, or their designees.

Such designee shall be duly authorized to exercise the authority of the principal and may include a deputy or principal assistant.

3.8 "Bay Delta Conservation Plan," "BDCP" and "Plan" mean the joint HCP and NCCP prepared by the Permittees in coordination with Reclamation and with the technical assistance of the Fish and Wildlife Agencies.

3.9 "Central Valley Project" or "CVP" means the Central Valley Project, as defined in 3404(d) of Title XXXIV of Public Law 102-575, and operated by Reclamation.

3.10 "Central Valley Project Improvement Act" or "CVPIA" means Title XXXIV of Public Law 102-575.

3.11 "CEQA" means the California Environmental Quality Act (Cal. Pub. Res. Code §§ 21000–21177) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.12 "CESA" means the California Endangered Species Act (Fish & Game Code §§ 2050–2116) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.13 "Changed Circumstances," as defined by 50 C.F.R. § 17.3 and § 222.102, means changes in circumstances affecting a species or the geographic area covered by the BDCP that have been reasonably anticipated by the Parties and that have been planned for in the BDCP. "Changed Circumstances" are defined under Fish & Game Code § 2805 (c) to mean reasonably foreseeable circumstances that could affect a Covered Species or the Plan Area. Changed Circumstances and planned responses to those circumstances are described in Chapter 6.4.2. Changes in circumstances that are not identified as Changed Circumstances will be treated as unforeseen circumstances.

3.14 "Chapter" means a chapter, subchapter, or section of the BDCP.

3.15 "Consensus" means that either all voting members of the Adaptive Management Team or all voting members of the Real Time Operations Team agree to the proposal at hand, or that no voting member dissents from the proposal.

3.16 "Conservation Measure" means each action detailed in the Conservation Strategy in Chapter 3 to minimize and mitigate impacts, to the maximum extent practicable, and to provide for the conservation and management of Covered Species.

3.17 "Conservation Strategy" means the program described in Chapter 3 that consists of four components: (1) biological goals and objectives; (2) Conservation Measures; (3) adaptive management; and (4) monitoring.

3.18 "Coordinated Operation Agreement" means the Agreement between the United States of America and the State of California for the Coordinated Operation of the Central Valley Project and the State Water Project dated November 24, 1986.

3.19 "Covered Activities" means the otherwise lawful activities and projects described in Chapter 4 that may be implemented in the Plan Area by non-federal Parties for which take is authorized by the Fish and Wildlife Agencies pursuant to the Permits.

3.20 "Covered Species" means the species, listed and non-listed, for which take may be authorized and for which the BDCP provides measures to minimize and mitigate, to the maximum extent practicable, the impacts of Covered Activities, and provides for the conservation and management of those species. Covered Species are listed in Exhibit A to this Agreement.

3.21 "Delta" and "Sacramento–San Joaquin Delta" mean the Sacramento–San Joaquin Delta as defined in Water Code § 12220.

3.22 "CDFW" means the California Department of Fish and Wildlife, a department of the California Natural Resources Agency.

3.23 "Effective Date" means the date on which this Agreement takes effect, as provided in Section 21.1.

3.24 "ESA" means the Federal Endangered Species Act of 1973, as amended (16 U.S.C §§ 1531–1544) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.25 "Federally Listed Species" means the species that are listed as threatened or endangered species under the ESA. See 50 C.F.R. § 17.11.

3.26 "Federal Permits" means the federal Incidental Take Permits issued by USFWS and NMFS to the Permittees, pursuant to Section 10(a)(1)(B) of the ESA.

3.27 "Fish and Wildlife Agencies" means USFWS, NMFS and CDFW.

3.28 "Fully Protected Species" means the Covered Species that are identified in Fish & Game Code sections 3511, 4700, 4800, 5050 and 5515.

3.29 "Implementation Office" means the office that, under the direction of a Program Manager, will manage, coordinate, oversee, and report on all aspects of Plan administration, subject to the oversight of the Authorized Entity Group and certain limitations set out in the BDCP and this Agreement, as further described in Section 15.2.

3.30 "Incidental Take" under federal ESA means the take of a covered fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity.

3.31 "Incidental Take Statement" means the statement that is attached to the integrated biological opinion that is issued by USFWS and NMFS. It anticipates and authorizes the amount or extent of take for federally listed species.

3.32 "Integrated Biological Opinion" means the joint biological opinion that is issued by USFWS and NMFS to complete the Section 7 consultation associated with the BDCP. The Integrated Biological Opinion will also serve as a Conference Opinion for certain Covered Species and proposed critical habitat.

3.33 "Listed Species" means State Listed Species or Federally Listed Species.

3.34 "Memorandum" means a separate memorandum, or similar agreement, describing Reclamation's roles and responsibilities in the implementation of BDCP.

3.35 "Migratory Bird Treaty Act" means the federal Migratory Bird Treaty Act (16 U.S.C. §§ 703–712) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.36 "NMFS" means the National Marine Fisheries Service, an agency of the Department of Commerce.

3.37 "NCCPA" means the California Natural Community Conservation Planning Act (Fish & Game Code §§ 2800–2835), and all rules, regulations and guidelines promulgated pursuant to that Act.

3.38 "NEPA" means the National Environmental Policy Act (42 U.S.C. §§ 432–4347) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.39 "Non-listed Species" means a species that is not listed as endangered or threatened under the ESA or is not listed as endangered or threatened, or designated as a candidate for such status, under CESA.

3.40 "NPPA" means the California Native Plant Protection Act (Fish & Game Code §§ 1900–1913) and all rules, regulations, and guidelines promulgated pursuant to that Act.

3.41 "Other Authorized Entities" means the entities described in Chapter 7.1.2.2 that receive take authorizations through the Permits issued to DWR.

3.42 "Other Stressors Conservation Measures" means a certain category of conservation measures, as described in Conservation Measures 13–21.

3.43 "Party" and "Parties" mean the signatories to this Agreement, individually and collectively.

3.44 "Permit Oversight Group" means the State and federal fish and wildlife agencies, specifically, the Regional Director of USFWS, the Regional Administrator of NMFS, and the Director of CDFW or their designees. Such designee shall be duly authorized to exercise the authority of the principal and may include a deputy or principal assistant.

3.45 "Permits" mean the Federal Permits and the State Permit.

3.46 "Permittees" means DWR and the SWP/CVP Contractors.

3.47 "Plan Area" means the area covered by the BDCP, as described in Chapter 1 and depicted in Exhibit B of the Plan.

3.48 "Planning Agreement" means the Planning Agreement regarding the Bay Delta Conservation Plan executed in October of 2006 by the Parties, Reclamation and several other entities, as amended in 2009.

3.49 "Reserve Unit Management Plan" means a Reserve Management Plan as described in Chapter 3.4.11.2.2.

3.50 "Reserve System" means the assemblage of land acquired and dedicated in perpetuity by either fee interest or conservation easement that is designed to advance the preservation, conservation, enhancement and restoration objectives of the Conservation Strategy of the BDCP.

3.51 "Rough Proportionality" means implementation of BDCP Conservation Measures that is roughly proportional in time and extent to the impact on habitat or Covered Species authorized under the BDCP and as required by Fish & Game Code § 2820(b)(9).

3.52 "State-Listed Species" means the species that are listed as threatened or endangered species, or a candidate for such status, under CESA, as fully protected species under the Fish & Game Code, or as rare species under the NPPA. See Cal. Code Regs., tit. 14, §§ 670.2, 670.5, Fish & Game Code §§3511, 4700, 4800, 5050 and 5515. Published notifications in the California Regulatory Notice Register identify candidate species.

3.53 "State Permit" means the State NCCPA take Permit issued to the Permittees pursuant to Section 2835 of the Fish & Game Code.

3.54 "State Water Project" or "SWP" means the State Water Project as authorized by Water Code sections 12930 *et seq*. and Water Code sections 11100 *et seq*. and operated by DWR.

3.55 "Supporting Entity" means an agency, organization or individual that performs certain Plan implementation tasks, at the request of the Program Manager, as provided in Section 15.7 and further described in Chapter 7.1.9.

3.56 "SWP/CVP Contractors" means the individual water agencies that hold water delivery contracts with DWR for SWP water (SWP Contractors) or Reclamation for CVP water (CVP Contractors), or an entity comprising such agencies, and that have executed this Agreement. SWP/CVP Contractors may include the State and Federal Water Contractors Agency (SFWCA), a joint exercise of powers agency, and the San Luis & Delta Mendota Water Authority (SLDMWA), a joint exercise of powers agency. The SWP/CVP Contractors are listed on Exhibit H to this Agreement.

3.57 "Take" and "Taking" mean, in the context of the ESA to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such conduct. 16 U.S.C. § 1532(19)and in the context of the Fish & Game Code Section 86 mean to hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill.

3.58 "Take Authorizations" means the Federal Permits, the State Permit, and the Incidental Take Statement issued with the Integrated Biological Opinion to collectively authorize take associated with Covered Activities and Associated Federal Actions.

3.59 "Unforeseen Circumstances" means (a), in the context of the ESA, changes in circumstances affecting a Covered Species or geographic area covered by the BDCP that could not reasonably have been anticipated by the Permittees, USFWS or NMFS at the time of the BDCP's negotiation and development, and that result in a substantial and adverse change in the status of a Covered Species (50 C.F.R. §§17.2 and 222.102), and (b), in the context of the NCCPA, changes affecting one or more species, habitats, natural communities, or the geographic area covered by a conservation plan that could not reasonably have been anticipated at the time of Plan development, and that result in a substantial adverse change in the status of one or more Covered Species (Fish & Game Code § 2805(k)).

3.60 "USFWS" means the United States Fish and Wildlife Service, an agency of the United States Department of the Interior.

4.0 FINDINGS

4.1 Findings by USFWS and NMFS

As part of their findings, USFWS and NMFS will make certain determinations, after opportunity for public comment, regarding the adequacy of the BDCP to meet the permitting requirements of the ESA. To issue Permits pursuant to the BDCP, USFWS and NMFS must find that: (1) the taking of Covered Species within the Plan Area in accordance with the BDCP will be incidental to the carrying out of otherwise lawful activities; (2) the actions set forth in the BDCP will, to the maximum extent practicable, monitor, minimize and mitigate the impacts of such incidental taking; (3) adequate assurances of funding to implement the BDCP have been provided; (4) the requested taking of Covered Species will not appreciably reduce the likelihood of survival and recovery of such species in the wild or result in the destruction or adverse modification of critical habitat; and (5) the BDCP contains all measures deemed necessary and appropriate by USFWS and NMFS for the purposes of Section 10 of the ESA.

4.2 Findings by CDFW

4.2.1 NCCPA

In a separate document, entitled the "Findings of Fact and NCCPA Permit for the Bay Delta Conservation Plan," CDFW will make certain findings, after opportunity for public comment, regarding the adequacy of the BDCP and this Agreement to meet the permitting requirements of the NCCPA. To issue a Permit under the NCCPA, CDFW must find that the BDCP adequately provides for the conservation and management of Covered Species and their habitat and otherwise satisfies all legal requirements under Section 2820 of the Fish & Game Code, as follows:

(1) The BDCP has been developed consistent with the process identified in the Planning Agreements entered into pursuant to Fish & Game Code § 2810.

(2) The BDCP integrates adaptive management strategies that are periodically evaluated and modified based on the information from the monitoring program and other sources, which will assist in providing for the conservation of Covered Species and ecosystems within the Plan Area.

(3) The BDCP provides for the protection of habitat, natural communities, and species diversity on a landscape or ecosystem level through the creation and long-term management of habitat reserves or other measures that provide equivalent conservation of Covered Species appropriate for land, aquatic, and marine habitats within the Plan area.

(4) The development of reserve systems and conservation measures in the Plan Area provides, as needed to provide for the conservation of species, all of the following:

(A) Conserving, restoring, and managing representative natural and semi-natural landscapes to maintain the ecological integrity of large habitat blocks, ecosystem function, and biological diversity.

(B) Establishing one or more reserves or other measures that provide equivalent conservation of Covered Species within the Plan Area and linkages between them and adjacent habitat areas outside of the Plan Area.

(C) Protecting and maintaining habitat areas that are large enough to support sustainable populations of Covered Species.

(D) Incorporating a range of environmental gradients (such as slope, elevation, aspect, and coastal or inland characteristics) and high habitat diversity to provide for shifting species distributions due to Changed Circumstances.

(E) Sustaining the effective movement and interchange of organisms between habitat areas in a manner that maintains the ecological integrity of the habitat areas within the Plan Area.

(5) The BDCP identifies activities, and any restrictions on those activities, allowed within reserve areas that are compatible with the conservation of species, habitats, natural communities, and their associated ecological functions.

(6) The BDCP contains specific Conservation Measures that are intended to meet the biological needs of Covered Species and that are based upon the best available scientific information regarding the status of Covered Species and the impacts of permitted activities on those species.

(7) The BDCP contains a monitoring program.

(8) The BDCP contains an adaptive management program.

(9) The BDCP includes the estimated timeframe and process by which the reserves or other Conservation Measures are to be implemented, including obligations of the Plan signatories and consequences of the failure to implement such measures in a timely manner.

(10) The BDCP contains provisions that ensure adequate funding to carry out the conservation actions identified in the BDCP.

(11) This Agreement includes provisions defining species coverage, including any conditions of coverage.

(12) This Agreement includes provisions for establishing the long-term protection of any habitat reserve or other measures that provide equivalent conservation of Covered Species.

(13) This Agreement includes specific terms and conditions, which, if violated, would result in the suspension or revocation of the State Permit, in whole or in part. These terms and conditions address, but are not limited to, provisions specifying the actions CDFW shall take under all of the following circumstances:

(A) If the Permittees fail to provide adequate funding.

(B) If the Permittees fail to maintain the Rough Proportionality between impacts on habitat or Covered Species and Conservation Measures.

(C) If the Permittees adopt, amend, or approve any plan or project without the concurrence of the CDFW that is inconsistent with the objectives and requirements of the approved Plan.

(D) If the level of Take exceeds that authorized by the State Permit.

(14) This Agreement includes provisions specifying procedures for amendment of the Plan and this Agreement.

(15) This Agreement includes provisions ensuring implementation of the monitoring program and adaptive management program.

(16) This Agreement includes provisions for oversight of Plan implementation for purposes of assessing mitigation performance, funding, and habitat protection measures.

(17) This Agreement includes provisions for periodic reporting to CDFW and the public for purposes of information and evaluation of Plan progress.

(18) This Agreement includes mechanisms to ensure adequate funding to carry out the conservation actions identified in the Plan.

(19) This Agreement includes provisions to ensure that implementation of Conservation Measures on a Plan basis is roughly proportional in time and extent to the impact on habitat or Covered Species authorized under the Plan.

As required by Fish & Game Code, Section 2821, concurrent with its approval of the BDCP, the CDFW will establish a list of species that are authorized for take pursuant to Fish & Game Code, Section 2835, and make specific findings to support coverage pursuant to Fish & Game Code, Section 2820. CDFW must further determine whether

the mitigation measures specified in the Plan are consistent with Fish & Game Code, Section 2801, subdivision (d).

4.2.2 The Sacramento-San Joaquin Delta Reform Act of 2009

CDFW has found that the BDCP satisfies the requirements of the Sacramento–San Joaquin Delta Reform Act of 2009, Water Code sections 85300 *et seq*. Specifically, as required by Water Code, Section 85320, CDFW has found:

- The BDCP complies with Chapter 10 (commencing with Section 2800) of Division 3 of the Fish & Game Code such that the BDCP can be approved as an NCCP.

- The Environmental Impact Report (EIR) prepared for the BDCP complies with Division 13 (commencing with Section 21000) of the California Public Resources Code, including by providing a comprehensive review and analysis of all of the following:

  - A reasonable range of flow criteria, rates of diversion, and other operational criteria required to satisfy the criteria for approval of a natural community conservation plan as provided in subdivision (a) of Section 2820 of the Fish & Game Code, and other operational requirements and flows 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.

  - A reasonable range of Delta conveyance alternatives, including through-Delta, dual conveyance, and isolated conveyance alternatives and including further capacity and design options of a lined canal, an unlined canal, and pipelines.

  - The potential effects of climate change, possible sea level rise up to 55 inches, and possible changes in total precipitation and runoff patterns on the conveyance alternatives and habitat restoration activities considered in the EIR.

  - The potential effects on migratory fish and aquatic resources.

  - The potential effects on Sacramento River and San Joaquin River flood management.

  - The resilience and recovery of Delta conveyance alternatives in the event of catastrophic loss caused by earthquake or flood or other natural disaster.

- The potential effects of each Delta conveyance alternative on Delta water quality.

- In compliance with Water Code Section 85321, the BDCP includes a transparent, real-time operational decision making process in which fishery agencies ensure that applicable biological performance measures are achieved in a timely manner with respect to water system operations.

5.0 ROLE OF BUREAU OF RECLAMATION IN THE BDCP

Federal agencies, such as Reclamation, comply with the ESA through the Section 7 consultation process and not through the Section 10 HCP permitting process. Given the scale of Reclamation's CVP operations and the degree to which these operations are coordinated with the SWP, BDCP has been designed to address both SWP and CVP operations in the Delta. Reclamation will enter into a Memorandum, or similar agreement, with the Parties that sets out Reclamation's roles and responsibilities pursuant to the BDCP and establishes processes to ensure that Reclamation's actions are implemented in a manner consistent with the Plan.

6.0 INCORPORATION OF THE BDCP

The BDCP and each of its provisions are intended to be, and by this reference are, incorporated herein; provided, wherever possible, the terms of this Agreement and the terms of the BDCP shall be interpreted to be supplementary to each other; provided further, in the event of a direct conflict between the terms of this Agreement and the BDCP, the terms of this Agreement shall control.

7.0 GENERAL OBLIGATIONS OF THE PARTIES

7.1 Authorized Entities

The Authorized Entities will fulfill all of their respective obligations under this Agreement, the BDCP, the Permits and the Integrated Biological Opinion. The Authorized Entities' general obligations include:

- Implementing the Conservation Measures and other BDCP actions as specified in the Plan, in Chapter 3 and this Agreement.

- Participating in the Authorized Entity Group as described in Chapter 7.1.3.

- Participating in the Adaptive Management and Monitoring Program.

- Participating in the scientific research program.

- Conferring with the Implementation Office and Permit Oversight Group regarding Plan implementation matters and obtaining concurrence or approval of Permit Oversight Group where required.

- Funding a portion of the Conservation Strategy.

7.2 Fish and Wildlife Agencies

The Fish and Wildlife Agencies will fulfill all of their respective obligations under this Agreement, the BDCP, the Permits and the Integrated Biological Opinion. The Fish and Wildlife Agencies' general obligations include:

- Participating in the Permit Oversight Group.

- Participating in the Adaptive Management and Monitoring Program.

- Participating in the scientific research program.

- Conferring with the Implementation Office regarding Plan implementation matters.

- Providing one written communication, to the maximum extent practicable, for responses, reviews, concurrence, acceptance, or approvals of BDCP reports, plans, and other documents.

- Funding a portion of the Conservation Strategy.

- Adhering to the Assurances and Protections provided under this Agreement.

- Investigating and taking appropriate steps to further reduce the adverse effect of all factors that stress the fish and wildlife species dependent upon the Bay-Delta estuary.

- Providing assistance to third parties engaged in activities in the Delta to help ensure that such activities proceed in compliance with State and federal endangered species laws and in a manner that does not compromise the likelihood of success of the BDCP.

- Implementing, where appropriate, certain BDCP actions as specified in the Plan and this Agreement.

7.3 Collaboration Among Parties

The Parties agree that frequent collaboration is essential to the success of the BDCP. Each Party will use its best efforts and act in good faith to: meet and confer with any other Party upon the request of that Party to address matters pertaining to the BDCP, the Permits, or this Agreement; provide relevant, non-proprietary, non-confidential information pertaining to the BDCP upon the request of any Party; provide timely responses to requests from any Party for advice, concurrence, or review and comment on reports, surveys or other documents, regarding matters pertaining to the BDCP, the Permits, or this Agreement; accomplish implementation tasks assigned to a Party by the Implementation Office consistent with the direction given; and cooperate, to the fullest extent possible, on matters important to the successful implementation of the BDCP and achievement of the purposes of the Plan.

8.0 TAKE AUTHORIZATIONS

The Fish and Wildlife Agencies have found that the BDCP fulfills the requirements of the ESA and the NCCPA for the issuance by the Fish and Wildlife Agencies of Take Authorizations for the Covered Activities and Associated Federal Actions.

8.1 Take Authorizations Issued to Authorized Entities

8.1.1 Permittees

Concurrent with their execution of this Agreement, the USFWS and NMFS will each issue a Federal Permit to DWR and the SWP/CVP Contractors that authorizes the incidental take of Covered Species resulting from Covered Activities, and CDFW will issue a State Permit to DWR and the SWP/CVP Contractors that authorizes the take of Covered Species resulting from Covered Activities.

The take authorizations will cover the Permittees, including all of their respective officers, directors, employees, agents, subsidiaries, member agencies, contractors, and the Supporting Entities, as applicable, who engage in any Covered Activity. All contracts between Permittees and any such person or entity regarding the implementation of a Covered Activity will require compliance with the Permits, and Permittees shall remain ultimately responsible for compliance with the Permits.

8.1.2 Reclamation

USFWS and NMFS will issue an Incidental Take Statement in the Integrated Biological Opinion that authorizes take of Federally Listed Covered Species for Associated Federal Actions carried out by Reclamation and/or its agents and contractors, as described in Chapter 4.

8.2 Take Authorizations Issued to Other Authorized Entities

Through CM 21, certain third parties may seek take authorizations under the BDCP for ongoing operation of water diversions that are not associated with the SWP or CVP, and for remediation actions associated with those diversions, as described in Chapter 4. Those third parties who participate in the remediation program described in CM21 will be considered Other Authorized Entities.

Other Authorized Entities will receive take authorizations through DWR for the operation of their non-project diversions and for associated remediation actions through the Permits. An Other Authorized Entity will receive take authorization after executing a Certificate of Inclusion that meets the minimum requirements of the template set forth in Exhibit C of this Agreement and that has been approved by the Fish and Wildlife Agencies as to the specific Other Authorized Entity, to ensure compliance with the terms and conditions of the Plan and Permits. The Implementation Office will issue the Certificates of Inclusion for the State Permit and the Federal Permit issued by USFWS, and NMFS will issue the Certificates of Inclusion for the Federal Permit issued by NMFS after receiving a recommendation from the Implementation Office. The USFWS, NMFS, and CDFW agree and acknowledge that DWR shall not be liable for any violations of the terms and conditions of the Certificate of Inclusion that are committed by an Other Authorized Entity, provided the Fish and Wildlife Agencies have approved or issued the applicable Certificate of Inclusion. The Certificate of Inclusion shall be withdrawn and any Take authorization extended to the Other Authorized Entity shall be terminated by the Implementation Office and/or the Fish and Wildlife Agencies if the Other Authorized Entity fails to comply with such terms and conditions. Other Authorized Entities will not be members of the Authorized Entity Group nor will they have a specific role in the governance of the BDCP, other than as potential members of the Stakeholder Council. Other Authorized Entities shall remain responsible for compliance with other applicable laws.

8.3 Timing of Take Authorizations

As of the Effective Date, the Authorized Entities may take the Covered Species as a result of the implementation of Covered Activities and Associated Federal Actions in the Plan Area consistent with the provisions of this Agreement, the BDCP, the Integrated Biological Opinion, and the take authorizations.

8.4 No Take Beyond that Authorized

If CDFW determines, after conferring with the Implementation Office, that take is occurring beyond that authorized by the State Permit, CDFW, at its discretion, may suspend or revoke the State Permit, in whole or in part, pursuant to the procedures in Section 22.4 of this Agreement. Modifications to the BDCP through adaptive management or other provisions of the Plan that would result in an increase in take of Covered Species beyond that analyzed in the BDCP are not authorized. Any such

modification must be proposed, reviewed, and approved as an HCP and/or NCCP amendment in accordance with Section 23.3 of this Agreement.

8.5 Take Authorizations for Non-listed Covered Species

8.5.1 Federal Permits

Covered Species that have not been listed as of the Effective Date as threatened or endangered under the ESA have been treated in the BDCP as if they are Listed Species. In the event a Non-listed Covered Species becomes a Federally Listed Species in the future, incidental take of that species will, without any further action on the part of the Permittees, be automatically authorized by the Federal Permits pursuant to the terms of the BDCP and this Agreement.

8.5.2 Section 7 Consultations

Under the provisions of Section 7 and its implementing regulations, Incidental Take Statements contained in biological opinions apply only to species listed as endangered or threatened under the ESA. The Integrated Biological Opinion also serves as a conference opinion pursuant to 50 C.F.R. § 402.10(d) and (e) that evaluates all Covered Species as though listed and provides a basis for authorizing incidental take should non-listed Covered Species become listed in the future. In the event a Non-listed Covered Species becomes listed in the future, USFWS and NMFS will adopt the conference opinion as the final biological opinion for that species in accordance with 50 C.F.R. § 402.10(d) for Associated Federal Actions undertaken by Reclamation unless significant changes have occurred in the proposed action or the information used in the conference opinion. If the conference opinion can be adopted pursuant to 50 C.F.R. § 402.10(d), USFWS and NMFS will not request, impose, recommend, or require mitigation, conservation, compensation, enhancement, or other protection for such Covered Species, beyond that expressly provided in this Agreement.

8.5.3 State Permit

Under the NCCPA, take of unlisted species may be authorized under a Section 2835 permit. The State Permit authorizes the take of all Covered Species as of the Effective Date, regardless of whether they have been listed under State law.

8.6 Take Authorizations for Fully Protected Species

CDFW acknowledges and agrees that the BDCP includes measures that are intended to avoid, to the maximum extent practicable, the take of any Fully Protected Species as a result of the implementation of Covered Activities. However, if implementation of Covered Activities causes the take of a Fully Protected Species that is also a Covered Species, CDFW acknowledges and agrees that the take is authorized under the State Permit, pursuant to Fish & Game Code § 2835.

8.7 Take Authorizations for Plant Species Under the ESA

The take of Covered Species that are federally listed plants is not prohibited under the ESA, and therefore take authorization for federally listed plants is not necessary. Plant species included on the list of Covered Species are listed on the Federal Permits in recognition of the Conservation Measures and benefits provided for those plants under the BDCP and for the purpose of demonstrating the avoidance of jeopardy pursuant to the Section 7 Biological Opinion. As of the Effective Date, any reference in this Agreement or the BDCP to the authorized take of Covered Species shall, for the purpose of incidental Take authorized under Section 10(a)(1)(B), exclude plant species. To the extent permitted by law, if at any time during the term of this Agreement and the Federal Permits, any plant listed as a Covered Species becomes subject to the take prohibition under the ESA, the Federal Permits shall automatically become effective as to such species, and the Permittees shall receive incidental take authorization for such species.

8.8 Take Authorizations for Rare Plants Covered by the Native Plant Protection Act

CDFW acknowledges and agrees that the BDCP provides sufficient protection to Covered Species that are listed under the NPPA as rare plants for a finding of compliance with the NPPA.

8.9 Take Authorization for Species Covered by the Migratory Bird Treaty Act

The USFWS agrees to issue a Special Purpose Permit under 50 C.F.R. § 21.27 to authorize take of migratory birds protected by the Migratory Bird Treaty Act (MBTA) that are Covered Species and that are also listed under the ESA as threatened or endangered. The Special Purpose Permit will authorize take in the amount specified in the BDCP, subject to the terms and conditions set forth in the Federal Permits.

The Special Purpose Permit will be valid for three years and will be renewed pursuant to the MBTA, provided the Permittees are in compliance with the Federal Permits. Each renewal of the Special Purpose Permit shall be for a period of three years, or longer if the maximum permit term has been extended by law, provided that the Federal Permits remain in effect for such period. If and when any other Covered Species that is protected under the MBTA is designated a Federally Listed Species, the Federal Permits will automatically constitute a Special Purpose Permit for that species as of the date the Federal Permits become effective as to such species.

The Federal Permit will constitute a Special Purpose Permit under the Migratory Bird Treaty Act as provided at 50 C.F.R. § 21.27 for the Take of migratory birds protected by the MBTA that are Covered Species and that are also listed under the ESA as threatened

or endangered, subject to the terms and conditions specified in the Federal Permit, as of the Effective Date. The Special Purpose Permit will be valid for a period of three (3) years from the Effective Date, provided the Federal Permit remains in effect for such period. The Special Purpose Permit will be renewed in accordance with the Migratory Bird Treaty Act provided that the Permittees remain in compliance with the Federal Permit. Each such renewal will be valid for the maximum period allowable under the applicable regulations at the time of the renewal (which, as of the Effective Date is three (3) years), provided that the Federal Permit remains in effect for such period. If and when any other Covered Species that is a migratory bird becomes a Federal Listed Species, the Federal Permit will automatically constitute a Special Purpose Permit for that species as of the date the Federal Permit becomes effective as to such species as provided in this Agreement.

9.0 ACTIVITIES AND ACTIONS COVERED BY THE BDCP

9.1 Introduction

The BDCP is intended to provide the basis for the issuance of regulatory authorizations under the ESA and the NCCPA for a range of ongoing and anticipated activities in the Plan Area. These actions have been designated as either Covered Activities, which encompass those actions that will be undertaken by non-federal parties, or Associated Federal Actions, which refer to those actions that are authorized, funded, or carried out by Reclamation within the Plan Area. Covered Activities and Associated Federal Actions encompass all actions that are proposed for coverage under the Take Authorizations to be issued by the Fish and Wildlife agencies on the basis of the BDCP.

9.2 Covered Activities

The Covered Activities, as described in Chapter 4, consist primarily of activities related to the development and operation of water conveyance infrastructure associated with the SWP that will occur within the Plan Area. Specifically, those SWP-related actions covered by the BDCP involve the following actions:

- The development and operation of new Delta conveyance facilities, in conjunction with the operation of existing facilities, to transport and deliver water to State Water Project and Central Valley Project contractors.

- The maintenance and monitoring of water infrastructure and other facilities.

The Covered Activities also include actions associated with restoration of aquatic and terrestrial habitats, monitoring of Covered Species, and research and study of species and their habitats.

9.3 Associated Federal Actions

The BDCP Associated Federal Actions comprise those activities that are primarily the responsibility of Reclamation, including actions that are carried out, funded, or authorized by Reclamation in the Plan Area, and that would receive appropriate ESA coverage through Section 7. These actions relate to the operation of the CVP's Delta facilities, and conveyance through the SWP's Delta facilities to meet CVP purposes. These actions include the operation of existing CVP Delta facilities to convey and export water for project purposes, associated maintenance and monitoring activities, and the preservation, restoration and creation of habitat. The CVP is operated in coordination with the SWP under the Coordinated Operation Agreement. Associated Federal Actions are described in Chapter 4.

9.4 Integration of the BA and BDCP

The BDCP is a comprehensive plan designed to provide the basis for the biological assessment submitted by Reclamation to support the Section 7 consultation with USFWS and NMFS regarding its CVP-related actions within the Delta. The BDCP Conservation Strategy described in Chapter 3 and the Associated Federal Actions described in Chapter 4 have been incorporated into the biological assessment by Reclamation as its proposed action. The BDCP does not distinguish precisely between the effects on Covered Species and their habitat attributable to the CVP-related federal actions and to Covered Activities associated with the SWP. Rather, the BDCP includes a comprehensive analysis of the effects related to both the SWP and the CVP within the Plan Area, and sets out a Conservation Strategy that adequately addresses the totality of those effects. The incorporation of the BDCP into the biological assessment and subsequent Integrated Biological Opinion ensures comprehensive take authorization for Associated Federal Actions.

9.5 Approval, Adoption or Amendment of Future Plans or Projects by Permittees Inconsistent with the BDCP Objectives and Requirements

The approval, adoption, or amendment of a future plan or project by any Permittee other than the BDCP, that is substantially inconsistent with the objectives and requirements of the BDCP, without the concurrence of the Fish and Wildlife Agencies, is grounds for suspension or revocation of the State Permit. If CDFW determines, after conferring with the Permittees, that such a plan or project has been approved, adopted, or amended in a manner that is substantially inconsistent with the objectives or requirements of the BDCP, CDFW will provide written notice to the Permittees documenting the nature of the inconsistency.

Within fifteen (15) days of the issuance of such notice, CDFW, the Program Manager, and the Permittees shall meet and confer to consider the basis for CDFW's determination

and to identify steps that may be taken to address any such inconsistency. In the event that the inconsistency is not satisfactorily addressed within forty-five (45) days or within a period mutually agreed to by CDFW and the Permittees, CDFW, at its discretion, may suspend or revoke the State Permit, in whole or in part, pursuant to Section 22.4 of this Agreement. CDFW shall not revoke the State Permit until such time as the review process set forth in Section 15.8 of this Agreement has been completed, provided the process has been invoked by a Permittee.

10.0 CONSERVATION STRATEGY

The Conservation Strategy has been designed to achieve the BDCP's overall goals of restoring and protecting ecosystem health, water supply, and water quality in the Delta within a stable regulatory framework. The Conservation Strategy has been developed to meet the regulatory standards of Sections 7 and 10 of the ESA and the NCCPA. The BDCP describes the intended biological outcomes of the Conservation Strategy and details the means by which these outcomes will be achieved. The Conservation Strategy includes biological goals and objectives and conservation actions that appropriately minimize and mitigate the potential effects of Covered Activities and Associated Federal Actions on these resources and provides for the conservation and management of Covered Species and the natural communities upon which they depend. The Conservation Strategy also includes comprehensive programs for adaptive management, monitoring, and research. Additional details regarding the BDCP Conservation Strategy are found in Chapter 3 of the BDCP.

10.1 Biological Goals and Objectives

The biological goals and objectives reflect the ecological outcomes that are expected to occur through the implementation of the BDCP. Biological goals articulate the broad, intended outcomes of the BDCP. Biological objectives are specific, measurable outcomes that are expected to be achieved through the implementation of the Conservation Strategy. The biological goals and objectives are intended to provide the following functions.

- Describe the desired biological outcomes of the Conservation Strategy and how those outcomes will contribute to the long-term conservation of Covered Species and their habitats.

- Provide, where feasible, quantitative targets, metrics, and timeframes for achieving the desired outcomes.

- Serve as benchmarks by which to measure progress toward achieving those outcomes across multiple temporal and spatial scales.

- Provide metrics that will be used to assess the effectiveness of the Conservation Measures and inform decisions regarding potential

adjustments to the Conservation Measures through the adaptive management process.

Through the implementation of the Plan, including adjustments made through the adaptive management process, Permittees will satisfy their obligation to achieve the biological goals and objectives. Unless otherwise specified in the Plan or this Agreement, failure to achieve a biological goal(s) and/or objective(s) shall not be a basis for a determination by the Fish and Wildlife Agencies of non-compliance with the Plan or for the suspension or revocation of the Permits, provided the Permittees are properly implementing the BDCP and are in compliance with this Agreement and the terms and conditions of the Permits.

10.1.1 Relationship to Plan Implementation

Progress toward achieving the biological goals and objectives will be measured during implementation of the Plan through monitoring and targeted research. Biological objectives may be modified over time.

10.1.2 Process to Modify Biological Objectives

Biological objectives may be modified through either the adaptive management decision-making process as described in Chapter 3.6.3.5 and Section 10.3.4 of this Agreement or through the formal amendment process set out in Chapter 6.5.3 and Section 23.3 of this Agreement.

10.2 Conservation Measures

The Parties agree that the implementation of the Conservation Measures will, to the maximum extent practicable, minimize and mitigate impacts to Covered Species and provide for the conservation and management of Covered Species. These measures have been developed in accordance with the principles of conservation biology and address, among other things, ecological processes, environmental gradients, biological diversity, and regional aquatic and terrestrial linkages.

The Conservation Measures are expected to be sufficient to achieve the biological goals and objectives of the Plan during the 50-year timeframe for Plan implementation. Most of the Conservation Measures address several goals and objectives, and most objectives will be met through a combination of Conservation Measures.

The Conservation Measures are described in Chapter 3.4.

10.2.1 Decision Tree Process

10.2.1.1 Purpose and Function

The Parties agree that a key area of scientific uncertainty concerns the volume of Delta outflow that is necessary to advance the biological goals and objectives for both delta smelt and longfin smelt. To address these uncertainties, a "decision tree" process will be established to further investigate the role and contribution of fall and spring outflow for these smelt species. The Decision Tree process is a component of an adaptive management process and is described in CM1. The Parties acknowledge that the outflow requirements associated with the Decision Tree may be met through project operations or other means.

The Decision Tree process describes two potential outcomes for spring outflow and two potential outcomes for fall outflow. The outcomes of the Decision Tree are linked to scientific hypotheses. These hypotheses will be tested over the next approximately ten years using the best available scientific information. The specific outflow requirements for both delta smelt and longfin smelt at the time the new conveyance system becomes operational will be based on the best available science that tests these hypotheses associated with spring and fall outflow.

For permitting purposes, the applicants propose a project with operational and flow criteria intended to achieve the biological goals and objectives, which, among other things, include the range of operational and flow criteria for the high-outflow and low-outflow scenarios. It is expected that USFWS, CDFW, and NMFS will issue Permits for the proposed project, which may include as permit terms and conditions the operational and flow criteria related to the high-outflow scenario in the application.

However, all of the Parties, including USFWS, NMFS, and CDFW, agree that future science and improved information will be used as described herein to determine fall and spring outflow criteria applicable when the conveyance facilities become operational. The relevant Fish and Wildlife Agencies will make the final decision about criteria that will be implemented when the conveyance facilities become operational pursuant to the decision-making process set out in Section 10.2.1.2 and the review process described in Section 15.8.

10.2.1.2 Decision-making Process

The Parties agree that the processes established in Chapter 3.6.3.5, and Section 10.3 and 10.4 for the adaptive management and monitoring program will be used to decide matters regarding the Decision Tree process. The decision tree process will involve the following steps.

1. Clearly articulate scientific hypotheses designed to reduce uncertainty about what outflow criteria are needed to achieve the biological objectives for delta smelt and longfin smelt.

2. Development and implementation of a science plan and data collection and analysis program to test the hypotheses, and report the results of the

analysis as well as the robustness of the results and extent and sources of uncertainty.

3. Completion and peer review of a report that (i) incorporates all pertinent and credible available scientific information including, but not limited to, the data, analyses, and results that emerge from the above investigations, (ii) includes a critical assessment and synthesis of such scientific information, and (iii) interprets such scientific information in order to identify a recommended course of action with respect to the alternatives set out through the decision tree process. This step will be administered by the Implementation Office under the direction of the Adaptive Management Team.

4. Prior to the time CM1 operations begin, the Implementation Office will provide the report (including the Adaptive Management Team's recommendation) to the Authorized Entity Group and the Permit Oversight Group for decision pursuant to Chapter 3.6.3.5.3, and Sections 10.3 and 10.4.

10.2.1.3 No Requirement for Plan or Permit Amendment

The Permits and related Section 7 consultation processes will be used to authorize Take associated with Covered Activities and Associated Federal Actions based in part on specific outflow criteria. Neither the BDCP nor the associated regulatory authorizations would need to be amended to allow for the implementation of flow criteria determined through the Decision Tree process.

10.2.1.4 Relationship of Decision Tree Process to the Adaptive Management Program

The Parties acknowledge that changes to CM1 may occur through the adaptive management program, which will go into effect once the BDCP has been permitted. Notwithstanding the foregoing, with respect to changes to CM1 related to outflow requirements for delta and longfin smelt pursuant to the Decision Tree process, such changes may not occur through the adaptive management program until the Authorized Entity Group and Permit Oversight Group act on the recommendation as set out in the Decision Tree report. The outflow criteria applicable to CM 1 may be within the range of outflow criteria analyzed in the decision tree and will be based on the best available science.

10.2.1.5 Relationship of the Decision Tree Process to Other Covered Fish Species

The Parties recognize that other covered fish species, including salmonids and sturgeon, are affected by outflow. As such, the Parties understand that NMFS and CDFW will

consider outflow needs for other Covered Species as part of their review of the Plan. The outflow needs of these species will also be investigated as part of the scientific research and analysis that will be conducted prior to the new conveyance system becoming operational. In the event that information developed during this period indicates that changes to the outflow requirements of CM1 associated with these other fish species are warranted, adjustment will occur in the context of the adaptive management program.

10.2.2 Real Time Adjustments to Water Operations

10.2.2.1 Purpose and Function

The Parties shall establish a "real time operations" mechanism to allow for short-term adjustments to be made to water operations, within the established ranges and criteria as set out in CM1 and CM2, for the purpose of maximizing conservation benefits to covered fish species and maximizing water supplies.

The Parties agree that any real time operational adjustments shall be made in accordance with the following guidelines:

- The primary BDCP agencies (CDFW, USFWS, NMFS, DWR, and Reclamation) will collaborate in making real time operational adjustments.

- The scope of real time operational adjustments will apply only to certain identified operational parameters and will occur within the boundaries of, or consistent with, the operational criteria set out in CM1 and CM2.

- Real time adjustments that are anticipated to be implemented in the coming year will be identified in the Annual Delta Water Operations Plan developed by DWR and Reclamation with input from the RTO Team. The Annual Delta Water Operations Plan will also describe how project reoperations and the Supplemental Resources Fund assets will be used as part of real time operations for the purpose of maximizing conservation benefits to covered fish species and maximizing water supplies.

10.2.2.2 Real Time Operations Process

10.2.2.2.1 Real Time Operations Team

The Parties shall establish a Real Time Operations Team ("RTO Team"), which will consist of one representative each from USFWS, NMFS, CDFW, Reclamation, and DWR. The RTO Team will also include one representative of the SWP Contractors and one representative of the CVP Contractors, who will serve as non-voting members. The voting members may, by consensus, expand the membership of the RTO Team.

10.2.2.2.2 Function of the RTO Team

The RTO Team will track and document real time operational adjustments as they are implemented in relation to what was identified in the Annual Delta Water Operations Plan and assess the effect of such adjustments on Covered Species and quantify the effects on water supply. The RTO Team will also document use of the Supplemental Resources Fund as part of real time operations. Documentation of any adjustment that was made to operations, and the effect, if any, of the adjustment on water supply, will include information regarding the circumstances that warranted an adjustment and the expected benefits to the targeted Covered Species and to water supply. The RTO Team shall make such information available to the public through a website or other electronic medium. This information will be used by DWR and Reclamation in the development of subsequent Annual Delta Water Operations Plans. This subsection describes the operations planning expected to occur on an annual basis for the purpose of maximizing conservation benefits to covered fish species and maximizing annual water supplies.

10.2.2.2.3 Decision-Making Process

The RTO Team shall operate by consensus when making recommendations related to real time adjustments to water operations. In the event that consensus cannot be reached among the RTO Team, the matter will be elevated to the director of CDFW and the regional director of the relevant federal Fish and Wildlife Agency and the director of DWR and the regional director of Reclamation. Absent the concurrence of the relevant agency directors, the disputed real time operational adjustment will not be made.

10.2.2.3 Scope of Real Time Operational Adjustments

The Parties recognize and agree that any such operational adjustments effectuated through the real time process shall be limited to the specific parameters and criteria set out in Chapter 3.4.1.4 and shall apply only to those facilities and activities identified in CM1 and CM2. Some operational parameters will not be subject to real time adjustments, as these components of the system would be operated pursuant to discrete criteria set out in the Conservation Measure.

Facilities that will be subject to real time operational adjustments are as follows:

- North Delta Intakes (CM1)
- Delta Cross Channel Gates (CM1)
- Head of Old River Gate (CM1)
- South Delta Diversions (Clifton Court and Jones Pumping Plant) (CM1)
- Fremont Weir Operable Gates (CM2)

The extent to which real time adjustments that may be made to each parameter related to these facilities shall be limited by the criteria and/or ranges set out in CM1 and CM2. That is, operational adjustments shall be consistent with the criteria, and within any ranges, established in the Conservation Measures.

Any modifications to the parameters subject to real time operational adjustments or to the criteria and/or ranges set out in CM1 or CM2 shall occur only through the adaptive management program or by Plan amendment. Similarly, any changes to the facilities or activities subject to real time operational adjustments shall occur only through the adaptive management program or by Plan amendment.

10.2.3 Process to Modify Conservation Measures

Conservation measures may be modified solely through the adaptive management decision-making process as described in Chapter 3.6.3 and Section 10.3.4 of this Agreement or, if necessary, through the formal amendment process set out in Chapter 6.5.3 and Section 23.3 of this Agreement.

10.3 Adaptive Management Program

10.3.1 Purpose

Under the adaptive management and monitoring programs, new information and insight gained during the course of Plan implementation will be used to develop and potentially implement alternative strategies to achieve the biological goals and objectives. Monitoring and research will be used, among other things, to confirm Plan implementation and to measure the efficacy of the Conservation Measures, factors affecting the response of the ecosystem and Covered Species to these measures, and the influence of factors present outside the Plan Area.

The Parties recognize that the some of the Conservation Measures may not achieve their expected outcomes, while others may produce better results than expected. Through monitoring and research efforts, new scientific data, information, and analysis, the Parties will be informed regarding the capacity of the Conservation Measures to meet the biological goals and objectives. The adaptive management program will afford the flexibility to allow for changes to be made to Conservation Measures and biological objectives, including the addition to or elimination of such measures or objectives, to improve the effectiveness of the Plan over time.

10.3.2 Adaptive Management Team

10.3.2.1 Purpose and Function

An Adaptive Management Team shall be established as set forth in Chapter 3.6.2.2. The Adaptive Management Team shall have primary responsibility for administration of the adaptive management and monitoring program and shall have the authority to make decisions involving certain specified matters; for certain other matters, the role of the Adaptive Management Team will be to develop and make recommendations regarding potential adaptive changes for consideration by the Authorized Entity Group and the

Permit Oversight Group; and for other matters, the Adaptive Management Team will serve as a source of guidance and advice to the Implementation Office.

10.3.2.2 Membership and Composition

The Adaptive Management Team shall be chaired by the Science Manager and shall consist of representatives of DWR, Reclamation, two participating State and federal water contractors (one each representing the SWP and CVP), CDFW, USFWS, and NMFS. Each of the foregoing parties shall be voting members. The Lead Scientist for the Interagency Ecological Program, the Lead Scientist for the Delta Science Program and the Director of the NOAA Southwest Fisheries Science Center shall also be members of the Adaptive Management Team, but shall serve in an advisory capacity only and shall not be eligible to vote on matters. The directors of DWR and CDFW and the regional directors of Reclamation, USFWS, and NMFS will each designate a management-level representative to serve on the Adaptive Management Team, each of whom shall be qualified to represent both policy and scientific perspectives on behalf of their respective agencies.

10.3.2.3 Meetings of the Adaptive Management Team

The Adaptive Management Team shall determine its meeting schedule and administrative matters. The Implementation Office shall ensure that a record of Adaptive Management Team meetings and its actions is posted to a website or other appropriate electronic medium to ensure public access. The record should include a list of meeting attendees, meeting agenda, decisions and/or recommendations made, assignments to conduct additional work on a matter, audiovisual presentations or other materials distributed, and other documents relevant to the deliberations of the Adaptive Management Team.

On a periodic basis, the Adaptive Management Team shall open its meetings to the public. The Adaptive Management Team will institute procedures with respect to public notice of and access to these meetings. The date, time, and location of the meetings will be posted on the BDCP website at least ten (10) days prior to such meetings. The meetings will be held at locations within the City of Sacramento or the legal Delta.

10.3.3 Adaptive Management Changes Involving Routine or Administrative Matters

10.3.3.1 Scope of Routine and Administrative Matters

The Adaptive Management Team shall make decisions involving routine scientific matters associated with adaptive management, effectiveness monitoring, and research activities. The Adaptive Management Team shall also make decisions regarding administrative matters involving the Adaptive Management and Monitoring Program. These matters have been specifically assigned to the Adaptive Management Team in Chapter 3.6. They include: reassessment of and modifications to problem statements and

conceptual models; synthesis of scientific information; preparation and distribution of information pertaining to adaptive management, effectiveness monitoring, and scientific research to various parties, including policy-makers, stakeholders, and the public.

10.3.3.2 Development of Proposals regarding Routine or Administrative Matters

On a periodic basis or otherwise as appropriate, the Adaptive Management Team will consider, based on biological monitoring data and other information available at the time, whether conditions warrant a routine or administrative change to the Adaptive Management and Monitoring Program. As part of its deliberations, the Adaptive Management Team may seek input from independent scientists or from other appropriate sources, including the Technical Facilitation Sub-group of the Stakeholder Council. In the event that the Adaptive Management Team determines that a routine adaptive management change may be warranted, it may develop a proposal for the change. The Authorized Entities, the Fish and Wildlife Agencies, or the Stakeholder Council also may submit for consideration by the Adaptive Management Team, through the Science Manager, proposals for such adaptive changes. The Adaptive Management Team may receive proposals from other interested parties and, at its discretion, may review any such proposals and determine whether such proposals will receive further consideration.

In its consideration of issues and development of recommendations the Adaptive Management Team will identify relevant policy, legal, and regulatory principles and will make decisions regarding routine or administrative matters consistent with the schedule, budget and the adaptive resources available to support the Adaptive Management and Monitoring Program. The Science Manager will work with the Program Manager to define the policy, legal, budget or schedule issues at hand and will provide such information to the Adaptive Management Team prior to any action on the matter. The Adaptive Management Team will consider technical input that may be received from the Technical Facilitation Subgroup of the Stakeholder Council, as described in Chapter 7.1.6.

10.3.4 Adaptive Management Changes to Conservation Measures or Biological Objectives

The Adaptive Management Team shall be responsible for developing proposals for changes to the Conservation Measures and to the biological objectives for consideration by the Authorized Entity Group and the Permit Oversight Group. On a periodic basis or otherwise as appropriate, the Adaptive Management Team will consider, based on biological monitoring data and other information available at the time, whether conditions warrant a change to a Conservation Measure or a biological objective. As part of its deliberations, the Adaptive Management Team may seek input from independent scientists or from other appropriate sources, including the Technical Facilitation Sub-group of the Stakeholder Council. In the event that the Adaptive Management Team determines that a change in a Conservation Measure or a biological objective may be

warranted, it may develop a proposal for a change. The Authorized Entities, the Fish and Wildlife Agencies, and the Stakeholder Council may submit to the Adaptive Management Team, through the Science Manager, proposals for a change to a Conservation Measure or biological objective, and such proposals shall be considered by the Adaptive Management Team. The Adaptive Management Team may also receive proposals for adaptive changes from other interested parties and, at its discretion, review any such proposals to determine whether such proposals will receive further consideration.

In its consideration of issues and development of recommendations the Adaptive Management Team shall take into account the policy, legal, and regulatory principles that may be relevant to the proposed change to a Conservation Measure or a biological objective and shall make its recommendations consistent with the adaptive resources available under the Plan, as set forth in Section 10.3.7. The Science Manager will work with the Program Manager to define policy, legal, budget, schedule and adaptive resource issues and will provide such information to the Adaptive Management Team prior to any action on the matter. The Adaptive Management Team shall review relevant data and information, and take into account any input from the Authorized Entity Group, the Permit Oversight Group, or the Stakeholder Council, including technical input that may be received from the Technical Facilitation Subgroup of the Stakeholder Council.

Adaptive management actions that are associated with the implementation of the Conservation Measures and are within the scope of the Conservation Measures as described in the Plan will be determined and undertaken by the Implementation Office. Such actions shall not be subject to the processes set out in Section 10.3 and will not require the approval or concurrence of the Authorized Entities, the Fish and Wildlife Agencies, or the Adaptive Management Team.

10.3.5 Decision-making Process

The decision-making process set out in this Section shall be used to effectuate changes to elements of the Adaptive Management and Monitoring Program, including those that are considered to be "routine" or that involve changes to the administration of the Adaptive Management and Monitoring Program, and to the Plan's Conservation Measures or biological objectives.

10.3.5.1 Decision-Making Process

10.3.5.1.1 Routine or Administrative Matters

In the event that the Adaptive Management Team achieves consensus as to whether adopt a routine or administrative change, the decision on the matter shall be considered final. Such decisions of the Adaptive Management Team shall not be subject to review and consideration by the Authorized Entity Group and the Permit Oversight Group, nor shall they be subject to the review process established in Section 15.8 of this Agreement.

In the event that the Adaptive Management Team fails to reach consensus regarding a proposed routine or administrative change, the Adaptive Management Team will document for the Authorized Entity Group and the Permit Oversight Group the change under consideration and the nature of the disagreement, including the divergent positions taken by the voting members of the Adaptive Management Team. The Program Manager will forward the documentation to the Authorized Entity Group and the Permit Oversight Group for their consideration. The Program Manager may supplement the documentation prepared by the Adaptive Management Team with any information the Program Manager believes will assist the Authorized Entity Group and Permit Oversight Group in reaching a determination on the matter. Resolution of the issue in dispute will follow the process set out below pertaining to changes to Conservation Measures or biological objectives; however, with respect to potential routine or administrative changes, if the Authorized Entity Group and Permit Oversight Group are unable to reach agreement, the Permit Oversight Group will decide the matter.

The Program Manager shall be responsible for documenting any routine or administrative changes that are adopted. Such information will be included in the Annual Progress Report, as described in Chapter 6.3.3.

10.3.5.1.2 Matters Involving Potential Changes to Conservation Measures or Biological Objectives

With respect to its consideration of a proposed change to a Conservation Measure or a biological objective, the Adaptive Management Team may or may not reach consensus regarding the matter. In either event, the Adaptive Management Team, upon completing its consideration of the proposed change, shall promptly notify the Authorized Entity Group and the Permit Oversight Group of the outcome of its deliberations.

As part of its notification, the Adaptive Management Team shall include information to assist the Authorized Entity Group and the Permit Oversight Group in their consideration of the proposed change. Specifically, the Adaptive Management Team shall provide the Authorized Entity Group and the Permit Oversight Group with the following information:

- A description of the proposed change, including, as applicable, the extent, magnitude, and timing of the proposed modification.

- A description of the scientific rationale for the proposed change and why it is reasonably expected to better achieve the biological objectives (if the change is to a Conservation Measure) or goals (if the change is to an objective) of the Plan.

- Identification of any alternatives that were considered and the reasons for their rejection.

- A description of any uncertainties associated with the change and potential approaches to reducing any such uncertainties.

- A report describing any information derived from independent science review and an explanation of how that information was addressed in the recommendation.

- An analysis of the potential cost in water, land, money, or other resources associated with the change being proposed.

- An analysis of the means by which the adaptive resources available to support adaptive management actions will be used to fund the proposed change, if applicable.

- A cover letter and any information the Program Manager believes may be helpful in assisting the Authorized Entity Group and Permit Oversight Group in making their decision.

If the Adaptive Management Team has not reached consensus on the recommendation, it will forward to the Program Manager the proposals, each prepared by a member or group of members within the team, which represents the differing views of how the matter should be resolved.

The Authorized Entity Group and the Permit Oversight Group will jointly meet to consider and act on the matter presented by the Adaptive Management Team. In the process of its deliberations, the Authorized Entity Group and Permit Oversight Group may jointly meet and confer with the Adaptive Management Team to discuss the matter at hand. The Authorized Entity Group and the Permit Oversight Group shall decide matters taking into account the policy, legal, and regulatory principles, as set forth below, as well as budgetary and scheduling considerations and the parameters established for the adaptive resources available to support the change under consideration. The Authorized Entity Group and Permit Oversight Group may base their decision on the information provided by the Adaptive Management Team and the Program Manager, or they may gather additional information or commission independent expert review to further inform their decision.

Any member of the Authorized Entity Group or Permit Oversight Group may introduce supplemental information not provided by the Adaptive Management Team or the Program Manager for the purpose of better informing deliberations. The member may further seek independent expert review of the supplemental information. With regard to such information, if any member should so request, it will be provided to the Adaptive Management Team for its review and comment. The Adaptive Management Team may comment on the information either through a report reflecting the consensus of its members or, in the event no such consensus is reached, through individual comments.

As part of their deliberations on changes to Conservation Measures, the Authorized Entity Group and the Permit Oversight Group shall take into account the following legal, policy, and regulatory principles:

- The scope and nature of a proposed adaptive response will be considered within the totality of the circumstances, including the degree to which the change is reasonably expected to offset the impacts of Covered Activities or Associated Federal Actions and Plan implementation or to better achieve the biological objectives.

- The proposed adaptive management action must be consistent with the legal authority of the entity responsible for effectuating the action.

- The Adaptive Management process will be used to help ensure that Conservation Measures are in conformity with the ESA and NCCPA permit issuance criteria throughout the course of Plan implementation. Changes will be limited to those actions reasonably likely to ensure that (1) the impacts (or levels of impacts) of a Covered Activity or Associated Federal Action on Covered Species that were not previously considered or known are adequately addressed or (2) a Conservation Measure or suite of Conservation Measures that are less than effective, particularly with respect to effectiveness at advancing the biological goals and objectives, are modified, replaced or supplemented to produce the expected biological benefit.

- The strength of the scientific evidence linking the proposed change to a Conservation Measure and to the ability of the Plan to achieve the relevant biological objective or objectives.

- An assessment will be made of a potential adaptive change so that the desired outcome(s) will be achieved with the least resource costs. As long as equal or greater biological benefits can be achieved, adaptive responses should favor changes that minimize impacts to water supply or reliability.

- Prior to any decision to change a Conservation Measure in a manner that would potentially result in the modification of water supplies consistent with Section 9.3.7, non-operational alternatives will be considered and, if such alternatives are rejected, the Adaptive Management Team will provide an explanation provided as to why they were not sufficient to address the effects of the Covered Activity, or Associated Federal Action, or achieve the biological objective(s) of the Plan.

If the Authorized Entity Group and the Permit Oversight Group jointly agree that the proposed change to a Conservation Measure or biological objective is warranted, the change will be adopted and incorporated into the Plan.

In the event that the Authorized Entity Group and the Permit Oversight Group are unable to reach agreement on the proposed change to a Conservation Measure or biological objective, the dispute review process described in Chapter 7.1.7 and Section 15.8 of this Agreement will be available to the Parties. If invoked, the appropriate Fish and Wildlife Agency official with authority over the matter, after considering the available information and taking into account the advice of the review panel, shall decide whether the proposed change, or an alternative to the proposed change, will be adopted.

The Program Manager shall be responsible for documenting any changes made to the Conservation Measures or the biological objectives. Such information will be included in the Annual Progress Report, as described in Chapter 6.3.3.

10.3.6 No Requirement for Plan or Permit Amendment

The Parties recognize and agree that a change to a Conservation Measure or to a biological objective shall not require an amendment to the BDCP nor to the regulatory authorizations issued pursuant to the Plan, provided such change is adopted through the adaptive management process, as described in this Section, and in a manner consistent with the adaptive resources available for such changes, as described in Section 10.3.7 and Chapter 3.4.

10.3.7 Resources to Support Adaptive Management

10.3.7.1 Resources Generally Available to Support Changes in Conservation Measures

Pursuant to the adaptive management process described in Section 10.3.4, the Parties may modify or adjust Conservation Measures and biological objectives. Such changes to Conservation Measures include the following strategies: modifying approaches to the implementation of the measures, shifting resources from less effective to more effective Conservation Measures, adding and/or eliminating Conservation Measures, and using the Supplemental Adaptive Management Fund to fund, if necessary, any such changes to the Conservation Measures.

The Parties agree that any potential adaptive management changes to the Conservation Measures, either individually or cumulatively, shall not require the commitment of resources, including land, water, or money, in excess of those specifically provided for under these strategies, including the Supplemental Adaptive Management Fund, or alter the financial commitments of the Plan participants, as set out in Chapter 8.

10.3.7.2 Resources Available to Support Changes to Water Operations Conservation Measures

In the event that changes to CM1 are adopted through the adaptive management process, the resources necessary to implement such changes shall be drawn from the following sources, to the extent available, and in the order of priority set out below.

- Adjusting operations on an inter-annual basis.
- Sharing resources derived from water supply improvements.
- Re-allocating resources from less effective Conservation Measures.
- Drawing funds from the Supplemental Adaptive Management Fund.

The limits and constraints associated with each of the foregoing sources are set out in Chapter 3.4 and Chapter 8. Any such changes to CM1 shall be consistent with the funding commitments set out in those chapters.

10.3.7.3 The Supplemental Adaptive Management Fund

10.3.7.3.1 Purpose

A Supplemental Adaptive Management Fund, as described in Chapter 3.4.23.5, shall be established to support adaptive management changes to CM1, as well as to other Conservation Measures, determined to be necessary during Plan implementation. The Fund will be made available to support an adaptive management change in the event that sufficient resources cannot be secured through the first three of the approaches identified in Section 10.3.7.2. Funding for the Supplemental Adaptive Management Fund will be as described in Chapter 8 of the Plan and Section 13.1 of this Agreement.

10.3.7.3.2 Availability of the Fund

The Parties agree that the funds within the Supplemental Adaptive Management Fund shall be made available pursuant to the process and criteria set out in the Plan and this Section to support adaptive management changes to any of the Conservation Measures. Prior to any such use of the Supplemental Adaptive Management Fund, the parties shall determine whether sufficient resources to support an adaptive change are available from any of the sources identified in Section 9.3.3.2, subject to the limitations associated with each. If a determination is made that adequate funds are not available through these sources, the Supplemental Adaptive Management Fund may be used at any time, provided the following actions have occurred or determination shave been made beforehand.

- A 5-year periodic review has determined that one or more of the biological objectives are unlikely to be achieved through the implementation of the existing Conservation Measures.

- The biological objectives have been assessed to determine their likely achievability through the implementation of the Plan and, adjustments were made on the basis of new circumstances and scientific information.

- A lack of progress toward achieving one or more biological objectives is related to or caused by the Covered Activities or Conservation Measures.

- Adjustments to one or more Conservation Measures (e.g., more flow, changes in habitat restoration targets or locations) are likely to address the problem.

- To the extent appropriate, existing assets have been reallocated to support adequate changes to Conservation Measures (Chapter 3.4.23.3, *Redirected Funding to the Most Effective Conservation Measures*).

- Measures that do not adversely affect water supply, if any, have been implemented.

If the consideration of the foregoing factors confirms the need to use the fund, the Implementation Office, pursuant to the direction provided through the adaptive management process, would initiate actions to deploy the money available through the Supplemental Adaptive Management Fund to provide the additional resources necessary to implement the adaptive management change. The parties anticipate that such funds could be used to acquire water to supplement flows, undertake additional natural community restoration, or implement a range of other actions. In the event that additional outflow was determined to be necessary, supplemental water may be acquired from voluntary sellers. In the event that additional natural community restoration actions or investment in predation reduction activities were determined to be necessary, these actions may also be funded through the Supplemental Adaptive Management Fund.

10.3.7.3.3 Relationship to Regulatory Assurances and Protections

The resources provided for under the Supplemental Adaptive Management Fund, as well as other resources that may be available through actions described in Section 9.3.7.2, reflect the full extent of the commitment of the Parties to support changes made to the Plan through the adaptive management process. These commitments shall be considered part of the overall resource obligations of the Parties in the context of the regulatory Assurances and Protections described in Section 14.0.

10.4 Biological Monitoring and Research

Biological monitoring and research shall be conducted to provide new data and information regarding ecological and scientific matters relevant to the BDCP pursuant to Chapter 3.6. The data and information gathered through these and other efforts will be

used to inform key decisions, including those involving adaptive management actions, and to assess progress toward meeting the Plan's biological goals and objectives.

10.4.1 Scope of Biological Monitoring

The purpose of the biological monitoring program is to provide the necessary data, information, and analysis to determine the effect of the Plan on Covered Species and their habitats and to assess the effectiveness of the Plan in advancing the biological goals and objectives. Specifically, "effects" monitoring will provide the basis for evaluating the impacts of Covered Activities, Associated Federal Actions, and Conservation Measures on Covered Species, including the amount of take of Covered Species; "effectiveness" monitoring will provide the basis for determining the effectiveness of the Conservation Measures and identifying the need for adaptive management responses, as described in Chapter 3.6.4.4.

Effectiveness monitoring actions are identified in the descriptions of each Conservation Measure identified in Chapter 3.4, and listed by Conservation Measure in Table 3.E-2 of Appendix 3.E of the Plan. Metrics and protocols for effectiveness monitoring will be developed, under the direction of the Adaptive Management Team, at the early stages of Plan implementation and will be periodically revised to reflect new scientific developments and improved technological capability.

10.4.2 Responsibility of Adaptive Management Team

The Adaptive Management Team shall have primary responsibility for the overall development and administration of the monitoring and research program, as described in Chapter 3.6.2.2. The Adaptive Management Team will also be responsible for integrating the adaptive management and monitoring activities into one cohesive program.

10.4.3 Annual Monitoring and Research Plan

The Implementation Office shall prepare an Annual Monitoring and Research Plan, based on the recommendations and guidance provided by the Adaptive Management Team. The plan will identify, among other things, the type, scope, nature and timing of the proposed monitoring and research activities and the rationale and need for such activities, as further described in Chapter 3.6.4.

A draft of the Annual Monitoring and Research Plan will be submitted to Authorized Entity Group and the Permit Oversight Group for their joint approval. In the event that the Authorized Entity Group and the Permit Oversight Group are unable to reach agreement on the Annual Monitoring and Research Plan, the Permit Oversight Group will determine whether the proposed plan, or an alternative to that plan, will be adopted. If a member(s) of the Authorized Entity Group does not agree with the decision of the Permit

Oversight Group, the dispute will be resolved pursuant to the review process described in Chapter 7.1.7.

The Implementation Office will incorporate the Annual Monitoring and Research Plan into the Annual Work Plan and Budget, as described in Chapter 6.3.1.

10.4.4 Role of Independent Science

The Adaptive Management Team may direct scientific reviews and solicit independent scientific advice to assist the team in its management of the monitoring and research program. The Adaptive Management Team, through the Science Manager, will coordinate monitoring and research efforts with the Delta Science Program, the IEP, the Authorized Entity Group, the Permit Oversight Group, and the Stakeholder Council.

11.0 PLAN IMPLEMENTATION

11.1 Implementation Schedule

The Implementation Office will ensure that the Conservation Measures are implemented substantially in accordance with the Implementation Schedule, Exhibit D. The Parties agree that implementation of the Conservation Measures in accordance with the Implementation Schedule will help ensure that the impacts of Covered Activities and Associated Federal Actions on Covered Species are minimized and mitigated, to the maximum extent practicable, and that the measures are sufficient to provide for the conservation and management of Covered Species.

11.1.1 Maintaining Rough Proportionality Between Impacts and Conservation Measures

If the Conservation Measures are implemented in accordance with the Implementation Schedule and procedure as detailed in Chapter 6.1.2 and Tables 6-1 and 6-2 of the Plan, Rough Proportionality will be considered by CDFW to be maintained in accordance with the NCCPA.

11.1.2 Procedure for Addressing Failure to Maintain Rough Proportionality

If a Fish and Wildlife Agency determines that Rough Proportionality between impacts to Covered Species and the implementation of the Conservation Measures is not being maintained, that agency will invoke the following process. If a Fish and Wildlife Agency determines, after conferring with the Implementation Office, that the conditions of the Implementation Schedule are not being met, the Fish and Wildlife Agencies, the Program Manager, and the Permittees shall meet and confer. Within forty-five (45) days of the determination, the Permittees shall either (a) regain Rough Proportionality by demonstrating substantial implementation of the actions according to the existing

Conservation Strategy and Implementation Schedule; or (b) enter into an agreement with the relevant Fish and Wildlife Agency(ies) to expeditiously regain Rough Proportionality. Such an agreement may include advancing and/or accelerating plans to acquire, restore, or enhance lands of the appropriate land cover type.

If the Implementation Office has not re-established Rough Proportionality within forty-five (45) days or has not entered into and maintained compliance with an agreement with the Fish and Wildlife Agency(ies) within that period that sets a course of action to regain Rough Proportionality in a timely manner, the Fish and Wildlife Agency(ies) may suspend or revoke their Permits, in whole or in part. The partial suspension or revocation may include removal of one or more Covered Species or reduction in the scope of the Take Authorizations. The Fish and Wildlife Agency(ies) may suspend but shall not revoke the Permits until such time as the review process set forth in Section 15.8 of this Agreement has been completed, provided the process has been invoked by a Permittee.

11.2 Advance Credit for Interim Implementation Actions

Implementation actions that have been undertaken or completed prior to the issuance of the Permits, but after the date of execution of the Planning Agreement in October 2006, will be credited toward meeting the overall BDCP conservation requirements, provided that the actions (1) are consistent with the Conservation Measures; (2) advance the BDCP's biological goals and objectives; and (3) do not constitute mitigation associated with projects that are not a Covered Activity or Associated Federal Action.

Interim implementation actions that may meet the three aforementioned conditions include those listed in Table 6-4 of the Plan. These actions may be credited toward the fulfillment of the Conservation Measures set out in Chapter 3, after evaluation by the Fish and Wildlife Agencies.

11.3 Credit for Restoration Actions Identified in the CVP/SWP Long-Term Operation Biological Opinions and State Incidental Take Permit

Notwithstanding the provisions of Section 11.2 above, the Parties agree that 8,000 acres of tidal habitat restoration identified in the USFWS Biological Opinion (issued December 15, 2008) and the CDFW Consistency Determination (issued October 14, 2011), and further discussed in the NMFS Biological Opinion (issued June 4, 2009) and the CDFW Consistency Determination (issued April 27, 2012) and in the Section 2081 permit issued for longfin smelt (issued February 23, 2009), will be credited to the BDCP as restoration actions fulfilling a portion of the obligations identified in Conservation Measure 4 once the required criteria have been met.

11.4 Reserve System

The creation and management of the Reserve System is a component of the Conservation Strategy, as described in Conservation Measure 3 in Chapter 3.4.3. The Implementation Office shall oversee the creation of the Reserve System, which will consist of a number of individual reserve units. The Reserve System will be created through the permanent protection and long-term management of aquatic and terrestrial habitats.

11.4.1 Provisions to Ensure Long-Term Protection of Reserve System Lands

Reserve System lands shall be permanently protected through acquisition of fee title or conservation easement, or, where there is an identified impediment to transferring fee title or creating a conservation easement, through the use of another site protection mechanism approved by the Fish and Wildlife Agencies. All Reserve System conservation easements will comply with California Civil Code sections 815–816 and California Government Code, section 65965 *et seq*. Conservation easement templates for natural lands and for agricultural lands will be developed by the Authorized Entities and will be subject to the approval of the Fish and Wildlife Agencies. Upon approval by the Fish and Wildlife Agencies, those templates will be deemed to be attachments to this Agreement as Exhibit E for natural lands and Exhibit F for agricultural lands. The easement templates may be revised, subject to approval of the Fish and Wildlife Agencies, without amendment to this Agreement.

The Fish and Wildlife Agencies shall designate which template provisions are to be required in each easement, unless otherwise approved by the Fish and Wildlife Agencies, and which provisions can be amended in individual easements without the further approval of the Fish and Wildlife Agencies. In cases requiring approval of an easement template revision, or a revision to a particular easement, the Implementation Office shall seek and obtain the approval of the applicable Fish and Wildlife Agencies. The Fish and Wildlife Agency(ies) requested to approve a revision to the easement template, or to approve an easement revision specific to a particular parcel of land, shall respond to the Implementation Office within sixty (60) days.

The Implementation Office will ensure that non-wasting endowments, or substantial equivalent as approved by the Fish and Wildlife Agencies, are established for Reserve System lands to ensure funding for long-term management in perpetuity.

The Implementation Office shall carry out the reserve management responsibilities, as further described in Chapter 3.4.11 of the Plan. The Implementation Office may delegate planning and implementation tasks to other Parties or qualified third parties, including but not limited to universities, scientists and other contractors. However, the Permittees shall remain solely responsible for ensuring the management of the reserve lands and the timeliness and quality of all requirements of reserve management during the term of the Permits and ensuring mechanisms are in place for reserve management in perpetuity.

Where the Authorized Entities have funded an endowment to fully satisfy certain conservation obligations under the Plan and the endowment has been reviewed and approved in writing as adequate by the Fish and Wildlife Agencies, funding is deemed adequate to carry out such obligations, and the Fish and Wildlife Agencies shall not require additional funds or resources from the Authorized Entities with regard to those obligations.

11.4.2 Reserve Management Plans

11.4.2.1 Reserve Unit Management Plans

The Implementation Office will prepare and implement management plans for protected natural communities and Covered Species habitats that are found within those communities. Management plans will be prepared by reserve unit, which may be an individual reserve or multiple reserves in a specified geographic area that share common management needs. Within two years of acquiring parcels, the Implementation Office will conduct surveys to collect information to identify actions necessary to achieve the applicable biological objectives related to management and enhancement of the reserve. The Implementation Office will prepare reserve unit management plans in collaboration with the Fish and Wildlife Agencies, and will submit plans to the Fish and Wildlife Agencies for approval within four years of the first acquisition within each reserve unit. Prior to approval of a reserve unit management plan, reserves will be managed using best practices based on successful management of the site prior to acquisition, or based on management at other similar sites.

General enhancement and management actions to be implemented throughout the reserve system are described in Chapter 3.4.11.2.3 and address fire management, recreation, invasive plant control, nonnative animal control, mosquito abatement, pesticides, levee maintenance, reserve system connectivity and permeability, and access control. Management and enhancement actions specific to certain natural communities will be included in reserve management plans, as provided in CM 11.

The Implementation Office shall evaluate each Reserve Management Plan for effectiveness and revise it as appropriate (a) to incorporate new acquisitions within the same reserve unit and to document new best management practices; (b) at least every five (5) years to ensure that the BDCP adaptive management and monitoring program and the results of the latest research are being applied to management in each reserve unit, and (c) whenever necessary under Changed Circumstances pursuant to Section 12.0 of this Agreement.

11.4.2.2 Management of Agriculture and Grazing Easements or Leases

Reserve unit management plans for cultivated lands, grasslands or other natural communities may include ongoing grazing or agricultural activities, if approved by the

Fish and Wildlife Agencies, pursuant to Conservation Measure 11, Chapter 3.4.11.2.7. For reserve units that are acquired through fee title, the Implementation Office shall include the terms of the reserve unit management plan in any lease or other agreement that allows continued grazing or other agricultural use of the land. For lands that are acquired through conservation easement, any key elements related to maintaining or enhancing habitat for Covered Species (i.e., essential requirements, restrictions or other criteria required for the reserve unit management plan) shall be included or referenced in the conservation easement. The reserve unit management plan itself shall be completed within two (2) years after recording the conservation easement.

12.0 CHANGED CIRCUMSTANCES

Ecological conditions in the Delta are likely to change as a result of future events and circumstances that may occur during the course of the implementation of the BDCP. The BDCP identifies changes in circumstances that are reasonably foreseeable and that could adversely affect reserve system lands or waters in the Plan Area, consistent with the "changed circumstances" provisions of the ESA regulations and in the NCCPA. To ensure successful implementation of the Conservation Strategy, the BDCP sets out measures designed to respond to these foreseeable future changes.

The BDCP identifies the specific Changed Circumstances that can reasonably be expected to occur in the Plan Area during the course of Plan implementation and that may compromise the effectiveness of the implementation actions set out in the BDCP. As set out in Chapter 6.4.2, the Plan describes the responses that will be implemented through the BDCP to adequately address such events and discusses their potential to prevent or impede the BDCP from achieving anticipated biological outcomes. The specific approaches and steps related to many of the planned responses will be developed and implemented through the adaptive management program (Chapter 3.6). However, for certain Changed Circumstances, responsive actions will fall outside the scope of the adaptive management program; these actions are specifically described in Chapter 6.4.2. The planned responses to Changed Circumstances have been designed to be practicable yet sufficient to effectively address such events.

12.1 Process to Respond to Changed Circumstances

The Implementation Office and the Fish and Wildlife Agencies shall be responsible for identifying the onset of a Changed Circumstance, using information obtained from system-wide or effectiveness monitoring, scientific study, or information provided by other sources. Once the Implementation Office and/or the Fish and Wildlife Agencies has become aware that a Changed Circumstance has occurred or is likely to occur, they will take immediate steps to investigate and confirm the event. The Implementation Office shall notify the Authorized Entity Group, the Permit Oversight Group and the Stakeholder Council of the change in circumstances.

After documenting the occurrence of a Changed Circumstance, the Implementation Office will determine specific responsive actions that are consistent with the requirements set out in Chapter 6.4.2 and develop a schedule for their implementation. The Implementation Office will confer with the Fish and Wildlife Agencies regarding the details of the response and a timeframe for implementation. For actions implemented through the adaptive management and monitoring program, the decision-making process described in Chapter 3.6 will be used. After implementing such actions, the Adaptive Management Team will oversee monitoring efforts to determine the effectiveness of the responsive actions and report the associated result and finding through the annual reporting process.

13.0 FUNDING

The Parties recognize that the ESA and the NCCPA each require that adequate funding will be assured to implement an HCP and/or an NCCP. The Parties acknowledge that such assurances do not require that all necessary funds be secured at the time of permit issuance, but rather establish that such funding is reasonably certain to occur during the course of Plan implementation.

The Permittees agree to provide such funds as may be necessary to carry out their obligations under the BDCP. Furthermore, as described in Chapter 8 of the Plan, the State and federal governments have committed to provide additional funding to implement the Plan. The Parties agree that the detailed accounting of the estimated costs associated with the various components of the BDCP, as set out in Chapter 8.2 and Tables 8-5 through 8-36, reflect best efforts to determine the level of funding necessary to implement the Plan.

The Parties and Reclamation have identified the various sources from which funding will likely be drawn, as described in Chapter 8.3 and Tables 8-37 through 8-59, sufficient to support a viable funding strategy. Such sources of funding include State and federal water contractor revenue, contractor-issued bonds, State-issued bonds, federal agency appropriations, and State and federal grants.

The Parties acknowledge that the sources of funding identified in the Plan, including bonds for infrastructure, have historically proven to be reliable means by which public projects may be funded. In addition, the primary sources of funding that the Parties intend to rely upon are typical of the type of sources that are generally available to public agencies to fund large-scale infrastructure and mitigation projects.

The Parties agree that the assessment of funding requirements for the BDCP, the viability of the sources identified for such funding, and the commitments made by the Parties in the Plan and this Agreement provide an adequate basis for a finding by the State and federal Fish and Wildlife Agencies that sufficient assurances of funding have been provided pursuant to the ESA and the NCCPA. In the event that certain sources of funds cease to be available or circumstances warrant a reexamination of the viability of the

BDCP funding strategy, Section 13.2 of this Agreement will guide the Parties in their efforts to remedy any actual or imminent shortfall.

13.1 Obligations of the Parties

The overall level of funding required for the implementation of the Plan is set out in Chapter 8 and this Agreement. The Parties acknowledge and agree that the overall level of funding set out in the Plan represents a best estimate of such costs and that the funding obligations of the Parties, as described in the Plan and this Agreement, will be fulfilled over the course of Plan implementation. The Plan and this Agreement contain provisions for periodic evaluation of funding and for addressing any potential for inadequate funding.

13.1.1 Obligations of the Authorized Entities

The Authorized Entities shall be responsible for funding a share of the overall cost of the BDCP, as set forth in the Plan. The Authorized Entities will provide funding equal to the costs associated with the construction, operation, and maintenance of the new conveyance infrastructure set out in CM1 and for the mitigation associated with such infrastructure, as described in Chapter 8.3.4. The Authorized Entities will contribute towards all other Conservation Measures and related program elements, as described in the column "Amount Paid by Contractors" in Table 8-41 in Chapter 8.3.4.1. [Note to Reviewers: This amount in table 8-41 of the draft BDCP totals $903 million]. Consistent with the foregoing, the Authorized Entities shall not be obligated to provide, either directly or through another agency, funding to implement any other elements of the Plan.

13.1.2 Obligations of California and the United States

[Note to Reviewers: no Federal Administration Position on Financing – While the United States has been engaged in the development of this draft Agreement, there is no federal position as of this time regarding potential funding obligations of the United States. The Parties anticipate reaching agreement on a federal and state cost share.]

Subject to the limitations in Section 24.15 of this Agreement, and as described in Chapter 8 Tables 8-37 through 8-40, the State of California, acting through the appropriate State agency or agencies and the United States, acting through the appropriate federal agency or agencies, shall be responsible for funding the implementation of the Plan, except as funded by the Authorized Entities pursuant to 13.1.1, which will include the Supplemental Adaptive Management Fund.

13.1.3 Additional Funding Opportunities

To provide supplemental funding for Plan implementation, State, federal, and local agencies, including any of the Parties, may pursue funding from sources other than SWP

and CVP contractors. Such sources include those identified in BDCP Chapter 8.3 (including Tables 8-37, 8-39, 8-40, 8-48 through 8-55), as well as other sources that may be available. If Reclamation or DWR, or other State or federal agencies, pursue such funding for purposes of satisfying costs of Plan implementation that are not obligations of the CVP and SWP contractors, then Reclamation and DWR shall not directly, or otherwise charge or pass such costs to the SWP/CVP contractors.

13.2 Inadequate Funding

Subject to the limitations in Section 24.15 of this Agreement, the Parties and Reclamation have committed to provide substantial resources to ensure the proper implementation of the BDCP and, through the Plan and this Agreement, have provided assurances that adequate funding for such purposes will be available and forthcoming.

A Fish and Wildlife Agency determination that the BDCP is not being adequately funded shall require a demonstration that: 1) a funding shortfall exists; and 2) such shortfall either a) prevents a specific action or actions from being implemented in a timely manner, as defined by the rough proportionality criteria set out in Chapter 6, or b) prevents a specific action or actions from being properly and fully implemented, as described in the relevant provisions of the BDCP.

In the event of a funding shortfall from the Authorized Entities, the Fish and Wildlife Agencies will evaluate the impact of the shortfall on Plan implementation and determine whether the funding deficiency should affect the scope or ongoing viability of the regulatory authorizations. The Plan and this Agreement contain provisions that provide for rough proportionality and that are intended to ensure there would be no mitigation debt in the event of inadequate funding. If circumstances warrant suspension or revocation of one or both of the Federal Permits (and/or invalidation of Reclamations' Incidental Take Statement) USFWS and NMFS may proceed pursuant to procedures in Sections 22.1, 22.2 and 22.3 of this Agreement. If CDFW determines adequate funding is not being provided by the Authorized Entities, CDFW may suspend or revoke the State Permit, in whole or in part, pursuant to the procedures in Section 22.4 of this Agreement. If the Authorized Entities elect to institute measures to cure the funding shortfall, implementation of such measures shall begin no later than ninety (90) days from the date of the meeting with the Fish and Wildlife Agencies.

In the event of a shortfall in State or federal funding, a Fish and Wildlife Agency(ies) shall not suspend or revoke the State and/or Federal Permits or invalidate Reclamation's take statement if the shortfall in funding is determined to be likely to have no more than a minimal effect on the capacity of the Plan to advance the biological goals and objectives.

The Parties have committed to provide substantial resources to ensure the proper implementation of the Plan. The Plan is designed to demonstrate that this funding will be adequate for such purposes and will be forthcoming. However, in the unanticipated event

of a shortfall in State or federal funding, the Implementation Office will make reasonable adjustments to expenditures to continue to meet the obligations of the Plan. If these adjustments are inadequate to meet Plan requirements, the Implementation Office will confer with the Fish and Wildlife Agencies to identify alternative courses of action. Actions that may be considered to address such shortfalls include adjusting the scope of the Plan in proportion to the public funding shortfall. Such actions may focus initially on the terrestrial components of the Plan and would be incorporated into the Plan through the formal amendment process described in Chapter 6.5.3 of the Plan and Section 23.3 of this Agreement. The Authorized Entities will not be required to provide land, water, or monetary resources beyond their commitments in this Plan in the event of a shortfall in State or federal funding.

14.0 ASSURANCES AND PROTECTIONS

The ESA regulations and provisions of the NCCPA provide for regulatory and economic assurances to Parties covered by approved HCPs or NCCPs concerning their financial obligations under a plan. Specifically, these assurances are intended to provide a degree of certainty regarding the overall costs associated with mitigation and other Conservation Measures, and add durability and reliability to agreements reached between permit holders and the Fish and Wildlife Agencies. That is, if unforeseen circumstances occur that adversely affect species covered by an HCP or an NCCP, the Fish and Wildlife Agencies will not require of the permit holder any additional land, water, or financial compensation nor impose additional restrictions on the use of land, water, or other natural resources without their consent.

The assurances provided under the ESA and the NCCPA do not prohibit or restrain USFWS, NMFS, CDFW, the Permittees or any other public agency from taking additional actions to protect or conserve species covered by an NCCP or HCP. The State and federal agencies may use a variety of tools at their disposal and take actions to ensure that the needs of species affected by unforeseen events are adequately addressed.

14.1 Regulatory Assurances under the ESA – The No Surprises Rule

Under the No Surprises rule (63 Fed. Reg. 8859 (Feb. 23, 1998)), once an incidental take permit has been issued pursuant to an HCP, and its terms and conditions are being properly implemented, the federal Fish and Wildlife Agencies will not require additional measures for Changed Circumstances not provided for in the plan or for unforeseen circumstances, without the consent of the Permittee, including land, water (including quantity and timing of delivery), financial compensation, or restrictions on the use of those resources (63 Fed. Reg. 8859, 8868 (Feb. 23, 1998)). If the status of a species addressed under an HCP unexpectedly declines because of unforeseen circumstances, the primary obligation for undertaking additional conservation measures rests with the federal government, other government agencies, or other nonfederal landowners who have not yet developed HCPs.

However, the federal Fish and Wildlife Agencies may, in the event of unforeseen circumstances, require additional measures provided they are limited to modifications in conserved natural community areas or to the HCP's operating conservation program (*e.g.*, the Conservation Strategy) for the affected species, and that these measures do not involve additional financial commitments or resource restrictions without the consent of the Permittee. These assurances are provided to all HCP permittees that properly implement their plans. The No Surprises rule, however, does not apply to federal agencies. 50 C.F.R. § 222.307(g).

14.2 Regulatory Assurances under the Natural Community Conservation Planning Act

Under the NCCPA, CDFW provides assurances to permittees commensurate with the long-term conservation assurances and associated implementation measures that will be implemented under a plan (Fish & Game Code § 2820(f)). In its determination of the level and duration of the assurances to be afforded a permittee, CDFW takes into account the conditions specific to the plan, including such factors as:

- The level of knowledge of the status of covered species and natural communities;
- The adequacy of analysis of the impact of take on covered species;
- The use of the best available science to make assessments of the impacts of take, reliability of mitigation strategies, and appropriateness of monitoring techniques;
- The appropriateness of the size and duration of the plan with respect to quality and amount of data;
- The sufficiency of mechanisms for long-term funding of all components of the plan and contingencies;
- The degree of coordination and accessibility of centralized data for analysis and evaluation of the effectiveness of the plan;
- The degree to which a thorough range of foreseeable circumstances are considered and provided for under the adaptive management program; and
- The size and duration of the plan.

The assurances provided to the entities receiving permits under the NCCPA will ensure that if there are unforeseen circumstances, no additional financial obligations or restrictions on the use of resources will be required of the Permittees without their consent. Specifically, the NCCPA directs that,

> [i]f there are unforeseen circumstances, additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources shall not be required without the consent of plan participants for a period of time specified in the implementation agreement, unless CDFW determines that the plan is not being implemented consistent with the substantive terms of the implementation agreement (Fish & Game Code § 2820(f)(2)).

The NCCPA requires that CDFW suspend or revoke a permit, in whole or in part, if the continued take of a Covered Species would jeopardize its continued existence.

14.3 USFWS and NMFS

14.3.1 Permittees

Pursuant to the No Surprises Rule at 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5), and 222.307(g), and provided that the BDCP is being implemented consistent with the terms of this Agreement, the Plan, and the Federal Permits, the USFWS and NMFS shall not require the Permittees to provide additional land, water or other natural resources, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level provided for under the BDCP, this Agreement and the Federal Permits with respect to Covered Activities without the consent of the Permittees. Adaptive management modifications and planned responses to Changed Circumstances are provided for under the BDCP, as set out in Chapter 3.6 and Chapter 6.4.2. Accordingly, the resources identified to support such modifications and planned responses, together with the other resources commitments of the Permittees reflected in the Plan, this Agreement and the associated regulatory authorizations, constitute the extent of the obligations of the Permittees pursuant to the No Surprises Rule.

14.3.2 Reclamation

The No Surprises Rule does not apply to federal agencies. In light of Reclamation's integral role in the BDCP, it is appropriate to provide to Reclamation a degree of certainty regarding its obligation to fund Conservation Measures, and to provide durability and reliability regarding BDCP implementation. In that regard, USFWS and NMFS agree that once the Integrated Biological Opinion has been issued: (1) to the maximum extent allowed by law, Reclamation's ongoing responsibilities for Associated Federal Actions under Section 7(a)(2) of the ESA will be fulfilled through Reclamation's participation in the BDCP, including through the obligations it has assumed under the adaptive management and the Changed Circumstances provisions of the Plan; and (2)

USFWS and NMFS agree that Reclamation will not be required to provide additional commitments or measures for Associated Federal Actions beyond those set forth in the BDCP without first attempting to resolve issues through the review process in Section 15.8, if invoked by an Authorized Entity, and exhausting processes set forth in Section 22.5 of this Agreement.

14.3.3 Unforeseen Circumstances

Under the ESA regulations and this Agreement, if unforeseen circumstances arise during the life of the BDCP, USFWS and/or NMFS may not require the commitment of additional land or financial compensation, or additional restrictions on the use of land, water, or other natural resources other than those agreed to in the Plan.

Within these constraints, USFWS and/or NMFS may require additional measures, but only if the following conditions apply:

- The agencies prove an unforeseen circumstance exists.
- Such measures are limited to modifications within any conserved habitat areas or to the Conservation Measures for affected Covered Species.
- The original terms of the Plan will be maintained to the maximum extent possible.
- The overall cost of implementing the BDCP is not increased by the modification.

Pursuant to 50 C.F.R. §§ 17.22(b)(5)(iii)(C), 17.32(b)(5)(iii)(C), and 222.307(g)(3)(iii), the USFWS or NMFS has the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available. The USFWS and NMFS will consider input submitted by the Authorized Entities prior to making that determination. A finding of unforeseen circumstances must be made considering the following six factors: (1) size of the current range of the affected species; (2) percentage of range adversely affected by the conservation plan; (3) percentage of range conserved by the conservation plan; (4) ecological significance of that portion of the range affected by the conservation plan; (5) level of knowledge about the affected species and the degree of specificity of the species' conservation program under the conservation plan; and (6) whether failure to adopt additional Conservation Measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild. If such a finding is made and additional measures are required, the Authorized Entities will work with CDFW, USFWS and/or NMFS to appropriately redirect resources to address the unforeseen circumstances, consistent with the intent of the BDCP.

If USFWS or NMFS believe an unforeseen circumstance exists, it shall provide written notice of its proposed finding of unforeseen circumstances to the Implementation Office. The USFWS or NMFS shall clearly document the basis for the proposed finding regarding the existence of unforeseen circumstances pursuant to the requirements of 50 C.F.R. §§ 17.22(b)(5)(iii)(C), 17.32(b)(5)(iii)(C), and 222.307(g)(3)(iii). Within fifteen (15) days of receiving such notice, the Authorized Entities, the Program Manager, and the USFWS and NMFS shall meet and confer to consider the facts cited in the notice and potential changes to the Conservation Strategy.

14.4 CDFW

14.4.1 Permittees

Provided the BDCP is being implemented consistent with the substantive terms of this Agreement, the Plan, and the State Permit, CDFW agrees that it will not require from the Permittees additional land, water or financial compensation or additional restrictions on the use of land, water, or other natural resources for the 50 year term of the State Permit without the consent of Permittees. Adaptive management modifications and Plan responses to Changed Circumstances are provided for under the BDCP, as set out in Chapter 3.6, and Chapter 6.4.2. Accordingly, the resources identified to support such modifications and planned responses, together with the other resources commitments of the Permittees reflected in the Plan, constitute the extent of the obligations of the Permittees, pursuant to the assurances provided for in the NCCPA. Section 2823 of the NCCPA provides, however, that CDFW shall suspend or revoke any permit, in whole or in part, issued for the take of a species subject to Section 2835 if the continued take of the species would result in jeopardizing the continued existence of the species. Responses to a jeopardy determination are addressed in Section 22.6 of this Agreement.

14.4.2 Unforeseen Circumstances

As specified in Section 14.4.1, CDFW agrees that it will not require of the Permittees additional land, water, or financial compensation or additional restrictions on those resources without the consent of the Permittees for the 50 year term of the BDCP and this Agreement. In the event of unforeseen circumstances, CDFW shall make an unforeseen circumstances finding based on the best scientific evidence available, after considering any responses submitted by the Permittees. If such a finding is made and additional measures are required, the Authorized Entities will work with CDFW, USFWS and NMFS to appropriately redirect resources to address the unforeseen circumstances, consistent with the intent of the BDCP.

If CDFW believes an unforeseen circumstance exists, it shall provide written notice of its proposed finding of unforeseen circumstances to the Implementation Office. CDFW shall clearly document the basis for the proposed finding regarding the existence of unforeseen circumstances. Within fifteen (15) days of receiving such notice, the

Authorized Entities, the Program Manager, and CDFW shall meet and confer to consider the facts cited in the notice and potential changes to the Conservation Strategy.

14.4.2.1 Interim Obligations upon a Finding of Unforeseen Circumstances under the ESA or NCCPA

If a Fish and Wildlife Agency finds that an Unforeseen Circumstance has occurred with regard to a Covered Species and that additional measures are required for the Covered Species as a result, during the period necessary to determine the nature, scope and location of any additional measures, the Permittees will avoid causing an appreciable reduction in the likelihood of the survival and recovery of the affected species. The Permittees will not be responsible for implementing any additional measures unless the Permittees consent to do so.

15.0 IMPLEMENTATION STRUCTURE

15.1 Approach to BDCP Governance and Implementation

The implementation of the BDCP will generally be effectuated through an Implementation Office, which will be managed by a Program Manager and governed by the Authorized Entities through the "Authorized Entity Group." The Authorized Entities shall have ultimate responsibility for the actions undertaken by the Implementation Office. The Fish and Wildlife Agencies will maintain an ongoing role in Plan implementation, including participation in a Permit Oversight Group, to ensure that such implementation proceeds in a manner consistent with the BDCP and its associated regulatory authorizations. Through the Permit Oversight Group, the Fish and Wildlife Agencies will be involved in certain specified implementation decisions and will lend technical and scientific expertise to the implementation process. In addition, a "Stakeholder Council" shall be created and regularly convened to enable public agencies, non-governmental organizations, interested parties, and the general public to provide ongoing input into the implementation process and to effectively discuss and resolve issues in dispute.

15.2 Implementation Office

15.2.1 Purpose and Function

The Program Manager will establish, organize, and direct the Implementation Office. To ensure that the commitments reflected in the BDCP are carried out in a timely and efficient manner, the Program Manager, through the Implementation Office, will institute processes and procedures to adequately address planning, budgeting, sequencing, and scheduling needs related to Plan implementation. The Implementation Office will function with a significant level of independence from its member entities. However, the Program Manager and the Implementation Office staff will work closely with these entities on a range of matters, particularly with respect to actions that affect water

operations, and will be responsive to the Authorized Entity Group, regardless of the entity through which the Program Manager and the Implementation Office staff have established employment relationships. In addition, for those activities involving functions that, under State and federal law, cannot be delegated (e.g., water operations, water contracting, procurement, expenditures of State and federal funds), the Program Manager will coordinate with the appropriate designated State or federal official to ensure that the necessary function is carried out. The Program Manager will also, to the extent appropriate, solicit input from the Stakeholder Council on a range of implementation matters.

Specifically, under the direction of the Program Manager, the Implementation Office shall assume responsibility for the implementation of a broad range of actions, as identified in Chapter 7, including:

- Oversight and coordination of administration of program funding and resources.
- Preparation of annual budgets and work plans.
- Establishment of procedures and approaches to implement Plan actions.
- Planning, oversight, and implementation of actions set out in the Conservation Measures.
- Technical and logistical support to the Adaptive Management Team with respect to the administration of the Adaptive Management and Monitoring Program.
- Coordination with Delta-wide governance entities, including the Delta Stewardship Council, the Delta Science Program, and the Delta Conservancy.
- Implementation of public outreach program.
- Fulfillment of compliance monitoring and reporting requirements, including the preparation of annual reports.
- Reporting, at least on an annual basis, to the Delta Stewardship Council on the status of Plan implementation, including on matters related to the adaptive management and monitoring activities.

The Implementation Office shall not be responsible for certain implementation actions. Specifically, the Implementation Office will have limited, if any, involvement in the following matters:

- The Implementation Office shall not be involved in the construction or operation of SWP and/or CVP facilities other than to monitor infrastructure development and water operations for the purpose of assembling the information necessary to evaluate and report on compliance with the terms and conditions of the Plan, the Implementing Agreement, and the associated regulatory authorizations, as described in Chapter 6.4. The BDCP sets out the parameters within which DWR and Reclamation will conduct SWP and CVP operations and infrastructure development. DWR and Reclamation may choose to operate the SWP and CVP and develop new project infrastructure using their current organizational capacity or by contract with other entities.

- The Implementation Office shall not administer the Adaptive Management and Monitoring Program. Rather, the program will generally be administered by the Adaptive Management Team, which will be chaired by the Science Manager (See Chapter 3.6.2.1). The Implementation Office will provide logistical and technical support to the Adaptive Management Team.

The Program Manager will also organize, convene, and provide support to the Authorized Entity Group and its proceedings, including its meetings with the Permit Oversight Group. In the event that the Program Manager position is vacant, then DWR and Reclamation will designate agency staff to serve this role until such time as the position has been filled. The Program Manager will further ensure that the Authorized Entity Group receives and reviews all proposed work plans, reports, budgets, and other relevant information generated by the Implementation Office, the Fish and Wildlife Agencies, the Adaptive Management Team, and other sources. The Program Manager will further ensure that the Authorized Entity Group has sufficient opportunity to provide input regarding these documents.

The Implementation Office shall implement a public outreach and education program to promote public awareness and provide opportunities for public input on matters concerning Plan implementation, as described in Chapter 7.5. The outreach program shall meet the following objectives.

- Promote public awareness of and understanding about the Plan's purpose, specific Conservation Measures and their implementation.

- Provide streamlined and timely access to information.

- Provide opportunities to engage with decision-makers.

- Maintain a transparent process for understanding, clarifying and addressing public input and comments.

Particular emphasis will be placed on outreach efforts focused on the following stakeholders: Delta residents, including landowners, farmers, and business owners; environmental community; agricultural community; boaters; commercial fishing interests; recreational anglers; local governments; reclamation districts; irrigation districts; public utilities; public and private landowners adjacent to BDCP conservation areas; and Native American tribes. In addition, to further facilitate access to information and promote transparency in decision-making, the Implementation Office shall maintain a public, on-line database of key documents and information, such as annual implementation reports, work plans, and budgets.

15.2.2 Legal Status

The Implementation Office will not be a legal entity and, therefore, will not be authorized to enter into contracts directly or hold property in its own name. As such, the Implementation Office will administer the implementation of the BDCP under the existing authorities of the Authorized Entities.

15.2.3 No Delegation of Authority

The assignment of responsibility to the Program Manager and the Implementation Office will not alter or modify existing authorities, mandates, and obligations of the Authorized Entities or any other State and federal agency participating in Plan implementation. No general delegation of authority by the Authorized Entities to the Implementation Office, including the Program Manager or to any employee assigned to the Implementation Office will occur, although specific delegation may occur in the event that it is considered by the delegating Authorized Entity to be beneficial to the efficient operation of the Implementation Office. Any such delegation will be conferred, in writing, by the delegating Authorized Entity to the Program Manager, and will be reviewed by that agency from time to time. No unauthorized delegation of State or federal authority to the Program Manager or the Implementation Office will occur.

15.2.4 Implementation Office Management and Other Staff

15.2.4.1 Program Manager

The Program Manager will manage, coordinate, oversee, and report on all aspects of Plan implementation, subject to the oversight of the Authorized Entity Group and consistent with certain limitations related to the development, operation, and maintenance of the SWP and CVP facilities and the administration of the Adaptive Management and Monitoring Program. The Program Manager will report to the Authorized Entity Group, and act in accordance with the Group's direction.

The Authorized Entity Group will select the Program Manager. Prior to making its selection, the Authorized Entity Group will: solicit qualified candidates for the Program Manager position; confer with the Permit Oversight Group regarding the selection

process and the qualifications of the candidates; invite the Permit Oversight Group to participate in the interview process; and confer with the Stakeholder Council regarding the selection process. The Program Manager shall meet the qualifications set out in Chapter 7.1.1.1.

15.2.4.2 BDCP Science Manager

The Program Manager will select a Science Manager. Prior to making the selection, the Program Manager will: consult with the Authorized Entity Group and the Permit Oversight Group regarding the selection process and the qualifications of the candidates; invite the Authorized Entity Group and the Permit Oversight Group to participate in the interview process; and confer with the Stakeholder Council regarding the selection process. The Science Manager must meet the qualifications set out in Chapter 7.1.1.2. The Science Manager will report to the Program Manager.

The responsibilities of the Science Manager will include:

- Serve as Chair of the Adaptive Management Team and assist the team in the development and administration of the Adaptive Management and Monitoring Program, in coordination with the Interagency Ecological Program and other science programs.

- Serve as a member of the IEP Coordinators.

- Engage in regular communication and coordination with the Delta Science Program and the Independent Science Board, in a manner consistent with Water Code § 85820, as well as other outside scientists and, with guidance from the Adaptive Management Team, coordinate or contract with the Independent Science Board, the Delta Science Program, or other scientists to obtain input and review, to support the Adaptive Management and Monitoring Program.

- Support the Program Manager in the preparation of plans, reports and other technical documents.

- Assist in building sufficient scientific capacity and resources within the Implementation Office and the IEP to advance the goals and objectives of the BDCP.

- Assist the Adaptive Management Team in synthesizing and presenting the results of studies and research, compiling the findings of monitoring efforts, and summarizing the current scientific knowledge on relevant Delta resources to the Program Manager, Authorized Entity Group, Permit Oversight Group, Stakeholder Council, and others.

15.2.4.3 Staff

The Program Manager will fulfill the staffing needs of the Implementation Office by drawing from existing personnel at DWR, Reclamation, State and Federal Water Contractors Agency (SFWCA), and from other sources, including from sources outside of agencies, if appropriate and if such personnel possess the expertise and experience necessary to carry out the tasks associated with implementation. The specific staffing needs of the Implementation Office will be determined by the Program Manager, with input from the Authorized Entity Group and the Permit Oversight Group. Staff assigned to the Implementation Office will act under the direction of the Program Manager. The engagement of personnel from DWR, Reclamation, and other entities, however, will not affect or modify the existing authorities of federal, State, and local agencies or nongovernmental organizations that pertain to personnel matters. Personnel may be retained under the Intergovernmental Personnel Act (5 U.S.C. §§ 3371–3375); through personal services contracts, or other appropriate mechanisms. The Authorized Entities and the Fish and Wildlife Agencies will each designate a representative from their respective agencies to serve as liaisons to the Implementation Office.

15.2.4.4 Conservation Measure Implementation Actions

The Implementation Office shall be responsible for planning, design and implementation of Conservation Measures, as described in more detail in Chapter 3.6.3.5.1 of the Plan. As such, these activities shall not be subject to the processes set out in Section 10.3 and will not require the approval or concurrence of the Authorized Entities, the Fish and Wildlife Agencies, or the Adaptive Management Team.

15.3 BDCP Authorized Entity Group

15.3.1 Purpose and Function

The Authorized Entity Group shall be established to provide program oversight and general guidance to the Program Manager regarding the implementation of the Plan. The Authorized Entity Group will consist of the Director of DWR, the Regional Director for Reclamation, a representative of the SWP contractors and a representative of the CVP contractors. The Authorized Entity Group will be responsible for ensuring that the management and implementation of the BDCP are carried out consistent with its provisions, this Agreement, and the associated regulatory authorizations.

The Authorized Entity Group will provide oversight and direction to the Program Manager on matters concerning the implementation of the BDCP, provide input and guidance on general policy and program-related matters, monitor and assess the effectiveness of the Implementation Office in implementing the Plan, and foster and maintain collaborative and constructive relationships with the Fish and Wildlife Agencies, other public agencies, stakeholders and other interested parties, and local government throughout the implementation of the BDCP.

The Authorized Entity Group will engage in a number of specific matters including, but not limited to, the following:

- Provide oversight of the administration and funding of implementation activities.

- Provide oversight regarding the implementation of non-water related Conservation Measures by the Implementation Office.

- Approve, jointly with the Permit Oversight Group, changes to Conservation Measures or biological objectives proposed by the Adaptive Management Team.

- Decide, jointly with the Permit Oversight Group, all other adaptive management and monitoring program matters for which concurrence has not been reached by the Adaptive Management Team.

- Approve, jointly with the Permit Oversight Group, the Annual Monitoring and Research Plan.

- Select the Program Manager and provide input into the selection of the Science Manager.

- Review and approve the Annual Work Plan and Budget.

- Review and approve Annual Progress Reports, including Annual Delta Water Operations Reports, and other compliance-related documents.

- Review and approve submission of Plan amendments to the Permit Oversight Group.

15.3.2 No Delegation of Authority

The participation of the Authorized Entities on the Authorized Entity Group will not trigger or otherwise cause a delegation of authority or responsibility for any of the implementation actions described in the BDCP from one Authorized Entity to another or to the Implementation Office. Rather, the specific roles and level of involvement in implementation actions are defined either by existing statutory or regulatory authorities or by provisions set out in the Plan and this Agreement. For many of the BDCP actions and commitments, a specific Authorized Entity will have the sole responsibility for implementation; for other actions and commitments established by the Plan, the Authorized Entities may be jointly and severally responsible for their implementation. For instance, the operation of the SWP will remain under the control and responsibility solely of DWR; likewise, the operation of the CVP will continue to be under the control

and responsibility of Reclamation. As such, while it is expected that the Authorized Entity Group will express a single position of the group regarding a matter under its consideration, the entity(ies) with vested statutory or regulatory authority over the matter will make the final determination.

15.3.3 Meetings of the Authorized Entity Group

The Authorized Entity Group will meet on a schedule of its own choosing, but at a minimum on a quarterly basis. The Authorized Entity Group may also be convened by the Program Manager, as needed, to review issues that arise during the implementation of the Plan, including proposed amendments to the Annual Work Plan and Budget. The Authorized Entity Group will also meet with the Permit Oversight Group (Chapter 7.1.3), at least on a quarterly basis to review Plan implementation issues, including those related to the adaptive management and monitoring program and the restoration and preservation of habitat.

The Authorized Entity Group shall have the responsibility to inform the public of its deliberations and decisions. As such, the Program Manager will ensure that the public receives notice of upcoming meetings of the Authorized Entity Group, that meeting agendas are posted prior to such meetings, and that any decisions of the Authorized Entity Group are made available through the BDCP website. On a periodic basis, the Authorized Entity Group will hold meetings that are open to the public. The Authorized Entity Group will institute procedures with respect to public notice of and access to these meetings and to any public meetings it holds with the Permit Oversight Group. The date, time, and location of the meetings will be posted on the BDCP website at least ten (10) days prior to such meetings. The meetings will be held at locations within the City of Sacramento or the legal Delta.

15.4 Permit Oversight Group

15.4.1 Purpose and Function

The Permit Oversight Group will consist of the Fish and Wildlife Agencies, specifically, the Regional Director of USFWS, the Regional Administrator of NMFS, and the Director of CDFW. Consistent with their authorities under the ESA and the NCCPA, the Fish and Wildlife Agencies will retain responsibility for monitoring compliance with the BDCP, approving certain actions, and enforcing the terms and conditions of their respective regulatory authorizations. In addition to fulfilling those regulatory responsibilities, the Fish and Wildlife Agencies will also provide technical input on a range of implementation actions that will be carried out by the Implementation Office.

To ensure that the BDCP is being properly implemented, the Permit Oversight Group will coordinate agency review of the actions being implemented under the Plan and assessments of compliance with the provisions of the Plan, this Agreement, and associated regulatory authorizations. The Permit Oversight Group will be involved in

certain decisions relating to the implementation of water operations and other Conservation Measures, actions proposed through the adaptive management program or in response to Changed Circumstances, approaches to monitoring and scientific research. The Implementation Office will work with the Permit Oversight Group and the Authorized Entity Group to institute mutually agreeable processes to enhance opportunities for such collaboration and engagement.

The Permit Oversight Group will have the following roles, among others, in implementation matters:

- Approve, jointly with the Authorized Entity Group, changes to Conservation Measures or biological objectives proposed by the Adaptive Management Team.

- Decide, jointly with the Authorized Entity Group, all other adaptive management and monitoring program matters for which concurrence has not been reached by the Adaptive Management Team.

- Approve, jointly with the Authorized Entity Group, the Annual Monitoring and Research Plan.

- Participate in decision-making regarding real-time operations, consistent with the criteria of *CM1 Water Facilities and Operation* and other limitations set out in the BDCP and annual Delta water operations plans.

- Provide input into the selection of the Program Manager and the Science Manager.

- Provide input and concurrence with respect to the consistency of specified sections of the Annual Work Plan and Budget with the BDCP and with certain agency decisions.

- Provide input and concur with the consistency of the Annual Delta Water Operations Plan with the BDCP.

- Provide input and accept Annual Progress Reports, including Annual Delta Water Operations Reports.

- Provide input and approve Plan amendments.

15.4.2 Positions of the Permit Oversight Group

For those actions that are regulatory in nature or require the concurrence and/or approval of the Permit Oversight Group, there will be one written communication, to the maximum extent practicable, relaying the position of the Permit Oversight Group on the

issue in question. In developing this communication, the three member agencies will coordinate with each other to evaluate interspecies conflicts and determine actions that meet the needs of all Covered Species, and they will ensure consistency among the federal agencies and, to the extent possible, among all three agencies in the application of their respective regulatory authority. Subject to the requirements for consistency above, nothing in this Agreement will limit the ability of any Permit Oversight Group agency to exercise its discretion through individual correspondence in circumstances where project operating agency action is imminent and there is not sufficient time to coordinate correspondence. Nothing in the this Agreement will limit application of authorities with respect to necessary Section 7 correspondence related to annual or seasonal operations of the CVP.

15.5 Adaptive Management Team

The Adaptive Management Team will have primary responsibility for administration of the adaptive management and monitoring program. The specific roles and responsibilities of the Adaptive Management Team are described in Chapter 3.6.2 and Section 10.3.2 of this Agreement.

15.6 BDCP Stakeholder Council

15.6.1 Purpose and Function

The Stakeholder Council will be formed to provide opportunities for interested parties to consider, discuss, and provide input on matters related to the implementation of the BDCP. The primary purpose of the Stakeholder Council is to provide a forum for the BDCP stakeholders to assess the implementation of the Plan, and to propose to the Implementation Office ways in which Plan implementation may be improved. The BDCP Stakeholder Council will be organized and convened by the Program Manager, who will also serve as a member of the Stakeholder Council.

For the benefit of the Stakeholder Council members and the general public, the Program Manager will provide information and conduct briefings regarding Plan implementation. Briefings will include presentations of drafts of the Annual Progress Report, Annual Work Plan and Budget, Annual Delta Water Operations Plan, the Annual Water Operations Report, Five Year Comprehensive Review, and the Five Year Implementation Plan, as described in Chapter 6.

The Stakeholder Council will develop its own process to consider and provide input regarding the various aspects of BDCP implementation, including matters related to work plans and budgets, the Annual Delta Water Operations Plan, implementation of Conservation Measures, adaptive management changes, monitoring and reporting activities, scientific research and review processes, and annual reports. A Technical Facilitation subgroup will be established to provide input to the Implementation Office and the Adaptive Management Team on technical and scientific matters. The

Stakeholder Council process will complement, but not substitute for, ongoing collaboration and communication between stakeholders and the Implementation Office, Authorized Entities, the Authorized Entity Group, the Permit Oversight Group, and the Fish and Wildlife Agencies. The Implementation Office will organize, help convene, and provide support to the Stakeholder Council and its proceedings.

15.6.2 Membership

The Stakeholder Council will consist of representatives from a range of entities and organizations with an interest in BDCP-related issues or otherwise engaged in BDCP matters. At a minimum, representatives of the following entities will be invited to participate on the Council:

- Representatives of DWR and Reclamation
- Representatives of SWP/CVP Contractors
- Representatives of Other Authorized Entities
- Representatives of USFWS, NMFS, and CDFW
- Representatives of other State and federal regulatory agencies, including the Army Corps of Engineers, the U.S. Environmental Protection Agency, and State Water Resources Control Board
- A representative of the Delta Stewardship Council
- A representative of the Delta Protection Commission
- A representative of the Delta Conservancy
- A representative of the Central Valley Flood Protection Board
- Representatives of the counties of San Joaquin, Sacramento, Solano, Yolo, and Contra Costa

Additional members will be selected from the following categories by the Secretary of the California Natural Resources Agency, in consultation with the directors of the relevant departments comprising the Agency, such as DWR and CDFW. The public may submit nominations to the Secretary for these additional members. Each member will serve a term of four years, and may be reappointed without limit and may serve until such time as they are replaced.

- At least three representatives from conservation groups with expertise in fish and wildlife management and/or the management of aquatic habitats and other natural lands

- At least three representatives of local government agencies within the Delta.

- At least one representative of fishing organizations

- At least one representative of hunting organizations

- At least one representative of recreational organizations

- At least two representatives of Delta reclamation districts

- At least two representatives of Delta agriculture

- At least three scientists with expertise in the management of natural lands, and native plant and animals species

- At least one representative of water agencies located in the Sacramento valley

- At least one representative of water agencies in the San Joaquin River watershed

- One representative from organized labor working in the building trades

- One representative from the exclusive representatives of State-employed scientific or engineering professionals

- Other stakeholders whose assistance will increase the likelihood of the success of Plan implementation, including Delta civic organizations and members of the general public

15.6.3 Meetings of the Stakeholder Council

The Program Manager will convene and facilitate the Stakeholder Council on at least a quarterly basis to exchange information and provide input to the Program Manager concerning the current significant issues at hand. Stakeholders will have opportunity to inquire about implementation matters, be apprised by the Program Manager of issues of interest, and make recommendations concerning pending decisions and other implementation matters. Stakeholder Council meetings will be open to the public.

15.7 Supporting Entities

15.7.1 Purpose and Function

The Implementation Office, through the Program Manager, may request that other entities, referred to as "Supporting Entities," perform certain implementation tasks, where such entities have the authority, resources, expertise, and willingness to successfully and timely undertake and complete the task. Where specific tasks are so assigned, the Program Manager will ensure that tasks and associated responsibilities are carried out properly and in coordination with other BDCP actions. The Authorized Entities and the Fish and Wildlife Agencies may also be Supporting Entities. Other Supporting Entities may include the following entities:

- The Delta Conservancy, which has been designated by statute as a primary State agency to implement ecosystem restoration in the Delta.

- Sponsors of regional conservation planning programs, including those engaged in NCCP and/or HCP development or implementation, or of other similar conservation programs, that overlap or are adjacent to the Plan Area.

- State and federal agencies.

- Other public agencies and private entities that have authority, capacity, or expertise to implement actions described in the Conservation Strategy in a cost-effective, reliable, and timely manner.

15.7.2 Administration and Oversight

The Program Manager will oversee each Supporting Entity's performance of its responsibility for carrying out a specific task. Decisions by the Program Manager to engage another entity in the implementation of specific Plan elements or actions will be accomplished by written contract (through the existing authorities of an Authorized Entity) and will be based on the entity's jurisdictional authority, level of expertise, and its capacity to carry out the element or action in a timely and successful manner. The Program Manager, with the concurrence of the Authorized Entity Group, may terminate a Supporting Entity's role in Plan implementation in the event that the Supporting Entity does not perform a task adequately. The Supporting Entity will be responsible, subject to oversight by the Program Manager, for entering into the necessary contracts and acquiring interests in real and personal property, in some cases obtaining permits or other authorizations, and taking all other steps needed to complete the implementation task.

The Take authorizations that will be issued pursuant to the BDCP will provide regulatory coverage under the ESA and the NCCPA for all activities and actions covered by the Plan. As such, no additional Take authorizations will be required to implement these

activities, regardless of whether the action is carried out by the Implementation Office or a Supporting Entity. The Permittees shall remain ultimately responsible for compliance with the Plan, this Agreement, and the associated regulatory authorizations.

15.8 Review of Disputes Regarding Implementation Matters

15.8.1 Matters Subject to Review

The Parties will be responsible for making various decisions with regard to the implementation of the BDCP. With respect to implementation matters for which the Authorized Entity Group and the Permit Oversight Group have joint decision-making authority and are unable to reach agreement, the review process described in this Section may be invoked to help resolve matters in dispute.

15.8.2 Review Process

In the event of a dispute between the Authorized Entity Group and the Permit Oversight Group, the Parties will describe the basis for the dispute and identify options that may be available to help resolve the matter. The Parties will meet and confer to consider these options and to determine whether agreement can be reached on the matter. If after the meeting the matter remains unresolved, the entity with decision-making authority, as set out in Table 7-1 of the Plan, will make a final decision.

Prior to that final decision by the entity with decision-making authority, any member of the Authorized Entity Group or the Permit Oversight Group may initiate a non-binding review process concerning the matter in dispute. A member of either group may trigger this process by providing the Authorized Entity Group and the Permit Oversight Group with a written notice of dispute that describes the nature of the dispute and a proposed approach to resolution. Such notice must be provided to the Parties within fourteen (14) days of the announcement of a tentative decision by the entity with decision-making authority. The entity with decision-making authority over the matter shall refrain from taking any actions to implement its decision until the review process has been completed.

Within fourteen (14) days of the issuance of the written notice of dispute, the Parties, with the assistance of the Implementation Office, will form a three member panel of experts. One member of the panel will be selected by the Authorized Entity Group, one member will be selected by the Permit Oversight Group, and a third member will be selected by mutual agreement of the first two panel members. Sixty (60) days after written notice of dispute, both Parties will submit letter briefs and documentary evidence. No discovery will be allowed. At its discretion, the panel may require rebuttals or responses from the Parties. If so required, the Parties will submit rebuttals or responses within thirty (30) days of the request. Also, at its discretion, the panel may meet and confer with any of the Parties regarding the matter and gather whatever available information it deems necessary and appropriate. Within sixty (60) days of the submittal of the written positions of the Parties, or rebuttals if so required, a non-binding

recommendation will be issued by a majority of the panel, in writing, which will include a statement explaining the basis for the recommendation. If the recommendation is not issued by that date, the entity with decision-making authority may make its final decision. The timely completion of the review process is important to the effective implementation of the BDCP. The schedule described above shall be adjusted as necessary to inform the decisions in a timely manner.

Within thirty (30) days of issuance of the panel's non-binding recommendation, the entity with final decision-making authority over the matter shall consider those recommendations, as well as any other relevant information concerning the issue at hand, and convey its final decision regarding the matter to the Authorized Entity Group and the Permit Oversight Group.

15.8.3 Availability of Legal Remedies

The availability of this review process will have no effect on the ability of a party to pursue legal remedies that may otherwise be available regarding a disputed matter. The recommendations of the panel are not intended to be given special deference by a reviewing court relative to the expert judgment of the agency making the final decision.

16.0 COMPLIANCE MONITORING AND REPORTING

16.1 Purpose of Compliance Monitoring

The purpose of compliance monitoring is to track progress of BDCP implementation in accordance with established timetables and to ensure compliance with terms and conditions of the BDCP and its associated regulatory authorizations. Compliance monitoring actions associated with specific Conservation Measures are set out in Chapter 3.4, and in Table 3.E-1 of Appendix 3.E of the Plan. Compliance monitoring will be conducted for all Conservation Measures, whether implemented directly by the Implementation Office or by Supporting Entities.

16.2 Responsibilities of the Implementation Office

The Implementation Office shall be responsible for ensuring that the compliance monitoring and reporting requirements of the Plan are met and for carrying out the tasks required to meet these obligations, as further described in Chapters 6 and 7. The Implementation Office may enlist the Adaptive Management Team or Supporting Entities, including the IEP and the Delta Science Program, to perform certain monitoring and reporting tasks. However, the Implementation Office shall remain solely responsible for fulfilling all monitoring and reporting requirements.

16.3 Compliance and Progress Reports

The Implementation Office shall prepare, on a periodic basis, reports documenting compliance with the provisions of the BDCP and its associated regulatory authorizations and the progress being made toward meeting the biological goals and objectives of the Plan. The Implementation Office shall, over the term of the BDCP, submit various reports and plans to the Fish and Wildlife Agencies that serve the following purposes:

- Provide the data and information sufficient to demonstrate that the BDCP is being properly implemented.

- Provide assessments regarding the effects of Plan implementation on Covered Species and the effectiveness of the Conservation Strategy at advancing the biological goals and objectives.

- Identify actions, if any, taken pursuant to the adaptive management and monitoring program and/or in response to changed or unforeseen circumstances.

- Disclose issues and challenges concerning implementation, and the potential modifications or amendments to the BDCP that may be taken to address these issue and challenges.

- Provide schedules and budget estimates associated with the implementation of Plan actions over 1-year and 5-year timeframes.

The Program Manager shall post on the BDCP website the reports and other information identified in this Section, including any subsequent revisions to those reports. As part of those postings, the Program Manager will include information, on a daily basis, about planned and actual water diversions, including updates on revisions to the Annual Delta Water Operations Plan. An accounting of actual diversions, including daily, weekly, monthly, and yearly operational levels, shall also be posted. The Program Manager will describe and explain operational changes, including departures from planned or anticipated diversion levels, in terms that are understandable to the general public.

Throughout the course of BDCP implementation and for the purpose of demonstrating compliance with the provisions of the BDCP, this Agreement, and the associated regulatory authorizations, the Implementation Office shall prepare and submit to the Fish and Wildlife Agencies the following reports.

16.3.1 Annual Progress Report

At the end of each implementation year,[1] the Implementation Office shall begin the preparation of an Annual Progress Report. The report will document the Plan actions carried out during the implementation year and provide information sufficient to demonstrate that the BDCP is being implemented consistent with the provisions of the Plan, this Agreement, and the associated regulatory authorizations. The report will include, as provided for in Chapter 6.3, information relating to the implementation of Conservation Measures, actions taken or changes to Conservation Measures or biological objectives adopted pursuant to the adaptive management and monitoring program, expenditures of funds, occurrences of any Changed Circumstances or unforeseen circumstances, and modifications or amendments to the BDCP or its associated regulatory authorizations. The Annual Progress Report shall also include an evaluation of the progress being made toward meeting the biological goals and objectives of the Plan. The Annual Progress Report shall incorporate the Annual Delta Water Operations Report.

The Program Manager shall solicit input on the draft of the Annual Progress Report from the Permit Oversight Group and the Stakeholder Council, and submit the report to the Authorized Entity Group for review and approval. The Implementation Office shall finalize and submit the Annual Progress Report to the Fish and Wildlife Agencies for their acceptance within six months of the close of the reporting year.

16.3.2 Annual Delta Water Operations Report

Beginning in the first year that the north Delta diversions and conveyance facilities become operational, and for each year thereafter, the Implementation Office shall prepare an Annual Delta Water Operations Report. The report will document the operations of the SWP and the CVP within the Plan Area over the course of the prior implementation year and provide sufficient information to demonstrate that such operations were implemented in a manner consistent with the provisions of the Plan, this Agreement, and the associated regulatory authorizations. The report will include, as described in Chapter 6.3, a summary of the prior year's operations, including a comparison of the actual operations to planned operations, and an evaluation of the effects of water operations on Covered Species and ecological processes, including the responses of those species to real-time operational changes.

The Implementation Office will seek input from the Authorized Entities, Fish and Wildlife Agencies, and the Stakeholder Council on the draft Annual Delta Water Operations Report. Within six months of the close of the reporting year, the Implementation Office shall complete the report and incorporate it into the Annual Progress Report.

16.3.3 Five-Year Comprehensive Review

[1] The Implementation Office will decide how the planning year will be bounded (e.g., calendar year, federal fiscal year, state fiscal year, or water year).

At increments of five years, the Implementation Office shall undertake a Five-Year Comprehensive Review of the BDCP. The purpose of these reviews is to assess, on a periodic, program-level basis, the overall effectiveness of the BDCP, including the progress made toward achieving the biological goals and objectives and water supply reliability targets. As such, these reviews will focus on identifying and evaluating broad ecological trends in the Delta and changes in the status of Covered Species. The scope of the Five-Year Comprehensive Review is described in Chapter 6.3.5.

The Five-Year Comprehensive Review will be carried out by the Implementation Office, in coordination with the Interagency Ecological Program, Delta Science Program, and Independent Science Board. The Implementation Office will work with the Interagency Ecological Program lead scientist and the Delta Science Program Science Manager to consolidate data and information from a range of sources. The Program Manager shall solicit input on the draft findings of the Five-Year Comprehensive Review from the Permit Oversight Group and the Stakeholder Council, and submit the review report to the Authorized Entity Group for review and approval. The Implementation Office shall complete and submit the Five-Year Comprehensive Review report to the Fish and Wildlife Agencies for their acceptance within six months of the close of the five year period subject to the review.

16.4 Inspections by Fish and Wildlife Agencies

The Fish and Wildlife Agencies may conduct inspections and monitoring of the site of any Covered Activity, and may inspect any data or records required by this Agreement, the BDCP or the Permits, in accordance with applicable law and regulations. The USFWS and NMFS may also inspect and monitor the site of any Associated Federal Action for the purpose of verifying Reclamation's compliance with the Integrated Biological Opinion and Incidental Take Statement.

17.0 PLANNING DOCUMENTS

17.1 Purpose of Planning Documents

The Authorized Entities intend for several types of plans to be developed throughout the course of BDCP implementation. Although not a mandatory element of the BDCP, the Parties acknowledge that such plans will improve coordination, enhance the effectiveness of Plan implementation, and increase transparency regarding the administration and implementation of the Plan. Accordingly, the Authorized Entities commit to the development of such plans.

17.2 Types of Planning Documents

17.2.1 Annual Work Plan and Budget

On an annual basis, the Implementation Office will prepare an Annual Work Plan and Budget for the upcoming implementation year. The work plan will describe the activities, including those related to the implementation of Conservation Measures and the Adaptive Management and Monitoring program, which are expected to be implemented. The budget will set out projected expenditures and identify the sources of funding for those expenditures.

The Program Manager shall solicit input on the draft Annual Work Plan and Budget from the Permit Oversight Group and the Stakeholder Council, and submit the Annual Work Plan and Budget to the Authorized Entity Group for review and approval. As part of this process, the Permit Oversight Group will review the draft plan and provide written concurrence, within thirty (30) days, or as soon as practicable thereafter, that the draft plan accurately sets forth and makes adequate provision for the implementation of the applicable joint decisions of the Authorized Entity Group and the Permit Oversight Group or decisions of an agency with authority over the matter.

If the Permit Oversight Group concludes that the draft plan does not do so, it will provide written notification to the Program Manager and the Authorized Entity Group, within the 30 day timeframe, or as soon as practicable thereafter, of the specific reasons for its conclusion. In such event, the Authorized Entity Group may direct the Program Manager to modify the draft plan to the satisfaction of the Permit Oversight Group. If the Authorized Entity Group does not, the Program Manager, Authorized Entity Group and the Permit Oversight Group will, in a timely manner, meet and confer in an effort to resolve the matter in dispute. If the Parties are unable to reach resolution, the review process described in Chapter 7.1.7 and Section 15.8 of this Agreement may be invoked by any member of the Authorized Entity Group or the Permit Oversight Group.

The draft Annual Work Plan and Budget will be submitted for review and comments to the Authorized Entity Group no later than three months, and the Permit Oversight Group and the Stakeholder Council no later than two months, prior to the release of the final Annual Work Plan and Budget. A final Annual Work Plan and Budget will be completed no later than one month prior to the beginning of the implementation year. The Program Manager will utilize the foregoing process with respect to any proposed amendments to the Annual Work Plan and Budget.

17.2.2 Annual Delta Water Operations Plan

On an annual basis, DWR and Reclamation will jointly develop an Annual Delta Water Operations Plan. The Annual Delta Water Operations Plan will set out the operational priorities and strategies to address biological objectives and water supply targets for the upcoming year, and include other information as set forth in Chapter 6.3. The first of such plans will be prepared in the year prior to the initiation of operations of the north Delta diversion and conveyance facilities (assumed to be year nine). Subsequent plans will be prepared and finalized no later than one month prior to each implementation year.

DWR and Reclamation will seek input from other members of the Authorized Entity Group, the Implementation Office, Permit Oversight Group, Adaptive Management Team, and the Stakeholder Council regarding the draft Annual Delta Water Operations Plan. The Annual Delta Water Operations Plan will include: 1) operational priorities for both fisheries and water supply for the upcoming year for the purpose of maximizing conservation benefits to covered fish species and maximizing water supplies; 2) expected operations, including consideration of real time operational adjustments, consistent with the criteria established in CM1 and CM2; 3) monitoring, data collection, research efforts, and potential adaptive management actions associated with water operations for the upcoming year and 4) the potential need for the Supplemental Resources Fund to assist in achieving the overall goals of the BDCP for the coming year due to anticipated operating conditions. DWR and Reclamation will retain final approval authority over the plan; however, the Permit Oversight Group will, within thirty (30) days of receipt of the draft plan, or as soon as practicable thereafter, review the draft plan and provide written concurrence that the draft plan is consistent with the provisions of the BDCP, this Agreement, and the associated regulatory authorizations.

If the Permit Oversight Group concludes that the draft plan is not consistent, it will notify DWR and Reclamation in writing within the 30-day timeframe, or as soon as practicable thereafter, of the specific reasons for its conclusion. In such event, DWR and Reclamation may modify the plan to the satisfaction of the Permit Oversight Group. If they do not, DWR, Reclamation and the Permit Oversight Group will, in a timely manner, meet and confer in an effort to resolve the matter in dispute. If these Parties are unable to reach resolution, the review process in Chapter 7.1.7 and Section 15.8 of this Agreement may be invoked by any of these parties. In the event that the Permit Oversight Group invokes the elevation process, DWR and Reclamation may nonetheless begin to implement the plan, provided that their operations do not substantially preclude a potential resolution of the issue in dispute. The Implementation Office will incorporate the final Annual Delta Water Operations Plan into the Annual Work Plan and Budget (Chapter 6.3).

17.2.3 Five-Year Implementation Plan

Based on the Five-Year Comprehensive Review, the Implementation Office will prepare a Five-Year Implementation Plan that identifies and assesses prospective issues likely to arise over the upcoming five-year period. The Five-Year Implementation Plan will contain, among other things, a summary of the planned actions and timeframe for those actions, including potential revisions to those actions and timeframes, related to the implementation of the Conservation Strategy; a description of expected long-term and system-wide monitoring actions and anticipated research efforts; and budget projections reflecting the estimated costs of implementing future actions.

The Program Manager shall solicit input on the draft Five-Year Implementation Plan from the Permit Oversight Group and the Stakeholder Council, and submit the draft plan to the Authorized Entity Group for review and approval. As part of this process, the

Permit Oversight Group will review the draft plan and provide written concurrence, within thirty (30) days, or as soon as practicable thereafter, that the draft plan accurately sets forth and makes adequate provision for the implementation of the applicable joint decisions of the Authorized Entity Group and the Permit Oversight Group or decisions of an agency with authority over the matter.

In years when Five-Year Implementation Plans are prepared, the Annual Work Plan and Budget may be included with or prepared separately from the Five-Year Implementation Plan.

18.0 RELATIONSHIP OF THE BDCP TO OTHER REGIONAL CONSERVATION PLANS

The Plan Area adjoins or overlaps with six other regional conservation plans that are being implemented or are under development. The Parties expect that implementation of the BDCP will not adversely affect or be incompatible with overlapping and adjoining plans that have been approved or are under development. To ensure the successful implementation of the BDCP and these other regional conservation plans, the Implementation Office will undertake the following efforts:

- Encourage local government participation on the Stakeholder Council.

- Establish processes to enhance opportunities for collaboration and coordination between the Implementation Office and the regional plan sponsors on matters relating to, among other things, the acquisition and management of lands preserved as habitat within areas common to both plans.

- Enlist local governments to serve as Supporting Entities to assist in the acquisition and management of habitat lands.

- Encourage joint acquisitions of land to realize economies of scale and to secure large, contiguous blocks of habitat.

- Explore opportunities to identify the range of easement values serving one or more conservation objectives of the BDCP and other regional plans.

- Identify key acquisition areas that meet the full complement of conservation objectives (e.g., intrinsic habitat value, connectivity, reducing exposure to the effects of climate change) and that may be available for support of existing plans in conjunction with the BDCP.

- Explore opportunities for the Implementation Office to facilitate funding for “advance” conservation actions (i.e., habitat acquisition and

restoration) that may benefit both the BDCP and other regional conservation plans.

- Work with the sponsors of the regional conservation plans in California to encourage an increase in federal appropriations to support HCP implementation through existing federal grant programs and to help ensure that sufficient funds are available to all eligible plans in California.

19.0 RELATIONSHIP OF THE BDCP TO THE DELTA PLAN

The Sacramento–San Joaquin Delta Reform Act of 2009 (Act) (Water Code §§ 85300 *et seq*.), provides for the establishment of an independent State agency, the Delta Stewardship Council, which is charged with the development and implementation of a comprehensive Delta Plan, and is vested with the authority to review actions of State and local agencies and advise on their consistency with the Delta Plan.

The Act sets out conditions for the inclusion of the BDCP into the Delta Plan. To ensure that the BDCP is incorporated into the Delta Plan in a timely manner, CDFW, upon execution of this Agreement and issuance of Permits, shall immediately notify the Delta Stewardship Council that the BDCP meets the requirements of the NCCPA. USFWS and NMFS shall similarly provide timely notification to the Delta Stewardship Council that the BDCP has been permitted under ESA Section (10)(a)(1)(B).

20.0 SPECIFIC OBLIGATIONS OF THE FISH AND WILDLIFE AGENCIES

20.1 Obligations of USFWS and NMFS

20.1.1 Future Section 7 Consultations for Covered Activities and Associated Federal Actions

The BDCP is intended to meet the requirements of the ESA and provide the basis for regulatory coverage for a range of activities identified in the Plan. Some of the Covered Activities and Associated Federal Actions may require funding or regulatory authorizations or approvals from other federal agencies. In such instances, these federal agencies may need to consult with USFWS and/or NMFS under Section 7 of the ESA with respect to the effect of the activity on listed species and critical habitat.

Unless otherwise required by law or regulation, in any future Section 7 consultation on a Covered Activity or Associated Federal Action, USFWS and NMFS will each ensure that the Section 7 consultation(s) is(are) consistent with the Integrated Biological Opinion provided that the action as proposed in the consultation is consistent, and will be implemented in accordance with the Plan, and this Agreement. Unless otherwise required by law or regulation, USFWS and NMFS will not require through the Section 7 consultation additional land, water or other natural resources, or financial compensation

or additional restrictions on the use of land, water, or other natural resources for Covered Activities and Associated Federal Actions beyond the measures provided for under the BDCP, the Implementing Agreement, the Permits, and the Integrated Biological Opinion.

20.1.2 Section 7 Consultations for Other Activities

In any Section 7 consultation that occurs subsequent to the issuance of take authorizations under the BDCP and involves actions other than Covered Activities and Associated Federal Actions that may have an effect upon Covered Species and their habitats within the Plan Area, USFWS and NMFS shall give notice thereof to the Authorized Entities, Implementation Office, and the Authorized Entity Group. For these biological opinions issued in connection with projects that are independent of the Covered Activities and Associated Federal Actions, USFWS and NMFS agree to make every effort to avoid rendering opinions or taking actions that would cause additional restrictions on the use of land, money, or water for the Authorized Entities with respect to their obligations under the BDCP or this Agreement.

20.1.3 Reinitiation of Consultation on Integrated Biological Opinion

The Parties acknowledge that circumstances may arise under which Reclamation and USFWS and NMFS determine that it is necessary to reinitiate Section 7 consultation with regard to the Integrated Biological Opinion. Reinitiation of Section 7 consultation on the Integrated Biological Opinion shall occur in accordance with the criteria set forth at 50 C.F.R. § 402.16. The Parties agree the BDCP includes provisions that provide for adjustments to Conservation Measures and Plan implementation through adaptive management and through planned responses to Changed Circumstances if new information reveals the Covered Activities and Associated Federal Actions may affect Covered Species in a manner or to an extent not previously considered. Therefore, Reclamation, USFWS and NMFS will not re-initiate consultation on the Integrated Biological Opinion without first evaluating the BDCP provisions that provide for a response to these newly identified effects, and making a determination that the BDCP provisions are not sufficient to address those effects. Prior to any reinitiation of consultation regarding the Integrated Biological Opinion, the Authorized Entities and USFWS and NMFS shall meet and confer and attempt to resolve any disagreements regarding whether such reinitiation of consultation is warranted.

20.1.4 Reinitiation of Consultation on Other CVP/SWP-Related Biological Opinions

Prior to the reinitiation of consultation regarding a biological opinion involving CVP or coordinated CVP/SWP operations other than those addressed in the BDCP and the Integrated Biological Opinion, the Authorized Entities and USFWS and NMFS will meet and confer regarding any disagreements over the need to reinitiate consultation If Reclamation or FWS and/or NMFS reinitiates consultation on a Biological Opinion involving CVP or coordinated CVP/SWP operations, to the maximum extent allowed by

law, Reclamation will prepare the Biological Assessment and the USFWS and/or NMFS, as applicable, will prepare the Biological Opinion consistent with the BDCP, the permits, the Integrated Biological Opinion and this Agreement including the Assurances and Protections.

20.1.5 Process for Review of Draft Biological Assessments and Draft Biological Opinions Prepared During Reinitiation of Consultation on the Integrated Biological Opinion or Other CVP/SWR-Related Biological Opinions

In the event of reinitiation of consultation on actions addressed in the Integrated Biological Opinion or on actions related to the CVP operations or coordinated CVP/SWP operations that may substantially affect the BDCP , the Permittees, as well as other affected parties as determined by the action agency, shall be given the opportunity to participate, within the timeframes required by the action agency, in such consultation, and allowed to (i) submit information for consideration during consultation, (ii) review and comment on draft biological assessments and draft biological opinions prepared for such consultation, and, (iii) participate in the development of reasonable and prudent alternatives that would substantially affect BDCP, in the event a jeopardy or adverse modification determination is made.

20.1.6 Critical Habitat Designation for Covered Species

The BDCP and this Agreement provide a comprehensive, habitat-based approach to the protection of Covered Species by focusing on the land and water necessary to provide for the long-term conservation and management of the Covered Species. This approach is consistent with the overall purposes of the ESA to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved.
At the time critical habitat is considered for a species proposed for listing under the ESA or currently listed under the ESA, the Services will consider whether habitat protections under the BDCP adequately protect habitat that would be deemed essential to the species' recovery and survival. If the finding is that the habitat is adequately protected, and the benefits of exclusion outweigh the benefits of inclusion, such critical habitat would not be designated in BDCP Plan Area. If critical habitat is designated within the BDCP Plan Area subsequent to issuance of the permits, no compensation, mitigation, or minimization measures will be required of the Permittees as a result of the designation.

20.1.7 Future Recovery Plans for Covered Species

Recovery plans under the ESA delineate actions necessary to recover and protect federally listed species. During the preparation of the BDCP, these plans provided useful information and recommendations that informed the development of the Conservation Strategy. Recovery plans are not, however, intended to establish or define the obligations of permit applicants under the ESA.

The Parties acknowledge that ESA recovery plans have no effect on the implementation of the BDCP, except to the extent that they may contribute information that supports the Adaptive Management and Monitoring Program. With respect to any recovery plan applicable to any Covered Species within the Plan Area that is developed after the approval of the BDCP the parties agree that:

- Recovery plans cannot require any additional land or financial compensation or otherwise diminish the take authorization for Covered Species granted to the Authorized Entities pursuant to the Federal Permits or the Integrated Biological Opinion.

- Be finalized only after USFWS and NMFS will provide an opportunity for input from the Authorized Entity Group on the draft recovery plan.

20.1.8 Agencies Responsible for Conducting the NEPA Analysis

Reclamation, USFWS, and NMFS have served as federal lead agencies under NEPA regarding the preparation of the joint EIR/Environmental Impact Statement (EIS) for the BDCP. Prior to the Effective Date, the lead agencies prepared an EIS that fully analyzed the actions proposed in the BDCP and a full range of alternatives to ensure that decision makers and the public were fully informed of the potentially significant effects of the proposed BDCP, and the alternatives to the Plan, on the quality of the human environment.

20.1.9 Future Environmental Review Under NEPA

To the maximum extent possible in accordance with NEPA and applicable law, Reclamation, USFWS, and NMFS shall rely on and use relevant portions of the EIS and NEPA findings when conducting future environmental review of Covered Activities and Associated Federal Actions. In the event that USFWS or NMFS participate as a lead or cooperating agency under NEPA with respect to subsequent environmental review related to the implementation of a Covered Activity or Associated Federal Action, USFWS or NMFS will not recommend or request the imposition of any additional or more stringent minimization or mitigation measures related to the protection or conservation of Covered Species or their habitat unless required by applicable law. Except in those instances, USFWS and NMFS will notify the lead NEPA agency that the Conservation Measures in the BDCP fully address any impact to or incidental take of any Covered Species or habitat resulting from Covered Activities or Associated Federal Actions.

20.2 Obligations of CDFW

20.2.1 CEQA

20.2.1.1 Agencies Responsible for CEQA Analysis

CDFW has served as a responsible agency under CEQA regarding the development of the joint EIR/EIS for the BDCP. Prior to or concurrent with the Effective Date, DWR and CDFW each evaluated the BDCP pursuant to CEQA and issued findings addressing whether the implementation of the BDCP would cause significant adverse impacts to the environment.

20.2.1.2 Future Environmental Review Under CEQA

Unless otherwise required by CEQA or other applicable law, the Permittees and CDFW shall rely on and use relevant portions of the EIS/EIR and the CEQA findings when conducting future environmental review of Covered Activities. In the event that CDFW participates as a lead, responsible, or trustee agency under CEQA with respect to the implementation of Covered Activities, CDFW will not require, recommend, or request the imposition of any additional or more stringent minimization or mitigation measures directed at the protection or conservation of Covered Species or their habitats. As a responsible or trustee agency under CEQA, CDFW will further notify the lead CEQA agency that any avoidance, minimization, and mitigation measures otherwise required for any impact to or take of any Covered Species or habitat resulting from Covered Activities will be satisfied through the implementation of the BDCP.

20.2.2 Lake and Streambed Alteration Agreements for Covered Activities

CDFW acknowledges and agrees that the BDCP, this Agreement, and the State Permit shall be deemed to provide an equivalent level of protection for wildlife, habitat, or other biological resources as the measures that would otherwise be required or recommended to address the impacts of Covered Activities on Covered Species pursuant to Fish & Game Code §§ 1600–1616.

In any future notification provided to CDFW under Section 1602 related to a Covered Activity, CDFW will ensure that any Streambed Alteration Agreement issued in response to the notification is consistent with the BDCP, this Agreement, and the State Permit. Unless otherwise required by law or regulation, CDFW will not require through the Streambed Alteration Agreement additional land, water or other natural resources, or financial compensation or additional restrictions on the use of land, water, or other natural resources to address impacts of Covered Activities on Covered Species beyond the measures provided for under the BDCP, this Agreement, and the State Permit.

21.0 TERM

21.1 Effective Date

This Agreement shall be effective upon execution by all Parties and issuance of all Permits.

21.2 Term of the Permits

The Permits will be in effect for a term of fifty (50) years, unless extended pursuant to Section 21.3. The terms of the Permits will begin from the Effective Date.

21.3 Extension of Permit Duration

Prior to expiration of the Permits, the Permittees may apply to the Fish and Wildlife Agencies to renew the Permits. The Permittees will initiate the Permit renewal process prior to the expiration of the initial 50-year period and with sufficient time to allow for the review and processing of the Permit renewal.

21.4 Withdrawal

Upon ninety (90) days written notice to the Parties, any Permittee may unilaterally withdraw from the BDCP and this Agreement. Such withdrawal of a Permittee from this Agreement shall be deemed to constitute a surrender of the Permittee's authorization under the Permits. In the event of withdrawal by any Permittee other than DWR, the remaining Permittees would remain obligated to meet all Permittee requirements under the Plan and this Agreement. In the event of withdrawal by DWR, the Permits will be terminated.

21.4.1 Obligations in the Event of Withdrawal

As a condition of withdrawal, the withdrawing Party(ies) shall remain obligated to ensure implementation of all existing and outstanding Conservation Measures required under this Agreement, the BDCP and the Permits to address all impacts of any take caused by the withdrawing Party(ies) that occurred prior to such withdrawal. Such obligations would include long-term management of Reserve Lands established prior to withdrawal.

21.4.2 Mitigation Credit in the Event of Withdrawal

In the event of withdrawal, the withdrawing Party(ies) shall receive mitigation credit for any mitigation attributable to the withdrawing Party(ies) that occurs prior to withdrawal and that is not required to offset take that occurred prior to withdrawal.

22.0 REMEDIES AND COMPLIANCE

Each Party will have all of the remedies available in equity (including specific performance and injunctive relief) and at law to enforce the terms of this Agreement, the BDCP and the Permits, and to seek redress for any breach or violation thereof; except to the extent that equitable relief in contract (including specific performance) is not available against the United States, and except that:

- none of the Parties will be liable in damages to any other Party or to any other person or entity for any breach of this Agreement, any performance or failure to perform a mandatory or discretionary obligation imposed by this Agreement, or any other cause of action arising from this Agreement;

- in the event that the Authorized Entities are wholly or partially prevented from performing obligations under this Agreement because of causes beyond their reasonable control and without their fault or negligence (force majeure), including, but not limited to, acts of God, labor disputes, sudden actions of the elements not identified as Changed Circumstances, or actions of non-participating federal or State agencies or local jurisdictions, the Authorized Entities, as applicable, will be excused from whatever performance is affected by such cause to the extent so affected, and such failure to perform will not be considered a material violation or breach, provided that nothing in this Section will be deemed to authorize any Authorized Entities to violate the ESA, CESA or NCCPA, and provided further that:

    - The suspension of performance is of no greater scope and no longer duration than is required by the force majeure;

    - Within fifteen (15) days after the occurrence of the force majeure, the Authorized Entities, as applicable, provide the Fish and Wildlife Agencies written notice describing the particulars of the occurrence;

    - The Authorized Entities use their best efforts to remedy their inability to; and

    - When the Authorized Entities are able to resume performance of their obligations, the Authorized Entities, as applicable, shall give the Fish and Wildlife Agencies written notice to that effect.

Nothing in this Agreement is intended to limit the authority of the federal and State government to seek civil or criminal penalties, equitable relief, or otherwise fulfill enforcement responsibilities under the ESA, NCCPA or other applicable law.

22.1 Suspension of Federal Permits

USFWS or NMFS may suspend the Federal Permits, in whole or in part, for cause in accordance with 50 C.F.R. § 13.27 and 222.306(e) and other applicable laws and regulations in force at the time of such suspension. Unless emergency suspension is necessary to avoid jeopardy to a Covered Species, USFWS or NMFS shall not issue a notice of proposed suspension in accordance with 50 C.F.R. § 13.27(b) without first (1) attempting to resolve, in accordance with Section 15.8, any disagreements regarding the implementation or interpretation of the BDCP, this Agreement or the Permits; and (2)

identifying the facts or conduct which may warrant the suspension and requesting the Implementation Office to take appropriate remedial actions. Unless emergency suspension is necessary, USFWS and NMFS shall not suspend a Federal Permit, in whole or in part, to avoid the likelihood of jeopardy to a Covered Species, without first following the dispute resolution process in Section 22.5 of this Agreement. Any proposed decision to suspend the USFWS permit must be reviewed and approved in writing by the Assistant Secretary for Water and Science and the Assistant Secretary for Fish Wildlife and Parks, before it is effective. Any proposed decision to suspend the NMFS permit must be reviewed and approved in writing by the appropriate Under Secretary at the Department of Commerce. This responsibility shall not be delegated.

22.2 Reinstatement of Suspended Federal Permits

In the event USFWS or NMFS suspends a Federal Permit, in whole or in part, as soon as possible but no later than ten (10) days after such suspension, USFWS or NMFS, as applicable, will meet and confer with the Implementation Office concerning how the suspension can be ended. At the conclusion of any such conference, USFWS or NMFS will identify reasonable, specific actions, if any, necessary to effectively redress the suspension. In making this determination, USFWS or NMFS will consider the requirements of the ESA and its regulations, the conservation needs of the Covered Species, the terms of the Federal Permit and of this Agreement and any comments or recommendations received from the Implementation Office. As soon as possible, but not later than thirty (30) days after the conference, USFWS/NMFS will send the Implementation Office written notice of any available, reasonable actions necessary to effectively redress the deficiencies giving rise to the suspension. Upon performance or completion, as appropriate, of such actions, USFWS/NMFS will immediately reinstate the Federal Permit. It is the intent of the Parties that in the event of any total or partial suspension of a Federal Permit, all Parties will act expeditiously and cooperatively to reinstate the Federal Permit.

22.3 Revocation of Federal Permits

USFWS and NMFS each agree that it will not revoke or terminate a Federal Permit, in whole or in part, pursuant to 50 C.F.R. §§ 13.28–13.29 and 50 C.F.R. §§ 17.22(b)(8) and 17.32(b)(8) unless the Permittees fail to fulfill their obligations under the BDCP, this Agreement, or the Federal Permits, and only after identifying the facts or conduct which may warrant the revocation and requesting the Implementation Office to take appropriate remedial actions, and following the review process in Section 15.8 if invoked by a Permittee, unless immediate revocation is necessary to avoid the likelihood of jeopardy to a Covered Species. USFWS and NMFS each agree that it will not revoke or terminate a Federal Permit, in whole or in part, to avoid the likelihood of jeopardy to a Covered Species, without first following the dispute resolution process in Section 22.5 of this Agreement.

Any proposed decision to revoke the USFWS permit must be reviewed and approved in writing by the Assistant Secretary for Water and Science and the Assistant Secretary for Fish Wildlife and Parks, before it is effective. Any proposed decision to revoke the NMFS permit must be reviewed and approved in writing by the appropriate Under Secretary at the Department of Commerce. This responsibility shall not be delegated.

22.4 Suspension or Revocation of the State Permit

CDFW may suspend or revoke, in whole or in part, the State Permit in the event that it determines that the Permittees have failed to fulfill their obligations under the BDCP, this Agreement, or the State Permit. Unless an immediate suspension is necessary to avoid jeopardy, CDFW shall not suspend or revoke the State Permit without first notifying in writing the Implementation Office and Permittees of the basis for its determination and the proposed action to revoke or suspend and meeting and conferring with the Program Manager and the Permittees regarding the matter. The Parties shall meet and confer within fifteen (15) days of issuance of such notice to assess the action or inaction that warranted CDFW's determination and to identify any appropriate responsive measures that may be taken. Within forty-five (45) days of receiving notice from CDFW, Permittees shall either satisfy CDFW that they are in compliance with the State Permit or reach an agreement with CDFW to expeditiously obtain compliance.

Following this forty-five (45) day period, CDFW may suspend, but shall not revoke the State Permit until such time as the review process set forth in Section 15.8 of this Agreement has been completed, provided the process has been invoked by a Permittee. Any decision to suspend or revoke the State Permit must be in writing and must be signed by the Director of CDFW. This responsibility shall not be delegated. Situations related to a jeopardy determination are addressed under Section 22.6 of this Agreement.

22.5 Dispute Resolution Process for Revocation or Suspension of the Federal Permits or Invalidation of the Incidental Take Statement Related to a Jeopardy Determination

In the event that USFWS or NMFS determine, after following the process to address unforeseen circumstances set forth in Section 14.3.3 of this Agreement, that circumstances warrant suspension or revocation of one or both of the Federal Permits or invalidation of the Incidental Take Statement to avoid jeopardy to a Covered Species, USFWS and/or NMFS, as applicable, shall meet and confer with the Program Manager and the Authorized Entity Group within thirty (30) days of such determination to identify potential actions that may be available to forestall the suspension or revocation. Such actions that may include, but would not be limited to, the following:

- Identify and secure other State and/or federal resources that had not been previously identified.

- Identify voluntary implementation actions that the Authorized Entities may undertake to remedy the situation. Such measures may include (1) adjustments of project operations to reduce or avoid impacts; (2) operational changes at the points of diversions; (3) water transfers or purchase of water rights involving third parties; (4) new water storage or banking arrangements; (5) payments from the federal and State governments to the Authorized Entities for reduced allocations; and (6) additional funding for wildlife agency staff to increase enforcement against third party activities causing unlawful take.

If no such remedies are identified, and USFWS and/or NMFS determine that the continuation of a Covered Activity or Associated Federal Action will result in jeopardy to a Covered Species, any member of the Authorized Entity Group may invoke the review process in Section 15.8 of this Agreement.

22.6 Dispute Resolution Process for Revocation or Suspension of the State Permit Related to a Jeopardy Determination

Section 2823 of the NCCPA provides that CDFW shall suspend or revoke any permit, in whole or in part, issued for the take of a species subject to Section 2835 if the continued take of the species would result in jeopardizing the continued existence of the species. CDFW agrees that it will not revoke the State Permit pursuant to Section 2823 without first (a) requesting that the Permittees take appropriate remedial action, and (b) providing the Permittees with notice in writing of the facts or conduct which warrant the revocation and a reasonable opportunity (but not less than forty-five (45) days) to take remedial action. CDFW shall meet and confer with the Program Manager and the Permittees within fifteen (15) days of such notice to identify potential actions that may be available to forestall the revocation. Such actions may include, but would not be limited to, the following:

- Identify and secure other State and/or federal resources that had not been previously identified.

- Identify voluntary implementation actions that the Permittees may undertake to remedy the situation. Such measures may include (1) adjustments of project operations to reduce or avoid impacts; (2) operational changes at the points of diversions; (3) water transfers or purchase of water rights involving third parties; (4) new water storage or banking arrangements; (5) payments from the federal and State governments to the Authorized Entities for reduced allocations; and (6) additional funding for wildlife agency staff to increase enforcement against third party activities causing unlawful take.

If no such remedies are identified, and CDFW determines that continued take of a Covered Species would result in jeopardizing the continued existence of the species, CDFW shall suspend or revoke the State Permit, in whole or in part, under Fish & Game Code Section 2823. CDFW shall not revoke the State Permit, however, until such time as the review process set forth in Section 15.8 of this Agreement has been completed, provided the process has been invoked by a Permittee.

22.7 Obligations in the Event of Permit Suspension or Revocation

In the event of suspension or revocation of the Permits, the Permittees will remain obligated to fulfill any existing and outstanding minimization and mitigation measures required of them under this Agreement or the BDCP related to any Take that occurs prior to such suspension, revocation, or termination. Such obligations would include the obligation to provide for the long-term management or Reserve System Lands that were established prior to suspension or termination of the Permits or that would otherwise be required under the Plan for impacts of any act that would cause the permitted Take.

23.0 MODIFICATIONS AND AMENDMENTS

The BDCP may be modified during implementation in accordance with CDFW, USFWS, and NMFS regulations, the Plan, and the terms of this Agreement. Plan modifications may be needed periodically to clarify provisions or correct unanticipated inconsistencies in the documents. Plan changes fall into three broad categories: administrative changes, minor modifications, and formal amendments. Certain changes to the BDCP will also require an amendment to the Permits.

23.1 BDCP Administrative Changes

The administration and implementation of the BDCP will require frequent and ongoing interpretation of its provisions by the Implementation Office and the Parties. Actions taken on the basis of these interpretations that do not substantively change the purpose, intent, or terms of the Plan or this Agreement will not require modification or amendment of the Plan, this Agreement, or its associated authorizations. Such actions related to the ordinary administration and implementation of the Plan may include, but are not limited to, the following:

- Clerical corrections to typographical, grammatical, and similar editing errors that do not change the intended meaning; or to maps or other exhibits to address insignificant errors.

- Variations in the day-to-day management of reserve system lands.

- Adjustments to monitoring protocols to incorporate new protocols approved by the Fish and Wildlife Agencies.

- Administration of the Implementation Office.

- Changes in the representatives of member entities of the Stakeholder Council.

- Minor corrections to land ownership descriptions.

- Changes to survey, monitoring, reporting, restoration, and/or management protocols or techniques that do not adversely affect Covered Species or habitat functions and values.

- Updates or corrections to the land cover or other resource maps or species occurrence data.

23.2 Minor Modifications or Revisions

As part of the process of Plan implementation, the Implementation Office may need to make minor modifications or revisions to the Plan and/or this Agreement from time to time to respond appropriately to new information, scientific understanding, technological advances, and other such circumstances. Minor modifications or revisions are likely to be technical in nature and will not involve changes that will adversely affect Covered Species, the level of take, or the obligations of Authorized Entities.

Minor modifications or revisions may include, but are not limited to, the following circumstances:

- Transfers of targeted acreages between Resource Opportunity Areas consistent with criteria set out in Chapter 3.

- Transfers of targeted natural community acreages among Conservation Zones, provided such change does not preclude meeting preserve assembly requirements, significantly increase the cost of Plan management, or preclude achieving biological goals and objectives.

- Adjustments of Conservation Measures or biological objectives developed through and consistent with the adaptive management program, as described in Chapter 3.6.

- Extensions of earth-moving or ground disturbance outside the right-of-way limits analyzed in the effects analysis for the Plan regarding Covered

Activities and Associated Federal Actions involving infrastructure development or natural community restoration.

- Other proposed changes to the Plan that the Fish and Wildlife Agencies have determined to be insubstantial and appropriate for implementation as a minor modification.

23.2.1 Procedures for Minor Modifications

The Implementation Office, the Authorized Entities, or the Fish and Wildlife Agencies may propose minor modifications or revisions by providing written notice to the other Parties. Such notice will include a description of the proposed minor modifications or revisions, an explanation of the reason for the proposed minor modifications or revisions, an analysis of their environmental effects including any impacts on Covered Species, and an explanation of why the effects of the proposed minor modifications or revisions will have the following characteristics.

- They will not significantly differ from, and will be biologically equivalent or superior to, the effects described in the Plan.

- They will not conflict with the terms and conditions of the Plan.

- They will not significantly impair implementation of the Conservation Strategy.

The Fish and Wildlife Agencies and/or the Authorized Entities may submit comments on the proposed minor modification or revision in writing within sixty (60) days of receipt of notice. The Authorized Entities must agree to any proposed minor modification.

If the Fish and Wildlife Agencies do not concur that the proposed minor modification or revision meets the requirements for a minor modification or revision, the proposal must be processed as a formal amendment as described in Section 23.3. Any Authorized Entity or Fish and Wildlife Agency may invoke the review process set forth in Section 15.8 of this Agreement to resolve disagreements concerning a proposed minor modification or revision.

If the Fish and Wildlife Agencies concur that the requirements for a minor modification or revision have been met and the modification or revision should be incorporated into the Plan, the BDCP shall be modified accordingly. If any Fish and Wildlife Agency fails to respond to the written notice within the 60-day period, the agency will be deemed to have approved the proposed minor modification or revision.

Notwithstanding the foregoing, agreement of the Authorized Entities shall not be required for minor modifications that involve changes to Conservation Measures or biological

objectives adopted through the adaptive management process, as described in Chapter 3.6.

23.3 Formal Amendment

Under some circumstances, it may be necessary to substantially amend the Plan and this Agreement. Any proposed changes to the Plan that do not qualify for treatment as described in Chapters 6.5.1 or 6.5.2 will require a formal amendment. Formal amendment to the Plan and this Agreement also will require corresponding amendment to the authorizations/Permits, in accordance with applicable laws and regulations regarding permit amendments. The Implementation Office will be responsible for submitting any proposed amendments to the Permit Oversight Group.

Amendments to the Plan likely will occur infrequently and will follow the process set forth in Chapter 6.5.3. Formal amendments include, but are not limited to, the following changes.

- Substantive changes to the boundary of the Plan Area, other than those associated with the acquisition of terrestrial natural communities in the surrounding Delta counties, as described in Chapter 1.4.1.
- Addition of species to the Covered Species list.
- Increase in the take of Covered Species beyond that authorized.
- Adding new Covered Activities and Associated Federal Actions to the Plan.
- Substantial changes in implementation schedules that are likely to have significant adverse effects on the Covered Species.
- Changes in Conservation Measures that would require additional obligations of the Authorized Entities beyond those provided for within the adaptive resources established under the Plan and this Agreement.
- Changes to Biological Goals.

23.3.1 Process for Formal Amendment

Formal amendments will involve the same process that was required for the original approval of the Plan. In most cases, an amendment will require public review and comment, CEQA and NEPA compliance, and intra-Service Section 7 consultation. Amendments will be prepared by the Implementation Office, subject to review and approval of the Authorized Entity Group prior to submission to the Permit Oversight Group. Each Fish and Wildlife Agency, for which the proposed amendment is

applicable, will use reasonable efforts to process proposed amendments within one-hundred eighty (180) days.

23.3.2 Additions to Covered Species List

In the event the Authorized Entities desire to add species to the list of Covered Species, the Authorized Entities will propose an amendment to the BDCP and request an amendment to the Permits and the Integrated Biological Opinion. Any such request will be supported by sufficient evidence to meet the requirements of the ESA and the NCCPA. The Fish and Wildlife Agencies shall give due consideration to, and full credit for, Conservation Measures previously implemented as part of the Plan that benefit such species.

24.0 MISCELLANEOUS PROVISIONS

24.1 No Delegation of Authority

Nothing in this Agreement shall cause, or shall be deemed to cause, any delegation of authority from any Party to this Agreement to any other Party.

24.2 Relationship to Other Regulatory Requirements

The terms of this Agreement are consistent with and will be governed by and construed in accordance with the ESA, the NCCPA and other applicable State and federal laws. In particular, nothing in this Agreement is intended to limit the authority of USFWS, NMFS and CDFW to seek penalties for violations of, or otherwise fulfill its responsibilities under, the ESA, CESA and NCCPA. Moreover, nothing in this Agreement is intended to limit or diminish the legal obligations and responsibilities of USFWS or NMFS as agencies of the federal government or CDFW as an agency of the State of California.

24.3 Changes in Environmental Laws

It is acknowledged and agreed by the Fish and Wildlife Agencies that the Authorized Entities are agreeing to perform substantial avoidance, minimization, mitigation, conservation, and management measures as set forth in this Agreement. If a change in, or an addition to, any federal or State law governing or regulating the impacts of development on land, water or biological resources as they relate to Covered Species, including, but not limited to, the ESA, NEPA, NCCPA, CESA, and CEQA, the Fish and Wildlife Agencies shall give due consideration to the measures required under the BDCP in applying the new laws and regulations to the Authorized Entities.

24.4 References to Regulations

Any reference in this Agreement, the BDCP, or the Permits to any regulation or rule of the Fish and Wildlife Agencies will be deemed to be a reference to such regulation or rule in existence at the time an action is taken.

24.5 Applicable Laws

All activities undertaken pursuant to this Agreement, the BDCP, or the Permits must be in compliance with all applicable local, State and federal laws and regulations.

24.6 Notices

The Implementation Office will maintain a list of individuals responsible for ensuring BDCP compliance for each of the Parties, along with addresses at which those individuals may be notified (Notice List). The Notice List as of the Effective Date is provided in Exhibit G. Each Party will report any changes of names or addresses to the Implementation Office and the other Parties in writing.

Any notice permitted or required by this Agreement will be in writing, and delivered personally, by overnight mail, or by United States mail, postage prepaid. Notices may be delivered by facsimile or electronic mail, provided they are also delivered by one of the means listed above. Delivery will be to the name and address of the individual responsible for each of the Parties, as stated on the most current Notice List.

Notices will be transmitted so that they are received within deadlines specified in this Agreement, where any such deadlines are specified. Notices delivered personally will be deemed received on the date they are delivered. Notices delivered via overnight delivery will be deemed received on the next business day after deposit with the overnight mail delivery service. Notices delivered via non-certified mail will be deemed received seven (7) days after deposit in the United States mail. Notices delivered by facsimile or other electronic means will be deemed received on the date they are received.

24.7 Entire Agreement

This Agreement, together with the BDCP, the Permits, the Integrated Biological Opinion, and the Memorandum, constitutes the entire agreement among the Parties, supersedes any and all other agreements, either oral or in writing, among the Parties with respect to the subject matter hereof, and contains all of the covenants and agreements among them with respect to said matters. Each Party acknowledges that no representation, inducement, promise of agreement, oral or otherwise, has been made by any other Party or anyone acting on behalf of any other Party that is not embodied in this Agreement, the BDCP, the Permits, the Integrated Biological Opinion, or the Memorandum.

24.8 Severability

In the event one or more of the provisions contained in this Agreement is held to be invalid, illegal or unenforceable by any court of competent jurisdiction, the Parties will meet and confer to determine whether such portion will be deemed severed from this Agreement and the remaining parts of this Agreement will remain in full force and effect as though such invalid, illegal, or unenforceable portion had never been a part of this Agreement.

24.9 Independent State and Federal Permits

The State and Federal Permits are independent such that revocation of the State Permit or one of the Federal Permits does not automatically cause revocation of the other Permits.

24.10 Assignment or Transfer

This Agreement will be binding on and inure to the benefit of the Parties and their respective successors and assigns. Assignment or other transfer of the Permits or any rights or authorities granted thereunder will be governed by provisions of the ESA, and the NCCPA pertaining to the assignment or transfer of Permits.

Any obligation of an Authorized Entity may be assigned to any other Authorized Entity consistent with applicable law and upon written execution of an agreement of assignment. Such an assignment shall relieve these respective Parties of their pre-existing obligations under this Agreement only to the extent consistent herewith. Any assignment or other transfer of the Permits must be approved by the applicable Fish and Wildlife Agency.

24.11 Amendments

This Agreement may be amended only by the written agreement of all of the Parties.

24.12 No Partnership

Neither this Agreement nor the BDCP shall make or be deemed to make any Party to this Agreement the agent for or the partner of any other Party.

24.13 No Third Party Beneficiaries

Without limiting the applicability of rights granted to the public pursuant to the ESA, CESA, NCCPA or other applicable law, this Agreement will not create any right or interest in the public, or any member thereof, as a third party beneficiary thereof, nor will it authorize anyone not a Party to this Agreement to maintain a suit for personal injuries or property damages under the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third party beneficiaries will remain as imposed under existing State and federal law.

24.14 Elected Officials not to Benefit

No member of, or delegate to, the California State Legislature or the United States Congress will be entitled to any share or part of this Agreement or to any benefit that may arise from it.

24.15 Availability of Funds

All Actions required of the United States or its agencies in implementing this Agreement are subject to appropriations by Congress. Nothing in this Agreement shall be interpreted as or constitute a commitment or requirement that the United States or its agencies obligate or pay funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341, or other applicable law. Nothing in this Agreement is intended or shall be construed to commit a Federal official to expend Federal funds not appropriated for that purpose by Congress. To the extent that the expenditure or advance of any money or the performance of any obligation of the United States or its agencies, or any Secretary under this Agreement is to be funded by appropriation of funds by Congress, the expenditure, advance, or performance shall be contingent upon the appropriation of funds by Congress that are available for this purpose and the apportionment of such funds by the Office of Management and Budget. No breach of this Agreement shall result and no liability shall accrue to the United States or its agencies or any Secretary in the event such funds are not appropriated or apportioned. Nothing in this Agreement is intended or shall be construed to require the obligation, appropriation, reprogramming, or expenditure of any funds by the United States or its agencies, except as otherwise permitted by applicable law.

Implementation of this Agreement and the BDCP by DWR and CDFW is subject to the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any money from the Treasury of the State of California. The Parties acknowledge and agree that DWR and CDFW will not be required under this Agreement to expend any State-appropriated funds unless and until an authorized official of that agency affirmatively acts to commit such expenditure as evidenced in writing.

24.16 Duplicate Originals

This Agreement may be executed in any number of duplicate originals. A complete original of this Agreement will be maintained in the official records of each of the Parties hereto.

24.17 Calendar Days

Throughout this Agreement and the BDCP, the use of the term "day" or "days" means calendar days, unless otherwise specified.

24.18 Response Times

Except as otherwise set forth herein or as statutorily required by CEQA, NEPA, CESA, the ESA, NCCPA or any other laws or regulations, the Parties will use reasonable efforts to respond to written requests from any Party within a forty-five (45) day time period.

24.19 Attorney's Fees

If any action at law or equity, including any action for declaratory relief, is brought to enforce or interpret the provisions of this Agreement, each Party to the litigation will bear its own attorneys' fees and costs. Notwithstanding the foregoing, attorneys' fees and costs that may be recoverable against the United States may be sought as provided by applicable federal law.

24.20 Governing Law

This Agreement will be governed by and construed in accordance with the laws of the United States and the State of California, as applicable.

24.21 Headings

Headings are used in this Agreement for convenience only and do not affect or define the Agreement's terms and conditions.

24.22 Defense

Upon request by any Party, other Parties hereto shall reasonably cooperate in defending lawsuits regarding the BDCP, this Agreement, or the Permits. Such cooperation may include, but is not limited to, entering into a joint defense agreement and cooperation among the DWR, SWP/CVP Contractors, CDFW, USFWS and NMFS in the preparation of an administrative record.

24.23 Due Authorization

Each Party represents and warrants that (1) the execution and delivery of this Agreement has been duly authorized and approved by all requisite action, (2) no other authorization or approval, whether of governmental bodies or otherwise, will be necessary in order to enable it to enter into and comply with the terms of this Agreement, and (3) the person executing this Agreement on behalf of each Party has the authority to bind that Party.

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

OFFICE OF THE
REGIONAL ADMINISTRATOR

Aug 26, 2014

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

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

Dear Mr. Stelle:

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

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

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

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

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

Clean Water Act Water Quality Standards

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

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

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

Habitat Restoration

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

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

Alternatives

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

Project-level Analysis

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

Upstream/Downstream Impacts

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

NEPA Effects Determination

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

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

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

Adaptive Management

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

Conclusion

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

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

Sincerely,

/S/

Jared Blumenfeld

Enclosure

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

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

Table of Contents

I. Water Quality Impacts

A. Adverse Impacts

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

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

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

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

B. Salinity (Electrical Conductivity, Chloride) and Bromide

1. Water Quality Standards Exceedances and Degradation

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

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

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

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

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

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

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

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

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

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

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

2. **Mitigation Effectiveness**

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

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

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

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

3. Mitigation Relationship to Water Quality Standards

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

C. Potential Increases in Methylmercury Formation and Transport

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

D. Selenium

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

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

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

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

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

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

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

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

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

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

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

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

E. Additional Water Quality Impacts

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

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

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

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

II. Fish and Aquatic Resources

A. Aquatic Resources Beneficial Uses

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

1. Longfin Smelt Abundance

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

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

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

2. Entrainment of Juvenile Delta Smelt

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

3. Impacts on Delta Smelt Rearing Conditions

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

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

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

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

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

B. NEPA Effects Determinations

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

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

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

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

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

III. Analytical and Presentational Issues

A. Defining the Project Proposal

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

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

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

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

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

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

B. Alternatives Analysis

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

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

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

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

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

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

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

C. Comparison of Alternatives

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

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

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

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

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

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

D. Scope of Impact Analysis

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

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

E. Integrated Water Management

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

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

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

F. Habitat Restoration

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

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

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

G. Aquatic Species Recovery

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

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

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

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

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

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

H. Project-level Decision-making

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

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

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

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

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

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

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

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

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

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

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

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

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

I. Energy Infrastructure

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

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

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

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

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

J. No Action Alternative

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

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

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

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

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

K. Impacts to Wetlands

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

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

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

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

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

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

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

L. Air Quality Impacts

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

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

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

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

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

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

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

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

IV. Additional Issues

A. Alternatives

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B. Water Supply

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

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

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

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

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

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

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

C. Groundwater

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

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

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

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

D. Water Quality

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

E. Fish and Aquatic Resources

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

F. Energy

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

G. HCP Monitoring and Assessment

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

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

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

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

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

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

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

[34] Ibid

8/27/2014 1:33pm

BDCP DEIS: Corrections and Additional Editorial Recommendations

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Will, Ryan –

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

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

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

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

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

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

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

targets.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

-Kathy

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November 9, 2015

Zachary Simmons, Project Manager
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Re: Comments on SPK-2008-00861 California WaterFix Permit Application

Dear Mr. Simmons:

Please find attached comments submitted on behalf of Save the California Alliance.

There is a list of attachments following the body of our comments, which contains hyperlinks to the first page of each attachment. We particularly commend to your full perusal Attachment Twelve, which is the flow criteria report addressed to the BDCP/California WaterFix as required by California Water Code section 85086(c)(1), and Attachment One, which is the Delta Independent Science Board's review of the California WaterFix SDEIS.

We believe that a comparison of the flow criteria report's recommendation for the minimum flows needed to restore the Delta ecosystem with the bypass flows provided by California WaterFix shows that WaterFix is not in the public interest.

We believe that the Delta Independent Science Board's review of the SDEIS establishes that preparation and recirculation of a second SDEIS is necessary before the Corps can begin evaluation of the project as required by 33 C.F.R. § 230.21 and 40 C.F.R. § 1502.9.

We appreciate the opportunity to submit these comments and thank the Corps for considering our views. We would particularly appreciate the opportunity to engage with the Corps in future public meetings and public hearings as explained in our comments.

Sincerely,

/s/Michael A. Brodsky
Michael A. Brodsky

COMMENTS OF SAVE THE CALIFORNIA DELTA ALLIANCE
SPK-2008-00861

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COMMENTS OF SAVE THE CALIFORNIA DELTA ALLIANCE
SPK-2008-00861

1. We Respectfully Request That The Corps Re-issue The Notice With A Clear Explanation Of The Corps' Process And Inclusion Of Documents Needed For Informed Comment.

The purpose of the Notice appears to be to solicit comments "to determine whether to issue, modify, condition, or deny a permit for this proposal [California WaterFix]." Notice 4. However, from what we can tell, the process appears to be a lot more complicated.

The Notice does not have a link to the project application and we could not locate the application elsewhere on the Corps' website. We found the California WaterFix Clean Water Act Section 404 Application (unsigned) ("Application"), along with a cover letter from Cassandra Enos, Program Manager, BDCP/California WaterFix to Michael Jewell, Chief, Regulatory Branch, Sacramento District, U.S. Army Corps of Engineers, dated August 24, 2015 ("Cover Letter"), on an external website.[1] The Application refers the reader to Appendix E of the BDCP/California WaterFix Recirculated Draft Environmental Impact Report/Supplemental Environmental Impact Statement ("SDEIS"). The Application states that Appendix E "provides an overview of the material needed for the Corps' permitting process under the authority of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act and identifies the stage of the permitting process at which the material will be available." Application 28.

Appendix E is not referenced or linked on the Notice. It is unclear if Appendix E is a part of the Application. Appendix E, in turn, references a "white paper entitled 'BDCP: Permit Application Approach for CM-1,'" which was developed by the "USACE Sacramento District" in March 2013 ("*White Paper*"). SDEIS Appendix E E-2. The *White Paper* is not referenced or linked in the Notice and we have thus far been unable to locate it on the Corps' website. We did eventually obtain it from an external source. Appendix E further explains that "USACE and DWR have developed an approach to permitting the construction, operation, and maintenance of a new water conveyance facility pursuant to Section 404 and RHA Section 10." SDEIS Appendix E E-4.

Like all documents issued as a part of the BDCP/California WaterFix environmental review process, Appendix E, and its description of the Corps' permitting process, are incomplete and opaque. *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,* September 30, 2015 (*ISB SDEIS Review*) (Attachment One).

Based on the foregoing, we respectfully request that the Notice be reissued and that it: 1) contain or attach or link a description of the entire Corps permitting process for California WaterFix going forward; 2) provide an anticipated schedule (subject to revision) of when all the missing detailed project information described below is

[1] As these comments were nearing completion, we obtained the signed application from a colleague who obtained it from the Corps in response to a FOIA request.

anticipated to be available; 3) based on anticipated receipt of the missing information, identify stages at which public comment will be open/re-opened and the focus of comments at each stage; and 4) attach or link all relevant documents including the Application (including future supplements), the *White Paper*, any "approach to permitting" that has been agreed upon between the Corps and DWR, the Corps' July 16, 2014, comments on the BDCP Draft EIR/S, and, on future notices, the missing project information as it becomes available.

We respectfully suggest that re-issuance(s) of the Notice is needed to comply with the requirement of 33 C.F.R. § 325.3(a) that the "notice, must therefore, include sufficient information to give a clear understanding of the nature and magnitude of the activity to generate meaningful comment," and that the documents and information requested above fall within any "other available information which may assist interested parties in evaluating the likely impact of the proposed activity if any, on factors affecting the public interest." 33 C.F.R. § 325.3(a)(13). The underlying purpose of these regulations is to provide a notice that generates "meaningful comment." Meaningful comment here is only possible if the public understands the permitting process that the Corps is undertaking and has ready access to all the relevant documents.

Reissuance of the Notice, and issuance of future notices, with a new comment period, under these circumstances, accords with the Corps' regulations for processing applications. "The district engineer will issue a supplemental, revised, or corrected public notice if in his view there is a change in the application data that would affect the public's review of the proposal." 33 C.F.R. § 325.2(a)(2).

We also suggest that a public meeting (perhaps in the form of a workshop) be held in order to have an exchange with the public about the process going forward and to formulate an approach to future public hearings on supplemental notices.

2. We Respectfully Request That The Corps Reject The Current Application, Without Prejudice To Its Re-Submittal, Because It Is Incomplete.

We believe that the application is incomplete and should be returned to the applicant, the notice re-issued as described above, and public comment opened when a complete application is submitted.

The White Paper describes a "complete application" as being submitted *after* the lead agencies issue their RODs on the project. This makes sense because at that time complete environmental documents and detailed project information should be available. However, the application has been submitted before any RODs have been issued, the environmental documents are incomplete, and much essential detailed project information is unavailable.

The *White Paper* lists, as necessary to a "Complete Application for CWA/RHA 10 DA Permit," *White Paper* 3, "detailed project information, including CM1 operations, in accordance with 33 CFR 325.1(d)." *Id*. However, CM1 operations are not now known at any level of certainty or detail. As USEPA recently noted, "the choices that will affect the operation of the tunnels, and thus the overall impacts of the project, will not be made until future regulatory actions are completed." Letter from Jared Blumenfeld, Regional Director USEPA Region 9 to David Murillo, Regional Director Bureau of Reclamation

Mid-Pacific Region, October 30, 2015, 4 ("*October 30, 2015, EPA Letter*") (Attachment Two). Current "[w]ater quality and aquatic life analyses in the SDEIS show that the proposed project may cause or contribute to violations of state water quality standards and significant degradation of waters of the U.S." *Id*. at 4.

Meaningful specifications for CM1 operations, and CM1's ability (or inability) to avoid violation of water quality standards and degradation of waters of the U.S., will not be available until 1) the California State Water Resources Control Board ("SWRCB") completes processing of the Clean Water Act section 401 permit for the project; and 2) the applicant completes and submits an adaptive management plan.

The *White Paper* anticipates that the section 401 permit will be issued before application is made to the Corps. Although 33 C.F.R. part 325 contemplates situations in which a 401 certification will be obtained after the application is submitted and before a permit is issued, here the information generated by the 401 process is essential to a complete application. Absent a detailed description of CM1 operations adequate to assess whether the project helps or harms the ecosystem and adequate to assess whether the project helps or harms water system reliability, the application does not contain a "complete description of the proposed activity" within the meaning of 33 C.F.R. § 325.1(d)(1). *See Also October 30, 2015, EPA Letter* 2 ("how freshwater flows through the Delta will be managed … is not described in the SDEIS and is, instead, deferred to future regulatory agencies [SWRCB]").

The applicant acknowledges the central role of adaptive management in defining CM1 operations. However, the applicant has not begun to develop an adaptive management plan for the operations of CM1 and appears unequipped to undertake this complex task. *See ISB SDEIS Review* 5 (applicant "unable to develop a substantive idea of how adaptive management would work for this project"). Absent a fully formulated adaptive management plan, evaluation of the impacts of the project on waters of the United States is not possible.

The *White Paper* also lists "a draft compensatory mitigation plan" as necessary to a complete application. *White Paper* 3. None was submitted with the application. Instead, the applicant's cover letter states that, at some point in the future, "DWR will submit a plan to the Corps that sets out an approach to mitigating" impacts. Cover Letter 4. The application also states that "DWR will submit to the Corps its approach to compensatory mitigation" at an unspecified date in the future. Application 22. The application does not satisfy 33 C.F.R. § 325.1(d)(7) ("application must also include either a statement describing how impacts to waters of the United States are to be compensated or a statement explaining why compensatory mitigation should not be required for the proposed impacts").

Although the "issuance of a public notice will not be delayed to obtain information necessary to evaluate an application," 33 C.F.R. § 325.1(d)(10), where the missing information makes the application incomplete it may be rejected. In accordance with the Corps' regulations for processing of applications, we believe that the application should be rejected and resubmitted with the needed information because the missing information will constitute a "change in the application data that would affect the public's review of the proposal." 33 C.F.R. § 325.2(a)(2).

3. We Respectfully Request That The Corps Exercise Its Authority Under 33 C.F.R. Part 230 To Require Preparation Of A Second Supplemental Draft EIS As Required By 40 C.F.R. § 1502.9.

With regard to the SDEIS, there is "substantial doubt as to technical or procedural adequacy or omission of factors important to the Corps decision." 33 C.F.R. § 230.21. This doubt is particularly acute with regard to the Corps' duty to assess and compare the range of alternatives available to the proposed project. As discussed below, there are unanalyzed alternatives that would avoid (or greatly reduce) discharge to waters of the U.S, would avoid impacts to historic districts and landscapes, would avoid impacts to navigation, and would avoid violation of water quality standards and degradation of aquatic resources of national importance.

The current SDEIS fails as an informational document and, in particular, fails with regard to treatment of alternatives. The SDEIS suffers from:

> overall incompleteness through deferral of content to the Final EIR/EIS (herein, "the Final Report"); specific incompleteness in treatment of adaptive management, habitat restoration, levees, and long-term effects; and inadequacies in presentation.
>
> ***
>
> The Current Draft lacks key information, analysis, 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.

ISB SDEIS Review 4. Despite sustained outcry from the public and peer reviewers, the SDEIS still fails to comprehensibly compare the expected results of various courses of action:

> For over three years, the Delta ISB has been specifically requesting summaries and comparisons: first in June 2012, then in June 2013, and again in a review of the Previous Draft in May 2014 (footnote 1, p.1). Appallingly, such summaries and comparisons remain absent in the Current Draft. … Three years is more than enough time to have developed them.

Id. at 9.

With respect to the SDEIS's omission of a comprehensible alternatives analysis, which is essential to the Corps' duty to identify the Least Environmentally Damaging Practicable Alternative ("LEDPA"):

> The Previous Draft contained few examples of concise text and supporting graphics that compare alternatives and evaluate critical underlying

assumptions. Rudimentary comparisons of alternatives were almost entirely absent. The Current Draft retains this fundamental inadequacy.

Id. at 4. No peer reviewer has found the environmental documents to be adequate. The missing content is "critical to comprehending what is being proposed and its potential impacts." *Id.* at 10.

Under the circumstances, the applicant's promise that it "is in the process of developing information to support the analysis of alternatives pursuant to the Section 404(b)(1) Guidelines," Notice 3, is inadequate. We believe that relevant regulations mandate preparation and recirculation of a second SDEIS before the Corps begins evaluation of the project. "If a draft statement is so inadequate as to preclude meaningful analysis, the agency *shall* prepare and circulate a revised draft of the appropriate portion." 40 C.F.R. § 1502.9 (emphasis added). *See also Kettle Range Conservation Group v. United State Forest Serv.*, 148 F.Supp.2d 1107, 1120 (E.D. Wash. 2001) ("a draft EIS *must* be redrafted and reissued when it is so inadequate that it precludes meaningful analysis") (emphasis added). Awaiting preparation of the Final EIS is not a lawful option because "[t]hat will be far too late in the EIR/EIS process for content so critical to comprehending what is being proposed and its potential impacts." *ISB SDEIS Review* 10.

4. Applying The Section 404(b) Guidelines, The Application Should Be Denied.

a. All of 40 C.F.R. § 230.11(a)–(g) apply to the operation of CM1 as well as the direct effects of discharge.

Table 1 at Application 12 shows 141,675 cubic yards of discharge to waters of the United States at the intakes, and an additional 180,000 cubic yards of discharge at the intake end curves/walls. This discharge creates the fast land upon which the intake apparatus sits. The section 401(b) guidelines state that "[a]ctivities to be conducted on fast land created by the discharge of dredged or fill material in waters of the United States may have secondary impacts within those waters which should be considered in evaluating the impact of creating those fast lands." 40 C.F.R. § 230.11(h)(2). Upon considering the fill at the intakes, the Corps should consider the effect of the intakes in diverting water (the activity conducted on fast land) from the Sacramento River as a part of its direct 401(b) evaluation. Of course, the impacts of the change in point of diversion and operation of CM1 on California's entire water supply system and the Delta ecosystem are also considered under the Corps' public interest responsibilities pursuant to 33 C.F.R. § 320.4 and 33 C.F.R. § 323.6(a).

b. The applicant presents only one single-focus alternative through unlawfully narrowing the purpose and need of the project.

40 C.F.R. section 230.12(a)(3) provides that the application must be "[s]pecified as failing to comply with the requirements of these Guidelines where: (i) There is a

practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." An alternative "is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purpose." 40 C.F.R. § 230.10(a)(2).

Here, the overall project purpose is aptly stated as follows:

> As stated in the SDEIS, the purpose and need for the WaterFix project, as was the case for the BDCP, is to advance the co-equal goals set forth in the Delta Reform Act of 2009. Those are (1) to provide a more reliable water supply for California, and (2) to protect, restore, and enhance the Delta ecosystem.

October 30, 2015, EPA Letter 2. *See Also* Cal. Water Code § 85054 ("'Coequal goals' means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.").

The applicant has repeatedly justified and described the project's overall purpose in the same broad terms summarized by the USEPA. "The overarching goals of the BDCP are to advance the restoration of the ecological functions and productivity in the Delta and restore and protect water supplies provided by the SWP and CVP … ." 2013 Public Draft BDCP 1-5 ("Draft BDCP"). Successful completion of the BDCP is intended to "afford regulatory stability with respect to the operation of the primary water delivery systems for the State of California." Draft BDCP 1-26. The BDCP "is intended to result in long-term regulatory stability for the state and federal water projects, while furthering the goals of the BDCP to restore and protect ecosystem health, water supply, and water quality." Draft BDCP 1-6. *See also Draft Implementing Agreement for the Bay Delta Conservation Plan* § 2.1.8 ("The overall goal of the BDCP is to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework.") (Attachment Three).

The range of alternatives analyzed in the SDEIS addresses only the unreasonably narrow characterization of the project purpose as the applicant provided it to the Corps and as it is restated in the Notice: "The applicant's stated overall project purpose is [to] construct and operate facilities and/or improvements for the movement of water entering the Delta from the Sacramento Valley watershed to the existing SWP and CVP pumping plants located in the southern Delta" in a manner that minimizes adverse effects of the project. Notice 2. Eight of the nine alternatives analyzed in the 2013 Draft EIR/S also focus on the construction of tunnels or canals to divert water from the north Delta to the existing pumping plants. Now that extensive habitat restoration has been dropped from the project, "[i]mplementing the conveyance facilities alone, as now proposed under Alternatives 4A, 2D, and 5A" is the range of alternatives analyzed in the 2015 SDEIS. In other words, the overall purpose as described by the applicant is to build CM1. Therefore, the applicant does not (and will not) provide alternatives to CM1. There is essentially only one alternative.

However, applicants are not free to provide a description of the underlying purpose of the project that "fulfill[s] their own prophecies, whatever the parochial impulses that drive them." *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (9th Cir. 1991). *See also National Parks & Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1072 (9th Cir. 2009) (summarizing 9th Circuit precedent to "forbid the [lead agency] to define its objectives in unreasonably narrow terms") (striking down lead agency's EIS because "[a]s a result of this unreasonably narrow purpose and need statement, the [lead agency] necessarily considered an unreasonably narrow range of alternatives"); *id*. at 1071 (stating that the court will "determine whether the [lead agency's] purpose and need statement properly states the [lead agency's] purpose and need … in a manner broad enough to allow consideration of a reasonable range of alternatives"). Courts reject unreasonably narrow interpretations of purpose and need that exclude viable alternatives suggested by commenters. *Center for Biological Diversity v. National Highway Traffic Safety Admin*., 538 F.3d 1172, 1219 (9th Cir. 2008) (holding that "[w]e also disagree with [the lead agency] that Petitioners' suggested alternatives would not be reasonably related to the project's purpose").

c. The project potentially provides only one benefit, avoiding smelt entrainment, that is outweighed by the project's adverse effect on Delta flows and resulting degradation of the aquatic ecosystem.

Because the applicant presents only one single-focus alternative, changing the point of diversion to the north Delta to avoid entrainment of the delta smelt, the project has only one reasonably predictable benefit: that it could allow for a reduction in entrainment of the delta smelt. Currently, the south Delta points of diversion create reverse flows in Old and Middle River ("OMR reverse flows") that entrain smelt. If diversion could be shifted to the north Delta points of diversion when smelt are present in south Delta, this entrainment could be avoided. This could allow exports to continue when they would otherwise be halted by federal Endangered Species Act requirements that pumping discontinue when smelt are jeopardized.

The applicant's originally proffered ability of north Delta points of diversion to help restore Delta flows has been proven false by the applicant's own modeling. The words "restore Delta flows" have taken on a new meaning for the applicant and now denote only a reduction in OMR reverse flows. *See, e.g.,* SDEIS ES-1–2 (describing project benefits as avoiding reverse flows, smelt entrainment, and concomitant restrictions on exports). CM1 neither enhances freshwater flows in the Delta nor contributes to ecosystem recovery. "We are concerned over the sole reliance on habitat restoration for ecosystem recovery, recognizing that existing freshwater diversions and significantly diminished seaward flows have played a significant role in precluding the recovery of Bay Delta ecosystem processes and declining fish populations." Letter from Jared Blumenfeld, Regional Director USEPA Region 9 to Will Stelle, Regional Administrator West Coast Region National Marine Fisheries Service, August 26, 2014 ("*August 26, 2014 EPA Letter*") (Commenting on 2013 Draft EIR/S) (Attachment Five). The elimination of habitat restoration in the new preferred alternative 4A only highlights the failure of CM1. Things have not improved as of the latest environmental review,

"because significant volumes of freshwater flows are diverted at the intakes resulting in less water that is also of lower quality downstream of the intakes." *October 30, 2015, EPA Letter* 3 (reviewing 2015 RDEIR/S).

Less water of lower quality downstream of the intakes will cause significant degradation of aquatic resources of national importance. Adverse effects include "loss of valuable aquatic habitat for many fish species in the Delta … [including] delta smelt, winter-run Chinook salmon, green and white sturgeon, stripped bass, and American shad," *October 30, 2015, EPA Letter* 3, "exceedances of chloride criteria near municipal water supply intakes … exceedances of salinity standard[s]" and other impacts. *Id*. These impacts might theoretically be mitigated or reduced by reducing diversions at the new intakes and "by appropriately timed increased flows." *Id*. However, the analysis that might support the applicant's reliance on altering CM1 operations has not yet been done and, as discussed in section 1 above, cannot be supported in the absence of an adaptive management plan. These impacts must therefore be considered adverse and unavoidable unless the applicant carries its burden to show otherwise. In addition, impacts GW-8, GW-9, AQUA-22, and AQUA-201 are admitted by the applicant to be adverse and unavoidable. Mitigation of impacts WQ-11 and AQUA-78 depend on an adaptive management plan that is impermissibly deferred and therefore must be considered adverse and unavoidable. Mitigation of impacts WQ-7 and WQ-32 are unsupported and must be considered adverse and unavoidable. *See Comments of Save the California Delta Alliance on 2015 SDEIS* 18–23 ("*Delta Alliance SDEIS Comments*") (Attachment 4).

We also join in the comments of others pointing out many other unavoidable adverse effects of Alternative 4A that degrade aquatic resources of national importance (and unsupported/flawed analysis in the SDEIS purporting to reduce these effects), including comments of Local Agencies of the North Delta and the National Resources Defense Council.

Taking a step back, common sense dictates that diverting up to 9,000 cfs from the Sacramento River at a point upstream of the Delta would exacerbate the primary problem in the Delta, which is lack of freshwater flows through the Delta. While providing relief from entrainment at the south Delta intakes is the only remaining veracious rationale for the project, depriving the Delta and the smelt of freshwater habitat actually harms the smelt as well as other endangered species. The "SDEIS predicts a loss of valuable aquatic habitat for many fish species in the Delta and upstream tributaries due to the combined effects of the WaterFix project, CVP/SWP exports," climate change, and upstream diversions. "Information presented in the SDEIS shows that the WaterFix project could reduce habitat conditions for delta smelt, winter-run Chinook salmon, green and white sturgeon, stripped bass, and American shad, and result in a decline of longfin smelt abundance." *October 30, 2015, EPA Letter* 3.

The applicant's promotional efforts, within its application and elsewhere, do not accurately characterize or place the project's reduction of OMR reverse flows in the context of the overall harm that results from CM1.

d. There are practicable alternatives to the applicant's single-focus "solution" that do not degrade the aquatic ecosystem.

There are practicable alternatives to the applicant's single-focus "solution" to water supply and ecosystem problems that "have less adverse effects on the aquatic ecosystem," 40 C.F.R. § 230.12(a)(i), and that would avoid discharge of dredged or fill material. *See* 40 C.F.R. § 230.10(a) ("no discharge of fill material shall be permitted if there is a practicable alternative" to the proposed discharge).

Virtually all stakeholders and the scientific community agree that a "portfolio" approach is required if we are to make meaningful progress in solving California's water problems and restoring the Delta, which are two sides of the same coin. A portfolio approach simply combines elements of conveyance with one or more elements of storage, groundwater management/recharge, and conservation.

In 2014, the BDCP lead agencies commissioned four eminent Delta scientists to author a report addressing the challenges facing the Sacramento-San Joaquin Delta in the context of solving the vexing problems of water supply and ecological degradation. *See* Louma, et. al, *Challenges Facing the Sacramento-San Joaquin Delta* (Delta Science Program 2015) ("*Delta Challenges"*) (Attachment Six). *Delta Challenges* concludes that Delta problems are too complex to be addressed by single-focus solutions, such as lone conveyance projects. "Single-focus problem solving can create unanticipated outcomes." *Delta Challenges* 9. Instead, "Simultaneous attention to a portfolio that includes actions like addressing overuse and misuse of water, and improving ground water management and storage, *should accompany any necessary water infrastructure adjustments*." *Id*. at 4 (emphasis added). *See also* Delta Stewardship Council, *18 Principles for Water Conveyance in the Delta, Storage Systems, and for the Operation of Both to Achieve the Coequal Goals*, *available at* http://www.deltacouncil.ca.gov/docs/delta-stewardship-council-october-22-23-2015-meeting-agenda-item-10-attachment-1-draft, last visited November 6, 2015 ("*18 Principles*") (Attachment Eight):

> The benefits of new Delta conveyance infrastructure should be maximized by integrating with new and expanded storage projects, implementing projects that increase water-use efficiency and conservation, improving groundwater management, and restoring the structure and function of some key Delta ecosystems. New Delta conveyance infrastructure by itself does not create any new supplies of water.

Id. at ¶ 4.

Practicable portfolio alternatives include integrating north of Delta offline storage ("NODOS") with a new point of diversion. The Sites Reservoir project is one example of NODOS that is well along in its feasibility studies and could add up to 1.4 million acre feet or more of water to current storage capacity. Water would be drawn from the Sacramento River only at times of peak flow and conveyed through existing local irrigation canals to a new storage facility. The stored water would be re-released back into the Sacramento River at times of low flow. This "new water" would flow downstream to the Delta. Part of it could be diverted by a new point of diversion and part of it could continue to flow downstream and through the Delta. This would increase

water available for export and increase freshwater flows through the Delta at the same time.

Because water would be available more consistently for export, new intakes for California WaterFix could be reduced from three to one, cutting impacts and fill discharge by two-thirds, and tunnels could be reduced from two 7500 cfs capacity tunnels to one 3,000 cfs capacity tunnel, substantially reducing (or even eliminating) the impacts from tunnel construction on wetlands and reducing the amount of excavated muck and its impacts. A new point of diversion and all the impacts from construction could be eliminated entirely because having additional upstream storage capacity could allow for release of water at times when smelt are not present at the south Delta points of diversion. Reoperation of Jones and Banks pumping plants in conjunction with NODOS (and other storage) could reduce or eliminate smelt entrainment. NODOS itself withdraws water from the system only at times of peak flow, so it should not have adverse impacts on downstream flow needs.

Preliminary information indicates that the single intake for the Sites project would be a small fraction of the size of one California WaterFix intake. A NODOS *Highlights Booklet* is attached (Attachment Seven). Due to file size, the NODOS Draft EIR (*available at* http://www.water.ca.gov/storage/northdelta/prelim_admin_draft_eir_index.cfm, last visited November 6, 2015) is not attached but is incorporated by reference as if fully set forth herein.

Moving forward with NODOS projects, and the Sites Reservoir project in particular, is urged by DWR (California Water Plan) and the Delta Stewardship Council (Delta Plan). The California WaterFix lead agencies have led the NODOS investigation. *See http://www.water.ca.gov/storage/northdelta/* (Reclamation and DWR stating that "NODOS would provide a robust set of benefits"). However, the project has been languishing for years and may never be built unless incorporated into WaterFix.[2]

Storage through groundwater recharge, creating new water through conservation, and implementing integrated water management are all also elements that could practicably be included in a feasible alternative. At the least, such an alternative would reduce impacts in the same ways described above, and could eliminate the need for discharge and wetlands impacts entirely.

Our July 29, 2014, comments on the BDCP Draft EIR/S ("*Delta Alliance Draft EIR/S Comments*") and our October 30, 2015, *SDEIS Comments*, which discuss available feasible alternatives in more detail, are attached hereto (Attachment Nine and Attachment Four). We believe that the LEDPA, which includes a portfolio element, is among these alternatives.

The applicant has been unable to justify omitting storage from the project other than by begging the question by stating that storage isn't a part of the project. *See* DWR, *Your Questions Answered* 8 (project does not include storage because "BDCP is a stand-

[2] The history of water projects in California is a history of broken promises for supplemental projects at a later date promised to secure approval for the present project. For example, SWP approval was premised on a promise to connect north coast rivers to the project. It never happened. If DWR wants Fix considered in the context of future storage, or its general commitment to a portfolio approach, approval of that storage or portfolio elements must be analyzed in a second SDEIS and approved as a part of the Fix ROD.

alone project") (Attachment 10); *see also Delta Alliance SDEIS Comments* § 3.C.3. (Attachment Four) (refuting applicant's arguments against storage).

5. Impacts On Navigation, Locke Historic District, And Historic Vernacular Landscapes.

a. Impacts at intakes.

There are significant multi-year (permanent) impacts to recreational boating due to construction activities at the intakes. The SDEIS describes construction-related cofferdams sticking out 60 feet into the Sacramento River at three locations over about four miles on the east bank of the River between Elk Slough and Snodgrass Slough. The SDEIS states that "warning signs and buoys would be posted upstream, downstream of, and at the construction sites" for the intakes. It also describes barge traffic servicing the intake construction sites. It is reasonably foreseeable that multiple barges with construction equipment and supplies will be anchored throughout this stretch of the river. Safety concerns will likely result in a five mile per hour zone along this entire stretch of river. Prudent boaters will feel compelled to slow to five miles per hour or avoid the area in any event.

This massive construction activity turns a four-mile stretch of the Sacramento River into a multi-year five mile per hour summer-season construction zone. The SDEIS states that in-water construction activity will be limited to the period between June 1 and October 31 each season in order to minimize impacts to fish species. However, that limitation concentrates construction activities in the prime summer boating season, which is when recreational boat traffic is intense and impacts on boating are the greatest.

If the three large intakes proposed in Alternative 4A are to be constructed, this effect is adverse and unavoidable. The only way to avoid this impact is to consider alternatives that do not involve three large intakes at this location. For example, an alternative with one 3,000 cfs intake would lessen the impact.

The SDEIS describes the cofferdams being replaced by permanent rock embankments when construction is completed. The drawings and description are very vague as to how far from the existing levees the permanent rock embankments will stick out and whether the rock embankments are underwater or rise to and above the surface. It is unknown whether promised "state of the art fish screens" will necessitate a five mile per hour zone. There is not enough information for the applicant to show that permanent impacts to recreational boating will not be adverse; its claims to the contrary are unsupported.

The intakes and associated industrial facilities, including gantry cranes looming over the river, scenic Highway 160, and the entire landscape, and forebays that look like sewage treatment plants (despite the applicant's best efforts to render them in a flattering light), alter a historic vernacular landscape by placing multiple large industrial facilities on an extensive stretch of peaceful boating and farming landscape. *See* Design Construction Enterprise, *Intake Design Review* (Attachment Eleven) (gantry cranes at page MWD004398).

The intakes and associated industrial facilities are also in close proximity to the town of Locke and the Locke Historic District, which preserves the cultural and aesthetic

history of Chinese immigrants to the Delta. The Locke Historic District is "the largest, most complete example of a rural, agricultural Chinese American community in the United States." National Park Service, *Locke Historic District*, *available at http://www.nps.gov/nr/travel/Asian_American_and_Pacific_Islander_Heritage/Locke-Historic-District.htm,* last visited November 7, 2015. The historic district exists in the context of the largely unaltered late nineteenth century landscape surrounding it. It is now, for the most part, as it was when the immigrants first settled here. The industrial forebay shown on sheet 6 of the figures attached to the Notice, as well as the dumping sites shown on sheet 6, are in very close proximity to the town of Locke. There are historic homes on the banks of the Sacrament River close to the intakes. Perhaps the only remaining example of a levee-side historic farmhouse is near one of the intakes. The nearby town of Hood is an iconic example of the Delta-as place. The intake facilities change the character of the entire area and present an unavoidable adverse effect on the historic values of the area. The intake structures are existentially incompatible with maintaining the historical sense of the area.

Within Alternative 4A, this is an adverse unavoidable aesthetic impact to boaters, users of scenic Highway 160, and the entire historic vernacular landscape that emanates from the Locke Historic District and the historically preserved character of the area. A Programmatic Agreement under Section 106 cannot mitigate or avoid these impacts after permits are issued because only an alternative plan for the project can avoid or lessen these impacts. One 3,000 cfs intake is likely the most that can be placed in this area without destroying the aesthetics and cultural significance of this Delta landscape. A better alternative, from the historic perspective, would be to avoid the area entirely because the applicant has chosen the most scenic and historically significant point in the Delta for its project.

b. Adverse effects and cumulative adverse effects of gate on Old River.

The new gate at Old River impacts recreational navigation. The presence of existing temporary seasonal barriers in this area does not lessen the impact (as claimed by the applicant); rather it increases the cumulative impact of barriers to navigation. The South Delta Temporary Barriers Project already blocks recreational boating on four waterways. These blockades are seasonal. Making the blockade at the head of Old River a permanent structure (gate) has a cumulative adverse effect. Multiple barrier and gate projects are being planned all over the Delta and present reasonably foreseeable additional cumulative impacts. For example, DWR erected a rock barrier at False River in the summer of 2015 and plans to continue to place rock barriers at False River to control salinity and allow exports to continue during times of drought. Gates are proposed at Three Mile Slough, and the SWRCB is encouraging the installation of other gates. Gates are planned or contemplated to address water quality issues in the San Joaquin River at Stockton. The "gating of the Delta" is one project and piecemeal approval of the head of Old River gate should only be made in the context of a cumulative impacts analysis for all reasonably foreseeable Delta gates or in the context of a Delta-wide programmatic EIS for gates.

An essential characteristic of boating in the Delta and the Delta-as-place is that it is free. Boaters enjoy the freedom of being able to travel by water through the maze of

sloughs without blockage. The Old River barrier and its cumulative counterparts invade that sense of wonder and freedom. These cumulative impacts are adverse and unavoidable. They should be analyzed. An alternative to the Old River gate, and the gate approach in general, should be considered.

Although of long duration, the Temporary Barriers Project does not represent a permanent infrastructural commitment. Likely, the applicant will want to replace the other seasonal barriers in the Temporary Barriers Project with permanent gate structures as well. This "gate creep" is alarming to boaters and should be the subject of a programmatic EIS, or at the minimum, a thorough cumulative impacts analysis.

6. CM1 Harms The Public Interest.

The Sacramento-San Joaquin Delta Reform Act of 2009, Water Code §§ 85000–85350 ("Act") directly addresses the public interest with regard to the reliability of California's water supply and its interrelationship with the Delta ecosystem. The pole star of the public interest with regard to the Delta is achievement of the coequal goals, which are "providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem." Cal. Water Code § 85054. This legislative determination of public interest is commensurate with the project's failed objectives, as discussed above in section 4.b. The determination of the people's elected representatives—speaking directly to the subject at issue here—is persuasive authority worthy of due consideration.

The foundation of the project was the restoration/creation of 90,000 acres or more of aquatic habitat, which was intended to qualify the project to meet the "gold standard" of a habitat conservation plan pursuant to section 10 of the Endangered Species Act. The hypothesis underlying habitat restoration on an unprecedented scale was that habitat could be substituted for flow. Proponents could export more water through CM1 *and* the Delta ecosystem would flourish even with diminished flows because the habitat-reformulated Delta would be an ecosystem that required less freshwater flow. The project failed in July of 2015 when that speculative and counterintuitive hypothesis proved false. They should have seen it coming: "One cannot substitute for the other; both flow improvements and habitat restoration are essential to protecting the public trust resources. *Flow Criteria Report* 7 (2010) (Attachment Twelve). What is left is a mega-diversion project with no habitat restoration, no HCP, no capacity to restore Delta flows, and the capacity to do great damage to aquatic resources of national importance. The project is now a single-focus approach to problem solving directed at avoiding smelt entrainment to allow for uninterrupted exports. The approach is antithetical to the *Flow Criteria Report's* identification of "the need for the BDCP to develop an integrated set of solutions, to address ecosystem flow needs, including flow and non-flow measures." *Id.* at 7.

Restoring Delta flows is an irrefragable and inherent sub-goal of restoring the Delta ecosystem. *See* Cal. Water Code § 85302(e)(4). Restoring Delta flows means allowing *substantially more freshwater to flow through the Delta.* The California Legislature directed the applicant to consider the *Flow Criteria Report*, which was legislatively commissioned. California Water Code § 85086(c)(1) provides that:

For the purposes of informing planning decisions for the Delta Plan and

> the Bay Delta Conservation Plan, the board [SWRCB] shall, pursuant to its public trust obligations, develop new flow criteria for the Delta ecosystem necessary to protect public trust resources ["flow criteria report"].

The flow criteria report concluded that restoring "75% of 14-day average unimpaired flow for January through June" was necessary to "halt the population decline and increase populations of native species as well as species of commercial and recreational importance." *Flow Criteria Report* 98. This flow criteria is "necessary to protect public trust resources … [because] flow modification is an action that can be implemented in a relatively short time in order to improve the survival of desirable species and protect the public trust resources … ." *Flow Criteria Report* 7.

The *Flow Criteria Report* repeatedly cautions the reader that it takes account only of ecosystem needs (as directed by the legislature) and cannot be implemented now because there would be no water left for export.[3] *See Flow Criteria Report* cover sheet and *passim.* It cannot be implemented today because we lack integrated storage and conveyance projects that achieve integrated water management. The California Legislature understood the need for integration. The Act calls for "new and improved infrastructure relating to the water conveyance in the Delta, storage systems, and for the operation of both to achieve the coequal goals," Cal. Water Code § 85304.

CM1 does not take us in the direction of restoring Delta flows. *See October 30, 2015, EPA Letter* 3 ("the WaterFix project does not propose additional flows in the Delta"). Alternatives that "could provide substantially more water for resident and migratory fish and provide benefits to aquatic life … were not evaluated as alternatives in the SDEIS." *October 30, 2015, EPA Letter 3*.

Under Alternative 4A, "the flexibility that Reclamation and DWR have to operate the system to ensure that water quality criteria are met will be seriously diminished, and the two agencies will have little room for error in operating the system to protect beneficial uses and achieve the coequal goals." *October 30, 2015, EPA Letter 3*.

Alternative 4A's single-focus problem solving is contrary to the public interest because rather than advancing the coequal goals, it makes it more difficult (if not impossible) to achieve them.

[3] It also repeatedly stresses that attention to other stressors, in addition to lack of freshwater flow, are needed in conjunction with improved seaward flows. However, lack of freshwater flow is the major stressor on the Delta ecosystem.

7. Conclusion.

In the interest of non-repetition, we adopt the comments of others pointing out deficiencies in the environmental documentation and adverse effects to aquatic resources of national importance. We also adopt the comments of others pointing out violations of state and federal law, including state and federal endangered species acts, state and federal clean water acts, and the federal Administrative Procedure Act. We thank the Corps for this opportunity to submit comments and for considering our views.

Sincerely,
/s/Michael A. Brodsky
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Delta Independent Science Board

September 30, 2015

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

From: Delta Independent Science Board

Subject: Review of environmental documents for California WaterFix

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

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

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

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

Review by the Delta Independent Science Board of the

Bay Delta Conservation Plan/California WaterFix Partially Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement

September 30, 2015

Contents

EXPECTATIONS FOR IMPACT ASSESSMENT OF CALIFORNIA WATERFIX

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

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

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

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

BACKGROUND OF THIS REVIEW

The Delta Reform Act of 2009, in §85320(c), directs the Delta Independent Science Board (Delta ISB) to review the environmental impact report of the Bay Delta Conservation Plan (BDCP) and to provide the review to the Delta Stewardship Council and the California Department of Fish and Wildlife. On May 14, 2014, we submitted our review of the BDCP's Draft Environmental Impact Report/Draft Environmental Impact Statement (herein, the "Previous Draft"), which had been posted for review on December 9, 2013. This review[1] contained three main parts: an extended summary, detailed responses to charge questions from the Delta Stewardship Council, and reviews of individual chapters. Although the Previous Draft considered vast amounts of scientific information and analyses to assess the myriad potential environmental impacts of the many proposed BDCP actions, we concluded that the science in the Previous Draft had significant gaps, given the scope and importance of the BDCP.

The proposed BDCP actions have now been partitioned into two separate efforts: water conveyance under California WaterFix[2] and habitat restoration under California EcoRestore[3]. Environmental documents in support of California WaterFix (the Current Draft) were made available for a 120-day comment period that began July 10, 2015. The Current Draft focuses on three new alternatives for conveying Sacramento River water through the Sacramento – San

[1] http://deltacouncil.ca.gov/sites/default/files/documents/files/Attachment-1-Final-BDCP-comments.pdf
[2] http://www.californiawaterfix.com/
[3] http://resources.ca.gov/ecorestore/

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

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

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

The initial public draft of this review was based on our study of Sections 1-4 of the Current Draft and on checks of most resource chapters in its Appendix A. This public draft was the subject of a September 16 meeting that included further discussions with Cassandra Enos-Nobriga[5] and comments from Dan Ray of the Delta Stewardship Council staff. Additional comments on that initial draft were provided by DWR in a September 21 letter to the Delta ISB chair[6]. These discussions and comments helped clarify several issues, particularly on expectations of a WaterFix EIR/EIS.

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

DIFFERENCES BETWEEN THE BDCP AND CALIFORNIA WATERFIX

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

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

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

[5] Written version at https://s3.amazonaws.com/californiawater/pdfs/63qnf_Delta_ISB_draft_statement_-_Enos_-_FINAL.pdf

[6] http://deltacouncil.ca.gov/docs/response-letter-dwr

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

IMPROVEMENTS ON THE PREVIOUS DRAFT

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

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

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

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

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

CURRENT CONCERNS

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

Missing content

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

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

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

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

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

Adaptive management

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

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

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

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

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

[7] https://s3.amazonaws.com/californiawater/pdfs/bo0lx_Delta_ISB_Draft_Statement_&_Response_Letter_-_Enos_-_FINAL.pdf

The Current Draft defers details on how adaptive management will be made to work: "An adaptive management and monitoring program will be implemented to develop additional scientific information during the course of project construction and operations to inform and improve conveyance facility operational limits and criteria" (p. ES-17). This is too late. If adaptive management and monitoring are central to California WaterFix, then details of how they will be done and resourced should be developed at the outset (now) so they can be better reviewed, improved, and integrated into related Delta activities. The details could include setting species-specific thresholds and timelines for action, creating a Delta Adaptive Management Team, and capitalizing on unplanned experiments such as the current drought[8]. Illustrative examples could use specific scenarios with target thresholds, decision points, and alternatives. The missing details also include commitments and funding needed for science-based adaptive management and restoration to be developed and, more importantly, to be effective.

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

Restoration as mitigation

Restoration projects should not be planned and implemented as single, stand-alone projects but must be considered in a broader, landscape context. We highlighted the landscape scale in our review of the Previous Draft and also in an earlier review of habitat restoration in the Delta[9]. A landscape approach applies not just to projects that are part of EcoRestore, but also to projects envisioned as mitigation in the Current Draft, even though the amount of habitat restoration included (as mitigation) in the Current Draft has been greatly reduced. On August 13 and 14, representatives of WaterFix and EcoRestore acknowledged the importance of the landscape scale, but the Current Draft gives it little attention. Simply because the CEQA and NEPA guidelines do not specifically call for landscape-level analyses is not a sufficient reason to ignore them.

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

Mitigation ratios

Restoring a former wetland or a highly degraded wetland is preferable to creating wetlands from uplands[11]. When an existing wetland is restored, however, there is no net gain of

[8] http://deltacouncil.ca.gov/docs/adaptive-management-report-v-8
[9] http://deltacouncil.ca.gov/sites/default/files/documents/files/HABITAT%20RESTORATION%20REVIEW%20FINAL.pdf
[10] Letter from Cassandra Enos-Nobriga, DWR, September 21, 2015.
[11] http://www.nap.edu/openbook.php?isbn=0309074320

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

In view of inevitable shortcomings and time delays in wetland restorations, mitigation ratios should exceed 1:1 for enhancement of existing wetlands. The ratios should be presented, rather than making vague commitments such as "restore or create 37 acres of tidal wetland…." The Final Draft also needs to clarify how much of the wetland restoration is out-of-kind and how much is in-kind replacement of losses. It should examine whether enough tidal area exists of similar tidal amplitude for in-kind replacement of tidal wetlands, and whether such areas will exist with future sea-level rise. We agree that out-of-kind mitigation can be preferable to in-kind when the trade-offs are known and quantified and mitigation is conducted within a watershed context, as described in USACE's 2010 guidance for compensatory wetland mitigation.[12] Since then, many science-based approaches have been developed to aid decision-making at watershed scales, including the 2014 Watershed Approach Handbook produced by the Environmental Law Institute and The Nature Conservancy[13].

Restoration timing and funding

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

Levees

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

On the one hand, the Current Draft fails to consider how levee failures would affect the short-term and long-term water operations spelled out in Table 4.1-2. A rough estimate was proposed under the Delta Risk Management Study[14] and another is part of a cost-benefit analysis for the BDCP[15]. The Final Report should provide analyses that incorporate these estimates.

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

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

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

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

[15] http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Draft_BDCP_Statewide_Economic_Impact_Report_8513.sflb.ashx

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

would guide the Delta Levees Investment Strategy[17]. Public safety, a focus of the Delta Flood Emergency Management Plan,[18] is just one asset that levees protect. The Current Draft does not evaluate how the proposed project may affect estimates of the assets that the levees protect.

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

Long-term effects

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

The No-Action alternative establishes the baseline for evaluating impacts and benefits of the proposed alternative(s). It is therefore important to consider carefully how the baseline is established, as this can determine whether particular consequences of the alternatives have costs or benefits. Climate change, for example, is considered under the No-Action alternative in the Current Draft, as is sea-level rise. Climate change is expected to reduce water availability for the proposed northern intakes, and both climate change and sea-level rise are expected to influence tidal energy and salinity intrusion within the Delta[20]. Changes in water temperature may influence the condition of fishes that are highly temperature-dependent in the current analyses. These environmental effects, in turn, are likely to influence environmental management and regulation; from the standpoint of water quality they may even yield environmental benefits if agricultural acreage decreases and agricultural impacts are reduced.

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

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

[17] http://deltacouncil.ca.gov/docs/delta-levee-investment-strategy/dlis-peer-review-technical-memorandum-31
[18] http://www.water.ca.gov/floodmgmt/hafoo/fob/dreprrp/InterdepartmentalDraftDFEMP-2014.pdf.
[19] http://www.californiawaterfix.com/problem
[20] http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0024465

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

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

Informative summaries and comparisons

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

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

The Previous Draft provided text-only summaries for just the two longest of its resource chapters (Chapters 11 and 12). A fragmentary comparison of alternatives was buried in a chapter on "Other CEQA/NEPA required sections" (part 3 of Chapter 31) but fell far short of what was needed. Both the Previous and Current Drafts have been accompanied by a variety of outreach products for broad audiences (e.g., the descriptive overview of the BDCP Draft EIR/EIS[21]). These products do little to compensate for the overall paucity of readable summaries and comparisons in the Previous and Current Drafts.

For over three years, the Delta ISB has been specifically requesting summaries and comparisons: first in June 2012[22], then in June 2013[23], and again in a review of the Previous Draft in May 2014 (footnote 1, p. 1). Appallingly, such summaries and comparisons remain absent in the Current Draft. The generally clear writing in Sections 1 through 4 shows that the preparers are capable of providing the requested summaries and comparisons. Prescriptions in CEQA and NEPA in no way exclude cogent summaries, clear comparisons, or informative graphics. And three years is more than enough time to have developed them.

[21] Highlights+of+the+Draft+EIS-EIR+12-9-13.pdf
[22] http://deltacouncil.ca.gov/sites/default/files/documents/files/DISB_Letter_to_JMeral_and_DHoffman-Floerke_061212.pdf
[23] http://deltacouncil.ca.gov/sites/default/files/documents/files /DISB%20Comments%20on%20Draft%20BDCP%20Document.doc_.pdf

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

PRIOR CONCERNS AND THEIR RELEVANCE TO THE CURRENT DRAFT

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

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

Effectiveness of conservation actions

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

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

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

Uncertainty

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

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

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

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

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

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

First, the Current Draft is probably outdated in its information on climate change and sea-level rise. It relies on information used in modeling climate change and sea-level rise in the Previous Draft, in which the modeling was conducted several years before December 2013. The absence of the climate-change chapter (Chapter 29) in the Previous Draft from Appendix A in the Current Draft indicates that no changes were made. In fact, the approaches and assumptions in the Current Draft remained unchanged from the Previous Draft in order to ensure consistency and comparability across all the Alternatives, even though newer scientific information had become available.[6] Yet climatic extremes, in particular, are a topic of intense scientific study, illustrated by computer simulations of ecological futures[24] and findings about unprecedented drought[25]. The Current Draft does not demonstrate consideration of recently available climate science, and it defers to the Final Report analysis of future system operations under potential climate and sea-level conditions. In fact, the Current Draft generally neglects recent literature, suggesting a loose interpretation of "best available science."

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

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

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

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

Interactions among species, landscapes, and the proposed actions

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

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

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

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

On point 3: Although the Current Draft considers how the project might affect groundwater levels south of the Delta (7.14 to 7.18), it continues to neglect the environmental effects of water use south of (or within) the Delta. Section 4.3.26.4 describes how increased water-supply reliability could lead to increased agricultural production, especially during dry years. Elsewhere, a benefit-cost analysis performed by ICF and the Battle Group[26] calculated the economic benefits of increased water deliveries to agriculture in the Delta. The Current Draft does not fully consider the consequences of these assumptions, or of the projections that the project may enhance water-supply reliability but may or may not increase water deliveries to agriculture (depending on a host of factors). We have been told that to consider such possibilities would be "too speculative" and that such speculations are explicitly discouraged in an EIR/EIS. Yet such consequences bear directly on the feasibility and effectiveness of the project, and sufficient information is available to bracket a range of potential effects. Our previous concerns are undiminished.

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

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

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

Implementing adaptive management

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

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

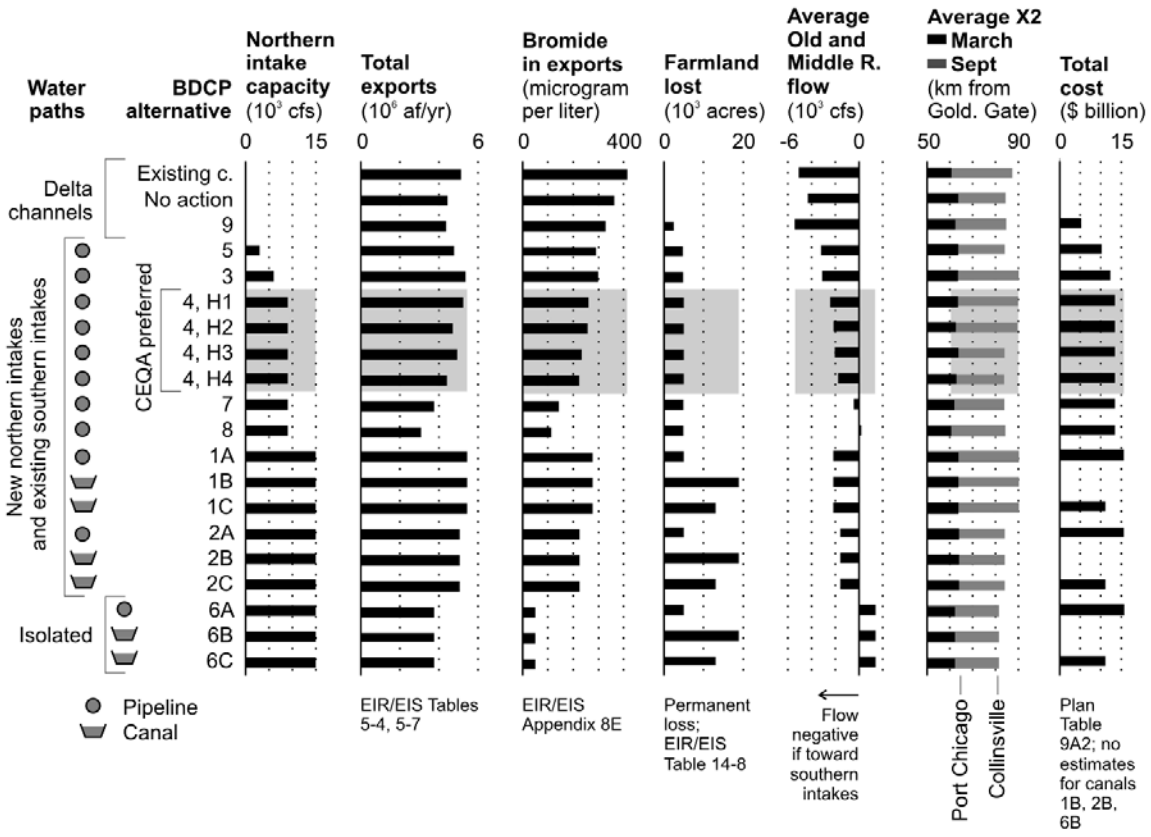
Reducing and managing risk

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

Comparing BDCP alternatives

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

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



COMMENTS ON INDIVIDUAL SECTIONS AND CHAPTERS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Water quality (Chapter 8)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Fish and aquatic resources (Chapter 11)

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

Effects of temperature

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

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

Fish screens

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

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

Invasive plants

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

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

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

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

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

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

Cryptic acronym and missing unit

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

Terrestrial biological resources (Chapter 12)

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

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

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

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

Habitat descriptions

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

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

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

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

Land use (Chapter 13)

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

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

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

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

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

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

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

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

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

Attachment 12

Suisun Marsh Salinity Control Gates Salmon Passage Evaluation Report 2003

Department of Water Resources
And
Department of Fish and Game

May 2004

Adult Salmon Migration Monitoring, Suisun Marsh Salinity Control Gates, September – November 2003

Introduction

The 2003 adult salmon passage study is the third year of a planned three-year program to monitor the passage rate and passage time of migrating Chinook salmon (*Oncorhynchus tshawytscha*) past the Suisun Marsh Salinity Control Gates (SMSCG) in Montezuma Slough. Telemetry studies were begun in 1993 (Tillman *et al* 1996; Edwards *et al* 1996) to monitor and assess the effects of the SMSCG on migrating adult Chinook salmon, particularly federally listed winter-run which may be present in Montezuma Slough during the peak operating times of the gates, October – May. These studies showed that the gates did have a negative effect on salmon passage and recommended making modifications to the structure. In 1998, modifications were made to the flashboards to include 2 horizontal openings to increase passge rate and decrease passage time through the gates for migrating adult salmon Results from the 1998 and 1999 studies indicated that the modified flashboards did not improve salmon passage at the SMSCG (Vincik *et al* 2003).

Studies began in 2001 focused on the use of the existing boat lock as a fish passageway that was already a part of the SMSCG structure and could be held open during gate operations to allow salmon passge during periods when the flashboards were installed and the gates tidally operated (*2001 Suisun Marsh Salinity Control Gates Salmon Passge Evaluation Report. http://iep.water.ca.gov/suisun/dataReport/index.html).* Fish passage through the gates was monitored during three operational configurations (phases) of the SMSCG including: flashboards installed, gates tidally operated, boat lock closed (Full Operation Phase), flashboards out, gates held open, boat lock closed (Full Open Phase), and flashboards installed, gates tidally operated, boat lock open (Modified Phase) (Figure 1).

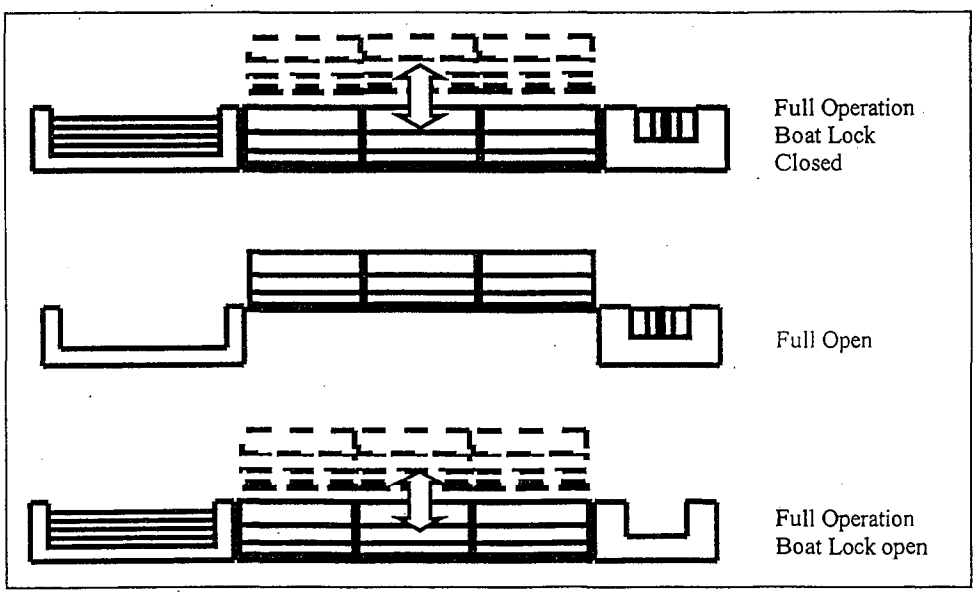


Figure 1. Three Operational configurations of the SMSCG.

These configurations were used in the 2001 – 2003 studies with the order of the operations changed per study year to determine if timing of the adult salmon migration had any affect on passage.

During the 2003 study a total of 163 adult salmon were captured using a large mesh gill net, measured to the nearest mm fork length, visually sexed and internally implanted with an ultrasonic transmitter. A Floy tag was attached externally just behind and below the dorsal fin the help identify any tagged fish that might be recaptured by the tagging crew. The address of the Stockton Fish and Game office was printed on each Floy tag to aid in the recovery of information from recreational anglers if the fish were caught. Salmon were tagged and monitored during September 30 – November 10:

Phase	Gate Configuration	Date	# of Tagged Salmon
I	Full Operation, Boat Lock Closed	9/30 – 10/13	54
II	Full Operation, Boat Lock Open	10/14 – 10/27	44
III	Full Open	10/28 – 11/10	65

Adult fall-run Chinook salmon were used as a surrogate for the federally listed winter-run with tagging being completed by October 31 which did not overlap with the time designated for the presence of winter-run in Montezuma Slough.

For the 2001 and 2002 studies, Sonotronics telemetry equipment was used to track and monitor tagged salmon. In 2003, due to equipment problems, Sonotronics equipment was replaced with Vemco brand products which required less maintenance and were easier to deploy in and around the SMSCG. Each ultrasonic tag was coded with a unique signal to identify individual tagged fish. The signals were recorded at stationary monitoring sites located upstream and downstream of, and on the SMSCG (Figure 2).

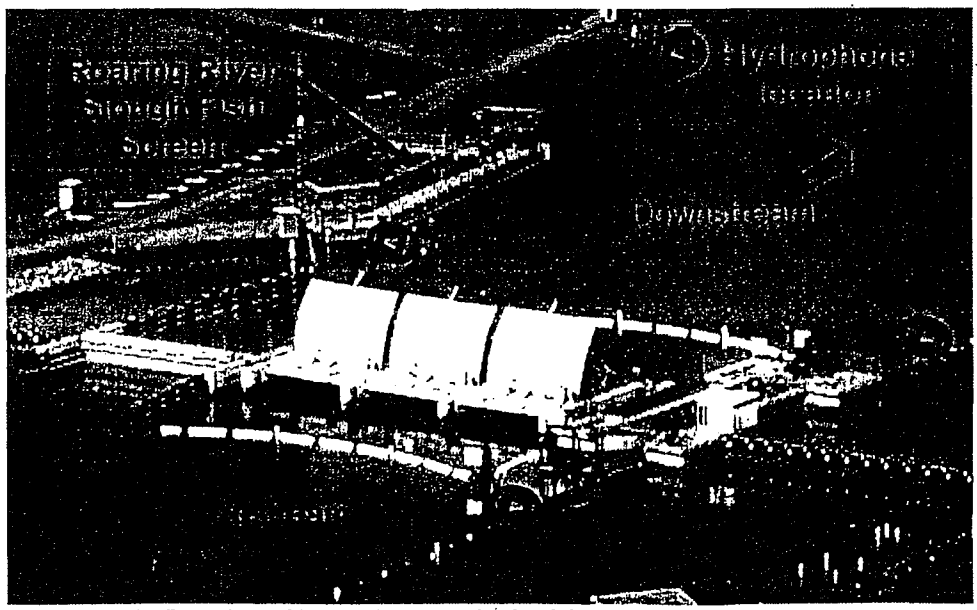


Figure 2. Location of hydrophones at the SMSCG Sept – Nov 2003

2003 Results

One hundred and three tagged salmon passed through the SMSCG during the 2003 tagging study representing 63% of the 163 total tagged adult fish. Fifty-two tagged salmon did not pass the gates(32%) having exited Montezuma Slough by going back downstream after tagging and 8 salmon were removed from the sample population due to non-detection or having died after tagging (5%). The highest percentage of tagged salmon passed the gates during the full open configuration (Phase III) and the lowest percentage of passage was during the full operation with boat lock closed configuration (Phase I) (Figure 3.)

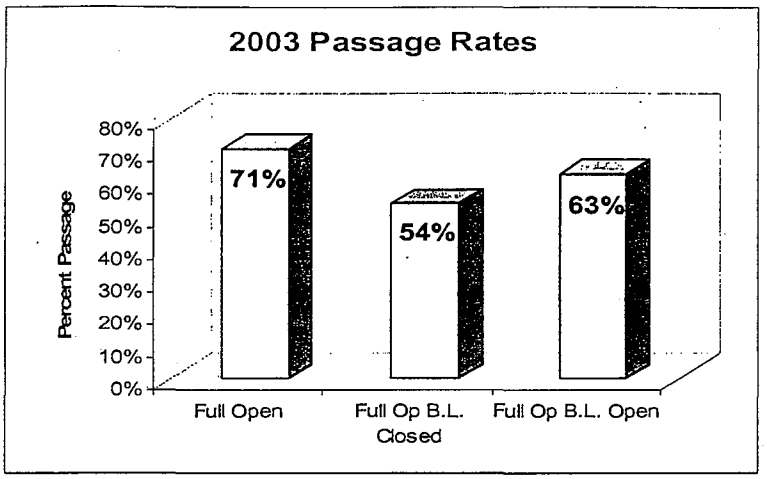


Figure 3. Passage rates by phase at the SMSCG, Sept – Nov 2003

The average passage time for tagged fish ranged from 1.2 to 229 hours with the full operational, boat lock closed configuration (Phase I) having the longest mean passage time, although there was no significant difference between each operational phase (Figure 4).

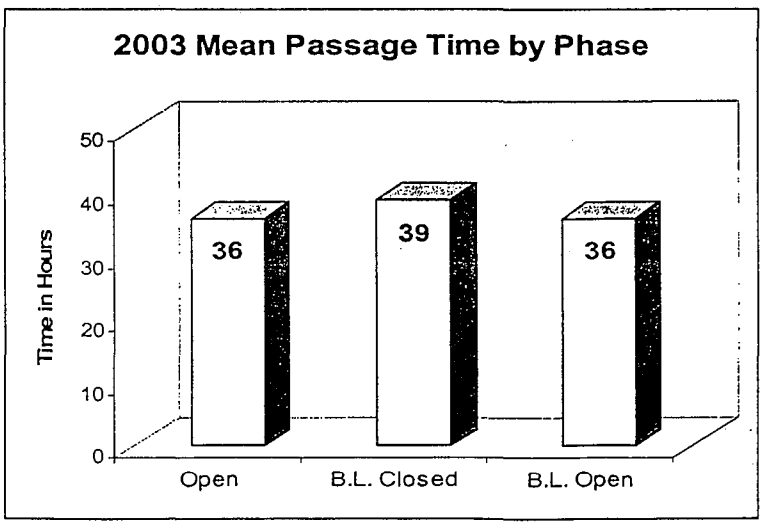


Figure 4. Mean passage time by phase at the SMSCG, Sept – Nov 2003

Tagged fish ranged in size from 600 to 1120 mm fork length and were evenly distributed between males and females.

Passage by Phase

Phase I (Full operation, boat lock closed) - 54% passed the gates with a mean passage time of 39 hours (1.5 to 211.0). During this phase, there were no tagged fish that moved back downstream after passing the gates. There were 2 tagged fish (4%) that had no records or were mortalities.

Phase II (Full operation, boat lock open) – 63% passed the gates with a mean passage time of 36 hours (1.9 to 229.0). During this phase, two tagged fish (5%) moved back downstream after tagging and three fish (7%) had no records or were mortalities.

Phase III (Full open) – 71% passed the gates with a mean passage time of 36 hours (1.2 to 209.0). During this phase, six tagged fish (9%) moved back downstream after tagging and three fish (4%) had no records or were mortalities.

The full open configuration had the best passage rate and was not significantly different from the boat lock open phase. There was a significant difference between the open phase and the boat lock closed phase. There was no significant difference in the passage times between each phase (Table 1).

Table 1.
Chi-square and probability for passage rates

2003

Phase I vs. Phase II: $\chi^2 = 1.51$, $P = 0.219$

Phase I vs. Phase III: $\chi^2 = 4.28$, $P = 0.039$*

Phase II vs. Phase III: $\chi^2 = 0.42$, $P = 0.517$

Kruskal-Wallis Analysis of Variance for passage times

Phase I vs. Phase II vs. Phase III: $P = 0.726$

* = Significant difference

Salmon Usage of the Boat Lock

During the phase II configuration (full operation, boat lock open), of the 29 tagged fish to pass through the gates eight (29%) used the boat lock for passage. One half (4) of the

2003 denotes the third year of a planned three-year study of the effectiveness of the boat lock for adult salmon passage at the SMSCG. Two out of the three years of the study show improvement in passage rates and passage time for tagged adult salmon, but the results from the 2002 study cannot be ignored. Further analysis and comparison of all three years and a possible forth year of the study in 2004 may help to validate the effectiveness of using the boat lock as a permanent means to facilitate fish passage in Montezuma Slough.

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Edwards, G.W., K.A.F. Urquhart, and T.L. Tillman. 1996. *Adult salmon migration monitoring, Suisun Marsh Salinity Control Gates, September-November 1994.* Technical Report 50, Interagency Ecological Program for the San Francisco Bay/Delta Estuary. 27pp.

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Vincik, R.F. 2002. *Adult salmon migration monitoring at the Suisun Marsh Salinity Control Gtes, Sept. – Nov. 2001.* Interagency Ecological Program for the San Francisco Estuary Newsletter 15:45-48.

Vincik, R.F., G.W. Edwards, G.A. Aasen, and R.W. Fujimura. 2003. *Suisun Marsh Salinity Control Gates adult salmon passge monitoring, 1998-1999.* Technical Report (unpublished), Interagency Ecological Program for the San Francisco Bay/Delta Estuary. 27pp.

CALIFORNIA WATER FIX
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INTAKE DESIGN REVIEW

Design Construction Enterprise

AGENDA

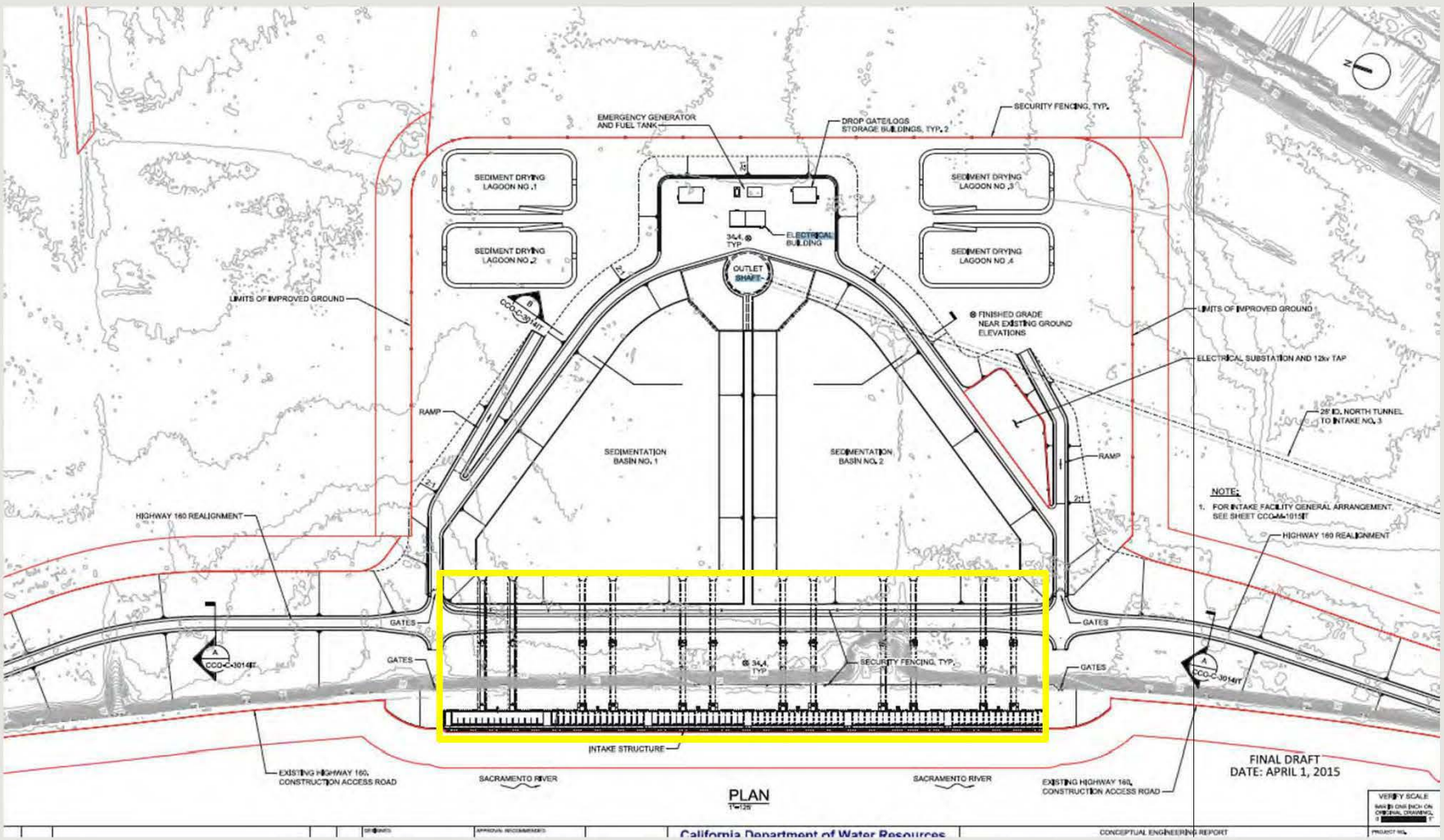
- Introductions
- Meeting Purpose
- Overview of intake design
- Review of questions from last meeting
- Operations and Maintenance
- FFTT Studies
- Schedule

INTAKES – DRAWING REVIEW

PRELIMINARY FISH SCREEN DESIGN CRITERIA

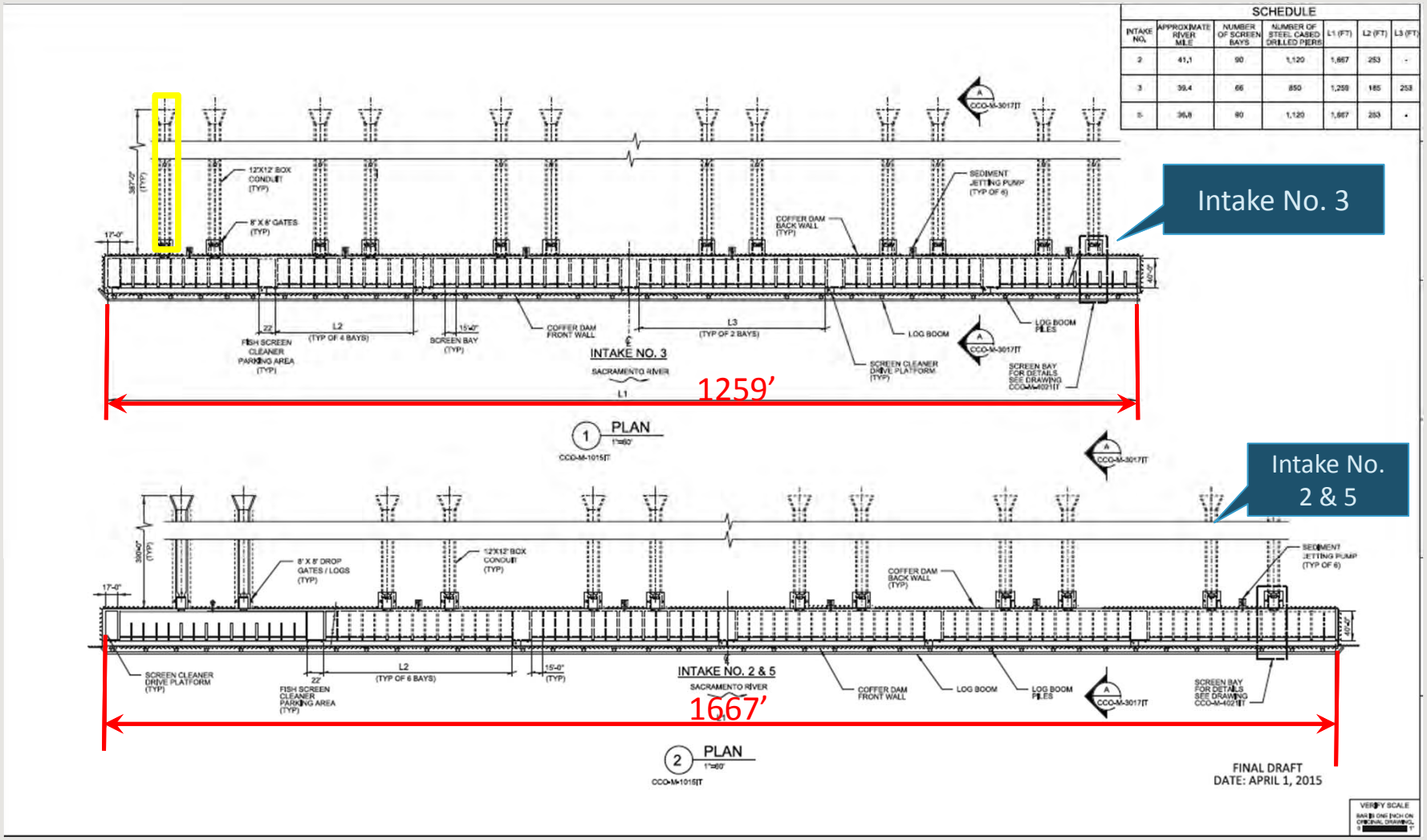
Criterion	Description
General	
Intake Technology	On-bank intake
Number of Intakes	3
Maximum Single Intake Structure Capacity	3,000 cfs
Maximum System Flow Capacity	9,000 cfs
Hydraulic Intake Criteria	
Screen Approach Velocity	.20 fps
Screen Sweeping Velocity	≥0.20 fps

INTAKES – DRAWING REVIEW



No. 2 site plan

INTAKES - CONSTRUCTION



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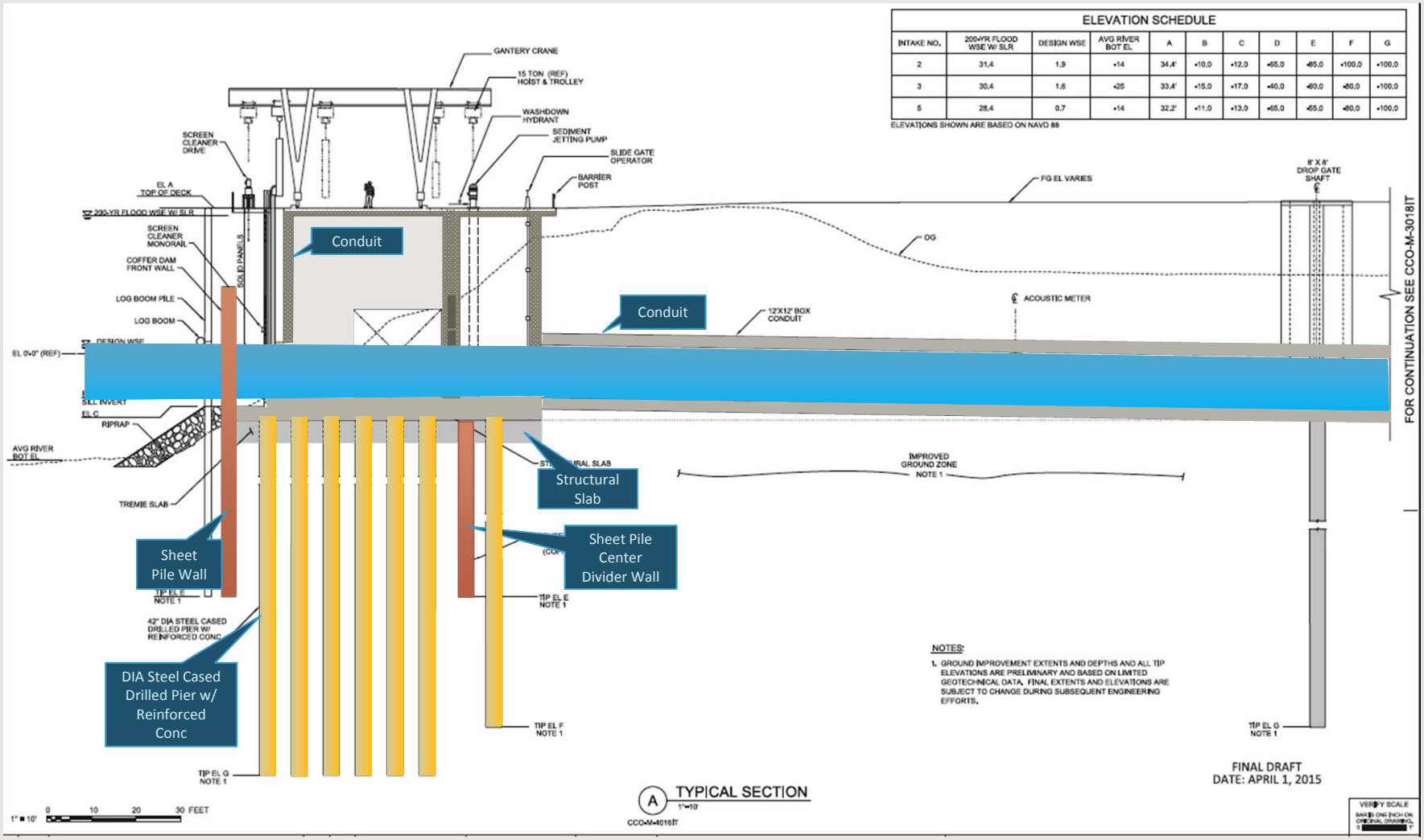

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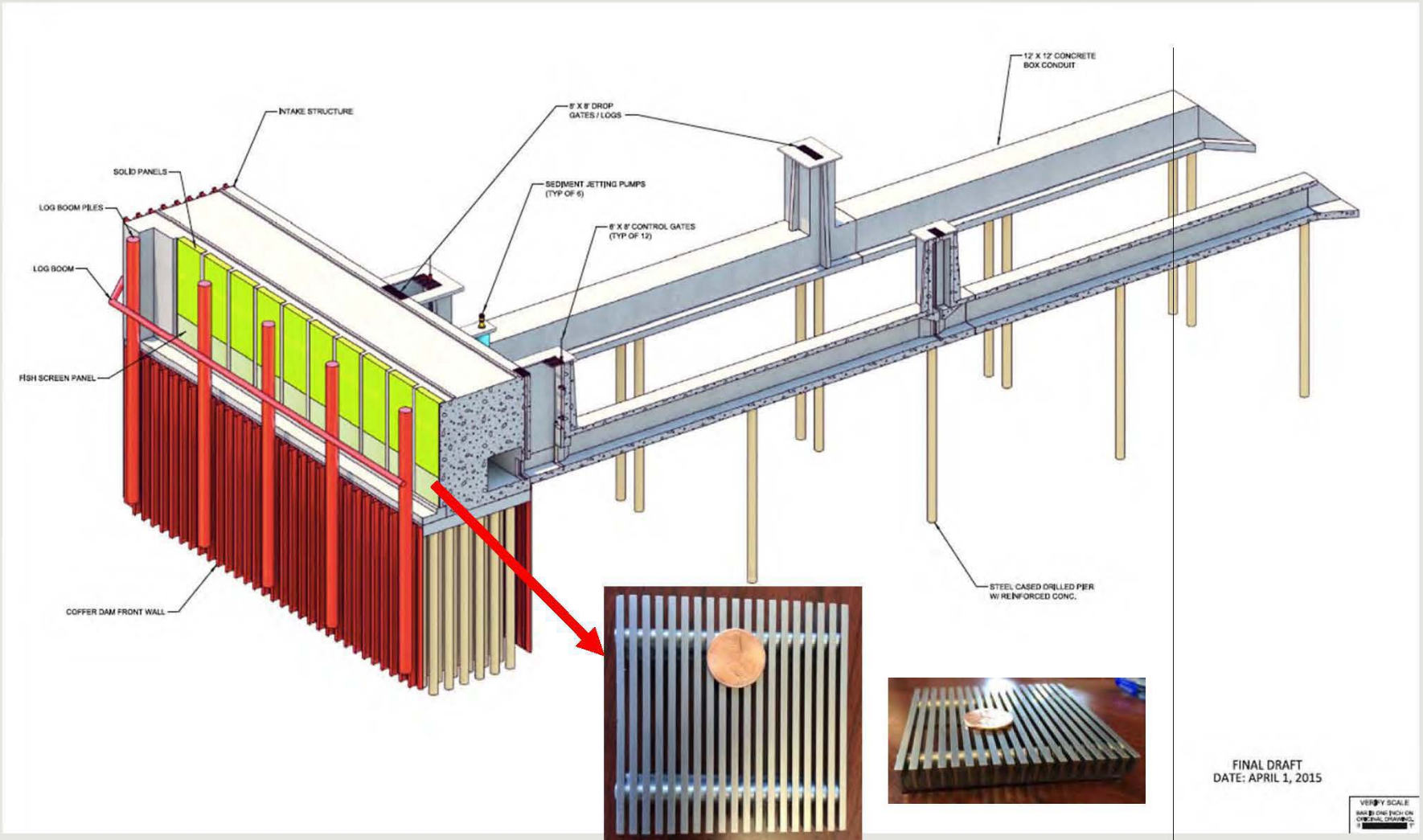
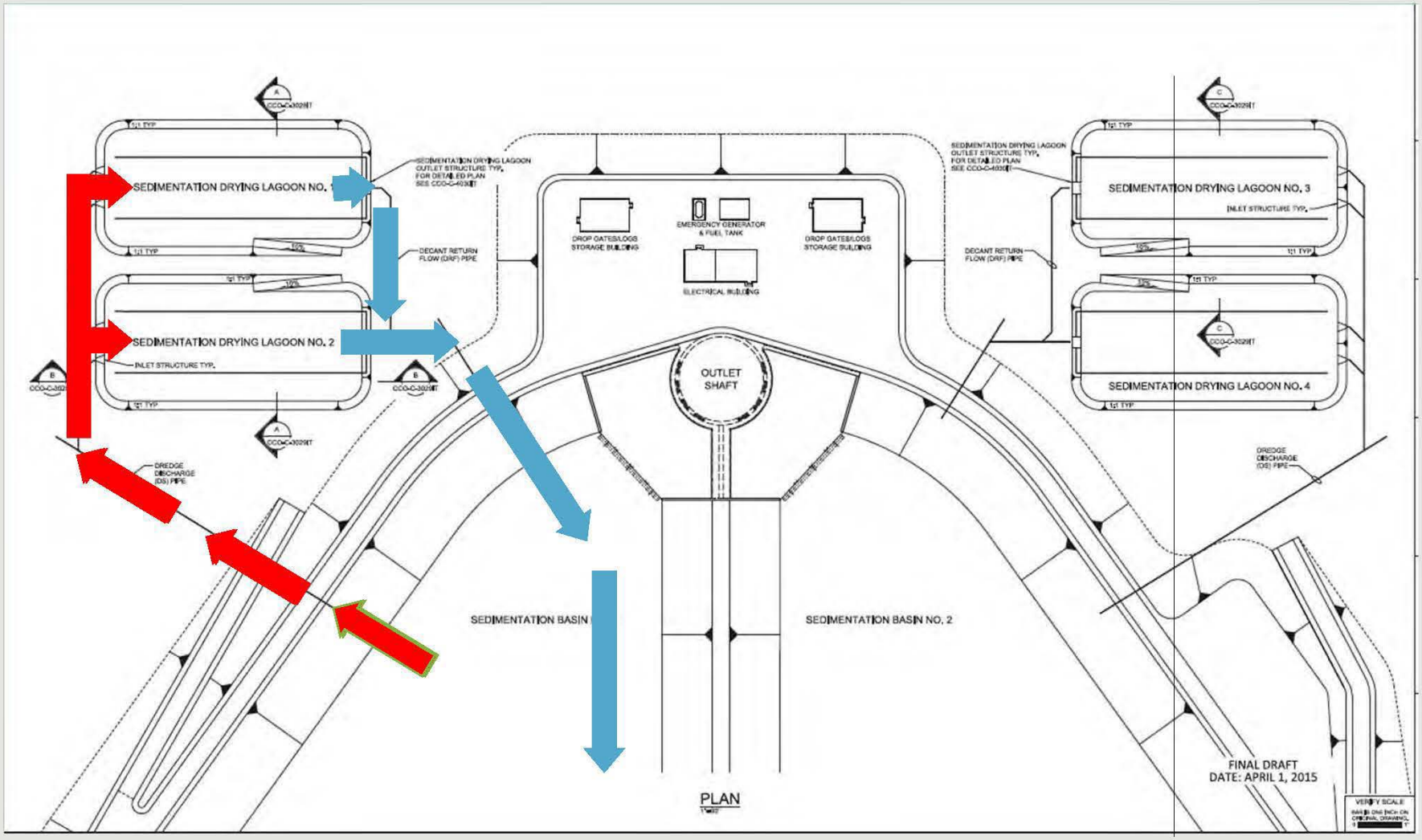
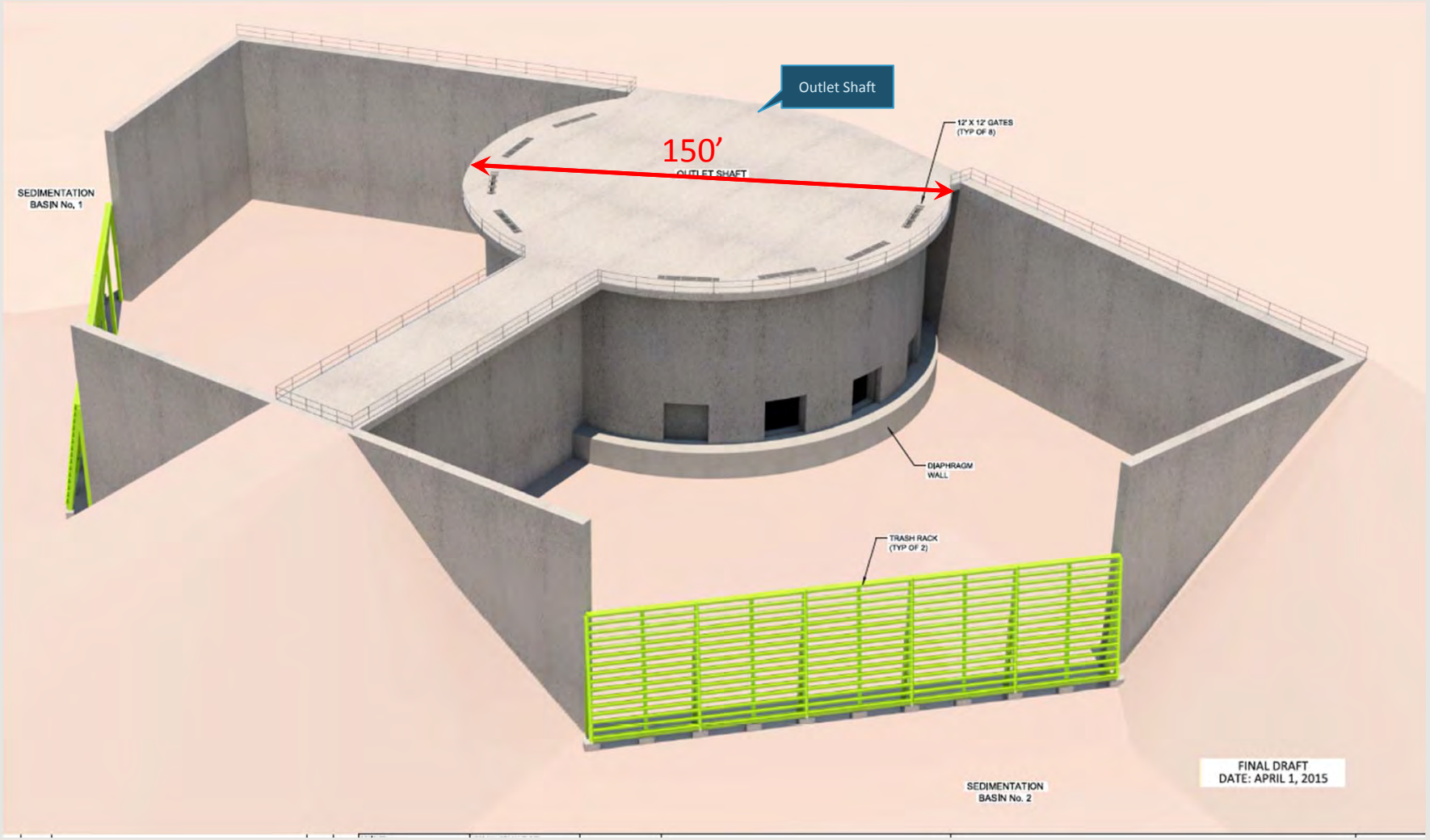


SEDIMENTATION BASINS – DRAWING REVIEW



SHAFTS – DRAWING REVIEW

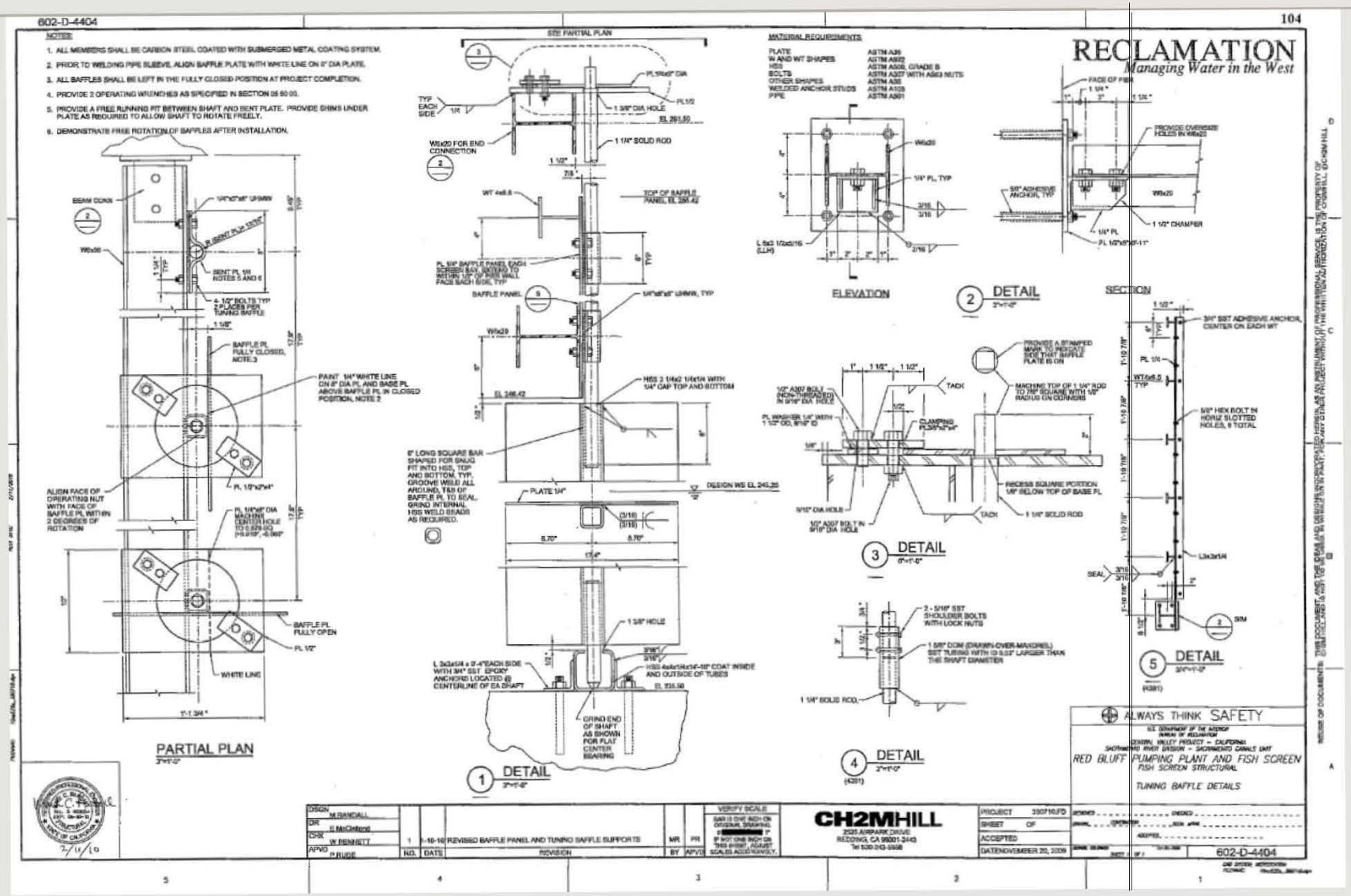


INTAKES – DRAWING REVIEW

QUESTION FROM LAST MEETING

- **What size are the baffles on the fish screens?**
- **What is the size/design of the refugia?**
- **How will the sweeping velocity past the screens be measured?**
- **How often will the sediment basins (at the intakes) be cleaned out?**
- **Where will the sediment be disposed?**
- **What will be frequency be for dredging the sediment in front of the screens?**
- **What's the depth of the fish screens?**
- **Do you have more detailed design for the barge landings?**
- What is the design for the HORB?
- What are the assumptions for the HORB borrow and spoils sites, staging areas, access roads?

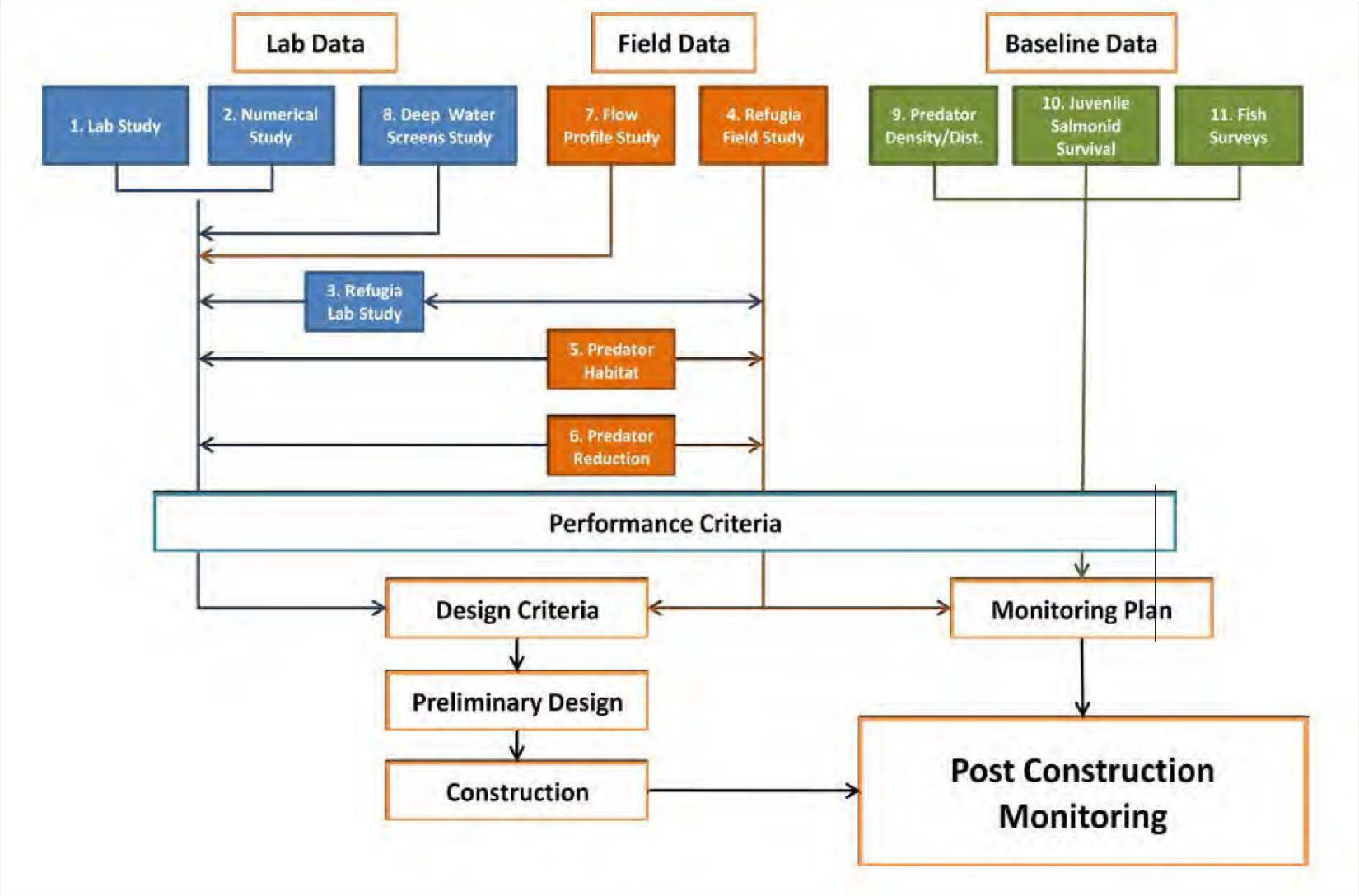
INTAKE STUDIES WORK PLAN



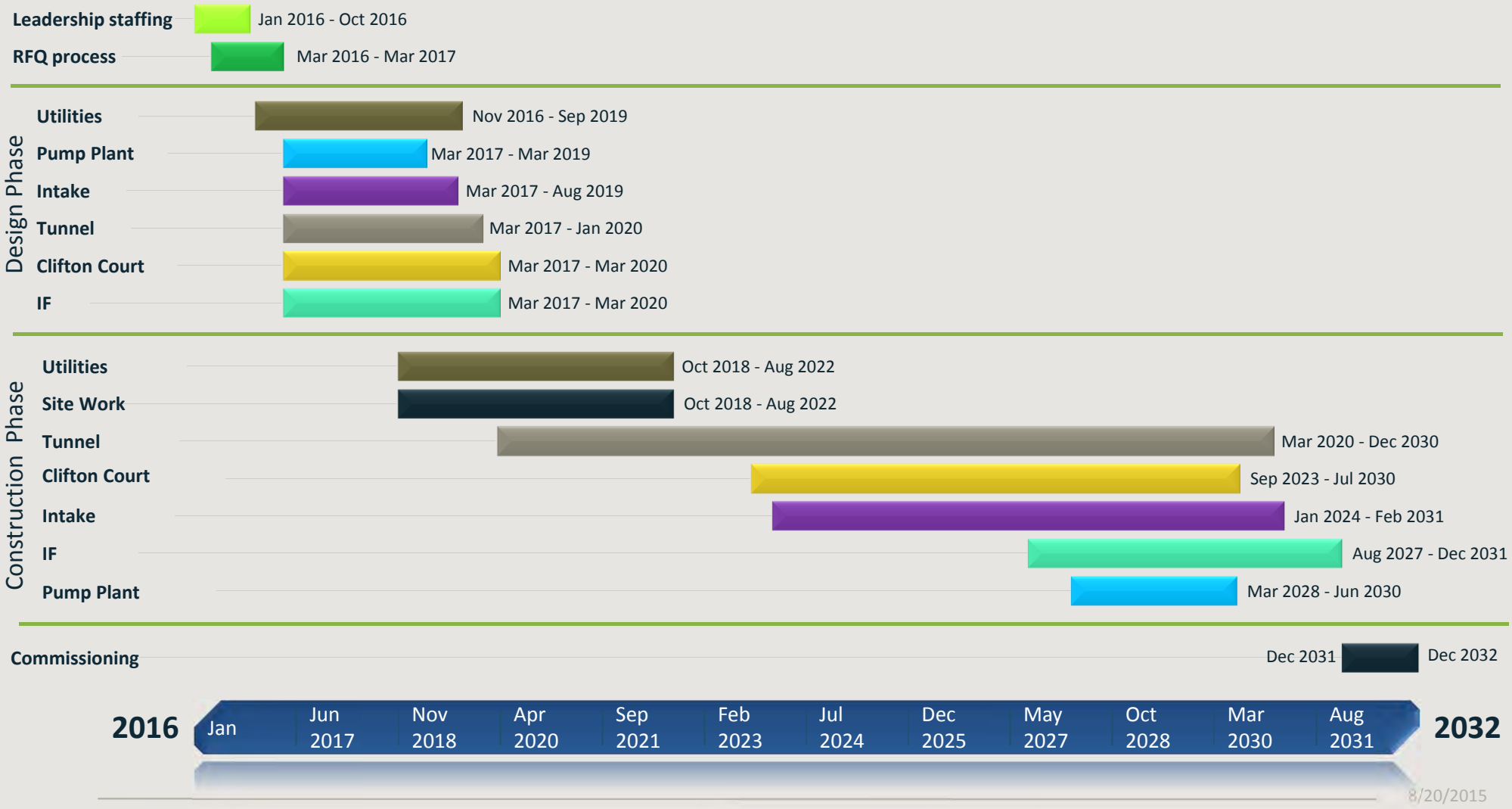
INTAKE STUDIES WORK PLAN

1. Site Locations Lab Study
2. Site Locations Numerical Study .
3. Refugia Lab Study
4. Refugia Field Study
5. Predator Habitat Locations
6. Predator Reduction Methods
7. Flow Profiling Field Study
8. Deep Water Screens Study
9. Baseline Predator Density and Distribution
10. Reach-Specific Baseline Juvenile Salmonid Survival Rates
11. Baseline Fish Surveys

INTAKE STUDIES WORK PLAN

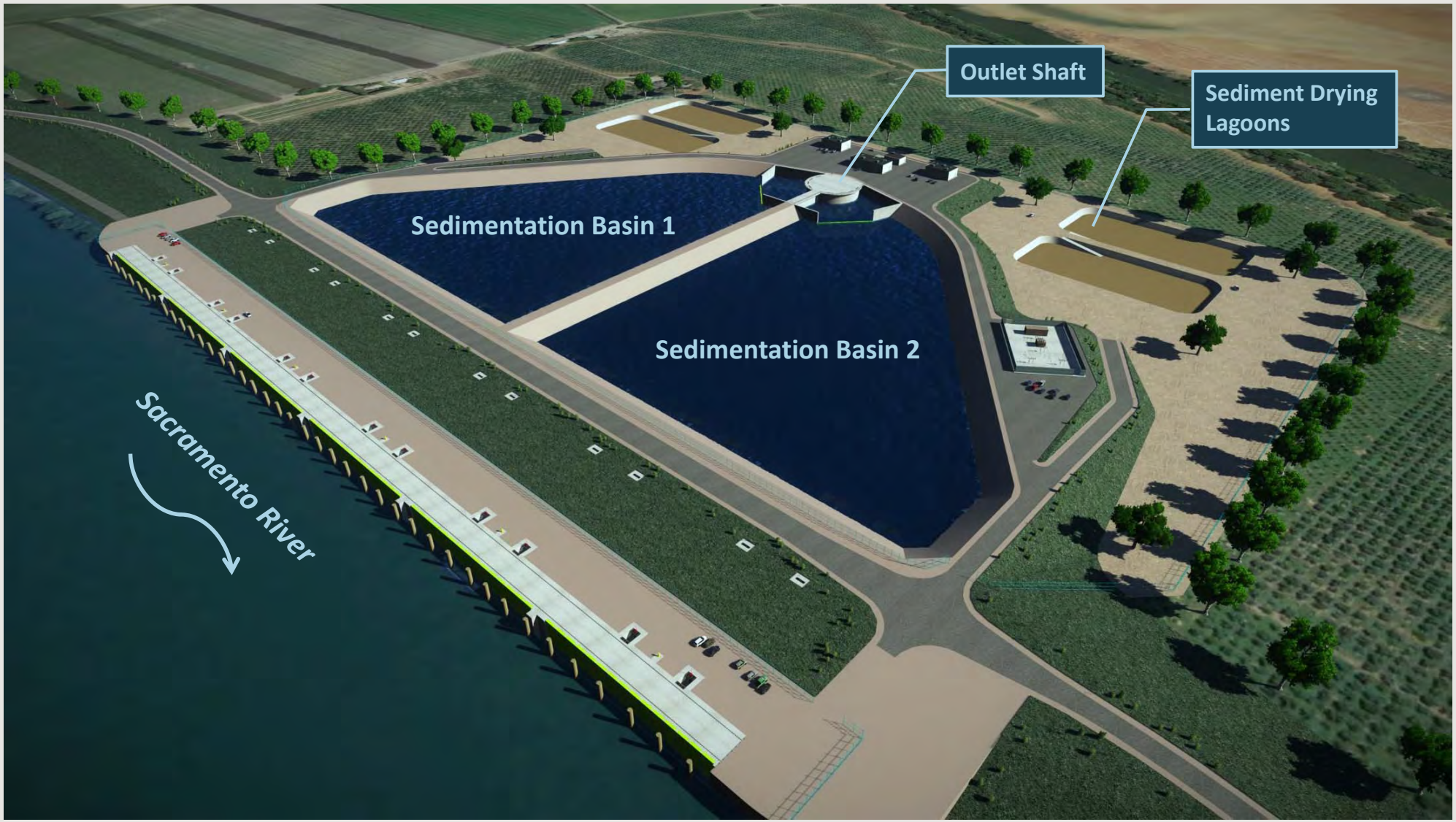


DCE PROGRAM SCHEDULE



INTAKE DESIGN SCHEDULE

RIVER INTAKES – OPTIMIZED



INTAKE ANIMATION