From: MCL <mcl@marinconservationleague.org>
Sent: Monday, July 28, 2014 1:49 PM
To: bdcp.comments@noaa.gov
Subject: Bay Delta Conservation Plan Administrative Draft and Draft EIR/EIS
Attachments: adv_wat_bay-delta-deir-deis_mcl_2014.07.28.pdf

MARIN CONSERVATION LEAGUE
Protecting Marin Since 1934

July 29, 2014

BDCP Comments
Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Dear Mr. Wulff:

Re: Bay Delta Conservation Plan Administrative Draft and Draft EIR/EIS

Marin Conservation League is concerned that any measures taken in the Draft BDCP to modify flow through the Delta will also affect the health of the San Francisco Estuary, its water quality and aquatic species.

In the Plan it is acknowledged that "the effects of implementing the BDCP may extend to aquatic systems beyond the Delta, both upstream and downstream." Impacts downstream in San Francisco Bay have been identified as potentially significant. The Plan's downstream boundary, however, ends in Suisun Bay near Benicia, when in fact the downstream *impacts* of altered flow extend all along the west shoreline of San Pablo Bay and the Central San Francisco Bay to the Golden Gate Bridge. This area includes not only the shallow water habitats of San Pablo Bay but also many sensitive wetlands along the shores of Solano, Napa, Sonoma, and Marin Counties. As you are aware, this area includes thousands of acres of existing wetlands as well as diked former tidelands that are undergoing extensive restoration at great public expense. Potentially affected habitats lie both within and outside the San Pablo Bay National Wildlife Refuge and support species such as the threatened green sturgeon and endangered Chinook salmon. Impacts on these areas and their fish and wildlife inhabitants are not addressed in the EIR/EIS!

A major concern, one voiced by county officials and many other agencies, organizations and individuals, is that the Plan should provide for sufficient freshwater flow to insure the health of the San Francisco Bay complex and the fish and wildlife it supports. Our bay is a blend of fresh and saline waters that nourishes a vast array of aquatic species adapted to this mixture, and reduced freshwater flow threatens this important resource.

We ask that the impacts on the San Francisco Bay estuary, including San Pablo Bay and the shoreline waters of Solano, Napa, Sonoma, and Marin Counties be fully considered in the Plan and its environmental review documents. Downstream impacts of any flow regimen considered for the Delta must be fully analyzed and, when impacts are identified, the Plan must be changed or acceptable mitigation measures included.

Thank you for this opportunity to comment.

Jon Elam

Jon Elam, President
Marin Conservation League
175 N. Redwood Drive, Suite 135, San Rafael, CA 94903
Ph: 415-485-6257 Fax: 415-485-6259

From: susan_don@comcast.net
Sent: Monday, July 28, 2014 3:32 PM
To: BDCP.comments@noaa.gov
Subject: Comments
Attachments: BDCP email comment.doc

Please see the attached comments

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Donald and Susan Ludwig
2007 Pin Oak Place
Danville, CA 94506
925-838-2180

I believe the tunnels project will be like many other infrastructure projects in California. I have heard estimated costs for the tunnels project from a low of 8 billion dollars to 33 billion dollars. I am not sure how these estimates were arrived at, but I am sure they are not accurate. The high speed train between San Francisco and Los Angeles was originally estimated to be about 750 million dollars. Those estimates have been revised to more than 3 billion dollars and the first rail hasn't even been laid yet. The San Francisco Bay Bridge project was estimated to be 1.2 billion dollars when it was sold to the public. The actual cost is approaching 6 billion dollars and this doesn't even cover the huge cost overruns for demolishing the old structure.

By using the extrapolation method, that means the actual cost of this project will cost taxpayers an estimated 36.8 billion dollars to 151.8 billion dollars for a water project that will not produce one drop of water. Let's address the more important issue of how to collect, produce and hold water before we spend billions and billions of dollars to create a system to move water we don't have!!!

Don Ludwig

From: Linda Sheehan <lsheehan@earthlaw.org>
Sent: Monday, July 28, 2014 10:16 PM
To: Bdcp.comments@noaa.gov
Cc: 'Grant Wilson'
Subject: Earth Law Center BDCP comments
Attachments: BDCP final ELC July 28.pdf

Thank you for the opportunity to submit the attached comments. If you have any questions or would like to discuss the comments further, please do not hesitate to contact us.

Best regards,

Linda Sheehan

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July 28, 2014

Ryan Wulff
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814
VIA ELECTRONIC MAIL c/o Mr. Ryan Wulff at BDCP.Comments@noaa.gov

Re: Comment Letter – Draft Bay Delta Conservation Plan and Draft Bay Delta Conservation Plan EIR/EIS

Dear Mr. Wulff:

Earth Law Center (ELC) welcomes the opportunity to provide these comments on the Draft Bay Delta Conservation Plan[1] and the BDCP Draft Environmental Impact Report/Environmental Impact Statement[2] (collectively, "BDCP"). ELC is a non-profit organization that advances legal rights for ecosystems and species to exist, thrive and evolve, and particularly supports the development of water rights for waterways as critical to their long-term health and well-being.

ELC incorporates by reference the June 2014 comment letter and July 2014 supplemental comment letter submitted on the BDCP by the Environmental Water Caucus (EWC), as well as the July 2014 BDCP comments of CWIN/CSPA/AquAlliance. ELC also incorporates by reference the attached March 28, 2013 comments by ELC to the State Water Resources Control Board (SWRCB) on the Bay-Delta Water Quality Control Plan Draft SED (Bay-Delta Plan). ELC attaches these latter comments to address flow issues raised in this letter in additional depth.

EXECUTIVE SUMMARY

ELC believes that the BDCP must be revised and recirculated for public review for the reasons described below, among others (such as those articulated in the comment letters incorporated above by reference). It should be noted, however, that on an overarching basis, ELC continues to have serious concerns as to whether even significant

[1] Bureau of Reclamation, U.S. Fish and Wildlife Service, and Nat'l Marine Fisheries Service, Public Draft Bay Delta Conservation Plan, (Nov. 2013), available at: http://baydeltaconservationplan.com/PublicReview/PublicReviewDraftBDCP.aspx (hereinafter "Public Draft Plan").

[2] Bureau of Reclamation, U.S. Fish and Wildlife Service, and Nat'l Marine Fisheries Service, Public Review Draft Bay Delta Conservation Plan (BDCP) Environmental Impact Report/Environmental Impact Statement, (Nov. 2013), available at: http://baydeltaconservationplan.com/PublicReview/PublicReviewDraftEIR-EIS.aspx (hereinafter "Public Draft EIR/EIS").

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reworkings of the currently flawed BDCP Project could ensure the well-being of the Delta. In particular:

- The BDCP preferred alternative creates a flow regime that fails to meet the BDCP's own mission and purpose of restoring the Delta ecosystem. Rather than increasing already-inadequate Delta flow, which scientists consider the biggest stressor on the Delta (along with diminished habitat), the BCDP chooses to prioritize exports, thus failing to take the steps necessary to recover Delta species and ecosystems.

- The BDCP fails to meet fundamental Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) mandates to protect Delta fish and habitats by declining to establish meaningful increases in Delta flow. Current Delta flow is inadequate to support fish and fish habitat, as recognized by the SWRCB and other government actors as well as the scientific community. Yet, the BDCP proposes to increase exports and decrease outflow under many scenarios. The BDCP in fact would result in survival rate *reductions* in several listed fish species, including winter-run and spring-run Chinook. The BDCP also fails to meet the requirement for an NCCP to ensure adequate funding to carry out identified conservation actions.

- The BDCP fails to meet California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements, particularly with respect to its evaluation of flow alternatives. The BDCP EIR/EIS violates CEQA by failing to consider a reasonable range of alternatives, including most notably alternatives that demonstrably increase flows sufficient to ensure Delta well-being. Instead, every alternative falls short of the flows identified in, for example, the August 2010 flow criteria report from the SWRCB, which uses science to identify the flows fish need to survive.[3] Similarly, the BDCP EIR/EIS falls short of NEPA by failing to identify reasonable alternatives that would minimize adverse impacts of the BDCP. At minimum, the BDCP must analyze alternatives that will achieve the science-based flows described in the SWRCB's August 2010 flow criteria report.

- The BDCP will not meet the requirements of the Delta Reform Act, as it fails to identify the amount of flow necessary to recover the Delta ecosystem and restore fish populations and *only then* identify the remaining amount of water for export and other beneficial uses. The BDCP must be revised to include alternatives that identify such flows (*e.g.*, such as the minimum flows identified in the August 2010 flow criteria report) and *only then* determine the remaining amount for export and other beneficial uses.

- The BDCP will result in actions that will violate the Clean Water Act (CWA). In particular, implementation of the BDCP will require a CWA Section 401 certification

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[3] SWRCB, "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem," pp. 2, 5 (Aug. 3, 2010), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.

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for the expected CWA Section 404 permit(s). This certification in turn can be granted only for projects that comply with water quality standards, which the BDCP will not do as proposed, given its notably inadequate flow (and other) protections.

- More generally, if the flow regime in the proposed BDCP is integrated into the state's upcoming revisions to its Bay-Delta Plan, the resultant flow objective(s) will fail to protect the most sensitive beneficial uses, as required by the CWA. Under the CWA, the state must adopt science-based flow criteria that protect (not "reasonably" protect) the most sensitive beneficial use. However, the BDCP is based on levels of instream flow that are widely considered to be inadequate to protect Delta fish and habitats. Additional efforts to ostensibly enhance flow (*e.g.* the BDCP's north Delta diversion bypass flow) fall significantly short of what is needed to prevent violations of beneficial uses necessary to protect Delta systems and species.

- Finally, the state should include in this process the development of an instream water rights program that recognizes in law the inherent rights of waterways to the flows they need to survive and flourish. Instream water rights systems of other states, such as Oregon, can provide guidance in this effort. A state legal system that guides water management practices pursuant to an overarching acceptance of "water rights for waterways" is key to ensuring the Delta's long-term health.

- In sum, the BDCP Lead Agencies should abandon the preferred alternative and work with stakeholders to apply science and law to the development of flow regimes that adequately protect the most sensitive beneficial uses of affected water systems.

In summary, restoring the quality of the Sacramento-San Joaquin Delta ("Delta") is a critical task. The Delta – once home to ecosystems such as rich, biodiverse tidal marshes and a vibrant estuary – has seen the majority of its natural wonder decline due to years of misguided water and species use and management. Iconic Delta species have dwindled in population. Local communities, tribes and fishermen, who rely on a healthy Delta ecosystem for clean water, food and their way of life, are also suffering.

Unfortunately, the BDCP fundamentally fails to achieve its core purpose of restoring the Delta system. Instead, it chooses to prioritize water exports – largely responsible for much of the Delta's poor health in the first place – over critically needed conservation gains. Thus, the BDCP fails to achieve its own goal of being a "comprehensive conservation strategy" for the Delta.[4] Rather than continuing the same brand of 20th century water projects that failed us to begin with, we must act quickly and boldly with 21st century strategies to protect and restore the Delta to health.

ELC is also concerned that the BDCP establishes flow regimes that, if implemented, will contravene the CWA. The CWA seeks to restore and maintain the chemical, physical,

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[4] Public Draft Plan Executive Summary, p. 1, available at: baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Executive_Summary.sflb.ashx.

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and biological integrity of the Nation's waters.[5] As described below, implementation of necessary BDCP activities will require CWA Section 401 certification, which calls on the state to certify that the proposal will meet certain CWA mandates. One such mandate is meeting water quality standards under CWA Section 303, which the BDCP will fail to do, in light of its continued negative impacts on beneficial uses due to inadequate flow proposals.

A better approach is for the state to establish science-based flow criteria that will expeditiously restore the Delta ecosystem to health, implemented through instream water rights that provide legal protection for waterways' and species' flow needs. This would ensure that long-term Delta health is protected from competing short-term interests. Other Western states, such as Oregon, have seen positive results after implementing instream flow programs, and California's waterways would likewise benefit.

To create a conservation plan that restores the Delta ecosystem and protects the health of aquatic species, ELC urges the state to revise and recirculate the BDCP based on these and other comments described below, and in the comments incorporated herein by reference.

THE BDCP'S PREFERRED ALTERNATIVE CREATES A FLOW REGIME THAT FAILS TO MEET THE BDCP'S OWN MISSION AND PURPOSE

The Delta, once a thriving ecosystem, has been critically altered from its natural state.

Reviewing the history of the Delta provides context to help understand the fundamental inability of the proposed BDCP alternatives to achieve the original BDCP purpose of conserving the Delta ecosystem and restoring Delta species. The Delta was once the West Coast's largest wetland system,[6] with over 500,000 acres of perennial wetlands (including 365,000 acres of tidal wetlands and 145,000 of non-tidal wetlands) in the Delta's core, as well as seasonal wetlands, riparian forests, rising sand mounts, willow thickets, grasslands, ponds and lakes, oak woodlands, savannas and other diverse ecosystem features.[7] Landscapes throughout the Delta varied – from the maze of channels in the central Delta's tidal freshwater wetland, to the expansive flood basin in the north Delta, complete with tule marsh, lakes, riparian forests and other features.[8] The rich Delta ecosystem supported flourishing terrestrial and aquatic life, particularly the iconic salmon. Wrote Edwin Bryant about his journey to the Delta in the 1846-1847: "It abounds in fish, the most valuable of which is the salmon. These salmon are the largest and fattest I have ever seen."[9]

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[5] 33 U.S.C. § 1251(a).
[6] San Francisco Estuary Institute, "Sacramento-San Joaquin Delta Historical Ecology Investigation: Exploring Pattern and Process," p. xxi (August 2012), available at: www.sfei.org/sites/default/files/Delta_HistoricalEcologyStudy_SFEI_ASC_2012_medres.pdf.
[7] *Id.*, pp. 81-82.
[8] *Id.*, p. xxiv.
[9] QUEST Science, "California's Deadlocked Delta: Interactive Map," Slide 21, available at: science.kqed.org/quest/delta-map.

The Delta's former natural splendor, however, has been fundamentally transformed. The San Francisco Estuary Institute described the Delta's transformation from wild ecosystem to factory for human use as follows: "Rivers were leveed, wetlands drained, tidal sloughs dammed, riparian forests cut, and flows altered," creating a landscape that is "broadly recognized" to be "failing as an ecosystem."[10] What is left of the Delta is "highly disturbed, fragmented, or disconnected from other habitat types."[11] Local wetlands have "virtually disappeared," with only about three percent of historic freshwater emergent wetlands remaining.[12] The Delta has been degraded from all sides: from above, by altering or destroying most of the surface habitat; from the periphery, by exporting vast quantities of water out of the Delta, which dries up waterways that fish species and estuarine systems rely on to survive; and from below, with the drainage of the Delta causing peat soil to decompose more quickly under aerobic conditions – resulting in land subsidence that could trigger the catastrophic failure of Delta levees.[13]

Salmonid populations have been especially hard-hit, with Central Valley salmon and steelhead runs having decreased by at least 90 percent since State Water Project operations began.[14] Flow alterations have also harmed a long list of additional Delta species: Delta smelt, longfin smelt, Sacramento hitch, white sturgeon, Sacramento splittail and others.[15] Poor flow and habitat quality have caused the Sacramento River winter-run and Central Valley spring-run Chinook salmon to be listed as endangered on the State and Federal Endangered Species Acts, the Central Valley Steelhead and Southern Distinct Population Segments of North American Green Sturgeon to be listed as threatened on both lists, and the Delta smelt to be listed as state-endangered and federally threatened.[16] Further, flow alteration supports the expansion of invasive species in the Delta, such as red ear sunfish, largemouth bass, golden shiner and bluegill, to the detriment of native species.[17] Fundamental change, especially restoring Delta flow, is necessary to overcome these escalating challenges.

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[10] San Francisco Estuary Institute, "Sacramento-San Joaquin Delta Historical Ecology Investigation: Exploring Pattern and Process," p. 1 (August 2012), available at: www.sfei.org/sites/default/files/Delta_HistoricalEcologyStudy_SFEI_ASC_2012_medres.pdf.

[11] *Id.*, p. 92.

[12] *Id.*, p. 96.

[13] U.S. Geological Survey, "Delta Subsidence in California: The Sinking Heart of the State," (Apr. 2000), www.science.calwater.ca.gov/pdf/fs00500.pdf.

[14] CA Advisory Committee on Salmon and Steelhead, "Subject: Recommendation to Deny Incidental Take Permit and Natural Communities Conservation Plan for Bay Delta Conservation Plan" (Feb. 26, 2014), available at: http://mavensnotebook.com/wp-content/uploads/2014/02/CACSST-to-Bonham-CDFW-on-BDCP-NCCP_022614.pdf.

[15] PPIC, "Aquatic Ecosystem Stressors in the Sacramento–San Joaquin Delta," p. 13 (2013), available at: http://www.ppic.org/content/pubs/report/R_612JMR.pdf.

[16] *Id.*

[17] *Id.*

The BDCP fails to meet fundamental Habitat Conservation Plan and Natural Community Conservation Plan mandates to protect Delta fish and habitats by failing to establish meaningful increases in Delta flow.

Despite its mandate, the BDCP unfortunately fails to take the necessary steps to ensure needed fundamental change occurs to protect and restore Delta species and their habitat to health. The BDCP serves as both a HCP and a NCCP. An HCP is a required element of an incidental take permit application under the Endangered Species Act (ESA).[18] HCPs "provide for partnerships with non-Federal parties to conserve the ecosystems upon which listed species depend, ultimately contributing to their recovery."[19] HCPs support the stated purpose of the ESA to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved,"[20] where the term "conserved" refers to "all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary."[21] In issuing incidental take permits, Congress directed the Secretary of the Interior to specifically consider "the extent to which the conservation plan is likely to enhance the habitat of the listed species or increase the long-term survivability of the species or its ecosystem."[22] An incidental take permit cannot be issued if the permit "threatens the continued existence of a wildlife or plant population."[23]

The BDCP describes an NCCP as a "comprehensive, broad-scale conservation [plan] that [focuses] on the needs of natural communities and the range of species that inhabit them."[24] The Natural Community Conservation Planning Act (NCCPA) states that the purpose of an NCCP is to "sustain *and restore* those species and their habitat identified by the department that are necessary to maintain the continued viability of those biological communities impacted by human changes to the landscape."[25] More broadly, the NCCPA finds it to be the policy of the state to "conserve, protect, restore, and enhance natural communities."[26]

As described by the California Department of Fish and Game, joint HCP/NCCPs are to "provide protection and long-term conservation and management for common as well as threatened, endangered, and at-risk species in terrestrial, aquatic, and marine habitats; for fine-scale and rare habitat features, as well as broader-scale natural communities; and for

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[18] 16 U.S.C. § 1539(a).
[19] U.S. Fish & Wildlife Service, "Habitat Conservation Plans: Overview," available at: https://www.fws.gov/endangered/what-we-do/hcp-overview.html.
[20] 16 U.S.C. § 1531(b).
[21] Id., § 1532(2).
[22] U.S. Fish & Wildlife Service, "Issuance Criteria for Incidental Take Permits," p. 7-4 (Nov. 1996), available at: www.fws.gov/endangered/esa-library/pdf/hcpbk7.pdf, *citing* H.R. Report 97-835, 97th Congress, Second Session.
[23] *Id.* at p. 7-1.
[24] CA Fish and Game Code §§ 2800 *et seq.*
[25] CA Fish and Game Code §2801(i) (emphasis added).
[26] *Id.*, § 2802.

ecological processes that sustain the function of ecosystems."[27] The BDCP's joint HCP/NCCP should "conserve ecosystems in a sustainable manner and contribute to the recovery of threatened and endangered species."[28]

With fish species and the Delta ecosystem in decline, the BDCP must fulfill the purposes of the NCCPA and ESA by describing and creating a clear path toward species recovery and Delta ecosystem health. As discussed below, this requires substantial increases in Delta flow to waterways. Along with diminished habitat, scientists consider inadequate flow in rivers and other waterways to be the biggest stressor on the Delta ecosystem.[29] Very simply, fish need water to survive. Inadequate flow also affects fish habitat by altering "turbidity, temperature, dissolved oxygen, [and] nutrient loading" and can exacerbate the effects of pollutants, such by affecting their concentration, duration of exposure, contaminant chemistry and biological availability.[30]

The BDCP fails to adequately protect and enhance Delta flow.

Current flows in the Delta are vastly inadequate to support fish and fish habitat, as found by a wide variety of government agencies, scientists and stakeholders. For example, according to the SWRCB, "[t]he best available science suggests that current flows are insufficient to protect public trust resources," and "[r]ecent Delta flows are insufficient to support native Delta fishes for today's habitats."[31] The U.S. Bureau of Reclamation (Reclamation) and U.S. Fish and Wildlife Service (USFWS) wrote that "San Joaquin Basin salmonid populations continue to decline and [the Interior] believes that flow increases are needed to improve salmonid survival and habitat."[32] The California Department of Fish and Wildlife (DFW) similarly concluded that "[f]ish population declines coupled with these

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[27] CA Dep't of Fish and Game, "Regional Conservation Plans Protect Species and Ecosystems in California" (June 2010), available at: deltacouncil.ca.gov/sites/default/files/documents/files/Item_9_Attach_1_DFG_Summary_Paper.pdf.

[28] Public Draft Plan Executive Summary, p. 1, available at: baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Executive_Summary.

[29] PPIC, "Scientist and Stakeholder Views on the Delta Ecosystem," p. 2 (2013), available at: http://www.ppic.org/content/pubs/report/R_413EHR.pdf.

[30] U.S. EPA, "Water Quality Challenges in the San Francisco Bay/ Sacramento-San Joaquin Delta Estuary: EPA's Action Plan," p. 7 (August 2012), available at: www2.epa.gov/sites/production/files/documents/actionplan.pdf.

[31] SWRCB, "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem," pp. 2, 5 (Aug. 3, 2010), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf. *See also* U.S. EPA, "EPA's comments on the Bay-Delta Water Quality Control Plan; Phase 1; SED (March 28, 2013), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/hearings/baydelta_pdsed/docs/comments032913/tim_vendlinski.pdf.

[32] U.S. Dep't of Interior, Comments on the Revised Notice of Preparation and Notice of Additional Scoping Meeting for the State Water Resources Control Board Review of the Southern Delta Salinity and San Joaquin River Flow Objectives in the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (May 13, 2011), p. 1, available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/cmmnts052311/amy_aufdemberge.pdf.

hydrologic and physical changes suggest that current Delta water flows for environmental resources are not adequate to maintain, recover, or restore the functions and processes that support native Delta fish."[33] The message from these and other experts is clear: the Delta ecosystem will continue to fail unless we provide more flow.

However, even though agency consensus is that flow is crucial to recovering fish species in the Delta, the BDCP preferred alternative is primarily concerned with securing and, in many cases, increasing Delta exports, to the detriment of ecosystems and species. Although the BDCP does call for measures to restore habitat, these efforts will be insufficient to protect Delta fish species without corresponding increases in flow. It is particularly telling that the BDCP's "Conservation Measure 1" consists of three, 3,000 cfs intakes plus associated pipeline and tunnel systems, which not only fail to protect flow, but also will actually *increase* exports under many scenarios, to the further detriment of the Delta ecosystem.

More broadly, during wet and above normal years, the BDCP preferred alternative would result in an annual increase in average exports.[34] For example, average export projections under the BDCP for April and May in wet and above normal years show that the State Water Project and the Central Valley Project could export between 300,000 and 350,000 acre-feet more water compared to the status quo (depending on the scenario),[35] with approximately 75 to 80 percent of the increased exports resulting from the use of the North Delta intakes. Based on average export levels during wet and above normal years, the BDCP could seemingly result in record-setting export amounts.[36] In drier years, average exports under the BDCP appear to decrease in some individual months and increase in others,[37] though overall they would fail to achieve the overall increases in flows necessary to ensure the well-being of the Delta and its native species. Moreover, without significant changes in California's water management trends, proposed reductions in exports during drought years may not have even the desired effect since, as the EWC points out in their June 2014 comment letter, the SWRCB often grants requested petitions to have Delta water quality objectives waived during such times.[38]

While the BDCP also incorporates "bypass flows" that ostensibly establish the minimum amount of water that must flow downstream of the planned north Delta intakes, the north Delta diversion bypass flows fall well short of what would be necessary to protect

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[33] DFW (formerly the CA Dep't of Fish and Game), "Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta," (Nov. 03, 2010), available at: http://deltacouncil.ca.gov/docs/2010-11-23/final-quantifiable-biological-objectives-and-flow-criteria-aquatic-and-terrestrial-s.

[34] *See* Public Draft Plan, Figure 5.B.4-4, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Appendix_5B_-_Entrainment.sflb.ashx.

[35] *See id.* at Figure 5.B.4-1.

[36] Figure 5.B.4-4 shows an average wet year export level of about 6.8 million acre-feet, whereas the current record for the CVP and SWP is a combined 6.67 million acre-feet in 2011, a wet year. *See id.* at Figure 5.B.4-4.

[37] *Id.* at Figure 5.B.4-1.

[38] *See e.g.* Environmental Water Caucus, "Comment Letter: Bay Delta Conservation Plan and EIR/EIS," p. 45 (June 11, 2014).

aquatic habitat and other sensitive beneficial uses. The BDCP's analysis of flow below the north Delta intakes in 2060 shows that the BDCP will reduce flow in every month of the year compared to existing biological conditions (EBC2) – on the low end, a reduction of 1,242 cfs in October, and on the high end, a reduction of 6,359 cfs in March (when comparing the average of different water-year types with the BDCP to the EBC2 scenario).[39] The average reduction in flow is about 4,000 cfs, compared to existing biological conditions (when comparing the average of different water-year types to the EBC2 scenario).[40] Chinook salmon, Central Valley steelhead, sturgeon and lamprey all migrate and spawn in this area, with Delta smelt and longfin smelt likely spawning in the lower Sacramento River, as well.[41] The north Delta intakes will significantly disrupt the lower Sacramento River's flow regime, such as through flow network changes to Elk, Steamboat, Sutter and Georgiana sloughs and the Delta Cross Channel[42] – crucial areas for Salmonid smolt and juvenile survival.

Furthermore, the SWRCB's August 2010 flow criteria report found that from November to June, adequate flows (13,000 to 17,000 cfs at Freeport) are needed to increase juvenile salmon survival by preventing bidirectional flow in the mainstem Sacramento River near Georgiana Slough.[43] Yet north Delta diversion bypass flows (measured below Freeport but above Georgiana Slough) are only 7,000 cfs in November, while significant diversions are still allowed under many scenarios in December through June ("constant low level pumping" is allowed if flow is over 5,000 cfs, and significantly more exports are allowed when there are certain amounts of additional flow), indicating that north Delta diversion bypass flows fall short of what is necessary to protect salmon.[44]

While the BDCP alleges that north Delta intakes will be operated so as not to increase reverse flows at Georgiana Slough, the U.S. National Marine Fisheries Service wrote that the claim of reducing flows below the north Delta intakes without increasing the magnitude or duration of reverse flows at the Georgiana Slough junction is "counter-intuitive" and recommended independent peer review.[45]

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[39] Public Draft Plan, Table 5.5.3-9, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Chapter_5_-_Effects_Analysis.sflb.ashx.

[40] *Id.*

[41] *Id.* at § 3.4.1.3.5, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Chapter_3_-_Part_2_-_Conservation_Strategy.sflb.ashx.

[42] *Id.* at Table 5.3.1-5.3.1.13.

[43] SWRCB, "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem," at 2, 54 (Aug. 3, 2010), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.

[44] *See* Public Draft Plan, Table 3.4.1.2 (Nov. 2013), available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Chapter_3_-_Part_2_-_Conservation_Strategy.sflb.ashx.

[45] U.S. National Marine Fisheries Service, NMFS Progress Assessment and Remaining Issues Regarding the Administrative Draft BDCP Document, p. 4 (Apr. 4, 2013), available at: http://nodeltagates.files.wordpress.com/2013/04/nmfs_progress_assessment_regarding_the_bdcp_administrative_draft_4-11-13-sflb.pdf.

The BDCP preferred alternative also results in an overall decrease in average Delta outflow.[46] A comparison of the BDCP in the year 2060 (under the ESO_LLT scenario) to projected future conditions without the BDCP (based on the BiOps and predicted climate change impacts, also in 2060) shows that, on average, the BDCP results in an average reduction in outflow (15,767 cfs monthly outflow under the BDCP compared to 16,282 cfs without it).[47] In individual months, the BDCP, on average, would reduce outflow in November-May and July-August, and increase outflow in October, June, and September.[48] Comparing the same scenarios in the year 2025 (when the intake facility is complete but restoration activities are not), the BDCP once again would reduce outflow on average (15,590 cfs monthly outflow under the BDCP versus 16,157 cfs without it), with monthly outflow reductions again occurring in November-May and July-August.[49] Even when the BDCP's decision tree adaptive management process results in "increased" outflow through its high-outflow operations (HOS), average annual outflow will still be less than under existing, inadequate biological conditions (*i.e.*, without the BDCP) in both 2025 and 2060, respectively.[50]

The BDCP will negatively impact Delta fish species, including threatened and endangered species.

This ironic ending to what was supposed to be a HCP/NCCP narrative brings the BDCP's characterization as a "conservation" plan into serious doubt. Indeed, the opposite effect is being proposed; for example, the BDCP is projected to result in average survival rate reductions in 2060 (compared to a no-BDCP alternative) of 2.9 percent for winter-run Chinook salmon smolt, four percent for spring-run Chinook salmon smolt, 2.2 percent for San Joaquin River fall-run Chinook salmon smolt, and 1.2 percent for Sacramento River fall-run Chinook salmon smolt.[51] The potential increases of late fall-run Chinook of .4 percent and Mokelumne River fall-run Chinook of 2.5 percent[52] do not justify the *overall* reduction in salmon smolt survival rates. The BDCP's decrease in salmon smolt survival rates will compound the ongoing long-term decline of winter-run and spring-run Chinook salmon populations in the Sacramento River Basin: adult winter-run Chinook production decreased from an average of 54,439 over the period of 1967-1991 to 6,320 over the period of 1992-2011, and adult spring-run Chinook production decreased from an average of 34,374 over the period of 1967-1991 to 13,654 over the period of 1992-2011.[53]

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[46] *See* Public Draft Plan, App. 5C, Attachment 5.C.A, Table C.A-41 (Nov. 2013), available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Appendix_5C_-_Part_5_-_Flow_Passage_Salinity_and_Turbidity.sflb.ashx.

[47] *Id.*

[48] *Id.*

[49] *Id.*

[50] *Id.* at Table C.A- 43.

[51] *Id.* at §§ 5.5.3-5.5.6, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Chapter_5_-_Effects_Analysis.sflb.ashx.

[52] *Id.*

[53] U.S. Fish and Wildlife Service, "Doubling Goal Graphs," available at: http://www.fws.gov/stockton/afrp/Documents/Doubling_goal_graphs_020113.pdf.

The BDCP's negative impact on winter-run and spring-run Chinook alone demonstrates that the BDCP cannot meet the ESA, which requires ecological assurances that the HCP will "enhance the habitat of the listed species or increase the long-term survivability of the species or its ecosystem," and which conversely forbids the issuance of an incidental take permit if the permit "threatens the continued existence of a wildlife or plant population." Similarly, the Department of Fish and Wildlife cannot find that the BDCP will lead to the recovery of winter-run and spring-run Chinook, since the BDCP in fact jeopardizes their existence, as described above.[54] In concurring with this conclusion in their February 2014 BDCP comment letter, the California Advisory Committee on Salmon and Steelhead Trout highlighted the BDCP's decrease of already inadequate outflow and failure to otherwise ensure adequate flow as "[contributing] to the decreases to salmon smolt survival rates modeled by the BDCP."[55] The Committee further critiqued the BDCP as "[promoting] the unproven scientific hypothesis that habitat restoration can substitute for flow."[56]

The BDCP does not adequately ensure funding sources as required by the NCCPA.

While the BDCP does propose some potentially useful conservation and restoration measures, the state has yet to identify specific sources of adequate funding to actually implement such measures. Roughly 68 percent of overall BDCP funding is projected to come from state and federal water contractors – with almost 95 percent of that amount (over $16B) supporting the conveyance facilities – and about 31 percent projected to come from state and federal sources (one percent is expected to come from interest earnings).[57] Conservation and restoration funding is expected to come from a mix of state (over $4 billion) and federal (over $3.5 billion) sources, with small amounts also coming from water contractors (under $1 billion) and interest income (about $165 million).[58] Almost all of the federal funding, which is planned to support ecosystem restoration and not the conveyance facilities, would purportedly come from yet-to-be-approved Congressional appropriations.[59] The state funding for ecosystem restoration is proposed to come primarily from two future, yet-to-be-drafted state bond measures – with the significant caveat that "it is unclear if and when voters will approve them."[60] Disturbingly, the water conveyance facilities could in fact proceed before full funding for conservation is

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[54] California Advisory Committee on Salmon and Steelhead Trout, "Subject: Recommendation to Deny Incidental Take Permit and Natural Communities Conservation Plan for Bay Delta Conservation Plan," p. 2 (Feb. 26, 2014), available at: http://restorethedelta.org/wp-content/uploads/2014/05/CACSST-to-Bonham-CDFW-on-BDCP-NCCP_022614.pdf.

[55] *Id.*

[56] *Id.*

[57] Nat'l Marine Fisheries Services, Dep't of Water Resources, "Public Meeting on BDCP Examines Project's Cost, Funding and Impact on Species" (July 17, 2013), available at: http://www.acwa.com/news/delta/public-meeting-bdcp-examines-project%E2%80%99s-cost-funding-and-impact-species.

[58] Legislative Analyst's Office, "Financing the Bay Delta Conservation Plan" (Feb. 12, 2014), available at: www.lao.ca.gov/handouts/resources/2014/Financing-the-BDCP-02-12-14.pdf.

[59] *Id.*

[60] *Id.*

obtained.[61] Although conservation is supposed to stay in "rough proportionality" to the BDCP's impacts,[62] the lack of even reasonably guaranteed conservation funding raises serious questions about the ability of the state to achieve the necessary conservation goals. The funding scheme for environmental conservation and restoration thus does not appear meet the requirements of the NCCPA, which states that "[t]he department shall approve [an NCCP] for implementation" only if the plan includes "provisions that *ensure* adequate funding to carry out the conservation actions identified in the plan."[63] Ensuring funding for all needed BDCP conservation measures should be the first step in considering its approval as an NCCP, rather than an afterthought.

COMPLIANCE WITH NEPA, CEQA AND THE DELTA REFORM ACT IS ALSO CALLED INTO QUESTION UNDER THE CURRENT DRAFT BDCP

The BDCP EIR/EIS must meet the requirements of CEQA, State CEQA Guidelines, NEPA, and NEPA-implementing regulations.[64] Broadly, CEQA and NEPA require the BDCP EIR/EIS to identify potentially significant adverse impacts and evaluate a reasonable range of alternatives and mitigation measures. Meanwhile, BDCP EIR/EIS also serves to meet certain Delta Reform Act requirements.[65] This section addresses compliance with these state and federal mandates and finds that that the BDCP EIR/EIS fails to meet these mandates.

The BDCP EIR/EIS fails to meet CEQA requirements.

Under CEQA, an EIR must consider a reasonable range of alternatives, including those that "would avoid or substantially lessen any significant effects of the project."[66] Such alternatives must be considered "even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly"[67] (for example, notable reductions in Delta exports and negative economic impacts are not necessarily justifiable reasons for excluding otherwise valid alternatives). Where feasible alternatives or mitigation measures that substantially lessen environmental effects exist, CEQA expresses its intent that "public agencies should not approve projects as proposed."[68] While not every

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[61] Bay Delta Conservation Plan Homepage, "What Happens If Voters Do Not Approve Bond Measures? Could Conveyance Construction Begin Before Restoration Funding is Secured?," available at: http://baydeltaconservationplan.com/AboutBDCP/YourQuestionsAnswered.aspx (last visited July 28, 2014).
[62] *Id.*
[63] CA Fish and Game Code § 2820(a)(10) (emphasis added).
[64] Public Draft EIR-EIS Executive Summary, p. ES-1 (Nov. 2013), available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Executive_Summary.sflb.ashx. Regulations implementing NEPA come from the President's Council on Environmental Quality (CEQ), Department of Interior (43 CFR Part 46), and the NMFS (NOAA Administrative Order 216-6).
[65] *See* Public Draft EIR-EIS, App. 3I (Nov. 2013), available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Appendix_3I_-_BDCP_Compliance_with_the_2009_Delta_Reform_Act.sflb.ashx.
[66] Cal. Pub. Res. Code § 21002; 14 C.C.R. §§ 15002(a)(3), 15021(a)(2), 15126(d).
[67] 14 C.C.R. § 15126.6(b).
[68] Cal. Pub. Res. Code § 21002.

possible alternative need be considered, an EIR must "consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation."[69]

The BDCP asserts that it achieves this mandate, at least in part, by evaluating fifteen alternatives in the BDCP EIR/EIS, and addressing impacts to covered species, natural communities and water supplies in these alternatives analyses.[70] The alternatives include, among others, a No Action alternative, one- and two-tunnel alternatives, and a "through-Delta" alternative that would modify Delta channels and intake locations.[71] The BDCP EIR/EIS analyzes flow under each of the listed alternatives.

However, the BDCP EIR/EIS fails to identify a reasonable range of alternatives that avoid or substantially lessen significant effects, as required by CEQA. Almost all of the alternatives, on average, actually *increase* exports, at the expense of adequate instream flow. At best, only one alternative (Alternative 8) would achieve some potential improvements. But even the flow levels in Alternative 8 (the dual conveyance design with Scenario F operational modeling criteria, including a monthly Delta outflow/unimpaired flow percentage of 55% from January through June[72]) fall well short of the flows identified in the August 2010 SWRCB science-based flow criteria report, which recommends the following to protect Delta fish: 75% unimpaired Delta outflow from January through June, 75% unimpaired Sacramento River inflow from November through June, and 60% unimpaired San Joaquin River inflow from February through June.[73] Furthermore, Alternative 8 still involves construction of a north Delta intake and tunnel system, which itself negatively impacts fish species.

To meet the burden of CEQA, the BDCP EIR/EIS must evaluate alternatives that notably reduce exports and increase in-Delta flows to clearly enhance protection and conservation of habitat and species, including alternatives without North Delta intake facilities and tunnels. These should include alternatives that reduce exports to meet and exceed in-waterway minimum flow needs, such as the enhancements identified in the SWRCB's August 2010 flow criteria report.

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[69] 14 C.C.R. § 15126.6(a).
[70] Public Draft Plan, § 3I.3 (Nov. 2013), available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Appendix_3I_-_BDCP_Compliance_with_the_2009_Delta_Reform_Act.sflb.ashx.
[71] *Id.* at Table 9-3, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/BDCP_Chapter_9_-_Alternatives_to_Take_5-29-13.sflb.ashx.
[72] Public Draft EIR/EIS, § 3I.4, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Appendix_3I_-_BDCP_Compliance_with_the_2009_Delta_Reform_Act.sflb.ashx.
[73] SWRCB, "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem," at 2, 5 (Aug. 3, 2010), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.

Such additional alternatives could also incorporate methods to decrease reliance on Delta exports, which have been offered in detail by stakeholders, such as in EWC's May 2013 "Responsible Exports Plan."[74] EWC and partner organizations also transmitted an earlier version of the Responsible Exports Plan (the "Reduced Exports Plan"[75]) to the California Resources Agency Deputy Secretary in December 2012. The Responsible Exports Plan contains constructive actions to achieve water supply reliability and Delta ecosystem restoration, including significantly reduced exports, adherence to the SWRCB's August 2010 flow criteria report, water conservation methods to ensure that exports are adequate to meet demand, enhancements to existing levees, installation of improved fish screens at existing Delta pumps, and other improvements to California's water management system.[76]

The BDCP EIR/EIS fails to meet NEPA requirements.

An EIS under NEPA is required for "major Federal actions significantly affecting the quality of the human environment."[77] Similar to CEQA, an EIS under NEPA must "inform decisionmakers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment."[78] The requirement to list alternatives to the proposed actions is "the heart of the environmental impact statement."[79] Specifically, agencies have a duty under NEPA to "rigorously explore and objectively evaluate all reasonable alternatives."[80]

The BDCP EIR/EIS falls short of NEPA by failing to identify reasonable alternatives that would minimize adverse impacts of the BDCP. Similar to CEQA, in order to meet this requirement, the BDCP EIR/EIS must include alternatives that reduce exports and increase in-Delta flows, including alternatives without North Delta intake facilities and tunnels. As noted above, at least one suitable alternative should reflect instream flow levels such as those in the SWRCB's August 2010 flow criteria report; however, the Lead Agencies eliminated consideration of an alternative based on these criteria. In explaining the failure of the BDCP EIR/EIS to include this type of alternative, agencies raised issues such as the alternative's impacts on pre-1914 water rights holders in the Sacramento River basin, which would raise

> the potential to require changes in the legal Sacramento River water rights or water entitlements of third parties other than BDCP permit applicants that are beyond the scope of the regulatory authority of the agencies charged with considering approval

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[74] Environmental Water Caucus, "Responsible Exports Plan" (May 2013), available at: http://www.aqualliance.net/wp-content/uploads/2013/08/RESPONSIBLE-EXPORTS-PLAN-MAY-2013-update.pdf.
[75] Environmental Water Caucus, "Reduced Exports Plan," (May 2012), available at: http://www.ewccalifornia.org/reports/REDUCEDEXPORTSPLAN.pdf.
[76] Environmental Water Caucus, "Responsible Exports Plan" (May 2013), available at: http://www.aqualliance.net/wp-content/uploads/2013/08/RESPONSIBLE-EXPORTS-PLAN-MAY-2013-update.pdf.
[77] 42 U.S.C. § 4332(2)(C).
[78] 40 C.F.R. § 1502.1.
[79] *Id.* at § 1502.14.
[80] *Id.* at § 1502.14(a).

of the proposed BDCP (including CDFW, which approves the NCCP, and USFWS and NMFS, which approve the HCP).[81]

However, these concerns do not raise a bar to consideration of this type of alternative. Despite the agency assertions raised in the BDCP, alternatives must be examined that include "all appropriate methods of accomplishing the aim of the action, *including those without the area of the agency's expertise and regulatory control* as well as those within it."[82] Even where an alternative requires "legislative action" to be feasible, this "does not automatically justify excluding it from an EIS."[83] Therefore, the Lead Agencies were unwarranted in eliminating an alternative that potentially included sufficient flows to allow the BDCP to meet the letter and intent of its mandate to protect habitats and species, including recovery of threatened and endangered species.

Moreover, all water rights holders, including pre-1914 water right holders, are subject to the public trust doctrine, waste and unreasonable use doctrine, and other legal mandates that must be observed to prevent the type of damage being inflicted on Delta ecosystems and species by ongoing water use practices.[84] The EIR/EIS accordingly should not tie its own hands by failing to develop alternatives that could meet HCP/NCCP and other mandates and restore the health of the Delta. In order to meet NEPA requirements, the Lead Agencies should revise the BDCP to include a range of alternatives that significantly reduce Delta exports and increase outflow and then recirculate the BDCP EIR/EIS for public review.[85]

The failure of alternatives under the BDCP to adequately protect flow results in a failure to meet the requirements of the Delta Reform Act.

The Delta Reform Act of 2009 created the Delta Stewardship Council (Council), required the Council to create a Delta Plan to cover actions in the Delta (which became effective on September 1, 2013), and established certain requirements for how the Council and the California Department of Fish and Wildlife would consider the BDCP for inclusion in the Delta Plan, among other provisions.[86] According to the Delta Reform Act, the BDCP cannot be integrated into the Delta Plan and become eligible for state funding unless it satisfies the NCCPA and CEQA, including specifically a comprehensive review of:

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[81] Public Draft EIR/EIS § 3I.4 (Nov. 2013), available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Appendix_3I_-_BDCP_Compliance_with_the_2009_Delta_Reform_Act.sflb.ashx.

[82] *Environmental Defense Fund v. Corps of Engineers of United States Army*, 492 F.2d 1123, 1135 (5th Cir. 1974) (emphasis added); 40 C.F.R. § 1502.14(c).

[83] *See City of Sausalito v. O'Neill*, 386 F.3d 1186, 1208 (9th Cir. 2004) (citing *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 815 (9th Cir. 1987); overruled on other grounds by *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989)).

[84] *See e.g. Light v. State Water Resources Control Board*, Cal. App. 1st, Case A138440 (June 6, 2014).

[85] NEPA requires that where "a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft" that contains the information necessary for adequate public debate. 40 C.F.R. § 1502.9(a).

[86] Calif. Water Code § 85200 *et seq.*

> [a] reasonable range of flow criteria, rates of diversion, and other operational criteria required [for an NCCP], 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.[87]

The BDCP fails to meet this requirement of the Delta Reform Act. Specifically, the BDCP fails to identify the amount of flow necessary for recovering the Delta ecosystem and restoring fish populations, and *only then* identify the *remaining* amount of water for export and other beneficial uses. For example, if the amount of flow required to recover the Delta ecosystem and restore fisheries corresponds to at least the amount identified in the SWRCB's August 2010 flow criteria report, along with corresponding levels for other areas of the system, then the EIR/EIS must include an alternative that reserves such flows for instream purposes and *then* identifies remaining water for exports and other beneficial uses. (Of course, the EIR/EIS also could itself analyze the amount of flow that would recover the Delta and restore fish populations through new alternatives that provide additional in-Delta flows over and above what the SWRCB recommended.)

Only one alternative, Alternative 8, comes close to meeting this requirement by establishing that about 3.1 million acre-feet of water would be available for "export of other beneficial uses" after setting aside the amount of flow that would recover the Delta ecosystem and restore fisheries.[88] However, Alternative 8 does not quantitatively or qualitatively analyze whether this amount of flow will actually recover the Delta ecosystem and restore fisheries. Furthermore, this amount of flow falls short of the August 2010 flow criteria report and thus is inadequate, and Alternative 8 still includes construction of the twin tunnels, which itself impedes the goal of recovering the Delta ecosystem and restoring fisheries. Accordingly, the BDCP, if adopted as proposed, will fail to meet the requirements of the Delta Reform Act.

THE BDCP WILL RESULT IN ACTIONS THAT WILL VIOLATE THE CLEAN WATER ACT

Implementation of the BDCP will require CWA Section 401 certification.

Development and implementation of the BDCP must be held accountable to the CWA. Therefore, sound planning dictates that consideration of the CWA's requirements should be made now, to prevent violations arising from the projected implementation phase of the BDCP.

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[87] Calif. Water Code § 85320(b)(2)(A).

[88] *See* Public Draft EIR/EIS, § 3I.4, available at: baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Appendix_3I_-_BDCP_Compliance_with_the_2009_Delta_Reform_Act.sflb.ashx; *see also* Public Draft EIR/EIS, Table 5.4, available at: baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Chapter_5_-_Water_Supply.sflb.ashx.

One CWA requirement that will arise during BDCP implementation is CWA Section 401 certification, which is necessary for any "[f]ederal license or permit to conduct any activity ... [that] may result in any discharge into navigable waters."[89] A key federal license or permit that will trigger the 401 certification process is a CWA Section 404 permit. This will be needed from the Army Corps of Engineers because implementation of the BDCP will result in discharges of dredged or fill material into waters of the United States.[90] Section 401 requires that the SWRCB certify that the Corps' Section 404 permit meets CWA requirements before the permit may be legally issued.[91]

State and federal agencies have already recognized the importance of this requirement, meeting several times to discuss it in the context of the preparation of the BDCP EIR/EIS.[92] As reflected by U.S. EPA in its comments on these discussions:

> [a]lthough there is no statutory requirement that the NEPA document prepared for an HCP under the Endangered Species Act be used as the basis for permits and certifications required under CWA §404 to authorize and implement the project, EPA recognizes the importance of coordination in federal review. Toward this end, EPA and the Corps have met with the project proponent on numerous occasions over the past several years in the interest of using the BDCP EIS/EIR to inform the Corps' 404 regulatory decisions. Despite these efforts, significant unresolved issues remain about the scope of analysis for the proposed project, the level of detail required to trigger the consultation process and federal permitting, and the structure of a comprehensive permitting framework for the proposed project.[93]

Among other concerns that have arisen during this consultation process, ELC contends that the inadequate flow proposals contained in the BDCP EIR/EIS alternatives will ensure that implementation of the BDCP trips over mandatory compliance with the CWA. Flow regimes that fully protect Delta ecosystems and species are necessary to avoid this result.

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[89] 33 U.S.C. § 1341(a)(1).

[90] "Many of the actions that will be implemented under the BDCP will result in the discharge of dredged or fill materials into waters of the United States and will need to be authorized by USACE." Public Draft Plan § 1.3.7.1 (Nov. 2013), available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Chapter_1_-_Introduction.sflb.ashx.

[91] "No license or permit shall be granted until the certification required by this section has been obtained or has been waived as provided in the preceding sentence. No license or permit shall be granted if certification has been denied by the State, interstate agency, or the Administrator, as the case may be." 33 U.S.C. § 1341(a)(1).

[92] U.S. EPA, "EPA's Comments on BDCP ADEIS," p. 6 (July 03, 2013), available at: www2.epa.gov/sites/production/files/documents/july3-2013-epa-comments-bdcp-adeis.pdf.

[93] *Id.*

CWA Section 401 certification can be granted only for projects that comply with water quality standards.

To obtain CWA Section 401 certification, the project at issue must meet several CWA requirements,[94] including the requirement to meet water quality standards under CWA Section 303.[95] If these requirements are met, then either the Regional Water Quality Control Boards (RWQCB) or the SWRCB[96] may grant Section 401 certification.

As implementing U.S. EPA regulations assert,[97] Section 401 certification "shall" include "a statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards."[98] In other words, the state *cannot* grant Section 401 certification to a project if there is no reasonable assurance that it will meet water quality standards. The examination of whether a project violates water quality standards does not include "balancing" factors such as economic considerations – a project either meets water quality standards, or it does not.[99] Furthermore, as confirmed by the U.S. Supreme Court in *PUD No. 1 of Jefferson County v. Washington Department of Ecology* (*PUD No. 1*), CWA Section 401 certification considers the impacts of the *entire* activity – not just the impacts of the particular discharge that triggers Section 401.[100] Therefore, for the BDCP to receive Section 401 certification, the entire BDCP project must be conducted in such a way as to meet all water quality standards. This it does not do, as water quality standards cannot be met under the currently-proposed BDCP flow regimes (as well as under the BDCP discharge scenarios, as described in the comment letters incorporated by reference).

The CWA states that water quality standards "shall consist of the designated uses of the navigable waters involved *and* the water quality criteria for such waters based upon

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[94] 33 U.S.C. § 1341(a)(1), (d). A state agency may also condition, deny or waive certification under certain circumstances. 33 U.S.C. § 1341(a)(1)-(2).

[95] 33 U.S.C. § 1341(d). According to § 401(d), certification "*shall* set forth any effluent limitations and other limitations ... necessary to assure that any applicant" complies with certain provisions of the CWA. The Supreme Court in *PUD No. 1 of Jefferson County v. Washington Department of Ecology* held that this includes CWA § 303, since § 301 incorporates it by reference. *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700, at 713-715 (1994) (PUD No. 1).

[96] In California, the Regional Water Quality Control Boards are responsible for granting water quality certification, unless the project occurs in two or more regions, in which case the SWRCB is responsible. *See* SWRCB, "Instructions for Completing the Clean Water Act Section 401 Water Quality Certification Application" (Jan. 2005), available at: www.swrcb.ca.gov/centralcoast/water_issues/programs/401wqcert/docs/instruct_401_wq_cert_app.pdf.

[97] The Supreme Court held that the EPA's interpretation is consistent with the CWA in *PUD No. 1.*

[98] 40 CFR § 121.2(a)(3); *PUD No. 1* at 712.

[99] 40 CFR § 131.11 ("For waters with multiple use designations, the criteria shall support the most sensitive use"); *see also* 40 CFR § 131.6. As noted by the state Supreme Court, Porter-Cologne "cannot authorize what federal law forbids"; that is, California cannot allow for the "balancing away" of the most sensitive beneficial uses in a reliance on Porter-Cologne rather than the Clean Water Act. *City of Burbank v. State Water Resources Control Bd.*, 35 Cal.4th 613, 626, 108 P.3d 862 (2005).

[100] *PUD No. 1*, 511 U.S. 700 (1994). *PUD No. 1* established that so long as there is a discharge, the state can regulate an activity as a whole under § 401. *PUD No. 1* at 711-712.

such uses."[101] In other words, "a project that does not comply with a designated [*i.e.*, beneficial] use of the water does not comply with the applicable water quality standards."[102] This fundamental CWA mandate does not change when the impact on beneficial uses arises from altered flow. The CWA was established specifically to "restore and maintain the chemical, *physical*, and biological integrity of the Nation's waters" – not solely to regulate "pollutants."[103] The U.S. Supreme Court addressed this issue directly in *PUD No. 1*, stating that:

> Petitioners also assert more generally that the Clean Water Act is only concerned with water 'quality,' and does not allow the regulation of water 'quantity.' This is an artificial distinction.[104]

In *PUD No. 1*, Supreme Court took up the question of whether Washington state had properly issued a CWA Section 401 certification imposing a minimum stream flow requirement to protect fish populations. The Supreme Court held that conditioning the certification on minimum stream flows was proper, as the condition was needed to enforce a designated use contained in a state water quality standard.[105] In reaching this decision, the court noted that the project as proposed did not comply with the designated use of "[s]almonid [and other fish] migration, rearing, spawning, and harvesting," and so did not comply with the applicable water quality standards.[106]

The U.S. Supreme Court specifically took note of CWA Sections 101(g) and 510(2), which address state authority over the allocation of water as between users. The Court found that these provisions "do not limit the scope of water pollution controls that may be imposed on users who have obtained, pursuant to state law, a water allocation."[107] This conclusion is supported by the "except as expressly provided in this Act" language of Section 510(2), which conditions state water authority; and by the legislative history of Section 101(g), which allows for impacts to individual water rights as a result of state action under the CWA when "prompted by legitimate and necessary water quality considerations."[108] Accordingly, these CWA provisions are not impediments to California's

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[101] 33 U.S.C. 1313(c)(2)(A) (emphasis added); *PUD No. 1* at 704. In addition to the uses to be protected and the criteria to protect those uses, water quality standards include an antidegradation policy to ensure that the standards are "sufficient to maintain existing beneficial uses of navigable waters, preventing their further degradation." *PUD No. 1* at 705; 33 U.S.C. 1313(d)(4)(B); 40 CFR § 131.6. EPA regulations add that "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." 40 CFR § 131.12.

[102] *PUD No. 1*, 511 U.S. at 715. *See also* 40 CFR § 131.3(b) (U.S. EPA stating that "[w]hen criteria are met, water quality will *generally* protect the designated use," (emphasis added) indicating that numerical criteria do not always by themselves protect a designated use).

[103] 33 U.S.C. § 1251(a) (emphasis added).

[104] *PUD No. 1*, 511 U.S. at 719.

[105] *Id.* at 723.

[106] *Id.* at 714.

[107] *Id.* at 720.

[108] *Id.* ("*See* 3 Legislative History of the Clean Water Act of 1977 (Committee Print compiled for the Committee on Environment and Public Works by the Library of Congress), Ser. No. 95-14, p. 532 (1978) ('The requirements [of the Act] may incidentally affect individual water rights. . . . It is not the purpose of this amendment to prohibit those incidental effects. It is the purpose of this amendment to insure that State

implementation of its CWA mandate to ensure compliance with water quality standards, *including* within the context of flows.

In summary: implementation of the BDCP will require a CWA Section 404 permit from the Army Corps of Engineers, which it cannot receive unless the state issues a CWA Section 401 certification. The certification in turn cannot be legally issued unless the BDCP project as a whole (*i.e.*, rather than the individual discharge mandating the 404 permit) meets water quality standards, which includes meeting beneficial uses designed to protect Delta species and ecosystems. The BDCP will fail this test, as described in more detail below.

The BDCP will violate water quality standards established for flow, preventing necessary CWA Section 401 certification.

To obtain the CWA Section 401 certification for the necessary Section 404 permit, implementation of the BDCP must comply with the CWA. The BDCP does not set a path for implementation consistent with the CWA, however, because (among other reasons) it will result in water quality standards violations, including those involving violation of beneficial uses. These beneficial uses include "rare, threatened or endangered species habitat," "estuarine habitat," "spawning, reproduction, and/or early development," and other sensitive beneficial uses.[109]

As noted above, in its August 2010 flow criteria report, the Water Board found that "[t]he best available science suggests that current flows are insufficient to protect public trust resources," and that "[r]ecent Delta flows are insufficient to support native Delta fishes for today's habitats."[110] However, the flow regimes incorporated by the current BDCP are largely equivalent to those that have been failing to protect Delta ecosystems and species for years. These include: Water Right Decision 1641 (D-1641);[111] the 2006 San

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allocation systems are not subverted and that effects on individual rights, if any, are prompted by legitimate and necessary water quality considerations')." *See also* Memorandum from U.S. EPA Water and Waste Management and General Counsel to U.S. EPA Regional Administrators, "State Authority to Allocate Water Quantities – Section 101(g) of the Clean Water Act" (Nov. 7, 1978), available at: http://water.epa.gov/scitech/swguidance/standards/upload/1999_11_03_standards_waterquantities.pdf.

[109] SWRCB, "Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary," p. 9 (Dec. 13, 2006), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/wq_control_plans/2006wqcp/docs/2006_plan_final.pdf.

[110] SWRCB, 2010 Flow Report, pp. 2, 5.

[111] D-1641 requires the SWP and CVP to meet flow and water quality objectives, including specific outflow requirements, an export/import ratio, spring export reductions, salinity requirements, and, in the absence of other controlling restrictions, a limit to Delta exports of 35 percent total inflow from February through June and 65 percent inflow from July through January. Public Draft EIR/EIS § 5B.1.1.2, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Appendix_5B_-_Responses_to_Reduced_South_of_Delta_Water_Supplies.sflb.ashx.

Francisco Bay/Sacramento-San Joaquin Delta Estuary Water Quality Control Plan; the 2009 NMFS Biological Opinion (BiOp);[112] and the 2008 USFWS BiOp.[113]

Furthermore, not only does the BDCP fail to significantly improve upon the current flow regime, but it actually *increases* average exports[114] and *reduces* Delta outflow in many months[115] (see discussion on Delta flows, above). Like ELC, the U.S. EPA expressed serious concerns about the EIR/EIS Administrative Draft's (ADEIS) proposed decrease in outflow "despite the fact that several key scientific evaluations by the federal and State agencies indicate that *more* outflow is necessary to protect aquatic resources and fish populations."[116] By failing to significantly increase flow and, in many cases, decreasing flow, the BDCP's flow regime will violate the beneficial uses of affected waterways. In order to receive the Section 404 permit, the Lead Agencies should revise the BDCP to ensure that it meets all beneficial uses.

If the BDCP is integrated into the Bay-Delta Plan, the resultant flow regime projected under the current draft will fail to protect the most sensitive beneficial uses, as required by the CWA.

The SWRCB is currently in the process of updating the Bay-Delta Plan, last updated eight years ago. While the SWRCB is not required to incorporate the BDCP into the draft or final revised Bay-Delta Plan, the BDCP and its modeling criteria likely represent the shape of the "regime change" for water quality control in the Delta if the BDCP moves forward.

As discussed above, the CWA requires the state to adopt water quality standards that "shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses."[117] In setting criteria to protect the beneficial uses, U.S. EPA regulations require states to "*protect* the designated use."[118]

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[112] Public Draft EIR/EIS, § 5.3.3.1, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Chapter_5_-_Effects_Analysis.sflb.ashx.

[113] *Id.*

[114] *See e.g.* Public Draft Plan, App. 5B, Fig. 5.B.4-4, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_EIR-EIS_Appendix_5B_-_Responses_to_Reduced_South_of_Delta_Water_Supplies.sflb.ashx.

[115] For example, on average for the period of February through June, the BDCP would *decrease* the average Delta outflow by about 1,000 cubic feet per second and also *decrease* the median Delta outflow by about 2,000 cfs. Furthermore, for the period of January through June (the time period during which the August 2010 Flow Criteria from the SWRCB called for an increase of outflow to 75 percent unimpaired Delta outflow), the BDCP *decreases* outflow. *See* Public Draft Plan, App. 5C, Attachment 5.C.A, Table C.A-41, available at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Appendix_5C_-_Part_5_-_Flow_Passage_Salinity_and_Turbidity.sflb.ashx.

[116] U.S. EPA, "EPA Comments on Administrative Draft EIR/EIS, III Aquatic Species and Scientific Uncertainty, Federal Agency Release," p. 4 (July 18, 2013) (emphasis added), available at: http://www2.epa.gov/sites/production/files/documents/july3-2013-epa-comments-bdcp-adeis.pdf.

[117] 33 U.S.C. 1313(c)(2)(A); *PUD No. 1* at 704.

[118] 40 CFR § 131.11 (emphasis added); *see also* 40 CFR § 131.6.

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Actions that "reasonably protect"[119] rather than "protect" the beneficial use are insufficient. If multiple beneficial uses are at stake, adopted flow criteria must protect the *most sensitive* beneficial use (*i.e.*, they cannot "balance" away uses) and must be based on science.[120] As the state Supreme Court found, Porter-Cologne balancing provisions[121] that provide only "reasonable" protection "cannot authorize what federal law forbids."[122] The more protective CWA water quality standard requirements take precedence over weaker Porter-Cologne language; ecosystem and species needs cannot – and should not – be balanced away.

This position is also evident in the 1995 U.S. EPA approval of the then-Bay-Delta Water Quality Control Plan. Specifically, the approval letter recognizes that CWA Section 303 and implementing regulations require states to adopt water quality criteria "sufficient to protect" beneficial uses (*i.e.*, not "reasonably" protect).[123] The letter recognized (as is the case today) that "there is a difference in opinion about the scope of EPA's authority under the Clean Water Act to review... measures included in the 1995 Bay/Delta Plan," and added that EPA believes that its actions "are fully in accord with the Clean Water Act."[124] ELC agrees with U.S. EPA that federal review of the state's actions in developing new standards for consistency with the CWA is fully in accord with the CWA's requirements to protect, not "reasonably" protect, beneficial uses.

As described earlier, the BDCP alternatives are based on levels of instream flow that are widely considered to be inadequate for Delta fish and habitat. For example, the Department of Interior stated that it "remains concerned that the San Joaquin Basin salmonid populations continue to decline and believes that flow increases are needed to improve salmonid survival and habitat."[125] A comparison of flow regimes established under the BDCP, current flows, the State Water Board's August 2010 flow criteria report, and other flow data demonstrates that flow regimes proposed under the BDCP are at best similar to existing, deeply inadequate flows – and often less than that, with reduced

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[119] SWRCB, "Comments on the Second Administrative Draft Environmental Impact Report/Environmental Impact Statement for the Bay Delta Conservation Plan," p. 1 (July 05, 2013), available at: baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/State_Water_Resouces_Control_Board_Comments_on_BDCP_EIR-EIS_7-5-2013.sflb.ashx (emphasis added).

[120] EPA regulations state that "criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use." *See* 40 CFR § 131.11; *see also* 40 CFR § 131.6.

[121] Calif. Water Code § 13000.

[122] *City of Burbank v. State Water Resources Control Bd.*, 35 Cal.4th 613, 626, 108 P.3d 862 (2005) (citing the Supremacy Clause).

[123] Letter from Felicia Marcus, Regional Administrator, US EPA, to John Caffrey, Chair, SWRCB (Sept. 26, 1995), available at: http://earthlawcenter.org/static/uploads/documents/WQCP1995Approval.pdf.

[124] *Id.*, Attachment 1.

[125] U.S. FWS, "Comments on the Revised Notice of Preparation and Notice of Additional Scoping Meeting for the State Water Resources Control Board Review of the Southern Delta Salinity and San Joaquin River Flow Objectives in the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary," p. 1 (May 23, 2011), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/cm mnts052311/amy_aufdemberge.pdf. *See* above for other statements of scientists and agencies on Delta flow.

average outflow in many months (see discussion on Delta flows, above). For example, comparing the BDCP "evaluated starting operations" to scenarios without the BDCP shows the BDCP results in an average decrease in Delta outflow for the period of January through June, despite the August 2010 flow criteria report calling for an increase to 75% unimpaired Delta outflow.

The August 2010 flow criteria report from the SWRCB used science to identify the *minimum* amount of unimpaired flow that would protect Delta fish species and habitats; this report far better reflects the flows needed to protect these sensitive beneficial Delta uses. A new Bay-Delta Plan that incorporated the BDCP's proposed flow regimes would fall significantly short of this benchmark, and thereby would fail to protect the most sensitive beneficial uses as required by the CWA.

ESTABLISHMENT OF A STATE PROGRAM OF INSTREAM WATER RIGHTS FOR WATERWAYS SHOULD BE EVALUATED IN THE BDCP

The BDCP fundamentally fails to achieve its purpose to conserve ecosystems and move the state toward recovery of threatened and endangered species. As established above, the BDCP also runs afoul of NEPA, CEQA, the Delta Reform Act and the CWA, in addition to ESA and the NCCPA. The BDCP Lead Agencies should abandon the preferred alternative and work with stakeholders to create alternative flow regimes that protect ecosystems and species, so that we may begin to restore the Delta to health. The SWRCB update of the Bay-Delta Plan – which must ensure "freshwater flow improvements to protect beneficial uses"[126] – provides a critical opportunity now to establish robust, legally-based instream flow objectives and protections in the Delta.

Californians "must change their relationship toward the environment and water."

An additional, important, yet unexamined, path forward lies in creation of a comprehensive, instream water rights program that protects ecosystems and species. The Delta Vision Blue Ribbon Task Force found in 2008 that "Californians must . . . change their relationship toward the environment and water."[127] Our current legal system treats the environment's needs as an afterthought to our wants. The state has attempted to address the needs of waterways and fish for flows through a "co-equal goals" approach to water management; however, water supply reliability can only be achieved consistent with an *overarching* goal of environmental sustainability. The state Supreme Court has reached the

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[126] U.S. EPA Region IX, "Comprehensive Review of the Bay-Delta Water Quality Control Plan" (Dec. 11, 2012) (Letter from Karen Schwinn, U.S. EPA Water Division to Thomas Howard, SWRCB, available at: http://www2.epa.gov/sites/production/files/documents/sfdelta-decpost-workshopltr-dec2012.pdf).
[127] Delta Vision Blue Ribbon Task Force, "Our Vision for the California Delta," (2008), available at: http://www.water.ca.gov/deltainit/docs/Delta-Vision-Summary.pdf.

same conclusion, finding that "water exports from the Bay-Delta ultimately must be subordinated to environmental considerations."[128]

Forcing a false dichotomy between environment and economy will only pit one against the other, to the detriment of both. We cannot extricate ourselves from our environment, no matter how many policies and laws to that effect that we adopt. The "co-equal goals" presumption allows us to imagine that our own needs are not dependent on the needs of the ecosystems to which we are inextricably linked. Rigid adherence to this flawed presumption only delays our acceptance of the inevitable: that we must learn to live within our means, or the environment will ensure that that happens in a manner for which we did not plan. By designing our water supply systems consistent with an overarching goal of ecological health, implemented through recognition of the rights of waterways to the water they need to survive, we will be able to plan a sustainable, reliable water future for California.

The state should develop a program of instream water rights to ensure the ongoing, sound health of waterways and aquatic species.

As challenged by the Delta Vision Blue Ribbon Task Force, we need to "change our relationship toward the environment and water" by recognizing in law the rights of rivers to flow with clean water, and the rights of fish to swim and have the aquatic habitat they need to flourish – not just to avoid extinction, but to thrive.

If water rights are to be the legal system by which water is allocated, then the law must reflect the science and ethics of our integration with our environment: legal water rights for waterways must be developed, allocated, and enforced to support water needs for healthy aquatic ecosystems and a healthy California. Our legal system currently addresses ecosystem water needs only indirectly, through such methods as permit conditions, provisions in the state Constitution and Water Code to prevent "waste and unreasonable use" (when implemented), Water Code Section 1707 water transfers, the public trust doctrine, and the Endangered Species Act. None of these otherwise important tools are actual water *rights*, however, at a level equivalent to currently-allocated water rights for human uses. The result to date has been that ecosystem water needs are consistently relegated to a tangential role in state water planning, until the ecosystems and/or their non-human inhabitants are at the brink of collapse. That is when the ESA hammer falls – abruptly, with little foresight, controversially, and often too late.

California needs a legal system that allows the state to plan effectively for the water needs for *both* Californians and California's ecosystems and species. The dangerously well-

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[128] *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings*, 43 Cal.4th 1143, 1168 (June 5, 2008). The state Supreme Court further found that the then-Delta management program (CALFED) was "premised on the theory, as yet unproven, that it is possible to restore the Bay-Delta's ecological health while maintaining and perhaps increasing Bay-Delta water exports"; the Court added that "[i]f practical experience demonstrates that the theory is unsound, Bay-Delta water exports may need to be capped or reduced." *Id.* As described in these comments, experience has indeed demonstrated that the state must move toward reducing exports sufficiently to ensure the health of Delta waterways and aquatic species.

trod path of "use, overuse, environmental decline, then hasty and unplanned reaction" can begin to be broken by granting ecosystems the right to be at the planning table from the beginning, at a level *legally* at least "co-equal" to human water uses – rather than at the end, when the damage is done.

We can start now to address this legal imbalance by drafting changes to our laws to recognize water rights for waterways based on their flow requirements, including the needs of fish, using the science we already have and obtaining the additional science we need. Formalizing and effectuating water rights for ecosystems will ensure that waterway and fish needs are considered up front, that planning is effective, and that implementation and enforcement are clearer. The BDCP alternatives analysis must include consideration of this important legal and policy avenue. As noted above, "all appropriate methods of accomplishing the aim of the action" – that is, to sustain and restore Delta habitats and species, including endangered and threatened species – must be considered, "including those without the area of the agency's expertise and regulatory control as well as those within it."[129]

California is undertaking various processes now that could set state water policy for decades. What is needed is a statewide vision similarly broad in scope that reflects our interconnections with the natural world, and that commits us to actions commensurate with the sweep and importance of these efforts and the challenges we face. Accordingly, the process before us must include consideration of water rights for waterways, to ensure the well-being of the state's people and environment.

One example of advancement of waterway rights in law is found in Oregon's Instream Water Rights Act (IWRA). The IWRA recognized a broad array of instream uses as beneficial uses,[130] converted minimum flow requirements to instream rights,[131] and established a streamlined system to convert water rights to instream uses.[132] Not only did the IWRA create instream water rights for waterways throughout Oregon, but it also began

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[129] *Environmental Defense Fund v. Corps of Engineers of United States Army*, 492 F.2d 1123, 1135 (5th Cir. 1974) (emphasis added); 40 C.F.R. § 1502.14(c). Again, "legislative action" (such as that which may be needed to establish a program of instream water rights) "does not automatically justify excluding [the alternative] from an EIS." *City of Sausalito v. O'Neill*, 386 F.3d 1186, 1208 (9th Cir. 2004) (citing *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 815 (9th Cir. 1987), *overruled* on other grounds by *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989) (quoting *City of Angoon*, 803 F.2d at 1021); *see also Kilroy v. Ruckelshaus*, 738 F.2d 1448, 1454 (9th Cir.1984) ("In some cases an alternative may be reasonable, and therefore required by NEPA to be discussed in the EIS, even though it requires legislative action to put it into effect").

[130] O.R.S. §§ 537.332 - 537.334 (recognizing that public uses that are valid instream uses include "conservation, maintenance and enhancement of aquatic and fish life, wildlife, fish and wildlife habitat and any other ecological values").

[131] IRWA converted all minimum streamflows established under the 1955 Minimum Perennial Streamflow Act to instream water rights. O.R.S. § 537.346.

[132] O.R.S. § 537.348.

to create a "'culture' of flow restoration"[133] in which conservation groups, regional land trusts, state agencies and others became partners for waterway health.

Limitations in Oregon's program could be addressed through careful crafting of a similar initiative in California. For example, newly established instream water rights in Oregon receive a priority date based on the day they were created, making them junior to most off-stream (human) water rights. This, of course, limits the amount of water practically available for waterways and hobbles the IWRA's effectiveness in reversing years of over-appropriations (although some of the Oregon's most senior water rights have recently been converted to instream uses).[134] Another limitation is that only the Oregon Department of Fish and Wildlife, Department of Environmental Quality, and the State Parks and Recreation Department can appropriate new instream water rights,[135] which the Oregon Water Resources Department holds in trust.[136] Nevada, on the other hand, allows any private party to appropriate water for instream use, unless the State Engineer finds this to interfere with existing rights, threaten the public interest or threaten a protectable interest in a domestic well.[137] California could learn from the work of other states in developing a state instream water rights program that ensures that the law backs up the science of waterways' flow needs.

Additional elements of a state instream water rights program.

"Finding" instream flows for fully appropriated or over-allocated waterways can present a challenge in California; however, a number of steps can be taken to overcome this challenge. One initial step could be to adopt a program similar to Oregon's Allocation of Conserved Water Program, which sets aside a certain percentage of conserved water for instream uses. Such a program could also be expanded to require that water conserved with public funds be converted to instream use. Other potential strategies for "finding" water include, but are not limited to, the following:

- Determinations as to whether the existing water use is a "waste and unreasonable use" pursuant to the California Water Code and California Constitution;
- Assessment of methods of water use and methods of diversion, changes in which can improve waterway health;
- Determinations as to whether the existing water use is a violation of the public trust;
- Initiatives to convince existing water rights holders to give up their water rights voluntarily, such as via a charitable giving process;
- Increases in fees on diversions to encourage voluntary release of unneeded rights;
- Review of unexercised water rights and reapplication of those rights to waterways;

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[133] Janet Neuman *et al.*, *Sometimes a Great Notion: Oregon's Instream Flow Experiments*, 36 ENVTL. LAW 1125 (2006).
[134] *Id.* at 1151, 1154.
[135] O.R.S. § 537.336.
[136] O.R.S. §§ 537.332-537.349.
[137] Nev. Rev. Stat. § 533.370.

- Formal adjudications of relative water rights; and
- Efforts with the federal government to review and adjust the allocation of federal water rights in California.

As water rights are freed up, they could be reassigned to waterways in a prioritized effort that considers the relative requirements of waterways and aquatic species populations.

Other key elements to address in developing a rights-based system for protecting the health of waterways and species include enforcement and accounting. With respect to enforcement, ecosystem water rights would be "held" by the waterways, but must be managed on their behalf by human agents. Independent legal guardians or trusts can be established for this task, and given a clear fiduciary responsibility to protect and enforce the identified water rights fully. While these entities should be accountable to the public, they should not be a government agency, as they must have full and primary responsibility for protecting the waterways to which they are assigned. Guardians/trusts necessarily should be required to coordinate with each other pursuant to a statewide water system vision, due to the broad interconnections among California's surface water and groundwater systems.

With respect to accounting, the state would need to ensure that flows put back into a waterway are being maintained in the waterway and not simply removed downstream. Such a system of accounting need not be limited to instream water rights, but also could be valuable in the context of Section 1707 transfers and other, existing approaches to restore waterway health. A clear system for tracking and maintaining assigned waterway flows in the medium- and long-term will provide needed accountability and transparency for the public.

Necessarily, the state should also develop a process for funding program costs, including: guardian/trust costs, accounting, oversight, research, monitoring and other program elements. A reliable source of funding is essential; oversight funding cannot simply be delegated to intermittent grants and allocations. Fees on water diversions, for example, should at a minimum be tapped as a regular funding stream, with less-regular sources (such as federal or other grants) identified for short-term/pilot initiatives.

The BDCP should assess a program of instream water rights for waterways.

An instream water rights program is a critical step towards restoring the Delta to health, and is necessary to set Californians on a path towards achieving resilient, self-sufficient water supplies. Such a program accordingly should be assessed in the Alternatives section of the EIR/EIS and considered in the BDCP itself. By recognizing and enforcing the rights of the Delta and its tributary waterways to flow, California can create flow regimes that will far better protect the Delta ecosystem and aquatic species, as well as the human communities that rely on the Delta for food, clean water and quality of life on an ongoing basis.

CONCLUSION

The long-term decline of the Delta ecosystem is a story of our lost connection with nature. Once a pristine ecosystem and the West Coast's largest estuary – a rich, biodiverse habitat of unspoiled grasslands, riparian forests, willow thickets, and other features, with an abundance of native fish species such as salmon – the Delta has suffered tremendously from society's misguided belief that nature can be endlessly exploited and degraded. As a first step towards recovery, we must enhance flow, which is essential for aquatic species populations and the larger health of the Delta.

The BDCP instead focuses on reinforcing and, in many cases, increasing existing Delta exports. As such, it fails to achieve its purpose of conserving the Delta ecosystem and recovering threatened and endangered species. The BDCP also will likely result in implementation strategies that will violate the CWA, rather than actually restoring and conserving Delta beneficial uses.

Fortunately, we can still restore the Delta by adopting (at a minimum) sufficient flows to support healthy fish species and Delta habitats. Moreover, the time is ripe to establish a comprehensive instream water rights program that ensures the longevity of the Delta ecosystem and species, and serves as a model for the state as a whole. Rather than following the same destructive path that transformed one of the world's most magnificent estuaries into an engine for unsustainable development – which has left the Delta fragmented, thirsty and sick – let us create a vision of people, ecosystems and species flourishing together.

* * *

Thank you for your attention to these comments. We look forward to working with you to set in place water policies and strategies that will protect the health of Delta habitats and species for many generations to come.

Best regards,

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cc: Tim Vendlinksi, U.S. EPA Region 9
Felicia Marcus, SWRCB
Tom Howard, SWRCB

Attachment: Comment Letter from ELC to the SWRCB, "Bay-Delta Water Quality Control Plan Draft SED" (March 28, 2013)

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March 28, 2013

Charlie Hoppin, Chair and Board Members
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

VIA ELECTRONIC MAIL c/o Ms. Jeanine Townsend at commentletters@waterboards.ca.gov

Re: Comment Letter – Bay-Delta Plan SED

Dear Chair Hoppin and Board Members:

Earth Law Center (ELC) welcomes the opportunity to provide these comments on the State Water Resources Control Board's (SWRCB) "Draft Substitute Environmental Document"[1] (Draft SED). Earth Law Center is a non-profit organization that advances legal rights for ecosystems and species to exist, thrive and evolve, and particularly supports the development of water rights for waterways as critical to their long-term health and well-being.

ELC incorporates by reference the comment letters submitted to the SWRCB on this Draft SED by the Environment Water Caucus (EWC) and by C-WIN/California Sportfishing Protection Alliance/AquAlliance. EWC submits these comments to address some of the flow issues raised in these letters in additional depth.

As an overarching point, ELC shares the deep concerns expressed strongly in the EWC and C-WIN/CSPA/AquAlliance with regard to the inability of the Draft SED to protect Bay-Delta water quality, particularly as it pertains to the protection of aquatic species and habitats. The importance of the extant effort, particularly in light of the multiple stressors already plaguing Delta health and the threats still to come, demand careful attention to full and accurate application of the law and facts in the decisionmaking task before us. Unfortunately, the Draft SED fails to meet that challenge.

Specifically, in addition to the above-incorporated issues raised in the referenced NGO letters, ELC believes that the Draft SED must be revised and recirculated for additional public review for the following reasons:

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[1] SWRCB, "Draft Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary: San Joaquin River Flows and Southern Delta Water Quality" (Dec. 2012), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2012_sed/.

- California has a federal mandate under the CWA to protect waterway beneficial uses, particularly "protection and propagation of fish, shellfish, and wildlife" (CWA Section 101(a)(2)). This mandate may properly impact individual water rights as needed to address "legitimate and necessary water quality considerations." Accordingly, the Draft SED must specifically consider CWA compliance in developing and assessing alternative flow scenarios.
- State flow (and salinity) objectives must meet Clean Water Act (CWA) requirements to fully protect – *not* "reasonably" protect – beneficial uses. If there are multiple use designations, the level of quality necessary to support the most sensitive uses must be maintained. Uses cannot be balanced away, and application of the Section 13241 factors cannot result in beneficial use protection that is less than that mandated by the CWA.
- As a result of its flawed application of the law and facts, the Draft SED adopts a Preferred Alternative flow requirement that (assuming it is implemented, which is unclear from the document) will fail to protect existing beneficial uses. Indeed, the state by its own data is in danger of acting to eliminate existing beneficial use(s), in direct violation of the CWA.
- The CWA specifically allows for incidental impacts on water rights to occur as a result of actions necessary to address water quality concerns, a point decisively upheld by the U.S. Supreme Court. The state cannot avoid CWA based on a misunderstanding of the relationship between water quality and quantity under the law. The CWA must guide the state's development of criteria to protect beneficial uses impacted by flow.
- The state must complete and circulate for public comment a thorough antidegradation analysis for its chosen alternatives, which in turn must meet the requirements of the CWA. Currently, no antidegradation analysis has been done, despite data demonstrating that – at best – new flows will barely top the inadequate flow levels that currently exist,[2] and may actually be lower. New Preferred Alternatives must be developed consistent with the CWA and an antidegradation assessment performed on the new alternatives before the documents are recirculated, so that the public has a meaningful opportunity to comment on (hopefully nonexistent) potential degradation of the Tier 2 water bodies affected by the Board's action.

These points are discussed further below.

Ultimately, to be effective, the decisions of the Water Board to protect aquatic life and habitats through improved flows should be enshrined in law through water rights for waterways, prioritized to ensure that flows are available when needed. We must care for the waters that support us in order to ensure our collective, long-term well-being.

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[2] In a national report released March 2013, U.S. EPA characterized the biological condition of over three-quarters of Central Valley rivers and streams as "very altered," with *no* rivers or streams labeled as "good." These degraded conditions will not improve without significant intervention in the form of meaningfully higher flows. U.S. EPA, "National Rivers and Streams Assessment 2008-2009," p. 97, EPA/841/D-13/001 (Feb. 28, 2013), available at: http://water.epa.gov/type/watersheds/monitoring/aquaticsurvey_index.cfm. The complete coastwide closure of the ocean salmon fishery in both 2008 and 2009, the first since its beginnings in the early part of the 20th century, is just part of the evidence of the significant and ongoing impacts of this degradation.

THE STATE WATER BOARD MUST SPECIFICALLY ADDRESS CLEAN WATER ACT MANDATES TO FULLY PROTECT BENEFICIAL USES

The Clean Water Act Requires Protection of Beneficial Uses through Science-Based Criteria that Address the Most Sensitive Uses

The Draft SED's analysis avoids direct interaction with the Clean Water Act, choosing instead to rely on Porter-Cologne provisions such as Sections 13000 and 13241, which call only for the highest water quality that is "reasonable" in light of competing uses and other factors. However, as noted by the state Supreme Court, Porter-Cologne "cannot authorize what federal law forbids."[3] Under the federal Constitution's Supremacy Clause (Art. VI), a state law that conflicts with federal law, as the weaker Porter-Cologne provisions clash with CWA requirements, is "without effect."[4]

The CWA was established to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[5] To ensure that water quality improves, rather than degrades, the CWA requires state adoption of water quality standards that "shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses."[6] The use of waterways for the "protection and propagation of fish, shellfish, and wildlife" was given special attention through the "fishable/swimmable" provision in CWA 101(a)(2). This provision effectively creates a rebuttable presumption that these uses are attainable unless a state or tribe "affirmatively demonstrates, with appropriate documentation, that such uses are not attainable"[7] (though "existing uses" cannot be eliminated).[8]

In setting criteria to protect the beneficial uses, U.S. EPA regulations[9] require states to "protect [*not* 'reasonably' protect] the designated use." The EPA regulations add that:

> [s]uch criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. *For waters with multiple use designations, the criteria shall support the most sensitive use.*

(Emphasis added.) The regulations conclude that criteria may be based on U.S. EPA Guidance developed pursuant to CWA Section 304(a) or "[o]ther scientifically defensible methods," including

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[3] *City of Burbank v. State Water Resources Control Bd.*, 35 Cal.4th 613, 626, 108 P.3d 862 (2005).
[4] *Id.*
[5] CWA § 101(a); *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700, 704 (1994) (*PUD No. 1*). For most of the CWA's implementation history, regulatory attention has been primarily focused on the chemical integrity of waterways, even though the letter of the law demonstrates that it was also written to address other elements of waterway health. Regulatory agencies have significantly increased their attention on biological integrity over the last 5-10 years. Physical integrity is now starting to reach the regulatory docket, particularly since the *PUD No. 1* Supreme Court decision, with more states adopting narrative flow criteria and taking other actions under the CWA to create more flows in waterways.
[6] CWA § 303(c)(2)(A); *PUD No. 1* at 704.
[7] *See, e.g.*, U.S. EPA, "Water Quality Standards Academy, Key Concepts (Module 2.c)," available at: http://water.epa.gov/learn/training/standardsacademy/mod2/page4.cfm.
[8] 40 CFR §§ 131.10(g), (h)(1).
[9] 40 CFR § 131.11; *see also* 40 CFR § 131.6.

biomonitoring. In other words, *criteria must protect the most sensitive beneficial use and must be based on science*. Other considerations (such as cost) do not factor into the development of criteria.

Finally, in addition to the uses to be protected and the criteria to protect those uses, water quality standards include an antidegradation policy to ensure that the standards are "sufficient to maintain existing beneficial uses of navigable waters, preventing their further degradation."[10] EPA regulations add that "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."[11]

The Proposed Preferred Alternative for Flow Does Not Protect Fish and Aquatic Life as Required by the Clean Water Act

In its August 2010 flow criteria report,[12] the Water Board found that "[t]he best available science suggests that current flows are insufficient to protect public trust resources" (page 2), and that "[r]ecent Delta flows are insufficient to support native Delta fishes for today's habitats" (page 5). The Board concluded that:

> In order to preserve the attributes of a natural variable system to which native fish species are adapted, many of the criteria developed by the State Water Board are crafted as percentages of natural or unimpaired flows. These criteria include… *60% of unimpaired San Joaquin River inflow from February through June.*

(Page 5 (emphasis added).) These conclusions were supported in testimony by state and federal fish and wildlife agencies speaking before the Water Board at the March 20, 2013 public hearing on the Draft SED.

By contrast with the scientifically-supported flow criteria that would protect the well-being of sensitive fish and other aquatic life, the Draft SED recommends a flow objective of (potentially)[13] 35% unimpaired flow.[14] This barely skirts current flows,[15] which the Draft SED

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[10] *PUD No. 1* at 705; CWA Sec. 303(d)(4)(B); 40 CFR § 131.6.

[11] 40 CFR § 131.12.

[12] SWRCB, "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem" (Aug. 3, 2010) (2010 Flow Report) available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.

[13] As discussed further in the Antidegradation section below, the Draft SED actually does not commit to a 35% preferred flow alternative. Instead, flows could be 25% of unimpaired flows, there may be no flow changes at all, or flows could decrease. Draft SED, App. K: "Draft Lower San Joaquin River Fish and Wildlife Flow Objectives and Program of Implementation," pp. 4-5.

[14] The vague nature of the narrative standard further facilitates this lack of attention to the flows needed to protect beneficial uses. In particular, the narrative objective calls on the state to "[m]aintain flow conditions from the San Joaquin River Watershed to the Delta at Vernalis, together with other *reasonably controllable* measures in the San Joaquin River Watershed, sufficient to support and maintain" beneficial uses, focusing on flows that "*reasonably* contribute" to maintaining beneficial uses. Draft SED, Appendix K, p. 1. The continued, inappropriate focus on "reasonably" attainable flows will not support beneficial uses. By contrast, Tennessee's narrative flow standard to protect fish and aquatic life is direct: "Stream or other waterbody flows shall support the fish and aquatic life criteria." Tennessee Rule 1200-04-03-.03 – Criteria for Water Uses, available at: http://tn.gov/sos/rules/1200/1200-04/1200-04-03.20110531.pdf.

[15] *See, e g.*, Draft SED, App. C, p. 2-56 ("February through June flow volume at Vernalis has been reduced to a median of 27% of unimpaired flow… Observed flow from February through June as percentages of unimpaired flows have

acknowledges have been contributing to the overall decline in salmon and other fish populations.[16] The Water Board attempted to justify this figure its public Fact Sheet on the Draft SED, stating that "[t]he 35 percent unimpaired flow proposal *strikes a balance* between providing water for the protection of fish and other competing uses of water, including agriculture and hydropower generation."[17] As we have just seen, the CWA does not provide for "balancing" beneficial uses; instead, it mandates adoption of criteria that "support the most sensitive use" – in this case, the protection of fish and aquatic life. Rather than the 60% demanded by science, the Draft SED's inattention to CWA requirements has produced criteria far below that needed to protect sensitive beneficial uses, and so runs afoul of the CWA.

Again, state and federal fish and wildlife agencies testifying at the Water Board hearing on March 20th reiterated this point, stating that the 35% flow recommendation was inadequate and would continue the decline of fish populations and fisheries.[18] The agencies also faulted the Water Board for not incorporating the salmon *doubling* goal, which mandates an increase of roughly 78,000 returning salmon per year.[19]

In addition to its inappropriate "balancing" of beneficial uses, the Water Board appears to have also shaved the science-based 60% flow figure down to the flawed 35% flow through a misplaced reliance on Porter-Cologne and its Section 13241 factors,[20] rather than protecting the most sensitive beneficial use as required by the CWA. As the Draft SED states in the Executive Summary, one key purpose of the plan amendments is the development of "flow objectives during the February–June period and a program of implementation for the *reasonable protection* of fish and wildlife beneficial uses."[21] This deference to "reasonable" protection presumably arises from

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fallen well below medians of 41%, 21%, and 26% in the Stanislaus, Tuolumne, and Merced Rivers respectively").

[16] Draft SED, p. ES-10 ("scientific information indicates that higher flows of a more natural pattern are needed from the three eastside, salmon-bearing tributaries during the spring (February–June) to protect fish and wildlife beneficial uses (including SJR Basin fall-run Chinook salmon and other important ecosystem processes)").

[17] SWRCB, "Bay Delta Plan Update: Draft San Joaquin River Flow and Southern Delta Salinity Requirements Released for Public Comment," p. 2 (Dec. 31, 2012), available at: http://www.swrcb.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2012_sed/docs/sjr_factsheet2012.pdf (emphasis added).

[18] In an independent assessment of progress in improving Central Valley conditions for fish, scientists concluded that "(i)t is especially important to specify the flow regime in the lower river and through the Delta that is necessary for the biological requirements of anadromous fish," and that meeting statutory obligations will require "a significant reduction in the amount of water pumped out of the system." Circlepoint, for U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service, "Listen to the River: An Independent Review of the CVPIA Fisheries Program," (Dec. 2008) (Listen to the River), available at: http://www.usbr.gov/mp/cvpia/docs_reports/indep_review/FisheriesReport12_12_08.pdf.

[19] Draft SED, p. 1-13 ("Section 3406(b)(1) of the Central Valley Project Improvement Act (CVPIA) directs the Secretary of the Interior to develop and implement a program that makes all reasonable efforts to at least double natural production of anadromous fish in California's Central Valley streams on a long-term, sustainable basis"). The current Bay Delta Water Quality Control Plan similarly contains a narrative objective (apparently unimplemented) stating that "Water quality conditions shall be maintained, together with other measures in the watershed, sufficient to achieve a doubling of natural production of chinook salmon from the average production of 1967-1991, consistent with the provisions of State and federal law." SWRCB, "Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary," Table 3 (Dec. 13, 2006), available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/wq_control_plans/2006wqcp/docs/2006_plan_final.pdf. *See also* Listen to the River (criticizing the agencies for failing to integrate CVPIA implementation into their other activities).

[20] Draft SED, pp. 1-19, 18-1.

[21] *Id.*, pp. ES-9–ES-10 (emphasis added).

the following statement of policy under Porter-Cologne:

> The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the *highest water quality which is reasonable*, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.[22]

This provision, while modern at its adoption in 1969, falls short of the mandates of the CWA, adopted three years later. Water Code Section 13241 similarly requires the adoption of objectives that will only ensure the "reasonable protection of beneficial uses." The proof of the impacts is in the flow figures – 60% when consistent with the CWA (*i.e.*, based on science rather than also on economics and other factors),[23] and 35% when the "balancing" and Section 13241 factors are applied.

As noted above, the state Supreme Court has found that Porter-Cologne "cannot authorize what federal law forbids." The federal CWA dictates that criteria must be based on science, and that criteria must protect the most sensitive beneficial use. The state may consider other factors if it so chooses, but that analysis cannot result in criteria less protective than dictated by the CWA.[24] If the state desires to take action that would impact such uses,[25] it must complete an antidegradation analysis that clearly demonstrates the need for the change and justifies it with data. Pre-empting this process with state factors that throw in the towel on fish and wildlife protection before effort has even begun cannot be construed as consonant with the CWA.[26]

Significant work remains for the state to craft a solution to the disappearance of fish populations and healthy aquatic habitat in the Lower San Joaquin River.

THE CLEAN WATER ACT ENCOMPASSES THE USE OF FLOW MODIFICATIONS TO PROTECT BENEFICIAL USES

The Draft SED's reliance on Porter-Cologne over the stricter requirements of the CWA perhaps can be attributed to a mistaken perception that the CWA does not address flows. This issue was decided to the contrary, however, by the U.S. Supreme Court in *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700 (1994) (*PUD No. 1*), which found the distinction between water quality and quantity under the CWA to be "artificial."

In *PUD No. 1*, Supreme Court took up the question of whether Washington state had properly issued a CWA Section 401 certification imposing a minimum stream flow requirement to protect fish populations. The Supreme Court held that conditioning the certification on minimum stream flows was proper, as it was needed to enforce a designated use contained in a state water

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[22] Calif. Water Code § 13000 (emphasis added).
[23] 2010 Flow Report, p. 2.
[24] *City of Burbank*, 35 Cal.4th at 627-28.
[25] Existing, "Tier 1" uses, however, cannot be degraded further. 40 CFR § 131.12(a)(1).
[26] It bears noting that this, of course, is true for the salinity objectives as well.

quality standard.[27] In reaching this decision, the court noted that "a project that does not comply with a designated use of the water does not comply with the applicable water quality standards," and that Washington had properly determined that the project as proposed (*i.e.*, without the minimum flow conditions) would have been inconsistent with the applicable designated use of "[s]almonid [and other fish] migration, rearing, spawning, and harvesting."[28]

In responding to project proponents' argument that the CWA only addresses water "quality" and excludes regulation of water "quantity," the Supreme Court held that:

> [t]his is an artificial distinction. In many cases, water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery.[29]

The Supreme Court specifically took note of CWA Sections 101(g) and 510(2), which address state authority over the allocation of water as between users. The Court found that these provisions "do not limit the scope of water pollution controls that may be imposed on users who have obtained, pursuant to state law, a water allocation." This conclusion is supported by the "except as expressly provided in this Act" language of Section 510(2), which conditions state water authority; and by the legislative history of Section 101(g), which allows for impacts to individual water rights as a result of state action under the CWA when "prompted by legitimate and necessary water quality considerations."[30]

Other states and U.S. EPA Regions have already embraced this direction and protected aquatic beneficial uses through actions that impact flows. For example, numerous states[31] have already adopted "instream flow water quality standards," with Texas and New Mexico (among potentially others) examining them as well. In a recent letter to the state of Alabama, U.S. EPA Region 4 noted that "the tools under the CWA are increasingly being used to protect and restore the hydrology of waterbodies"[32] and recommended that Alabama

> utilize the ... CWA to develop instream flow water quality standards (WQS) for the protection of all designated uses and for application in all other purposes under the CWA. Under the CWA, WQS include the designated use of a waterbody, ... criteria to protect those designated uses and the state's antidegradation requirements. All three of these WQS

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[27] *PUD No. 1,* 511 U.S. at 723.
[28] *Id.* at 714.
[29] *Id.* at 719.
[30] *Id.* at 720 ("*See* 3 Legislative History of the Clean Water Act of 1977 (Committee Print compiled for the Committee on Environment and Public Works by the Library of Congress), Ser. No. 95–14, p. 532 (1978) ('The requirements [of the Act] may incidentally affect individual water rights. . . . It is not the purpose of this amendment to prohibit those incidental effects. It is the purpose of this amendment to insure that State allocation systems are not subverted, and that effects on individual rights, if any, are prompted by legitimate and necessary water quality considerations')." *See also* Memorandum from U.S. EPA Water and Waste Management and General Counsel to U.S. EPA Regional Administrators, "State Authority to Allocate Water Quantities – Section 101(g) of the Clean Water Act" (Nov. 7, 1978), available at: http://water.epa.gov/scitech/swguidance/standards/upload/1999_11_03_standards_waterquantities.pdf.
[31] At a minimum, the following states have adopted flow criteria: Tennessee, Kentucky, Vermont, New Hampshire, Rhode Island, New York, Virginia, and Missouri. Letter from U.S. EPA Region to Alabama Department of Environmental Management, pp. 10-12 (Nov. 19, 2012) (U.S. EPA Reg. 4 Letter) (attached).
[32] *Id.*, p. 10.

components can be used by Alabama as relevant and vital tools to protect and restore healthy hydrology in the state.[33]

In this letter, U.S. EPA Region 4 also noted that some states are setting flow criteria "outside the CWA" and raised concerns about that practice being potentially inconsistent with protection of state water quality standards, including their beneficial use components.[34] U.S. EPA Region 4 recommended instead "setting the instream flow standard through existing CWA provisions," and noted that "[o]nce approved, those standards would be in use for all purposes under the CWA...."[35]

EPA concluded in this letter that "*Alabama should not set conditions which would be less stringent than or in conflict with the state WQSs under the CWA.*"[36] It is important to recognize that this is just the path that the Water Board is currently taking with its weak, 35% unimpaired flow objective.

Finally, U.S. EPA Region 1 embraced consideration of flows well before even Region 4. Shortly after the *PUD No. 1* decision, for example, U.S. EPA Region 1 issued a letter to the Rhode Island Department of Environmental Management reiterating the findings of *PUD No. 1* and recommending numerous option for the state to address flow issues through the CWA, including pointing out that "[f]ishery restoration/management plans can also be integrated into water quality standards."[37]

In summary, the Clean Water Act demands the protection of beneficial uses through science-based criteria that protect the most sensitive uses fully. Flow criteria cannot be less stringent than or in conflict with state water quality standards under the CWA. The Draft SED's recommendation of 35% unimpaired flow, if it even occurs,[38] will be barely more than existing flows causing widespread degradation of fish and aquatic life and habitat uses, and far less than the science-based 60% flow properly focused on protection of these sensitive uses. The state cannot avoid its responsibilities under the CWA by relying on state factors that balance away these beneficial uses.

CALIFORNIA MUST PREPARE AN ANTIDEGRADATION ANALYSIS THAT IS CONSISTENT WITH BOTH STATE AND FEDERAL LAW AND CIRCULATE IT FOR PUBLIC COMMENT WITH THE REVISED DRAFT SED

Before addressing antidegradation, it is worth noting that the alarming decline in Delta fish and other aquatic life raises the question of whether the state's actions may result in the elimination of existing uses. As noted by the U.S. Supreme Court, "no activity is allowable ... which could partially or completely eliminate any existing use."[39] The anemic potential increases in flows (as

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[33] *Id.*, p. 9.
[34] *Id.*, p. 12.
[35] *Id.*
[36] *Id.* (emphasis in original).
[37] Letter from U.S. EPA Region 1 to Rhode Island Department of Environmental Management (June 25, 1996) (U.S. EPA Region 1 Letter) (attached).
[38] *See supra* n. 13 and the next section.
[39] *PUD. No. 1*, pp. 718-19; *see also* 40 CFR §§ 131.10(g), (h)(1).

well as the inadequate salinity criteria) fail to support existing aquatic life and habitat beneficial uses as required by the Clean Water Act, and the Draft SED must be revised and recirculated for that reason alone.

The Draft SED must also be revised to include an antidegradation analysis that meets both state and federal requirements. This is critical in light of the poor correlation in the Draft SED with actual flows that will improve, rather than continue or potentially worsen, current conditions. To learn more, we must turn to Appendix K.

As discussed above, the proposed 35% unimpaired flow figure falls well below the science-based 60% flow demanded by the CWA and will perpetuate the decline of aquatic life in the Delta. However, Appendix K makes clear that the Draft SED does not actually commit to even this 35% preferred flow alternative. The actual required percentage of unimpaired flow may range as low as 25% of unimpaired flow,[40] or there may be no flow changes at all. As to the latter, Appendix K states that "the State Water Board may allow modifications to the numeric requirements in this program of implementation" based on future monitoring.[41] Moreover, "adaptive management of flows does not have to rely on the unimpaired flow percentage method, but instead can use . . . other management approaches."[42] Even these "other management approaches" do not necessarily have to be linked with flow results in the water. Appendix K declares that "as long as the approved adaptive management plan is *designed* to achieve the applicable unimpaired flow range ..., *compliance with the plan* will be deemed compliance with those flows."[43]

In other words, Appendix K offers up the fact that, as long as the state complies with a management plan that is written to ostensibly meet flows as low as 25% of unimpaired flows, the state has allegedly met its water quality duties, *regardless* of the actual flows that result from those activities. In sum, *the state has devolved from science-based criteria of 60% of unimpaired flows to a management plan that may or may not achieve the inadequate flows that currently exist.*

The fact that these numeric and non-numeric "implementation" activities are tied to a narrative standard does not save them, as the narrative standard is also disconcertingly vague in its attempted protection of beneficial uses. As noted above,[44] the narrative objective calls for flows that "reasonably" contribute to protecting beneficial uses.[45] The continued, inappropriate focus on "reasonably" attainable flows in this narrative objective, as with the numeric flow criteria, will continue to fail to support beneficial uses, and in fact may hasten their decline.

In light of these concerns with continued – and perhaps accelerated – degradation under the proposed project, the Draft SED must be revised to include an antidegradation analysis that meets both state and federal antidegradation requirements. The Draft SED currently states that the SWRCB "will considered [sic] all relevant information and determine if the [LSJR or SDWQ] alternatives would *unreasonably* affect the water quality or adversely affect the designated

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[40] Draft SED, App. K, pp. 4, 5.
[41] *Id.*, p. 5.
[42] *Id.*, p. 4.
[43] *Id.*, p. 5.
[44] *See supra* n. 14.
[45] Draft SED, Appendix K, p. 1.

beneficial uses of water from the estuary in the final SED."[46] First, the state must complete the antidegradation analysis now – not at the final SED – and must submit it for public review and assessment if it is to justify the continued degradation in beneficial uses expected from the proposed actions. Second, the state must meet the significant analysis, supporting data, and public participation requirements for these Tier 2[47] waters pursuant to both state and federal antidegradation mandates.

Federal antidegradation requirements protecting Tier 2 waters do not simply require California to make a statement about whether the proposed activities would "unreasonably" impact beneficial uses and water quality. Rather, federal antidegradation requirements require that the quality of Tier 2 waters be "maintained and protected" unless the state meets a rigorous set of required showings and "full satisfaction" of public participation provisions. Specifically, U.S. EPA antidegradation regulations for Tier 2 waters require that:

> Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully....[48]

None of this work has been done to date. Indeed, as noted above, the state has not even yet defined for the public the extent of the flow controls that may or may not occur. Accordingly, the level of potential degradation (along with the justification for it) remains unclear.

Though the Draft SED appears to focus on California's antidegradation policy, particularly through its language up front regarding actions that "unreasonably" affect water quality,[49] it similarly fails to conduct the analysis necessary to give the public a meaningful opportunity to comment on the potential impacts of the proposed project. This analysis is especially important in light of the recent decision of the Third Appellate Court in *Asociacion de Gente Unida por el Agua v. Central Valley Regional Water Quality Control Board*, 210 Cal.App.4th 1255 (Nov. 6, 2012). In this decision, the Court found that the state antidegradation policy "measures the baseline water quality as that existing in 1968 and defines high quality waters as the *best quality achieved since that date,*"[50] encompassing most waters of the state as high quality water to be protected. It further finds that any actions to lower water quality below that level will trigger the antidegradation policy,[51] which requires that such high quality "will be maintained until it has been demonstrated"

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[46] Draft SED, p. 19-1 (emphasis added).
[47] *Id.*, p. 19-2 ("The project area's waterbodies are classified as Tier 2 waterbodies per the Federal Antidegradation Policy").
[48] 40 CFR § 131.12(a)(2).
[49] Draft SED, Sec. 19.1, p. 19-1.
[50] *Asociacion de Gente Unida por el Agua v. Central Valley Regional Water Quality Control Board*, 210 Cal.App.4th 1255, 1270 (Nov. 6, 2012) (emphasis added).
[51] State Water Resources Control Board, "Resolution 68-16: Statement of Policy with Respect to Maintaining High Quality of Waters in California" (Oct. 28, 1968), available at:

that "any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies."[52]

Based on this direction, a thorough antidegradation analysis must be performed to identify and justify any changes in water quality as a result of the actions in the Draft SED. The Court in *Asociacion de Gente Unida por el Agua* found inadequate the Central Valley Regional Water Quality Control Board's dairy program antidegradation analysis, which had relied on the associated Order's statement that the program "does not authorize any further degradation to groundwater." Stating that "[t]he wish is not father to the action,"[53] the Court rejected the agency's claim that its proffered monitoring program would "enforce" the "no degradation" directive.[54] Though in the current situation the Draft SED contains no antidegradation analysis at all, the court's decision bears careful study in light of the Draft SED's assertion that the preferred flow alternative will protect beneficial uses – an assertion significantly called into question after a close examination of Appendix K. The state cannot rely on a wish that its proposed activities will protect the most sensitive beneficial uses as required by the CWA and state law – it must demonstrate convincingly that this will be the case.

Finally, it is worth reiterating that federal antidegradation requirements are no less important in the case of flow issues than in other situations in which beneficial uses are to be protected. For example, referencing *PUD No. 1*, U.S. EPA found that a state's antidegradation program "must obviously address water withdrawals as well as discharges," to ensure there is "adequate ability to protect existing uses."[55] U.S. EPA has stated further that antidegradation requirements are "relevant and vital tools to protect and restore healthy hydrology."[56] California must fully evaluate hydrology protections and impacts in the revised Draft SED and perform the assessments necessary to correct (or justify) any concomitant flow-related impacts on beneficial uses, consistent with state and federal law.

CONCLUSIONS

The role and import of the federal Clean Water Act is noticeably muted in the Draft SED. Instead of developing science-based criteria to protect sensitive aquatic life and habitat beneficial uses, the Draft SED inappropriately relies on an array of weaker state law factors to water down the science-based criteria to recommendations that could worsen, rather than improve, the current, tenuous environmental health of the Delta. The state must redraft and recirculate an SED that fully complies with the clear CWA mandate to protect beneficial uses fully, without degradation unless justified by an adequate antidegradation analysis.

The state cannot simply stand by while Delta health continues to spiral downward. The CWA provides the tools to begin to reverse this slide and must be used by the Water Board. In

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http://waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf.

[52] *Asociacion de Gente Unida por el Agua*, 210 Cal.App.4th at 1270.

[53] *Id.* at 1260.

[54] *Id.* at 1261.

[55] U.S. EPA Region 1 Letter, p. 3.

[56] U.S. EPA Region 4 Letter, p. 9.

addition, the Board should begin examination of the active use of water rights for waterways to ensure final flow commitments are met. The Delta's aquatic life and habitats "should not be destroyed because the state mistakenly thought itself powerless to protect them."[57] We urge the Water Board to incorporate these comments into a revised project and SED that will advance the letter and intent of the CWA to ensure a thriving, biodiverse, flowing Delta.

Thank you for your attention to these comments.

Best regards,

Linda Sheehan
Executive Director

Attachments:

Letter from U.S. EPA Region 4 to Alabama Department of Environmental Management (Nov. 19, 2012)
Letter from U.S. EPA Region 1 to Rhode Island Department of Environmental Management (June 25, 1996)

[57] *National Audubon Society v. Superior Court*, 33 Cal.3d 419, 452 (1983).

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NOV 19 2012

Lance LeFleur
Director
Alabama Department of Environmental Management
Post Office Box 301463
Montgomery, Alabama 36130-1463

Dear Mr. LeFleur:

Thank you for the opportunity to provide input into the State of Alabama's development of a comprehensive statewide water management plan. The Environmental Protection Agency strongly supports Governor Bentley's directive to develop a plan that is based on sound science and that will "benefit Alabamians now and for generations to come." As we have discussed at the most recent State Directors meetings, our stewardship of water resources in the Southeast is facing new challenges from increased demands on limited freshwater supplies. Your effort acknowledges that competing uses of ground water and surface water for industrial, municipal and agricultural uses, power generation, new reservoirs, inter-basin transfers and water diversions are all bringing this issue into sharp focus. Planning is further complicated by droughts, floods, climate change and existing hydrologic modifications.

Fortunately, our understanding of the science of water management has evolved significantly over the past decade. We applaud your efforts to bring this science to bear in assisting Alabama's efforts to balance multiple water needs. Long-term planning for the stewardship of Alabama's waters will serve to protect the significant ecological resources of the state, as well as ensure future delivery of drinking water, power generation and sustainable economic development.

The EPA has been working to better understand the complex issues of addressing water quantity and water quality effectively under the existing authorities of the Clean Water Act (CWA). The EPA Region 4 has had the benefit of working with other state and federal partners that have long been involved in this issue. For instance, population pressures and water disputes compelled many states in New England to begin development of water plans more than twenty years ago. All six of the New England states have developed hydrologic protection of state waters either through their state water quality standards program under the CWA and/or through state water allocation and permitting programs. The eight states surrounding the Great Lakes, facing challenges of competing water uses, spurred development of water plans under the Great Lakes and St. Lawrence Seaway Compact, including innovative tools such as Michigan's Water Withdrawal Assessment Process and Internet Screening Tool. Alabama can draw on such tools, expertise, innovation and success both here in the Region and nationally. We have provided several examples in our comments and would welcome the opportunity to share with you any of these resources and contacts in the coming year as you develop and refine your plan.

As requested, the EPA has completed a review of the *Water Management Issues in Alabama* report. Our comments include recommendations about how Alabama could utilize tools that are already available under the CWA to address many of the State's water resource issues, with a focus on efficiency, conservation and reuse, and development of instream flow water quality standards under the CWA. We support Alabama's water conservation and efficiency efforts, which can be a key component in water resource management. In addition, the EPA recommends that the State consider using its CWA authority under the water quality standards program to develop "instream flows which can serve as a cornerstone

of a statewide water management plan" (*Water Management Issues in Alabama*, Alabama Water Agencies Working Group, pg. 6). We further support the proposal to examine and recommend "appropriate flow dynamics for rivers and streams to support biological, recreational, and industrial/transportation needs and requirements" (Id., pg. 4), and have included examples of successful flow standards from throughout the country. We share with you the expectation, as you move forward, that all newly developed water plans and policies will of course be consistent with your state water quality standards under the CWA.

Our enclosed comments follow the format of the Water Issues Area Summaries while also addressing the 2009 recommendations from the Permanent Joint Legislative Committee on Water Policy and Management and the areas of stated importance from the Governor in his charge to the Alabama Water Agencies Working Group in April 2012.

With the benefit of evolving research in this area, we believe it is possible to develop the tools needed to protect, and where possible restore, the hydrologic condition and ecological integrity of state waters, while efficiently carrying out necessary and important water supply planning and economic development. We stand ready to assist your group in any way possible, and please do not hesitate to contact me at (404) 562-9470 or Ms. Lisa Perras Gordon at (404) 562-9317 if you have any questions.

Sincerely,

James D. Giattina
Director
Water Protection Division

Enclosure

cc: Glenda Dean

Alabama Water Agencies Working Group
EPA Region 4 Stakeholder Comments
November 2012

The Region 4 office of the Environmental Protection Agency (EPA) has reviewed the report entitled *Water Management Issues in Alabama* (the WMI Report) by the Alabama Water Agencies Working Group (AWAWG) and offers the following stakeholder input.

General Stakeholder Input

The EPA supports the development of a statewide water management plan as detailed in the WMI Report. The EPA's two primary issues for stakeholder input are conservation and reuse, and the recommendation to develop instream flow water quality standards. The EPA is also providing comments below in seven other areas. In addition to those comments, the EPA is providing information regarding the significance of Alabama's aquatic ecology that was not included in the WMI Report.

Alabama's globally significant aquatic biodiversity

The United States is often cited as one of the top countries in the world for aquatic biodiversity, ranking 1st for crayfishes, freshwater mussels, freshwater snails and many aquatic insects and 7th for fish diversity. In fact, whereas the U.S. has over 300 species of freshwater mussels, all the rivers of Europe have only 10 and the entire continent of Africa just 56. There is no question that Alabama is at the heart of the U.S. freshwater diversity, with more species of mollusks (180 species of both snails and mussels) and fish (>300 species) than any other state (ADCNR 2012). *Rivers of Life*, a NatureServe report on aquatic biodiversity, highlights the state of Alabama in general and the Mobile River basin in particular as having "extraordinarily diverse assemblages of freshwater animal species..." and also references the Cahaba River which it describes as a "treasure trove of botanical life" (Master et al. 1998). However, the report notes that many of Alabama's species are vulnerable. In fact, Tennessee and Alabama came in 1st and 2nd for the greatest number of imperiled freshwater species nationally. The report finds that just two regions of the U.S., one of which is the Mobile River Basin, are home to 35% of all vulnerable species in the U.S. Seventy percent of those species occur nowhere else in the world. Conservation practices and development of instream flow protections may provide the safeguards needed for many of these species that make Alabama a unique ecological treasure.

Freshwater ecosystems, as a whole, have suffered more decline than terrestrial ecosystems in recent decades (Master et al. 1998). Nationally, aquatic systems are under significant stress, and particularly in the Southeast, with the largest number of imperiled species. More than two centuries of alterations to aquatic habitat, such as dams, surface water and ground water withdrawals, impervious cover, introduction of non-native species and channelization have significantly altered the aquatic environment. Only recently have scientists begun to quantify the extent of that alteration. In a national assessment, the U.S. Geological Survey found that alteration of waterways has impacted the magnitude of minimum and maximum streamflows in more than 86% of monitored streams nationally and may be the primary cause of ecological impairment in river and stream ecosystems (Carlisle et al. 2011). Every aspect of the lives of aquatic plants and animals is cued by and inextricably linked to the natural variability of our rivers and streams (Southern Instream Flow Network 2010). Alterations and reductions in stream flow and fragmentation of our waterways concentrate toxic and conventional pollutants, reduce fish passage, increase stream temperatures, increase predation, reduce access to stream bank habitat, eliminate the

connectivity to feeding and breeding locations in the flood plain and in some instances even eliminate stream flow altogether.

The EPA supports Governor Bentley's efforts to create a statewide comprehensive water plan that includes instream flow protection which may provide protection for Alabama's significant aquatic biodiversity. The EPA applauds this movement towards greater stewardship of these resources and hopes that with public outreach citizens can take even greater pride in their state's ecological riches.

Little was mentioned of Alabama's global significance in this area in the WMI Report. EPA encourages the AWAWG to acknowledge and support the exceptional aquatic biodiversity of Alabama as it works toward the completion of the statewide water management plan.

Water Issue Area Specific Comments

Water Resources Management

As a means of managing and planning for water supply while minimizing impacts to public resources such as streams and wetlands, we encourage the state to place up-front emphasis on conservation and management principles.

Fixing ~~leaking~~ infrastructure and incentivizing efficient use can free up significant supply already in the treatment and distribution system, often closing demand-supply gaps at a fraction of the cost of developing new supply. Whereas many distribution systems have unaccounted-for water (UAW) volumes upwards of 20-30%, states that have UAW goals generally target losses of no more than 10-15% (EPA 2010a). With its *Water Conservation Standards* of 2006, for example, Massachusetts established that water suppliers should conduct annual audits and semi-annual system-wide leak detection surveys with a goal of reducing UAW volumes to below 10%. Suppliers must then work towards fixing system leaks and reducing unaccounted-for water, with regular reporting requirements. Fixing leaks and managing system losses can increase financial benefits because water treated and transported through the distribution system, but lost before reaching an end user, is unbilled and thus represents revenue loss that could be recovered. In the mid-1990s, for example, Gallitzin, Pennsylvania's small distribution system was experiencing high water losses exceeding 70% (EPA 2002). After a thorough leak detection and mapping effort, the authority initiated a leak repair program and a corrosion control program at the water treatment plant. Just four years after implementation, delivery had decreased by 68%, with UAW down to 9%. Chemical treatment and energy cost decreases were 47% and 61%, respectively, which allowed the authority to keep water rates down.

Projects that impact hydrology, such as new or expanded water supply, development, and recreational or amenity impoundments, often require Clean Water Act (CWA) Section 404 permits, making them subject to review for compliance with the 404(b)(1) Guidelines. In reviewing such projects EPA considers whether the applicant has demonstrated adherence to the mitigation sequence, with avoidance and minimization of impacts to aquatic resources as the first two steps. EPA also reviews proposed projects for full consideration of alternatives in selection of the Least Environmentally Damaging Practicable Alternative. For water supply project proposals, full implementation of conservation and

efficiency measures, including water reuse options, is a primary alternative that could have a fraction of the impacts to aquatic resources of developing new supply infrastructure. A study that surveyed multi-family residential units across several cities found that the introduction of sub-metering reduced water consumption by 10-26% (Mayer et al. 2004). EPA looks for such measures to minimize or altogether avoid aquatic resource impacts. A state water management plan can serve as the policy basis for prioritizing projects that use and improve upon existing infrastructure, and make use of existing investments so that they have less impact to aquatic resources. A state plan can facilitate such measures being considered together as a comprehensive approach rather than in isolation.

When water supply projects are determined to be necessary, demonstrated maximization of conservation and efficiency measures can facilitate federal permit review. Any new supply development (such as a reservoir) should be sized appropriately for the documented purpose and need, and designed to mimic the natural conditions as closely as feasible in the downstream waters. Dewatering of the downstream segments should not be allowed during the filling stages of impoundments. Many of these projects require long-term financial and maintenance obligations, which should be outlined and accounted for in all applications to ensure protection of the water quality necessary to protect designated and existing uses throughout the life of the project. The maintenance of impoundments, including the costs for activities such as dredging of sediments, is often not adequately considered, and can lead to degradation of resources. Whereas free-flowing streams can be economic boons by bringing recreational users and tourism, with associated hospitality and recreational gear business, reservoirs can be an economic liability. One such example is that of the Hickory Log Reservoir in Canton, Georgia. Costs for that reservoir have increased to more than five times the original estimate, creating an economic burden threatening other fundamental needs of the city. *The Atlanta Journal-Constitution* reported in June 2012 that water bills for city of Canton customers have increased 30% to pay for expenses for the reservoir, which is full but not yet delivering water (Scott 2012).

Incorporating protection for aquatic species is a critical element of a good water resource management plan. Impoundments, for example, represent a significant threat to connectivity of Alabama's exceptional aquatic resources, including the many threatened and endangered species of freshwater mussels found in the state.

Therefore, the EPA would like to encourage the State to give priority to maximizing efficiency measures and the possible expansion of existing facilities versus building new reservoirs in order to avoid impacts to aquatic resources such as streams and wetlands, and to protect overall ecological/environmental integrity. My staff would be happy to work with the AWAWG and member agencies to provide technical support of the state's efforts.

As the WMI Report recognizes, water resource management "needs to be holistic across an entire watershed or drainage basin due to the interrelationship of the natural and human processes and activities that can impact each other, in some cases from a great distance. This includes both land and water resources, since land use can have significant impacts on water resources and related ecosystems." A water management plan that incorporates all uses should give equal consideration to instream uses, e.g., aquatic life, aesthetic values, physical stability, and ecological viability (habitat, water quality) as it does to anthropogenic off-stream uses (supply, impoundment), as recognized for some time by western

states and more recently by eastern states and the Instream Flow Council (Breckenridge 2004). The CWA provides that each state must specify appropriate water uses to be achieved and protected for each waterbody (40 CFR 131.10(a)). The state must take into consideration the use and value of water for public water supply, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agriculture, industrial uses and other purposes including navigation. For the past 30 years, North Carolina has successfully utilized the designated use provisions under its water quality standards (WQS) program to work with local jurisdictions to directly address issues where land use affects water use. For instance, a use designation for Class WS-II Waters provides additional protections for drinking water supplies by requiring local jurisdictions to adopt "nonpoint source and stormwater pollution control criteria for the entire watershed" (NCDWQ 2007). Once the use designation is adopted, those provisions are placed into ordinances of local jurisdictions, which are then responsible for their implementation. These provisions also include best practices such as buffers, housing density options or advanced storm water management. The state is careful to point out that these practices do not limit economic development, but rather ensure sustainable development in sensitive areas. *Alabama could review North Carolina's use designations and consider more fully developing its designated uses under the CWA to provide protection for an entire watershed rather than just the waterbody, and require those provisions be adopted by local jurisdictions.*

Expanded Certificates of Use/Permitting:

The EPA strongly supports a comprehensive program for permitting and accounting for both ground water and surface water use in Alabama. Understanding water availability and use is essential to managing the resource (USGS 2012). Understandably, Alabama also would like to keep 'the regulatory burden to a minimum' (WMI Report p.12).

The EPA has three recommendations in this section:

- As other states have faced this challenge, new innovative tools have evolved that Alabama may want to explore. Michigan has developed an innovative and national award winning ground water withdrawal permitting system that provides detailed information on ground water use while keeping the regulatory burden to a minimum. Michigan's Water Withdrawal Assessment Process and Internet Screening Tool was developed collaboratively over six years by the Groundwater Conservation Advisory Council representing water users, state officials, technical experts and conservationists. This tool allows citizens to go on-line, type in information on proposed ground water use, and get instantaneous feedback to determine if the water withdrawal will affect local streams. If it does not, they need only complete forms to get permitted. If it does, they may try to change the location or withdrawal rate to get the "go-ahead." No direct government review is needed for the majority of the permits. Only those few wells that may cause biological effects on streams need to proceed to the more detailed site-specific permit review (Ruswick et al. 2010; Hamilton et al. 2011).

- As Alabama considers how to move ahead with issuing a Certificate of Use (COU) that 'will not interfere with an existing legal use of the water' we ask that you also consider a requirement that

the permitted use not cause or contribute to a violation of water quality standards, including any existing implicit protections for instream flow, such as support for aquatic life.

- In other states, authorities have found it important not to set the threshold too high for capturing withdrawals and impacts via a permitting system. In Massachusetts, for example (Breckenridge 2004), higher permit thresholds led to not capturing data on many withdrawals, compromising understanding of the total anthropogenic uses and impacts on systems, and increasing uncertainty in planning. An effective plan would incorporate estimates of unpermitted uses (e.g., those below the threshold and illegal withdrawals) to more accurately gauge impacts. A plan and permitting system that allows for periodic review and adaptive management will provide for more effective protection as lessons are learned, systems adjust to alterations and impacts, and new monitoring and scientific information becomes available, especially given the variability of hydrographs that is essential to maintenance of the physical/chemical system and aquatic life.

Economic Development

As indicated in Alabama's proposal, protecting the health of freshwater ecosystems is not only critical to biodiversity and ecology but also to the support of a thriving economy. Maintaining the integrity of natural biological and physical systems provides significant economic benefits to state and local economies. In July 2012, EPA Headquarters published a document entitled, *The Economic Benefits of Protecting Healthy Watersheds* (EPA 2012b). This fact sheet, based in part on a study that included data from Alabama entitled, *Forests for Water: Exploring Payments for Watershed Services in the U.S. South* (Hanson 2011) states that healthy intact watersheds provide many ecosystem services that are necessary for our social and economic well-being. These services include water filtration and storage, nutrient cycling, soil formation, flood prevention, food production and timber.

Protection of natural and aquatic resources can also be directly tied to the creation of jobs and a strong economy. For example:

- A 2012 report found that outdoor recreation contributed $646 billion in direct sales and services to the U.S. economy annually, supporting an estimated 6.1 million jobs, generating $39.9 billion in federal tax revenue and $39.7 billion in state/local tax revenue, and providing sustainable growth in rural communities (Outdoor Industry Foundation 2012). Outdoor recreation jobs numbering 215,126 were found in the East South Central states (AL, KY, MS and TN) (Outdoor Recreation Industry 2006).
- Twenty-four million Americans participate in paddling sports (kayaking, canoeing, rafting). Despite the national recession, the outdoor recreation economy grew approximately 5 percent annually between 2005 and 2011 (Outdoor Industry Association 2012).
- Local hydrologic restoration projects are bringing economic development to smaller communities in our region. A project to remove aging dams and restore naturalized white water flow to the Chattahoochee River on the Georgia/Alabama border is projected to bring 144,000 new visitors annually, create 700 jobs and add $42 million additional yearly revenue from recreational tourism (Adams 2011).

- Healthy estuaries, such as the Mobile Bay and coastal communities dependent on the natural timing and delivery of freshwater flows, contribute billions of dollars to state economies.

Protection of adequate instream flow also provides economic certainty to municipal and industrial dischargers. In recent years, there has been a trending downward of freshwater flows in many freshwater rivers and streams – much of which is anthropogenic in origin, such as over-pumping of ground water or surface water withdrawals. Some of these reductions may persist long enough to cause revisions to the calculated 7Q10 (the lowest recorded 7 days of flow in a ten year period). In addition, prolonged droughts have prompted those who control regulated rivers to consider dropping the low flow minimums or revise drought control manuals to allow for further reductions of the low flow values. National Pollutant Discharge Elimination System (NPDES) permits issued under Section 402 of the CWA use critical low flow values such as 7Q10s or negotiated low flows on regulated rivers to calculate a permittee's discharge limits. In areas where those low flow values are causing long-term changes, permits will have to be recalculated to protect for the new critical low flow. Where possible, protection of instream flows from anthropogenic alteration may prevent unnecessary and often costly additional treatment for those permittees.

Whereas resource management can often be portrayed as protection of ecology vs. protection for economic development, new data and studies indicate that they are quite often linked. Therefore, *the EPA encourages the AWAWG to acknowledge as they develop their plan that there may be significant economic benefits, in both ecosystem services, jobs and revenue, to protecting and maintaining intact aquatic ecosystems.*

Surface Water and Ground Water Availability

The EPA supports Alabama's approach of developing comprehensive scientific knowledge of surface water and ground water availability. The EPA recommends that as Alabama explores ground water development policy, it ensure that it addresses the linkages between ground water and surface water. Alabama notes surface water and ground water concerns in this section separately, but they should be treated in most areas as a single resource. Nearly all surface water bodies interact in some manner with ground water (Winter 1998). Withdrawal of surface water can deplete ground water and there are numerous areas in the Southeast where pumping of ground water has been known to directly affect surface water. Ground water depletion may cause significant reductions of surface water flow which may impair or remove designated uses without going through the provisions of the CWA (40 CFR 131.10 (g)). It should be noted that under the CWA, existing uses generally cannot be removed (40 CFR 131.10(h)).

The EPA recommends that newly developed ground water withdrawal policy directly link to Alabama's water quality standards so that any withdrawals will not cause or contribute to a loss of the water quantity needed to support the water quality, including support for meeting aquatic life uses, drinking water, recreation, etc.

The EPA will work with the State to explore any potential assistance that we can provide on funding options for maintenance of gaging stations, water quality and biological assessments and ground water and surface water assessments.

Water Conservation and Reuse

When it comes to protecting our limited fresh water supply, development and expansion of efficiency and conservation programs and efforts is an essential first step as we noted above, and we applaud the recognition in the *WMI Report* of the major impacts of water usage, and benefits of water conservation and reuse. Conservation not only reduces volumes requiring treatment (for consumption and as waste), but also reduces energy required to distribute and treat water. Conservation also preserves in-stream values such as water quality, habitat, physical stability, and aquatic life.

Water reuse, as recognized in the *Water Conservation and Water Reuse* section of the report, can be implemented in many settings. It can benefit municipal, agricultural, environmental, industrial, and private entities through uses such as those identified as well as through protection of environmental values. It can also represent an economic development advantage by reducing infrastructure and energy costs and resource demands in both public and private capacities. In September, EPA released its 2012 update of its manual *Guidelines for Water Reuse ("2012 Guidelines")*. This update includes new information on efforts by states across the country to develop water reuse, including regulations adopted by 30 states and one territory, and an inventory of diverse case studies (EPA 2012a). It can serve as a valuable resource and addresses two issue areas identified as considerations in the WMI Report. The first consideration given is:

- A tension exists within public water systems between the need to conserve water and a financial model predominantly based on water sales.

When water is reused as one measure for avoiding new withdrawals, this conflict is reduced; Chapter 7 of the *2012 Guidelines* addresses financial aspects of water reuse, including rate and fee structures. Other considerations describe success of these approaches as tied to public understanding and acceptance, for example:

- The public's perception of water reuse may be less receptive if they believe the recycled water is from a common public waste source.

This is a challenge that has played out nationally and in many communities as water reuse has been implemented, and Chapter 8 of the *2012 Guidelines* provides an excellent discussion of the issue and various approaches to public outreach and engagement. Much of this discussion, including the importance of proactively providing information to the public, is also translatable to conservation and efficiency programs.

An excellent example of a successful water reuse initiative is the Mobile Area Water and Sewer Systems (MAWSS) demonstration project funded by EPA through a $1.1 million National Community Decentralized Wastewater Demonstration Project grant. To deal with municipal treatment capacity overloads, the utility diverted wastewater to four satellite cluster facilities. Some of that diverted water is

then treated and used in a state-of-the-art underground drip irrigation system for a municipal park, decreasing the burden on the central treatment facility and reducing wastewater discharges to Mobile Bay (MAWSS 2005).

We have provided each of the southeastern states with a copy of EPA Region 4's 2010 *Guidelines on Water Efficiency Measures for Water Supply Projects in the Southeast* ("*WEGs*"). The *WEGs* emphasize many of the same goals expressed in the Alabama WMI report, and provide recommendations for effective implementation of conservation and efficiency measures (EPA 2010b). EPA is continually working to update these guidelines to incorporate more refined and quantifiable approaches and will continue to provide those as revised. The WMI Report issue area on conservation mentions measures such as fixing leaks, turning off water when not in use, rain barrel use, and non-potable water reuse in agricultural and industrial settings. We would highly recommend implementation of much more comprehensive measures (such as those identified in the *WEGs) and incentivizing them via funding programs and permitting requirements*. We especially endorse fixing leaking infrastructure, using an integrated resource management approach across residential, industrial, agricultural, and commercial settings, full-cost pricing, conservation pricing, metering of all water users, low-impact development and green infrastructure, retrofitting all buildings, water reuse, landscaping to minimize demand and waste, and efficient irrigation practices. Many state approaches can provide good examples of conservation and efficiency programs, such as the standards and recommendations in ten key areas in Massachusetts' *Water Conservation Standards* of 2006.

These approaches can conserve resources, reduce treatment costs, and reduce releases of pollutants into streams and rivers, as well as reduce unbilled losses. Conservation and efficiency measures can be promoted directly with residential, industrial, agriculture, commercial, municipal and local users, as well, not just public utilities, through establishment of codes, policies, and incentive programs, as demonstrated by many successful programs across the country. As recognized in the WMI report, developing a new water supply can be costly and time consuming, whereas demand can often be met for a fraction of the cost via conservation and efficiency measure implementation. Ashland, Oregon, for example, was facing a demand-supply gap and initially considered an $11 million reservoir or $7.7 million for 13 miles of new pipeline to withdraw from the Rogue River (EPA 2002). Instead they implemented an efficiency program comprised of system leak detection and repair, conservation-based water rates, a high-efficiency showerhead replacement program, and toilet retrofits and replacement. The cost of the program was just $825,875—less than 10% of the estimated cost of a reservoir—and less than a decade later demand was down considerably (16% of winter use), wastewater flow was reduced by 58 million gallons annually, and the town had realized considerable energy savings primarily associated with efficient showerhead replacement. Savings to utilities from avoiding additional infrastructure development can also be considerable. The WMI Report refers to the potential use of the Water Supply Assistance Fund; this presents an opportunity whereby efficiency-first guidelines could be established as part of this program. Additionally, the Regulated Riparian Model Water Code bolsters this emphasis by specifying a water authority's ability to "promulgate and establish guidelines and procedures relating to loans or grants" (ASCE 2004).

Again, EPA recommends that the state place up-front emphasis on conservation and efficiency as integral to water resource management. We highly recommend that the measures implemented be a far more comprehensive approach than that identified in the WMI Report, and that they be incentivized

through funding programs and permitting requirements. States such as Florida, Kansas, Colorado, Pennsylvania, Vermont, and Nebraska have used State Revolving Fund (SRF) programs to provide audit and leak detection programs, metering, and to improve efficiency in irrigation (EPA 2003). Kansas and Texas require implementation of approved water efficiency plans in order to receive SRF funding.

EPA welcomes the opportunity to work with Alabama to explore potential funding options to support Alabama's efforts to implement water efficiency measures and conservation and reuse programs. Nationally, the EPA already provides funding for efficiency, including reuse, through mechanisms such as the State Revolving Fund.

Interbasin Transfers

The EPA recommends that Alabama consider the procedures set out in Massachusetts' Interbasin Transfer Act (MGL Ch 21 Section 8B-8D), which governs water and wastewater transfers between river basins of the Commonwealth. This Act has been in effect for over 25 years and is considered part of an overall plan which has led Massachusetts to be considered a model for water supply efficiency. (See http://www.mass.gov/dcr/watersupply/intbasin/index.htm.) This well–established program includes many features that Alabama is considering, including defined basin units for evaluating and accounting for interbasin transfers and a "regulatory mechanism that provides for existing transfers and establishes criteria for new or expanded transfers." The Act also requires that efficiency measures be in place prior to approval of a transfer, such as conservation, leak detection, more accurate metering, etc. These efficiency measures correlate well with Alabama's stated goals regarding conservation.

Instream Flows

Under the WMI Report's Findings and Policy Options (pp.4-7) it recommends that the state:

- *Develop a policy concerning instream flows which can serve as a cornerstone of a statewide water management plan, and*
- *Develop an acceptable legal and regulatory framework for implementation of an instream flow policy.*

Under the issues identified by the Permanent Joint Legislative Committee on Water Policy and Management (2009) it recommended:

- *Examining and recommending appropriate flow dynamics [instream flows] for rivers and streams to support biological, recreational, and industrial/transportation needs and requirements.*

EPA concurs with these statements and recommends that Alabama utilize the well understood and well established tools under the CWA to develop instream flow water quality standards (WQS) for the protection of all designated uses and for application in all other purposes under the CWA. Under the CWA, WQS include the designated use of a waterbody, narrative and/or numeric criteria to protect those designated uses and the state's antidegradation requirements. All three of these WQS components can be used by Alabama as relevant and vital tools to protect and restore healthy hydrology in the state.

The WMI Report to the Governor states that "environmental legislation such as the Clean Water Act...often play[s] a major role in protecting instream flows in rivers and stream reaches but in a very indirect manner..." (WMI Report, p. 26). However, the EPA notes that the tools available under the CWA are increasingly being used to protect and restore the hydrology of waterbodies.

Many states have considered that the CWA is only concerned with water *quality* and does not regulate water *quantity*. However, the U.S. Supreme Court specifically addressed this under the CWA in PUD No. 1 of Jefferson County v. Washington Department of Ecology ("PUD"), 511 U.S. 700 (1994). In that case, the Court found that the distinction between water quality and quantity was "an artificial distinction" and that "[i]n many cases, water quantity is closely related to water quality..." (*PUD* at 1912-13). The linkage between water quality and water quantity has been well documented by the scientific community. Bunn and Arthington (2002) concluded that flow is a major determinant of physical habitat in streams and rivers and directly affects biological composition. Modifying flow regimes alters habitat and influences species diversity, distribution and abundance (Bunn and Arthington, 2002). Aquatic plant and animal species have evolved life cycle patterns directly tied to the frequency, magnitude, duration, timing and rate of change of natural flows. Ecologists now understand that flows following the range of the natural hydrograph are important for maintaining structure and function of aquatic ecosystems (Freeman and Marcinek, 2006). The *Regulated Riparian Model Water Code* recognizes the critical interconnectedness of water quantity and water quality at Section 1R-1-09, stating:

> Water allocation is inseparable from the regulation of water quality. Regardless of whether both functions are vested in a single agency, water allocation must be coordinated with water quality for effective management of a water source and to comply with federal laws and regulations. ... Two programs...will particularly affect State water allocation: 1. ambient water quality standards; and 2. effluent discharge standards for "point sources."

At this time, eight states and three tribes have adopted explicit narrative water quality criteria for protection of instream flows into their state WQSs under the CWA. Many more states are in the process of developing hydrologic standards under the CWA. Table 1 provides examples of how narrative criteria have been developed to protect not just the ecological conditions necessary to protect vital fisheries and aquatic life, but also recreation and all other designated uses under the CWA.

State/Tribe	Terms in WQS
NH	"surface water quantity shall be maintained at levels adequate to protect existing and designated uses"
RI	"quantity for protection of... fish and wildlife...adequate to protect designated uses" "For activities that will likely cause or contribute to flow alterations, streamflow conditions must be adequate to support existing and designated uses."
VT	Class A(1)- Changes from natural flow regime shall not cause the natural flow regime to be diminished, in aggregate, by more than 5% 7Q10 at any time; Class B WMT 1 Waters - Changes from the natural flow regime, in aggregate,

State/Tribe	Terms in WQS
	shall not result in natural flows being diminished by more than a minimal amount provided that all uses are fully supported; and when flows are equal to or less than 7Q10, by not more than 5% of 7Q10. Class A(2) Waters and Class B Waters other than WMT1 - Any change from the natural flow regime shall provide for maintenance of flow characteristics that ensure the full support of uses and comply with the applicable water quality criteria.
NY	For both Class N fresh surface waters and Class AA(S) fresh surface waters … "There shall be no alteration to flow that will impair the waters for their best usages."
VA	"Man-made alterations in stream flow shall not contravene designated uses including protection of the propagation and growth of aquatic life."
KY	"Aquatic Life. (1) Warm water aquatic habitat. The following parameters and associated criteria shall apply for the protection of productive warm water aquatic communities, fowl, animal wildlife, arboreous growth, agricultural, and industrial uses:...(c) Flow shall not be altered to a degree which will adversely affect the aquatic community."
TN	Criteria for Water Uses "(3) Fish and Aquatic Life (n) Habitat- The quality of stream habitat shall provide for the development of a diverse aquatic community that meets regionally-based biological integrity goals. Types of habitat loss include, but are not limited to: channel and substrate alterations… stream flow changes…. For wadeable streams, the instream habitat within each subecoregion shall be generally similar to that found at reference streams. However, streams shall not be assessed as impacted by habitat loss if it has been demonstrated that the biological integrity goal has been met. (o) Flow- Stream or other waterbody flows shall support the fish and aquatic life criteria." "(4) Recreational. (m) Flow- Stream flows shall support recreational uses."
MO	"Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community."
Seminole Tribe of FL	"Class 2-A waters shall be free from activities...that …Impair the biological community as it naturally occurs… due to …hydrologic changes"
Mole Lake Band of the Lake Superior Tribe of Chippewa Indians	"prohibited…human induced changes to … area hydrology that alter natural ambient conditions…such as…flow, stage…. Natural daily fluctuations of flow, stage… shall be maintained."
Bad River Band of the Lake Superior Tribe of Chippewa Indians	"Water quantity and quality that may limit the growth and propagation of, or otherwise cause or contribute to an adverse effect to wild rice, wildlife, and other flora and fauna of cultural importance to the Tribe shall be prohibited." "Natural hydrological conditions supportive of the natural biological community, including all flora and fauna, and physical characteristics naturally present in the waterbody shall be protected to prevent any adverse effects." "Pollutants or human-induced changes to waters, the sediments of waters, or area hydrology that results in changes to the natural biological communities

State/Tribe	Terms in WQS
	and wildlife habitat shall be prohibited. The migration of fish and other aquatic biota normally present shall not be hindered. Natural daily and seasonal fluctuations of flow (including naturally occurring seiche), level, stage, dissolved oxygen, pH, and temperature shall be maintained."

Table 1: Narrative language in WQS of select states and tribes relating to hydrologic criteria. See EPA website for full text of specific criteria: http://water.epa.gov/scitech/swguidance/standards/wqslibrary/index.cfm)

It should be noted that some other states have set instream flow standards that are implemented through provisions other than the state WQSs. Should Alabama choose to develop instream flow standards outside of the CWA, it should ensure that those instream flow standards are consistent with the state WQSs. That is, Alabama should not set conditions which would be less stringent than or in conflict with the state WQSs under the CWA. The EPA recommends setting the instream flow standard through existing CWA provisions in order to avoid that confusion. Specifically, EPA suggests that Alabama develop instream flow water quality criteria into the state WQSs (Chapter 335-6-10). Once approved, those standards would be in use for all purposes under the CWA in Alabama, such as Section 401, Section 404, etc.

The WMI Report states that the use of the public trust doctrine to protect instream flows often does not take into account the inter- and intra-annual flow variability needed to support stream ecology (p. 26). That is true of many state water policies or specific 'negotiated instream flow requirements' for regulated rivers that have historically focused on protecting a minimum or base flow. As Alabama succinctly captures, there is now a better understanding of the importance of addressing the seasonal, intra-annual and inter-annual variable flow patterns needed to maintain or restore processes that sustain natural riverine characteristics (Instream Flow Council 2009). The EPA concurs with Alabama and supports the approach that does not focus solely on the necessary minimum flows. While a low flow value such as the 7Q10 has been used as a critical flow value for developing waste load allocations for industrial and municipal dischargers, it was never intended as a value to protect ecological integrity.

The EPA Region 4 encourages states to consider adopting environmental flow standards under the CWA based on a "natural flow paradigm" that more closely resembles natural conditions (Poff et al. 1997). Where resources are available, site-specific environmental flow determinations can be made. When such studies are not practicable, the use of tools such as the "Ecological Limits of Hydrologic Alteration" (ELOHA; Poff et al. 2010) could be used which provides a scientifically sound means to assess environmental flows across large regions. Other natural flow approaches can be used where site-specific data are not available, such as using a Percent-of-Flow (POF) approach. The POF approach "explicitly recognizes the importance of natural flow variability and sets protection standards by using allowable departures from natural conditions, expressed as percentage alteration" (Richter et al. 2012). The POF approach is relatively simple to implement and may provide a high degree of protection for designated uses that are dependent on natural flow variability. Region 4 notes that the POF approach may need to be modified to be more protective for certain categories of highly sensitive or ecologically significant water bodies. This could include waters designated as Outstanding Alabama Waters or Outstanding National Resource Waters or waterbodies that have a significant contribution of base flow from ground water. The concept of supporting a "natural flow paradigm" as an important ecological objective fits in

naturally with the structure of CWA WQS as it can be explicitly stated as a narrative or numeric criterion with frequency, duration and magnitude, utilized to protect designated uses and evaluated during antidegradation reviews.

Development of an instream flow WQS under the CWA would address many of the concerns stated in the Instream Flows section of the WMI Report (pgs. 26-27), including the following:

- *Consistency with fulfilling the trustee resource conservation requirements for the Alabama Department of Conservation and Natural Resources regarding wildlife (Code of Alabama, 1975, §9-2-2).*
- *Relieving concerns regarding 'complex and cumbersome' implementation and enforcement and multi-agency coordination. Use of WQSs under the CWA is an established and well understood process. Other agencies could rely on the standards as the metric to be used in other state programs.*
- *Providing clear definition of the needed natural, variable instream flows versus static minimum flows which do not afford adequate protection.*

Interstate Coordination

EPA would welcome the opportunity to participate in any way with other state and federal agencies to facilitate coordination of interstate issues. EPA has access to facilitation services that could be utilized as needed for resolution of interstate issues.

As well, we encourage all states to keep in mind the CWA provision to protect all downstream uses, including the hydrologic conditions needed to meet the designated uses (40 CFR 131.10(b)) of downstream states.

Water Resources Data

EPA welcomes the opportunity to work with Alabama and other federal partners to explore potential funding options in Alabama's efforts to acquire quality surface water and ground water data.

The EPA also notes that there is a wealth of data and research that is already being developed in the area of water management, water efficiency, the flow-ecology relationship and ground water/surface water interactions that can be used by the state to supplement its own data and research, including work being done by the Southern Instream Flow Network, the USGS, the US Fish and Wildlife Service and academic researchers. Research that is taking place in neighboring states may also be of use to Alabama in those areas with similar physical and geological formations.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

OFFICE OF THE
REGIONAL ADMINISTRATOR

June 25, 1996

Timothy R.E. Keeney
Director
Department of Environmental Management
9 Hayes Street
Providence, RI 02908

Dear Director Keeney:

As you know, governments at the federal, state, and local levels, along with the private sector, have expended enormous efforts to reduce the discharge of pollution to our surface waters. This investment has yielded great improvements in water quality over the past two decades.

But these improvements are threatened by a growing problem: the ever-increasing diversion of water for hydropower generation, industrial and commercial use, agriculture, snowmaking, and municipal water supply. Whatever the end use, the result of unchecked water withdrawals can be a dangerous reduction in flows in rivers and streams and severe reductions in lake levels.

The effects of flow reductions can include disruption of fish passage, reduced protective cover, increased accesibility to predation, increased stream temperatures, and reduced spawning habitat. In addition, these effects can exacerbate the effects of chemical stressors. Reduced seasonal variations in stream flows can increase the potential that aquatic organisms will be exposed to toxic concentrations of chemicals from wastewater discharges. Artificially reduced flows have interfered with recreational uses, the restoration of historic salmon runs, and the cultural heritage of Native Americans.

We all have a responsibility to tackle the flow problem. This will become even more important as we accelerate our move toward a "watershed" approach to environmental protection--water withdrawals are a key factor in the health of a watershed.

A critical first step is to ensure that reasonable conservation measures are implemented in places where flow levels have become a concern. Last summer, the Ipswich River in Massachusetts literally ran dry--and yet some municipal water suppliers (who draw their water from wells in the Ipswich River watershed, directly contributing to lower water levels) had imposed no

conservation requirements at all. In other areas, significant stretches of riverbed are essentially dry due to the diversion of flow through pipelines to power plants. The unlimited use of water in a time of shortage is a luxury that our environment cannot afford.

Below, I have described some existing mechanisms to encourage conservation and prevent excessive water withdrawals. I believe that these mechanisms have been underused in the past. We must make more active use of these approaches.

In addition to these existing mechanisms, additional programs may be needed to protect water levels. At the end of this letter I have included some suggestions in that direction.

Existing authority to prevent excessive water withdrawals

1. Water Quality Standards. Water quality standards for each water body include two elements: the designated uses of that water body, and specific criteria designed to protect those uses. While attention is often focused on the criteria, the designated uses are of equal importance--and in many circumstances provide authority for states to regulate water withdrawals.

For example, the Supreme Court has ruled that states may deny certification pursuant to Section 401 of the Clean Water Act to a project which will interfere with a designated use set forth in the state's water quality standards--even if specific criteria will not be violated. PUD No. 1 of Jefferson County v. Washington Department of Ecology, 114 S.Ct. 1900 (1994). Section 401 certification is required whenever a federal permit or license is needed for a project involving a discharge to waters of the United States.

The PUD case concerned a proposed hydroelectric power plant, which required a license from the Federal Energy Regulatory Commission. The Court held that the State of Washington was entitled to require the plant to maintain certain stream flows as a condition of Section 401 certification. The Court noted that the distinction between water "quality" and water "quantity" is "artificial"--

> In many cases, water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses...

Id. at 1912-13.

I suggest that states use their water quality standards, in combination with the § 401 certification process or state laws which implement such standards, to prevent activities which will reduce stream flows to unacceptable levels. At a minimum, this approach could be used to require appropriate conservation measures. Moreover, as discussed below, I recommend that states consider increasing the effectiveness of water quality standards by incorporating numeric flow

criteria.

2. **Antidegradation.** EPA regulations require that state water quality standards include an antidegradation program that ensures the protection of existing beneficial uses.

In order to protect such uses, an antidegradation program must obviously address water withdrawals as well as discharges. Each state should review its antidegradation program to ensure that there is adequate ability to protect existing uses.

3. **§ 404 permits.** The construction of new water withdrawal systems (or the maintenance of existing systems) may require § 404 permits. Those permits are subject to the § 401 certification process, which (as discussed above) provides a mechanism for states to protect flow levels.

4. **NPDES permits.** Some water withdrawals are linked to downstream discharges. For example, a municipality may withdraw drinking water from a river at one point and then discharge wastewater downstream of that point.

In permitting the wastewater discharge, the permitting authority should consider whether the water withdrawal by the municipality will reduce flow to the point where the discharge will cause exceedances of water quality standards. If so, the permitting authority should consider requiring conservation measures to ensure that stream flow is adequate to accomodate the discharge without exceeding standards.

5. **Endangered Species Act and state endangered species statutes.** If a river or stream provides habitat or potential habitat for endangered or threatened species, the federal Endangered Species Act or analogous state statutes may provide authority to restrict withdrawals or require conservation activities. This possibility should be considered in permitting and other decisions.

6. **Public Trust doctrine.** In some states the "public trust" doctrine may provide legal authority for the protection of water levels in rivers, lakes, and streams.

Additional programs to protect water levels

1. **Permitting withdrawals.** Those states which do not already have a system for permitting water withdrawals might consider creating one. Such a system does not have to be bureaucratically onerous or needlessly restrictive--the goal is to allow targeted efforts to conserve water and, if necessary, limit withdrawals in areas where low flows cause real environmental problems.

2. **Make water quality standards more explicitly protective of flows.** As discussed above, water quality standards already include designated uses, which can be applied to protect flow levels. Such protection could be enhanced, however, by including specific flow requirements in the standards.

BDCP1636

For example, if a stream segment is designated as habitat for aquatic life, the standards might specify a flow level necessary to support such habitat. At the start, this might be done in a few segments with identified flow problems. The existence of such flow standards would support a state's efforts to impose conservation requirements through the § 401 certification process or other mechanisms.[1]

3. **Add biological criteria to water quality standards.** Water quality standards in many of the states have general biological criteria, in narrative form: for example, "high quality habitat," or "cold water fishery." These criteria provide a basis for the protection of habitat, but they are vague and subject to prolonged debate.

Maine has specific descriptive narrative criteria for its various classes of water. These criteria help to clarify habitat requirements and narrow the debate. We suggest that the states adopt at least class-specific narrative biological criteria, and preferably class-specific numeric measures of biological integrity.

I look forward to working with you on these issues. We will organize a meeting of appropriate staff to discuss how these approaches can be implemented in practice. We plan to hold such a meeting by the end of the summer.

Please feel free to call me or Ken Moraff at (617)/565-3741, with any comments, questions, or concerns. Thank you for your attention to this issue.

Sincerely,

John P. DeVillars
Regional Administrator

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1. Fishery management/restoration plans can also be integrated into water quality standards. For example, anadromous fish goals of state/federal restoration plans for the Connecticut, Merrimack, or Penobscot Rivers can be integrated into the respective state standards.

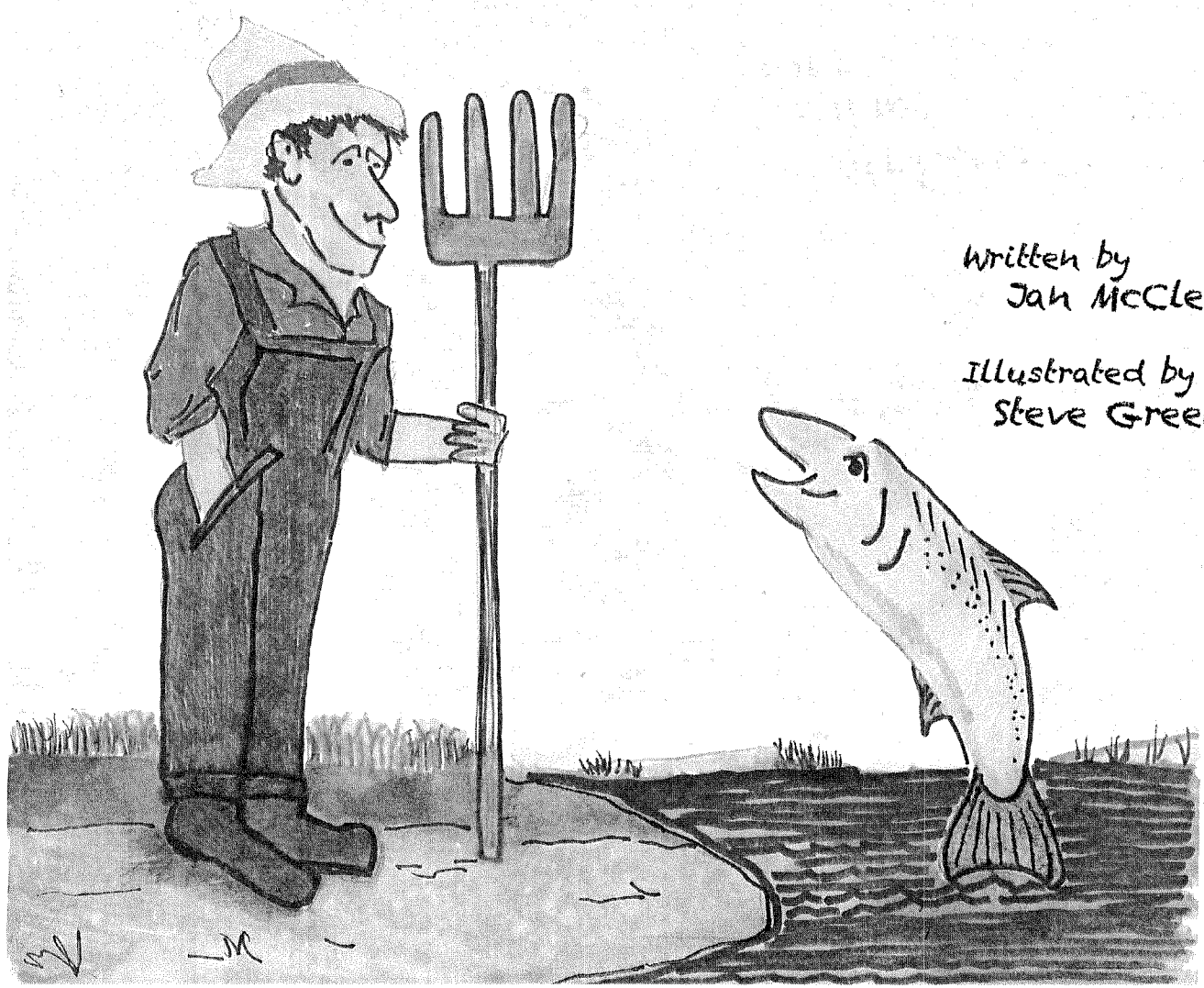
From: Janet McCleery <jmccleery@duckpondsoftware.com>
Sent: Tuesday, July 29, 2014 10:09 AM
To: BDCP.Comments@noaa.gov
Subject: BDCP Project Plan Comments (the problem and solution simplified in a story even children can understand)
Attachments: The Fable of the Farmer and the Fish.pdf

This is a comment about the BDCP Project Plan and why it is trying to solve a problem without recognizing what the real problem is. The real problem is that the expansion of farming on the westside has reached unsustainable levels. In addition, the westside farms leech selenium and other harmful chemicals. There is also insufficient drainage for those lands. Those damaged lands need to be retired and the number of trees in the Central Valley cut back to a sustainable level. The attached children's book explains in simple terms how greed got us to where we are today with the Delta crisis and what could be done to solve the problem for both the farmers and the fish if only Jerry Brown were as wise as the wise king in the story.

Jan McCleery
5672 Drakes Drive
Discovery Bay, CA 94505

Email: jmccleery@duckpondsoftware.com

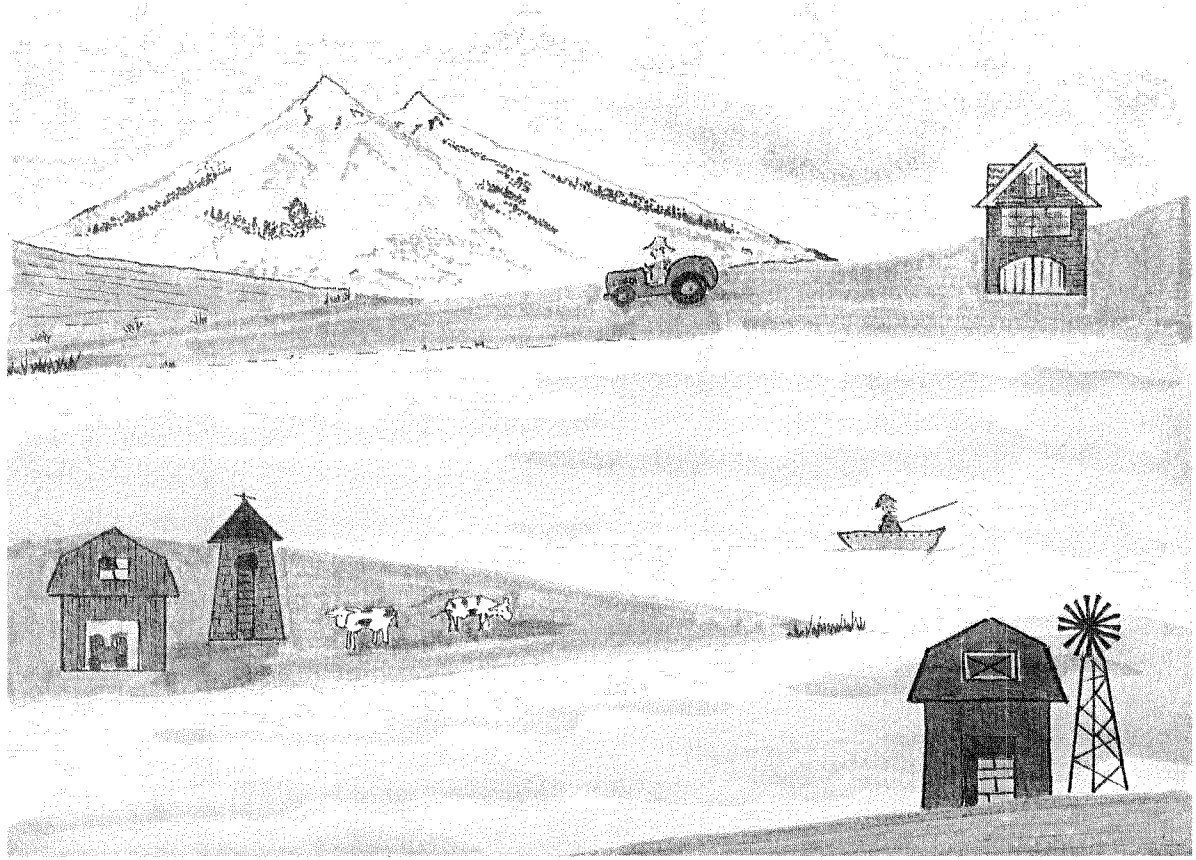
The Fable of the Farmer and the Fish



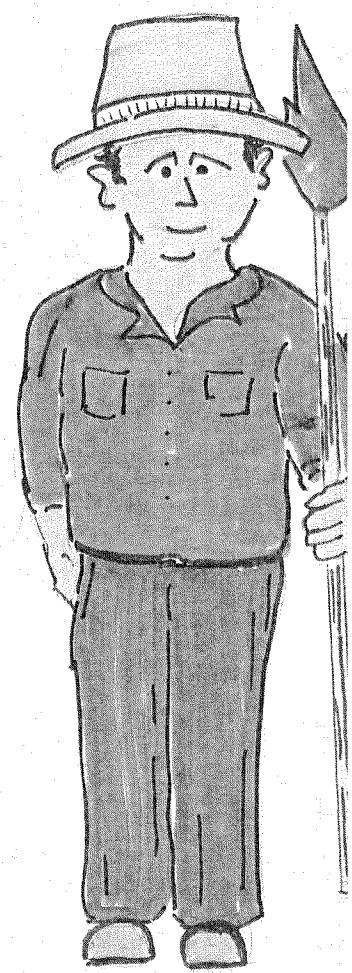
Written by
Jan McCleery

Illustrated by
Steve Greenfield

This book is dedicated to Serenity, who likes to swim in Mimi's river



Once in a land far away lived a happy people. They lived on a bounteous land surrounded by large, fresh flowing rivers. They worked hard during the week, building their homes and using the river's water for their drinking water. They planted crops. On weekends they enjoyed swimming and boating on the wide quiet waterways. The river teemed with beautiful salmon which they revered as an important part of the web of life and important food source for their village.



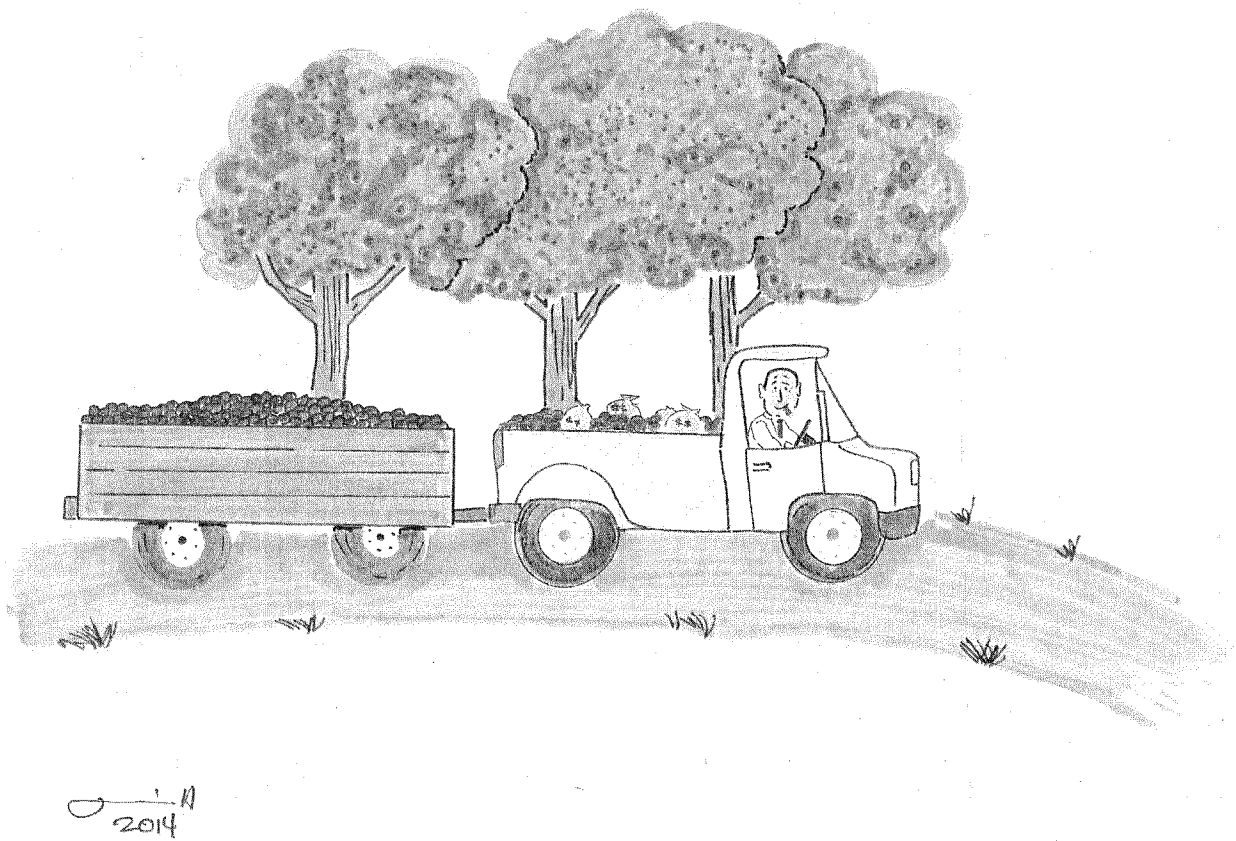
One day a visitor arrived. He said "You are a very lucky people. My people are not so fortunate. I work hard and farm my plot of land but our area is desert and it is difficult to grow enough to feed my family. You have more than enough water. Would you be so kind as to share some with your neighbors in the desert?"

"Why, of course," said the mayor of the River People.

So they worked to build a canal from the river to the desert and built pumps to pump the water into the canal.

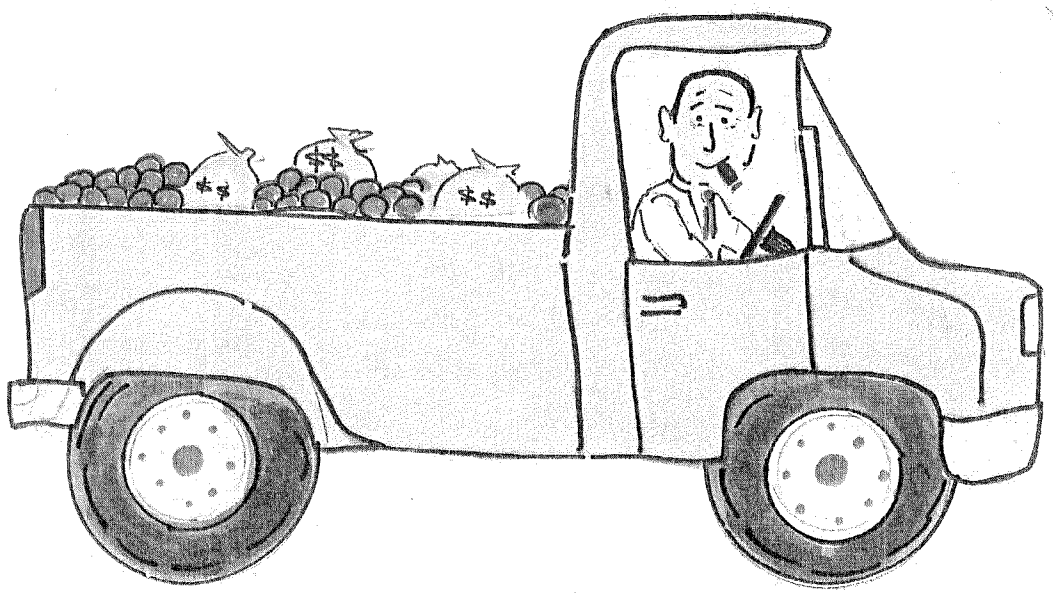
The farmer planted corn for his family to eat.

The desert farms bloomed. Soon more farmers came to the desert and soon the desert farms were producing many fruits and vegetables. This took even more water so they added more pumps from the river to the canal.



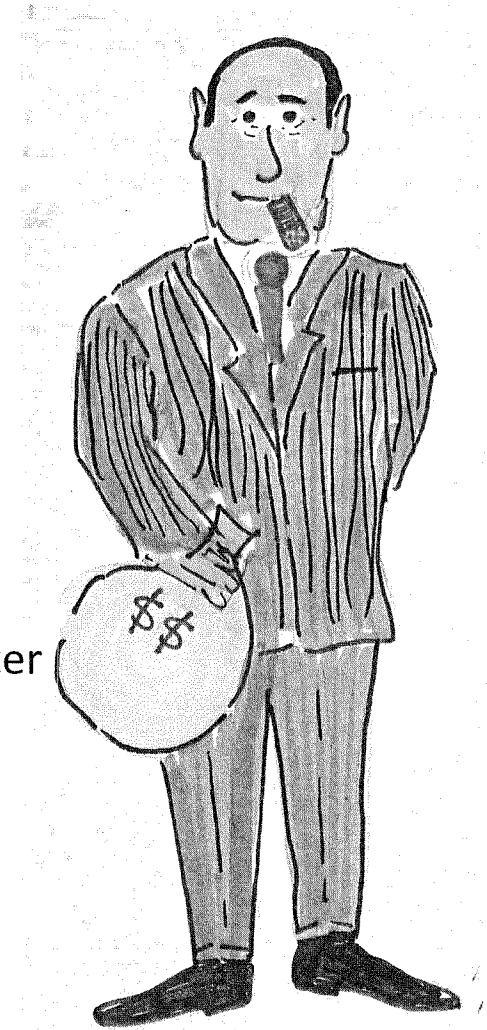
Some rich farmers from other lands heard about the blooming desert and bought many acres far out in the desert to plant and took more water from the river to irrigate with. They produced more fine fruits and nuts than their kingdom could eat so started sending their fine nuts to distant lands.

The farmers became very wealthy.



The River People became worried. Their river was getting sick without enough fresh water. The salt water from the sea was mixing into their towns' drinking water.

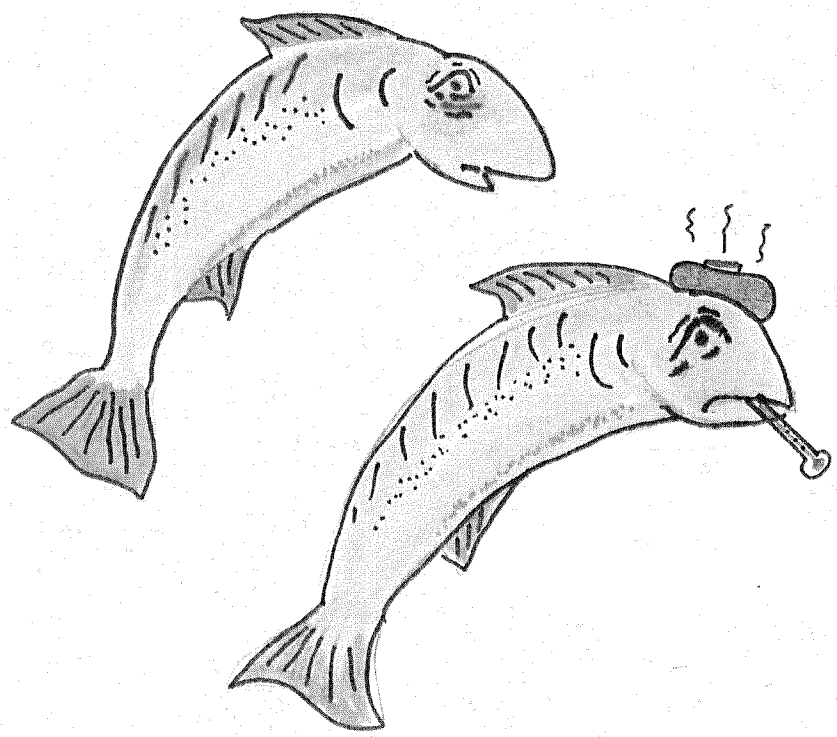
The River People said, "You need to cut back on the amount of water you are taking from our river. Our drinking water is getting salty."



But the rich Desert Farmers said, "You have plenty of places you can get your water from – just take your water from further upstream where there is no salt."

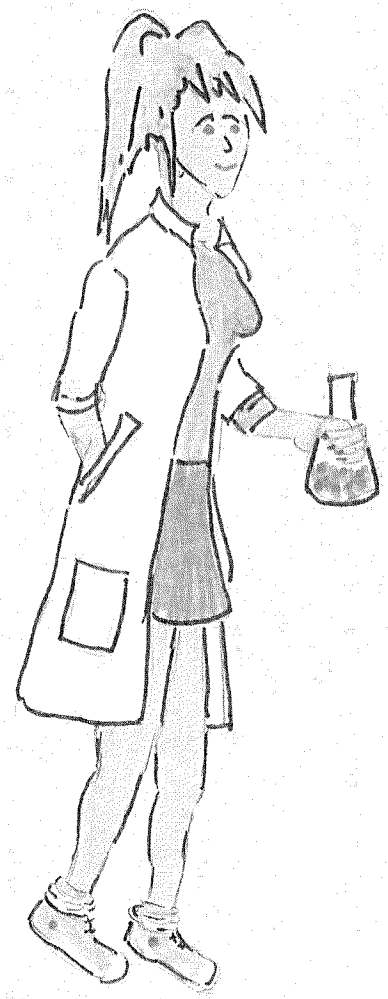
The River People said, "You need to cut back on the amount of water you are taking from our river. Our farmlands are getting salt from our irrigation water!"

But the Desert Farmers said, "Your crops are looking fine. A little salt won't hurt them."



The River People said, "You need to cut back on the amount of water you are taking from our river. Our salmon are dying."

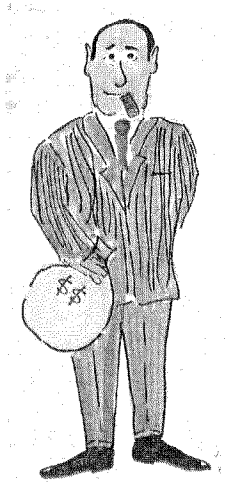
The Desert Farmers had a lot of money so they hired a scientist to find out how to save the salmon.

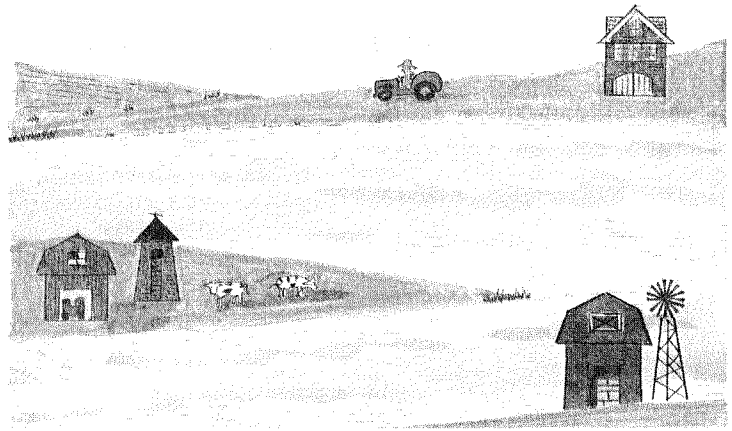


The scientist went north and returned with her report. She said, “There’s not enough fresh water flowing out to keep the sea from flowing in. Salmon need strong flows to make them healthy and strong and show them the direction to the sea. Lack of fresh water is what is killing the salmon.”

The Desert Farmers became angry. They did not want to give up their water and their profits. “No, that can’t be the right answer.” So they fired the scientist and hired another.

The second scientist went north and returned with his report. He said, "There are many factors that are affecting the salmon. When the salmon went out to the ocean last year the ocean temperatures were higher than normal and that killed many salmon. The Orca population is higher in the Northwest and they eat many salmon. The fishermen kill salmon. The striped bass that live in the river probably eat salmon. The farm runoff has pesticides that could harm salmon. The River People probably pollute the river."





The Desert Farmers told the River People, "We can't do anything about the ocean temperature. You should kill Orcas and the bass and stop the salmon fishermen who are killing the salmon. Stop farming by the river and move out of your villages. That is what you need to do to save the salmon."

But the River People said, "Our river, the fish, the bass, the farms have all been here for hundreds of years and everything thrived, including the salmon. The salmon need more fresh water. You need to stop taking so much water from our river. Our salmon are dying. All fish in the river including the bass are dying. Even the littlest fish in our river, the smelt are dying."

So the River People went to the pumps and made them stop pumping.

The Desert Farmers said, “What? You think a little fish like the smelt is more important than farmers?”

The farmers sent out town criers to all of the villages and neighboring lands saying "The River People think fish are more important than farmers. They worry more about a little tiny smelt than hard working farmers who put food on your table. They are keeping our water from us."

The king of the land who lived on a hilltop heard the news. "What? People are keeping water from the good farmers? They care more about a tiny smelt than putting food on the table for all the people in my kingdom?

The wise king decided it was time to come to their lands. The king traveled to see the River People to ask them why they cared more about a tiny fish than putting food on his people's table.

The River People said, "We were happy to share our water with the Desert Farmers. But they kept taking more and more water. Now our fish are sick, our farms and drinking water are salty."

The king traveled to the Desert Farmers who showed him their parched lands waiting for water from the river. As he looked about the land he remarked, "This is truly amazing. You have made this desert bloom. When I was here before there were just a few family farms and now look – there are orchards as far as the eye can see."

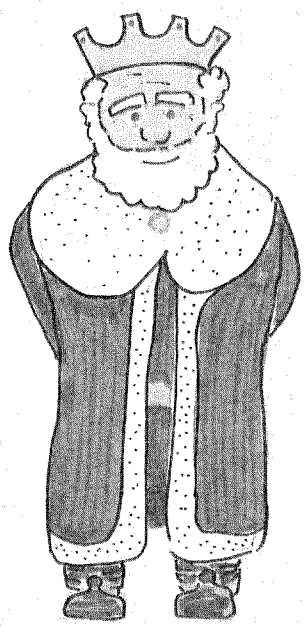
"Oh yes", said the proud farmers.

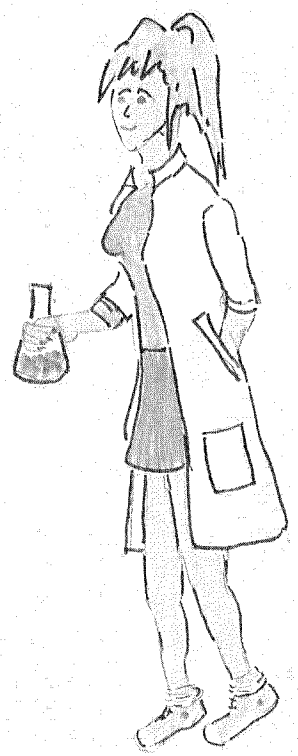
"If you had all of the water the river holds, could you plant even more orchards and send even more fruits and nuts to distant lands?"

"Oh yes", said the proud farmers.

He told the Desert Farmers, "This is not a fight of fish or farmers. The River People were kind to share their water with you. But you have not shared well.

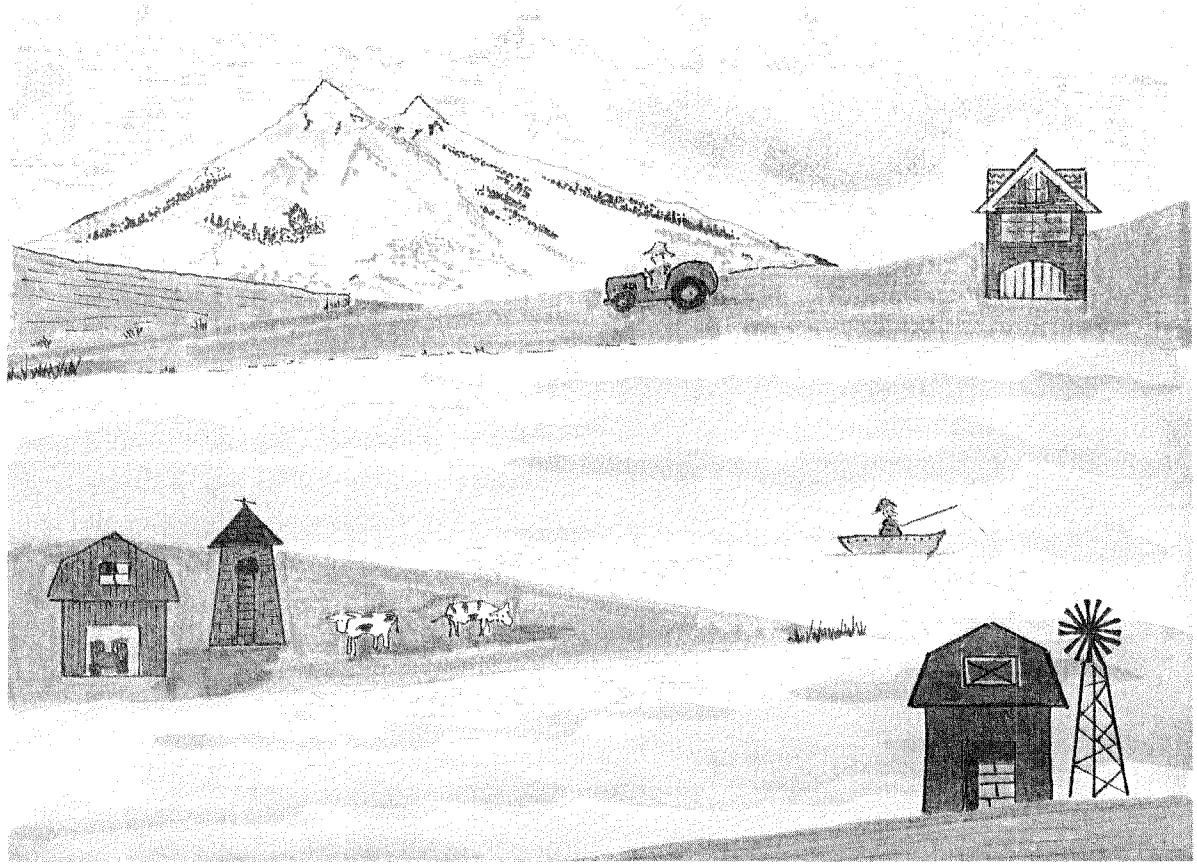
My new scientist will decide how much water the river needs and then the extra can be used for your farms. But there isn't enough for all of these orchards. The farmers who have farmed here the longest will still get their water. Those who came last should sell their lands and buy lands in wetter regions."





The rich farmers who had planted far out into the desert sold their land and bought land in far-away regions with an abundance of rain. They continued to make their profits from selling nuts to distant lands.

There was still an abundance of fresh farm produce from the Desert Farmers for the kingdom.



The River became healthy and the fish thrived. The River People were happy once again.

The End

A portion of the
proceeds from this
book will be donated to
the Save the California
Delta Alliance

www.NoDeltaTunnels.com

Vali Cooper & Associates, Inc.
CONSTRUCTION & PROGRAM MANAGEMENT

July 21, 2014

BDCP Comments
Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Re: Support for the Bay Delta Conservation Plan (BDCP) Environmental Impact Report/Environmental Impact Statement (EIR/EIS)

Dear Mr. Wulff,

I am pleased to let you know that Vali Cooper & Associates, Inc. (VC&A) is in support of the Bay Delta Conservation Plan as outlined in the Draft EIR/EIS. VC&A is encouraged by the release of the public draft of the plan and environmental documents. The outcome of this multi-year effort reflects collaboration of public water agencies, state and federal fish and wildlife agencies, business and agricultural stakeholders, local governments and the public.

Based on our current understanding, the recommended alternative which provides for three northern intakes along the Sacramento River, a 9,000 cfs twin-tunnel system conveying water to the existing aqueduct coupled with a comprehensive habitat conservation plan, is the best plan at this time to meet California's co-equal goals of reliability and ecosystem restoration.

By way of background, VC&A is a California based construction and program management firm providing services to public and private sector clients. We are committed to supporting the economic strength and quality of life for Californians through construction of infrastructure such as the BDCP.

VC&A sees the Bay Delta Conservation Plan as a workable proposal leading to an action plan that offers seismic protection, long-term supply reliability, critical habitat restoration, immediate job creation and statewide economic sustainability.

Sincerely,
Vali Cooper & Associates, Inc.

Agnes Weber, PE
President
2000 Powell Street, Suite 550
Emeryville, California 94608
510.446.8301

From: Thomas Meichtry <thomas.meichtry@valicooper.com>
Sent: Tuesday, July 29, 2014 11:47 AM
To: BDCP.comments@noaa.gov
Subject: Support for the Bay Delta Conservation Plan (BDCP) Environmental Impact Report/Environmental Impact Statement (EIR/EIS)
Attachments: BDCP Support Letter_bp140723 (4).pdf

Mr. Ryan Wulff,

Please find attached our support for the Bay Delta Conservation Plan (BDCP) Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Please contact me if you have any questions.

Sincerely,

Thomas Meichtry, PE, MBA, QSD, LEED
Vice President
925.285.0523 Cell Phone
Thomas.Meichtry@valicooper.com

Vali Cooper & Associates, Inc.
CONSTRUCTION & PROGRAM MANAGEMENT
VISIT OUR WEB SITE FOR OFFICE LOCATIONS
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Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101, Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org
Dorothy M. Lowman, Chair| Donald O. McIsaac, Executive Director

July 29, 2014

Ryan Wulff, NMFS
BDCP Comments
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814
BDCP.Comments@noaa.gov

Dear Mr. Wulff,

Thank you for accepting the comments of the Pacific Fishery Management Council regarding the Bay Delta Conservation Plan (BDCP) and associated Draft Environmental Impact Report/ Environmental Impact Statement (DEIR/DEIS). The Council is concerned that essential fish habitat (EFH) for Council-managed species will be impacted by proposed BDCP activity, and that there are shortcomings in the DEIR/DEIS that are relevant to the choice of a final preferred alternative.

As you know, the Pacific Council is one of eight Regional Fishery Management Councils established by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976, and recommends management actions for Federal fisheries off Washington, Oregon, and California. The MSA includes provisions to identify, conserve, and enhance EFH for species regulated under a Pacific Council fisheries management plan. Each Council is authorized under MSA to comment on any Federal or state activity that may affect the habitat, including EFH, of a fishery resource under its authority. Furthermore, for activities that the Pacific Council believes are likely to substantially affect the habitat of an anadromous fishery resource under its authority, the Pacific Council is obligated to provide comments and recommendations (MSA §305(b)(3)).

The Council believes the BDCP as currently proposed will negatively impact EFH for Council-managed species. Adverse effects on habitat for Chinook salmon of all runs and races—fall, late fall, winter, and spring—particularly concern the Council. In-river habitat conditions for all life phases of Chinook salmon are currently marginal on many levels, as described throughout the Operations Criteria and Plan (OCAP) Biological Opinion for management of the State Water Project and Central Valley Project. This has resulted in a severe lack of genetic diversity in the fall- and late-fall run salmon populations.

The tenuous state of California's salmon populations listed under the Endangered Species Act (ESA) is beyond dispute; further degradation to the habitat they depend on will simply worsen their condition. Impacts to unlisted Central Valley fall and late-fall runs, including both naturally spawning populations and hatchery-produced fish, result in reductions in the number of fish that can be taken in public fisheries. The Council believes that additional negative impacts to these four

runs should be avoided, and causing such impacts without enacting full mitigation measures is unacceptable.

The Council's examination of the effects of the alternatives, Section 11.3.4 of the BDCP DEIR/DEIS, reveals many examples of what are characterized in the analytical documents as "slight" reductions in the quality of habitat for Central Valley fall Chinook salmon. These examples frequently apply to the spawning and rearing habitat of fall Chinook salmon. In light of existing compromised habitat conditions for fall Chinook salmon in the Central Valley, these "slight" impacts should not be taken lightly. While individually each degradation might be small, when taken in total, they contribute to an unacceptable "death by a thousand cuts." The Council is very concerned that further reduction or degradation of Chinook habitat will lead to the inability of the unlisted fall run to support a sustainable fishery, and will threaten the very survival of the ESA-listed winter and spring runs.

The Council is also concerned that ultimately, the flow of fresh water through the Delta will continue to be unreasonably constrained by the project's water withdrawals. The mitigations described in the DEIR/DEIS do not appear to compensate for the ecological degradation resulting from the diversion of water from the system, and as discussed later, do not contain the funding assurances and conditions necessary to be considered dependable. The Council requests that the DEIR/DEIS more clearly describe the potential negative effects of changes in the fresh water flow available to the Central Valley and estuary ecosystems, and any changes in the carrying capacity of habitat for Council-managed species, from the furthest upstream withdrawals to the San Francisco Bay exit. Further, the Council requests complete analysis of proposed mitigation throughout the project area in order to explain how no net reduction in salmon production can be reasonably expected. If full mitigation in terms of the number of adult fish produced and available spawning and rearing habitat are not achieved, the Council requests the proposed plan be altered so that they are achieved.

Salmon Essential Fish Habitat

The EFH description of the Pacific Coast Salmon Fishery Management Plan (FMP) lists known threats to salmon habitat such as dam construction, reducing in-river flow, levee construction, logging riparian habitat, and pollution from both agricultural and urban runoff. These threats lead to loss of water quality, including elevated water temperatures, increased turbidity and suspended solids, flooding and dewatering of spawning areas, and alteration of the natural flow regime. The EFH description identifies beneficial habitat factors listed as EFH including side channel habitat, channel margin shading, high riffle/pool ratio and structure, and presence of large woody debris.

The Council is greatly concerned that almost none of these beneficial EFH elements presently exist in the Central Valley. While the BDCP contemplates some EFH conservation effort, there is no assurance of funding. Even though BDCP purports to address entrainment in the pumps and Delta habitat, Lindley et al. (2009) state, "...from this perspective the biggest problem with the state and Federal water projects is not that they kill fish at the pumping facilities, but that by engineering the whole system to deliver water from the north of the state to the south while preventing flooding, salmon habitat has been greatly simplified."

In addition, the BDCP should take notice of any changes to salmon EFH including the descriptions of non-fishing activities that may adversely affect EFH.

Central Valley Project Improvement Act

The Council notes that the 1992 Central Valley Project Improvement Act (CVPIA) and the recommendations of the independent audit of compliance and performance (Department of Interior, "Listen to the River"[1]) are not incorporated into the BDCP except as references. The Council believes that fish and wildlife resources are not receiving equal prioritization with irrigation and domestic uses of Central Valley Project water. The Council believes that improvements in EFH should result from implementing the CVPIA recommendations, and believes the BDCP should incorporate and fully analyze these recommendations and the independent audit "Listen to the River" in the DEIR/DEIS, including the funding necessary to accomplish them.

Central Valley Hatchery and Wild Salmon

Due to the lack of habitat to support abundant natural spawning of Chinook salmon since dam construction, Council fisheries are dependent on salmon hatcheries in the Central Valley. Hatchery mitigation programs, which are designed to mitigate for the loss of habitat above the dams, cannot replace the natural production of an entire river. In order to reduce straying of hatchery-produced salmon, the juveniles from some hatcheries are typically released and allowed to migrate naturally to the Delta and out to the ocean. As is especially apparent in this drought year, the lack of adequate flows in the Sacramento River can prevent salmon from experiencing a natural life cycle, with the possible loss of even hatchery stocks, as well as naturally-spawned fish.

The Council believes in-river flows must be adequate and continuous through the Delta and into San Francisco Bay to provide for proper exercise of the mitigation function of the hatcheries. The Council believes that CVPIA (b)(2) flows are a minimum requirement, and recommends using flows above (b)(2) where necessary to adequately mitigate the damage to fisheries resources caused by development of Central Valley water resources.

The Council notes the extreme importance of Sacramento River fall-run Chinook salmon to the economic well-being of California and Oregon coastal communities. Due to ESA conservation constraints, Sacramento River winter-run Chinook are of equal importance. Conservation actions to protect the winter-run Chinook frequently constrain the ocean harvest of fall-run Chinook by commercial and recreational fishers. With this in mind, the Council strongly recommends that the goal of BDCP be not simply to minimize impacts to salmon, but to fully support and fund measures to increase salmon and other native Central Valley anadromous fish populations through habitat restoration, including increased freshwater flow through the Delta and into San Francisco Bay. At the same time, hatchery mitigation programs are vital to west coast commercial and recreational fisheries. Hatchery mitigation programs should be adequately supported to ensure that the diversity of genetic resources is preserved and enhanced in order to fully mitigate for the decline in wild populations.

[1] https://www.usbr.gov/mp/cvpia/docs_reports/indep_review/FisheriesReport12_12_08.pdf

NMFS Incidental Take Permit; Reasonable and Prudent Alternatives

Regarding the National Marine Fisheries Service (NMFS) Incidental Take Permit (Section 1-25), the Council is largely in agreement with the comments of the California Advisory Council on Salmon and Steelhead Trout (Attachment 1). The Council is also aware that the NMFS California Central Valley Area Office has been in consultation with the Bureau of Reclamation concerning implementation of OCAP ESA Reasonable and Prudent Alternatives and EFH conservation recommendations. It is clear from communications between NMFS and the Bureau of Reclamation (Attachment 2) that the EFH conservation recommendations for Sacramento fall and late fall Chinook salmon have not been fully implemented.

The Council recommends the BDCP explicitly allocate resources for the implementation of EFH recommendations as well as ESA Reasonable and Prudent Alternatives in the OCAP Biological Opinion.

Research, Monitoring, and Evaluation

The Council appreciates the extensive monitoring and research program proposed in the BDCP, and has the following recommendations.

First, the Council has identified escapement and harvest monitoring as its primary data need in terms of salmon management. Specifically, the Council notes in its Research and Data Needs document that "escapement and fishery monitoring should be maintained and expanded where appropriate, and data collection should include information on age and sex composition, mark rates, coded wire tag recovery, and include spawning ground carcass enumeration and sampling. Sampling programs in some systems have been expanded and new escapement estimation methods developed such as genetic mark-recapture techniques." California Central Valley stocks are identified as the top priority under this topic. This data could be used to develop an age-specific cohort reconstruction for the stock, which, among other things, would allow for estimating contribution of hatchery-origin Chinook to ocean harvest, river harvest, and spawning escapement.

Centralized documentation and monitoring of habitat restoration programs, particularly with geographic information system technology, is also essential to the evaluation of program progress and success. The Council recommends that the database described in Appendix 3.D include projects not specifically funded by BDCP in order to monitor the affected ecosystem as a whole. This could enable BDCP conservation activities to work within a larger effort such as a National Oceanic and Atmospheric Administration Habitat Blueprint for the Central Valley. The Council stresses the need to know what other agencies and efforts are doing so that duplication and working at cross purposes is avoided.

Some monitoring activities in the BDCP are described as not expected to be needed for more than a few years. One example of this is the CM14 Tidal Natural Communities Restoration, (Appendix 3.D, page 13, "Conduct a site-level assessment of use by native and non-native fishes"). BDCP will monitor this restoration project for one year and then rely on existing programs for monitoring. The Council recommends that the BDCP continue to fund existing programs in this case, and to look throughout the BDCP monitoring program and ensure that the BDCP collaborates with other agencies to ensure that monitoring of the effectiveness of BDCP conservation programs continues

to provide high-quality data that will enable program-level decision-making and adaptive management of Bureau of Reclamation and California Department of Water Resources (DWR) operations.

Research planned for the BDCP will investigate the effectiveness of many elements of the conservation program. The Council notes that in the Columbia River Basin, research into fish passage has been ongoing since the first dams were built in the 1930s. The Bureau of Reclamation and DWR should plan to continue to invest in research and applied science programs to understand the changing relationship of the Delta ecosystem and its fish populations, especially as climate change increases stressors. Change will occur, and continued research will enable the Bureau of Reclamation and DWR to mitigate the impacts to fish and wildlife affected by the BDCP and other programs.

The Council encourages state and Federal water managers and resource managers to consider implementing Passive Induced Transponder (PIT) tag technology in the BDCP and Central Valley Project in the context of additional monitoring and evaluation strategies. PIT tag technology has been highly useful in the Columbia River Basin, where it has revolutionized how hydro-system management is evaluated and managed in order to help protect and recover ESA-listed and other important salmon and steelhead stocks in the Basin. The data available from PIT tag technology provide real-time information on juvenile abundance, emigration timing, reach passage survival, adult return timing, tributary and hatchery return timing, adult abundance, and early indications of straying. These data are valuable for monitoring and assessing all phases of salmon recovery programs. PIT technology has application to a broad suite of fishes in the freshwater environment, but has generally been targeted towards salmon and steelhead. We recognize that significant funding and additional monitoring capabilities will be needed in the Sacramento River system to fully utilize PIT tag technology; however, the benefits gained from this applied science and its use in real-time adaptive management in the Columbia Basin have far exceeded the costs.

Regional Oversight

The Council recommends giving the public a voice and visibility into BDCP fish and wildlife conservation programs, as these directly impact public resources. In the Pacific Northwest, the Northwest Power and Conservation Council (NPCC) Fish and Wildlife Program provides a public forum to give policy guidance to the Bonneville Power Administration in terms of coordinating, reviewing, and guiding fish and wildlife program development and project spending. The NPCC forum enables all interested management entities, sovereigns, the interested public, and others to work together to develop and periodically amend a fish and wildlife program for natural resource protection and recovery, including monitoring and evaluation programs that track the progress of the program towards achieving its goals and objectives. If such an arrangement is not possible for the BDCP, then detailed reports outlining progress made and allowing for feedback should be disseminated to the Council and other stakeholders on a regular basis.

Funding for Fish and Wildlife Conservation

Chapter 8 of the DEIR/DEIS describes potential funding sources for the BDCP, including Federal, state, and local sources, matching grants and income from water contracts. As the document clearly

states, these are *potential* sources of funding. Before an ESA Section 10 Incidental Take Permit can be issued, NMFS must find: "There are adequate assurances that the conservation plan will be funded and implemented..." (50CFR 222.307). The Council is also concerned about the adequacy and certainty of long-term funding; for example, fish production at Mitchell Act hatcheries has "been substantially reduced as inflation, maintenance, and other costs have eroded the amount of funding available for fish production." (NMFS Draft Environmental Impact Statement to Inform Columbia River Basin Hatchery Operations and the Funding of Mitchell Act Hatchery Programs). State and Federal funding is often less reliable than contractual mitigation funding from private power companies operating hydroelectric dam facilities. In addition, the Council is concerned that governmental funding for the BDCP may come from re-allocated funding from existing programs the Council relies on. The Council recommends BDCP better demonstrate funding certainty, particularly for fish and wildlife conservation programs, and also ensure that other programs will not lose funding as BDCP gains funding.

Groundfish and Coastal Pelagic Species Essential Fish Habitat

In addition to EFH for salmon, the BDCP would affect EFH for other Council-managed species. Section 11.2.1.3 of the DEIR/DEIS notes that EFH for salmon, but not for groundfishes or coastal pelagic species, occur in the plan area. However, Section 11.1.1 identifies Suisun Bay as being in the plan area, and San Pablo Bay and San Francisco Bay as areas that may be affected by the plan. These three areas contain estuarine and marine habitats that have been identified as EFH and habitat areas of particular concern for various species and life stages of groundfishes (e.g., starry flounder, English sole, rockfishes) and coastal pelagic species (e.g., northern anchovy and Pacific sardine). Appendix B to the West Coast Groundfish FMP and Appendix D to the coastal pelagic species FMP identify the species and life stages that occur in these areas and types of habitats. Therefore, the Council recommends that the DEIR/DEIS be revised to address these additional species.

Accuracy of Fishery Descriptions

The Council recommends permit applicants contact Council staff regarding the description of all fisheries impacts described in the BDCP document to assure that they clearly and accurately describe Council salmon management policy. For example, the subsection "Overfishing" in Chapter 11.1.5.4 (Harvest and Hatchery Management) is generally true; however, because the BDCP concerns only Central Valley-origin salmon, the mark-selective fisheries statements do not apply to Council-managed fisheries South of Cape Falcon, Oregon, and only one to three percent of the overall harvest of Central Valley-origin Chinook occurs North of Cape Falcon, Oregon. Furthermore, the Council sets conservative spawning escapement goals for Central Valley Chinook to allow for sustainable production of natural spawning Chinook, and naturally spawning Chinook in the Central Valley are not overfished under the terms of the MSA.

The bullets under Section 11.2.1.3 do not accurately reflect the status or FMPs of the species identified. For example, the first bullet states that starry flounder and northern anchovy are "monitored species" under the groundfish FMP; however, the groundfish FMP (2011) does not distinguish between "managed" and "monitored" species, and northern anchovy are managed under the coastal pelagic species FMP, not the groundfish FMP. As noted above, the species listed do not represent a comprehensive list of species with EFH in these areas.

We encourage the permit applicants to contact our office for more detailed information on fisheries managed by the Council.

The Council appreciates your attention to these comments. Please contact our staff member Ms. Jennifer Gilden (Jennifer.Gilden@noaa.gov) with any questions regarding the points made in this letter.

Sincerely,

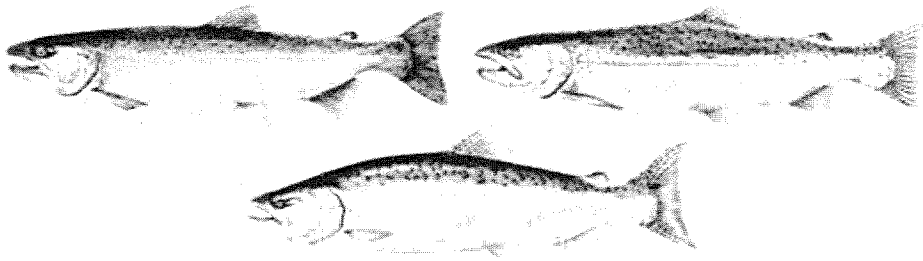
D. O. McIsaac, Ph.D.
Executive Director

Cc: Council Members
Ms. Heidi Taylor
Habitat Committee Members
Salmon Advisory Subpanel Members

Attachments:

- Letter from the California Advisory Council on Salmon and Steelhead Trout dated February 26, 2014 (http://tinyurl.com/nbyrk2u)
- Letter from NMFS to the Bureau of Reclamation dated July 28, 2010

BDCP1639



California Advisory Committee On Salmon and Steelhead Trout

February 26, 2014

Charlton H. Bonham, Director
California Department of Fish and Wildlife
1416 Ninth St., 12th Floor
Sacramento, CA 95814

Subject: Recommendation to deny incidental take permit and Natural Communities Conservation Plan for Bay Delta Conservation Plan

Dear Director Bonham;

The California Advisory Committee on Salmon and Steelhead in our capacity to advise you, the director of the California Department of Fish and Wildlife, in preparing and maintaining "a comprehensive program for the protection and increase of salmon, steelhead trout, and anadromous fisheries" in California,[1] recommends that the you deny issuance of an incidental take permit for the Bay Delta Conservation Plan's Alternative 4 (BDCP) as a Natural Communities Conservation Plan (NCCP). The BDCP does not meet the requirements of Fish and Game Code 2820 for an NCCP and cannot legally be approved because it will contribute to the further decline of Sacramento River Winter Run and Spring Run Chinook salmon.

All races and runs of Central Valley salmon and steelhead populations have experienced over 90% declines since the State Water Project came on line in the 1960's. In particular, naturally produced Chinook populations have experienced severe declines resulting in the listing of Sacramento Winter Run as endangered and the Spring Run as threatened under the federal and state Endangered Species Acts. Adult returns of these two species are far below the fish doubling goals of the Anadromous Fish Restoration Program. Attachments 1 and 2 are figures from the Anadromous Fish Restoration Program showing the severe declines these two runs of Chinook salmon have experienced in the Sacramento River basin.[2]

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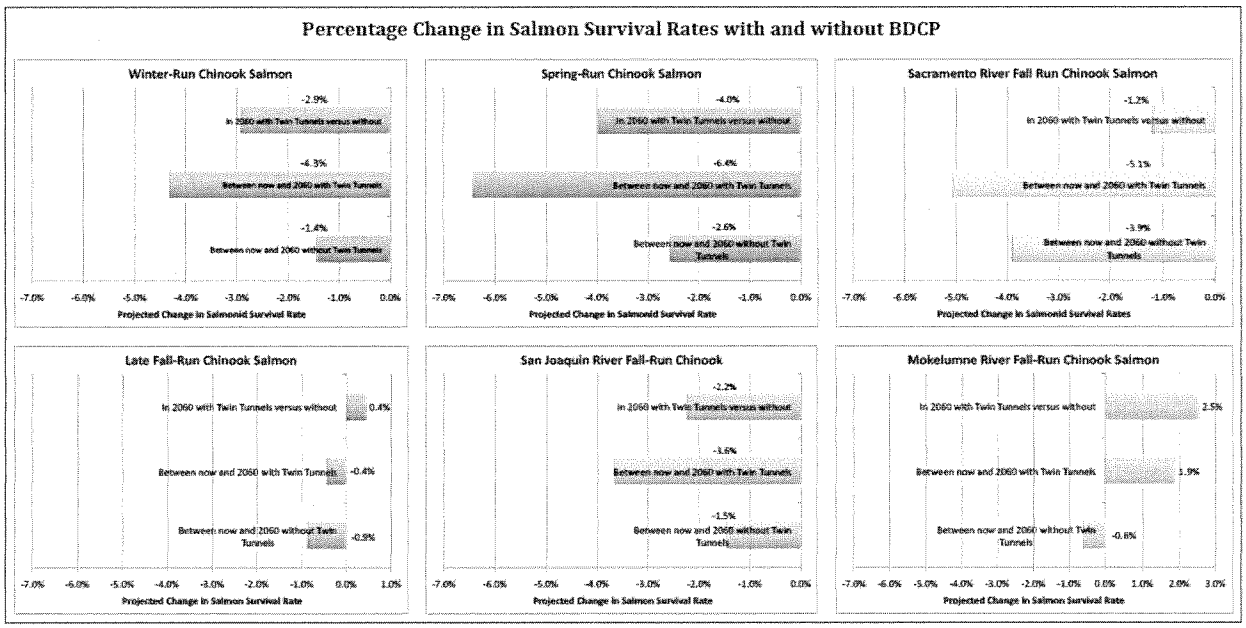
[1] California Fish and Game Code § 6920 (2008)
§ 6920. Preparation and maintenance of program; Consultation with public agencies
(a) The department shall, with the advice of the Advisory Committee on Salmon and Steelhead Trout and the Commercial Salmon Trollers Advisory Committee, prepare and maintain a detailed and comprehensive program for the protection and increase of salmon, steelhead trout, and anadromous fisheries.

[2] http://www.fws.gov/stockton/afrp/Documents/Doubling_goal_graphs_020113.pdf

Furthermore, according to data from Chapter 5, Effects Analysis of the November 2013 Draft BDCP, operation of the Twin Tunnels project will reduce winter run and spring Chinook salmon smolt survival by 2.9% and 4%, respectively. See Salmon Survival Rates Figure below taken from BDCP Chapter 5. Supporting data and source tables are shown in Attachment 3.[3]



BDCP promotes the unproven scientific hypothesis that habitat restoration can substitute for flow. However, the State Water Resources Control Board has already indicated that Delta inflows and outflows are presently insufficient to help listed species recover their former abundance.[4] BDCP would reduce Delta outflow, which contributes to the decreases to salmon smolt survival rates modeled by BDCP.

The concept of improving riparian and subtidal habitat to create an aquatic food supply for the Delta to make up for too much water diverted is an unproven theory that has been criticized extensively by federal agencies in their "red flag" comments on the BDCP.[5] Climate change will

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[3] Figure A taken from Draft Bay-Delta Conservation Plan, Chapter 5, Effects Analysis, Sections 5.5.3 through 5.5.6, Tables 5.5.3-10, 5.5.4-5, 5.5.5-8, 5.5.5-10, 5.5.5-18 and 5.5.5-20 See http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDCP_Chapter_5_-_Effects_Analysis.sflb.ashx

[4] "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem Prepared Pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009." SWRCB, August 3, 2010. Page 4, second bullet. See http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf

[5] See http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Federal_Agency_Comments_on_Consultant_Administrative_Draft_EIR-EIS_7-18-13.sflb.ashx and http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library_-_Archived/Effects_Analysis_-_Fish_Agency_Red_Flag_Comments_and_Responses_4-25-12.sflb.ashx and http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/NMFS_Progress_Assessment_Regarding_the_BDCP_Administrative_Draft_4-11-13.sflb.ashx and http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/NMFS_Evaluation_of_Flow_Effects_on_Survival_-_BDCP_Admin_Draft_-_4-11-13.sflb.ashx and

contribute to sea level rise directly in the Delta; this will help push X2 eastward into the Delta. BDCP analysis also shows that Sacramento River inflow will decrease directly from operation of the Twin Tunnels, and to some degree from lower upstream runoff (controlled by climate change and reservoir operation). The combined effect of continued high diversions from the Delta through BDCP (for the sake of "increased reliability") and the effects of climate change and X2 movement eastward will have a deleterious effect on Sacramento Winter Run and Spring Run Chinook salmon.

All of the conservation measures in BDCP with the exception of CM1 (Twin Tunnels) are programmatic in nature. Funding is far from assured, as identified in a recent Legislative Analyst's report. The LAO report identified that ecosystem restoration funding has not been secured and cost overruns are likely for land acquisition for habitat restoration. According to the report, [6]

"*If bond funds are not available in the near future and no additional funding sources are identified, some ecosystem restoration may not be funded, including the restoration actions needed before the tunnels begin operation. The BDCP states that the SWP and CVP will not pay additional costs or forgo water in the event of a funding shortfall.*"

The funding plan at Table 8-37 of Chapter 8 in BDCP confirms the LAO's conclusion. The state and federal water contractors propose that they will only pay for 68.4 percent of BDCP's costs. Nearly 95 percent of their financing commitment is solely to the Twin Tunnels project in Conservation Measure 1, and the rest of BDCP's costs would be borne by taxpayers at large.

Because Sacramento River Winter Run and Spring Run Chinook salmon are already significantly depleted and BDCP will further reduce smolt survival, the Department of Fish and Wildlife cannot make a finding that the BDCP NCCP will lead to recovery of the species.

None of the alternatives considered in the BDCP Draft Environmental Impact Statement and Report would lead to the recovery of Sacramento River Winter Run and Spring Run Chinook salmon. None of the alternatives analyzed reduces the amount of water diverted upstream of or within the Delta. None of the alternatives analyzed considers meeting or moving toward meeting the State Water Resources' Control Board's Delta Outflow Criteria of 2010 that was specifically required by the legislature in 2009 "to inform planning decisions for the Delta Plan and the BDCP."[7]

Therefore, findings approving a NCCP for the Bay-Delta Conservation Plan cannot be made pursuant to Section 2820 of the Fish and Game Code for the following reasons:

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http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/U_S_Fish_and_Wildlife_Service_Staff_BDCP_Progress_Assessment_4-11-13.sflb.ashx

[6] "Financing the Bay-Delta Conservation Plan", Legislative Analyst's Office, 2/12/14. p 8. See http://www.lao.ca.gov/handouts/resources/2014/Financing-the-BDCP-02-12-14.pdf

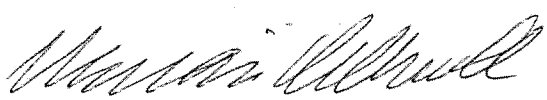
[7] Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem by the State Water Resources Control Board, August 3, 2010. See http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf

1. BDCP does not contribute to recovery and would jeopardize the continued existence of Sacramento River winter-run and spring-run Chinook salmon because smolt survival through the Delta is reduced by the project. (Fish & Game Code Section 2081(c))
2. The concept of habitat restoration measures to offset impacts from increased water withdrawals from the Delta (increased "reliability") is not supported by science, including but not limited to the 2010 SWRCB Delta Outflow Criteria. (Fish & Game Code Section 2081(b)(2))
3. The applicants do not assure funding and water supplies for habitat restoration measures. Habitat restoration measures will not be "shovel-ready" when the Twin Tunnels begin construction. (Fish & Game Code Section 2081(b)(4) and 2820(a)(10))
4. BDCP does not include analysis of an alternative or alternatives that would meet the recovery goals for Sacramento River Winter Run and Spring Run Chinook salmon. Such an analysis should at least take into consideration the State Water Resources Control Board's 2010 Delta Outflow decision. (Fish & Game Code Section and 2820(e))

In summary, the Bay-Delta Conservation Plan does not meet the requirements of the California Endangered Species Act or the Natural Communities Conservation Plan Act to recover Sacramento River winter-run and spring-run Chinook salmon. The BDCP NCCP is to be submitted to support issuance of an incidental take permit by the Department of Fish and Wildlife. For all of the above reasons, we urge you to reject approval of the BDCP as an NCCP.

We thank you for your consideration of these points and look forward to hearing back from you on this important matter.

Sincerely,



Vivian Helliwell, Chairman
P.O. Box 307
Eureka, CA 95502
vhelliwell@mcn.org

cc: Honorable Wesley Chesbro, Chairman Joint Committee on Fisheries and Aquaculture
Kevin Shaffer, CDFW Program Manager, Anadromous Fisheries Branch

Attachments:

1- Anadromous Fish Restoration Program Figure 4: Estimated yearly adult natural production, and in river adult escapements of Winter Run Chinook salmon
2- Anadromous Fish Restoration Program Figure 5: Estimated yearly adult natural production, and in river adult escapements of Spring Run Chinook salmon in the Central Valley rivers and streams.
3- Central Valley Salmon Smolt Survival With and Without BDCP

2-1-13

ATTACHMENT 1

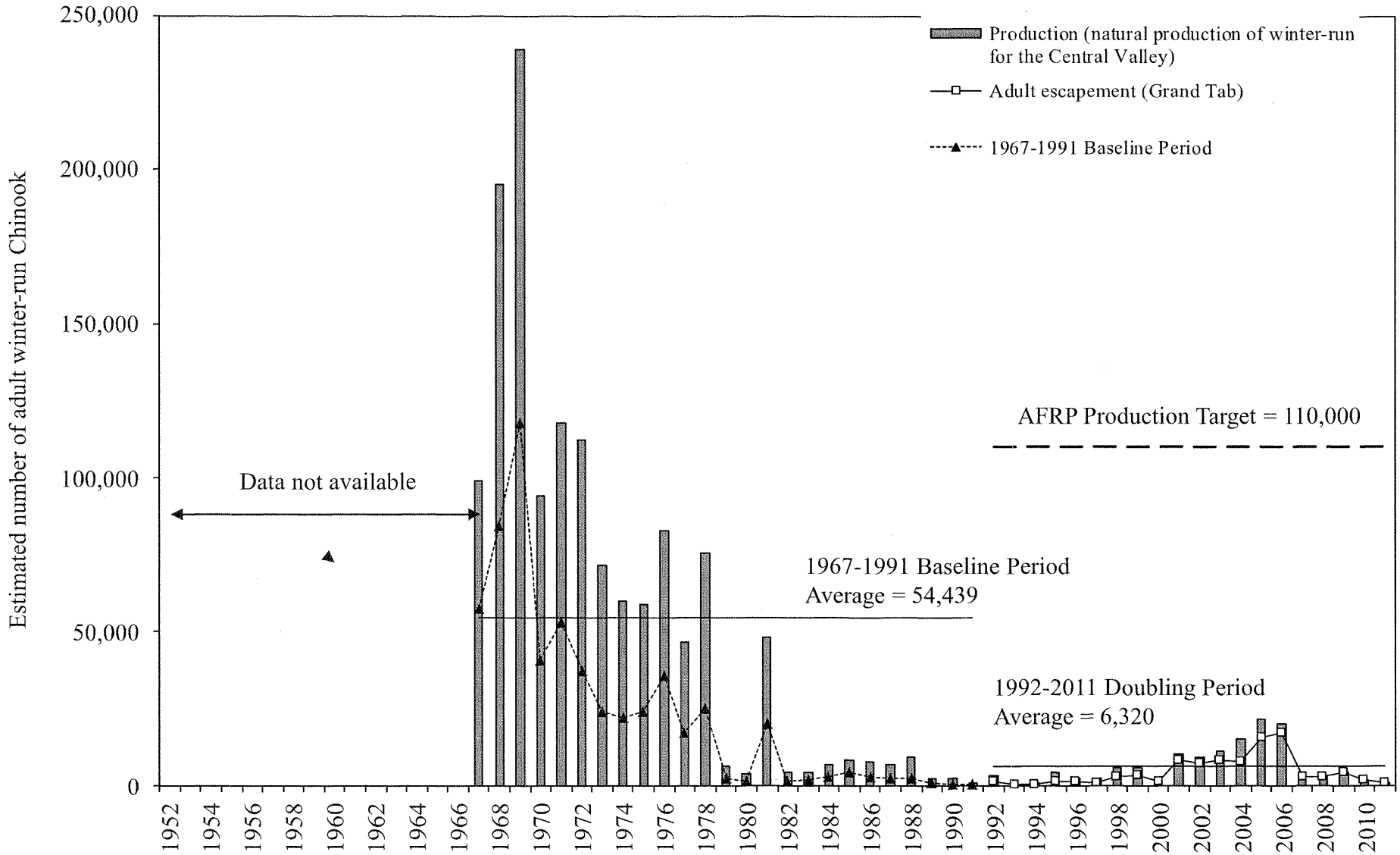


Figure 4. Estimated yearly adult natural production, and in river adult escapements of winter-run Chinook salmon in the Central Valley rivers and streams. 1992 - 2011 numbers are from CDFG Grand Tab (Apr 24, 2012). 1967-1991 Baseline Period numbers are from Mills and Fisher (CDFG, 1994).

ATTACHMENT 2

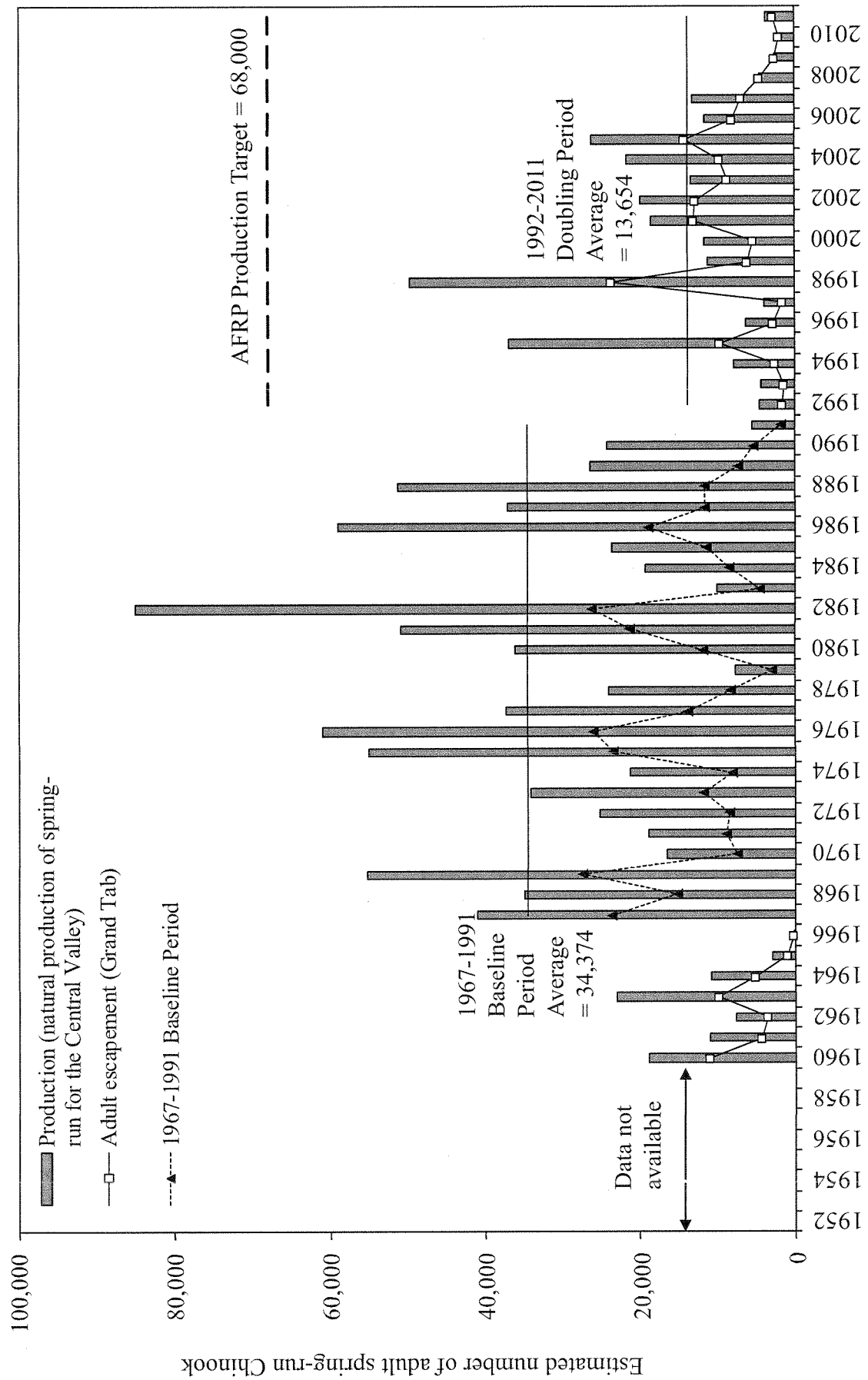


Figure 5. Estimated yearly adult natural production, and in-river adult escapements of spring-run Chinook salmon in the Central Valley rivers and streams. 1960 - 1966 and 1992 - 2011 numbers are from CDFG Grand Tab (Apr 24, 2012). 1967-1991 Baseline Period number are from Mills and Fisher (CDFG, 1994).

ATTACHMENT 3

Percentage Change in Salmon Survival Rates with and without BDCP

Salmon Run/Statistic	BDCP Chapter 5 Source Table	Baseline Conditions Now (EBC1)	Baseline Conditions in 2060 Without BDCP (EBC2-LLT)	Twin Tunnels Operation in 2060 (ESO-LLT)	Between Now and Without Twin Tunnels by 2060	Between Now and With Twin Tunnels by 2060	In 2060 With Twin Tunnels versus Without
Winter-Run	5.5.3-10						
Average		34.7%	34.2%	33.2%	-1.4%	-4.3%	-2.9%
Median		32.4%	31.8%	28.7%	-1.9%	-11.4%	-9.7%
Spring-Run	5.5.4-5						
Average		31.1%	30.3%	29.1%	-2.6%	-6.4%	-4.0%
Median		27.0%	26.4%	25.1%	-2.2%	-7.0%	-4.9%
Sac River Fall Run	5.5.5-8						
Average		25.7%	24.7%	24.4%	-3.9%	-5.1%	-1.2%
Median		22.8%	21.6%	22.4%	-5.3%	-1.8%	3.7%
Late Fall-Run	5.5.5-10						
Average		23.1%	22.9%	23.0%	-0.9%	-0.4%	0.4%
Median		20.1%	20.6%	21.3%	2.5%	6.0%	3.4%
San Joaquin River Fall-Run	5.5.5-18						
Average		13.7%	13.5%	13.2%	-1.5%	-3.6%	-2.2%
Median		10.7%	10.3%	12.1%	-3.7%	13.1%	17.5%
Mokelumne River Fall-Run	5.5.5-20						
Average		16.0%	15.9%	16.3%	-0.6%	1.9%	2.5%
Median		15.2%	14.0%	14.1%	-7.9%	-7.2%	0.7%

Source: Chapter 5, Effects Analysis, Sections 5.5.3 through 5.5.6, Bay Delta Conservation Plan, 2013.

BDCP1639

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

JUL 28 2010

In response refer to:
2008/09022

Donald Glaser
Regional Director
Mid-Pacific Region
U.S. Bureau of Reclamation
2800 Cottage Way, MP-3700
Sacramento, California 95825-1898

Subject: Response to Essential Fish Habitat Conservation Recommendations on the Long-Term Operations of the Central Valley Project and State Water Project

Dear Mr. Glaser:

NOAA's National Marine Fisheries Service (NMFS) received the Bureau of Reclamation's (Reclamation) January 12, 2010, letter responding to the Essential Fish Habitat (EFH) conservation recommendations provided by NMFS pursuant to the EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended (U.S.C. 1801 *et seq.*) for the long-term operations of the Central Valley Project and State Water Project in the Central Valley, California (CVP/SWP operations). NMFS' EFH conservation recommendations were provided in combination with NMFS' biological opinion and conference opinion (Opinion) pursuant to section 7 of the Endangered Species Act (ESA) on CVP/SWP operations, which included a multi-part reasonable and prudent alternative (RPA) to avoid jeopardizing the continued existence of several listed species in the Central Valley, and avoid adversely modifying their critical habitats. The EFH conservation recommendations submitted with the Opinion were based on Reclamation's October 1, 2008, formal consultation initiation package, and were designed to protect EFH for Chinook salmon adversely affected by CVP/SWP operations. Actions specified in the EFH conservation recommendations were separated into three categories: 1) general recommendations from Appendix A of Amendment 14 to the Pacific Coast Salmon Fishery Management Plan (FMP; PFMC 2009); 2) habitat-based actions within the RPA; and 3) specific conservation recommendations for fall- and late fall-run Chinook salmon in the Central Valley system.

In 2008 and 2009, commercial fisheries in California were closed due to the collapse of the Central Valley fall-run Chinook salmon stock. Additional restrictions were put in place for 2010, allowing for a severely limited season. Review by Lindley *et al.* (2009) suggests this

recent collapse stems from a series of adverse marine and freshwater environmental factors. The report further states that habitat improvements must be made within the Central Valley freshwater environment to ensure sustainable populations of fall- and late fall-run Chinook salmon. The EFH conservation recommendations and RPA actions detailed in the Opinion are an integral first step towards this goal.

Essential Fish Habitat Provisions

The MSA requires that EFH be indentified and described in federal FMPs [16 §U.S.C. 1853(a)(7)]. The Pacific Salmon FMP identifies and describes EFH for Central Valley Chinook salmon to include the Sacramento and San Joaquin Rivers and their tributaries (50 CFR § 660.412). Pursuant to the MSA, federal agencies must consult with NMFS with respect to any action authorized, funded, or undertaken, or proposed to be, that may adversely affect EFH [16 §U.S.C. 1855(b)(2)]. If NMFS determines that a proposed federal action would adversely affect EFH, then NMFS has an obligation to provide EFH conservation recommendations to the federal action agency [16 §U.S.C. 1855 (b)(4)(A)]. Any federal agency that receives an EFH conservation recommendation must provide a detailed response in writing to NMFS within 30 days, and include in its response a description of measures proposed by the agency to avoid, mitigate, or offset impacts to EFH. In the case of a response that is inconsistent with NMFS' EFH conservation recommendation, the federal agency must explain its reason for not following the recommendation. This explanation must include scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects [50 CFR §600.920(k)].

Reclamation's Response to EFH Recommendations

The NMFS appreciates Reclamation's time and consideration in reviewing the EFH conservation recommendations. However, Reclamation's January 12, 2010, response does not fully satisfy the consultation requirements in the EFH regulations [50 CFR § 305(b)(4)(B)]. In your written response, Reclamation does not clearly identify whether or how effects of CVP/SWP operations on fall- and late fall-run Chinook salmon EFH will be addressed. Specifically, the response does not sufficiently identify measures that will be implemented to avoid, mitigate, or offset the impact of CVP/SWP operations on EFH.

For example, conservation recommendation B.1 requests that Reclamation work through the appropriate CALFED program to investigate alternatives to the rice decomposition program and recommend ways to stabilize or increase flows after September 30 to reduce redd dewatering. Reclamation's response that NMFS' measure is not consistent with the CALFED Water Use Efficiency Program, and that Reclamation is committed to work through CALFED and the Central Valley Project Improvement Act to help address fishery needs in the upper Sacramento River fails to recommend a specific measure to address and/or reduce the effects of the rice decomposition program on lower in-stream flows and redd dewatering within the mainstem Sacramento River.

As further example, Reclamation's response to conservation recommendation E.2 states that the 24-month period is not long enough to provide solutions and that it is not practical to shut down the main export pumps for short periods of time. Reclamation does not describe why certain

aspects of NMFS' recommendation are infeasible to implement nor does it identify alternative specific measures that avoid, minimize or otherwise compensate for effects on EFH.

NMFS respectfully requests that Reclamation re-evaluate all of their responses to NMFS' EFH conservation recommendations and clarify specific actions Reclamation will implement to reduce effects to fall- and late fall-run Chinook salmon EFH. If Reclamation intends to follow a recommendation provided by NMFS, Reclamation should clearly state so, including referencing an RPA action, and describe any steps that will be taken to implement the recommendation. Pursuant to 50 CFR 600.920 (j), if Reclamation does not intend to follow a recommendation provided by NMFS or disagrees with the need to protect fall- and late fall-run Chinook salmon EFH, Reclamation should clearly state so and provide the scientific justification for any such disagreement with NMFS over the anticipated effects of the proposed action or measures needed to avoid or offset such effects.

In addition to the need to comply with EFH consultation requirements for fall-run Chinook salmon EFH, NMFS reminds Reclamation of their responsibility to initiate consultation and provide an EFH Assessment regarding potential adverse effects of the CVP/SWP operations on EFH for species managed under the Coastal Pelagic Species FMP and the Pacific Coast Groundfish FMP. As requested in our July 2, 2008, letter (enclosed), the EFH Assessment should include a complete list of managed species within those FMPs that may be affected by CVP/SWP operations, including effects on specific life history stages and analyses of how modeled climate change scenarios would likely affect future operations and managed species throughout the action area and on all life history stages. The Coastal Pelagic Species FMP includes five species, and the Pacific Coast Groundfish FMP covers more than 90. Due to the large number of species covered under the Pacific Coast Groundfish FMP, NMFS provided Reclamation with a list of focus species for which to base the analysis of effects for groundfish EFH.

NMFS appreciates the substantial amount of effort that Reclamation has dedicated to the ESA and EFH consultations for this project. We look forward to continuing to work cooperatively with Reclamation and are available for technical assistance as this process continues. If you have any questions regarding the EFH components of this consultation, please feel free to contact Tristan Leong of my staff at 916-930-3724 or Tristan.Leong@noaa.gov.

Sincerely,

for Rodney R. McInnis
Regional Administrator

Enclosure

cc: Michael Chotkowski, Reclamation, Sacramento
Bob Hoffman, NMFS, Long Beach
Bryant Chesney, NMFS, Long Beach
Chris Yates, NMFS, Long Beach
Eric Chavez, NMFS, Long Beach
Dick Butler, NMFS, Santa Rosa
Howard Brown, NMFS, Sacramento
Garwin Yip, NMFS, Sacramento
Copy to file: 151422SWR2006SA00268

References Cited

Lindley, S.T., C.B. Grimes, M.S. Mohr, W. Peterson, J. Stein, J.T. Anderson, L.W. Botsford, D.L. Bottom, C.A. Busack, T.K. Collier, J. Ferguson, J.C. Garza, A.M. Grover, D.G. Hankin, R.G. Kope, P.W. Lawson, A. Low, R.B. MacFarlane, K. Moore, M. Palmer-Zwahlen, F.B. Schwing, J. Smith, C. Tracy, R. Webb, B.K. Wells, and T.H. Williams. 2009. What caused the Sacramento River fall Chinook stock collapse? NOAA Technical Memorandum, NMFS Southwest Fisheries Science Center. NOAA-TM-NMFS-SWFSC-447. 61 pages.

Pacific Fishery Management Council. 2009. Description and identification of essential fish habitat, adverse impacts and recommended conservation measures for salmon. Amendment 14 to the Pacific Coast Salmon Plan, Appendix A. Pacific Fisheries Management Council, Portland, Oregon.

BDCP1639
** ENCLOSURE **

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

In response reply to:
2006/07858

JUL 02 2008

Mr. Ronald Milligan
Operations Manager
Central Valley Operations Office
U.S. Bureau of Reclamation
3310 El Camino Avenue, Suite 300
Sacramento, California 95821

Dear Mr. Milligan:

This is in response to the Bureau of Reclamation's (BOR) May 16, 2008, letter requesting to initiate formal consultation with NOAA's National Marine Fisheries Service (NMFS) under section 7 of the Endangered Species Act (ESA). The request was received on May 19, 2008. The consultation concerns the potential effects of the Central Valley Project (CVP) and State Water Project (SWP) Operations Criteria and Plan (OCAP) on the following NMFS' jurisdictional species:

- Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*) and their designated critical habitat,
- Central Valley spring-run Chinook salmon (*O. tshawytscha*) and their designated critical habitat,
- Southern Oregon/Northern California Coast coho salmon (*O. kisutch*) and their designated critical habitat,
- Central Valley steelhead (*O. mykiss*) and their designated critical habitat,
- Central California Coast (CCC) steelhead (*O. mykiss*) and their designated critical habitat,
- Southern Distinct Population Segment of North American green sturgeon (*Ascipenser medirostris*), and
- Southern Resident killer whales (*Orcinus orca*).

The May 16, 2008, letter enclosed a biological assessment (BA) that was missing the appendices. NMFS was subsequently notified by BOR that the BA was being revised, and that a new BA would be submitted on May 20, 2008. On May 20, 2008, NMFS received the revised BA. On May 30, 2008, BOR hand delivered a revised BA containing the appendices and modeling results. This is the most recent BA received by NMFS and is consistent with the BA the BOR provided to the U.S. Fish and Wildlife Service.

In addition, although your transmittal letter did not request Essential Fish Habitat (EFH) consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended in 1996, the BA provided an EFH assessment in Chapter 16.

NMFS understands the challenge in preparing a BA on a project operation as vast and complex as the joint operations of the CVP and SWP. We appreciate the work that has gone into modeling project operations and attempting to predict effects on salmonids and green sturgeon. Much of the information you have provided will be critically important to us in developing our biological opinion.

As you may recall, the Department of Commerce, Office of Inspector General's (OIG) report of July 8, 2005, found deficiencies in the 2004 OCAP consultation related to the initiation package based on incomplete information. Specifically, "Contrary to the NMFS normal process, the regional office initiated the formal consultation with insufficient information, rather than suspending it until the BOR provided the information" (OIG report page ii). Therefore, NMFS is committed to not initiating formal consultation on OCAP until it determines that the initiation package is sufficient and complete.

As you know, over the last 30 days, my staff has been required to spend many hours preparing for the various required court filings and testimonies pursuant to the Pacific Coast Federation of Fishermen's Associations/Institute for Fisheries Resources *et al.* vs. Gutierrez *et al.* court case. As a result, we did not have time to conduct a detailed review and comment on the OCAP BA. Nonetheless, staff has had adequate time to review the information provided with your letter and found that all of the information necessary to initiate formal consultation has not been provided in certain key areas. Formal consultation shall not be initiated by a Federal agency until a BA has been completed and submitted to NMFS, as outlined in the regulations governing interagency consultation [50 CFR § 402.14(c)]. Formal consultation begins once NMFS has received all of the information necessary to evaluate the effects of the action on listed species and critical habitat. This letter transmits the information that is necessary to initiate ESA formal consultation and conduct an EFH consultation. The Enclosure provides our initial comments on the BA. NMFS may provide the BOR with additional comments on the OCAP BA at a later date during the consultation process [50 CFR 402.14(e)] following our complete review.

Endangered Species Act

Over the last two-plus years, NMFS staff provided technical assistance to BOR in the form of general and specific comments on the OCAP BA towards the development of a complete initiation package. All previous comments are incorporated by this reference and should be addressed in their entirety in the OCAP BA.

In addition, NMFS requires the following general information to initiate formal consultation on OCAP, as outlined in the regulations governing interagency consultation (50 CFR 402.14). We did not review chapters pertaining to Delta smelt or long-fin smelt. The Enclosure provides some more specific information required in the initiation package.

1. A description of the action to be considered [50 CFR 402.14(c)(1)].

   The project description in the OCAP BA needs to be described in sufficient detail so that an analysis of effects can be conducted. Gaps in the project description include actions that are not reasonably foreseeable, but modeled in the analysis of effects, and therefore, reveal inconsistencies between the proposed action and the analysis of effects. For example, the modeling assumes a Vernalis Adaptive Management Plan (VAMP)-like action will continue through 2030, but the current VAMP action expires in 2009 with no stated renewal clause.

2. A description of the specific area that may be affected by the action [50 CFR402.14(c)(2)].

   The term "action area" is mentioned multiple times throughout the BA, but not defined. The geographical/spatial areas for the ESA and EFH consultations appear to be substantially different and inconsistent.

3. A description of any listed species or critical habitat that may be affected by the action [50 CFR 402.14(c)(3)].

   CCC steelhead designated critical habitat should be included in the ESA consultation. Operation of the Suisun Marsh salinity control gates does affect CCC steelhead designated critical habitat.

4. A description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effects [50 CFR 402.14(c)(4)].

   The BA needs:

   a. Analyses of all proposed operations on all listed species that may be affected, including all of the environmental "stressors" (physical or biotic) caused by the proposed action to which each life history stage and each species would be exposed. The BA should include an analysis of the likely response of each life history stage and species to such stressors. Once effects are established at the individual level, effects need to be aggregated to determine the extent of the effects resulting from implementing the proposed action on broader scales, for example, at the river reach, tributary, and Division scales.
   b. Best scientific and commercial data available to support the effects analysis and conclusions;
   c. Summaries of recent past operations and the effects in instream flows, temperature, carryover storage, *etc.*, in conjunction with the modeling. Especially where an element of the proposed action cannot be modeled, such as in the application of adaptive management processes like the Sacramento River Temperature Task Group, the actual performance of these processes in the recent past should be analyzed and discussed as part of the environmental baseline. If the proposed adaptive management processes are the same as those that functioned in the past, then BOR can utilize the environmental baseline to

determine the expected effectiveness of the adaptive management processes in the effects of the action section.

d. Additional modeling scenarios which NMFS has requested, but are not provided in the BA. We request a meeting with your modelers to design a realistic worst-case scenario. We have recently been criticized in other actions for not including realistic assumptions about future water demands, *etc.* We believe it is especially important to run a scenario that assumes all CVP B2 water is used for in Delta actions by March, and that this water is therefore unavailable for actions later in the water year. Also, it is reasonable to run a scenario with successive critically dry years, removing the 1.9 million acre feet storage soft target, *etc.*
e. Analyses of how the modeled climate change scenarios (Study 9.0 suite) would likely affect future operations and listed species throughout the action area and on all life history stages; and
f. Consideration of the effects of the proposed action within the context of the impacts of the environmental baseline and cumulative effects.

5. Relevant reports, including any environmental impact statement, environmental assessment, or BA prepared [50 CFR 402.14(c)(5)].

   NMFS needs the report from the contracted technical review of the 2008 OCAP BA, and responses to the recommendations from the peer review of the NMFS 2004 OCAP biological opinion.

6. Any other relevant available information on the action, the affected listed species, or critical habitat [50 CFR 402.14(c)(6)].

   a. Chapters 1 (Summary of Obligations Relevant to the Action) and 2 (Project Description) contain citations to numerous "agreements" that dictate project operations. The details of these agreements may be central to analyzing effects of the operations. We request that you scan and provide a DVD with any of these documents that contain significant detail on project operations.
   b. References need to be included for all references cited.

Essential Fish Habitat

NMFS requires the following general information in order to conduct a thorough EFH consultation, as outlined in the regulations implementing the EFH provisions of the MSA (50 CFR 600.920). The enclosure provides some more specific information required.

1. An analysis of the potential adverse effects of the action on EFH and the managed species [50 CFR 600.920(e)(3)(ii)]. The EFH Assessment lacks:
   a. a complete list of managed species within the Pacific Coast Salmon, West Coast Groundfish and Coastal Pelagic Species Fisheries Management Plans that may be affected by OCAP;
   b. in-depth analyses of all proposed operations on all managed species that may be affected, including sufficient detail to accurately assess potential impacts to EFH at

various scales (*e.g.*, within a given watershed for salmon) and effects on specific life history stages; and

c. analyses of how the modeled climate change scenarios would likely affect future operations and managed species throughout the action area and on all life history stages.

2. Given the general scope and complexity of the project, as much additional information as possible, as described in section 600.920(e)(4) of the EFH regulations, should be provided in the EFH Assessment.
3. The EFH Assessment needs to have a clear delineation of the action area.

Once we receive this additional information, we will send you a notification letter, which will also outline the dates within which formal consultation should be completed and the biological opinion delivered on the proposed action.

NMFS appreciates the tremendous efforts of BOR and Department of Water Resources staff in developing the BA. NMFS will continue to be available to provide BOR with technical assistance towards the development of a complete BA and initiation package. Please contact Mr. Garwin Yip at (916) 930-3611, or via e-mail at garwin.yip@noaa.gov, if you have any questions concerning this letter or require any additional information.

Sincerely,

Russell M Strack

for Rodney R. McInnis
Regional Administrator

Enclosure

cc: Copy to file – ARN 151422SWR2006SA00268
NMFS-PRD, Long Beach, CA
Ann Lubas-Williams, BOR, 2800 Cottage Way, Sacramento, CA 95825
Jerry Johns, Deputy Director, 1416 Ninth Street, P.O. Box 942836, Sacramento, CA 94236-0001
Kathy Kelly & John Leahigh, DWR, 1416 Ninth Street, P.O. Box 942836, Sacramento, CA 94236-0001
Cay Goude, Ryan Olah, & Susan Moore, USFWS, 2800 Cottage Way, Sacramento, CA 95825
Carl Wilcox & Jim White, CDFG, 830 S Street, Sacramento, CA 95811
Perry Herrgesell, CDFG, 4001 North Wilson Way, Stockton, CA 95205

Enclosure

Additional Information Necessary to Initiate Endangered Species Act Formal Consultation and Essential Fish Habitat Consultation on the Central Valley Project and State Water Project Operations Criteria and Plan June 30, 2008

Endangered Species Act

Over the last 2 plus years, NMFS staff provided technical assistance to Reclamation in the form of general and specific comments on the Central Valley Project (CVP) and State Water Project (SWP) Operations Criteria and Plan (OCAP) biological assessment (BA) towards the development of a complete initiation package. The following letters and comment documents are hereby incorporated by reference and should be addressed in their entirety in the OCAP BA (or responses as to why they are not incorporated).

i. NMFS' June 19, 2006, letter responding to the Bureau of Reclamation's (Reclamation's) April 26 and May 19, 2006, requests to initiate formal consultation, which provided the information necessary in order to initiate formal consultation.
ii. NMFS' February 21, 2008, letter to Reclamation and the Department of Water Resources, providing comments with regard to the development of the OCAP BA, and particularly, the draft project description.
iii. Multiple e-mails from the U.S. Fish and Wildlife Service (FWS submitted on behalf of FWS, NMFS, and DFG) providing specific comments on various chapters of the OCAP BA, including the legal setting (Chapter 1) and project description (Chapter 2).
iv. February 15, 2008, e-mails from Jeff Stuart (NMFS) to Shane Hunt (Reclamation), transmitting comments on species accounts for the anadromous salmonid species and green sturgeon (Chapters 3-6, and 8).

In addition, the following information is required to initiate Endangered Species Act (ESA) formal consultation.

1. **A description of the action to be considered [50 CFR 402.14(c)(1)].**
   a. Federal actions that warrant consultation are all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02). Lower Joice Island and Cygnus Units (OCAP BA pp.2-109 through 2-110) are no longer operated by DWR or BOR, therefore should not be part of the OCAP project description.
   b. Various actions are not reasonably certain to occur, and therefore, should not be modeled as part of the proposed action. For example:
      i. The Vernalis Adaptive Management Plan, as part of the San Joaquin River Agreement, will expire on December 31, 2009, unless extended pursuant to the conditions of the agreement (OCAP BA p.1-12);
      ii. The Environmental Water Account (EWA) program expired in 2007. The agencies are currently undertaking an environmental analysis of extending the EWA to 2011 (OCAP BA p.1-11). Also, the OCAP BA (p.2-21 & 22) is clear in stating that the future of the EWA is unclear and no decision has yet been made on what that

program would look like. Until a new EWA is agreed to it is invalid to claim the operational assets granted the EWA in the CALFED Record of Decision (ROD). It is not appropriate to unilaterally label short-term actions, like VAMP and the Yuba Accord, as EWA and claim the long-term operational assets granted in the CALFED ROD.

iii. The Yuba Accord, Component 1 Water, would be an EWA asset, but scheduled to expire in 2015 (OCAP BA p.2-21).

iv. The OCAP BA, p.2-118, pentultimate paragraph, states, "The proposed Phase 8 program has some of the characteristics of a transfer program in that water will be provided upstream of the Delta and increased exports may result. This is a potential future action that is not included in this consultation. However, should the phase 8 program be approved, water made available from the program could be transferred as part of the transfer water analyzed in this project description." Because the proposed Phase 8 program is not included in this consultation, then the effects of the program (*i.e.*, transfers) should not be included/considered in this consultation.

c. The OCAP BA, p.2-121, 1st paragraph under "500 cfs Diversion...," states, "This operation is being incorporated into the OCAP project description and permitting will continue via the OCAP biological opinions." NMFS does not issue a permit at the end of an ESA section 7(a)(2) formal consultation. Therefore, the biological opinion that NMFS issues cannot replace the requirement for another permit.

i. There needs to be a better clarification of the additional allotment of 500 cfs during the summer to the pumping rate at Banks (under the CALFED ROD) to go to EWA assets when the EWA has been diminished.

d. The proposed action is not adequately described. For example:

i. OCAP BA p.2-7 states that a maximum of "about 300 cfs" will be diverted by the Freeport Regional Water Project. Please be exact or specify exact range and criteria for choosing levels within that range. What "agreement" is being referenced in the project description here?

ii. OCAP BA pp.2-14 through 2-19, Real Time Decision-Making: Please provide a schematic of how all geographic and project-wide groups work. What are their exact mandates, what organizations are represented in the groups, and how do they report information or recommendations to whom. This would assist in our understanding and provide public transparency of the adaptive management process.

iii. OCAP BA p.2-19 Clear Creek: please provide the "August 2000 agreement" referenced here.

iv. OCAP BA p 2-20 American River: What are the draft criteria being developed by the California Department of Fish and Game (DFG) that Reclamation is using? Please include these draft criteria in the project description.

v. OCAP BA p.2-21 and 2-22, EWA. This section is clear in stating that the future of the EWA is unclear and no decision has yet been made on what that program would look like. Until a new EWA is agreed to, it is invalid to claim the operational assets granted the EWA in the CALFED ROD.

vi. OCAP BA p.2-22, paragraph just above the section, "Central Valley Project": In the first sentence, what does, "and related action" mean? Without elaboration, it could mean all actions related to ensuring the adequate quantity and timing of flows that

would ensure the timely outmigration of anadromous salmonids from the San Joaquin River.

vii. OCAP BA p.2-41, Red Bluff Diversion Dam (RBDD): How is the emergency closure provision modeled, if at all?
   (a) What evidence does Reclamation have that the 12-in opening is sufficiently protective of green sturgeon trying to pass upstream and downstream through RBDD?

viii. OCAP BA p.2-47, American River: The American River flow management standard needs to include temperature criteria. Without it, Reclamation, and subsequently, NMFS, cannot analyze the effect of operations on the American River on listed anadromous fish species. Also, please provide agreements with upstream operators of the dams scanned on a DVD. Please provide flood control agreement between Reclamation and Sacramento Area Flood Control Agency scanned on a DVD. Also, the last paragraph has a placeholder for the present level of American River Division water delivery.
   (a) NMFS appreciates that the flow management standard has been included in the project description, but we need the project description or an appendix to include the exact language and details of the flow management standard so that we may consult on it.

ix. OCAP BA p.2-62. The description of the New Melones operations is confusing and conflicting. Applicable water policies are "inferred" and "assumed." Was the temperature criterion purposefully eliminated? What are the proposed flows and temperatures at different times of year under different water year types? The project description says "under new operation procedures similar to what is descried [sic] here." What exactly is NMFS to consult on? Also we note that the 1997 Interim Plan of Operations (IPO) is inconsistent with the CALSIM model. The section implies that operations will follow the present IPO and at the same time describes that current operations deviate regularly from the IPO. Annual monthly flow schedules and habitat and temperature attributes relating to those flows must be presented in the BA in order to assess the effects of New Melones operations. It appears that annual decisions are made for allocation of water to the various categories and priorities listed, but there is no description of the process, nor what is the decision-making entity. There is no reference in the text to Table 2-11. Any long-term plan of operation for New Melones Reservoir will require re-initiation of the OCAP consultation.

x. OCAP BA p.2-67: Please explain/clarify the statement within the Friant Division, "This division operates separately from the rest of the CVP and is not integrated into the CVP OCAP, but its operation is part of the CVP for purposes of the project description." We assume that current Friant operations are part of the project description. We understand that future Friant operations conducted through the San Joaquin River Restoration Program are not ready for this consultation. That future operation will need to integrated into larger OCAP operations and will require a re-initiation of the OCAP consultation. Until those operations are in effect, the BA needs to describe in sufficient detail the effect of current Friant operations on the listed species in the San Joaquin River tributaries, the San Joaquin River, and the Delta so that NMFS can consult on this portion of the CVP's operations.

xi. Figure 2-12 (OCAP BA p.2-77) is referred to when describing the Oroville Field Division. However, the text in figure 2-12 is so small that it is barely legible, and therefore, not a very useful graphic in understanding the current and proposed action in the Feather River. Please enlarge figure 2-12 to a full page and ensure that the text is legible.

xii. OCAP BA p.2-119: Is the Yuba Accord part of the project description and subject to this OCAP consultation? If so, please provide a copy of it, scanned on a DVD.

2. A description of the specific area that may be affected by the action [50 CFR402.14(c)(2)].

a. Although the action area is mentioned multiple times throughout the BA, it is not defined. For example:
   i. The OCAP BA (p.14-7) stated that, "[s]almon originating in California streams are estimated to contribute 3 percent of salmon population off the Washington coast...," which indicates that the action area includes the Pacific Ocean off the coasts of California, Oregon, and Washington.
   ii. EFH (OCAP BA p.16-2) appears to be limited to freshwater and the Bay/Delta. Since the action area is expanded to include the Pacific Ocean, the EFH assessment would likely include the EFH of additional managed species.

b. Chapters of the BA, where applicable (*e.g.*, environmental baseline, effects of the action, summary of effects analysis, and EFH assessment), need to be adjusted based on the extent of the action area.

3. A description of any listed species or critical habitat that may be affected by the action [50 CFR 402.14(c)(3)].

b. Central California Coast steelhead designated critical habitat should be included in the consultation (OCAP BA page 3-2) because the action area extends into Suisun Marsh.

4. A description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effects [50 CFR 402.14(c)(4)].

a. An effects analysis, including justification and rationale, needs to be provided regarding why OCAP is not likely to adversely affect Central California Coast (CCC) steelhead (OCAP BA page 3-2).

b. An effects analysis should be included for CCC steelhead designated critical habitat.

c. An effects analysis should be included for the Southern Distinct Population Segment (DPS) of North American green sturgeon for the Suisun Marsh Salinity Control Structure, the Morrow Island Distribution System, and the temporary barriers.

d. An effects analysis for all species should be included for Roaring River and Goodyear Outfall (and Lower Joice Island and Cygnus Unit, if applicable).

e. OCAP BA p.9-35, Level of Development (Land Use): Under the heading of "Sacramento Valley," why is the American River excluded? What is the effect of this on the results of the modeling? Was American River temperature control modeled?

f. OCAP BA p.9-41, Regulatory Standards: Under the heading of "Upper Sacramento River," exactly what assumptions are built into the Shasta portion of temperature control. Where is the compliance point set?

g. Combining all water year types into only 2 classifications [wet years (which combines wet and above normal water year types) and dry years (which combines below normal, dry, and critical)] for salvage and loss tends to over simplify results. Averaging the water year types will not provide worst case and best case scenarios. Salvage and loss would be more appropriately looked at by comparing all water year classifications.

h. NMFS has requested additional modeling scenarios be conducted and these scenarios have not been conducted. We request a meeting with your modelers to design a realistic worst case scenario. We have been recently been criticized in other actions for not including realistic assumptions about future water demands, *etc.* We believe it is reasonable, and especially important, to run a scenario that assumes full build out of contract water demands with only guaranteed minimization measures (*i.e.*, all b2 water is used for in Delta actions by March, and that this water is therefore unavailable for actions later in the water year; no temperature control on the American River; the soft target of 1.9 million acre feet carryover storage in Shasta Reservoir not being met; and successive critically dry years).

i. Southern Resident killer whales: Chapter 14 concludes with a "may affect," whereas it should have a subsequent effect determination of "not likely to adversely affect" or "likely to adversely affect." The mechanism for the "may affect" is a potential reduction in killer whale prey, but because of the lack of analysis, we don't know what the effects are. The analysis is limited to "may" and "could" without an analysis of the probability or extent of effect. The chapter provides more discussion of why an analysis cannot be done, rather than conducting an analysis while understanding and acknowledging the data gaps. In order to determine the effects of the action on Southern Resident killer whales, the question, "Does the project reduce prey availability in the **short-term** or hinder viability/recovery potential of prey in the **long-term**?" needs to be answered.

   i. **Short-term effects** can be evaluated by comparing: (1) the level of prey reduction caused by project operations and (2) the level of mitigation from the action agencies' funding of hatcheries.

      (a) The level of prey reduction caused by project operations can be quantified by quantifying the level of mortality on the salmonid life-stages affected, and evaluating how that level relates to fewer salmon in the ocean.

      (b) Data necessary to determine the level of mitigation from the action agencies' funding of hatcheries include the percentage of returning Chinook salmon (all runs) that are hatchery-origin fish and the percentage of all funding for Chinook salmon hatchery programs that is contributed by the action agency(s). For example, if 50 percent of returns are hatchery-origin and the action agencies contribute 25 percent of all funding for Chinook salmon hatchery programs, then the action agencies are responsible for making 0.5*0.25=12.5 percent of the Chinook salmon that return. Using the above example, the level of mitigation (12.5 percent) is compared to the level of prey reduction caused by project operations.

   ii. **Long-term effects** can be tied to the conclusions for salmon, provided analyses are conducted on all runs of Chinook salmon.

j. Climate change: Climate change (Study 9 suite) was modeled for 4 scenarios: (1) wetter and more warming, (2) drier and more warming, (3) wetter and less warming, and (4)

drier and less warming. The results were applied to hydrology, and effects on potential reservoir storage and egg mortality. However, the model and BA lack:

i. discussions of the implications of the model results for fish, including other life history stages besides eggs;
ii. other temperature effects, like effects on foraging, growth, development, susceptibility to disease, and changes in the aquatic food web;
iii. changes in peak flow timing and amount of flow, and the effects of extended drought periods;
iv. climate change effects on ocean conditions, including potential changes in Pacific Decadal Oscillation/El Nino Southern Oscillation cycles, ocean acidification, and the effect of sea level rise on operations in the Delta. These effects from climate change are cumulative effects that need to be considered in concert with the effects of the action. As ocean conditions change, the species will likely respond differently to the effects of the action.
v. comparison between study 9 (climate change) and study 7.0 (environmental baseline).
vi. consideration of the effects of climate change in the summary of effects analysis (OCAP BA chapter 15).

k. Effects of the action "refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline." (50 CFR 402.02).
   i. The environmental baseline section should include the past and present impacts of all Federal, State, or private actions in the action area, including the past and present impacts of OCAP on each of the listed species. For example:
      (a) OCAP BA p.6-39 says,

> "Water is drawn from the central Delta through lower Old River and Middle River to the export pumps when combined CVP/SWP pumping exceeds the flow of the San Joaquin River water down the upper reach of Old River and Middle Rivers. This situation likely increases the risk of juvenile salmon migrating to the south Delta and perhaps being entrained at the SWP and CVP facilities. This condition can be changed either by reducing exports or increasing Delta inflows or the use of physical barriers and gates. Decreasing exports to eliminate net upstream flows (or, if net flows are downstream, cause an increase in positive downstream flows) may reduce the chances of migrating juvenile salmonids moving up lower Old River towards the CVP/SWP diversions. Tidal flows, which are substantially greater than net flows, play an important role in salmon migrations."

      Base on the above paragraph, the reader does not know what the current operations of the CVP and SWP are, and their influences on the timing and survival of emigrating juvenile Chinook salmon.
      (b) OCAP BA p.1-7 (Water Contracts): Please provide NMFS with, or refer us to, the specific location in the appendix where actual contracted deliveries are summarized for the last 15 years.

ii. The BA needs to describe the cumulative effects of future reasonably certain to occur State, Tribal, local, or private actions in the action area.

iii. Chapter 10 (CVP and SWP Reservoir Operations) provides a great deal of modeling information and results on the major tributaries. However, the entire chapter lacks any interpretation of model results or synthesis of effects on the listed species. For example, the specific number of years that Shasta End-of-September carryover storage is not likely to be met in the future is not indicated. This is critical for determining future impacts on cold water availability.

iv. The Feather River section (OCAP BA pp.10-56 through 10-57) is very confusing and appears to use a different set of criteria for evaluation of SWP operations (*i.e.*, CESA or NEPA) than the OCAP BA. The operations on Feather River compare OCAP model runs to Study 4a, which appears to be from the 2004 OCAP BA, and is not a model run described in the 2008 OCAP BA.

v. Chapter 11 should have incorporated the impacts identified in Chapter 10 and explained how they would impact individuals and then populations. Unfortunately, it does not go beyond making general statements about the impacts, and without citations or scientific rationale. For example, "Effects of RBDD operation on steelhead run timing would be unchanged from the current condition. About 16 percent of steelhead would still be delayed. Steelhead this early in the run are not ready to spawn and steelhead are repeat spawners so the slight delay of a small portion of the steelhead run is not a big effect on steelhead" (OCAP BA pp.11-47 through 11-48).

vi. The critical habitat analysis (OCAP BA pp.11-78 through 11-79) lacks any analysis of effects of the action on primary constituent elements or essential features of critical habitat, and does not quantify impacts or summarize the significant effects resulting from project operations discussed in Chapter 10. Instead, the reader is referred to earlier chapters (3 and 5) that describe the life history of salmonids and their critical habitat designations. In the environmental baseline section, Reclamation needs to describe the critical habitat for each anadromous salmonid species in the action area by life history stage and habitat needs, then describe the past and present impacts of all Federal, State, or private actions in the action area, including the impacts past and present impacts of OCAP on those primary constituent elements and habitat features. Only then will NMFS, and other readers, understand Reclamation's summary of effects in chapter 11 that all primary constituent elements in the upstream areas (chapter 11) will remain about the same as a result of the project. Despite a lack of critical habitat analysis for the Delta (chapter 13), "likely to adversely affect" effect determinations were made for all anadromous salmonid designated critical habitats (chapter 15).

l. In consideration of the risks associated with hatchery raised mitigation fish (OCAP BA pp.11-74 through 11-78), Reclamation should analyze the proposed operations of the Feather River Hatchery, rather than utilize the no action alternative under the National Environmental Policy Act (NEPA).

m. Use of the NEPA term "less than significant" is inappropriate to characterize effects of the South Delta Improvement Project in an ESA evaluation.

n. CVP and SWP delta effects on species (Chapter 13)

i. Based on the analysis provided, the reader is not able to ascertain the magnitude of direct and indirect effects on listed species.
ii. Combining water years into only two classifications (wet and dry years) tends to oversimplify results and effects to listed species.
iii. The results for salvaged steelhead are probably significantly underestimated because steelhead salvage results are only based on non-clipped (wild) juveniles observed at the Delta Fish Facilities from 1998-2007. Since Coleman National Fish Hatchery and Feather River Hatchery steelhead are considered part of the CV steelhead DPS, all hatchery and wild fish need to be considered in the Delta effects section. The proportion of the total hatchery fish salvaged that are Coleman National Fish Hatchery and Feather River Hatchery origin also needs to be determined. Likewise, since salvage of hatchery winter-run Chinook salmon is not reported, those results are likely underestimated as well.
iv. Temporary barriers:
    (a) Effects to green sturgeon need to be analyzed (OCAP BA pp.13-59 through 13-61).
    (b) Mitigation measures are described as "a necessary part of ESA consultation," yet no measures are described. This also indicates an inadequate project description.
    (c) A notch in the barriers is described as providing passage for migrating adult salmon (OCAP BA p.13-62), but this was not described in chapter 2 (Project Description). In addition, there is no analysis to determine the effects (*i.e.*, effectiveness) of this "mitigation/conservation" measure on all of the anadromous listed species.
    (d) The "design of the gate structures also will ensure successful passage" (OCAP BA p.13-69), yet no design is shown, or explanation given for this conclusion. The first part of this effects discussion says green sturgeon are *not blocked*, yet the second part says that their movement will be *minimized*. This statement seems to contradict the conclusion.

o. Much of the statements and conclusions regarding the effects of the action need scientific bases, with reference to best scientific and commercial data available.
p. All conclusions in Chapter 15 (Summary of Effects) end in "likely to adversely effect," yet there is no scientific basis for each conclusion.

5. Relevant reports, including any environmental impact statement, environmental assessment, or biological assessment prepared [50 CFR 402.14(c)(5)].

a. Technical review of the BA: Maria Rea's July 30, 2007, declaration (submitted to the United States District Court, Eastern District of California, pursuant to Pacific Coast Federation of Fishermen's Associations/Institute for Fisheries Resources, *et al.*, vs. Carlos M. Gutierrez *et al.*, case number 1:06-CV-245 OWW LJO) stated that (aside from the specific dates) a final biological opinion would likely be issued 9 months after a final, technically reviewed, BA is issued. To date, NMFS has not been successful in obtaining a copy of the technical review report. Also, Reclamation is currently in the process of "...working on our response report to the OCAP technical review panel report..." [June 16, 2008, e-mail from Donna Garcia (Reclamation) to Rhonda Reed (NMFS)], which means either (1) Reclamation does not intend to incorporate the technical review

comments into the BA, or (2) Reclamation plans on issuing another revised BA to the U.S. Fish and Wildlife Service (FWS) and NMFS. Please provide NMFS the technical review report and your answer as to whether a revised BA that addresses the review is forthcoming, or if no further changes to respond to the review will be made to the BA.

b. The NMFS 2004 OCAP biological opinion was peer reviewed by the California Bay-Delta Authority, Center for Independent Experts, and also the NMFS-Southwest Fisheries Science Center. Biological opinions are based on information provided in biological assessments. Although the peer reviews pertained to the NMFS' 2004 OCAP biological opinion, many of the comments applied to the 2004 OCAP BA. For example:
   i. The California Bay-Delta Authority (January 3, 2006) review identified 15 specific issues or areas in the biological opinion, which if addressed, would improve the scientific basis and synthesis of information used in the biological opinion. Issue 7, lack of a comprehensive population approach to jeopardy assessment, pertains to the biological opinion. However, issues that should be addressed in the BA include discussions of the potential effects of smolt migratory behavior and predatory fish on juvenile survival (Issue 9), inadequate accounting for fluctuations in ocean conditions that effect salmon survival (Issue 14), and too little attention devoted to effects of future global climate change (Issue 15).
   ii. Jean-Jacque Maguire (Center for Independent Expert reviewer, January 12, 2006) stated (on page 8 of 21) that,

> "The salmon mortality model only evaluates the effects of temperature on mortality for early life stages, and it does not evaluate potential impact on emergent fry, smolts, juvenile emigrants, or adults, nor does it consider other sources of mortality (in-stream flows, predation, etc.), which at times may be more important than temperature related mortality. As such, it is of limited usefulness."

As previously discussed, please provide responses as to how each peer review comment was addressed in the 2008 OCAP BA, as appropriate.

6. Any other relevant available information on the action, the affected listed species, or critical habitat [50 CFR 402.14(c)(6)].

a. Reclamation did not include a listing of the references cited in the OCAP BA. This is critical in determining if the best scientific and commercial data available was used in developing the BA [50 CFR 402.14(d)].

Essential Fish Habitat

The following information is necessary to include in the EFH Assessment.

1. Pacific Coast Salmon (Salmon) EFH
   a. The Upper Klamath-Trinity Rivers Chinook salmon Evolutionarily Significant Unit (ESU) is exposed to the same project-related stressors (*e.g.*, high temperatures, low flows, limited spawning/rearing habitat, *etc.*) as the ESA-listed Southern Oregon/Northern California Coast coho salmon ESU, which is analyzed in the BA. Therefore, potential effects to the EFH of the Upper Klamath-Trinity Rivers Chinook

salmon ESU associated with the operation of the project should also be included in the EFH Assessment.

b. There is a substantial amount of information included in Appendix A (entitled "Identification and Description of Essential Fish Habitat, Adverse Impacts, and Recommended Conservation Measures for Salmon") of the Salmon Fishery Management Plan (FMP) that should be incorporated into the EFH Assessment.

c. Salmon FMP Appendix A, Section 3.2: Tables A-8 and A-9 should be used to develop a comprehensive list of all the habitat types and components that can be impacted by activities associated with the operation of the project. Once established, this list should serve as the basis for evaluating impacts to EFH in each watershed to ensure a more consistent and comprehensive assessment. Table A-10 should also be used to evaluate how the project operations perform with respect to established indicators and ranges of acceptable values in each watershed. Moreover, the information within Table A-11 should be utilized to further address habitat concerns during specific life stages. Finally, the detailed information regarding potential impacts and conservation measures associated with nonfishing activities provided in section 3.2.5 is useful in determining any effect to the functioning of Salmon EFH. Therefore, incorporating this information into the EFH Assessment would improve the utility of the document.

d. OCAP BA pp.16-6 through 16-48. There is a general lack of detailed information to accurately assess potential impacts to Salmon EFH within a given watershed associated with project operations. There are many cases throughout the EFH Assessment where potential effects are mentioned, but not fully assessed. For example:

   i. The entrainment issue associated with the export pumps is mentioned on OCAP BA p.16-6 as having a "potentially significant but unknown impact," but no additional information is provided.

   ii. OCAP BA p.16-48 states "Adult migration can be influenced by cross-channel operations and salinity gate operations within the Suisun Marsh area," yet this issue/statement is not developed further.

   iii. The issue of redd dewatering or fry stranding may be introduced as being possible at certain times. However, specific flow levels or times of year during which those issues are likely to occur are not provided.

   iv. Data on temperatures within an individual watershed that are known to cause increased disease incidence, and when those temperatures have been exceeded in the past, are not provided. Disease incidence, as it pertains to spring-run Chinook salmon at the Oroville Facilities on the Feather River, was discussed (OCAP BA p.5-45). However, it was not apparent where, if at all, this issue was addressed for fall-run Chinook salmon.

   v. The information pertaining to the American River provides a potential example of a watershed where this type of evaluation and comparison with threshold values, or goals, was attempted, and therefore, where an adequate assessment of adverse impacts to salmon EFH may be possible.

   vi. OCAP BA pp.16-30 through 16-32: The "Sacramento River" section provides a list of stressors identified in the Sacramento River and focuses on water temperature and flow fluctuations as the main short-term factors affected by project operations. In addition to providing spawning run times (and which runs face the most difficult conditions), the assessment includes figures depicting historical fall-run Chinook

salmon escapements and daily average flows in the river. However, the flow figure lacks data from 2002 – present, a critical time period in which a major decline in spawning escapement for fall-run Chinook salmon has occurred (especially the 2007 returns). This section needs a discussion of the different flow regimes that led to unsuccessful (and successful) broods, threshold flows and temperatures in the river, *etc.* For instance, at what flow level, especially in the stretch of the Sacramento River from Keswick Dam downstream to Red Bluff where the majority of Chinook salmon spawning occurs, does redd dewatering and/or the stranding of fry and juveniles occur? During what times of the year are these flow levels most likely to be observed? Without specific information on what flows and temperatures can be expected to negatively (and positively) impact these runs, such as historical time series data showing these threshold levels and previous instances when they have been exceeded, assessing their effects on EFH for fall- and late fall-run Chinook salmon will be highly problematic.

vii. OCAP BA p.16-32: The temperature control device used to maintain desirable water temperatures in the Sacramento River for downstream fish habitat is mentioned here. However, there is no specific discussion as to how this device is used to address habitat needs for fall- and late fall-run Chinook salmon.

viii. A conclusion is made that although the temperatures below Thermalito will be too warm for adult holding and spawning, they will be appropriate for juvenile rearing and emigration (OCAP BA p.16-50). Yet on OCAP BA p.16-42, it was noted that the vast majority of fish in the lower Feather River system emigrate as fry, indicating a limited amount of rearing habitat or a decrease in habitat suitability later in the season. Therefore, an analysis demonstrating the specific seasonal flow and temperature conditions that elicit the early migration response should be incorporated into the assessment. Alternatively, at a minimum, some additional explanation as to the specific conditions and/or thresholds that affect the habitat suitability, or lack thereof, in these different reaches in the Feather River should be included.

ix. OCAP BA p. 16-50: The "Feather River" section concludes that flow and water temperature should be suitable year round for all fall-run Chinook salmon life history stages in the low flow channel (LFC). However, there is no rationale supporting this statement included within the text other than the statement that the remaining flow after diversions is typically 600 cfs in that section of the channel. In fact, on p.16-44, the statement was made that mean monthly flows in the LFC are only 5 – 38 percent of pre-dam levels. There is a discussion about general patterns regarding current and historic flows, but the assessment lacks specific information to compare with suitable temperatures for different life-stages.

e. OCAP BA p.16-23: The "Population Trends" section lacks any discussion referring to the sharp decline in salmon production in the Central Valley in recent years. This decline includes a record low number of returning age-2 fish in 2007, and a record low projection of approximately 59,000 Sacramento River fall-run Chinook salmon returning in 2008. These circumstances led to an unprecedented total closure of Chinook salmon-directed fisheries off the coasts of California and Oregon in 2008. The magnitude of the population decline and the highly unusual actions taken to restrict the harvest of these fish warrant further discussion on this topic.

f. OCAP BA p.16-27: The "Hatchery History and Operations" section is incomplete.
g. OCAP BA p.16-28. The "Hydrology" section is incomplete and limited to only two flow graphs, which are not referenced in the text.

2. West Coast Groundfish (Groundfish) EFH
   a. Amendment 19 and Appendices B, C and D include extensive material on EFH for groundfish species and should be used to evaluate the need to include additional groundfish species in the EFH Assessment. Specifically, several species, including Leopard Shark, Lingcod, English Sole and various rockfish species, are documented as having one or more life stages associated with estuarine environments (see summaries in tables 1 – 8 at the end of Section B.2 of Appendix B). The specific use of San Francisco Bay by various species, which is particularly relevant to this project, is included in Appendix B. If the review does not result in additional species being included in the assessment, justification as to why only starry flounder was chosen should be provided.
   b. Appendix D (entitled "Nonfishing Effects on West Coast Groundfish Essential Fish Habitat and Recommended Conservation Measures") of the Groundfish FMP is divided into sections that address specific activities, describe any potential adverse impacts to EFH, and recommend conservation measures. Information from Appendix D that applies to OCAP should be incorporated into the EFH Assessment.
   c. OCAP BA p.16-1: Starry flounder is referred to here as a "monitored" species under the Groundfish FMP. However, unlike the CPS FMP, the Groundfish FMP does not distinguish between managed and monitored (or assessed and unassessed) species.
3. Coastal Pelagic Species (CPS) EFH
   a. Appendix D to the CPS FMP should be used to evaluate the need to include additional CPS species in the EFH Assessment. If the review does not result in additional species being included in the assessment, justification as to why only Northern anchovy was chosen should be provided.
   b. Appendix D to the CPS FMP addresses EFH for CPS species, which includes information on the general distribution of different life stages for the different species managed under the CPS FMP (*e.g.*, table 2.0 of Appendix D). Information from Appendix D that applies to OCAP should be incorporated into the EFH Assessment.
4. Complete citation (and as stated above, the references), to all documents cited, including "NOAA ( )" (OCAP BA p.16-7); "(citation)" (OCAP BA p.16-21), and "Stein xxxx" (OCAP BA p.16-21).

BDCP1639

From: Kimberly Ambert - NOAA Affiliate <kimberly.ambert@noaa.gov>
Sent: Tuesday, July 29, 2014 11:28 AM
To: bdcp comments - NOAA Service Account
Cc: Bob Farrell; Bob Turner; Brian Corrigan; Buzz Brizendine; Cal Groen; Caren Braby; Chris Kern; Christina Wang; Craig Shuman; Dale Myer; Dan Wolford; Dave Ortmann; David Crabbe; David Hanson; David Hogan; David Sones; Dorothy Lowman; Frank Lockhart; Gregg Casad; Gway Kirchner; Herbert Pollard; Jeff Feldner; Joanna Grebel; Judson Feder; Kevin Duffy; Kyle (DFW); Marci Yaremko; Mariam Mccall; Mark Helvey; Michele K Culver, (DFW); Pat Pattillo; Peter Dygert; Phil Anderson; Rich Lincoln; Steven Haeseker; Troy Buell; Heidi Taylor - NOAA Federal; Arlene Merems; Bryant Chesney - NOAA Federal; Correigh Greene; Douglas DeHart; Eric Wilkins; Fran Recht; Jennifer Quan; Joel Kawahara; John Stadler; Lisa Wooninck - NOAA Federal; Liz Hamilton; Mike Orcutt; Scott Grunder; Stephen Scheiblauer; Butch Smith; Calvin Frank; Craig Stone; Dave Bitts; Dave Hillemeier; Gerry Reinholdt; Greg Johnson; Jim Hie; Jim Olson; Marc Gorelnik; Mike Sorenson; Paul Heikkila; Richard Heap; Richard Scully; Steve Watrous
Subject: PFMC Letter Re: Comments on Bay Delta Conservation Plan DEIR/DEIS
Attachments: BDCP letter FinalDraft.pdf; CACSST-to-Bonham-CDFW-on-BDCP-NCCP_022614.pdf; NMFS letter to BOR on EFH Final_7-28-10.pdf

Please see the attached letter from Dr. Donald McIsaac, Executive Director of the Pacific Fishery Management Council (Council) regarding Council comments on the Bay Delta Conservation Plan and associated Draft Environmental Impact Report/Environmental Impact Statement. Should you have any questions, please contact Dr. Donald McIsaac or Ms. Jennifer Gilden at 503-820-2280 or toll-free at 1-866-806-7204.

Thank you.

--
Kimberly Ambert
Administrative Specialist

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July 29, 2014

BDCP Comments
Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

VIA EMAIL: BDCP.Comments@noaa.gov

Subject: Comments on Bay-Delta Conservation Plan (BDCP) and associated environmental impact report/environmental impact statement (EIR/EIS)

Dear Mr. Wulff:

The Bay Area Clean Water Agencies (BACWA) appreciates the opportunity to comment on the Bay-Delta Conservation Plan (BDCP) and associated environmental impact report/environmental impact statement (EIR/EIS). BACWA is a joint powers agency whose members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that collectively provide sanitary services to over 6.5 million people in the nine-county San Francisco Bay Area. BACWA members are public agencies, governed by elected officials and managed by professionals who protect the environment and public health. On behalf of its member agencies, BACWA requests that following comments on the BDCP's impact on contaminants be considered.

The area studied for impacts by the BDCP is delineated at its western boundary at the Benicia Bridge (page 4 of the BDCP). While the EIR/EIS expands this area to consider upstream impacts, it does not consider downstream impacts. Since the San Francisco Bay is hydraulically connected to the Sacramento-San Joaquin Delta (Delta), the BDCP should evaluate impacts to the entire San Francisco Bay. BACWA is particularly concerned about the impact of the BDCP on selenium and nutrients.

1. **Impacts on Selenium loads**

The North San Francisco Bay is 303(d) listed for selenium, and therefore selenium loads and impacts have been studied for many years[1]. The Delta contribution of selenium to Suisun Bay, in particular from the San Joaquin River, is well documented. Implementing the BDCP project would increase the flow from the San Joaquin River to Suisun Bay relative to the flow from the

[1] For example, please see the North San Francisco Bay Selenium Characterization Study (2012) prepared by Tetra Tech in support of the North San Francisco Bay Selenium TMDL: ftp://swrcb2a.swrcb.ca.gov/pub/rwqcb2/Staff/Barbara%20Baginska/Se%20DrftFinal%20Rpt%2010_5_12.pdf

Sacramento River. Since the San Joaquin River has much higher selenium concentrations than the Sacramento River, this could increase the loading of selenium to Suisun Bay, and ultimately to the entire North San Francisco Bay.

The EIR/EIS proposes that selenium in Suisun Bay will be controlled by the TMDL under development by the San Francisco Regional Water Quality Control Board: "*Discharges from point sources in North San Francisco Bay (i.e., refineries) that contribute selenium to Suisun Bay and the western Delta are 21 expected to be reduced through a TMDL under development by the San Francisco Bay Water Board that is expected to result in decreasing discharges of selenium.*" (Page 8M-5 Lines 19-36). This assessment places the burden of mitigating the environmental impacts of selenium from the proposed BDCP project to dischargers downstream from the project. The combined selenium load from all refineries is estimated to be approximately 500 kg/yr, whereas approximately 2,700 kg/yr comes from the delta outflow. Contributions from point source dischargers other than the refineries are much smaller[2]. Therefore, a small increase in selenium loading from the Delta entails a much larger proportional decrease by point source dischargers. BACWA believes that it is inappropriate to plan to increase discharges of a 303(d) listed constituent while relying on the TMDL process to offset the increase in the future.

BACWA requests that impacts on the entire San Francisco Bay, not merely the portion that is upstream of the Benicia Bridge, be considered in the EIR/EIS. More current data, such as those associated with the North San Francisco Bay TMDL development, should be used to evaluate the impacts of the BDCP on selenium loading. Additionally, the BDCP should not rely on future regulatory actions by outside entities to mitigate adverse impacts of the projects.

2. Impacts on Nutrient Concentrations in the San Francisco Bay

Nutrients in the San Francisco Bay are a major issue for the Bay Area water quality community. Historically, the San Francisco Bay has not been adversely impacted by nutrient loading, although there are indications that its resilience is decreasing. Numerous scientific studies are being conducted by several entities to understand the impact of nutrients on the San Francisco Bay. The San Francisco Bay Regional Water Quality Control Board recently adopted the first Watershed Permit for Nutrients for municipal dischargers to the San Francisco Bay. If adverse impacts of nutrients are shown by the ongoing scientific studies, nutrient control management actions will be required, the cost of which will be borne by our members.

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[2] For an estimate of selenium loadings to North San Francisco Bay, please see North San Francisco Bay Selenium TMDL Preliminary Project Report (2011) at: http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/northsfbayselenium/SeTMDL_PreliminaryReport_01-11.pdf

The largest source of nutrients in the North San Francisco Bay is flows from the Delta[3]. Concentrations of nitrogen species are higher in the San Joaquin River than the Sacramento River[4], and this disparity will be magnified once the Sacramento Regional Wastewater Treatment Plant completes its nutrient control upgrades. Since the project will increase San Joaquin River flows to the delta compared to Sacramento River flows, the project has the potential to increase nutrient loads to the San Francisco Bay compared to a no-project alternative.

Scientists are studying how the different nitrogen and phosphorus species may interact to impact the food web in the Bay-Delta ecosystem. However, the BDCP and EIR/EIS currently only consider the ammonia/um form of nitrogen. Furthermore, the analysis is semi-quantitative and only considers wastewater treatment facilities as sources, whereas agricultural non-point sources may be a significant source when considering additional nitrogen species. Given the importance of the ongoing nutrient projects and development of regulatory mechanisms in the San Francisco Bay and throughout the State, the BDCP and EIR/EIS should complete a quantitative analysis to assess the project's impacts on nutrient concentrations and loads more comprehensively.

BACWA requests that the BDCP conduct a quantitative analysis of how the project will impact loads of nitrogen and phosphorus species into Suisun Bay and San Francisco Bay.

BACWA appreciates the opportunity to comment on the BDCP and thanks you for considering our concerns.

Respectfully Submitted,

David R. Williams

David R. Williams
Executive Director
Bay Area Clean Water Agencies

cc: BACWA Board

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[3] Nutrient loads to the Bay are calculated in Novick, E. and Senn, D., External Nutrient Loads to the San Francisco Bay (2014), at: http://www.sfei.org/sites/default/files/NutrientLoadsFINAL_FINAL_Jan232014_0.pdf

[4] For a recent estimate of nutrient concentrations and loads in the San Joaquin and Sacramento River, please see Novick, E., Characterizing Nutrient TRENDS, Loads, and Transformations in Suisun Bay and the Delta (2014), a poster presented at the February 2014 IEP meeting, at: http://www.sfei.org/sites/default/files/IEP%202014%20ENovick%20FINAL.pdf

BDCP1640

From: Sherry Hull <shull@bacwa.org>
Sent: Tuesday, July 29, 2014 11:26 AM
To: Ryan Wulff (BDCP.Comments@noaa.gov)
Cc: Dave Williams; Amy J. Chastain (AChastain@sfwater.org); Ben Horenstein; Ervin, James; Laura Pagano (LPagano@sfwater.org); Mike Connor (mconnor@ebda.org); Roger Bailey; Tim Potter (TPotter@centralsan.org); Tommy Moala
Subject: Comments on Bay-Delta Conservation Plan (BDCP)
Attachments: BACWA comments BDCP 2014.pdf

Dear Mr. Wulff,

Please find attached Bay Area Clean Water Agencies' comments on Bay-Delta Conservation Plan (BDCP) and associated environmental impact report/environmental impact statement (EIR/EIS).

Please let me know if you have any difficulty opening the attached document.

Thank you.

Sherry Hull

Assistant Executive Director
Bay Area Clean Water Agencies
shull@bacwa.org
415-404-8303

DAVISPARTNERS

July 29, 2014

BDCP Comments
Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Re: Support BDCP EIR/EIS Alternative #4

Dear Mr. Wulff,

On behalf of Davis Partners, LLC, I am writing to express our organization's support for the Bay Delta Conservation Plan (BDCP) and specifically Alternative #4 as outlined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS).

Following the passage of California's comprehensive water package in 2009, our organization has closely watched the BDCP process. We are encouraged by the release of the public draft of the plan and environmental documents. The outcome of this multi-year effort reflects collaboration of public water agencies, state and federal fish and wildlife agencies, business and agricultural stakeholders, local governments and the public.

The draft plan and accompanying environmental documents identify several options for addressing the current challenges with California's water supply delivery system and the Delta ecosystem. We believe that Alternative #4, which provides for three new intakes on the Sacramento River in the northern Delta and a 9,000 cfs tunnel system to convey that water to the existing aqueduct system, coupled with a comprehensive habitat conservation plan for the Delta, is the best alternative to meet California's co-equal goals of water supply reliability and Delta ecosystem restoration.

The construction of new water intakes and related conveyance is an essential element of the BDCP. The proposed twin tunnel system will protect public water supplies if a seismic event were to trigger levee breaks and cause saltwater to intrude from San Francisco Bay. The new intakes in the northern Delta will reduce conflicts between water systems and migrating fish species such as salmon. Habitat improvements will provide native species with the healthy ecosystems they need to survive. 50 years of regulatory stability will protect an estimated 1.1 million jobs throughout the state and create more than 177,000 jobs from construction projects and environmental restoration.

Southern California is rebuilding its aging infrastructure to ensure its water supplies are reliable. We need the same kind of investment in the State Water Project to safeguard our imported supplies. A project of such magnitude will require some difficult decisions and compromise between stakeholders with varying priorities. However, California cannot sit idly by and wait for disaster.

We support BDCP, and specifically Alternative #4, as a workable draft proposal that can lead to a final successful plan of action because it offers the best solution to minimize seismic risk to our state's water supply infrastructure while restoring the Delta's ecosystem.

Sincerely,

Neal Perkey, RPA, FMA
General Manager

Cc: Federal and State Officeholders within the organization's jurisdiction

BDCP1641

From: Neal Perkey, RPA, FMA <Neal.Perkey@davispartners.com>
Sent: Tuesday, July 29, 2014 11:13 AM
To: bdcp.comments@noaa.gov
Subject: Support BDCP EIR/EIS Alternate #4
Attachments: BDCP Letter of Support.pdf

Dear Ryan Wulff,

Please see our attached BDCP letter of support.

Thank you,

Neal Perkey, RPA, FMA
General Manager | #01148527
310.414.0014 off | 310.615.0690 fax
Neal.Perkey@davispartners.com
1960 EAST GRAND AVENUE, #400, EL SEGUNDO, CA 90245

From: Jim Wallace <jimwallace@sbcglobal.net>
Sent: Tuesday, July 29, 2014 11:06 AM
To: BDCP.Comments@noaa.gov
Subject: BDCP Comments July 29 2014
Attachments: Comments Baseline Data.pdf; Comments Chapter 7.pdf; Comments Chapter 9.pdf

National Marine Fisheries Service, US Fish and Wildlife Service, US Bureau of Reclamation, please find attached comments addressing the Bay Delta Conservation Plan Draft EIR/EIS.

All of the comments are directed to the failure of the Draft EIS to meet requirements set forth in NEPA and agency NEPA handbooks.

Thank you, Jim Wallace
PO Box 266
Courtland, CA 95615
July 29, 2014

BDCP1642

From: Jim Wallace
PO Box 266
Courtland, California

Subject: BDCP Draft EIS/EIR Review; Chapter 4 and Appendix 4A

Issue: Baseline Data

I. BDCP EIR/EIS Chapter 4 Approach to Environmental Analysis
A. The BDCP EIS does not meet the requirements of 40 CFR 1502.22, *Incomplete or unavailable information.*
B. Comment:
In accordance with 40 CFR 1502.22, the federal agencies responsible for preparation of the BDCP EIS shall always make clear when data necessary to evaluate reasonably foreseeable significant adverse effects is incomplete or unavailable. The federal agency shall include information the cost of which is not exorbitant to obtain in its analysis of reasonably foreseeable significant adverse effects; or explain how the incomplete information is relevant. Appendix 4A is clear that important information is not available to assess biological, geotechnical, archaeological, floral and faunal effects along proposed tunnel alignment alternatives. Despite statements contained in Appendix 4A, which makes clear information is lacking, the co-lead federal agencies make no attempt to conform to NEPA guidance set forth in 40 CFR 1502.22 and how the lack of those data effects a credible assessment of the effects of the proposed project.

NEPA and CEQA Analysis

NEPA requires that the lead Federal agencies rely on a scientific and analytical basis for the comparison of alternatives (40 CFR1502.16) in making their decisions. Commonly, when preparing a joint document, the lead Federal agency may adopt the CEQA significance thresholds as its scientific basis.

Lead agencies must make their best efforts to predict and evaluate the reasonable, foreseeable, direct, indirect, and cumulative environmental impacts of the proposed project (Federal Action) alternatives. NEPA and CEQA do not require the lead agencies to engage in speculation about impacts that are not reasonably foreseeable (CEQA Guidelines sections 15144 and 15145). In these instances, CEQA does not require a worst-case analysis. Similarly, NEPA does not require a worst-case analysis when confronted with incomplete or unavailable information (40 CFR 1502.22).

In analyzing a proposed project in a joint CEQA/NEPA format, the lead Federal agencies must distinguish the scientific and analytical basis for its decisions separately from the CEQA lead agency decision. Fundamental to this analysis is establishing the NEPA baseline.

For BDCP, the NEPA baseline for determining the significance of impacts is required to be the set of conditions defined by examining the full range of construction and operational activities the applicants could implement and are likely to implement absent permits from the USFWS and NMFS. Unlike the CEQA baseline, which is defined by conditions at a point in time (NOP, February 12, 2013), the NEPA baseline is not bound by statute to a "flat" or "no-growth" scenario. The significance of impacts associated with

implementation of the BDCP or its alternatives is defined by comparison to impacts that would occur under NEPA baseline conditions.

The NEPA baseline should also include other actions that would affect diversions into the intake structures. Those actions should be described under the No Action Alternative. The determination regarding the affects of other actions should be based on direct statements and empirical data from the applicants, and on the judgment and experience of the federal agencies.

BDCP EIS/EIR Appendix 4A: *Summary of Survey Data Collection Efforts by Department of Water Resources to Obtain Information Regarding Baseline Conditions in Areas That Could Be Affected by BDCP*

Appendix 4A corresponds to Chapter 4, Approach *to the Environmental Analysis*, and pleads the DWR case that private property owners denied access to land such that DWR could not gather necessary information:

> DWR has taken actions to obtain access to land in the Delta for the purpose of gathering information to be used in environmental review. DWR, however, has not been able to get access [to] a substantial number of the private properties that would yield relevant information. The problem repeatedly faced by DWR in such efforts has been the unwillingness of private property owners to allow entry onto their properties. Many landowners have gone to court to prohibit access. This appendix describes the actions taken by DWR to gain access to properties within the Delta as needed to fulfill the requirements of CEQA and NEPA and federal permits (i.e., Sections 408 and 404(b)) for the BDCP.

Appendix 4A describes the history of attempts to obtain the temporary entry permits and opines that private property owners have obstructed their attempts to gather information. The appendix concludes:

> As the preceding discussion shows, DWR has been unable, despite diligent efforts, to gain access to all of the private properties within the Delta on which it would like to conduct ground surveys, Environmental Site Assessments, and engineering, biological, geotechnical, archaeological, floral and faunal studies. Although DWR has been able to conduct some of the geotechnical studies it contemplated originally, it has not been able to conduct all such studies because of the court order issued April 8, 2011. DWR has challenged that court decision and is currently seeking access to land in the Delta for the purpose of conducting the geotechnical activities through the use of eminent domain. In short, DWR has done all that is reasonably feasible under the circumstances to conduct thorough investigation of the impacts of all of the BDCP alternatives.

On June 24, 2005, James Connaughton, Chairman of the Council on Environmental Quality wrote in a letter to heads of Federal agencies:

> The purpose of 40 CFR 1502.22 is to disclose the fact of incomplete or unavailable information, to acquire information if it is "relevant to reasonably foreseeable significant adverse impacts" and "essential to a reasoned choice among alternatives," and to advance decision-making in the absence of all information regarding reasonably foreseeable effects. The focus of this provision is, first and foremost, on "significant adverse impacts." The agency must find that the incomplete information is relevant to a "reasonably foreseeable" and "significant" impact before the agency is required to comply with 40 CFR 1502.22. If the incomplete cumulative effects information meets that threshold, the agency must consider the "overall costs" of obtaining the information. 40 CFR 1502.22(a) The term "overall costs" encompasses financial costs and other costs such as costs in terms of time (delay), program and personnel commitments. The requirement to determine if the "overall costs" of obtaining information is exorbitant should not be interpreted as a requirement to weigh the cost of obtaining the information against the severity of the effects, or to perform a cost-benefit analysis. Rather, the agency must assess overall costs in light of agency environmental program needs.

Analysis

The Council on Environmental Quality directs Federal agencies to obtain project-specific baseline information to compare the effects of the proposed action and its alternatives on the human environment if the costs to do so are not exorbitant (40 CFR 1502.22(a)). If collecting the data is not possible, the EIS must disclose what information is not available and identify the relevance of the information (40 CFR 1502.22(b)(1)(2)(3)). The DWR explanations in Appendix 4A (and in Chapter 4) make no reference to the costs of obtaining data on private land or if those costs made it exorbitantly expensive to do so

The EIS is largely silent with regards to the significance of the incomplete information, except in Chapter 4, Table 4-1. *Overview of BDCP EIR/EIS Modeling Tools*, Habitat Suitability Models (HSM), p. 4-16: "The models are not formulated on the basis of species occurrence data, which is incomplete for most covered species in the Plan Area. Instead, species occurrence data are used to verify the habitat models and, as necessary, revise the input data." However, this reference does not seem to be the result of the agency's inability to gain access to private property.

The DWR explanation pursuant to incomplete information does not meet the requirements set forth in 40 CFR 1502.22, *Incomplete or unavailable information.*

> When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.
>
> (a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

> (b) If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement:
> 1. A statement that such information is incomplete or unavailable;
> 2. A statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;
> 3. A summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and
> 4. The agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.
> (c) The amended regulation will be applicable to all environmental impact statements for which a Notice of Intent (40 CFR 1508.22) is published in the Federal Register on or after May 27, 1986. For environmental impact statements in progress, agencies may choose to comply with the requirements of either the original or amended regulation.

Based upon Chapter 4 and Appendix 4A, and the NEPA guidance provided by the CEQ pertaining to incomplete or unavailable information the BDCP EIS fails to comply with NEPA and makes an evaluation of potential project impacts impossible to reasonably evaluate:

1. Appendix 4A does not meet directives in 40 CFR 1502.22. All three Federal agency NEPA Handbooks refers to 1502.22. The NOAA/NMFS handbook does not offer specific instructions to comply with 1502.22. The USFWS handbook (516 DM 4.1, paragraph 4.13) notes that, "The references to overall costs in this section [EIS preparation guidance] are not limited to market costs, but include other costs to society such as social costs due to delay."

However, the Bureau's handbook provides explicit guidance to comply with 1502.22 and DOI NEPA Implementing Guidance (43 CFR 46.125). This guidance is specific to the BoR and does not necessarily apply to the USFWS.

> Bureau NEPA Handbook, p. 3-15, February 2012[1].
>
> Reclamation will obtain the information necessary to fully evaluate all reasonably foreseeable, significant adverse impacts in NEPA documents, unless the information cannot be obtained because the costs are too great or the means of getting it are not available. Data and new information needs should be identified early enough in the process to enable timely completion of required studies and integration of the information.

[1] See attached table that compares BoR NEPA Handbook 1990/2000 to BoR NEPA Handbook dated February 2012.

The determination of costs being too great (i.e., exorbitant) is the responsibility of the deciding official. In addition to the monetary costs of obtaining the information, consideration of other nonmonetary costs, such as social costs, delays, opportunity costs, and non-fulfillment or non-timely fulfillment of statutory mandates, is appropriate.

Reclamation should carefully evaluate whether to move ahead on proposals for which limited relevant information may prevent meaningful analysis of alternatives, impacts, or the means to mitigate impacts. If information cannot be obtained, the NEPA document will make it clear that such information is lacking and why, discuss how that information would be relevant to the analysis, provide a summary of relevant existing data, and provide Reclamation's evaluation of potential impacts based upon generally accepted approaches, methods, or models.

Some information may not be available to Reclamation because it is proprietary information maintained by an applicant (i.e., a non-Federal entity requesting Reclamation to take some action). The CEQ regulations in 40 CFR 1502.21 state that "Material based on proprietary data which is itself not available for review and comment shall not be incorporated by reference." Reclamation should work closely with the applicant on questions that deal with proprietary issues or information.

2. Based on a word search of the BDCP EIS/EIR, we could not find any chapter or section which complies with the directives in 1502.22. That is, we could not find a discussion of the incomplete information; a summary of relevant existing data and an evaluation of potential impacts based upon generally accepted approaches, methods or models. In short, the Federal agencies did not comply with 1502.22. In Appendix 4A DWR shines a bright light on incomplete data. DWR makes neither argument that the costs to comply with NEPA are exorbitant, nor does DWR attempt to identify how the incomplete information affects an evaluation of the project impacts.

3. DWR does not make a case that costs to obtain the incomplete information are exorbitant. We could not find a discussion regarding any kind of cost associated with gaining access to private property for the purpose of collecting environmental data. CEQ guidance provides that costs can include nonmonetary costs, such as social costs, delays, opportunity costs, and non-fulfillment or non-timely fulfillment of statutory mandates. There is no discussion in the EIS that provides the reader with an understanding of nonmonetary costs.

From: Jim Wallace
PO Box 266
Courtland, California

Subject: BDCP Draft EIR/EIS Comments

Chapter 7 and Appendix 7A: Groundwater

Throughout the Draft EIR/EIS a groundwater model is used to attempt to describe the environmental setting/affected environment and the environmental consequences on groundwater resources. The groundwater model used throughout the document to assess groundwater conditions in the plan area and upstream and service export areas is based on one developed by the US Geological Survey, referred to as CVHM. The application and limitations of CVHM are described in US Geological Survey Professional Paper 1776 (2009). The consulting firm, CH2MHill, listed on as one of the document preparers modified the CVHM model to assess groundwater conditions (environmental setting) and environmental consequences in the plan area (Delta) and renamed that modified model "CVHM-D", where the nomenclature "D" represents the Delta. Most of the groundwater section descriptive text and the data used as input to the CVHM and CVHM-D models were extracted from the State of California, Department of Water Resources publication, Bulletin 118-03 (February 2004).

Groundwater modeling, the project (alternatives) impacts on groundwater and the cumulative effects of the project (alternatives) on groundwater do not meet the requirements set forth in NEPA, nor does Chapter 7 or Appendix 7A of the Draft EIR/EIS identify all potential effects likely to impact groundwater resources.

Comment No. 1
The EIS fails to meet the requirements set forth in 40 CFR Section 1502.15 Affected Environment:

NEPA guidance requires that the EIS "...succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration." The EIS does not provide site-specific groundwater or aquifer data along the proposed conveyance routes or at the intake locations. The EIS uses only generalized data from published reports, primarily DWR Bulletin 118-2003. Bulletin 118-2003 provides generalized area information. No detailed groundwater or aquifer characteristic data are available for most of the project area within the Delta. The data necessary for a comprehensive, analysis of the groundwater setting along the alternative conveyance routes and intake locations are not available to a reviewer.

Section 7.1.1, *Potential Environmental Effects Area,* provides only regional generalized descriptions of the groundwater settings, and devotes significant discussion to regional groundwater conditions outside of the Delta. There are no specific discussions about groundwater or aquifer conditions in the Delta or that describe environmental and specific groundwater conditions within the alternative alignments. However, Section 7.3, *Environmental Consequences*, attempts to "describe[s] the potential groundwater-related effects that could result from project construction, operation, and maintenance." Regional groundwater data extracted from Bulletin 118-2003, the primary reference used in EIS Chapter 7, provides virtually no specific groundwater or aquifer data for project alternatives locations and site-specific groundwater data.

The EIS avoids reference to existing groundwater data as published in DWR Bulletin 118-3, *Evaluation of Ground Water Resources: Sacramento County*, 1974, which provides geologic data for superjacent stream channel deposits which cross-cut the northern Delta and which will affect and be affected by proposed dewatering and construction activities. Furthermore, the EIS makes no attempt to describe the

sedimentary textures or aquifer characteristics along the alignment alternatives, instead relying on groundwater modeling as described in and derived from USGS Professional Paper 1766, *Groundwater Availability of the Central Valley Aquifer, California.* However, according to Professional Paper 1766, the groundwater aquifer-system deposits in the Central Valley used to model groundwater availability, including the Delta, are derived from "the, lithologic data from approximately 8,500 drillers' logs of boreholes ranging in depth from 12 to 3,000 feet below land surface were compiled and analyzed to develop a 3-D texture model. The lithologic descriptions on the logs were simplified into a binary [two textures] classification of coarse- or fine-grained. The percentage of coarse-grained sediment, or texture, then was computed from this classification for each 50-foot depth interval of the drillers' logs. A 3-D texture model was developed for the basin-fill deposits of the valley by interpolating the percentage of coarse-grained deposits onto a 1-mile spatial grid at 50-foot depth intervals from land surface to 2,800 feet below land surface."

This modeling approach which is poorly described in the EIS ignores that only about 500 well logs were used to determine groundwater levels and only about 200 well logs out of 8,500 were used to describe aquifer textures (clay, silt, sand, gravel, etc.) for the entire Central Valley of California. The EIS describes how the USGS model, called CVHM, was modified (CVHM-D) from one-square mile modules to ¼ mile modules to analyze groundwater conditions in the project area. However, the modified model, CVHM-D, adds no new data, relies on essentially two wells in the Delta and provides no site specific groundwater data that describes the environmental setting along the alternative conveyance alignments.

On February 12, 2014 at a public open-house meeting held for the BDCP EIR/EIS in Clarksburg, this reviewer talked with Gwendolyn Buchholz, PE, Vice President, CH2M-Hill. Ms. Buchholz is listed as a preparer of Chapter 7. Ms. Buchholz said that she was responsible for groundwater modeling for the BDCP EIR/EIS and that the groundwater models used to evaluate the environmental setting, and the project impacts on the groundwater were lacking in site-specific data and that their usefulness was very limited. Ms. Buchholz was also unaware of geologic data acquired by CH2M-Hill from six-boring along a portion of the southern proposed alignment of one tunnel alternative which contradicted modeling data input and which called into question the conclusions reached in the EIS regarding tunnel impacts on groundwater.

Based on the absence of groundwater data as required by 40 CFR Section 1502.15, it is not possible for a reviewer to independently understand the environmental setting for the alternative alignments or at the intakes along the Sacramento River.

Therefore, the EIS must be revised to provide site specific groundwater and aquifer data along the alternative conveyance routes and at the proposed intake locations so that a reviewer can understand the environmental setting for groundwater resources, and evaluate project impacts and mitigation measures and assess the likelihood that the EIS has failed to address other impacts and mitigation measures..

Comment No. 2
The EIS fails to meet the requirements set forth in 40 CFR Section 1502.16 Environmental Consequences:

Section 7.3 *Environmental Consequences,* states that, "The potential for interaction between the canal alignments and the underlying aquifer system in the Delta Region was evaluated using a numerical model, Central Valley Hydrologic Model-Delta (CVHM-D), described in subsection 7.3.1.2, *Analysis of Groundwater Conditions due to Construction and Operations of Facilities in the Delta.*"

The EIS does not include an analysis of the environmental consequences to groundwater resources from the construction or operation of any of the proposed tunnel alignments, even though it appears that a tunnel, rather than a canal is the preferred alternative.

Therefore, the EIS must include specific groundwater modeling analysis of the tunnel alignments on groundwater resources and describe how the tunnels, with inverts at approximately 150-feet below the existing ground surface, will affect groundwater flow, groundwater quality and availability of groundwater resources.

Comment No. 3

Section 7.3.1.1 *Analysis of Groundwater Conditions in Areas that Use SWP/CVP Water Supplies* states that, "It is assumed that in areas that experience increased SWP/CVP water supplies, groundwater withdrawals would decline, and depending upon the local groundwater characteristics, groundwater elevations may rise. It is further assumed that if SWP/CVP water supplies decrease in areas that have historically relied upon groundwater for major portions of the water supply, groundwater withdrawals would increase to replace the reduction in SWP/CVP surface water supplies."

This statement contradicts the *Purpose Statement* (Chapter 2, Section 2.4) which states that, "The ... Purpose Statement reflects the intent to advance the coequal goals set forth in the Sacramento–San Joaquin Delta Reform Act of 2009 of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The above phrase—*restore and protect the ability of the SWP and CVP to deliver up to full contract amounts*—is related to the upper limit of legal CVP and SWP contractual water amounts and delineates an upper bound for development of EIR/EIS alternatives, not a target. It is not intended to imply that increased quantities of water will be delivered under the BDCP. As indicated by the "up to full contract amounts" phrase, alternatives need not be capable of delivering full contract amounts on average in order to meet the project purposes. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose."

Therefore, how can the project proponents assume that increased deliveries will be forthcoming under BDCP? Increased exports to supplement groundwater withdrawals should not be considered unless the BDCP EIS *Purpose and Need* is modified to reflect the need. Additionally, the EIS offers no evidence that increased groundwater withdrawals within the export service area will occur. The assumption used in the BDCP EIS that increased water exports with mitigate groundwater withdrawals in the export service areas is unfounded and should not be used as a justification for the BDCP, and without supporting evidence the assumption is not a legitimate direct, indirect or cumulative effect; therefore not an environmental consequence.

Comment No. 4

Section 7.3.1.2 *Analysis of Groundwater Conditions Associated with Construction and Operations of Facilities in the Delta.*

In the Central Valley Hydrologic Model–Delta Methodology portion of 7.3.1.2, the EIS lists five modifications to the CVHM for application to the project, to create model CVHM-D. One model modification reduced the grid-cell size from 1 mile square to ¼ mile square in order to provide more Delta-specific detail. "This modification allowed for greater precision in model output in the Delta Region." However, this modification relies on the assumption that spatial information, such a groundwater levels and aquifer texture characteristics are available within the original one-square mile grid-cell. According to Professional Paper 1766, Figure C15, *Distribution of Calibration Data,* in the case of the Delta region, there are no data points. That is, the US Geological Survey did not use any data from the Delta in CVHM.

How then does the EIS use CVHM and CVHM-D to calibrate and model groundwater conditions in the Delta or specifically, along the alternative conveyance alignments if there are no data? Dividing one-mile square grid cells into ¼ mile grid cells does not improve model precision if there are no data.

The EIS must explain how subdividing one-mile square grid cells devoid of data into ¼-mile grid cells, also devoid of data, improves the model precision and how these data-less grind-cells provide meaningful input to model groundwater conditions along the alternative alignments.

Comment No. 5

The EIS fails to meet the requirements set forth in 40 CFR Section 1502.22 Incomplete or Unavailable Information:

The EIS fails to comply with NEPA at the most basic level, as set forth in 40 CFR Section 1502.22 Incomplete or Unavailable Information and Section 1502.24 Methodology and Scientific Accuracy. Chapter 7 (Groundwater) is extremely difficult to objective review and develop meaningful comments

because there is virtually no data in the EIS which leads to conclusions that allows a reviewer to critically evaluate the impacts to groundwater or mitigation measures. At the Clarksburg BDCP open house we asked several "BDCP Staff" - all CH2MHill employees, if they could explain how they modeled groundwater conditions without any data - literally only 2 data points in 400,000 acres. Gwen Buchholz, VP at CH2MHill and the lead modeler, said that she had no data and was forced to create a model because they were under a time constraint to get the EIS out. She admitted that the groundwater model used to describe the affected areas was virtually useless. She told us that their assumption was that the tunnel would be bedded on a sand layer they saw in one boring at about 150 feet bgs. We told her that we had reviewed boring data (collected by CH2MHill) that clearly showed the tunnel invert would bed on fat clays. She said if that were true, it would change the analysis...it is true, but not evaluated in the EIS.

At the same Clarksburg open house we spoke with Praba Pirabarooban, DWR Supervising Water Resources Engineer. We asked him to explain how the tunnels are constructed: 3 boring machines working at once; each machine dropped to tunnel depth (about 150 feet) in an excavation; pre-cast concrete tunnel parts, each 10-feet long and representing 1/8 if the circumference (45 degrees), bolted and glued together (about 304,000 individual precast concrete pieces held together by about 12,000,000 bolts) . Mr. Pirabarooban admitted he had virtually no data to inform the design of the tunnel and very limited data about construction of the intakes. For instance, he had data from one boring in the Sacramento River which showed a clay layer at 30 feet bgs. Therefore, the entire dewatering plan (sheet pile construction) and intake construction protocols in the EIS are based on one boring, he actually thought that clay layer in the Delta would be continuous for about one mile along the river and about 1000 feet east of the river. There are no data to confirm this assumption. According to the EIS, DWR relied on two technical memorandums prepared by DWR to estimate dewatering protocols. I took us about one month, but we finally obtained the Tech Memos. Mr. Pirabarooban was a quality control reviewer for one the memos which said, that to dewater the intake construction sites will require anywhere from 200 to 1,000,000 gpd. But a final pumping protocol could not be determined without more data...data DWR never acquired before they prepared the EIS. It makes it very difficult to review an EIS when there is no data from which we can reasonably evaluate any impacts. We asked Mr. Pirabarooban what percentage of data he had for the tunnel design; he said about 15% for one alignment. DWR probably had less than 5% of the necessary data when compared to the alternative alignments. Mr. Pirabarooban agreed with that. We asked him how long would it take to acquire and analyze enough data to design the tunnels, his answer- about 1.5 to 2 years and $1.5 billion.

According to *Technical Memorandum: Definition of Existing Groundwater Regime for Conveyance Canal Dewatering Evaluation*, DWR 9AA-31-05-145-002, Task Order No. WGI-15, Subtask 2, January 21, 2010, section 3.0 Approach:

> p. 3-1: Although several thousand borings have been drilled throughout the Delta, mostly for geotechnical evaluation of manmade levees, almost none of these borings are located in the immediate vicinity of proposed project facilities. More relevant data for this investigation was found in previous studies for the Peripheral Canal. In addition, the project database included data from numerous United States Geologic Survey (USGS) and DWR groundwater monitoring wells surrounding the Delta. However, none of these well were located in the immediate vicinity of proposed project features.
>
> p. 3-4: Although more than 100 groundwater monitoring wells were identified within the project area, the spatial distribution of these wells is not uniform across the project area. Additionally, the density of wells with respect to near surface hydrogeologic conditions is insufficient to produce a project-wide groundwater map detailed enough for site-specific dewatering analysis. Therefore, it is not possible to determine the site specific variation of initial depth to groundwater along each ... alignment.

The EIS ignores these statements from a document upon which Chapter 7 of the EIS relies for much of its credibility and scientific accuracy. The EIS must be revised to meet CFR 40 Section 1502.22 and include an explanation of the limits of available data and how those data gaps influence the usefulness of the CVHM-D groundwater model.

Comment No. 6
The EIS fails to meet the requirements set forth in 40 CFR Section 1502.24 Methodology and Scientific Accuracy:

The EIS fails to meet the NEPA requirements of 40 CFR Section 1502.24. Professional and scientific integrity is compromised throughout EIS Chapter 7 by citing only portions or sections of reference material which agree with the project proponents desired outcome. This selective data presentation violates Section 1502.24, and makes it impossible for comprehensive review of the proposed project's impacts and mitigation measures.

Therefore, revise EIS Chapter 7 to meet the basic requirements of 40 CFR Section 1502.24 and to provide reviewers with a scientifically objective evaluation of the proposed project's impacts and relevant mitigation measures. Examples of the use of selective data include, but are not limited to:

Comment 6a

Section 7.1.1.1 Central Valley Regional Groundwater Setting; p. 7-3, beginning line 4, Regional Hydrogeology Overview; The EIS ignores or uses only selected data from three Chapter 7 references which describe the complex stratigraphy and lithologic character of the Delta and the site-specific groundwater conditions affecting project alternatives. The EIS uses only selective data or ignores the limitations of California Department of Water Resources, 2003, *California's Groundwater.* Bulletin 118, Update 2003; California Department of Water Resources, 2010, *Technical Memorandum: Definition of Existing Groundwater Regime for Conveyance Canal Dewatering and Groundwater Evaluation.* Delta Habitat Conservation and Conveyance Program, Document Number: 9AA-31-05-145-002, and California Department of Water Resources, 2010, *Technical Memorandum: Analysis of Dewatering Requirements for Potential Excavations,* Delta Habitat Conservation and Conveyance Program, Document Number: 9AA-31-05-145-001. From Chapter 9, the EIS ignores significant portions of Norris, R. M., and R. W. Webb. 1990, *Geology of California* Second Edition, New York: John Wiley & Sons, Inc. which describes the complex geologic setting of the Delta because it does not fit the pre-determined, simplified lithologic conditions for project groundwater modeling (Norris and Webb, beginning on page 434).

The EIS does not explain that Figure Number 9-3 used for groundwater analysis and geology which is adapted from Atwater (Atwater, B. F. 1982. *Geologic Maps of the Sacramento–San Joaquin Delta, California: U.S. Geological Survey.* (Miscellaneous Field Studies Map MF-1401, scale 1:24,000), Reston, VA) and that the Atwater map is essentially a surficial geology map that provides data to only a few feet below the existing ground surface.

Comment 6b

Section 7.3.1, Methods of Analysis. The EIS does not disclose that CVHM is a general, overall water balance tool model. CVHM specifies that groundwater water levels are generalized aquifer characteristics from selected wells and are culled to include just fine or coarse sand in 50 to 100 foot thick layers. This omission in the EIS prevents the reviewer from thoroughly understanding the implication of the dewatering and project construction impacts. Additionally, the "refinement of CVHM" to CVHM-D for the Delta only reduced the 1 sq. mi. grid to ¼ sq. mi. CVHM-D did not reduce the layer thickness to less than 50 feet; nor did it add additional texture (lithologic) descriptors.

CVHM-D model calibration is critical to the evaluation and interpretation of project impacts on groundwater resources. Water level in wells is necessary for this calibration. No wells for calibration were used in the Delta area. A general water balance in the Delta has been produced by the model, but the EIS does not provide specifics for subsurface geology, engineering characteristics, dewatering programs, or domestic well interference.

Comment 6c

The EIS refers to existing ground water levels and flow directions (p. 7-40). None of the groundwater parameters necessary to evaluate existing conditions have been measured or calculated. The EIS only

guesses at the groundwater elevations within one of two feet of depth and generalizes the groundwater flow direction based on topography and existing, present-day, drainage patterns. In the near-flat Delta terrain, surveys accurate to centimeters are necessary to accurately delineate the flow directions and head boundaries. The EIS fails to meet basic scientific standards.

Comment No. 7
Section 7.3.1.2, p. 7-36, beginning line 19.

The EIS states, "The parameters used to simulate the dewatering projects were obtained from two DWR technical memoranda: *Definition of Existing Groundwater Regime for Conveyance Canal Dewatering and Groundwater Evaluation* (California Department of Water Resources 2010a) and *Analysis of Dewatering Requirements for Potential Excavations* (California Department of Water Resources 2010b). Each dewatering project was simulated using CVHM-D."

However, according to *Technical Memorandum: Analysis of Dewatering Requirements for Potential Excavations,* DWR Document Number 9AA-31-05-145-001, Task Order WGI-15, February 28, 2010 (Technical Memo-1), section 1.1, p. 1-1: "Task Order WGI-15, Conveyance Canal and Construction Area Groundwater Evaluation, is designed to develop a more detailed understanding of the near-surface hydrogeologic regime and excavation dewatering requirements for proposed water conveyance options in the Sacramento River–San Joaquin River Delta ("the Delta")." The term "near-surface" refers to, "The pipeline excavation depth was assumed to be 30 feet below ground water surface. The dewatering target was assigned as 5 feet below the pipeline excavation depth (i.e. 35 feet bgs)." (Section 3.3.2, p. 3-7). Although the tunnel alignment *per se* will not be dewatered, there are numerous locations along the proposed tunnel alignment which are proposed to be dewatered to depths up to 150 feet below the existing ground surface. Therefore, project dewatering effects on groundwater, to tunnel alternatives invert depths from 36 feet to 150 feet below the exiting ground surface are ignored in the EIS.

Figure 3-3 (Technical Memo-1) shows one proposed tunnel alignment but does not show any alternative tunnel alignment, or Alternative 4, the preferred alignment and does not accurately show the proposed location of the intakes. Therefore, how can the EIS, which relies on Technical Memo-1, comply with 40 CFR Section 1502.14, Alternatives including the proposed action, and with CFR 40 Section 1502.24 Methodology and scientific accuracy?

Comment No. 8
Section 7.3.1.2, p. 7-36, beginning line 23.

The EIS states, relying on *Technical Memorandum: Analysis of Dewatering Requirements for Potential Excavations*, states that, "Each dewatering project was simulated using CVHM-D. The effects of each dewatering simulation were compared to the simulation of the No Action Alternative baseline conditions to obtain an estimate of the incremental impacts of dewatering activities." However, the EIS ignores Technical Memo-1 which states (Section 5.0 Data Needs, p. 5-1):

> A numerical model or analytical calculation **could** be employed to estimate the subsidence that **might** occur as direct result of dewatering. However, the usefulness of such a modeling/analysis effort would also depend on gathering site-specific thicknesses of potentially compressible units, values for inelastic and elastic storage coefficients. The estimates for pre-consolidation head are also needed to evaluate potential dewatering induced subsidence. The results of the subsidence assessments would be used to evaluate the potential for dewatering impacts to the surrounding topography, including nearby levee systems. The necessary data for this type of modeling/analyses could be acquired though geotechnical borings and acquisition of undisturbed core samples. However, dewatering of one or more test excavations as suggested ...would be necessary to confirm and refine the model's predictions.

Section 5.0, Data Needs of *Technical Memorandum: Analysis of Dewatering Requirements for Potential Excavations*, identifies "some data gaps" including dewatering analysis of peat, site specific aquifer parameters, installation of "numerous groundwater monitoring wells", collection of groundwater quality data and "Once site-specific data have been collected, it is recommended that previously created flow

evaluations be updated to reflect these new data. Additional scenarios could then be created to optimize dewatering methods or to determine the feasibility of alternate methods." (p. 5-2) None of these data gaps are addressed in the EIS. How does the EIS comply with CFR 40 Section 1502.24 Methodology and scientific accuracy and 40 CFR 1502.22 Incomplete or unavailable information?

Comment No. 9
Section 7.3.3, p. 7-39, beginning line 6

The EIS states, "The assessment of effects resulting from implementation of the BDCP alternatives is complicated by the fact that locations and construction details for existing production wells in the vicinity of the project are unknown at this time." This statement is misleading and is contradicted by *Technical Memorandum: Definition of Existing Groundwater Regime for Conveyance Canal Dewatering Evaluation*, DWR 9AA-31-05-145-002, Task Order No. WGI-15, Subtask 2, January 21, 2010, section 3.0 Approach, which states that, " Although more than 100 groundwater monitoring wells were identified within the project area, the spatial distribution of these wells is not uniform across the project area. Additionally, the density of wells with respect to near surface hydrogeologic conditions is insufficient to produce a project-wide groundwater map detailed enough for site-specific dewatering analysis. Therefore, it is not possible to determine the site specific variation of initial depth to groundwater along each ... alignment." (p. 3-4)

Additionally, *Technical Memorandum: Definition of Existing Groundwater Regime for Conveyance Canal Dewatering Evaluation,* DWR 9AA-31-05-145-002, Task Order No. WGI-15, Subtask 2, states that, "Appendix A contains individual hydrographs of groundwater wells monitored by DWR within the project area." Appendix A contains 102 groundwater well hydrographs. the location of each hydrograph is known. Therefore the EIS choose to ignore available groundwater data.

Comment No. 10
Section 7.3.3.9, p. 7-81, beginning line 25

The EIS states, "Operation of the tunnel would have no impact on existing wells or yields given the facilities would be located more than 100 feet underground and would not substantially alter groundwater levels in the vicinity."

The BDCP proposed two tunnels, not one; the EIS should be corrected. The EIS should be corrected to reflect a tunnel invert depth of 150 feet below the existing ground surface.

The EIS offers no evidence or data to support the above statement. Throughout the EIS, the project proponents have stated that there are limited groundwater data available for analysis and that much of Much of the Chapter 7 analysis of project impacts to groundwater resources is based on two technical dewatering memorandums prepared by DWR and the CVHM-D groundwater model, neither were used to evaluate groundwater resources to depths of 100 feet or greater. The construction and operation of two tunnels, each 44 feet in outside diameter, buried at 106 feet to about 150 feet below the surface could have significant impacts of groundwater resources.

Based on geotechnical borings (dated April 2013) from Mandeville and Bacon Islands, acquired by DWR and CH2MHill for the tunnel alignments, but not used in the preparation of the EIS, the interbedded lithologic units at depths between 100 and 150 feet below the existing ground surface range in thickness from one foot to about 17 to 20 feet and include 30 or more lithologic types. Some of the lithologic units at the tunnel depths exhibit aquifer characteristics – silty sand, fine grain sand, etc. The majority of lithologic units are clays which may act as aquitards or aquicludes. The EIS makes no attempt to assess the impacts of dual tunnel construction on groundwater resources at depths of 106 to 150 feet below the existing ground surface.

Based on DWR Bulletin 118-3, *Evaluation of Ground Water Resources: Sacramento County*, July 1974, reprinted April 1980, there are buried channels composed of permeable sand and gravels incised into less permeable silt and clay, resulting in a network of meandering tabular aquifers which are normal or near-normal to the proposed tunnels alignments. The buried channel aquifers represent the former locations of major rivers including the Sacramento, American and Consumnes. These buried, highly

permeable channels will be intersected by tunnel construction. It is likely, that in the north Delta, these buried tabular aquifers serve as drinking water and agricultural water supplies. However, the EIS does not address impacts to groundwater users who withdraw groundwater from these permeable aquifers.

Comment 11
The impacts to groundwater resources which are not addressed in the EIS include –

Impact GW 7(1): Dual tunnel construction will intersect producing aquifers and reduce or interfere with pre-existing wells. The impact would result in lowered groundwater levels and reduced well capacities and discharge rates and would affect residential and agricultural available groundwater.

Impact GW 7(2): Pumping pre-existing groundwater wells within the vicinity of the tunnel alignments will cause groundwater drawdown beneath the tunnels and may aversively affect the structural integrity of the dual tunnels. Pumping wells within the vicinity of the dual tunnels create radii of influence which lower groundwater levels. Withdrawing groundwater from beneath the dual tunnels will adversely affect the structural integrity of the lithologic units on which the tunnels are bedded.

Impact GW 7(3): Pumping during dewatering activities at the intakes and at specific locations along the tunnels alignments, may cause reversals in groundwater gradients and groundwater flow directions. The shallow groundwater gradients are susceptible to alterations that would affect pre-existing domestic and agricultural water wells.

Impact GW 7(4): Construction of the forebays, which intercept the unconfined aquifer, will change the gradient and depth to groundwater. Groundwater levels up-gradient of the forebays will be increased and depth to groundwater down-gradient of the forebays will be in reduced and may cause extremely shallow ground conditions that will damage building foundations, roadways and irrigation canals.

BDCP1642

From: Jim Wallace
PO Box 266
Courtland, California 95615

Subject: BDCP Draft EIR/EIS

Chapter 9, Geology and Seismicity, Section 9.3.3.9, Impact GEO-3, beginning p. 9-181

Impact GEO-3: Loss of Property, Personal Injury, or Death from Ground Settlement during Construction of Water Conveyance Features (Note: Impact Geo-3 applies at all tunnel alternatives; Section 9.3.3.9 refers to Alternative 4, the preferred alternative)

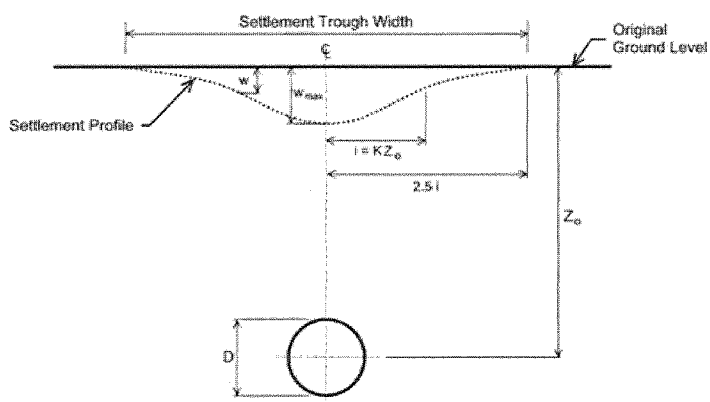
Impact Geo-3:

> Two types of ground settlement could be induced during tunneling operations: large settlement and systematic settlement. Large settlement occurs primarily as a result of over-excavation by the tunneling shield. The over-excavation is caused by failure of the tunnel boring machine to control unexpected or adverse ground conditions (for example, running, raveling, squeezing, and flowing ground) or operator error... This [large] settlement can also affect the ground surface...While this could potentially cause property loss or personal injury above the tunneling operation, instances of large settlement are extremely unlikely to occur due to pre-construction measures and other protective strategies and safety practices during construction.

Comment 1

According to US Department of Transportation, Federal Highway Administration, *Technical Design Manual for Design and Construction of Road Tunnels*, and *A Method of Estimating Surface Settlement Above Tunnels Constructed in Soft Ground*, by R.K Rowe and K.Y. Lo (National Research Council of Canada, 1983) and *Predicting the Settlements Above Twin Tunnels Constructed in Soft Ground* by D. N. Chapman, C.D.F. Rogers and D.V.L. Hunt, University of Birmingham, U.K., estimating potential ground settlement above tunnels in soft ground can be accomplished with accepted mathematical formulas. However, in the EIS all methods to estimate potential ground settlement above the twin tunnels are ignored.

The risk of ground settlement to cause personal injury above the tunnels may be low. However, the EIS ignores the potential for adverse impacts at the ground surface based on accepted soil mechanics applications. The *Technical Design Manual for Design and Construction of Road Tunnels* (US Department of Transportation, Federal Highway Administration) provides an approach to estimate ground surface settlement impacts above tunnels. Based on the design manual's mathematical formulas numbers 7-2, 7-3 and 7-4, it is possible to estimate the width and depth of a settlement trough. The design manual also states that, "In the case of parallel adjacent tunnels, surface settlement is generally assumed to be additive."



From the *Technical Design Manual for Design and Construction of Road Tunnels* (US Department of Transportation, Federal Highway Administration), Figure 7-9.

Therefore, based on published data, accepted soil mechanic applications and the proposed BDCP tunnel geometry, known or estimated groundwater conditions and soil types as stated in other chapters of the BDCP EIS, a reasonable estimate of ground surface settlement can be determined. The BDCP EIS should be revised to include such an estimate to be used to evaluate surface impacts so that an informed reviewer can understand the surface settlement effects of the twin tunnels.

Comment 2: Impact Geo-3:

The BDCP EIS's failure to estimate potential ground surface settlement above the twin parallel tunnels ignores potential surface impacts which include:

- An estimate of the width of the settlement trough which could be several hundred feet or more in width and extend the entire 35-mile length of the tunnels and how the width could vary depending on geologic and groundwater conditions,.
- An estimate of the depth of the settlement trough which could be minimal to tens of feet or more in depth and extend the entire 35-mile length of the tunnels and how the depth could vary depending on geologic and groundwater conditions.
- Effect of highways, roads, and streets from settlement.
- Effect on buried utilities.
- Effect on surface streams and rivers.
- Effect on agricultural lands and access to agricultural lands.
- The withdrawal of additional agricultural land from production within the trough.
- The requirement to purchase additional right-of-way to prevent encroachment onto land affected by settlement, and the additional costs to do so.
- The effect of flooding within the trough and how flooding could affect surrounding land uses.

Impact Geo-3:

> Site-specific geotechnical investigations are needed to design the extent and type of ground improvement that may be required. Ground improvement would be required to facilitate support of tunnel shafts, control groundwater at the locations of the shafts, prevent development of undesired tunnel-induced surface settlements and provide pre-defined zones for TBM [tunnel boring machine] maintenance interventions.
>
> However, during detailed project design, a site-specific subsurface geotechnical evaluation would be conducted along the pipeline/tunnel alignment to verify or refine the findings of the preliminary geotechnical investigation. The tunneling equipment and drilling methods would be reevaluated and refined based on the results of the investigations, and field procedures for sudden changes in ground conditions (e.g., excavate and replace soft soil; staged construction to allow soft soil to gain strength through consolidation) would be implemented to minimize or avoid ground settlement.

Comment 3:

The BDCP EIS relies exclusively on the twin tunnel concept to meet the purpose and need of the BDCP. However, there is virtually no detail and no significant discussion regarding the impacts of the tunnel construction on surface settlement. Therefore, a reviewer can not reach any conclusion on the project's effects or mitigation measures. Although not specifically called out, Impact Geo-3 relies on "adaptive management" techniques and future engineering studies and design to allay any concerns regarding surface settlement, and ignores published data that provides methods to estimate surface settlement impacts. The BDCP EIS proponents and preparers clearly know that published data to estimate surface settlement is available because language within the BDCP EIS is very similar to, or nearly the same as, language in various professional publications that address surface settlement caused by tunnels in soft ground. However, the preparers have chosen not to cite any published design manuals or professional papers, probably because doing so would force the preparers to acknowledge that large scale surface settlement and significant adverse effects are likely to occur during the construction of the twin tunnels. Therefore, the BDCP EIS preparers should revisit available technical publications and fully disclose to the public an estimate of surface settlement and the likely impacts.

Impact Geo-3

> The geologic units in the area of the Alternative 4 modified pipeline/tunnel alignment are shown on Figure 9-3 and summarized in Table 9-26. The characteristics of each unit would affect the potential for settlement during tunneling operations. Segments 1 and 3, located in the Clarksburg area and the area west of Locke, respectively, contain higher amounts of sand than the other segments, so they pose a greater risk of settlement.

Comment 4

Figure 9-3 does not show the location of the Alternative 4 tunnel alignment. Therefore, the reference to Figure 9-3 is confusing and should be corrected in the BDCP EIS. Alternative 4 is not located west of the community of Locke and the location shown in Figure 9-3 should not be considered in the vicinity of the Alternative 4 alignment.

Table 9-26, Surficial Geology Underlying Alternative 4/ Modified Pipeline/Tunnel Alignment by Segments, lists only surficial deposits. A surficial deposit is defined by the American Geological Institute (Dictionary of Geologic Terms, 1983) as, "Pertaining to or lying in or on a surface, specifically, the surface of the earth". Surficial geology is not a term that is applied to geologic deposits or geologic units at depth. The Atwater (1982) report cited in the BDCP maps surficial deposits and specifically identifies those deposits as shallow, near surface deposits, based largely on soil types; not 150 feet deep, the depth of the tunnel inverts. Therefore, the BDCP EIS should be revised to eliminate references to surficial geology as an indicator of potential ground surface settlement. Additionally, the title of Table 9-3 should be changed to "Surficial Geology Overlying Alternative 4/ Modified Tunnels Alignment by Segments".

Comment 5: Impact Geo-3

The title of Impact Geo-3 is "Loss of Property, Personal Injury, or Death from Ground Settlement during Construction of Water Conveyance Features" (section 9.3.3.9). Therefore it is misleading why the impact refers to:

> The results of the site-specific evaluation and the engineer's recommendations would be documented in a detailed geotechnical report prepared in accordance with state guidelines, in particular *Guidelines for Evaluating and Mitigating Seismic Hazards in California* (California Geological Survey 2008).

It is not clear from the BDCP EIS how surface settlement impacts from twin tunnels can be mitigated using *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. Therefore, the BDCP EIS must clarify how these guidelines are applied to surface settlement impacts and what those impacts could be.

Impact Geo-3 seems to assume that surface settlement from twin tunnels is akin to slope stability issues associated with landslides and that all risks from surface settlement will be addressed in the design phase of the project. Impact Geo-3 concludes:

> Conformance to these and other applicable design specifications and standards would ensure that construction of Alternative 4 would not create an increased likelihood of loss of property, personal injury or death of individuals from ground settlement. Therefore, there would be no adverse effect.

At best, the BDCP EIS vague about design specifications and gives no hint of what "other applicable design specifications and standards" might be. The BDCP does not cite any technical manuals or professional papers regarding methods to estimate ground surface settlement and asks the public to trust that the a qualified tunnel engineer and operator will be retained to construct twin 44-foot diameter tunnels in soft ground, entirely within groundwater aquifers, at tunnel invert depths of 150-feet for a distance of 35-miles. The BDCP EIS should be revised to take a hard look at its conclusion that the twin tunnels would have no adverse effect.

From: bccline@comcast.net
Sent: Tuesday, July 29, 2014 10:42 AM
To: BDCP comments
Cc: Bruce Cline - home
Subject: LIPOA BDCP Comment letter.
Attachments: CH-PRINTERS_CC2-MF_3469_001.pdf

Mr. Wulff,

Please find the attached BDCP comment letter submitted by the Long Island Property Owner's Association.

Bruce Cline
LIPOA President

BDCP1643

Ryan Wulff
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Mailed and submitted to
BDCP.comments@noaa.gov
on July 29, 2014

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

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

Submitted by - Long Island Property Owners Association
LIPOA
Walnut Grove, California

July 28, 2014

COMMENT LETTER SUBMITTED PERTAINING TO THE EIR/EIS

LIPOA submits the following comment letter pertaining to the EIR/EIS document for the Bay Delta Conservation Plan (BDCP or Tunnel Project).

Long Island – This letter is submitted on behalf of owners on Long Island, situated approximately nine miles downstream of the proposed project as well as residents in the vicinity of and downstream of the proposed diversion point. Long Island consists of 34 residential lots all maintained by the property owners. Long Island is surrounded by water with the Sacramento River on one side and a Dredger Cut on the other. Access to Long Island is via a private bridge. Property ownership dates back over 7 decades. Long Island residents have maintained the Dredger Cut for over 4 decades, including maintenance dredging approximately every ten years, including an ongoing project for which permits have recently been issued by seven different federal and state agencies. This property is one of a kind in the Sacramento Delta and residents have invested hundreds of thousands of dollars in the island and the assessed value of the property is conservatively over $17 million dollars. The proposed project will adversely affect the property at Long Island and have significant environmental effect on the delta and Sacramento regions above and below the proposed project. A current dredging project at Long Island is paid for entirely by property owners at a cost of nearly $200,000. Substantial environmental work was done prior to approval of the project. The Tunnel Project will adversely impact the dredge work and will result in a declining condition in the Dredger Cut caused by silt build up. A companion project at Vierra's resort, one half mile downstream from Long Island will incur a similar expense and suffer similar effects . As part of this project LIPOA commissioned a hydrology study relating to flows, weed growth, dredge options, and silt build up in the Dredger Cut

Impacts from the Proposed Project - -

Water Flows - The summer and spring flows will be dramatically reduced by the water diverted 9 miles upstream. Residents depend on spring and summer flows for recreation and to reduce weed growth. The drought over the past two years has resulted in decreased flows and warmer water. The reduction of flows from Oroville, Shasta and Folsom all dramatically affect the use of property on Long Island. We are tide dependent and the low tides are lower than most long time residents can remember. The dramatic decreases in flows in the Sacramento caused by the tunnels will exacerbate our low and high tide conditions. In many months of the spring, summer and fall the residents can only use docks at high tide conditions. The tunnel project will adversely affect the ability of residents to enjoy the use of their property even at high tide conditions. The owners have substantial investments in the island and the Tunnel Project has not examined the impact on recreation for property owners, impacts to the Dredger Cut and the increased costs that owners will incur for future dredge projects caused by low flows. Low flows allow sediment to deposit in the slough channel (Dredger Cut) at a much more rapid rate. As the sediment builds at the up and down stream ends, it slows further and causes even great deposits of silt.

The Tunnel Project has failed to examine the effects on flows for our neighbors or similarly situated property owners below the diversion point. Our studies show that greater silt will be deposited as flows slow. The lower flows impact fish, including the green sturgeon which we were recently required to analyze with our dredge project. The EIR/EIS significantly underestimates the flows from the diversion and thus the impacts experienced by all users below the Tunnel Project and the potential impacts to all reservoirs that are the source of the Sacramento River.

The Tunnel Project assumes that Sacramento water users and American River water user's contracts could be violated in order to provide the required water for the Tunnel Project. This assumption is flawed The project assumes the Folsom Lake could go to a dead pool status once every ten years and thus jeopardizing all other downstream users, including farmers and users like the owners on Long Island who depend on this water below the proposed site of the Tunnel Project.

The City of Folsom and other American River water agencies have provided extensive comments regarding the flawed analysis. This letter incorporates the comments provided by those agencies relative to the BDCP analysis and Climate Change and incorporates those comments by reference.

The Tunnel Project will adversely affect all residents on all sides of Grand Island as flows will be decreased in Steamboat Slough as well The users of the water ways on all sides of Grand Island, including Snug Harbor, the marinas and Hogback launch ramp will all be affected. Summer is the highest recreational use period and likely the highest period of demand for users of the water diverted by the Tunnel Project. These properties will also experience greater invasive weed growth as a result of the lower and slower flows. The EIR fails to analyze the

impact on users on all sides of Grand Island and fails to offer any mitigation measures or adequately examine how the impacts on these users can be mitigated.

The Tunnel Project fails to provide any mitigation for the property owners who will not have beneficial use of their property. The tunnel project does not provide any mitigation or analyze any potential mitigation measures such as dredging in the Sacramento River or the Dredger Cut to reduce the significant impacts of the project.

Weed Growth - The result of lower flows in the past year has been dramatically increased weed growth of over 4 types of aquatic weeds, including several which are invasive to the delta and are attempted to be controlled by Dept of Boating and Waterways (DBW). See http://www.dbw.ca.gov/BoaterInfo/AquaInvSpec.aspx for weed varieties. The Delta is being inundated by invasive weeds and our island has seen a dramatic increase in the past several years. The weed growth this year is even more dramatic than others due to low flows. As temperatures warm and the flows decrease the weeds grow exponentially. The weed growth impacts and prevents in some cases fish to utilize the water and makes navigation very difficult if not impossible depending on the flow and the tide level. The efforts to eradicate weeds by DBW are ineffective when there is even a small flows like we have in our Dredger Cut particularly with tidal action. The EIR fails to examine the impact on weed growth in the delta and fails to provide or study any potential mitigation measures for weed eradication.

Water Temperature – The current drought is a clear example of the correlation between flow and water temperature. This project will take hundreds of thousands of cubic feet of water from the lower Sacramento system, just 9 miles above our homes. The water temperature has risen since the drought and is further affected by low flows and weed growth. The temperature is measured objectively and the weed growth is dramatic and apparent. The project will only further raise water temperatures, particularly in the summer and spring months when water is most in demand by the downstream users of the Tunnel Project. The Tunnel Project will divert water that keeps the lower delta cool and reduces the impacts partially described above. The Tunnel Project will cause waters to warm in the American River affecting fish in the entire system. The Tunnel Project will significantly impact fish that are already struggling to survive in the delta.

Water temperature increases will adversely affect fish, result in more rapid invasive and other weed growth and the project has failed to adequately study the impact on water temperature or to provide or study any mitigation measures to lessen or eliminate the impacts. The EIR/EIS has failed to adequately examine the efforts on steelhead and fall run salmon. In addition the Green Sturgeon in the delta is impacted by water temperature and silt flows and the project has failed to analyze these impacts. If the state and federal agencies do not allow the delta system to be operated to the detriment of the fish, then the EIR/EIS has failed to present an accurate picture of the project. The EIR has failed to study the no project alternative option or to study and propose how the project can be mitigated to less than a significant level related to water temperatures.

Increase in Silt Build up – The project will result in increased silt build up in the Dredger Cut and the Sacramento River. Our study by a licensed engineer and hydrologist as well as personal

observation by owners on Long Island demonstrates that lower flows, particularly in the spring and summer will dramatically increase silt build up. Flows from upsteam of the Tunnel Project site will disturb silt and the reduction of flows at the tunnel site will result in depositing solids at a greater rate and cause further silt build up. Our residents bear the entire cost burden of Dredger Cut maintenance dredging and the EIR/EIS has failed to examine the impacts on the river or dredger cut in the area of Long Island or any of the marinas, or residential properties downstream of the tunnel project caused by silt build up.

The project itself will create significant flows of silt in the Sacramento River for years to come. There is no analysis of the impact of the silt flows from the project, just 9 miles above our residences.

No dredging has occurred in the Sacramento River below Walnut Grove for boat traffic in many years. The impacts on flows with diversions upstream will adversely affect navigation with any boats utilizing a sizable keel. Boat traffic for other boats will be impacted in low tides to a much more significant level. Boats docked on the river will potentially be impacted in lower tide situations and there is no analysis of these impacts or mitigation measures to address the impacts.

The EIR fails to examine the impact on users of water, including water wells downstream of the project who will be impacted by decreased flows and increased silt build up. Pumps along the river for irrigation depend on clear areas, free of silt build up.

Salinity and Impacts on Wells- The EIR fails to adequately examine the potential for salinity in the river downstream of the project and fails to provide any mitigation measures to address salinity or alternatives to the project to avoid salinity. Historically and with droughts, the salinity levels have crept up river and impacted farms and lawful water users. Our residents are all on wells for domestic and landscape purposes. The EIR does not examine the potential for salinity in the river, and its dramatic impact on all aspects of life in the delta, farming and water usage. Once salinity impacts users, the impact may and is likely to be irreversible.

Recent efforts that were abruptly stopped to install curtains at Walnut Grove to curtail salinity demonstrate the severity of the salinity threat. The Tunnel Project proposes to reduce flows by hundreds of thousands of cubic feet and result will be increased threats of salinity downstream from the tunnel diversion. The threat in the Spring of 2014 of salinity resulted in dramatic proposals by state agencies. These proposals including blocking access to certain areas and using lifts to move boats. The dramatic proposals were deemed necessary even without any reduction in water due to the Tunnel Project. If the tunnels are constructed, the water will flow through them. The result is simply less water below the diversion point. It is clear, that the threat of salinity and other impacts will not be lessened and, in fact, will be increased. The project fails to examine the impacts on fish cause by salinity and increased silt. There are no adequate mitigation measures to prevent the devastation that one low flow season that increases salinity will cause. The project has failed to mitigate or attempt to mitigate to a less than significant level.

Impacts of Continued Drought or Future Droughts – The Tunnel Project will reduce the flows for all downstream users. The 2013-14 drought, one of the worst on record, has

heightened the demand by all users upstream and downstream of the project for any available water. Residents in the Sacramento region have dramatically reduced water usage and water agencies have imposed mandatory and other voluntary restrictions on water use. Some communities utilizing American River water have reduced consumption by over 25%, yet still have significant restrictions on water use and the delta is not receiving the flows that are necessary for a healthy system. All the while the Tunnel Project proposes to divert hundreds of thousands of acre feet each year, to the detriment of all lawful downstream users. Should the drought continue or when the next one comes, the potential users of the Tunnel Project will demand use of the tunnel diversion water and the downstream users will be adversely impacted. These users include some of the richest farmland in the western United States, if not the world. The Tunnel Project fails to adequately examine mitigation measure to address future droughts and impacts on users downstream of the diversion.

The EIR is fatally flawed as the analysis shows that Folsom Lake will be reduced to a dead pool one out of every ten years. The Delta and particularly the upper Delta and the American River depend on Folsom lake flows for viability. The American River depends on cold water flows and the Delta depends these flows for migratory salmon, steelhead, and stripers, all of which will be impacted based on the flows from the American River.

The EIR/EIS contains no analysis to explain what would happen to groundwater in the region and in particularly the upper delta as users with wells rely more heavily on groundwater than their riparian rights. This is a serious concern as many users rely exclusively on well water for home and irrigation use. Our residents are exclusively on well water and we are only 9 miles below the diversion point. Impacts on the quality of the water and the depth at which water may be obtained must be identified. BDCP must adequately address possible groundwater impacts in our region.

Socio Economic Impacts on the Delta Economy and Injury to Businesses Caused by Reduction in Water Below the Diversion Point are not Properly or Thoroughly Analyzed.

NEPA requires that an EIS address a project's socioeconomic effects of a Project. CEQA requires that an EIR address a project's socioeconomic effects that generate environmental consequences. The DEIR/DEIS fails to properly analyze BDCP's socioeconomic impacts to the Delta and the region.

The Delta economy survives and thrives on water and is dependent on water for all aspects of life. Tourism, fishing, boating, aquatic and bird life, small businesses who depend on users of the river and farming all depend on the flow of water through the delta. At one of the upper most reaches of the delta the Tunnel Project proposes to divert water essential to the life of the Delta. Residents of all income brackets, farm workers and small business owners and farmers will be dramatically affected by the tunnel project and no mitigation is offered to assist or to prevent harm to the residents, business and economy all of whom depend on the river for their livelihood. The Tunnel Plan is poorly conceived and would violate the Endangered Species Act (16 U.S.C.A. §§ 1531-1544) ("ESA") and the Natural Community Conservation Planning Act (Fish & Game Code §§ 2800-2835) ("NCCPA"). The Tunnel Plan fails to satisfy the most basic funding requirements of the ESA and the NCCPA because nearly all of the funding sources it identifies are too speculative, and there are no guarantees that anticipated funding will be

adequate to implement the proposed conservation measures. Further the plan fails to recognize any funding for the impacts described above including silt build up, weeds and salinity.

The EIR/EIS is Poorly Written, Confusing, Contradictory and Fails to Adequately Inform the Public of the Consequences of the Tunnel Project.

The DEIR/EIS is legally inadequate as an informational document because it is poorly organized and very difficult to read. It is fundament that the EIR/EIS must be able to be understood, instead here it is incomprehensible to decision-makers and the public alike. The document fails to provide meaningful information about many of the project's environmental impacts. The confusing nature of the document itself — its extreme length, numerous cross-references, and contradictory statements — prevent the meaningful evaluation of BDCP's environmental consequences.

The EIR/EIS is Incomplete as It Has Failed to Obtain the Testing at the Project Site that Sought to Obtain.

The project intended to do testing at the project site. Property owners denied access and have thus far prevailed in their desire to keep the State from doing invasive testing on their land. To continue to pursue and EIR/EIS without the very testing they desired renders the project incomplete in its analysis of the site conditions.

The EIR/EIS Fails to Examine Viable Alternatives to the Proposed Plan

Alternatives have been offered by a host of individuals and organizations from smaller projects to diversions at a much lower point in the system that would avoid impacts to the delta and farmland. Alternatives must be examined and mitigation measures provided to avoid the disastrous impacts from the proposed Tunnel Project.

Conclusion

The BDCP and DEIR/EIS are fatally flawed. The plan and the environmental documents fail to analyze the impacts, provide mitigation measures, provide for funding to alleviate the impacts and present significant risks to the Delta and the American River water users, which in turn affect Delta users. The numerous flaws undermine its analysis and ability to withstand legal challenge. Because of these flaws, the plan must be significantly revised to address impacts to users upstream and downstream of the diversion points, including adding mitigation measures before any decisions can be made regarding permitting or implementing the plan.

LIPOA President

Bruce Cline
17360 Grand Island Road
Walnut Grove, California 95690

From: Mae Empleo <mae@semlawyers.com>
Sent: Tuesday, July 29, 2014 10:41 AM
To: mbanonis@usbr.gov
Cc: Osha Meserve; BDCP.comments@noaa.gov; Michael.G.Nepstad@usace.army.mil; foresman.erin@epa.gov; Maria.Rea@noaa.gov; Mike.Tucker@noaa.gov; lori_rinek@fws.gov; Heather_Webb@fws.gov; carl.wilcox@wildlife.ca.gov; melinda@cvflood.org; rdenton@ccwater.com; ryan.hernandez@dcd.cccounty.us; thomasdon@saccounty.net; rgoulartpostofficebox@gmail.com; philip.pogledich@yolocounty.org
Subject: BDCP Cooperating Agency Comments from Members of the Local Agencies of the North Delta
Attachments: Coop Agency LAND Comment Ltr 07.29.14.pdf

Dear Ms. Banonis:

Attached please find the BDCP comment letter submitted on behalf of NEPA cooperating agencies Reclamation Districts 3, 150, 551, and 999, which are members of the Local Agencies of the North Delta. Thank you for your attention on this matter. Should you have questions please do not hesitate to contact our office.

Sincerely,

Mae Ryan Empleo
Legal Assistant
Soluri Meserve, A Law Corporation
1010 F Street, Suite 100
Sacramento, CA 95814

☎ *tel:* 916.455.7300 ▪ *fax*: 916.244.7300 ▪ *mobile:* 559.361.5363 ▪ *email*: mae@semlawyers.com

BDCP1644

SOLURI MESERVE
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July 29, 2014

SENT VIA EMAIL (mbanonis@usbr.gov)

Ms. Michelle Banonis
U.S. Department of Interior
Bureau of Reclamation
801 I Street, Suite 140
Sacramento, CA 95814

RE: BDCP Cooperating Agency Comments - BDCP Environmental Coordination Team (BECT)

Dear Ms. Banonis:

NEPA cooperating agencies Reclamation Districts 3, 150, 551, and 999, which are members of the Local Agencies of the North Delta ("LAND"), have been assessing and commenting on some of the greatest issues of technical importance associated with the Bay Delta Conservation Plan ("BDCP") since its public inception. The issue of technical importance is a driving factor for LAND since its members have unique experience in land and water management in the Delta, as well as experience in land acquisition, mitigation and monitoring, as a result of their respective operations of water delivery, drainage and levee maintenance. These LAND members will also bear many of the economic and legal burdens of managing these facilities under the BDCP. Accordingly, these LAND members want to ensure that the projects have as minimal negative impact on their existing operations as feasible. To that end, LAND has taken a cooperating agency perspective, not just legally through its agreements with the U.S. Department of the Interior, Bureau of Reclamation ("BOR"), but also through its engagement with the other federal and state agencies and the project proponents.

LAND believes that the original premises of the BDCP, in particular Conservation Measure ("CM") 1 and its failure to reduce reliance on the Delta, are technically flawed in a fundamental way. Over several years, LAND has urged optimization of BOR project infrastructure and the Habitat Conservation ("HCP") planning elements to attempt to achieve their project purpose, minimize their effects on the environment, and meet the legal requirements of Senate Bill ("SB") 7x to protect Delta communities. BDCP ultimately responded by forgoing a proposed ring levee around Clarksburg, a proposed western habitat bypass along the ship channel, and by reducing the size of the intermediate forebay.

Notwithstanding these incremental improvements to the project, the BDCP still proposes to significantly impair the flood protection and water supply operations of the cooperating LAND districts. As the districts have identified in a separate letter, BDCP's analyses as presented in the Plan and the EIR/EIS, have significant deficiencies. Despite these issues, the analysis still clearly indicates that there has been a gross failure in the development of an effective HCP/Natural Community Conservation Planning ("NCCP") and project alternative since the preferred project has over 48 significant and unavoidable impacts.

The primary issues that concern all parties still remain, which include reliable water supplies, stable native species populations, take coverage for water operations and levee maintenance, and invasive species management. These issues, among others, will not be resolved with the current BDCP. This letter is broken into generalized problem statements, which are followed by technical comments.

Problem Statements

BDCP continues to inadequately address the following issues:

Reconciling the Water Demand: Removing millions of acre feet of water a year from a stressed system, and not designing that withdrawal to match the hydrologic cycle, is patently irresponsible. The BDCP's proposed operations take even more water out of the system, and take much more of it in drier years at the driest season of the year. No attempt is made by the BDCP to manage the demand side. The sole focus is to capture the supply side.

HCP/NCCP: This HCP/NCCP directly interferes with, and competes with, existing HCPs, conservation easements, habitat management plans, and refuge management plans. This HCP/NCCP is unique because it was developed without substantive input and support of those plans, or the participating local governments and landowners. Yet, the BDCP does not readily allow for future projects with similar goals and objectives to rely upon the BDCP HCP/NCCP, unlike other HCP/NCCPs.

The South Delta Pumping Operations: The BDCP fails to fundamentally address continued flow reversals and the massive fish killing in the South Delta. The engineered system needs to attempt to improve overall circulation, San Joaquin River connectivity, and some means of reducing take (and salvage losses). The BDCP claims this is the purpose of CM 1 (BDCP, p. 4-24), but then still proposes to operate the new facility only half of the time.

BDCP1644

The Existing Habitat Projects: Tens of thousands of acres of existing publicly funded and/or managed lands have already been acquired with essentially no scientific analysis of their success or failures or active management for optimization for listed species needs (or even reducing weeds). Instead, the BDCP trades off successful terrestrial and riparian resources for yet more generic aquatic habitat. This is a numbers game instead of a quality-based effort that will simply put more species into peril, such as the greater sandhill crane.

Invasive Species Management: The BDCP proposes some sort of invasive species management, at an unspecified time in the future, and in some other unspecified analysis. This should be the highest priority under any future Delta scenario for any ecological outcome to be favorable in the Delta, and it has widespread support, yet it is the least developed of the conservation measures (CM 13 & 20). These may be difficult ecological issues, but the pelagic organism decline, as well as any attempt to counteract that decline, hinge in a large part on improving invasive species management.

Inter basin Transfers: The BDCP, as well as the grossly over appropriated San Joaquin system in general, is dependent on inter basin transfers of water. The transfers have significant and unanalyzed impacts in their areas of origin, and can result in further stream depletion with or without conjunctive use. This is a classic example of how the BDCP trades off the high ecological value tributaries to make up for systemic failure to manage the root causes of declining Delta fisheries.

Agricultural Impacts: The BDCP is also literally sacrificing an exceptionally high value, sustainable agricultural region for another region, which has devastated its local water supplies and has already created several ecological disasters. Massive Tulare Lake, the San Joaquin River, San Joaquin Valley groundwater, and the South Delta, as well as every large river in the lower water watershed has been captured, depleted and/or destroyed. The BDCP fails to even acknowledge this history and current practice, as well as the repercussions of continuing to subsidize these impacts and their resulting toxic agricultural drainage.

In addition to those more general problems and failures to develop an effective problem statement that deals with the fundamental issues of removing too much water from an already depleted watershed, there are a host of technical issues that are either inadequately addressed or simply not dealt with at all in the current BDCP analysis.

Problems with Conceptual Development

The CMs are a hodgepodge of an industrial water project and undeveloped window dressing "habitat" measures (CMs 2-13) that attempt to serve as mitigation for the impacts of CM 1. To what degree the CMs mitigate for the project and what degree they stabilize and recover covered species is unclear in the analysis, but should be the most obvious part of the BDCP. It is nearly impossible to discern what the habitat-associated mitigation measures are for CM 1 or for other CMs, and how these measures are different from the requirements to support species recovery. In just one illustration, miles of contiguous, mature riparian forest is lost for the intakes, project roads and other features, but replacement is deferred and piecemealed. The lapse in time before replacement of this critical ecological resource is 30-40 years, and the replacement is spatially re-distributed to areas other than where the original impact occurred.

The range of alternatives is incomplete and insufficient to adequately analyze the project. For illustration, Alternative 9 (Through Delta) is a potentially significant improvement on current conditions, but that is not reflected in the analysis. Regardless of the selected alternative, existing Delta channels will remain the primary route for water for a minimum of 10 years during construction of the preferred alternative. It would also remain the primary flow route for up to half the time under the preferred alternative. Yet the benefits of implementing this alternative, or portions of this alternative, are not discussed. Since it would be still a primary flow route, it should be optimized for better hydrodynamics and reduction of fish loss. The implications of this failure to analyze the obvious future impacts of the project, and how to mitigate for them both during construction and during operations demonstrates how the analysis and its conclusions fail to meet the Least Environmentally Damaging Practicable Alternative ("LEDPA").

The BDCP should consider all alternatives individually without CM 1. For example, there is no analysis of which combination of CM 2, 13 and 16 would result in the lowest environmental impacts and greatest environmental and water supply benefits. There is also no analysis of the environmental result of timing CM 1 after successful completion of CM 2, 13 and 16. This stepwise process was effectively the outcome of CalFED, but was not considered under the BDCP.

Operational Uncertainties

The issues of defective conceptual development described above create a weak foundation for operations and the analysis in the BDCP. For example, the screen losses for salmonids in the north Delta were based on a series of assumptions that were not

conservative. If depletions of groundwater resulting from water transfers and conjunctive use further damage the spawning areas upstream, the ecological impacts of those losses could be much higher than analyzed. The limits of those transfer operations and their environmental impacts are explicitly left out of the BDCP documents, yet could be responsible for much of the overall project impact on the environment.

The relationship between how pumping will be controlled under real-time operations ("RTO"), and new dam operational rules are not described in this analysis. Yet, based on the provided water quality modeling, the dams would have to be operated under new rules – rules that are not yet developed or analyzed. The ecological considerations of matching north Delta pumping locations and rates in real world conditions, upstream dam operations, intake bypass flows, CM 2 bypass flows, Delta Cross Channel, Steamboat and Sutter Slough flow reversals, Head of Old River Barrier, and south Delta pumping operations are simply not analyzed in the EIR/EIS.

The implications for this failure of describing operational conditions and providing an associated analysis are profound to the cooperating agency districts. The likely stage elevation and water quality changes associated with the project are also not identified. The districts are likely to be subject to greater seepage from increased stages associated with the project and its unanalyzed water transfers. The water elevations and rapid changes in those elevations can lead to scour on levees, seepage can lead to crop damage, and water quality degradation can lead to crop losses. The amount of loss cannot be predicted because the real time impacts of the project are simply not described. The means by which these impacts will be quantified by the project is not identified, placing the burden of monitoring and remediation on the districts.

The overall environmental impacts of the project itself, together with its mitigation, and the habitat implications to the cooperating agency districts, have not been analyzed. The districts protect riparian and wetland habitat, and at times have mitigation needs of their own. The HCP should be open to all with similar project needs so that the Delta's environmental needs are consistently managed through one program. Under the BDCP, however, the existing and proposed local HCPs will compete for mitigation land with each other and the districts. It appears that the districts would have to duplicate portions of the BDCP in their own Section 7 and 10 processes, if needed in the future.

The cooperating agency districts remain concerned that the significant environmental impacts of the project on both terrestrial and aquatic species will result on the burden being shifted from the beneficiaries of the project to the local districts. As the resource agencies discover the need for more species protections and restrictions due to

the inadequacies of the BDCP, the BDCP proponents will be protected as they will have received 50-year take authority with "no surprises" assurances. On the other hand, BDCP offers no process by which other landowners or agencies within the plan area may receive take authority if needed for ongoing activities. Though remotely possible, the districts believe that re-consultation on the BDCP is unlikely and that the agencies will instead place environmental restrictions on local districts and landowners. The districts support LEDPA alternatives described earlier because they are far likely to achieve real environmental benefits, which in turn reduces everyone's compliance burdens.

For example, the critical project monitoring and associated metrics are poorly defined and are likely not to provide any ecologically useful statistical information. This can lead to the requirement to take more land out of agriculture and put it into habitat, placing additional local burdens due to poor science. Or, local restrictions may be put into place based on flawed analysis. A transparent, robust monitoring analysis program must be developed.

The project's monomaniacal emphasis on aquatic species over terrestrial species remains a concern across the board. Project impacts may occur to terrestrial species, such as greater sandhill cranes, but the proposed inadequate project monitoring will likely not disclose whether reductions in populations are due to the project's impacts. That puts the districts at risk of being subjected to new environmental restrictions. Strong environmental support for all listed and covered species needs to be put in place before CM 1 so that species do stabilize and recover, and an effective statistically-sound monitoring program must be implemented to identify project benefits and impacts.

The water quality impacts of the project raise similar unresolved concerns for the districts. It appears that sediment reductions will lead to Delta smelt impacts, which are arbitrarily ignored. Selenium and methylmercury impacts from habitat restoration activities could also lead to Central Valley Regional Water Quality Control Board restrictions on districts to reduce loads created by the project.

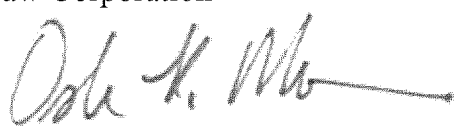
Finally, the districts have repeatedly identified that levee road damage and access impacts as a result of the project have been inadequately or improperly analyzed. The EIR/EIS does not deal with the structural impacts of the project on the structural, access and maintenance of critical district infrastructure. The districts use these levees to protect their islands from flooding, support flood fighting, transport agricultural supplies, goods and services, and to provide rescue routes. There are simply no substitutes available to replace these structures and routes; yet, the BDCP's treatment of impacts on local infrastructure is cursory and trivial.

Conclusion

The LAND cooperating agency districts appreciate the opportunity to work with the federal lead agencies and the other cooperators to address these technical concerns that so profoundly affect the Delta. This letter has also been submitted as a formal comment on the BDCP and associated environmental documents.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By: 
Osha R. Meserve

cc:

Ryan Wulff, NOAA-NMFS (BDCP.comments@noaa.gov)
Michael G. Nepstad, U.S. Army Corps of Engineers (Michael.G.Nepstad@usace.army.mil)
Erin Foresman, U.S. EPA (foresman.erin@epa.gov)
Maria Rea, NOAA-NMFS (Maria.Rea@noaa.gov)
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Roberta Goulart Solano County (rgoulartpostofficebox@gmail.com)
Philip J. Pogledich Yolo County (philip.pogledich@yolocounty.org)

From: Shelly Sannar <shelly@buttewater.net>
Sent: Tuesday, July 29, 2014 10:29 AM
To: BDCP.Comments@noaa.gov
Subject: BWD comment letter
Attachments: metooletter.pdf

Please see attached...

Thank-you,

Shelly Sannar, Office Manager
Butte Water District

735 Virgina Street
Gridley, CA 95948
530-846-3100
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buttewaterdistrict.org

BDCP1645

BUTTE WATER DISTRICT

Mark Orme
Manager-Secretary

735 Virginia Street
Gridley, California 95948

Phone 530-846-3100
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buttewaterdistrict.org

July 28, 2014

Butte Water District supports the comment letter dated July 28, 2014, submitted on behalf of the North State Water Alliance, which contains comments on the Bay Delta Conservation Plan, and its associated Implementation Agreement and draft Environmental Impact Statement and Environmental Impact Report. By and through this letter, Butte Water District adopts each comment and objection in the July 28, 2014 letter as its own, along with all exhibits and attachments to that letter, and incorporates herein by this reference all such comments, objections, and documents.

Sincerely,

Mark Orme, Manager
Butte Water District

From: John Brennan <john@pfbsons.com>
Sent: Tuesday, July 29, 2014 10:28 AM
To: BDCP.comments@noaa.gov
Cc: 'David Katz'; 'Jacob van Epen Katz'; 'Tom Cannon'; 'Philp,Thomas S'; 'Julie Spezia'; 'Moon, Laura K.@DWR'
Subject: BDCP Comments - CMFV
Attachments: Cal Marsh - BDCP Comments.pdf

Mr. Ruff -
Attached find a BDCP comment letter from Cal Marsh & Farms Ventures, LLC.
Thank you,
John Brennan

BDCP1646

Cal Marsh & Farm Ventures, LLC
315 Fourth Street, Colusa, CA 95932

July 25, 2014

Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

RE: Comments on the Draft Bay Delta Conservation Plan (12.13.13) and Associated EIR/EIS

As stakeholders with interest in the Yolo Bypass, we are very concerned about the overall timeline of the implementation of **Conservation Measure 2** (CM2) in the **Bay Delta Conservation Plan** (BDCP).

Our collaboration on the **Knaggs Ranch Science Projects** has changed perspectives on how to design **CM2** for better results to meet the biological goals of the **BDCP**.

We have been actively participating in the **Yolo Bypass Fisheries Enhancement Planning Team** and feel that too much time has been spent planning and not enough recognition has been given for the incremental steps already underway. To that end, we offer the attached **Cal Marsh Five-Point Plan** (CMP) for inclusion in **CM2**.

CMP includes a coordinated strategy for fixing the major fish passage problem in the Yolo Bypass and will add significant habitat that benefits rearing millions of wild and hatchery juvenile salmon in the Upper Yolo Bypass.

First, **CMP** addresses the problem of adult salmon, sturgeon, and steelhead straying into the Colusa Basin; with both short and long-term solutions for fish passage and stranding below the Fremont Weir. ***(Biop 1.7 - Reduce Migration Delay within Yolo Bypass)***

Second, **CMP** provides significant habitat improvements for rearing juvenile salmon in the Upper Yolo Bypass, including thousands of acres of managed inundated floodplain and many miles of restored riparian slough-floodplain forest. ***(Biop 1.6.1 - Salmonid Rearing Habitat in Lower Sacramento River Basin)***

Most significantly, the implementation of **CMP** provides for improved floodplain production of both naturally reared and hatchery salmon in drought years.

Sincerely,

David Katz, Partner

John Brennan, Partner

Short Term Actions in the Upper Yolo Bypass.

5 Point Plan - May 2, 2014

Plan prepared by: Cal Marsh & Farm Ventures, LLC

Upper Yolo Bypass Improvement Projects

Cal Marsh & Farm Ventures, LLC (Sponsor) in collaboration with other stakeholders proposes to implement five Upper Yolo Bypass fish habitat and passage improvement projects over the next five years. The projects are consistent with projects included in the Bay Delta Habitat Conservation Plan (BDCP) within Conservation Measure 2 (CM2). The projects are part of a long-term and on-going floodplain restoration and science program being implemented by the Sponsor in partnership with CalTrout, DWR, BOR, UC Davis, NOAA, CWA, DFW, SFCWA, and landowners.

As part of the Yolo Bypass Science Program the Sponsor has identified five multi-phased **Early Implementation Projects** that are consistent with elements of CM2 of the BDCP. Early implementation (first ten years) of BCDP/CM2 should include these five projects proposed by the Sponsor and an additional five supported by the Sponsor:

1. **Tule Canal Fish Passage and Floodplain Habitat Project (BDCP CM2 Component 9):** Create connectivity in Tule Canal from East pond just below Fremont Weir downstream to Highway 5. Barriers inhibit movement and trap adult and juvenile anadromous fish including listed salmon, steelhead, and sturgeon, especially after flood spills into the Yolo Bypass from the Sacramento River at Fremont Weir. (See Attachment A for further details.)

   Phase One: Replace fish passage obstructions at three road crossing over upper Tule Canal. North and middle crossings will receive operable gated culverts, while south crossing will be removed. This component project will replace agricultural crossings of the Tule Canal and Toe Drain with fish-passable structures such as flat car bridges or earthen crossings with large, open culverts. Construct new or replacement operable check structures to facilitate continued agriculture in the Yolo Bypass while promoting fish passage in season (BDCP Phase 1, Category 3 action).

   Benefits:
   - Prevention of post-flood stranding of adult green and white sturgeon and Chinook salmon behind crossing barriers via improved connectivity of upper Tule Canal to the Fremont Weir.
   - Prevention of juvenile salmon stranding upstream of barriers (thus increasing survival rates) of juvenile salmonids using floodplain ponds and shaded riparian channel habitats of upper Tule Canal.

   Phase Two: Operate new culvert gates at new crossing structures as elevation control structures in Tule Canal to control post-flood water elevations (and the amount and quality of rearing habitats). This management system will create enhanced juvenile salmonid rearing habitat in shaded riparian aquatic and floodplain habitat units under existing Fremont Weir overflow frequency as well as under higher frequencies of proposed Fremont Weir notching (BDCP CM2 Component 15) and higher flows from Colusa Basin Drain (BDCP CM2 Component 13).

Benefit:

- Enhanced foraging habitat to rearing juvenile salmon will result in greater size and body condition, earlier emigration, and improved survival to return as adults through improvement in upper Tule Canal's off-channel habitats by adding acreage of floodplain inundation and extending floodplain inundation duration.

2. **Wallace Weir Retrofit:** Replace dirt berm with year-round operable weir (as prescribed in BDCP CM2 Component 14). This component project will construct and test flood-neutral fish barriers to prevent fish from straying into Knights Landing Ridge Cut and the Colusa Basin Drain. These barriers will be most effective when employed in association with later phase attraction flows from the Fremont Weir that is fish-passable and leads to the mainstem Sacramento River.

   Benefits:

   a. **Winter-operable weir:** The current Wallace Weir infrastructure was built for summer irrigation and is normally removed in the fall. The operable infrastructure allows the weir's screen panels to be raised in a recessed position in order to not restrict flood flows, thus avoiding damage during flood events. The operable infrastructure can also be raised during winter low-flow periods in order to facilitate water delivery to managed agricultural floodplain rearing habitats on the Tule Canal and Knaggs Ranch. When in place the screen blocks fish from leaving the Bypass and moving upstream into the Colusa Drain where they are unlikely to reproduce or survive. Construction of a winter or high-flow weir and barrier will preclude fish passage into the Colusa Drain system during high water. Prior to attraction flows being available to pass fish upstream and over the Fremont Weir there will remain a need to trap and haul fish below any new barrier at the Wallace Weir entrance to the Colusa Drain.

   b. **Re-route Knights Landing Ridge Cut summer water attraction pulse to the Upper Tule Canal:** the new Wallace Weir will also block any upstream movement of fish in response to increased Colusa Drain water being routed into the Yolo Bypass under BDCP CM2 Component 13. Adult salmon and sturgeon that currently swim into Colusa Drain at Wallace Weir on the west side of the Bypass, will instead be attracted to Upper Tule Canal on the east side of the Bypass and improved fish ladder infrastructure at Fremont Weir (BDCP CM2 Components 5-7). This will set the stage for the retrofit of the Fremont Fish fish passage (BDCP CM2 Components 15-19).

   c. **Control water surfaces within Knights Landing Ridge Cut Canal:** Increases capacity to manage irrigation and wetland habitats upstream in KLRC and Colusa Drain, which will indirectly help facilitate BDCP CM2 Component 13).

3. **Delta Food Web Export:** Operate Wallace Weir in a manner to pass summer (August – October) ag flows and winter storm drainage from the Colusa Drain through Yolo Bypass. **(BDCP CM2 Component 13).** Under existing infrastructure and operation, most Colusa Drain

non-flood water is routed to the Sacramento River at Knights Landing. Routing storm and ag drainage water to the Bypass would increase flows into, through, and out of the Bypass into the North Delta in all water-year types.

Benefits:

- Increases export of food-web products produced on Yolo Bypass floodplains which will contribute to the Bypass and Delta foodwebs of multiple listed species including delta smelt, longfin smelt, all Chinook runs, steelhead, splittail and sturgeon.
- Increases habitat area and quality in Bypass.
- Improves fish passage flows in Bypass.

4. **Knaggs Operable Weir:** Install operable weir within the Tule Canal approximately one-half mile north of Interstate 5 (such infrastructure is prescribed in BDCP CM2 Components 9 and 19). The weir would be positioned to work in conjunction with existing east/west berm that crosses the Bypass along the north side of the historic City of Woodland sewer ponds. The weir would facilitate floodplain inundation during non-flood flows and provide improved fish passage infrastructure.

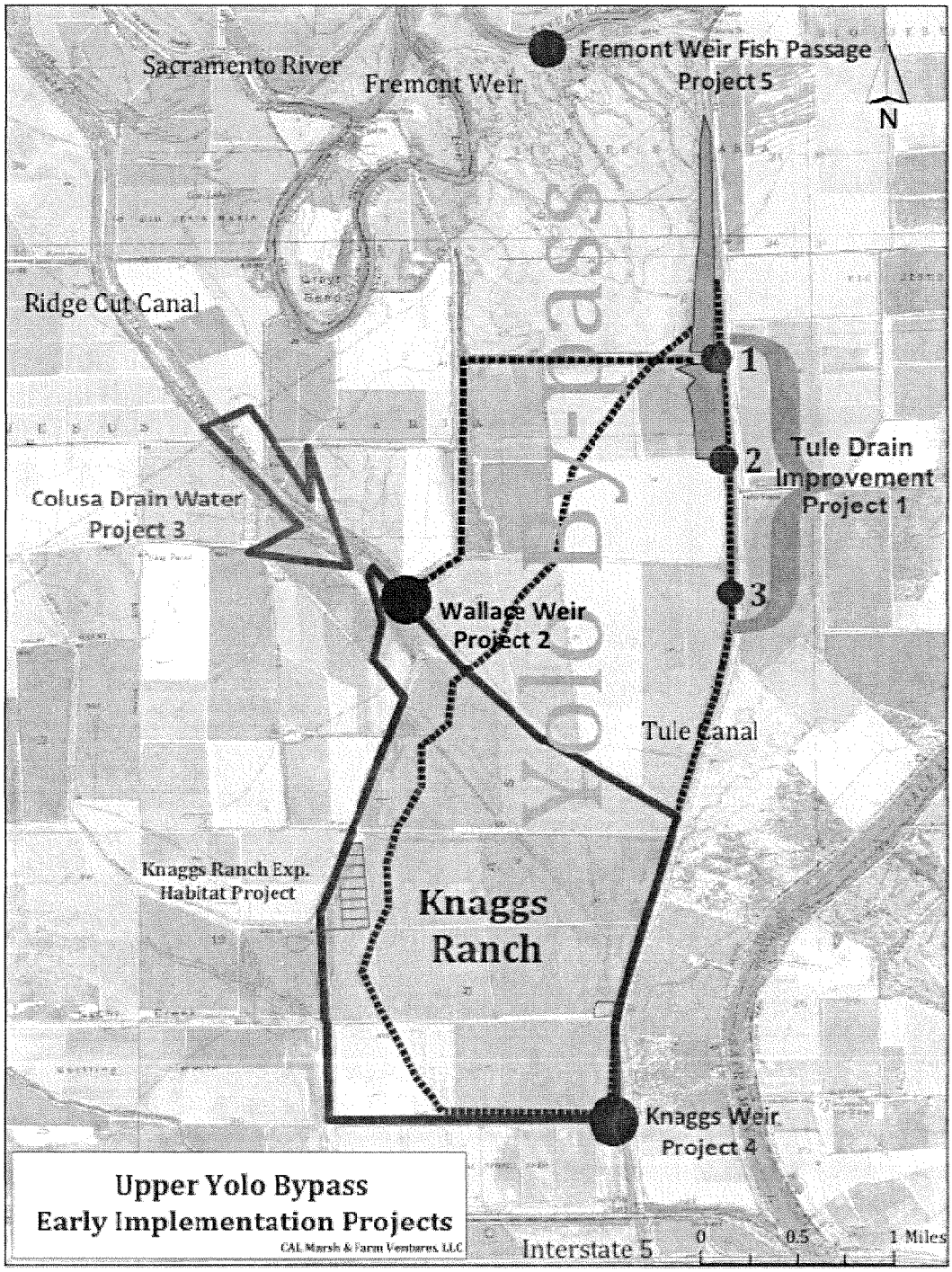
   Benefits:

   - An operable weir will control the water elevation across approximately 3,000-acres of managed agricultural floodplain habitat in the Bypass, increasing the extent and duration of floodplain inundation during non-flood periods.
   - Initial configuration would include a deflatable weir to allow peak flood waters to pass and then inflating the weir to retain descending limb of natural floods in Northern Yolo Bypass, thus extending shallow floodplain inundation.
   - Managed floodplain impounded behind operable Knaggs Weir could also be maintained with local water and from Ridge Cut Canal via Wallace Weir via overland methods. In drier years with low probability of Fremont Weir spills, hatchery salmon fry may be stocked in winter to rear "naturally" in ponded areas with expected high growth and survival potential. Splittail may also use the new inundated area in spring for spawning and early rearing.
   - Eventually, the new Knaggs Weir would be operated conjunctively with operable gates in Fremont Weir to optimize the northern Yolo Bypass for fish habitat. In such cases the new inundated area would be used by wild salmon young that pass over (or through via a new "notch") the Fremont Weir into the Bypass.

5. **Fremont Weir Retrofit Project:** Retrofit existing Fremont Weir and fish ladder with year round operable fish passage structure that also extends period of overflow from Sacramento River into Bypass. (BDCP CM2 Components 5, 6, 7, 15, 16, and 19). Fremont Weir retrofits would be designed to operate in conjunction with other Bypass infrastructure and visa-versa. Coordination of design, build, and operation are essential for all elements of the Five Point Plan.

Benefits:

- Create upstream passage for adult salmonids and sturgeon at the Fremont Weir, thereby avoiding stranding in the Bypass or migrations into the Colusa Drain. Project at Fremont Weir would be designed and operated in conjunction with downstream infrastructure and operations in the Bypass at Sponsor projects
- Create connectivity for water and fish from Sacramento River to Yolo Bypass floodplain habitats. Operations of a gated structure at Fremont Weir would be coordinated with Sponsor's Bypass projects.
- Coordinate gated Fremont Weir operations to maximize floodplain inundation benefits in Bypass.


Sacramento River
Fremont Weir
Fremont Weir Fish Passage
Project 5
N
Ridge Cut Canal
1
2
Tule Drain
Improvement
Project 1
Colusa Drain Water
Project 3
3
Wallace Weir
Project 2
Tule Canal
Knaggs Ranch Exp.
Habitat Project
Knaggs
Ranch
Knaggs Weir
Project 4
Upper Yolo Bypass
Early Implementation Projects
CAL Marsh & Farm Ventures, LLC
Interstate 5
0
0.5
1 Miles

PROJECT #1
Upper Tule Canal Fish Passage and Floodplain Habitat Project

Cal Marsh & Farm Ventures, LLC

June 21, 2013

Project Goals: Meet requirements of OCAP BO Action 1.7

1. Improve anadromous fish passage through Yolo Bypass
    a. Prevent post-flood stranding of adult green and white sturgeon and Chinook salmon via improved connectivity of upper Tule Canal
    b. Prevent stranding (increase survival rates) of juvenile salmonids utilizing floodplain and shaded riparian channel habitats of upper Tule Canal.
2. Enhance benefit of rearing Juvenile salmon (greater size and body condition) utilizing upper Tule Canal off-channel habitats by extending floodplain inundation duration
3. Habitat credits that are compatible with agriculture: Develop new management protocols for upper Tule Canal that increase wildlife benefit for waterfowl, riparian song birds, shorebirds, wading birds, salmon and sturgeon while sustaining production agriculture

Project Implementation: Replace fish passage obstructions in upper Tule Canal with the following:

- **North Crossing & Aqueduct:** Replace Te Velde cross channel aqueduct with open-bottomed D-culvert bridge and operable headgates (flash-boards or screw gates) at the end of the cross canal (to allow water to be released into Tule Canal pond). Water from Colusa Drain via Ridge Cut and Wallace Weir can then be released directly into head of Tule Canal at pond. (Irrigation water for Fremont Basin to east would pass under Tule Canal via siphon to east levee intake structures.)
- **Middle Culvert**: Replace collapsed culvert with larger open-bottomed D-culvert bridge (or box culvert) with operable headgates (flash-boards or screw gates), which will allow control of water levels in the upper Tule Canal pond.
- **South Culvert:** Remove crossing

Operation and Benefits: Adult Chinook, steelhead, and sturgeon attracted into Yolo Bass and Fremont Weir flow during flood events are trapped in Northern Bypass after Fremont Weir ceases spilling. Under current conditions these fish are stranded on the Weir apron, in deep scour holes just south of the weir or in several ponds created by passage obstructions in northern Tule Canal. In the open position, the open Middle Culvert gates will allow upstream passage to the Fremont Weir. In closed position, it will allow the capture (rescue) of adult Chinook and sturgeon after Fremont spill events immediately below the Middle Crossing, thereby averting stranding in the ponds (or leaving the fish below the Middle Culvert). Rescued fish can readily be transferred to the Sacramento River via levee road to Fremont Weir. In the closed position the Middle Culvert gates can also hold the descending limb of flood events creating capacity to extend floodplain inundation and enhance benefit to foraging juvenile salmonids rearing in the managed habitat units. Flow to ponded floodplain and Tule Canal can also be enhanced by releases from the North Crossing gates.

From: Vink, Erik@DPC <Erik.Vink@delta.ca.gov>
Sent: Tuesday, July 29, 2014 10:24 AM
To: BDCP.Comments@noaa.gov
Cc: Kaminskas, Bree@DPC
Subject: Delta Protection Commission BDCP Comment Letter
Attachments: BDCP_Matrix_7.24.14 FINAL.xlsx; Final BDCP Comment Letter 7-24-14.pdf

this was mailed last week, but in case the USPS went awry.....here is the BDCP comment letter and attached matrix from the Delta Protection Commission.

Erik Vink I Executive Director
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BDCP1647

DELTA PROTECTION COMMISSION
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July 24, 2014

Mr. Ryan Wulff
National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Re: **Draft Bay Delta Conservation Plan and associated Draft Environmental Impact Report/Environmental Impact Statement**

Dear Mr. Wulff:

The Delta Protection Commission (Commission) is a California state agency created by 1992 legislation that declared "the Delta is a natural resource of statewide, national, and international significance, containing irreplaceable resources, and that it is the policy of the state to recognize, preserve and protect those resources of the Delta for the use and enjoyment of current and future generations" (California Public Resources Code (PRC) section 29701).

The Delta Reform Act of 2009 (Chapter 5, California Statutes of 2009-10 Seventh Extraordinary Session) declared that the basic goals of the Act are to provide a more reliable water supply for California and protect, restore and enhance the Delta ecosystem, "in a manner that protects and enhances the unique cultural, recreational, natural resource and agricultural values of the Delta as an evolving place" (PRC section 29702). Further, the Commission is identified as a "forum for Delta residents to engage in decisions regarding actions to recognize and enhance the unique cultural, recreational, and agricultural resources of the Delta" (PRC section 29703.5(a)). In addition, the Commission has been identified to lead and support a variety of recommendations in the Delta Stewardship Council's Delta Plan, many related to protecting and enhancing the Delta's unique values.

Another primary Commission responsibility is to prepare and implement a comprehensive long-term Land Use and Resource Management Plan (LURMP) for the primary zone of the Delta. General plans of the five Delta counties are required to be consistent with the LURMP. PRC Section 29760(b) sets out policy requirements for the LURMP, which include the following:

- Protect and preserve the cultural values and economic vitality that reflect the history, natural heritage, and human resources of the delta.
- Conserve and protect the quality of renewable resources.
- Preserve and protect agricultural viability.
- Restore, improve, and manage levee systems.
- Preserve and protect water quality of the Delta.
- Preserve and protect open-space and outdoor recreational opportunities.
- Protect the Delta from any development that results in any significant loss of habitat or agricultural land.

The Commission has determined it is appropriate to review the proposed Bay Delta Conservation Plan (BDCP, or "project") and the associated Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS) in relation to the LURMP. LURMP policies have been adopted to protect and enhance the Delta's unique resources. To the extent that any project contradicts those policies, whether or not officially under the jurisdiction of the Commission, it is likely that the project will harm or reduce the unique values of the Delta.

The Commission discussed these comments at meetings held on May 22 and June 26, 2014. On a vote to approve these comments at the June 26 meeting, Commission members representing state agencies abstained from voting, and this letter in no way implies a recommendation or position of the Governor or his administration.

It is worth stating at the outset that the BDCP and its associated DEIR/EIS represent an immensely complicated project and analysis, and it is challenging to navigate the entirety of the proposal to determine its impacts on the unique cultural, recreational, natural resource and agricultural values of the Delta. The project review period also occurs during a time when drought-related activities are competing for time and attention with the review of this proposal. Important components of the BDCP (especially the anticipated Implementing Agreement) have only recently been released. This creates an additional challenge for interested parties to review the full context of the proposal.

As such, our review of the project has attempted to be thorough with regard to the most significant impacts to the Delta region, even though it is not comprehensive. The Commission's comments are organized into three primary areas of concern, as follows:

A. INADEQUATE CHARACTERIZATION OF IMPACTS TO DELTA AS PLACE

While we appreciate the effort and consideration that went into the proposed BDCP, our primary criticism of the effort is that it was completed with an overwhelming focus on one of the co-equal goals (a more reliable water supply for California; more specifically, in our view, a more reliable water supply for south-of-Delta exporters) and a distant secondary focus on the other co-equal goal (protect, restore and enhance the Delta ecosystem). This almost entirely disregards the essential context provided in law -- protection and enhancement of the unique cultural, recreational, natural resource and agricultural values of the Delta as an evolving place.

The DEIR/EIS does not adequately address or mitigate BDCP's effects (both from the proposed tunnel construction and the other conservation measures) on cumulative impacts to "Delta as Place": the agricultural, recreation, aesthetic, historic and community character resources of the Delta. In cases where there are not specific, feasible and enforceable mitigation measures provided, there should be specific performance standards that will mitigate the significant effects of the project.

Community Impacts: The BDCP estimates numerous impacts to Delta residents and visitors from construction activities, including exposure to construction noise at all hours, truck traffic leading to unacceptable level-of-service and pavement conditions, impacts to local farm and resident traffic from road relocations, new sources of light/glare that will adversely affect views in the area, effects on regional/local utilities, increase in safety hazards, and visual impacts to communities near intake and tunnel construction. The attached matrix outlines some of the specific concerns related to these issues. The DEIR/EIS discussion seems to suggest that abandonment of buildings and residences during the construction period will be temporary, when it is more likely that this will be a permanent abandonment and contribute to community blight and decline. The DEIR/EIS should identify explicit mitigation measures for these impacts.

As the BDCP states, the visual character of the Delta is strongly identified by its agricultural and water-based Delta landscapes and communities. As stated in DEIR/EIS Chapter 17 (page 205, lines 2-7): "These conservation measures would alter the Delta landscape by incrementally, and substantially, introducing elements into the study area over time. This could pave the way for the gradual transition of a much-valued cultural and regional landscape and make it easier for other similar projects to be implemented over time because of the devalued baseline conditions, compared to Existing Conditions, if conservation measures are not planned and implemented in a manner that protects visual resources."

In addition, the DEIR/EIS does not mitigate for the hydraulic impacts associated with construction of cofferdams in flood conveyance channels. Flood protection is critical for Delta communities as well as the greater region, and these impacts must be discussed and mitigated. In addition, the DEIR/EIS does not mitigate for the impacts to structural integrity of levees from construction traffic.

To attempt to better depict the actual impacts of some of the construction activities of the BDCP, the Commission undertook an effort to develop visual simulations of construction activities at some construction locations, based on information available in the BDCP. These materials have been shared with the project proponent.

Recreation Impacts: The BDCP undercounts recreational spending in the Delta by $76 million, as compared with the recreational spending estimated in the Commission's Economic Sustainability Plan (ESP) - $236 million in DEIR/EIS, $312 million in the ESP. There also will be reduced boating opportunities in the vicinity of riverside construction and barge traffic, with resulting significant economic impacts to marinas from reduced boat traffic. Over a construction

period lasting up to 10 years, it is likely that some number of these marinas will be unable to survive these negative impacts to their businesses. These impacts must be mitigated.

There also will be a reduction in Delta day visitors due to road relocation and avoidance of truck traffic, and resulting impacts on the Delta economy. In addition, CM 20 proposes a watercraft inspection program that will limit boating access to Delta waterways to specific points of entry. Chapter 15 (page 15-103) of the DEIR/EIS states that "Although there could be a marginal effect on the recreation experience if boaters are delayed at the boat launch, it is expected that there would be no adverse effect on recreational boating." Given the level of boating use in the Delta (6.4 million boating visitor days per year, according to the ESP) and the likely number of inspection stations, it is highly likely that many recreational boaters will seek other boating opportunities outside the Delta rather than wait to clear an inspection station. Finally, there will be a negative impact on Delta park facilities from tunnel construction and other conservation measures.

The DEIR/EIS should identify explicit mitigation measures for the significant and unavoidable recreation impacts caused by BDCP tunnel construction and operation, as well as CM 20 (watercraft inspection).

Agriculture Impacts: Conversion of agricultural land for habitat restoration in BDCP Conservation Measures 2 through 22 (CMs 2-22), especially tidal marsh restoration, is significant and dwarfs the conversion of agricultural land for tunnel construction activities. Combined, approximately 14% or 70,000 acres (equivalent to more than 109 square miles or the land area equivalent of the City of Fresno, population 510,000) of highly productive and unique Delta farmland is proposed for outright conversion as a result of tidal marsh restoration or tunnel construction, while an additional more than 10,000 acres (equivalent to more than 15.6 square miles or the land area equivalent of the City of Madera, population 62,600) would be agriculturally-restricted through seasonal flooding or other proposed restoration activities.

It is also worth noting that 3,500 acres would be proposed for storage of reusable tunnel material, and this land (assumed to be farmland) could be contaminated by toxic materials added to the tunnel boring process, thus rendering the land unusable and contributing further to the permanent conversion of agricultural land as a result of tunnel construction. The agricultural impacts of CMs 2-22 are not adequately analyzed due to the conceptual level of the proposed measures. This is a significant shortcoming to capturing the full agricultural impacts (as well as other "Delta as Place" impacts) from the proposed conservation measures.

The ESP estimated the economic impacts to Delta agriculture from the BDCP conservation measures as they existed in the 2010 BDCP documents; these conservation measures are largely unchanged and are now known as CMs 2-22. However, the DEIR/EIS does not cite the estimates of agricultural revenue loss from CMs 2-22 that is part of the ESP (estimated at $32-$132 million of direct impact annually depending on the locations used for restoration activities),

or even utilize the agricultural data generated for the 2013 BDCP statewide economic impact study (estimated at $89 million of direct impact annually).

Further, to minimize the impact on the Delta economy and communities, restoration efforts should focus first on existing publicly-owned land or land owned by conservation entities intended for restoration activities before acquiring productive agricultural land for restoration.

In addition to these direct conversions of agricultural land, there also are significant indirect negative impacts on Delta agricultural land. These include changes to groundwater levels (both increase and decrease) occurring as a result of tunnel construction and restoration activities on adjoining lands, and the corresponding impact on the root zones of crops; and disruption of drainage and irrigation facilities from tunnel construction.

It also is worth noting that the Commission has a role in reviewing any land-use changes on Staten Island, the proposed site of tunnel construction areas and tunnel material placement. Staten Island is subject to a 2001 conservation easement and a 2002 Memorandum of Understanding between the Commission and the Department of Water Resources (DWR). The stated intent of the conservation easement is that Staten Island be protected from "any actions that would result in the conversion of any material portion... away from agricultural use." DWR is the holder of the conservation easement and legally responsible for its enforcement. To date, the Commission has not been consulted related to these obligations, nor has it received a restoration plan for review as required by the conservation easement. It is difficult to understand how DWR intends to comply with these requirements and manage the apparent conflict of interest between its legal obligations to protect Staten Island against conversions from agricultural use and its interest in advancing the BDCP.

The primary mitigation measure for agricultural impacts is the proposed Agricultural Lands Stewardship Plan (ALSP – Mitigation Measure AG-1). While the recent draft version of the ALSP includes a variety of useful and well-thought mitigation strategies that would benefit agriculture, it also includes measures that appear designed more to facilitate restoration of agricultural land for the benefit of listed species. The Commission recommends that the Delta agricultural community be invited to select a preferred administrator for the agricultural mitigation funding, and allow this administrator to work with the full range of ALSP strategies to determine the best measures to mitigate for the loss of Delta farmland. The ALSP must also be adequately funded to compensate for the many agricultural impacts related to BDCP.

Water Impacts: The BDCP has significant effects on Delta water quantity and quality and these impacts must be fully mitigated. The DEIR/EIS is inadequate because it fails to analyze and disclose the significant adverse impacts to the water supply for in-Delta water users. It also discloses a change in Delta water elevations, but fails to analyze the impacts of these significant elevation changes on Delta agricultural water diversions, recreational fishing and boating.

Agricultural water quantity is also mentioned as a significant and unavoidable impact, but the DEIR/EIS fails to mitigate these completely avoidable impacts; these impacts are not being

avoided, and further they are not being mitigated. The DEIR/EIS acknowledges that water losses related to construction dewatering may not be replaced with supplies sufficient to meet the pre-existing demands or planned demands of the affected party but fails to mitigate those significant impacts on municipal and agricultural supplies in the Delta. In addition, the feasibility and effectiveness of phased actions to reduce salinity levels is uncertain, and are inadequate under CEQA and NEPA.

Water quality impacts to Delta water supplies include both an increase in dissolved organic carbon (affecting municipal supplies pumped from the Delta) and salinity (affecting both agriculture and municipal supplies). Reduced Delta outflows as a result of the project operation will result in greater saltwater intrusion into the Delta and resulting impacts to water quality for Delta water users. The DEIR/EIS lists these impacts as significant and unavoidable, and the only mitigation suggested is a vague description of assistance that "may take the form of financial contributions, technical contributions or partnerships." There are many ways that these water quality impacts can and must be mitigated, including increasing (rather than decreasing) Delta outflows in drier months (especially in the fall).

Related to water impacts, the impact of invasive aquatic weeds (from both proposed subtidal habitat restoration and reoperation of the water export system with the proposed tunnels) is not adequately analyzed. Proposed Conservation Measure 13 discusses treatment for invasive aquatic weeds, but the acreage proposed for treatment appears to be inadequate for the potential new infestation areas likely to occur from extensive proposed subtidal habitat restoration.

In summary, the combination of an inadequate analysis of water conveyance and export alternatives and the lack of appropriate mitigation for community, recreation, agriculture and water impacts created by the proposed project argues for an entirely new approach to ensuring water supply reliability and restoration of the Delta.

B. INADEQUATE ANALYSIS OF ALTERNATIVES

The DEIR/EIS fails to include appropriate alternatives for analysis. All but one of the DEIR/EIS alternatives are variations of the preferred alternative. This narrow list of alternatives even ignores recommendations from DWR's own January 2008 "Risks and Options to Reduce Risks to Fishery and Water Supply Uses of the Sacramento/San Joaquin Delta" report, which identifies three scenarios with highest risk reduction potential, two of which are ignored in BDCP: Armored Pathway Through-Delta Conveyance and Seismically Improved Levees. The Commission's 2012 Economic Sustainability Plan (ESP) describes additional alternatives to ensure water supply reliability that were not considered; the ESP was peer-reviewed, approved by the Commission and largely incorporated into the Delta Plan. Analysis and consideration of the ESP and its recommendations should be incorporated into the EIR/EIS as an additional through-Delta alternative.

Informing this focus on narrow alternatives, BDCP's characterization of the condition of Delta levees (Appendix 3E) is at odds with the description of Delta levees included in the

Commission's Economic Sustainability Plan. Specifically, BDCP builds a case for an isolated conveyance facility based on the fragility of Delta levees, without adequate consideration to significant Delta levee improvements made over the past several decades through the Delta Levees Subvention Program. The BDCP documents further neglect to address Delta levee improvements still necessary to reduce risks to people, property and state interests in the Delta (as required in the Delta Plan by California Water Code section 85305(a)), even though water exports would still rely in large part upon the existing water conveyance system.

C. INADEQUATE MECHANISMS FOR ADDRESSING PROJECT IMPACTS

The Commission is concerned about the composition of the Authorized Entity Group (AEG) given its important role as the governance entity for the project, and supports equitable Delta membership on the AEG to ensure that the project is operated in a way that takes into account Delta concerns. As proposed in the BDCP Implementing Agreement, the AEG is given authority to make final decisions over how Conservation Measures 2-22 are handled. Public bond funding is anticipated to provide over half of the funding for Conservation Measures 2-22; it is appropriate to include more public participation in the AEG, especially given the significant impacts upon the people and landscape of the Delta region.

In addition, a variation of the adaptive management contemplated for habitat restoration can and should be applied to socio-economic impacts to the Delta region. The project proponent should be responsible for monitoring project impacts and studying community impacts and regional economic impacts of the project to ensure that project actions are appropriately mitigated. For community and regional impacts, the project proponent could utilize the existing Delta Investment Fund established in the Delta Reform Act of 2009 (PRC section 29778.5) to advance regional economic sustainability and enhance Delta communities.

For individuals directly impacted by BDCP construction, there should be a simpler claims process to address economic damages related to tunnel construction activity. A mitigation measure should be added to establish a "Delta Compensation Fund" funded by the project proponent and administered by an impartial and independent third party. Modeled after the British Petroleum Deepwater Horizon Disaster Victim Compensation Fund and with funding sufficient to address deleterious impacts created by completion of the BDCP Conservation Measures (especially the construction of the tunnels) placed into an escrow account, the administrator of the Delta Compensation Fund would make payments directly to affected parties. This would both provide an impartial means of addressing negative impacts and a prompt method to compensate those affected.

These impacts and possible modifications are further described in the attached matrix. We ask that the comments contained in both this letter and the attached matrix be considered as our comments on the BDCP and associated environmental documents. From the Commission's perspective, the biggest positive change that BDCP could make to improve the unique cultural, recreational, natural resource and agricultural values of the Delta would be to fully analyze and

study alternatives to the proposed 9000 cfs isolated conveyance facility and significantly reduce the scale of the habitat restoration.

Again, we strongly urge that thorough analysis be conducted on all alternatives that would achieve the co-equal goals while accomplishing the objective inherent in achieving them – **to protect and enhance the unique cultural, recreational, natural resource and agricultural values of the Sacramento-San Joaquin Delta.**

Sincerely,

Frank L. Ruhstaller
Chairman

Enclosure: DPC Comments on Proposed BDCP and EIR/S Matrix

cc: John Laird, Secretary of California Natural Resources Agency
Mark Cowin, Director of California Department of Water Resources
Chuck Bonham, Director of California Department of Fish and Wildlife
Sally Jewell, Secretary of United States Department of Interior
Penny Pritzker, Secretary of United States Department of Commerce
David Murillo, Regional Director of United States Bureau of Reclamation
Ren Lohoefener, Regional Director of United States Fish and Wildlife Service
Will Stelle, Regional Administrator of United States NOAA Fisheries

#	Impacts/ Significance to DPC	BDCP or EIR/EIS Reference	Related DPC LURMP Policy	Related DPC Economic Sustainability Plan or other Program Recommendations	Proposed Modifications to Project Conservation Measures	Proposed Modifications to Mitigation Measures
1	Proponent proposes permanent impacts to Cosumnes River Preserve with access road, shaft location, reusable tunnel material (RTM) placement. The Cosumnes Preserve is an important location of the Pacific Flyway and is a critical component of the clustering of habitat, recreation and tourism resources, including The Nature Conservancy Staten Island property, State Park's Delta Meadows, Stone Lakes Natural Wildlife Refuge and the Legacy Communities.	Chapter 15, Impact Rec-1; Permanent Displacement of Existing Well-Established Public Use or Private Commercial Recreation Facilities Available for Public Access as a Result of the Location of Proposed Water Conveyance Facilities, Page 15-255; Line 12-27.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page274, Place Based Strategies to capture future growth for Recreation and Toursim, including 1) Enhance Delta Waterways, 2) Develop Dispersed Points of Interest and Activity Areas, 3) Create Focal Point Destination Complexes with natural areas, parks, legacy communities, marinas, historic features, and trails, 4) Expand public access to Natural Habitat Areas, 5) Create recreation-oriented buffers at Delta urban edges; Page 276, Recommendations for Habitat and Ecosystem Improvements: 1) Emphasize strategies with little or no conflict with the Delta economy, 2) Include recreation facility development in habitat enhancement plans when possible, 3) Habitat restoration should start on State-owned land and only occur on private lands with willing sellers.	The established preserve should not be disturbed for the placement of Reusable Tunnel Material, when other publicly owned sites that don't have established habitat or agriculture would be better suited. If the Cosumnes River Preserve is disturbed at all, it should only be for essential aspects of the water conveyance facilities.	DEIS/EIR states that no mitigation is required. However, consider that this is an established wildlife preserve on the Pacific Flyway for migratory birds. Mitigation should be required and implemented prior to disturbance of an existing and established wildlife preserve.
2	Impacts to Clarksburg Boat Ramp (Yolo County) would adversely effect visitor recreation experience for 8 years, at minimum. According to the project proponent, construction of the intake in this area would be long term and would also substantially alter the recreation setting for views from the boat launch/fishing access site. Therefore, constructing the proposed water conveyance facilities would result in long term reduction of recreational opportunities or experiences.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Clarksburg Boat Launch, Page 15-257, Lines 39-43; and Page 15-258, Lines 1-13.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page273, General Recommendations for Economic Sustainability: 2) Compensate local governments for lost property taxes and assessments from habitat and development of facilities for export water supply.	Project proponents should consider setting aside funds to compensate public for unknown impacts to community resources. The Delta Investment Fund can act as a depository for distribution of compensation funds.	Consider that for 8 years a public amenity will be all but unusable due to noise and visual impacts. Yolo County should be compensated for the period of time that the boat ramp is rendered unusable, and potentially the boat ramp site should be renovated when the construction period is complete. Also, consider that within the 8 year construction period the park installation and equipment will age/deteriorate, and the project proponent should update and renovate the park when construction is complete.
3	Proponent proposes permanent 230kv transmission line to be constructed on Cosumnes River Preserve disrupting scenic vistas and impacting Pacific Flyway.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Cosumnes River Preserve, Page 15-257; Line 21-24	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page 275, Recommendations for Infrastructure: Ensure that future development of infrastructure in the Delta is aligned with economic sustainability strategies.	Proponent's proposed permanent 230kv transmission line would be constructed on lands managed for ecological reserve. All transmission and utility lines proposed within the Legal Delta should be placed underground or under berms to reduce impacts to terrestrial wildlife, Pacific Flyway and to reduce visual impacts on Delta scenic vistas.	
4	All temporary transmission lines should be removed once construction is complete or undergrounded to preserve Delta scenic vistas; scenic vistas are a beneficial element of the Delta recreation economy.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Cosumnes River Preserve, Page 15-257; Line 25-26.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page 275, Recommendations for Infrastructure: Ensure that future development of infrastructure in the Delta is aligned with economic sustainability strategies.	All temporary transmission lines propcsed within the Legal Delta should be removed once construction is completed, or replaced with underground permanent transmission lines to reduce impacts to Pacific Flyway and to reduce visual impacts on Delta scenic vistas.	
5	Construction of proposed transmission lines will cause significant noise and visual disturbance impacting Delta recreation and residents; construction noise should be limited to reduce impacts to recreation.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Cosumnes River Preserve, Page 15-257; Line 29-30	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		Proponent predicts that proposed transmission line construction will cause visual and noise disturbance to visitors for 3.5 years. How loud is the proposed noise level and why would the noise be generated for such an extended period of time, if only building transmission lines. How long does it take to build a transmission line?	Construction noise should be limited to working hours, 8am-5pm during work week (Monday to Friday) to reduce impact on recreation and residents.
6	Proponent proposes to build temporary barge unloading facilities at Staten Island. Barge facilities should be placed where they are the least disruptive.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Cosumnes River Preserve, Page 15-257; Line 37-38	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page 274, Recommendations for Economic Sustainability of Recreation and Tourism: Protect and enhance private enterprise-based recreation with support from state and local public agencies. Most of the economic activity related to recreation is generated by private enterprise. Public agencies can provide catalist settings, recreation facilities, and infrastructure to improve access, enhance and create settings for private development, and services.	Should provide a route of all barges to fully understand impacts.	When feasible, temporary barge unloading facilities should be designed to be converted into boating recreational facilities when construction is completed. The material transport routes for barges should be shared with Delta stakeholder groups, including residents and recreationists, to reduce impacts. What is the route of the barge, where is it going, and what will it be carrying?
7	Proponent proposes construction activity Monday-Friday for up to 24 hours per day with dewatering activity 7 days per week, 24 hours per day.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Cosumnes River Preserve, Page 15-257; Line 44-45	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		Construction activity including noise and glaring lights should be restricted to the hours of 7am-5pm to relieve residents and wildlife of constant deluge of construction impacts.	Excessive work lights after 6pm should be mitigated through screens, and constructions barriers to reduce visual impacts to resident and Pacific Flyway. Construction producing excessive noise and light glare should not be permissible during the weekend to give residents relief from non-stop construction activity.
8	Construction of the proposed water conveyance facilities would reduce the amount of area available for wildlife viewing at Cosumnes River Preserve resulting in substantial long term reduction of recreation opportunities and experience. Given that recreation is a significant component of the Delta economy, impacts to recreation opportunities should be addressed prior to construction period.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Cosumnes River Preserve, Page 15-257; Page 15-258; Line 1-16	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			To compensate for the disruption to wildlife areas and the recreation economy, new wildlife areas should be established and enhanced prior to the start of construction, to reduce the impacts on the Pacific Flyway and wildlife habitat and to reduce impacts on wildlife viewing and recreation. Newly constructed wildlife and habitat areas should include recreation amenities to provide alternatives to recreation facilities disrupted during the construction period.

BDCP1677

#	Impacts/ Significance to DPC	BDCP or EIR/EIS Reference	Related DPC LURMP Policy	Related DPC Economic Sustainability Plan or other Program Recommendations	Proposed Modifications to Project Conservation Measures	Proposed Modifications to Mitigation Measures
9	Wimpy's Marina is within the construction noise threshold for BDCP-related construction, and should be compensated for the projected economic disruption to their business.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Wimpy's Marina, Page 15-258; Line 26-27	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page 274, Recommendations for Economic Sustainability of Recreation and Tourism: Protect and enhance private enterprise-based recreation with support from state and local public agencies. Most of the economic activity related to recreation is generated by private enterprise. Public agencies can provide catalist settings, recreation facilities, and infrastructure to improve access, enhance and create settings for private development, and services.	The magnitude of the BDCP construction project will have economic impacts that few marinas may be able to weather. Given that even the short-term construction impacts are predicted to last for a minimum of 8 years, and BDCP predictions regarding noise and visual impacts, many marinas might not survive.	The project proponents state that Wimpy's Marina is within the noise and visual disturbance impact area, and across the river from tunnel corridor and other project installations. Analysis should be conducted of economic impact to marinas and their visitation and clientele. Marinas should be compensated for construction impacts related to noise disruption, visual disruption and vehicle congestion. This will enable them to make necessary upgrades and adjustments in order to weather the economic impacts during the construction period.
10	Construction impacting Wimpy's Marina ingress and egress should be scheduled to coincide with the marina's off season. Recreation is a significant component of the Delta economy and impacts to the recreation providers should be quantified and business owners should be compensated.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Wimpy's Marina, Page 15-258; Line 27-28	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		A mitigation measure should be added to establish a "Delta Compensation Fund" funded by the project proponent and administered by an impartial and independent third party, with funding sufficient to address deleterious impacts created by completion of the BDCP Conservation Measures (especially the construction of the tunnels) placed into an escrow account. The administrator of the Delta Compensation Fund would make payments directly to affected parties. This would both provide an impartial means of addressing negative impacts and a prompt method to compensate those affected.	Road construction impacts adjacent to Wimpy's Marina ingress and egress should be scheduled during marina's least productive season to reduce adverse impact on the marina's business. Road construction should include new apron for marina entrance. Any construction of new road segments, or improvements to existing roads should consider incorporating Delta Trail segments (including Class I,II, III bicycle facilities) and refer to the Delta Trail master planning process for adopted alignments.
11	Anglers on river near Wimpy's Marina would experience noise and visual disturbances from construction. Recreation is a significant component of the Delta economy and impacts to the recreation providers should be quantified and business owners should be compensated.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Wimpy's Marina, Page 15-258; Line 31-32	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Angler fishing holes should be identified and their view corridors should be protected to the best extent possible, by maintaining vegetation and even screening work site construction and glare from lights. Night time fishing, including fishing at dusk and dawn, does occur in Delta, and the project proponents should research and identify fishing holes that would be impacted by glaring lights during these non-daylight hours.
12	Project proponent's impacts to Westgate Landing Park (San Joaquin County) would adversely effect visitor recreation experience for 8 years. Also, the adjacent community of Terminous and the Stockton KOA Camp are within the construction noise threshold (2,800 foot distance referenced in DEIR/EIS Chapter 23-112, Lines 10-11) and are currently not considered in the noise and visual impacts of the project analysis. This is of particular concern given that residents living within the 2,800 foot diameter are impacted by 24 hour noise. Recreation is a significant component of the Delta economy. Impacts to the recreation facilities should be quantified and San Joaquin County Parks should be compensated for facilities deteriorated during the construction period.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Westgate Landing Park, Page 15-258; Line 33-41	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9;Natural Resources P1, P7, P8	ESP, Page273, General Recommendations for Economic Sustainability: 2) Compensate local governments for lost property taxes and assessments from habitat and development of facilities for export water supply.	Impacts to Westgate Landing Park have not been fully analyzed. Project proponents should consider setting aside funds to compensate public agencies for unknown impacts to community resources. The Delta Investment Fund can act as a depository for distribution of compensation funds.	To mitigate for noise and visual impacts, it is suggested that a visual screen and noise barrier be provided on the west side of the park, such as planting a suitable row of trees at landside. Also, dust from Reusable Tunnel Material (RTM) may drift to the park. The vegetation barrier may also act as dust screen. If planting is not possible, trucking in large potted trees with a full canopy may also be suitable to act as a noise and dust screen. Consider that for 8 years a public amenity will be all but unusable due to noise, visual and potentially dust impacts. San Joaquin County should be compensated for the period of time that the park is rendered unusable, and potentially the park should be renovated when the construction period is complete. Also, consider that within the 8 year construction period the park facilities and equipment will age, and the project proponent should update and renovate the park when construction is complete.
13	CA State Parks owns Delta Meadows State Recreation Area, currently unstaffed but open to the public. However, it can be presumed that within the 8-10 year BDCP construction period, State Parks would generate the funds to staff Delta Meadows and make necessary improvements to the park. Delta Meadows is a key recreational resource outlined in the State Parks Recreation Proposal for the Sacramento-San Joaquin Delta and Suisan Marsh. Delta Meadow's vicinity to Locke, Walnut Grove, and other Legacy Communities makes it a key public resource and an asset for economic development and Delta recreation and tourism. Alternative 4 proposes permanent noise and visual disturbances to park visitors rendering this site inappropriate for recreation or visitation. In addition, if permanent noise and visual impacts are expected for Delta Meadows, it can be assumed that the same noise and visual disturbances will impact Locke and Walnut Grove since they are adjacent to Delta Meadows, reducing their small town characteristics and making it less appealing for visitors.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Delta Meadows, Page 15-259; Line 1-13	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page273, General Recommendations for Economic Sustainability: 2) Compensate local governments for lost property taxes and assessments from habitat and development of facilities for export water supply.		Temporary and permanent noise levels at Delta Meadows and surrounding Legacy Communities should not go above acceptable levels for residential communities. All temporary transmission lines proposed within the Legal Delta should be removed once construction is completed. Permanent transmission lines should be placed underground to reduce impacts to Pacifi Flyway and to reduce visual impacts on Delta scenic vistas.
14	During tunnel construction, Bullfrog Marina users would be disturbed by noise and visual disruptions related to the construction activities. Anglers on the river between the marina and the construction area would experience noise and visual disturbances from construction.	Chapter 15, Impact REC-2, Result in Long-Term Reduction of Recreation Opportunities and Experiences as a Result of Constructing the Proposed Water Conveyance Facilities, Bullfrog Landing Marina, Page 15-259; Line 14-24.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page 274, Recommendations for Economic Sustainability of Recreation and Tourism: Protect and enhance private enterprise-based recreation with support from state and local public agencies. Most of the economic activity related to recreation is generated by private enterprise. Public agencies can provide catalyst settings, recreation facilities, and infrastructure to improve access, enhance and create settings for private development, and services.	In addition, Cruiser Haven Marina is located on Palm Tract along Old River across from the safe haven work area on Bacon Island and should also be considered for impacts to marinas and recreation similiar to Bullfrog Landing Marina; A mitigation measure should be added to establish a "Delta Compensation Fund" funded by the project proponent and administered by an impartial and independent third party, with funding sufficient to address deleterious impacts created by completion of the BDCP Conservation Measures (especially the construction of the tunnels) placed into an escrow account. The administrator of the Delta Compensation Fund would make payments directly to affected parties. This would both provide an impartial means of addressing negative impacts and a prompt method to compensate those affected.	The magnitude of the BDCP construction project will have economic impacts that few marinas may be able to weather. Given that even the short-term construction impacts are predicted to last for 8 years and the BDCP predictions regarding noise impacts, many marinas may not survive. Economic impacts to marinas should be quantified and business owners should be compensated for impacts to their business. Angler fishing holes should be identified, especially non-daytime fishing holes, and their view corridors should be protected to the best extent possible, by maintaining vegetation and even screening construction and glare from work lights.
15	Recreational visitors to Clifton Court Forebay will experience a long term reduction of recreational opportunities and experiences as a result of the proposed water conveyance facilities.	Chapter 15, Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites, Impact REC-2, Clifton Court Forebay, Page 15-259, Lines 26-44; and Page 15-260, Lines 1-11.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Coordinate with Clifton Court Forebay Fishing Facility (State Clearing House # 2013062041).

#	Impacts/ Significance to DPC	BDCP or EIR/EIS Reference	Related DPC LURMP Policy	Related DPC Economic Sustainability Plan or other Program Recommendations	Proposed Modifications to Project Conservation Measures	Proposed Modifications to Mitigation Measures
16	To compensate for impacts to informal fish access sites, proponent proposes to enhance formal fish access sites. However, three of the four sites that proponent proposes to enhance will be directly impacted and rendered less than usable due to the construction.	Chapter 15, Mitigation Measure REC 2: Provide Alternative Bank Fishing Access Sites, Page 15-263, Lines 19-39; page 15-272, Lines 23-24.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	ESP, Page273, General Recommendations for Economic Sustainability: 2) Compensate local governments for lost property taxes and assessments from habitat and development of facilities for export water supply.	Alternative bank fishing sites should provide safe and adequate parking and sanitation facilities. Any improvements should consider a financing mechanism for increased law enforcement, waste management, and emergency response during the construction period to lift the burden from the local jurisdiction. Any proposed fish access sites that require improvements to right of way should consider incorporating Delta Trail Master Plan improvements.	There are inconsistencies in the mitigation measures. The proponent proposes to provide "formal" fishing access sites prior to the construction of the intakes to compensate for the "informal" fish access sites. However, three of the four proposed locations will be directly impacted by the construction of the intakes. For example, the Clarksburg Fishing Access site that the proponent proposes to enhance is directly across the Sacramento River from a proposed intake. Also, the Georgiana Slough Fishing Access site enhancements may be compromised by noise and visual disturbances due to its close vicinity to the construction of a proposed tunnel shaft. Also, enhancements at Clifton Court Forebay (CCF) will also be compromised for seven years given that CCF will be expanded (see page 15-259, lines 33-36). Enhancements at CCF may be possible since this site is not impacted by the conveyance construction; however, this site is not listed on the Recreation Facilities maps: Figure M15-2 (Sheets 1-7), and it should be. Any enhancements at these three Fishing Access sites (Clarksburg, Georgiana Slough and CCF) would be less than usable during the construction period. Instead, Fishing Access sites should be built that are not in the construction zone to compensate for the "informal' fishing access that will be unusable during the construction period. In addition, the Clarksburg, Georgiana Slough and CCF Fishing Access sites should be enhanced and upgraded once the conveyance construction is completed, given that these three sites are rendered unusable during the construction period.
17	In order to accommodate transmission lines and access routes, tree and shrub removal is proposed in addition to pruning. The removal of vegetation may have an impact on recreational opportunities.	Chapter 15, Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible, Page 15-264, Line 1-5; Page 15-273, Line 25-28; Page 15-283, Line 37-41; Page 15-289, Line 5-9.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		All proposed tree and shrub removal should be reviewed and the line of sight should be analyzed prior to assess visual impacts.	A stakeholder group (consisting of recreational users) should be convened to review the vegetation removal and pruning plan to assess impacts to recreational boating and fishing, and make recommendations on how to reduce impacts to user groups. In addition, new fishing facilities should be provided if there are substantial impacts to fishing. Boating and fishing stakeholders should also be informed of the new facilities and times of operation.
18	Construction activity that is not screened will have visual and noise impacts to visitors and recreational users.	Chapter 15, Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and Sensitive Receptors, Page 15-264, Line 6-9; Page 15-273, Line 6-7; Page 15-284, Line 37-41; Page 15-289, Line 10-13.	Infrastructure P1			A stakeholder group (recreational users) should be convened to review the proposed plans and location for construction screens, to assess if screens provide an adequate amount of coverage from construction work.
19	There are large surface areas along the BDCP tunnel alignment that are being proposed to store spoils and borrow materials. Most of these surface areas are currently being used for agricultural purposes. Reusable Tunnel Material areas should not be located on agricultural land of high value or privately owned agricultural land.	Chapter 15, Mitigation Measure AES-1c: Develop and Implement a Spoil/ Borrow and Reusable Tunnel Material Area Management Plan, Page 15-264, Line 10-13; Page 15-273, Line 10-11; Page 15-284, Line 5-8; Page 15-289, Line 14-17.	Agriculture P2, P3, P4, P5, P7, P9	ESP, page 274, Recommendations for the Economic Sustainability of Agriculture; 1. Maintain and enhance the value of Delta agriculture; 2. Limit the loss of highly productive farmland to urbanization, habitat, and flooding to the greatest practical extent		All management plans should be reviewed by a stakeholder group (consisting of agriculture and recreational interests) to ensure that the spoil/borrow material removal and transport does not impact agriculture operations and recreational activities, or at minimum to involve stakeholders who can provide input on how the transfer of spoil materials can be conducted while sustaining agriculture and recreational economies. Reusable Tunnel Material Areas should refrain from converting agricultural land to non-agriculturally-oriented uses. If this is to occur, project proponent should ensure that conversion of agriculturally-oriented land happens on public land rather than on land in private ownership. Conversion of agricultural land should occur first where productivity and agricultural values are the lowest.
20	Barges are proposed to transfer large amounts of spoil and borrow materials. In some cases barges will transfer materials on waterways from island to island. Barge traffic could impact recreational boating and fishing. Also, unloading facilities will need to be constructed and later decommissioned when project is complete.	Chapter 15, Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned, Page 15-264, Line, Page 15-264, Line 14-16; Page 15-273, Line 14-16; Page 15-284, Line 9-11; Page 15-289, Line 18-20.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		Consider converting barge unloading facilities into recreational amenities, such as boating facilities, once construction is completed.	The path of travel and times for the barges should be scheduled and coordinated with a recreation stakeholder group to ensure that barge activities have the least possible impact on recreational travel and economies. Barge unloading facilities should be designed with adaptive reuse in mind, to be converted to recreational boating and fishing purposes when construction is complete.

BDCP1041

#	Impacts/ Significance to DPC	BDCP or EIR/EIS Reference	Related DPC LURMP Policy	Related DPC Economic Sustainability Plan or other Program Recommendations	Proposed Modifications to Project Conservation Measures	Proposed Modifications to Mitigation Measures
21	Water intake facilities are industrial-type structures proposed in an agricultural setting with surrounding legacy communities. The exterior design of the water conveyance facilities has the potential to deteriorate scenic river views for residents and visitors. Part of preserving the historic quality of the Delta is also perserving the cultural landscape of the Delta. Recreational boating is a significant part of the Delta economy and scenic views are one of the reasons visitors come to the Delta.	Chapter 15, Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the Extent Feasible, Page 15-264, Line 17-20; Page 15-273, Line 17-20; Page 15-284, Line 12-15; Page 15-289, Line 21-24.	Infrastructure P1; Agriculture P1, P2, P3, P9; Natural Resources P1, P6, P8	The pumping intake stations will introduce an "industrial" quality along approximately five to ten miles of the Sacramento River, creating significant visual impacts to this rural, scenic stretch of river. In addition, the sound and night lighting related to these facilities will change the setting of the existing Legacy Communities. Together, these features will reduce the Delta-as-Place character and the value of the Delta as a tourism destination (ESP, page 191); ESP, Overarching Implementation Strategies for Legacy Communities (page 245): Historic Preservation - Legacy Communities offer a unique sense of place and history that should be preserved for future generations. However, as structures age and communities decline, reinvestment and new investment in real estate assests is critical to economic sustainability. Development projects that are consistent with the existing community fabric should be encouraged, particularly as a strategy to retain and recruit business in the Legacy Communities.	Intake screens should be designed to simulate or complement the scenery of the Delta environment. This could include simulated riparian vegetation. Buildings visible from the river's edge should be designed with aesthetics in mind to reduce the visual impacts.	The three water intake facilities proposed for Alternative 4 will have a permanent impact on the scenic and visual quality of the Sacramento River from Clarksburg, Hood and Courtland. The three water intakes are industrial-type facilities in an agricultural setting. The design and siting for the water intake facilities should consider its surrounding context and the architectural aesthetics of the adjacent legacy communities of Clarksburg, Hood and Courtland. The exterior of all water intake facilities should be designed to the appropriate scale, massing and proportions and should be set back from levees and river views. The exterior should incorporate appropriate architectural exterior materials, finishes and treatments. The exterior design of the Freeport water intake should be used as an example of the quality exterior expected.
22	Concrete batch plants and fuel stations will be a fixed structure for the construction period (8 years and potentially longer). During this period batch plants and fuel stations will have an impact on Delta visual and scenic resources. Construction of concrete batch plants and fuel stations are proposed as part of the water conveyance project, and could potentially be situated in the line of sight for recreational boating and fishing users. Once facilities are removed riparian areas may need to be restored to original state. Prominently located facilities should be designed with the vernacular architectural style of agricultural building types to fit into the Delta landscape.	Chapter 15, Mitigation Measure AES-1f: Locate Concrete Batch Plant and Fuel Stations Away from Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities, Page 15-264, Line 21-24; Page 15-273, Line 21-24; Page 15-284, Line 16-19; Page 15-289, Line 25-28.	Infrastructure P1; Agriculture P1, P2, P3, P9; Natural Resources P1, P6, P8	The pumping intake stations will introduce an "industrial" quality along approximately five to ten miles of the Sacramento River, creating significant visual impacts to this rural, scenic stretch of river. In addition, the sound and night lighting related to these facilities will change the setting of the existing Legacy Communities. Together these features will reduce the Delta-as-Place character and the value of the Delta as a tourism destination (ESP, page 191); ESP, Overarching Implementation Strategies for Legacy Communities (page 245): Historic Preservation - Legacy Communities offer a unique sense of place and history that should be preserved for future generations. However, as structures age and communities decline, reinvestment and new investment in real estate assests is critical to economic sustainability. Development projects that are consistent with the existing community fabric should be encouraged, particularly as a strategy to retain and recruit business in the Legacy Communities.		Construction of concrete batch plants and fuel stations should be sited to reduce the visual impacts on residents and recreation/tourism economies. A stakeholder group (comprised of residents and recreation users) should determine if batch plant and fuel station siting and appearance have significant visual impacts to warrant vegetative screening or building facade enhancements. If so, proposed temporary structures should be screened from view; if not feasible, construction-related structures should be designed to simulate existing Delta architectural building types and vernacular architecture. After construction period ends, building sites should be restored to their original conditions. When feasible, buildings should be considered for adaptive reuse into recreational facilities. Batch plants and fuel stations will have impacts on the riparian area of rivers and impact to recreational fishing, and the post-construction restoration of these area will also have impacts on recreational fishing. Construction of concrete batch plants and fuel stations should be sited to reduce the impact on recreational fishing.
23	Project proponent proposes to remove vegetation that is in conflict with construction footprint and proposes the implementation of a post-construction landscape plan to restore vegetation, habitat, and viewsheds.	Chapter 15, Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project Landscaping Plan, Page 15-264, Line 25-28.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		Recreational and habitat stakeholder group should review landscaping plan to provide input on how to reduce impacts to recreation and habitat restoration.	Best management practices related to new landscaping or vegetation restoration should take into account the impacts on residents, recreational and tourism economies, including fishing. Any landscape plan should be reviewed by a stakeholder group comprised of recreation users and local stakeholders.
24	Project proponent proposes to limit construction to daylight hours within a 1/4 mile of residents.	Chapter 15, Mitigation Measure AES-4a: Limit Construction to Daylight Hours within 0.25 Mile of Residents, Page 15-264, Line 29-32.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	The pumping intake stations will introduce an "industrial" quality along approximately five to ten miles of the Sacramento River, creating significant visual impacts to this rural, scenic stretch of river. In addition, the sound and night lighting related to these facilities will change the setting of the existing Legacy Communities. Together these features will reduce the Delta-as-Place character and the value of the Delta as a tourism destination (ESP, page 191); LURMP, Utilities and Infrastructure, Policy P1, Page 32; Utilities shall consult with communities early in the planning process for the purpose of creating an appropriate buffer from residences, schools, churches, public facilities, and inhabited marinas.		In agricultural settings, visual glare and noise impacts travels beyond a .25 mile area. A quarter-mile is not sufficient to mitigate for these impacts. Project proponent should increase minimum to .5 mile, and limit construction to daylight hours a half mile away from residents.
25	Proponent's construction activity will create fugitive lighting, which will have potential negative impact on Delta residents, and recreational and tourism economies, including fishing and boating.	Chapter 15, Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for Construction, Page 15-265, Line 1-4; Page 15-284, Line 24-27; Page 15-289, Line 33-36	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5; Agriculture P2, P3, P9; Natural Resources P1, P7, P8	The pumping intake stations will introduce an "industrial" quality along approximately five to ten miles of the Sacramento River, creating significant visual impacts to this rural, scenic stretch of river. In addition, the sound and night lighting related to these facilities will change the setting of the existing Legacy Communities. Together these features will reduce the Delta-as-Place character and the value of the Delta as a tourism destination (ESP, page 191);LURMP, Policy P1, Page 32; Utilities shall consult with communities early in the planning process for the purpose of creating an appropriate buffer from residences, schools, churches, public facilities, and inhabited marinas.		Fugitive light from portable sources used for construction will have negative impacts on recreational and tourism economies. Construction protocols should make every possible effort to screen any fugitive light from residential communities and high traffic roads. Fugitive light from portable sources used for construction could have negative impacts on nighttime fishing. Construction protocols should make every possible effort to screen any fugitive light.
26	Fugitive lights from trucks traveling to construction sites at night have the potential to disturb Delta residents in addition to recreational and tourism economies, including boating and fishing users.	Chapter 15, Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary, to Prevent Light Spill from Truck Headlights toward Residences, Page 15-265, Line 5-8; Page 15-284, Line 28-29; Page 15-290, Line 1-4	Infrastructure P1; Agriculture P1, P2, P3, P9; Natural Resources P1, P6, P8	The pumping intake stations will introduce an "industrial" quality along approximately five to ten miles of the Sacramento River, creating significant visual impacts to this rural, scenic stretch of river. In addition, the sound and night lighting related to these facilities will change the setting of the existing Legacy Communities. Together these features will reduce the Delta-as-Place character and the value of the Delta as a tourism destination (ESP, page 191)		Fugitive light from vehicular travel during nighttime construction could have negative impacts on nearby residents and nighttime fishing. Construction protocols should make every possible effort to screen any fugitive light behind visual barriers. In fact, recreational stakeholders should assist in identifying nighttime construction vehicular traffic routes to reduce impacts to recreational fishing. Information on nighttime vehicle traffic should be publicized to inform nearby residents and recreational interests of possible user impacts.

BDCP1642

#	Impacts/ Significance to DPC	BDCP or EIR/EIS Reference	Related DPC LURMP Policy	Related DPC Economic Sustainability Plan or other Program Recommendations	Proposed Modifications to Project Conservation Measures	Proposed Modifications to Mitigation Measures
27	Project proponent is proposing a Site Specific Construction Traffic Management Plan to address increased construction traffic impacts. This plan will mitigate for traffic impacts on roadways and waterways. Increased truck traffic will impact Delta residents in addition to agriculture and recreational/ tourism economies. Delta residents and recreation users, including recreational boating users and marina owners, should have input on the Traffic Management Plan to ensure that traffic impacts are minimized. Attenuation Devices will be used to reduce noise generated from pile driving and other construction related underwater noise.	Chapter 15, Mitigation Measure TRANS-1a: Implement Site-Specific Construction Traffic Management Plan, Page 15-265, Line 9-12; Page 15-270, Line 35-38; Page 15-284; Line 32-35; Page 15-290, Line 5-8	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Delta stakeholders should be made aware of construction routes and construction hours to mitigate transporation impacts. Provide windows of time when there is no truck traffic and farmers can move their farm equipment at these times. The proposed Mitigation Measure TRANS-1a Traffic Management Plan should be reviewed by recreation stakeholders (in particular recreational boating users and marina owners) to make recommendations on how to mitigate for traffic impacts, barge routes and barge schedules. Given that the proposed barge schedule runs from June 1-October 31 during the high season for boating in the Delta, the schedule should be modified to Monday to Thursday from 6am to 5pm, as this would allow recreational boaters to use the waterways for three days without barge traffic.
28	Recreational boating and fishing users will be impacted by increased construction traffic.	Chapter 15, Mitigation Measure TRANS-1b: Limit Hours or Amount of Construction Activity on Congested Roadway Segments, Page 15-265, Line 13-20; Page 15-284, Line 1-4; Page 15-285, Line 9-12	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Construction traffic management plans should consider the roads that are used by recreational fishing users and the management plan should reduce traffic impacts to recreational users.
29	Recreational boating and fishing users will be impacted by increased construction traffic.	Chapter 15, Mitigation Measure TRANS-1c: Make Good Faith Efforts to Enter into Mitigation Agreements to Enhance Capacity of Congested Roadway Segments, Page 15-265, Line 17-20; Page 15-285, Line 5-8; Page 15-285, Line 13-16	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Construction traffic management plans should consider the roads that are used by recreational fishing users and the management plan should reduce traffic impacts to recreational users.
30	Recreational boating and fishing users will be impacted by increased noise.	Chapter 15, Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during Construction, Page 15-265, Line 21-23; Page 15-285, Line 13-16; Page 15-285, Line 17-19.	Recreation P12, Infrastructure P1, Agriculture P3, P9; Natural Resources P1,P8	The pumping intake stations will introduce an "industrial" quality along approximately five to ten miles of the Sacramento River, creating significant visual impacts to this rural, scenic stretch of river. In addition, the sound and night lighting related to these facilities will change the setting of the existing Legacy Communities. Together these features will reduce the Delta-as-Place character and the value of the Delta as a tourism destination (ESP, page 191)		Construction noise will have an impact on recreational fishing. In general, construction noise should be reduced to less then significant levels to reduce impacts to residents and recreational users.
31	A complaint/response tracking system is being proposed to receive complaints from recreational boating and fishing users.	Chapter 15, Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response Tracking Program, Page 15-265, Line 24-26; Page 15-272, Line 36-37; Page 15-285, Line 12-14; Page 15-290, Line 20-22;	Recreation P12, Infrastructure P1, Agriculture P3, P9; Natural Resources P1,P8	The pumping intake stations will introduce an "industrial" quality along approximately five to ten miles of the Sacramento River, creating significant visual impacts to this rural, scenic stretch of river. In addition, the sound and night lighting related to these facilities will change the setting of the existing Legacy Communities. Together these features will reduce the Delta-as-Place character and the value of the Delta as a tourism destination (ESP, page 191)		A complaint and response tracking system should involve stakeholders, such as residents and recreationists, including recreational fishing stakeholders, to ensure the tracking program is developed to take into account their concerns, including nature of complaints, how complaints were resolved, response time and number of callers raising the same issues. Any complaint/response tracking program should also be coordinated with the County Sheriff's Department, appropriate Board of Supervisors offices, local community advisory councils, and stakeholder groups. The response tracking program coordinator should be required to report complaints/resolutions on a monthly basis to the stakeholder group and provide complaint intake notes. This would help ensure that complaints are being addressed appropriately and in a timely manner.
32	Construction noise impacts will include impact pile driving which will disrupt residents as well as recreational and fishing users.	Chapter 15, Impact REC-3: Result in Long-Term Reduction of Recreational Navigation Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities, Page 15-265, Line 27-28	Recreation P12, Infrastructure P1, Agriculture P3, P9; Natural Resources P1,P8	The pumping intake stations will introduce an "industrial" quality along approximately five to ten miles of the Sacramento River, creating significant visual impacts to this rural, scenic stretch of river. In addition, the sound and night lighting related to these facilities will change the setting of the existing Legacy Communities. Together these features will reduce the Delta-as-Place character and the value of the Delta as a tourism destination (ESP, page 191)		Impact Pile Driving should be restricted to daylight work hours from Monday through Friday (7am-4pm) and prohibited on weekends. If impact pile driving is utilized, every effort should be made to inform residents and recreational boating and fishing users of the dates and times of noise impacts, through their means of communication.
33	There will be a reduction of navigation opportunities for recreational boating as a result of constructing proposed water conveyance facilities. Alternative 4 depicts an operable barrier at Old River, per Figure M3-4, Sheet 15 of 15.	Impact REC-3: Result in Long-Term Reduction of Recreation Navigation Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities, Page 15-265, Lines 27-36.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Recreational boaters have access rights to navigable waters of the United States, and there should be assurance that any proposed control structures, such as gates or barriers whether temporary or permanent, shall not prohibit navigation through Delta waterways. Any proposed boat locks should be always staffed so not to prohibit recreational access to navigable Delta waterways. Also, any proposed operable boat locks/barriers should be installed, maintained and operated without any cost or expense to recreational boaters.
34	Construcition of Alternative 4 would lead to obstructions and associated boat traffic delays. Intake construction would involve installation of cofferdams in waterways, the use of barges, barge mounted cranes, or other large waterborne equipment, including barge unloading facilities, and siphons that would effect navigation for recreation users. This will make the Delta a less desirable place for recreational boating, fishing and water activities.	Impact REC-3: Result in Long-Term Reduction of Recreation Navigation Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities, Page 15-265, Lines 29-36.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Recreational boaters have access rights to navigable waters of the United States, and there should be assurance that any proposed control structures, such as gates or barriers whether temporary or permanent, shall not prohibit navigation through Delta waterways. Any proposed boat locks should be always staffed so not to prohibit recreational access to navigable Delta waterways. Also, any proposed operable boat locks/barriers should be installed, maintained and operated without any cost or expense to recreational boaters.

BDCP0647

#	Impacts/ Significance to DPC	BDCP or EIR/EIS Reference	Related DPC LURMP Policy	Related DPC Economic Sustainability Plan or other Program Recommendations	Proposed Modifications to Project Conservation Measures	Proposed Modifications to Mitigation Measures
35	Cofferdams would be constructed within the river channel at intake locations. Cofferdams would range from 740-2440 feet in length and extend into the river up to 120 feet depending on location. The river is approximately 500-700 feet wide near proposed intakes, which would leave approximately 380-580 feet open for boat passage.	Impact REC-3: Result in Long-Term Reduction of Recreation Navigation Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities, Page 15-266, Lines 2-10.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Restricted boat passage, including reduced speed zones, will cause reduced access and delays to boat passage at intake sites along the Sacramento River. Marina and boat launch sites north of the intakes will have reduced usage since it will be easier to store/launch boats south of construction sites rather than travel through the construction zone which will have reduced speed and no-wake restrictions. Project proponents should compensate marinas and launch sites for loss of revenue streams during the construction period.
36	Water-based recreational activities would be severly impacted at the vicinity of the intakes for the duration of construction period (up to 4 years at each intake location). At least 2 intakes will be constructed simultaneously. The project proponent should clarify how many of the intakes will be built simultaneously to understand the magnitude of construction impacts.	Impact REC-3: Result in Long-Term Reduction of Recreation Navigation Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities, Page 15-266, Lines 23-35.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Lines 26 through 27 state that " Water-based recreational activities such as waterskiing, wakeboarding, tubing, or fishing are also low, but effectively would be eliminated in the vicinity of the intakes for the duration of construciton (up to 4 years at each intake location)." Based on this information, it seems that all three intakes could be constructed simultaneously to meet the project timeline. Potentially, boaters traveling south on the Sacramento River would be restricted to a 5 mile-per-hour no-wake zone from Intake 2 to Intake 5. This is a 5-7 mile stretch of river from approximately south of Clarksburg to South of Walnut Grove. It is not clear from the project proposal if two or more intakes will be built at the same time, which is important to understand the magnitude of the noise, traffic and visual impacts.
37	Construction of 2 siphons associated with Alternative 4 would result in temporary obstruction of boat passage and may cause boat traffic delays and navigation hazards to boaters. Boating is a significant component of the recreational economy in the Delta and marinas should be compensated for loss in revenue due to construction activities.	Impact REC-3: Result in Long-Term Reduction of Recreation Navigation Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities, Page 15-267, Lines 17-29.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		A mitigation measure should be added to establish a "Delta Compensation Fund" funded by the project proponent and administered by an impartial and independent third party. With funding sufficient to address deleterious impacts created by completion of the BDCP Conservation Measures (especially the construction of the tunnels) placed into an escrow account, the administrator of the Delta Compensation Fund would make payments directly to affected parties. This would both provide an impartial means of addressing negative impacts and a prompt method to compensate those affected.	Italian Slough Siphon construction will impact the Lazy M. Marina and associated boat users through reductions in recreational navigation opportunities. An economic assessment should be conducted to better understand how construction activities will impact the marina economically. Impacted marinas should be compensated for loss of economic revenue during construction of Italian Slough Siphon or other siphons.
38	Proponent proposes building 5 temporary barge unloading facilities at riverbanks near the tunnel alignment. Facilities would be used to transfer pipeline construction equipment and materials to and from construction sites.	Impact REC-3: Result in Long-Term Reduction of Recreation Navigation Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities, Page 15-267, Lines 31-43, and Page 15-267, Lines 1-41.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		The proposed project does not specify the size of the barge facilities at each of the 5 locations. For the Old River barge description, there is an indication that the barge facility is 1000 feet by 200 feet, but it is not specified. The size of all 5 barge facilities should be indicated to further assess full impacts on Delta waterways and navigation.	Given that recreation is a significant component of the Delta economy and marina infrastructure in the Delta is in need of infrastructure upgrades, any barge facilities infrastructure that is built should be designed for adaptive reuse as recreational facilities once construction is completed. The proposed Mitigation Measure TRANS-1a Traffic Management Plan should be reviewed by residents and recreation stakeholders (in particular recreational boating users and marina owners) to make recommendations on how to mitigate for traffic impacts, including barge routes and barge schedules. Given that the proposed barge schedule runs from June 1- October 31 during the high season for boating in the Delta, the barge schedule should be modified to Monday to Thursday from 6am to 5pm, as this would allow recreational boaters access to waterways for three days without barge traffic.
39	Project will impact fishing activities in the Delta.	IMPACT REC-4: Result in Long-Term Reduction of Recreational Fishing Opportunities as a Result of Constructing the Proposed Water Conveyance Facilities, Page 15-270, Lines 39-43.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			Project proponents should consider project impacts to subsistence fishing in the Delta. There needs to be a comprehensive study of subistence fishing in the Delta to fully understand baseline conditions of subsistence fishing that will be impacted by Alternative 4 construction. Making enhancements at existing fishing access sites is not sufficient if there is little understanding of subsistence fishing activities. Also, there should be a comprehensive study of economic impacts to bass habitat and tournaments.
40	Project proponent proposes alternative bank fishing sites to compensate for informal bank fishing along project stretch. However, several of the sites the project proponent proposes to enhance are located in vicinity of construction and already are impacted by the construction project. New fish access sites away from the construction areas should be proposed.	Chapter 15, Mitigation Measure REC-2 Provide Alternative Bank Fishing Access Sites, Page 15-272, Line 23-24	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P52		Alternative bank fishing sites should provide safe and adequate parking and sanitation facilities. Any improvements should consider a financing mechanism for increased law enforcement, waste management, and emergency response during the construction period to lift the burden from the local jurisdiction. Any proposed fish access sites that require improvements to right of way should consider incorporating Delta Trail Master Plan improvements.	Project proponents should conduct a detailed study of informal fishing activities including subsistence and bank fishing along the entire stretch of the project site, including area of water conveyance intakes to assess full impact to informal and subsistence fishing and to determine the level of displacement that will occur and how much mitigation is necessary to eliminate the impact. In regards to the proposed enhancements of existing fishing sites, ensure that sites selected are not being impacted by construction activities, otherwise it does not compensate.
41	Construction noise impacts will include impact pile driving which will disrupt recreational and fishing users, as well as residents.	EIS/EIR, Chapter 15, Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects of Pile Driving and Other Construction-Related Underwater Noise, Page 15-272, Line 25-28; Page 15-285, Line 15-18	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		The time schedule of pile driving and other underwater noise activities should be reviewed by a stakeholder body comprised of Delta recreation, boating, and fishing stakeholders to make suggestions on how construction impacts can be minimized by managing construction hours. Impact pile driving should be restricted to daylight work hours from Monday through Friday (7am-4pm) and prohibited on weekends in order to reduce noise impacts to residents and recreational boating and fishing users. If impact pile driving is utilized, every effort should be made to inform recreational boating and fishing users of the dates and times of noise impacts, through their means of communication.	Pile driving and other construction-related underwater noise will have a negative impact on boating, fishing and water recreation. Underwater construction noise including pile driving should be scheduled when there will be the least impact to recreational activities. This would mean conducting these types of construction activities from 7am to 3pm Monday to Thursday and not conducting these type of activities from Friday through Sunday. This would allow recreational activities to resume during the weekend period, including Friday. This is especially important during summer and warm-weather months when recreational activities tend to occur. Recreational activities contribute to the Delta economy, so it is essential to ensure that construction impacts do not deter recreational users.

BDCP-1-19-3

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42	Pile driving and other construction-related underwater noise has the potential to impact fish species and recreational fishing near construction sites. Attenuation device will be used to reduce noise generated from pile driving and other construction related underwater noise.	EIR/EIS, Chapter 15, Mitigation Measure AQUA-1b: Use an Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related Underwater Noise, Page 15-272, Line 29-30 and 33-34; Page 15-285, Line 19-22	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			A stakeholder body comprised of Delta recreation, boating, and fishing stakeholders should be established to make suggestions on how construction impacts can be minimized. This would include reviewing the attenuation device to have a better understanding of how it will reduce pile driving and construction-related underwater noise.
43	Recreational boating and fishing are a significant part of the Delta economy. Economic impacts to recreational boating and fishing should be heavily considered as they have an impact on the Delta economy including marinas, restaurants, boating supplies, bait shops, and fishing tournaments and festivals.	Impact REC-5: Result in Long-Term Reduction of Recreational Fishing Opportunities as a Result of the Operation of the Proposed Water Conveyance Facilities, Page 15-273, Line 29-35 and Page 15-274, Line 1-6.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8			
44	A stretch of Sacramento River would be subject to recreational-use restrictions during maintenance and repair of proposed water conveyance facilities (i.e., any fish screens, water intakes, pumping mechanisms). According to the BDCP Document and CEQA conclusion, these impacts are less than significant and do not require mitigation measures.	Impact REC-7: Result in Long-Term Reduction in Water-Based Recreation Opportunities as a Result of Maintenance of the Proposed Water Conveyance Facilities, Page 15-276, Lines 9-35	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		Safety protocols should be implemented during maintenance periods to allow for safe passage of recreational vessels and recreation water users to prevent conflicts with maintenance and repair work, even if only temporary.	Safety protocols should be implemented during maintenance periods to allow for safe passage of recreational vessels and recreation water users to prevent conflicts with maintenance and repair work, even if work is only temporary. Also, signage should identify water conveyance facilities (i.e. fish screens, water intakes, pump mechanisms, gates) and risks to recreational users (i.e. identifying changes in water flow, such as undertow currents for users on non-motorized vessels). Recreational river users will not know how to interact with these large water conveyance facilities and signage should be installed informing recreational water users of how to interact with water conveyance facilities on the river course.
45	All water conveyance facilities should incorporate public infrastructure upgrades at facility locations, which may include road upgrades (Class II and III bike lanes); recreational trails (Class I bike lanes); water trail launch sites; bank fishing; observation points; visitor parking, rest stops and public bathrooms. Any maintenance of water conveyance facilities may impact recreation infrastructure during the maintenance period.	Impact REC-8: Result in Long-Term Reduction in Land-Based Recreation Opportunities as a Result of Maintenance of the Proposed Water Conveyance Facilities, Page 15-276-77, Line 38-42 and Line 1-6.	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P7, P8		All water conveyance facilities should incorporate public infrastructure upgrades at facility locations, which may include road upgrades (Class II and III bike lanes); recreational trails (Class I bike lanes); water trail launch sites; bank fishing; observation points; visitor parking, rest stops and public bathrooms. Any maintenance of water conveyance facilities may impact recreation infrastructure during the maintenance period.	Safety protocols should be implemented during maintenance periods to reduce impacts to recreation facilities and recreational users at any water conveyance facility site.
46	Soils-2, Construction of conveyance facilities would involve irreversible removal, overcovering, and inundation of topsoil over extensive areas, resulting in substantial loss of topsoil. This is of significance to the DPC as this loss could have negative impacts to Delta agriculture, habitat, recreation and other Delta land uses which the DPC strives to protect.	Loss of topsoil from excavation, overcovering, and inundation as a result of water conveyance facility construction. Chapter 10, Page 10-90 and 10-91, lines 33-35 and 1.	LU P-6, AG P-1, AG P-8, NR P-1		The EIR should clarify what impact this loss of topsoil will have on Delta agriculture, habitat and recreation. Additionally, it should clarify if this could increase subsidence on Delta islands.	The topsoil management plan should incorporate mitigation for negative impacts to Delta agriculture, habitat, and recreation and other Delta land uses; and ensure that topsoil loss does not exacerbate soil subsidence.
47	LU-3, Construction activities under alternative 4 would be located around Hood. A permanent power line and new road would be constructed through the Eastern section of the community, and construction and the long-term placement of intakes 3 and 5 would be built about 1/4 mile north and 1/2 mile south of Hood, respectively, and would substantially alter the lands to the north and south of the community. This is of significance to the DPC as the Delta Protection Act of 1992 finds and declares that the cities, towns, and settlements within the Delta are of significant historical, cultural, and economic value and that their continued protection is important to the economic and cultural vitality of the region.	Create physical structures adjacent to and through a portion of an existing community as a result of constructing the proposed Water Conveyance Facility. EIR/EIS Chapter 13, Page 13-114, Line 12-19	LU-1, NR-8, UI-1	Delta Trail; ESP 12.4 (Bullet 2); Delta Plan DP-R3, DP R-9	As a staging area for construction (consisting of parking areas, offices, and more) will be established adjacent to Hood, direct commerce activities (restaurants for construction workers, etc.) to Hood so community members can realize the financial benefits. Ensure that development for Hood's construction area will have long term sustainable, multi-beneficial uses beyond the BDCP (e.g., visitor parking/staging area, or parking for Hood's visitor facilities such as the Packing Shed which is being converted into a Visitor Center). Incorporate community participation into decision making process. Road improvements within and surrounding Hood should include Class II Trails connecting the Capital Southeast Connector Project to Stone Lakes National Wildlife Refuge to the Hood riverfront for future use after BDCP construction; A mitigation measure should be added to establish a "Delta Compensation Fund" funded by the project proponent and administered by an impartial and independent third party, with funding sufficient to address deleterious impacts created by completion of the BDCP Conservation Measures (especially the construction of the tunnels) placed into an escrow account. The administrator of the Delta Compensation Fund would make payments directly to affected parties. This would both provide an impartial means of addressing negative impacts and a prompt method to compensate those affected.	Conduct socioeconomic impacts assessment for the town of Hood before, during, and after construction. Utilizing socioeconomic adaptive management, direct funding from Delta Investment Fund to mitigate for adverse impacts that the physical structures cause to Hood from changes in community demographics, real estate/businesses, employment and aesthetic quality of the community.
48	AES-1, Alteration of existing visual quality/character from the construction of north Delta intake facilities along the Sacramento River Channel, construction affiliated with the new 40 acre intermediate forebay north of Twin Cities Road and expansion of the Clifton Court Forebay, large spoil/borrow storage area near Clarksburg, and other sites including reusable tunnel material areas, shaft sites, docks and barge traffic, access roads, concrete batch plants and fuel stations, and the construction of the head of the Old River Operable Barrier. This is of significance to the DPC's numerous program areas and policies which aim to enhance the Delta's recreational and tourism economies, as these alterations will cause blight throughout the Delta's landscape, making it less attractive for tourism/recreation.	Substantial alteration in existing visual quality or character during construction. Chapter 17, page 17-183, Line 24-38	NR-8, UI-1	Delta Trail; ESP 12.4 (Bullet 2); Delta Plan DP-R2, DP-R3, DP-R9	Consideration must be made in all improvements and mitigation to consider the "Delta as an Evolving Place". Due to unforeseen future conditions, not all impacts can be predictable, and therefore adaptive management must be incorporated into socioeconomic improvements and mitigation.	Conduct socioeconomic impacts assessment for Clarksburg and the other communities impacted by construction before, during and after construction. Utilizing socioeconomic adaptive management, direct funding from Delta Investment Fund to mitigate for adverse impacts that the physical structures cause to Clarksburg and the other communities from changes in community demographics, real estate/businesses, employment and aesthetic quality of the community.

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49	AES-2, Intake structures, pumping plants, surge towers, large-scale borrow/spoil and RTM area landscape effects, shaft sites, and transmission lines would result in significant impacts on scenic vistas. This is of significance to the DPC's numerous program areas and policies which aim to enhance the Delta's recreational and tourism economies, as these alterations will cause blight throughout the Delta's landscape, making it less attractive as a haven for tourism/recreation.	Permanent effects on a Scenic Vista from Conveyance Facilities. Chapter 17, Page 17-194, Line 33-40	NR-8, UI-2	Delta Trail; ESP 12.4 (Bullet 2); Delta Plan DP-R3		Develop an adaptive design plan.
50	AES-3, Permanent Damage to Scenic Resources along State Scenic Hwy 160 from Construction. This is of significance to the DPC, as the Delta Plan recommends the DPC nominate Highway 160 as a National Scenic Byway. Damage to such resources could weaken Highway 160's eligibility for this nomination. Additionally, such damage could eliminate potential future Delta Trail alignments making it difficult for the DPC to meet SB 1556, which mandated the DPC to develop a regional recreational trail system that crosses all five Delta counties and connects the San Francisco Bay Trails to planned and proposed Sacramento River Trails in Sacramento and Yolo Counties. In addition to hurting the Delta's recreation and tourism economy, this damage could negatively impact the Delta's sense of place that is held by local community members.	Permanent Damage to State Scenic Resources along a State Scenic Highway. Chapter 17, Page 17-197 Lines 9-13	LU-1, NR-8, RA-4, UI-1	Delta Trail, ESP 12.4 (Bullet 2); Delta Plan DP R-2, DP R-3, DP R-9		BDCP proponents should consult with Caltrans to ensure that Highway 160 remains in compliance with the State Scenic Highway Program, as Caltrans has authority under state law to revoke a scenic highway designation. If Highway 160 is delisted from the State Scenic Highway Program as a result of BDCP developments, then mitigation should ensure that local communities recover any economic losses from declines in tourism/recreation that result from the delisting. BDCP proponents should also consult with the U.S. Department of Transportation to ensure that any changes to the scenic resources of Highway 160 would not yield it ineligible for National Byway Nomination. Proponents should also consult with the DPC about funding the construction of potential Delta Trail alignments that could help the DPC meet its mandate of developing a regional recreational trail system which connects the SF Bay Trail with the Sacramento River Trail, bypassing any BDCP-developed areas but still taking advantage of the remaining scenic, historical, and natural resources of the Delta which the Delta Trail was intended to connect with.
51	AES-4, Development/construction would result in a new light source/glare which would adversely affect views. Facilities would also increase amount of nighttime lighting in the Delta. This is of significance to the DPC as such impacts could detract from the Delta's sense of place which could have negative impacts on the Delta's recreational and tourism economies, as well as the well-being of local Delta residents in the communities which the DPC strives to protect.	New light source/glare would result from construction/operation of conveyance facilities that would affect views, Chapter 17, Page 17-199, line 16-20	LU-1, NR-8, RA-4, UI-1	Delta Trail, ESP 12.4 (Bullet 2); Delta Plan DP R-3		
52	CUL-1, Recorded searches and inventory efforts have identified 10 archaeological sites in this alternative's footprint, many of which are deposit sites associated with prehistoric habitation and residence activities. There has been no single unified prehistoric chronology for the Delta and therefore many research questions remain unresolved, which these sites could help clarify. This is of significance to the DPC due to LURMP policies and program areas which intend to preserve and recognize the Delta's unique history and heritage in public/private facilities.	Construction Impacts on archaeological sites (identified), Chapter 18, Page 18-124: Line 13-19	LU-1, UI-1		Develop a unified prehistoric chronology for the Delta, utilizing artifacts excavated from these sites.	
53	CUL-2, Construction Impacts on archaeological sites that have not yet been identified. These sites may include valuable prehistoric and historic archaeological resources which may be useful in DPC's efforts to preserve and recognize the Delta's heritage and history in public/private facilities.	Effects on archaeological sites to be identified through future inventory efforts. Chapter 18, Page 18-127, Line 41-44, Page 18-128, Line 1-4	LU-1, UI-1			The treatment plan should be incorporated into socioeconomic mitigation activities. Treatment activities (e.g., historical preservation, documentation, etc.) should have direct economic development benefits to the communities (e.g., museums, businesses, etc. which preserve/interpret local history, while providing economic benefits to the communities through stimulation of cultural tourism).
54	CUL-3, Construction Impacts on archaeological sites (that may not be identified). These sites may include valuable prehistoric and historic archaeological resources which may be useful in DPC's efforts to preserve and recognize the Delta's heritage and history in public/private facilities.	Effects on archaeological sites that may not be identified through inventory efforts. Chapter 18, Page 18-131, Line 27-32	LU-1, UI-1			
55	CUL-4, The project area is sensitive for buried human remains, and the ground breaking construction work may damage previously unidentified buried human remains. This is of potential relevancy to the DPC's efforts to preserve and recognize the Delta's heritage and history in public/private facilities.	Effects on Buried Human Remains damaged during construction. Chapter 18, Page 18-133, Line 19	LU-1, UI-1			
56	Cul-5, Possible effects to eighteen built environment/architectural resources, including possible demolition and possible changes to the setting; yielding inability to convey significance	Construction effects on built environment/architectural resources, Chapter 18, Page 18-135, Line 16-20	LU-1, NR-8, UI-1	ESP 12.4 (Bullet 2)		The built environment treatment plan should be incorporated into socioeconomic mitigation activities. Treatment relevant to historical preservation, documentation, etc. should have direct economic development benefits to the communities (e.g., museums, businesses, etc. which preserve/interpret local history, while providing economic benefits to the communities through stimulation of cultural tourism).
57	Cul-6, Possible effects on historical/built environment resources from construction activities that have not yet been identified, as a majority of areas are legally inaccessible	Direct/indirect effects from construction activities on unidentified/unevaluated historic resources. Chapter 18, Page 18-138, Line 30-36	LU-1, UI-1	ESP 12.4 (Bullet 2)		
58	Trans-1, Alternative 4 would exacerbate unacceptable Levels of Service (LOS) for 13 roadway segments from increased construction vehicle trips. This is of significance to the DPC due to negative implications that traffic congestion would have on the Delta's economy and quality of life.	Increased construction vehicle trips resulting in unacceptable LOS. Chapter 19, Page 19-173, Line 1-4	AG-1, NR-8, RA-1, UI-1, UI-5	ESP 12.3 (Bullet 1 and 4), 12.4 (Bullet 1), Delta Trail; Delta Plan DP-R2, DP R3, DP R-9		Develop traffic management plan for public review prior to project commencement. Incorporate adaptive traffic control into a traffic management strategy to reduce potential unforeseen traffic impacts. Have residents and other stakeholders provide input in developing the traffic management plan.

BDC Plan 1

#	Impacts/ Significance to DPC	BDCP or EIR/EIS Reference	Related DPC LURMP Policy	Related DPC Economic Sustainability Plan or other Program Recommendations	Proposed Modifications to Project Conservation Measures	Proposed Modifications to Mitigation Measures
59	Trans-2, Construction would lead to further deterioration of roadway pavement conditions at 42 locations throughout study area. This is of significance to the DPC due to LURMP policies which intend to promote maintenance of Delta roadways for agricultural, commercial, recreational, and residential uses.	Increased construction vehicle trips exacerbating unacceptable pavement conditions. Chapter 19, Page 19-181 Line 10-17	AG-1, NR-8, UI-1, UI-5	ESP 12.3 (Bullet 1 and 4), 12.4 (Bullet 1), Delta Trail; Delta Plan DP-R2, DP R3, DP R-9	Project proponents should assess conditions of levees and levee roads to see if both can handle the increase in truck traffic with heavy loads and the increase in traffic frequency. Levees that are deficient should be upgraded to support heavy loads and increased frequecy. This assessment should be done prior to the traffic management plan.	All affected roadways should be improved from preconstruction conditions following construction (not just returned to existing conditions as described in Mitigation Measure Trans-2c). To the extent possible, consider DPC Resolution 02-12 which supports the incorporation of bicycle lanes as improvements are made to State Routes (4,12 and 160) in the Delta to support the Delta Trail.
60	Trans-3, Increase in safety hazards throughout Study Area, including interference with emergency routes due to an increase in amount of trucks using transportation system. Traffic on Byron Highway would also need to be rerouted, thus interfering with emergency services. This is of significance to the DPC as such interference could have detrimental effects on Delta residents and communities which the DPC strives to protect, thus impacting its economy, sense of place, vitality. Delta recreation could also be negatively impacted.	Increase in Safety Hazards, including interference with Emergency Routes during construction. Chapter 19, Page 19-183, Lines 17-22	AG-1, UI-1, UI-5	Emergency Response; Delta Plan DP R2, DP R3		Emergency plans must be developed to ensure that local residents are not negatively impacted by the interference. This may include, but is not limited to the development of emergency evacuation routes with local training and guidance on emergency evacuation, the development of temporary local emergency support facilities (e.g., hospitals, fire stations, etc.), increased training for local residents on CPR, fire protection, emergency preparedness etc. to minimize emergencies.
61	Trans-10, Increased traffic volumes during Habitat Restoration construction and maintenance activities such as placement of fill material, levee construction, infrastructure construction and removal, vegetation planting and management, and levee maintenance throughout Delta for projects CM2-CM22. This is of significance to the DPC as such impacts could negatively impact agricultural operations, and recreational activities which the DPC strives to protect.	Chapter 19, Page 19-192, Line 5-11	AG-1, NR-8, UI-1, UI-5	Delta Plan DP R2, DP R3		
62	AQ-9, Constructions emissions would exceed Sacramento Air Quality Management District's daily mono Nitrogen Oxide thresholds between 2016 - 2022.	Generation of pollutants in excess of federal minimum standards. Chapter 22, Page 22-229, Line 22-27	UI-1			
63	AQ-11, exposure of sensitive receptors to health threats (cancer risk)	Chapter 22	UI-1			
64	AQ-13, construction would involve operation of diesel fuel construction equipment in close proximity to sensitive receptor near Byron highway,	Chapter 22, Page 22-252, Line 21-29	UI-1			
65	AQ-18, Construction/operation impacts generate criteria pollutants,	Chapter 22, Page 22-267, Line 27-31	UI-1			
66	AQ-19, Restoration/enhancement could lead to cumulative greenhouse gas emissions,	Chapter 22, Page 22-269, Line 3-6	UI-1			
67	NOI-1, Exposure of noise-sensitive land uses to noise from construction of conveyance facilities, intakes, truck trips/commutes, power transmission lines, earthmoving activities. This is of significance to the DPC because of negative effects on Delta residents which the DPC represents, and Delta communities and economies which the DPC seeks to protect and enhance.	Exposure of Noise-Sensitive Land Uses to Noise from Construction of Water Conveyance Facility. Chapter 12, Pages 23-110 to 23-121 (NEPA)	NR-8, RA-4, UI-1	ESP 12.3 (Bullet 2); Delta Trail, Delta Plan DP R2		Prior to construction, develop a noise management plan for public review in the affected areas, which ensures that noise is minimized geographically an temporally. Also incorporate mitigation for economic losses from decline in tourism/recreation that would result from noise pollution.
68	NOI-2, Exposure of sensitive receptors to vibration and ground borne noise from pile driving at intake sites and construction of water conveyance facilities.	Exposure of sensitive receptors to vibrations or groundbourne noise from construction. Chapter 23, Page 23-123, Line 21-27.	NR-8, RA-4, UI-2	ESP 12.3 (Bullet 2); Delta Trail, Delta Plan DP R2		Prior to construction, develop a noise management plan for public review in the affected areas, which ensures that noise is minimized geographically an temporally. Also incorporate mitigation for economic losses from decline in tourism/recreation that would result from noise pollution.
69	NOI-4, Exposure to noise sensitive land uses to noise from restoration activities (Yolo Bypass, Tidal Habitat Restoration, Floodplain Restoration, Channel Margin Habitat Enhancement, Riparian Habitat Restoration, and more) could impact residences within 1,200 feet of an active restoration work area during the day and 2,800 feet at night.	Exposure of noise-sensitive land uses to noise from proposed restoration implementation. Chapter 23-130, Line 5-13.	NR-8, RA-4, UI-3	ESP 12.3 (Bullet 2); Delta Trail, Delta Plan DP R3		Prior to construction, develop a noise management plan for public review in the affected areas, which ensures that noise is minimized geographically an temporally. Also incorporate mitigation for economic losses from decline in tourism/recreation that would result from noise pollution.
70	CM2, CM4, CM5, CM6, and CM7 do not include sufficient access opportunities for recreational fishing to compensate for impacts to existing recreational fishing. In addition, CM20 proposes a boat inspection program that will limit boating access to Delta waterways to specific points of entry, hindering recreational boating access.	Impact REC-9: Result in Long-Term Reduction in Fishing Opportunities as a Result of Implementing Conservation Measures 2-21. Page 15-277- 15-283; Impact REC-10: Result in Long-Term Reduction in Boating-Related Recreation Opportunities as a Result of Implementing Conservation Measure 2-21, Page 15-285 -15-289	Recreation P1,P3, P4,P7,P12; Infrastructure P1,P5,P7; Agriculture P2, P3, P9; Natural Resources P1, P6, P8		CM2, CM4, CM5, CM6, and CM7 do not include sufficient access for fishing, boating, wildlife viewing or other types of recreation. These measures should compensate for impacts to current recreation opportunities by including new recreation opportunities and providing the recreation infrastructure necessary to accommodate users, such as access, trail heads, boat docks, interpretive kiosks, visitor parking and outdoor restrooms.	Regarding CM2 - There may be impacts to boating recreation on the Sacramento River and other connected waterways, if proposed changes to Yolo Bypass management increases the frequency, duration and magnitude of flood plain inundation and as a result decreases the water elevation in the Sacramento River and connected waterways. Changes in water elevation in Sacramento River was or affect showed by BDCP modeling and was not analyzed for impacts to boating recreation and it should be; Regarding CM20- Boat Inspections at entry points are unrealistic and will have a detrimental impact on the recreational boating econom It will also change and reduce the number of visitor days and vessel launches into the Delta, since boaters will need to take into account a 30 minute or longer wait time at inspection stations when planning a recreational trip. This may reduce the number of boaters who recreate for 3-4 hours, in particular boaters who recreate after a work day and want to spend the evening in the Delta. An inspection progra may deter recreationists who go out for 3-4 hours or less. In addition, any comprehensive inspection program should be modeled after an inspection progra of similiar size that covers the same number of square miles as the Legal Delta, the same number of marinas as are in the Legal Delta, and that generates 12 million visitor days and 6.5 millon boater days a year, as the Delta does. By making a comparison at the correct scale, the project proponent can come to a logical conclusion of the number of inspections stations needed to meet the user demand in the Delta. Currently, the BDCP proponents propose 7 stations, which is much les than other water recreation areas of similiar size (or even smaller). In addition, any inspection program should differentiate and provide streamlined access for Delta-only boats with special tags to reduce the number of boats that have to wait at inspections stations. Also, any inspection program proposal should work with an advisory group that includes boating recreation stakeholders.
71	Delta recreation spending underestimated by $76 million ($236 million in BDCP EIS/EIR, $312 million in DPC's Economic Sustainability Plan)	Chapter 16, page 16-22		ESP Chapter 8 (Recreation), section 3.5		

#	Impacts/ Significance to DPC	BDCP or EIR/EIS Reference	Related DPC LURMP Policy	Related DPC Economic Sustainability Plan or other Program Recommendations	Proposed Modifications to Project Conservation Measures	Proposed Modifications to Mitigation Measures
72	Table 16-21 underestimates impacts to Delta agriculture from CM-1 construction by showing only an annual impact and not the aggregate impact over the span of the entire construction period.	Chapter 16, page 16-62		ESP Chapter 7 (Agriculture), section 2.4		
73	Agricultural production value in the Delta is underestimated by $93 million ($687 million in BDCP EIS/EIR, $795 million in DPC's Economic Sustainability Plan)	Chapter 16, page 16-24		ESP Chapter 7 (Agriculture), section 2.4		
74	Agricultural impacts of Conservation Measures 2-22 are not included in Chapter 16 (Socioeconomics).	Chapter 16, page 16-75		ESP Chapter 7 (Agriculture), section 2.4		The EIS/EIR does not make any attempt to quantify economic impacts from agricultural land loss from Conservation Measures 2 through 22. It is almost assured that the negative economic effects to Delta agriculture from habitat restoration (especially tidal marsh restoration) would greatly exceed the negative effects from tunnel construction. The DPC's Economic Sustainability Plan estimated that habitat conversions would reduce agricultural output in the Delta by between $32 million and $132 million annually, with the majority of the loss stemming from BDCP restoration of 65,000 acres of tidal marsh.
75	Ag water quality and quantity impacts from proposed CM 1. Specifically, the BDCP states that these impacts remain significant and unavoidable after implementation of mitigation measures because (i) replacement water supplies associated with losses attributable to construction dewatering activities may not meet the preexisting demands or planned land use demands of the affected party, and (ii) the feasibility and effectiveness of phased actions to reduce EC levels is uncertain.	Chapter 14, page 14-125, lines 12-15	Agriculture P1, Water P1	ESP Chapter 7 (Agriculture), section 6.1		The BDCP lists these impacts as significant and unavoidable. The project proponent should ensure that there are no adverse impacts to water as a result of their project.
76	Municipal and industrial water quality impacts from proposed Conservation Measure 1 (salinity) and Conservation Measures 2-22 (dissolved organic carbon)	Appendix 3B, pages 42 (lines 27-41) and page 43 (lines 1-10)	Water P1	ESP Chapter 9 (Infrastructure), Section 5.1		The BDCP lists these impacts as significant and unavoidable. The project proponent should ensure that there are no adverse impacts to water as a result of their project. It is not enough to rely upon assistance that "may take the form of financial contributions, technical contributions, or partnerships."
77	The DEIR/EIS describes agriculture and recreation as the key sectors of the Delta economy and focuses its assessment of socio-economic impacts on these two (2) areas. The primary zone of the Delta also serves as a critical infrastructure hub (transportation, energy, and water) for the regional economy. The DEIR/EIS makes a few notes about natural gas wellheads that could be disrupted by the BDCP, but does not offer an adequate acknowledgement or assessment of socioeconomic impacts to other Delta infrastructure.	Chapter 16, page 16-4	UI-5	ESP Chapter 9 (Infrastructure)		
78	Increased mosquito populations due to habitat restoration and standing water would create a public nuisance impacting legacy communities and residents/visitors that may further spread to urban areas in the secondary zone. This potential public nuisance could have an effect on resident/visitor quality of life, recreational activities, and potentially have a negative impact on the Delta economy. Also there may be an increase in vector-borne diseases as a result of implementing Conservation Measures CM2, CM7, CM10, and CM11.	Chapter 25, page 25-109, Lines 34-37; page 25-111, Lines 21-23; Chapter 25, page 25-123, Lines 34-37	NR-P10	Increase in mosquito populations could generate a decline in property values, diminishment of recreational areas and opportunities, and increased human discomfort creating both a nuisance and decreased economic sustainability of the Delta region. The increase in habitat restoration could breed mosquito populations causing both an increased risk of vector borne disease and reducing the quality of life for Delta residents by generating a public nuisance where residents and visitors will not want to be outdoors. This public nuisance effect will have a detrimental impact on legacy communities and their efforts to diversify the Delta economy through promoting recreation and agri-tourism.	Habitat restoration should be analyzed for the potential to increase mosquito populations and should be designed and managed to reduce nuisance impacts on residential communities.	BDCP should provide funding to Vector Control Districts to compensate for additional treatments needed to manage mosquito population increases as a result of BDCP actions. The Project proponent states that they will work with local Vector Control Districts, but there is no mention of compensation and the increased resources that the Districts will need to accomplish this role. The Districts will be responsible for covering increased land area and resources should be direct towards them to accomplish this task.
79	Expose substantially more people to transmission lines generating new sources of Electric Magnetic Fields (EMF) as a result of the construction and operation of the water conveyance.	Chapter 25, page 25-120, Lines 1-41.	Infrastructure-P1			In order to reduce public exposure to Electric Magnetic Fields, all permanent transmission lines should be undergrounded. Doing so will avoid public health exposure and eliminate visual impacts to the landscape. The proposed measure to increase the height of transmission towers to reduce public health exposure will increase the visual impacts to the Delta's scenic vistas. The other proposed measure to widen the right of way for transmission lines to reduce public health exposure consumes more productive agricultural land.
80	Substantial increase in recreationist's exposure to pathogens as a result of implementing the restoration Conservation measures.	Chapter 25, page 25-123, Lines 5-26.	NR-P8		The DEIR/EIS indicates there will be limited public access to ROAs due to exposure to pathogens; instead, there should be mitigation measures to minimize the risk of pathogen transmission. To the greatest extent possible, Restoration Opportunity Areas (ROAs) should be open to recreation and tourism.	

BDCP164.1

From: Frances Brewster <FBrewster@valleywater.org>
Sent: Tuesday, July 29, 2014 10:12 AM
To: BDCP.comments@noaa.gov
Cc: Beau Goldie; Sylvia Van Diemen; Jim Fiedler; Joan Maher; Cindy Kao; Rita Chan; Devin Mody
Subject: BDCP Comments
Attachments: SCVWD BDCP EIR-EIS Comments 07 29 14.pdf; SCVWD Final comments on Draft IA 7-29-2014.pdf

Dear Mr. Wulff,

The Santa Clara Valley Water District (District) appreciates the opportunity to comment on the Public Review Draft Bay Delta Conservation Plan (BDCP) and EIR/EIS and on the Draft BDCP Implementing Agreement. The District appreciates the lead agencies' consideration of our comments in the two attached letters. If there are any question regarding the comments, please contact Ms. Cindy Kao at (408) 630-2346, or ckao@valleywater.org.

Sincerely,
Frances

Santa Clara Valley Water District

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Santa Clara Valley Water District

July 29, 2014

Mr. Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814
Email: BDCP.comments@noaa.gov.

Subject: Comments on Public Review Draft Bay Delta Conservation Plan and EIR/EIS

Dear Mr. Wulff:

The Santa Clara Valley Water District (District or SCVWD) appreciates the opportunity to comment on the Public Review Draft Bay Delta Conservation Plan and EIR/EIS. The District is the primary water resources management agency for Santa Clara County, providing wholesale water supply, stream stewardship and flood protection for the County's 1.9 million residents and the vital high-tech economy known as "Silicon Valley." Santa Clara County has been called the "economic engine" of the Bay Area, with over 200,000 workers commuting daily from other parts of the region and from the San Joaquin Valley for employment. The District also serves agricultural water users in the southern portion of the County.

Imported water supplies support many beneficial uses in Santa Clara County, and are critical to prevent the return of historic groundwater overdraft and land subsidence in San Jose and adjacent cities. The District's Central Valley Project ("CVP") and State Water Project ("SWP") supplies conveyed through the Delta are the primary sources of supply for its three drinking water treatment plants, and provide, on average, half the water delivered to the groundwater recharge system. During dry and critically dry years, such as this year, more than 90 percent of the County's surface water supply must be imported.

On October 9, 2012, the District Board of Directors adopted a Water Master Plan to achieve long-term water supply reliability in Santa Clara County through 2035. The plan's "Ensure Sustainability" strategy has three key elements: (1) secure existing water supplies and infrastructure that comprise the baseline system; (2) optimize the use of existing supplies and infrastructure; and (3) expand recycled water and conservation. The Water Master Plan calls for doubling current levels of conservation from 56,000 acre-feet/year to 99,000 acre-feet/year, and doubling the amount of recycled water use from 23,000 acre-feet/year to over 50,000 acre-feet/year over the next fifteen years, as well as other investments that will reduce reliance on the Delta by 10 percent. All future growth in county water needs will be met through water conservation and recycling. However, the county will still be depending on current long-term average Delta-conveyed supplies of about 170,000 acre-feet per year (AFY) to meet approximately 30 percent of its water needs.

The District has determined that continuing to rely on existing conditions of through-Delta conveyance for the District's imported water supplies is not acceptable because of the instability of existing Delta levees, underlying seismic risks, increasing threats of altered hydrology and

sea level rise due to climate change, and ongoing regulatory uncertainty and concerns over the environmental health of the Delta. To address these concerns, the District has joined with other public water agencies[1] and State and federal agencies to pursue a Delta solution to achieve the coequal goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Delta ecosystem, all in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. The District's desired outcome is a cost-effective, comprehensive, and reliable long-term solution for the Delta that meets the water supply, water supply reliability, and water quality needs of Santa Clara County while balancing other beneficial uses and providing a sustainable Delta ecosystem. It is within this context that the District reviews the BDCP and its EIR/EIS.

The goals of the BDCP are to restore the health of the Delta ecosystem and the reliability of water supplies conveyed through the Delta, and it includes major investments in habitat restoration, measures to address environmental stressors such as predation and invasive species, and new diversion and conveyance facilities to help restore natural flow patterns and reduce impacts of SWP and CVP operations on the Delta ecosystem. The comprehensive, large-scale ecosystem improvements and flexible, science-based management provided by the BDCP proposed project constitute an effective framework for protection and recovery of threatened and endangered fish and wildlife, and creation of a sustainable Delta environment for the future.

In addition to these environmental benefits, the BDCP proposed project would significantly stabilize and protect both the quantity and quality of imported water supplies for Santa Clara County. Benefits include: (1) reduced regulatory risk and improved long-term average water supply reliability (or avoided loss of long-term average water supply); (2) reduced risk of a prolonged imported water supply interruption due to seismic events and climate change; (3) improved quality of imported water conveyed through the Delta; and (4) reduced salt loading to the groundwater basin. Those BDCP alternatives that allow relatively more water to be diverted from northern intakes of a new isolated conveyance facility compared to existing southern Delta intakes would provide greater risk reduction and water quality benefits to Santa Clara County, as well as greater flexibility to restore natural flow patterns in the Delta for fishery benefit.

The District has the following general comments on the Public Review Draft EIR/EIS and Draft BDCP, and more detailed comments on some topics are listed in Attachment A. In addition, the District supports and incorporates by reference the detailed comments submitted by the State Water Contractors and the San Luis and Delta-Mendota Water Authority.

1. Delta as a Place: The District appreciates that, in response to public input, the Draft EIR/EIS endeavors to recognize the "Delta as a Place," especially in Chapter 16 (Socioeconomics). We note that the California Department of Water Resources (DWR) has, in response to public input, continually revised the preferred alternative to substantially reduce the effects of the project on Delta residents and the Delta environment. We encourage these efforts to continue and expand.

[1] Public water agencies are State Water Project and Central Valley Project water contractors, including Alameda County-Zone 7 Water Agency, Kern County Water Agency, Metropolitan Water District of Southern California, Santa Clara Valley Water District, San Luis & Delta-Mendota Water Authority, and Westlands Water District.

2. Funding: The District supports the concept of beneficiaries pay, with the cost of CM1 funded by public water agencies and the additional public benefits of habitat restoration and reduction of other stressors funded through State and federal sources. We understand that public funding is largely expected to flow from California Bay-Delta Restoration appropriations and anticipated State bond measures. As described in Chapter 8 of the Draft BDCP, since CALFED was established in 1995, more than $1.4 billion of state and federal funds have been spent for restoration activities, which demonstrates a significant level of commitment to support ecosystem and species restoration in the Delta. The Draft BDCP assumes that Bay Delta Restoration appropriations will continue at the same level as fiscal year 2011 appropriations through year 40 of the permit term, comprising more than $3 billion of the $7.9 billion public share of funding for the BDCP. The Draft BDCP also observes that water bonds have been approved by voters at a frequency of one in every 4 years on average, and therefore infers that future water bonds that would partially fund the public benefit portions of BDCP are also likely to occur during the permit term. These are reasonable assumptions. However, because the fish and wildlife agencies will need to make a finding that such funding is reasonably certain to occur before they issue permits, the document should provide a more focused discussion regarding the limitations and likelihood of public funding, including further discussion of how public funding is made available to support other large Habitat Conservation Plans. In particular, Section 8.4 should be expanded to provide a discussion on the reliability of projected public funding sources.

3. Alternatives: The District appreciates the range of alternatives considered in the Draft EIR/EIS to meet the project objectives, purpose, and need, as required by CEQA and NEPA. The Draft EIR/EIS comprehensively describes and evaluates 15 action alternatives, with a wide range of conveyance facility, operating scenarios, and conservation measure components. The alternatives recognize that Delta ecosystem restoration requires a comprehensive approach to address multiple stressors and restoration opportunities, and that Delta ecosystem restoration cannot be achieved by focusing simply on flow alone. Several entities submitted proposals, such as the "Portfolio-Based BDCP Conceptual Alternative" by the Natural Resources Defense Council and others, which include additional actions such as increasing water recycling and conservation. While the District agrees with and is actively implementing a number of the elements in the Portfolio-Based Alternative, we believe these elements are more appropriately included in the State's Water Action Plan and ongoing programs currently being implemented by the State and federal governments, and we agree with the assessment in Appendix 3A, that many of these actions are beyond the scope of a Delta-focused HCP/NCCP.

4. Effectiveness of Conservation Measures Requiring Habitat Restoration: The District observes that the Draft EIR/EIS, as well as the Draft BDCP and the appendices to both documents, provide adequate analyses to support assumptions and conclusions that conservation measures requiring habitat restoration are likely to achieve the desired biological benefits. Real world examples, such as the successful habitat usage in Liberty Island by delta smelt, illustrate the potential benefit of habitat creation. In addition, habitat usage by longfin smelt in the Island Ponds in South San Francisco Bay demonstrates the direct benefit to listed species from the addition of restored habitat and the food production this can create (Jim Hobbs, UC-Davis, unpublished data). Some commenters have and will continue to question the Draft

BDCP and EIR/EIS technical analysis of habitat restoration benefits, but this does not mean there is not sufficient evidence to take action now, nor does it make the EIR/EIS inadequate.[2]

5. Scientific Uncertainty: Given the complex dynamics of the Delta and the incomplete understanding of how fish interact with the habitat, the current approach of using the best available scientific literature and best professional judgment to analyze potential project impacts is reasonable. The integrated management structure and resources proposed in the Draft BDCP would establish a viable framework to improve scientific understanding over time, and further, to expedite actions that benefit covered species through a robust and reactive adaptive management plan. The Decision Tree process is a reasonable approach to resolve the existing scientific uncertainty associated with the benefits of various outflow scenarios to delta and longfin smelt. The EIR/EIS should properly characterize the uncertainty and conflicting expert opinions associated with these outflow scenarios.

6. Adaptive Management: The District believes the Draft BDCP lays out a strong framework and process for adaptive management that meets the requirements for an HCP and NCCP. We look forward to additional detail that will be provided in the Final BDCP, including procedures for scoping monitoring and research work, staffing roles and responsibilities, and additional detail on how the Adaptive Management Team will function.

7. Validity of Draft EIR/EIS Environmental Setting: The District observes that the Draft EIR/EIS provides sufficient detail on the environmental setting of Delta properties to perform adequate impact analyses for geologic, biological, cultural and other resources. Although access to some private properties for BDCP environmental studies was not available, a detailed parcel-specific inventory of environmental resources is not necessary to understand impacts of the BDCP alternatives.[3]

8. Impact Significance: For some impacts, the relevant impact significance criteria were not used to judge impact significance before and/or after mitigation, resulting in overly-conservative findings of impact significance. Examples include certain surface water, groundwater, recreation, and aesthetics impacts. The specific significance criteria described in each chapter should be used for significance determinations. See Attachment A for detailed comments.

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[2] A lead agency may adopt the conclusions reached by experts that prepare an EIR, even though others may disagree with the underlying data, analysis, and conclusions. *Laurel Heights Improvement Ass'n v Regents of Univ. of California* (1988) 47 Cal. 3d 376, 408. Also, a lead agency can make reasonable assumptions based on substantial evidence about future conditions without guaranteeing that those assumptions will remain true. *Environmental Council of Sacramento v City of Sacramento* (2006) 142 Cal.App.4th 1018, 1036.

[3] Under CEQA Guidelines Section 15125(a), the environmental setting description shall be no longer than necessary to understand the impacts of a proposed project and its alternatives.

9. Impacts on San Luis Reservoir Storage Levels: The Draft EIR/EIS does not provide a detailed assessment of the BDCP's impact on San Luis Reservoir (SLR) storage levels and water deliveries. Summary information presented in the Draft EIR/EIS indicates that the projected SLR storage levels are significantly lower under some action alternatives, particularly those that assume high outflow requirements (e.g., Alternatives 4 (High Outflow Scenario H4), 7, and 8) than under no project. The Draft EIR/EIS (p. 5-24) briefly recognizes that if San Luis Reservoir is drawn down too low, the reliability and water quality of deliveries to the San Felipe Division, which includes the District, are adversely affected. When SLR storage levels drop below an elevation of 369 feet, about 300,000 acre-feet (AF) in storage or the "low point", algal blooms occurring during the summer can enter the lower intake of the Pacheco Pumping Plant and deliveries of the District's CVP supplies can be adversely affected; water quality within the algal blooms is not suitable for municipal and industrial water users relying on existing water treatment facilities in Santa Clara County. Deliveries to the San Felipe Division may be severely or completely interrupted when storage levels are drawn down such that there is insufficient hydraulic head to effectively operate Pacheco Pumping Plant. The EIR/EIS should provide more detail on the existing low point issue, and existing Reclamation operational protocols designed to minimize low point conditions. It should also provide greater analysis and detail on the impacts of the action alternatives on SLR levels, and on the District's water supplies due to low point conditions. In addition, the operational priorities for the Annual Delta Operations Plan (described in Draft BDCP Section 6.3.2) should be amended to specifically include minimizing the frequency of San Luis Reservoir low point conditions, potentially by meeting requirements for high outflow by securing additional water supplies rather than reducing deliveries to storage in San Luis Reservoir. See Attachment A for detailed recommended revisions to the Draft EIR/EIS to address the low point issue. See Attachment B for further technical background on the low point issue.

10. Impacts on San Luis Reservoir Water Quality: As with water supply impacts, the Draft EIR/EIS does not analyze the water quality impacts associated with increased frequency of low point conditions under some of the action alternatives. The available information in the EIR/EIS indicates that the frequency of low point conditions would significantly increase under some action alternatives, particularly those that require high outflow conditions, adversely affecting the District's municipal and industrial beneficial use of water stored at San Luis Reservoir. Concentrations of algae (as measured by chlorophyll-a) that are not suitable for existing water treatment facilities would increase at the District's water supply intake. The water quality impact analysis should include this impact. Because the increased frequency of low point conditions could increase District operational and water treatment costs as well as impair the ability to utilize its CVP supplies, the EIR/EIS should include a new "non-environmental" commitment to offset these impacts through adjustments to the Annual Operations Plan, implementing water management agreements and/or other acceptable options, including compensation for increased costs to the extent they are actually incurred. This commitment should be analogous to commitments (as described in Section 3B.2.1) for other water purveyors whose water quality is adversely affected by BDCP operations.

11. Streamlining Future Environmental Compliance: Appendix 31A should clarify that the substantial evidence (not fair argument) test would be used to determine whether future changes to the conveyance facilities require an EIR/EIS. See Attachment A for detailed comments.

12. Water Quality Modeling Results: Water quality modeling in Chapter 8 indicates that several action alternatives, including the preferred alternative, will result in greater exceedances of Water Quality Control Plan (WQCP) standards and concludes that these are significant and unavoidable effects. The Draft EIR/EIS should explain that the SWP and CVP will be operated to meet all WQCP standards as a highest priority, and that the apparent increase in exceedances is likely due to model limitations that do not allow for real-time operational decisions based on daily flow conditions.

The District appreciates the lead agencies' consideration of our Public Review Draft EIR/EIS comments. If there are any questions regarding the comments, please contact Ms. Cindy Kao at (408) 630-2346, or ckao@valleywater.org.

Sincerely,

Beau Goldie
Chief Executive Officer

Attachment A

SCVWD Detailed Public Review Draft BDCP EIR/EIS Comments

Page	Comment	Recommended Change
3B-44 Line 18	The commitments for water purveyors whose water quality is adversely affected by BDCP does not include a commitment to offset water quality impacts associated with increased low point conditions at San Luis Reservoir.	Because the increased frequency of low point conditions could increase District costs for water treatment, operations or alternative water supplies, the EIR/EIS should include a new "non-environmental" commitment to offset these impacts through adjustments to the Annual Operations Plan, implementing water management agreements, and/or other acceptable options, including compensation for increased costs to the extent they are actually incurred . This commitment should be analogous to commitments (as described in Section 3B.2.1) for other water purveyors whose water quality is adversely affected by BDCP operations.
5-14 Lines 41–45, 5-15 Lines 1–2	Minor clarifications are needed to better characterize the San Felipe Division system. The Santa Clara Tunnel is located between the Pacheco Conduit and Santa Clara Conduit, and the three segments together equal 30 miles, but that is not clear from reading the existing text.	Revise the text to state that water is then pumped into the San Luis Reservoir and diverted through the 1.8-mile-long ~~of~~ Pacheco Tunnel ~~inlet~~ to the Pacheco Pumping Plant. Twelve 2,000- horse-power pumps lift the water a maximum ~~of 490 cfs a~~ height ~~varying from 85 feet to 300~~ of 240 feet to the 5.3-mile-long Pacheco Tunnel. The water then flows through the tunnel and without additional pumping, through ~~29~~ 30 miles of concrete, high-pressure pipeline, varying in diameter from 10 feet to 8 feet, ~~and the mile-long Santa Clara Tunnel~~. In Santa Clara County, the pipeline terminates at the Coyote Pumping Plant, which is capable of pumping water directly to the treatment plants, local streams, or groundwater recharge facilities, or ~~to~~ into Anderson Reservoir or Calero Reservoir for ~~further~~ future distribution ~~at~~ to treatment plants or groundwater recharge.
5-24 Lines 12-19	The text provides an overly-general description of the "low point" issue. It does not provide technical explanations, or explain existing Reclamation operational protocols designed to minimize low point conditions.	Revise the text to provide a more detailed, technical explanation of the low point issue; Attachment B to this letter can be used as an information source. Explain operational protocols that Reclamation uses to manage SLR levels to minimize low point conditions.

Page	Comment	Recommended Change
5-61 Lines 3-15	The text describes changes in reservoir storage under the No Action Alternative. It does not mention changes in SLR storage, and how the frequency of low point conditions would change.	Revise the text to describe changes in SLR storage under the No Action Alternative, and how the frequency of low point conditions would change.
5-74 Lines 1-14	Global comment for all action alternatives: The text discusses impacts on CVP south of Delta M&I deliveries in general. It does not specifically discuss impacts of the action alternatives on SLR storage and reservoir levels, the frequency of low point conditions, and resulting impacts on San Felipe Division and District water supplies.	For each action alternative, add a section discussing impacts of the action alternatives on SLR storage and reservoir levels, the frequency of low point conditions, and resulting impacts on San Felipe Division and District water supplies.
5A-B12, Lines 13-19	The text describes CALSIM II model assumptions for San Luis operations. These assumptions do not take into account existing Reclamation operational protocols designed to minimize SLR low point conditions.	Revise the text to explain that CALSIM II model assumptions do not take into account existing Reclamation operational protocols designed to minimize SLR low point conditions.
6-59 Impact SW-4	Global comment on Impact SW-4: The impact adversity/significance judgments do not use the significance threshold listed on page 6-45 to judge the adversity/significance of this impact (a substantial alteration of drainage pattern or a substantial increase in runoff).	Use the Impact SW-4 threshold to judge the adversity/significance of Impact SW-4.
6-62 Line 41 through 6-63 Line 14	Global comment on Impact SW-8: The impact adversity/significance judgments do not use the significance threshold listed on page 6-45 to judge the adversity/significance of this impact (exposure to a significant risk)	Also, to improve defensibility, use the Impact SW-8 threshold to judge the adversity/significance of Impact SW-8.
7-21 Lines 23–25	Although Hetch Hetchy water is used in Santa Clara County, these contracts are between SFPUC and individual retailers in the County and not with SCVWD.	The most heavily used basins that receive imported water from the Delta Watershed include Santa Clara Valley, Napa Valley, and Livermore Valley groundwater basins. Santa Clara ~~Valley WD~~ County water supplies include SWP water via the South Bay Aqueduct, CVP water via the San Felipe Division of the CVP, and water from SFPUC's Hetch Hetchy ~~Aqueduct~~ Regional Water System.
7-21 Lines 26–28	SCVWD does not have water level data back to 1900, and permanent subsidence occurred beyond 1960.	The Santa Clara Subbasin has historically experienced ~~decreasing groundwater level trends.~~ long-term groundwater overdraft, resulting in large water level declines and up to 13 feet of unrecoverable land subsidence between 1915 and 1969 (Santa Clara Valley Water District 2012).[4] ~~Between 1900 and 1960, water level declines of more than 200 feet from groundwater~~

[4] Source: 2012 Groundwater Management Plan, available at: http://www.valleywater.org/Services/Clean_Reliable_Water/Where_Does_Your_Water_Come_From/Groundwater/2012_Groundwater_Management_Plan.aspx

Page	Comment	Recommended Change
		~~pumping have induced unrecoverable land subsidence of up to 13 feet (Santa Clara Valley Water District 2011)~~. Importation of surface water via the Hetch Hetchy and South Bay Aqueducts and the San Felipe Division, and the development of an artificial recharge program have ~~favored~~ resulted in the rise of groundwater levels since 1965.
7-22 Lines 11–13	SCVWD maintains an active recharge program in Santa Clara County to avoid long-term overdraft.	In the southern San Francisco Bay Area, SCVWD maintains an active recharge program in Santa Clara County to avoid overdrafting of the groundwater basin and resulting land subsidence. Groundwater and surface water are connected through in-stream and off-stream artificial recharge projects.~~, in which surface water is delivered to water bodies that permit the infiltration of water to recharge overdrafted aquifers.~~ Natural groundwater recharge also occurs from rainfall and stream seepage during the wet season.
7-22 Lines 19–20	Hardness is fairly common in groundwater due to naturally occurring deposits of calcium and magnesium, regardless of the proximity to the ocean or areas of intrusion.	In basins located near the ocean or where seawater intrusion has occurred, TDS ~~and hardness are~~ is an issue~~s~~.
7-22 Lines 20–21	Salt water intrusion through tidal creeks occurred historically in the northern Santa Clara Valley. Impacts are primarily limited to shallow aquifers near San Francisco Bay and no significant impacts to deeper drinking water aquifers are observed. (Source 2012 SCVWD GWMP p. 2-9.)	Seawater intrusion ~~is prevalent~~ has been observed in groundwater basins near San Francisco Bay, northern Santa Clara Valley, and Napa Valley.
7-22 Lines 24–26	While there are several hundred contaminant release sites in Santa Clara County, there have been very limited impacts to drinking water aquifers.	Contaminated groundwater from industrial and agricultural chemical spills, underground and above ground storage tank and sump failures, landfill leachate, septic tank failures, and chemical seepage is also ~~an issue~~ a potential threat to groundwater aquifers in the Bay Area (California Department of Water Resources 2009a).
7-22 Lines 29–31	Correct quantity of groundwater pumped annually.	In Santa Clara County, approximately ~~160,000~~ 149,000 acre-feet of groundwater is pumped annually by local water suppliers and private well owners to meet municipal, domestic, agricultural, and industrial water needs (Santa Clara Valley Water District ~~2011~~ 2012 GWMP p. 2-14).

Page	Comment	Recommended Change
7-23 Lines 5–14	Correct factual information on SCVWD's groundwater management operations.	The Santa Clara Valley Water District (SCVWD) operates 10 surface water reservoirs and an extensive system of in-stream and off-stream artificial recharge facilities to replenish the groundwater basin and provide more flexibility to manage water supplies. ~~Eighteen major recharge systems allow~~ SCVWD releases local reservoir water and imported water ~~to be released in more than 30 local creeks and 71 percolation ponds~~ through more than 390 acres of recharge ponds and over 90 miles of creeks for artificial recharge to the groundwater basin. Artificial recharge amounts to approximately ~~157,000~~ 100,000 acre-feet annually (Santa Clara Valley Water District ~~2011~~ 2012). Recharge in this subbasin occurs naturally along streambeds and artificially in in-stream and off-stream managed basins. The operational storage capacity in the basin was estimated with a groundwater flow model at 350,000 acre-feet~~, and the rate of withdrawal from the basin is a controlling function; pumping should not exceed 200,000 acre-feet in any single year,~~ which accounts for the avoidance of adverse impacts such as inelastic land subsidence and salt water intrusion. (Santa Clara Valley Water District ~~2001:27~~ 2012 Source: 2012 GWMP p AP-20).
7-23 Lines 18–20	Correct factual information on SCVWD's groundwater management operations.	ACWD, SCVWD, and Zone 7 Water Agency currently ~~have~~ participate in groundwater banking programs. SCVWD reached an agreement with Semitropic WSD to bank up to 350,000 acre-feet in ~~their~~ Semitropic WSD's storage facilities. As of ~~2001~~ January 1, 2014, SCVWD's storage balance in the Semitropic banking program was about 263,000 acre-feet ~~SCVWD had stored about 140,000 acre-feet in the water banking program (Santa Clara Valley Water District 2001:26)~~ (Santa Clara Valley Water District. 2010. *Urban Water Management Plan 2010*. San José, CA).
7-23 section starting	This section should be updated to note that the Central Coast Region includes portions of Santa Clara County, namely the Llagas Subbasin (DWR	Groundwater provides over 90% of the water supply for areas overlying the Llagas Subbasin and is the sole source

Page	Comment	Recommended Change
with Line 22	Subbasin 3.3-01).	of drinking water. Approximately 44,000 acre-feet is pumped from the Llagas Subbasin each year (SCVWD 2012 GWMP p. 2-14).
7-23 Lines 34–36	SCVWD operates the Uvas and Chesbro Reservoirs to recharge the Llagas Subbasin. Managed SCVWD recharge in the Llagas Subbasin is approximately 24,000 acre-feet per year (SCVWD GWMP p. 2-14).	Groundwater recharge is achieved through the operation of several reservoirs: Uvas Reservoir, Chesbro Reservoir, Hernandez Reservoir, Twitchell Reservoir, Lake San Antonio, and Lake Nacimiento.
7-24 Lines 7–8	The water budget for the Llagas Subbasin from 2002 to 2011 shows inflows and outflows are generally balanced (SCVWD GWMP 2012, p. 2-19)	Other basins are in equilibrium due to management of the basin through conjunctive use by local water districts. For example, the water budget for the Llagas Subbasin from 2002 to 2011 shows inflows and outflows are generally balanced (SCVWD GWMP 2012, p. 2-19).
7-24 Lines 29–30	The statement made about Santa Barbara County is also true in the Llagas Subbasin in Santa Clara County (and other portions of the Central Coast Region like Salinas).	State MCLs for nitrates have been exceeded in some areas of Santa Barbara County, Santa Clara County, and other portions of the Central Coast Region (e.g., Salinas).
7-31 Lines 4–5	While the SCVWD District Act provides broad authority to manage water resources, there is no specific language limiting groundwater extraction.	For example, the Orange County Water District ~~and SCVWD have~~ has been granted Special Act 1 District authorities. In general, the specific authority of ~~these~~ this district~~s~~ includes two general categories. -Limiting export and extraction of groundwater in their jurisdictions (upon evidence of overdraft or threat of overdraft).
7-47 Lines 34-38 and 7-110 Lines 19-21	Global comment on Mitigation Measures GW-1, 5, and 7: The conclusions that these mitigation measures may not reduce impacts to less-than-significant appears overly-conservative, and do not use the relevant impact significance criterion.	Use the relevant impact significance criterion to decide whether MMs GW-1, 5 and 7 reduce impacts to less-than-significant levels.
7-119 Lines 1–2	Update reference:	~~Santa Clara Valley Water District. 2001. *Santa Clara Valley Water District Groundwater Management Plan*. July.~~ The recommended changes reference our current Groundwater Management Plan, adopted by the District Board of Directors in July 2012. The plan is available SCVWD's website.
7-119 Lines 3–4	Update reference: this webpage has been updated since March 2011, and no longer contains many of the values referenced. Suggested edits within the text reference the District's 2012 GWMP.	Delete link from references.
8-298.	The Draft EIR/EIS does not analyze the water	The water quality impact analysis

Page	Comment	Recommended Change
Line 12	quality impacts associated with increased frequency of low point conditions under some of the action alternatives, particularly those that assume high outflow requirements. As mentioned in the water supply comments, the increased frequency of low point conditions would adversely affect the District's municipal and industrial beneficial use of water stored at San Luis Reservoir. Concentrations of algae (as measured by chlorophyll-a) that are not suitable for existing water treatment facilities would increase at the District's water supply intake.	should include this impact by adding a new Impact WQ-32 for each alternative. For those alternatives that increase the frequency of low point conditions, reference a new "non-environmental" commitment as described in comment #9 in the main body of this letter, (See also comment on p. 3B-45.) Summarize the new commitment in the text in a format similar to that on page 8-238, lines 33-43 (bromide non-environmental commitment for in-Delta water purveyors).
11-110	Table 11-2. SWP/CVP Export Service Area Reservoirs is incomplete.	Lake Del Valle, Bethany Reservoir, Calero Reservoir, and San Justo Reservoir should also be included.
15-263 Lines 11-17	Global Comment on Impact REC-2: The text states that REC-2 impacts are significant and unavoidable. The conclusion appears overly-conservative, and does not use the REC-2 significance criterion of "substantial long-term reduction of recreational opportunities and experiences."	Use the REC-2 significance criterion to decide whether REC-2 impacts can be reduced to less-than-significant levels.
15-270 Lines 28-31	Global comment on REC-3: The text states that REC-3 impacts are long-term, and therefore considered significant and unavoidable. The conclusion appears overly-conservative, and does not use the REC-3 significance criterion of "substantial long-term reduction of recreational opportunities and experiences."	Use the REC-3 significance criterion to decide whether REC-3 impacts can be reduced to less-than-significant levels.
17-183 Line18 through 17-184 Line 16; 17-184 Lines 8-16	Global comment Impact AES-1: The applicable significance criterion (substantial alteration of visual quality) is not used to determine whether impacts are adverse or significant, pre- and post-mitigation. The finding that Impact AES-1 is significant and unavoidable appears overly conservative. The same comment applies globally to Impacts AES-2, 3, 4, 5 and 6, and to cumulative aesthetic impacts.	Use the AES-1 significance criterion (substantial alteration of visual quality) to determine whether impacts are adverse or significant, pre- and post-mitigation. The same recommendation applies globally to Impacts AES-2, 3, 4, 5 and 6, and to cumulative aesthetic impacts.
30-99 Lines 14–16	Under the growth inducement section, the language makes it seem as if SCVWD has a higher proportion of deliveries, when it appears that this statement is based on allocation multiplied by contract amount. Also, SCVWD's deliveries will not necessarily increase, as described in the following sentences. Language should be consistent with other contractors' benefits.	Delete the following sentence: Among M&I contractors SCVWD is projected to receive the second greatest increase in deliveries (following MWD) under the BDCP alternatives.
30B-31	The EIR/EIS analysis of water deliveries only presents results for the low outflow scenario (H1) creating a misleading representation of potential benefits.	Include results of analyses for all four Alternative 4 operational scenarios (H1-H4), or at a minimum, present the range from the bookends of the low

Page	Comment	Recommended Change
		outflow and high outflow scenarios, H1 and H4.
31A-2	Appendix 31A (future environmental compliance) is unclear on whether the appendix environmental checklist should apply to future changes to conveyance facilities (as well as to CM2-22), and on what standard of review should apply. Since CEQA/NEPA compliance for the conveyance facilities is at the project level, any future changes should be evaluated under Public Resources Code §21166 (need for a Supplemental or Subsequent EIR/EIS), which employs the deferential substantial evidence (not fair argument) standard of review.	The appendix should clarify that the substantial evidence (not fair argument) test would be used to determine whether future changes to the conveyance facilities require an EIR/EIS. The appendix environmental checklist should be limited to future activities related to CM 2-22.

Attachment B

Additional Information on San Luis Reservoir Low Point

Public Review Draft EIR/EIS existing text, page 5-24, lines 12-19:

> With the existing facility configuration, the operation of the San Luis Reservoir could impact the water quality and reliability of water deliveries to the San Felipe Division if San Luis Reservoir is drawn down too low. Reclamation has an obligation to address this condition and may solicit cooperation from DWR, as long as changes in SWP operations to assist with providing additional water in San Luis Reservoir (beyond what is needed for SWP deliveries and the SWP share of San Luis Reservoir minimum storage) does not impact SWP allocations and/or deliveries. If the CVP is not able to maintain sufficient storage in San Luis Reservoir, there could be potential impacts on resources in Santa Clara and San Benito Counties.

Insert the following additional text describing San Luis low point on page 5-24, after line 19:

Figure 1-1 illustrates San Luis Reservoir facilities, including the Pacheco intakes and pumping plant that serve the San Felipe Division. During summer months, algae blooms of up to 35 feet thick often develop in the reservoir. When reservoir storage levels drop below 300,000 acre-feet (AF), algae blooms may enter the Lower Intake and affect drinking water treatment plant deliveries within Santa Clara County. Deliveries to Santa Clara and San Benito may be severely or completely interrupted when storage levels are drawn down such that there is insufficient hydraulic head to effectively operate Pacheco Pumping Plant. Deliveries to other SWP and CVP contractors are made through the Gianelli intake, which is about 40 feet lower than the Pacheco intake and is generally unaffected by the water quality and supply interruption issues that affect the San Felipe Division.

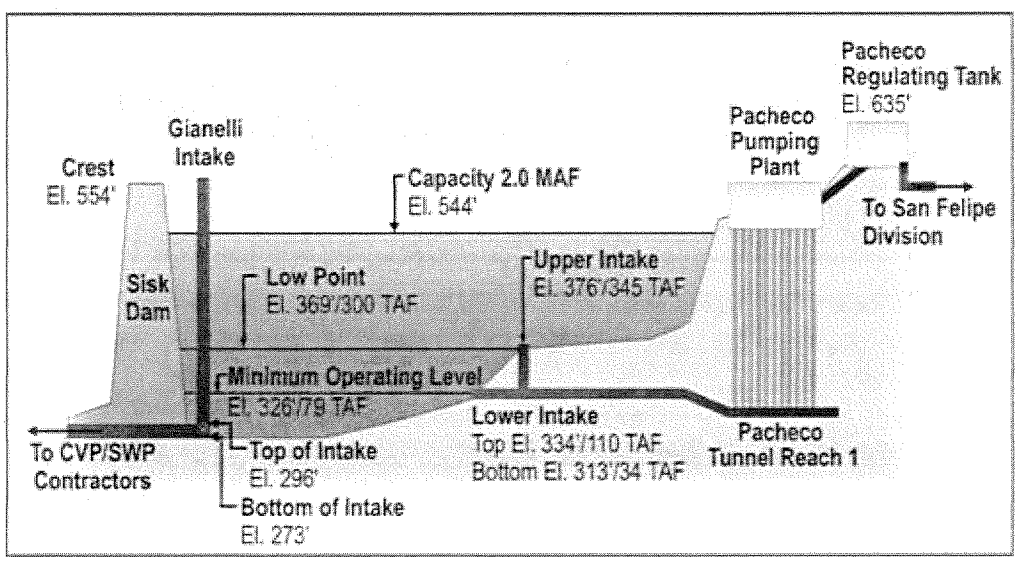

Figure 1-1. San Luis Reservoir Facilities

Reclamation and DWR allocate federal and State water each year based on the full use of available San Luis storage, and in many years, water levels are predicted to fall below 300,000 AF. These chronic predictions of "low point" cause water supply concerns for the San Felipe Division, particularly for Santa Clara County, because mitigating this risk leads to less efficient water management, increased pumping and treatment costs, and the need to prepare treated water retailers for taste and odor problems or disruptions in supply. The risk of San Luis Reservoir dropping below the Lower Intake and affecting scheduled deliveries of CVP water during peak summer demand months is a significant concern. Minimum storage levels are typically projected to occur in August or September and remain flat for several months before the reservoir begins to refill. This typically overlaps with the peak summer demand period in Santa Clara County, limiting the Santa Clara Valley WD's operational flexibility and supply availability when both are needed most. The severity of impacts to Santa Clara Valley WD depends on how long the reservoir elevation is predicted to be below 300,000 acre-feet, how low the elevation gets, and the frequency at which it occurs.

From: Frances Brewster <FBrewster@valleywater.org>
Sent: Tuesday, July 29, 2014 10:12 AM
To: BDCP.comments@noaa.gov
Cc: Beau Goldie; Sylvia Van Diemen; Jim Fiedler; Joan Maher; Cindy Kao; Rita Chan; Devin Mody
Subject: BDCP Comments
Attachments: SCVWD BDCP EIR-EIS Comments 07 29 14.pdf; SCVWD Final comments on Draft IA 7-29-2014.pdf

Dear Mr. Wulff,

The Santa Clara Valley Water District (District) appreciates the opportunity to comment on the Public Review Draft Bay Delta Conservation Plan (BDCP) and EIR/EIS and on the Draft BDCP Implementing Agreement. The District appreciates the lead agencies' consideration of our comments in the two attached letters. If there are any question regarding the comments, please contact Ms. Cindy Kao at (408) 630-2346, or ckao@valleywater.org.

Sincerely,
Frances

Santa Clara Valley Water District

FRANCES BREWSTER
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BDCP1649

Santa Clara Valley Water District

July 29, 2014

Mr. Ryan Wulff
National Marine Fisheries Service
650 Capitol Mall, Suite 5–100
Sacramento, CA 95814
Email: BDCP.comments@noaa.gov.

Subject: Santa Clara Valley Water District Comments on Draft Bay Delta Conservation Plan Implementing Agreement

Dear Mr. Wulff:

The Santa Clara Valley Water District (District) appreciates the opportunity to comment on the Draft Bay Delta Conservation Plan (BDCP) Implementing Agreement. The District is the primary water resources management agency for Santa Clara County, providing wholesale water supply, stream stewardship and flood protection for the County's 1.9 million residents and the vital high-tech economy known as "Silicon Valley," while also serving agricultural water users in the southern part of the County.

The District was formed in 1929 to address groundwater overdraft and land subsidence in San Jose and adjacent cities, serious conditions that were successfully resolved by the importation of water from the federal Central Valley Project ("CVP") and State Water Project ("SWP"). Today, an average of 40% of Santa Clara County's water supplies are conveyed through the Delta by these projects, while an additional 15% is delivered from the Delta watershed by the San Francisco Public Utilities Commission's Hetch-Hetchy system. Ongoing operation of the District's conjunctive management program and aggressive development of water use efficiency help maintain groundwater reserves to meet the County's needs in dry years, and prevent the reoccurrence of land subsidence and salt water intrusion. However, these operations can only be sustained with adequate CVP and SWP water supplies. In critically dry years such as 2013 and 2014, these imported water supplies make up over 95% of the water needed at the District's three drinking water treatment plants, and are vital to maintaining emergency groundwater reserves for successive dry years.

The District has determined that continuing to rely on existing conditions of through-Delta conveyance for the District's imported water supplies is not acceptable because of the instability of existing Delta levees, underlying seismic risks, increasing threats of altered hydrology and sea level rise due to climate change, and ongoing regulatory uncertainty and concerns over the environmental health of the Delta. To address these concerns, the District has joined with other

public water agencies[1] and State and federal agencies to pursue a Delta solution to achieve the coequal goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Delta ecosystem, all in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. The District is evaluating the Bay Delta Conservation Plan (BDCP) as one such solution that meets the water supply, water supply reliability, and water quality needs of Santa Clara County while balancing other beneficial uses and providing for a sustainable Delta ecosystem.

The District is considering participating as a signatory to the BDCP Implementing Agreement (IA). Overall, the draft agreement effectively clarifies the processes needed to ensure successful implementation, identifies responsibilities of the entities responsible for financing and/or implementing the plan, and sets out the assurances and protections for those that receive take authorizations pursuant to the BDCP. The District appreciates the effort put into preparing such a complex document. Some specific comments are provided below:

Goals and objectives Although there are several areas that require further clarification within the document, the terms and conditions of the draft IA generally support the BDCP goals and objectives of both improving the health of the Delta ecosystem as well as the reliability of California's water supply.

Signatories to the Agreement The draft IA sets out the roles, responsibilities, and commitments of the key parties involved in implementing the BDCP. The United States Bureau of Reclamation (Reclamation) is not identified as a signatory in the draft document but is a critical partner in the implementation of the BDCP as it operates the CVP and may participate in implementation of various Conservation Measures. Reclamation should be signatory to the agreement to ensure that all key participants are committed to a shared vision and that commitments for all key participants are defined. The BDCP reflects commitments of the State of California and the United States. Therefore, the District recommends that the Secretary of the Interior and the Governor of California sign the IA.

Adaptive Management The success of the BDCP will largely hinge on effective implementation of a sound and well-structured adaptive management program. In general, the draft IA lays out an appropriate framework for implementing the adaptive management program that is consistent with the BDCP itself and identifies reasonable limits on flow adjustments. The agreement identifies four resources to support adaptive management changes in Section 10.3.7.2, including adjusting operations on an inter-annual basis and sharing resources derived from water supply improvements. These resources should be more clearly defined in the Implementing Agreement.

Public funding shortfall The draft IA states that "(i)n 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

[1] Public water agencies are State Water Project and Central Valley Project water contractors, including Alameda County-Zone 7 Water Agency, Kern County Water Agency, Metropolitan Water District of Southern California, Santa Clara Valley Water District, San Luis & Delta-Mendota Water Authority, and Westlands Water District.

advance the biological goals and objectives." (Section 13.2, *emphasis added*). The document should explain what constitutes more than a "minimal effect".

The District strongly supports the concept of comprehensive, large-scale ecosystem improvements and flexible, science-based management provided by the BDCP proposed project. The plan has the potential to protect and help recover threatened and endangered fish and wildlife, significantly stabilize and protect imported water from continuing regulatory reductions, and create a sustainable Delta environment for the future. It is critical to the success of the plan that, as the draft IA is revised and finalized, it supports the dual purposes of ecosystem restoration and improved water supply reliability for the State, and accurately reflects policy decisions that have been painstakingly negotiated.

Again, the District appreciates the opportunity to comment on the Draft IA and is looking forward to a final agreement that provides for a cost-effective, comprehensive, and reliable long-term Delta solution that the District can support. If there are any questions regarding the comments, please contact Ms. Cindy Kao at (408) 630-2346, or ckao@valleywater.org.

Sincerely,

Beau Goldie
Chief Executive Officer

D E L T A W E T L A N D S P R O J E C T

July 29, 2014

Via email to
BDCP.Comments@noaa.gov

BDCP Comments
Ryan Wulff, NMFS
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Subject: Comment Letter - BDCP EIR/EIS

Dear Mr. Wulff:

Delta Wetlands Properties ("Delta Wetlands"), proponent of the in-Delta storage project commonly referred to as the Delta Wetlands Project, appreciates the opportunity to provide input to the California Department of Water Resources, the U.S. Bureau of Reclamation, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service regarding the Draft Environmental Impact Report/Environmental Impact Statement ("Draft EIR/EIS") for the Bay Delta Conservation Plan ("BDCP"). These comments are provided in response to the release of the Draft EIR/EIS for formal public review and comment. Delta Wetlands' comments address the treatment of the Delta Wetlands Project by the Draft EIR/EIS.

Cumulative Impacts Analysis:

The Draft EIR/EIS does not consistently address the Delta Wetlands Project as part of its cumulative impacts analysis. An EIR must discuss a cumulative impact if the project's incremental effect combined with the effects of other projects is "cumulatively considerable." (14 Cal.Code.Regs. §15130(a).) This determination is based upon an assessment of the project's incremental effects "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (*Id.* at § 15065(a)(3).) An EIR's evaluation of cumulative impacts may be based upon a list of past, present, and probable future projects producing related impacts. (*Id.* at § 15130(b)(1)(A).) Probable future projects include projects for which environmental review has begun. (See, *San Franciscans for Reasonable Growth v. City & County of San Francisco* (1984) 151 Cal.App.3d 61, 74; *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 870.)

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Appendix 3D of the Draft EIR/EIS states that its cumulative impact assumptions include the programs, projects and policies included in the existing conditions, the no-action alternative, the no-project alternative, and reasonably foreseeable probable future programs and projects. (Draft EIR/EIS, App. 3D, § 3D.3.4, at p. 3D-24.) The Draft EIR/EIS also states that "programs with specific plans identified in draft environmental and engineering documents without subsequent approvals were included in the Cumulative Impact Assumptions as reasonably foreseeable, as shown in Table 3D-6. A more comprehensive table is included at the end of this Appendix in Table [sic][1] 3D-A." (*Id.*) The Delta Wetlands Project is not included in Table 3D-6 but is included in Attachment 3D-A. (See, *Id.* at pp. 3D-54, 3D-83.) While Attachment 3D-A is titled "Descriptions of Programs, Projects, and Policies considered for Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Analysis for the BDCP EIR/EIS," the information in the table indicates that the Delta Wetlands Project is *not* included in the existing conditions, the no-action alternative, the no-project alternative, or the cumulative impacts analysis. (*Id.*) This is inconsistent with the fact that the Draft EIR/EIS discusses the Delta Wetlands Project in the cumulative impacts analysis for various resource sections. (See, *Id.* at Ch. 9, § 9.3.3.17, Table 9-31, p. 9-260 [Geology and Seismicity]; Ch. 11, § 11.3.5, Table 11-13, p. 11-3009 [Fish and Aquatic Resources]; Ch. 12, § 12.3.3.17, Table 12-8, p. 12-3234 [Terrestrial Biological Resources]; Ch. 14, § 14.3.4, p. 14-189 [Agricultural Resources]; Ch. 17, § 17.3.3.17, Table 17-2, p. 17-298 [Aesthetics and Visual Resources]; Ch. 18, § 18.3.5.17, Table 18-2, p. 18-207 [Cultural Resources][2]; Ch. 25, § 25.4.1.1, Table 25-10, p. 25-47 [Public Health][3].) Further, even where the Draft EIR/EIS discusses the Delta Wetlands Project with regard to cumulative impacts, the discussion is minimal and in places inaccurate.

The environmental impact report for the Delta Wetlands Project was certified in September 2011 and was upheld following a legal challenge in October 2012. Thus, at a minimum, the Delta Wetlands Project is a reasonably foreseeable probable future project that must be included in the cumulative impacts analysis of the Draft EIR/EIS. The Draft EIR/EIS should: (1) include the Delta Wetlands Project in its cumulative impact analysis, (2) be clear that the Delta Wetlands Project is included in the cumulative impact analysis, and (3) substantively address impacts to the Delta Wetlands Project and avoidance measures associated with the BDCP alternatives.

Project Description for the Delta Wetlands Project:

The Draft EIR/EIS includes a number of sections that describe the Delta Wetlands Project. (See, Draft EIR/EIS, App. 3D, § 3D.3.4, at pp. 3D-54, 3D-83; Ch. 11, § 11.3.5, Table 11-13, p. 11-3009; Ch. 12, § 12.3.3.17, Table 12-8, p. 12-3234; Ch. 14, § 14.3.4, p. 14-189; Ch. 25, § 25.3.3.1, Table 25-9, p 25-47; Ch. 25, § 25.4.1.1, Table 25-10, p. 25-47.) However, some of the descriptions are inaccurate and/or do not represent the current description for the Delta Wetlands

[1] The reference should be to "Attachment 3D-A," not "Table 3D-A."
[2] Note that Chapter 18 also discusses the Delta Wetlands Project under the no-action alternative. (Draft EIR/EIS, Ch. 18, § 18.3.5.17, Table 18-1, p. 18-47.)
[3] Note that Chapter 25 also discusses the Delta Wetlands Project under the no-action alternative. (*Id.* at Ch. 25, § 25.3.3.1, Table 25-9, p 25-47.)

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Project. The description of the Delta Wetlands Project set forth below and as further detailed in the 2010 Draft Delta Wetlands Place of Use Environmental Impact Report should be used for describing the Delta Wetlands Project in the Draft EIR/EIS.

> The Delta Wetlands Project involves the construction of a new water diversion and storage system on two islands in the Sacramento-San Joaquin River Delta ("Delta") - Bacon Island and Webb Tract ("Reservoir Islands"). The Reservoir Islands provide for a total estimated storage capacity of 215 thousand acre-feet. The Delta Wetlands Project would increase the availability of high-quality water in the Delta for export or outflow through the following: (1) diversion of water on to the Reservoir Islands during high-flow periods (i.e., December through March); (2) storage of water on the Reservoir Islands; (3) mitigation for wetland and wildlife effects of the water storage operations on the Reservoir Islands by implementing a habitat management plan on Bouldin Island and Holland Tract; (4) supplemental water storage in Semitropic Groundwater Storage Bank and the Antelope Valley Water Bank; (5) discharging water for export to designated south-of-Delta users when excess CVP or SWP pumping capacity is available (i.e., typically July through November); and (6) releasing water for water quality and outflow enhancement in the Bay-Delta Estuary typically from September through November.

Thank you for your time and consideration of these comments. If you have any questions, please contact me at (925) 932-0251.

Sincerely,

David A. Forkel
General Manager
Delta Wetlands Project

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BDCP1650

From: Patty Slomski <ps@eslawfirm.com>
Sent: Tuesday, July 29, 2014 10:12 AM
To: BDCP.comments@noaa.gov
Subject: BDCP EIR/EIS Comment Letter
Attachments: Delta Wetlands Comment Letter - BDCP EIR-EIS_07_29_2014 (00245905xBA8E1).pdf

Mr. Wulff – Attached please find the comment letter on behalf of Delta Wetlands Properties.

Thank you.

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