EPA PERSPECTIVE ON BAY DELTA CONSERVATION PLAN (12/28/2012)

Background: The Bay Delta Conservation Plan (BDCP) is a habitat conservation plan under the Endangered Species Act (ESA) and a Natural Communities Conservation Plan under parallel California law. The purpose of the BDCP is to provide 50-year permits under ESA for continued operation of the existing water export facilities and construction and operation of new water export facilities in the Sacramento-San Joaquin River Delta (Bay Delta Estuary). The Bay Delta Estuary is the site of decades-long conflict between water exporters and fisheries interests. A range of anadromous and pelagic fishes have suffered dramatic declines in the last ten years and water exports were limited in a recent drought to minimize killing of endangered fishes. The BDCP proposes to address fisheries declines and water supply reliability by: (a) building three new intakes and massive tunnels to bring water from the Sacramento River around the Delta to the existing south Delta export pumps where it is sent to the San Joaquin Valley and Southern California; (b) identifying a long-term water export operations plan that contributes to the recovery of endangered and threatened species; and (3) restoring more than 50,000 acres of aquatic habitat in the Delta and surrounding areas to enhance fishery productivity.

EPA has multiple roles in this process. EPA will review the BDCP EIS/EIR under CAA 309 authority and we are a Cooperating Agency under NEPA. CWA responsibilities include EPA review and approval or disapproval of any changes in water quality standards in the Bay Delta Estuary that are adopted by the State Water Resources Control Board (State Water Board) in response to the BDCP. And EPA and the Corps have joint responsibilities for CWA 404 permits for the new intake and conveyance facilities.[1]

Current status: The Action Agencies[2] announced the **structural** elements of a proposed new Delta Conveyance Project in July 2012. The structural elements include three new water intakes (~1000 ft each on Sacramento River banks), two 9,000 cfs capacity tunnels, with forebays and powerplants needed to operate the new facilities. The **operational** elements of the proposed project (the timing and volume of water exports) have not yet been identified by the applicants (California Department of Water Resources, State and Federal water contractors). "Preliminary draft" documents for both the BDCP and the EIS/EIR have been publicly released, at various levels of completion. The action agencies solicited feedback, and EPA commented on those draft portions most relevant to our responsibilities. The Action Agencies anticipate completing an administrative draft EIS/EIR in spring of 2013. It will be provided to EPA for review and comment.

Primary Goal and Concern: Protecting all beneficial uses in the Bay Delta Estuary is our primary goal. We are focused on identifying sustainable freshwater flow through the Delta to protect aquatic life and freshwater exports to support consumptive uses. Increased freshwater flows are needed to provide important estuarine and migratory open water habitats for fishes. BDCP applicants suggest that the new intake facilities and tunnel combined with tidal marsh, floodplain, and wetland restoration in and around the Delta will provide enough aquatic habitat to allow water exports out of the Bay Delta Estuary to increase. The quality and quantity of open water estuarine and migratory fish habitats will decrease as freshwater exports out of the Delta increase. For this reason, we are concerned that BDCP will not result in freshwater flows that protect aquatic life, specifically important estuarine open water aquatic habitat types.

Summary NEPA of issues: The following are highlights from EPA's NEPA review thus far.

1. Scope of EIS unclear: DWR has described the EIS as programmatic for the entire BDCP and project level for the signature element, the Delta Conveyance Project. It is not clear whether or not programmatic information relevant to CWA Section 404 about the Delta Conveyance Project (e.g., corridors and operations) will be included in the EIS. Recently, DWR signaled that project level information relevant to CWA Section 404 (e.g., engineering drawings, construction details, estimated impacts to aquatic resources) will not be included in the BDCP EIS. It is unclear whether or not project level information relevant to ESA will be included in the BDCP EIS.

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2. Credible proposal and need statement: The BDCP process needs to develop a credible scientific basis for the project. The National Academy of Sciences National Research Council (NRC) said in its first report on the BDCP, that *"[t]he lack of an appropriate structure creates the impression that the entire effort is little more than a post-hoc rationalization of a previously selected group of facilities, including an isolated conveyance facility, and other measures for achieving goals and objectives that are not clearly specified."*[3] The NRC explicitly declined to endorse the proposed new conveyance facilities: *"The committee has not analyzed the benefits and disadvantages of an isolated conveyance facility, because not enough specific information was available about it, and we make no recommendation with respect to its adoption as a major part of water management in the Delta."*[4]

3. Incomplete and inconsistent analyses. The current documents are remarkable because of what is not available. This is an acknowledged problem, and the result of an aggressive schedule, consultant turnover, and a decision to publicly release early drafts in the interest of transparency. Examples of incomplete information include: the Alternatives Development Report, which reportedly includes detailed descriptions of alternatives and the screening criteria; a fish entrainment analysis for the new Sacramento River intakes; and contaminant (i.e., selenium and mercury) impact analyses.

In addition, inconsistent definitions and assumptions (about operational scenarios, the nature of each alternative, the use of climate change forecasts, etc.) make meaningful comparison of alternatives difficult, if not impossible. Some of this is presentation of available analyses, but some appears to be incorrect or incomplete analyses. For example, the document includes aggressive negative impacts from climate change when it evaluates future fisheries scenarios, but does not make similar evaluations for the anticipated climate change effects on Northern California hydrological conditions (even though these projections are readily available in DWR documents). The analyses are further complicated by the fact that the state and federal action agencies are using multiple baseline and "no action" alternatives. For example, the document includes an "existing conditions" alternative and three *different* No Action Alternatives. That is inherently complex, but the document fails to carry through in the discussion by frequently referring to "the" No Action Alternative.

Water Quality and Aquatic Life Issues

1. Water Quality Standards: The State Water Resources Control Board (State Board) is updating water quality standards that control freshwater flow (flow objectives) through the Delta. This is the most critical CWA action needed to protect aquatic life in the Estuary and EPA is supporting the State Board in this effort. These flow objectives will control water exports from CVP and SWP prior to construction and operation of a new Delta Conveyance under BDCP and they will be modified if a new Delta Conveyance is approved and built. EPA is working with the State Board to ensure that new flow objectives identify sustainable freshwater flows through the Delta to support aquatic life beneficial uses and freshwater diversions to support consumptive use demand. The State Board is targeting June 2014 for adopting new flow objectives. The new standards require EPA approval. This action is critical to making effective decisions on water operations with a new Delta Conveyance under BDCP.

***a. Aquatic Life Habitat*:** Freshwater flow from the Sacramento and San Joaquin River watersheds through the Delta to the Bay is one of the most important habitat elements for resident and migratory fish populations and sport and commercial fisheries. Freshwater flow from the Sacramento and San Joaquin River watersheds is a primary driver of the quality and quantity of aquatic habitat for fishes in the system. High freshwater flows maintain lower temperatures, higher levels of dissolved oxygen, provide continuous migratory corridors for salmonids, and locate the freshwater-saltwater mixing zone (the "low salinity zone" or LSZ) in Suisun, Grizzly, and Honker Bays where shallow water habitat provides protection from predators and adjacent marsh provides increased access to food. Low freshwater flows result in elevated water temperature, lower levels of dissolved oxygen, discontinuous flow from rivers to the ocean which

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negatively affects salmonid navigation, and moves the LSZ into narrow, deep, riprapped, Delta channels with increased exposure to predators and less access to food sources.

Freshwater flows through the estuary have been identified as one of primary stressors contributing to the collapse of fisheries and the foodweb in the Bay Delta Estuary. The last twelve years included maximum water exports out of the estuary to support freshwater consumptive use demand, minimum freshwater flows through the estuary, and plummeting fish populations to record low abundances. Similarly, the base of the foodweb, abundance of phytoplankton and zooplankton, has been steadily declining over the last three decades due mostly to the invasion of clams in Suisun Bay facilitated by salinity intrusion which is caused by minimal freshwater flow to Suisun Bay.

We are concerned that the BDCP process will not identify sufficient freshwater flows through the Delta to support aquatic life habitat and rebuild fish populations. The amount and timing of freshwater exported through the new Delta Conveyance and the existing export facilities under BDCP (referred to as BDCP "water operations") define freshwater flow through the Delta to the Bay and the quality and quantity of LSZ and migratory corridor aquatic habitat types. Analyses produced for BDCP and years of discussions with lead federal agencies suggest that BDCP applicants believe that restoring tidal marsh habitat in and around the Delta and building and operating new intake facilities and a tunnel will be sufficient for meeting the requirements of section 10 of the Endangered Species Act (contributing to the recovery of endangered species), allow for increased freshwater exports out of the Delta and decreased freshwater flow through the Delta. We are concerned that the concept of exchanging open water habitat types (LSZ and intact migratory corridors) for freshwater marsh habitat will not be successful in rebuilding fish populations and protecting the most sensitive beneficial uses in the Bay Delta Estuary aquatic ecosystem.

b. Sacramento River Salmon: The primary commercial salmon runs in the Bay Delta Estuary are not listed under ESA but they would be exposed to a series of new massive water diversions under the BDCP. The impacts of 3,000 cfs of suction power through three, 1000 foot water intakes along the banks of the Sacramento River are difficult to estimate and mitigate. Fish screens necessary to protect the salmon have never been built on this scale. The Freeport Regional Water Project intake and powerplant located on the Sacramento River south of the city has a maximum capacity of 290 cfs.[5] Each of the new Delta Conveyance Project intakes and pumping plants would be ten times larger. Perhaps more important are the impacts of reduced Sacramento River flow and the increased potential for juvenile salmon to be redirected into the interior of the Delta where the probability of survival and successful migration to the ocean is substantially lower.

***c. Compliance with Water Quality Standards*:** Some of the BDCP analyses make assumptions about revisions to existing water quality standards or SWRCB water rights decisions. These proposed changes have not been evaluated by either the SWRCB or EPA. At a minimum, the BDCP needs to include an analysis based on the existing regulatory structure which includes flow objectives in the San Francisco Bay/Sacramento-San Joaquin Delta Water Quality Control Plan (Bay-Delta Plan) as well as contaminant objectives (e.g., methylmercury, selenium, low dissolved oxygen) and Total Maximum Daily Loads in the Sacramento River and San Joaquin River Watershed Water Quality Control Plans.

***d. South Delta Water Quality*:** While a new conveyance structure may enhance the overall quality of exported water (Sacramento River water), it will result in a downstream Delta more dominated by relatively degraded San Joaquin River inflows. The entire Delta is currently listed as water quality impaired by one or more contaminants, and there needs to be serious consideration to this potential additional degradation. Notable contaminants of concern include selenium, mercury, pesticides, low dissolved oxygen, ammonia, microcystis and other harmful algal blooms.

e. Wetland Restoration & Methylmercury: EPA supports restoration of aquatic and tidal marsh habitat.

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Nevertheless, the draft proposal relies primarily on restoring habitat (including longer seasonal inundation) in the Yolo Bypass, Cache Creek Basin, and Cosumnes River areas, which raises concerns about methylmercury formation caused primarily by legacy mercury in sediments. Some USGS research shows that seasonal wetlands methylate mercury during the dry to wet transition while other research suggests that air deposition may be the dominant driver of methylmercury availability and uptake by organisms. Central Valley Regional Water Quality Control Board scientists note that "[w]hen the Yolo Bypass is flooded, it becomes the dominant source of methylmercury to the Delta." Our comments on the BDCP have said that habitat restoration programs will need to include robust efforts to minimize methylmercury formation and discharge, as well as monitoring to verify success of those efforts.

2. Clean Water Act Section 404 Compliance

EPA and the Corps have been working with the action agencies, especially the California Department of Water Resources (DWR) (the likely permit applicant), for over a year to integrate and streamline the 404 permitting process and its NEPA requirements with the ESA NEPA process. The goal of integrating CWA 404 and NEPA for ESA compliance is to allow the Corps to rely on the BDCP EIS/EIR without producing additional environmental information. DWR recently signaled it will not be integrating CWA Section 404 information into the BDCP EIS. Instead DWR plans to apply for a CWA Section 404 permit after the Final EIS and Record of Decision are signed for the BDCP. The Corps appears to understand that additional information development and disclosure under NEPA may be necessary to support CWA Section 404 permitting decisions for the Delta Conveyance Project. The status of 404 permitting including successes and challenges is outlined below.

a. Numerous and Confusing Purpose Statements

NEPA Project Purpose Statement. EPA, the Corps, and the three federal action agencies agree on the NEPA project purpose statement included in the pre-administrative draft of the EIS.

Programmatic CWA Overall Project Purpose Statement for BDCP. The Corps concurred with a programmatic CWA overall project purpose statement for the BDCP proposed by DWR. The function of this purpose statement is not clear. CWA overall project purpose statements are for individual projects. The BDCP is a habitat conservation plan produced under Section 10 of the Endangered Species Act and contains more than 20 "Conservation Measures" with multiple individual projects for every Conservation Measure.

Programmatic CWA overall project purpose statement for "Action 1." The Corps concurred with a programmatic CWA overall project purpose statement for "Action 1" of the BDCP. "Action 1" seems to refer to Conservation Measure 1 in the BDCP, the new Delta Conveyance Project. The function of this CWA overall project purpose is not clear. The statement narrows the range of Delta Conveyance Project alternatives considered at the programmatic level[6] which is inconsistent with Corps guidance.[7] The Corps concurrence letter suggests the purpose statement should not be used to screen out Delta Conveyance Project alternatives at the programmatic level.

Project-level CWA overall project purpose statement for Conservation Measure 1. The Corps concurred with a project-level CWA overall project purpose statement for CM1 of the BDCP, the new Delta Conveyance Project. This is the overall project purpose statement that would be used in the CM1 application for a CWA 404 permit. DWR has not fully defined CM1. We understand the basic structural elements to be building two 9,000 cfs capacity tunnels, three new intake structures and power plants, and a new forebay. The operational elements that define how much water is exported out of the new Conveyance Facility and through the old infrastructure are not defined. We are concerned that agreeing with this purpose statement is premature and narrows the range of alternatives to the applicants' preferred project.

b. CWA Jurisdictional determination and Functional Assessment. DWR is currently producing a preliminary

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JD with oversight from the Corps and EPA using primarily remote mapping and a small amount of direct field work in the few sites where access can be obtained. DWR and the Corps agreed to identify ground-level CWA Section 404 jurisdictional determinations that are in progress or have been verified for other projects in the Delta Conveyance Project area to assist with the level of available detailed information.

c. Range of Alternatives. Corps agreed with the range of BDCP and Delta Conveyance alternatives. Although EPA and the Corps are aware of the alternatives as discussed in various documents, we have not received the screening criteria document. There has also been a recent change in the approach to developing operating criteria. Until the basic and overall project purpose is finalized, the Alternatives Development Report is available, and the new approach to operations is explained, EPA is not commenting on the adequacy of the alternatives.

d. LEDPA identification Use of Low Salinity Zone (LSZ) as a metric to evaluate impacts to aquatic habitat. EPA and the Corps had verbally agreed to include anticipated changes to the location and areal extent of the LSZ as a metric to evaluate impacts to aquatic habitat in the Estuary that result from operating the new Delta Conveyance Project. The Corps recently used this approach in evaluating a permit application for the Port of Sacramento. Recently, Corps leadership decided they do not plan to include LSZ impacts or water quality impacts from operating the new Delta Conveyance project into the LEDPA determination.

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[1] The Corps issues the permits. EPA can "elevate" a permit pursuant to the national Corps/EPA MOA when the permit will result in "unacceptable adverse effects to aquatic resources of national importance." (EPA/Corps MOA 08/11/92, at Part IV.) CWA Section 404(c) provides that EPA can veto a permit if the Administrator determines that the permit "will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas."

[2] The action agencies include the agencies that operate the water export projects [the California Dept of Water Resources (DWR) and the U.S. Bureau of Reclamation (USBR)] and the fish and wildlife agencies (California Dept of Fish and Game (DFG), U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS)). For planning purposes, DWR is being treated as the permit applicant for both ESA and CWA permits. No 404 permit application has yet been submitted.

[3] NRC, A Review of the Use of Science and Adaptive Management in California's Draft Bay-Delta Conservation Plan, 2011, at page 43.

[4] NRC, Sustainable Water and Environmental Management in the California Bay-Delta, March 2012, at page 7.

[5] http://www.freeportproject.org/index.php

[6] By defining the project as only those alternatives that require new points of diversion which eliminates the "Delta Corridors" alternative.

[7] Corps of Engineers Standard Operating Procedures, "the overall project purpose should be specific enough to define the applicant's project but to not so restrictive as to constrain the range of alternatives that must be considered under the 404(b)(1) Guidelines." Available at http://www.saw.usace.army.mil/wetlands/Policies/SOPI.pdf; and Department of Army CWA 404(q) Elevation Guidance Memos such as the Plantation Landing memo (April 21, 1989), Hartz Mountain memo (August 17, 1989) and Old Cutler Bay memo (September 13, 1990).

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