

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

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May 23, 2014

TO: Commissioners and Alternates
FROM: Lawrence J. Goldzband, Executive Director (415/352-3653 lgoldzband@bcdc.ca.gov)
Joe LaClair, Chief Planning Officer (415/352-3656 joel@bcdc.ca.gov)
SUBJECT: Staff Recommendation on Comments on the Bay Delta Conservation Plan Environmental Documents
(For Commission consideration on June 5, 2014)

Staff Recommendation

Staff recommends that the Commission direct staff to submit the following comments on the Bay Delta Conservation Plan (BDCP) Environmental Impact Report/Statement (EIR/S) with any revisions from the Commission.

The Commission received a briefing from Paul Helliker from the Department of Water Resources (DWR) on the BDCP at its February 20, 2014 meeting, and held a panel discussion on the BDCP at its May 1, 2014 meeting. At these briefings, Commissioners raised several questions about how the proposed project may directly affect the San Francisco Bay and Suisun Marsh. The BDCP is undergoing state and federal environmental review. Commission laws and policies call for adequate fresh water inflows from the Delta to Suisun Marsh and the Bay to maintain proper salinity levels and water circulation patterns, to flush pollutants, and to maintain related ecosystem functions. Based on Commissioner comments and questions, and staff review of the environmental documents prepared for the BDCP, staff prepared the following proposed comments on these environmental documents. Attached to this report is a memo from Paul Helliker providing some additional information on the BCDP issues raised at the Commission's briefings.

Staff Report

Bay-Delta Conservation Plan Project Description. The Bay-Delta Conservation Plan (BDCP) is being prepared to meet the requirements of the federal and state Endangered Species Acts. It is the first attempt in the nation to prepare a habitat conservation plan that includes aquatic habitats. The plan lays out a framework for conserving certain species, both listed and non-listed, and authorizes take of listed species under certain circumstances. Regulated entities (DWR and the US Bureau of Reclamation, state and federal water contractors, other users of Delta water) and resource agencies (California Natural Resources Agency, state and federal fishery agencies) and non-governmental organizations developed the plan.



Making San Francisco Bay Better

BDCP's long-term goal is to preserve, restore and enhance aquatic, riparian and associated terrestrial natural communities and ecosystems that support a wide range of species of concern. It intends to provide a stable regulatory environment for water projects, standardize mitigation and compensation requirements, and provide a less costly and more efficient approach to conservation than project-by-project and species-by-species reviews.

The BDCP Environmental Impact Report/Statement (EIR/S) evaluates sixteen project alternatives, including fifteen that vary over different project components. These variations include: four different water conveyance configurations; different intake locations and alignment options; four different diversion capacities ranging from 3,000 to 15,000 cubic feet per second (cfs); eight various operational scenarios based upon guiding water supply parameters, diversion flows, operational demands, and water quality requirements; and, three different habitat restoration plans ranging from 113,000 to 163,000 acres. The alternatives have varying implications for biological resources, hydrology, and interactions with the human environment. Alternative 4, the proposed project of the BDCP, includes using a pipeline/tunnel system to convey water from the Sacramento River over forty miles south, under the Delta, to the California Aqueduct system, which supplies much of the state's water. The comment period on the BDCP draft EIR/S ends June 13, 2014.

Project Impacts. Potential effects of the BDCP on water bodies downstream of the Delta were analyzed and the EIR/S states that the project may affect the following downstream resources:

- Flow;
- Sediment inputs;
- Food;
- Temperature; and
- Dissolved oxygen.

The analysis in the EIR/S concludes that there would be no significant adverse effects on San Francisco Bay. Therefore, areas downstream of the Delta (e.g., San Pablo Bay, San Francisco Bay south to the Golden Gate Bridge and Bay Bridge) were considered, but were not included as a part of the BDCP's analysis.

Staff Comments

Staff would like to commend the authors for this ground-breaking plan. As the first ever aquatic Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP), in one of the most ecologically, legally and culturally complex areas in the world, the BDCP represents an incredible first effort at crafting a solution to many of the complex Delta issues. We believe there are some pieces missing, and our comments address those. As a responsible agency under CEQA, BCDC should comment on the EIR/S. The Commission will need to issue permits or consistency determinations for the conservation measure projects located in the Suisun Marsh or San Francisco Bay. Based on Commissioner comments and questions, the Commission's laws and policies, and staff review of the EIR/S prepared for the BDCP, staff prepared the following proposed comments on these environmental documents. The relevant, applicable policies are quoted in the following section.

San Francisco Bay and Suisun Marsh Effects. The EIR/S states that there would be no significant effects on San Francisco Bay. Commissioners, staff, other state agencies and members of the public raised concerns about possible project impacts west of the Delta in the Suisun Marsh and downstream in the San Francisco Bay. Some of these effects would be significant. Potential significant impacts could include effects on salinity, sediment supply, and the consequences (intended and unintended) of various restoration programs, and further impacts

on Bay habitats and species. The Delta Stewardship Council's (DSC) Independent Science Board (ISB) concluded that more research and analysis is needed on areas west of the Delta in order to get a more complete picture of the cumulative effects of the BDCP. The ISB noted that "the hydrodynamic modeling needs to capture the entire domain of effects. The current Effects Analysis does not consider the influence of shifting timing of withdrawals on San Francisco Bay circulation patterns and ecology. This is a significant omission with ecologically important implications."

The ISB also noted that the BDCP evaluates "three geographic regions: upstream of the Delta, the legal Delta, and the State Water Project (SWP) and Central Valley Project (CVP) service areas. Areas downstream of the Delta (i.e., San Francisco Bay) were not included even though the National Research Council (NRC) scientific review specifically stated that this area should be included. Adequate justification for lack of consideration of impacts to San Francisco Bay was not provided ... in the document, although there are potential impacts. For example, the expected reduction in sediment supply has the potential impacts of: (1) tidal marshes in the Bay could be less resilient to sea level rise and; (2) increased water clarity in the Bay could render it more responsive to nutrient inputs." The EIR/S should better assess the potential effects on the Marsh and the Bay, and identify potential impacts on salinity, sediment delivery and Bay species as potentially significant, and evaluate strategies to avoid or mitigate these effects.

Water Quality and Salinity. Biological opinions from the National Marine Fisheries Service and the US Fish and Wildlife Service determined that habitat degradation in the Marsh for multiple sensitive species is due, in part, to reduced freshwater inflows from the Delta. Current Delta fresh water outflows seem inadequate to support or recover endangered species. Studies project that the salinity in San Francisco Bay could increase by 0.30-0.45 practical salinity unit (psu) per decade due to the compounding effects of decreasing freshwater inflow and rising sea level (projected by Cloern et al. 2011 to rise approximately 4 inches per decade). Climate change will affect future Bay salinity and the restoration and conservation measures proposed in the EIR/S. Higher salinity in the Suisun Marsh due to high diversion years would affect managed wetlands, and the Bay's native species, such as the Dungeness Crab, that use the lower salinity of the Bay as a nursery. However, these species are not included in the BDCP's analysis. Also, waterfowl that rely on the lower salinity/freshwater of the Marsh as breeding habitat may be at risk, as higher salinity levels have been shown to be dangerous to ducklings.

The EIR/S states that the BDCP would be implemented using a "decision tree process, a focused form of adaptive management that will be used to determine at the start of new operations, the fall and spring outflow criteria that are required to achieve the conservation objectives of the BDCP for delta smelt and longfin smelt and to promote the water supply objectives of the BDCP. Other BDCP-covered fish species, including salmonids and sturgeon, may also be affected by outflow. Their outflow needs will also be investigated as part of the decision tree process." The EIR/S should clarify how the proposed pipelines will be managed in the long term (e.g., 50 years), if there are recurring droughts that require changes in future flow regimes. The BDCP should evaluate flow scenarios that provide greater freshwater flows to the Bay beyond the requirements of D1641¹ to recover declining fish populations. Decreased reliance on Delta freshwater diversions may become necessary for the protection of sensitive and threatened species. Scenario F (Alternative 8: pipeline/tunnel alignment, dual conveyance, intakes at 2, 3 & 5, with 9,000 cfs diversion) would increase Delta outflow up to 1.5 million acre-feet annually. A project alternative that provides for greater Delta outflows is likely necessary to meet the policy objectives in the *San Francisco Bay Plan* (Bay Plan) and the *Suisun Marsh*

¹ D1641 refers to a State Water Board water rights Decision of 2005 that set water quality (salinity) standards for various monitoring stations in the Bay and Delta and amends certain water rights by assigning responsibilities to the persons or entities holding those rights to help meet the salinity objectives.

Protection Plan (Marsh Plan). Also, the EIR/S should evaluate potential impacts on non-listed Marsh and Bay species that rely on salinity levels characteristic of the Bay and the Marsh as required by current X2 standards.

Conservation Measures. Most Conservation Measures are discussed at a programmatic level, rather than at a project level in the EIR/S. The ISB noted that, “the difference in level of detail [of restoration project analyses] presented effectively treats the co-equal goals unequally. We are concerned that the merely programmatic analysis of habitat restoration provides too little basis for decision-making by the Delta Stewardship Council and other parties. Furthermore, the benefits of habitat restoration are assumed when a beneficial cumulative impact is concluded under NEPA or a less than significant cumulative impact is concluded under CEQA. Achieving beneficial conservation measures requires understanding limiting factors, ecosystem processes, sequencing, adaptive management responses, thresholds for certain actions, and interactions and other consequences of these actions...to describe how major uncertainties will be resolved.” Also, the Effects Analysis recognizes that suspended sediment has been declining in the Sacramento River, but no analysis of the potential for corresponding increased algal blooms is addressed.

Specific locations for habitat improvements are not discussed in the restoration opportunity areas, including those in the Suisun Marsh. The EIR/S would benefit from further analysis of restoration patterns in the Marsh to determine how they affect salinity patterns in the Marsh and Delta. This may help focus the restoration efforts to specific regions of the Marsh to limit salinity intrusion. There is little discussion in the EIR/S of the effects of climate change on conservation measures. Some Conservation Measures that involve habitat restoration or enhancement should be addressed at a project level of detail in the EIR/S so that they can be implemented early in the project cycle, in timeframes consistent with Conservation Measure 1. Also, additional conservation measures may be needed to address project effects on the Marsh and the Bay, particularly those related to sediment management.

Sediment. The BDCP EIR discusses a potential reduction in suspended sediment transport to the Suisun Marsh and San Francisco Bay of approximately eight to ten percent. The EIR/S does not characterize this change as a significant impact. The ISB report to the Delta Stewardship Council raises this as a significant issue. USGS researchers have observed a steep reduction in Bay suspended sediment concentrations and characterize San Pablo Bay as erosional. With projected sea level rise, further reduction in Bay sediment inputs should be considered significant, given Bay wetland restoration targets, current subsided diked-baylands, and the overall Bay-Delta sediment budget. Given sediment settling in the new northern forebay, the relocation of flows from channels into underground pipes, new pumping regimes and proposed restorations together and separately will alter sediment transport, delivery, and rate of deposition downstream. Reduced suspended sediment in the Bay will exacerbate nutrient loading problems caused from the sewage treatment plants discharging into the Bay.

Construction of restoration projects, which are highly desirable in the Delta upstream of the Bay, will likely create sediment sinks, thus further reducing sediment flows to the Marsh and San Francisco Bay. The cumulative impacts analysis should consider this, using science-based thresholds of significance.

Cumulative Effects. There are several related projects that, cumulatively, could exacerbate effects of BDCP and adversely affect the Bay and the Marsh that are not addressed in the EIR/S. These projects include, but are not limited to, dredging the Baldwin Ship Channel (between San Pablo Bay and the Port of Stockton) that may include constructing a sill in the Carquinez Strait; proposals to construct seasonal drought barriers or gates in the Delta; and several proposed water storage projects on existing dams and reservoirs. The issue of storage should be addressed within BDCP, particularly planned projects. The EIR/S should address cumulative impacts of all relevant related projects.

Next steps. The authors of the EIR/S will review the comments from the many agencies, organizations and members of the public providing input and will determine whether to recirculate a draft or prepare a final environmental document, in either case, that responds to the comments provided. If a draft EIR/S is circulated, then another round of comments will follow, before a final document is prepared, or a final document will be prepared and issued later this year or early next year.

BCDC's Relevant Policies and Related Agreements

Bay Plan Findings and Policies. The Commission's Bay Plan recognizes the tremendous ecological value of the Bay-Delta estuary and the importance of fresh water inflows from the Delta to the survival of fish and wildlife in the Bay and Suisun Marsh.

Bay Plan findings on Tidal Marshes and Tidal Flats state, in part, that "San Francisco Bay is a substantial part of the largest estuary along the Pacific shore of North and South America and is a natural resource of incalculable value" and that "the sheltered waters of estuaries support unique communities of plants and animals specially adapted for life in the region where rivers meet the coast."

Bay Plan findings and policies recognize the importance of fresh water inflows to the ecosystem of the Bay. Bay Plan findings on Fish, Other Aquatic Organisms and Wildlife state, in part, that "conserving fish, other aquatic organisms and wildlife depends, among other things, upon availability of ...proper fresh water inflows, temperature, salt content, water quality, and velocity of the water." Fresh Water Inflow Finding A states that "[f]resh water flowing into the Bay, most of which is from the Delta, dilutes the salt water of the ocean flowing into the Bay through the Golden Gate....This delicate relationship between fresh and salt water helps to determine the ability of the Bay to support a variety of aquatic life and wildlife in and around the Bay."

Bay Plan findings and policies also recognize the impact of pollutants passing through the Delta into the Bay. Bay Plan findings on Water Quality state, in part, that "water from approximately 40 percent of California drains into San Francisco Bay carrying with it pollutants from point and nonpoint sources" and that "harmful effects of pollutants reaching the Bay can be reduced by maximizing the Bay's capacity to assimilate, disperse, and flush pollutants by maintaining and increasing...the volume and circulation of water flowing in and out with the tides and in fresh water inflow."

The Bay Plan's Fresh Water Inflow policies require limits on water diversions, preservation of the Suisun Marsh, and cooperation with the State Water Board to ensure adequate fresh water inflow. Policy 1 states that "[d]iversions of fresh water should not reduce the inflow into the Bay to the point of damaging the oxygen content of the Bay, the flushing of the Bay, or the ability of the Bay to support existing wildlife." Policy 2 states that "[h]igh priority should be given to the preservation of Suisun Marsh through adequate protective measures, including maintenance of fresh water inflows." Finally, Policy 3 states, in part, that the "Bay Commission should cooperate with the State Board and others to ensure that adequate fresh water inflows to protect the Bay are made available."

Suisun Marsh Preservation Act. The Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974 directed BCDC and the California Department of Fish and Game (CDFG) to develop the Suisun Marsh Protection Plan, which was codified into law as the Suisun Marsh Preservation Act of 1977. The Act recognizes the important role of the Suisun Marsh in providing wintering habitat for waterfowl using the Pacific Flyway and critical habitat for other wildlife, including rare and endangered species.

The Suisun Marsh, where salt and fresh water meet and mix, contains approximately 85,000 acres of tidal marsh, managed wetlands, and waterways in southern Solano County. It is an important part of the Bay-Delta ecosystem and requires adequate fresh water inflows to maintain its fish and wildlife habitat.

Section 29003 of the Act finds that continued wildlife use of Suisun Marsh requires, among other things, “[p]rovision for future supplemental water supplies and related facilities to assure that adequate water quality will be achieved within the wetland areas.”

Section 29010 finds that “[w]ater quality in the marsh is dependent on the salinity of the water in sloughs of the marsh, which depends in turn on the amount of fresh water flowing in from the Delta.”

Suisun Marsh Protection Plan. The Plan recognizes that Suisun Marsh contains “the unique diversity of fish and wildlife habitats characteristic of a brackish marsh.” The Plan emphasizes the need to maintain adequate fresh water inflows to preserve this unique habitat.

Water Supply and Quality Finding 2 of the Plan states, in part, that “[t]he most important source of fresh water inflow to the Suisun Marsh is the outflow from the Sacramento-San Joaquin River Delta.”

Finding 9 states, in part, that “[t]he State Water Resources Control Board in its Delta Decision, and the Environmental Protection Agency and the Regional Water Quality Control Board in the Water Quality Control Plan for the San Francisco Bay Basin, have set water and soil salinity standards for the Marsh.”

Finding 10 states, in part, that “[a]ssuring that sufficient quantities of fresh water will be available to the Marsh to meet the standards and marsh management requirements is as important as determining appropriate water quality standards for the Marsh.”

Water Supply and Quality Policy 1 states, in part, “there should be no increase in diversions by State or Federal Governments that would cause violations of existing Delta Decision or Basin Plan standards.”

Policy 2 states, “Adequate supplies of fresh water are essential to the maintenance of water quality in the Suisun Marsh. Therefore, the State should have the authority to require the Bureau of Reclamation to comply with State and Federal water quality standards for the Delta and the Marsh. This should be accomplished through Federal legislation if necessary.”

Policy 4 states, in part, that “[w]ater quality standards in the Marsh should be met by maintaining adequate inflows from the Delta.”

Suisun Marsh Preservation Agreement. In 1987, DWR, CDFG, the Bureau, and the Suisun Resource Conservation District signed the Suisun Marsh Preservation Agreement to mitigate impacts on Marsh salinity from the CVP, SWP, and other upstream diversions. The objectives of the agreement are:

- To assure that the Bureau and DWR maintain a water supply of adequate quantity and quality for managed wetlands within the Marsh. This is to mitigate adverse effects on these wetlands from operation of the CVP and SWP as well as a portion of the adverse effects of other upstream diversions;
- To improve Marsh wildlife habitat on these managed wetlands;
- To define the obligations of the Bureau and DWR necessary to assure the water supply, distribution, management facilities, and actions necessary to accomplish these objectives; and
- To recognize that water users in the Marsh (i.e., existing landowners) divert water for wildlife habitat management within the Marsh.

In 2005, the Revised Suisun Marsh Preservation Agreement was signed to make its water salinity requirements consistent with water quality standards adopted in 1999 (see "Bay-Delta Beneficial Uses" in Bay-Delta Management section below) and to replace proposed large scale water management facilities with landowner water and management activities to meet the Agreement objectives in the western Marsh.

X2 Water Quality Standards. X2 refers to the salinity level of 2 parts per thousand, which corresponds to the mixing zone of fresh and salt water. Maintaining X2 within Suisun Bay between February and June is considered beneficial for the reproductive success and survival of the early life stages of many estuarine species, including Delta smelt. The CCMP recommended the adoption of these standards, which became an element of the 1994 Bay-Delta Accord.

The US Fish and Wildlife Service listed the Delta Smelt as threatened under the federal Endangered Species Act in 1993, and designated portions of the Delta as critical habitat for the smelt in 1994. The US Environmental Protection Agency and FWS established the X2 water quality standards in 1995. The standards require X2 to be maintained at particular locations within the Delta between February and June depending on the amount of precipitation.

To: BCDC Commissioner and Alternates
From: Paul Helliker, Deputy Director, California Department of Water Resources
Subject: Summary Responses to Issues Raised at the May 1, 2014 Meeting and BDCP Panel Discussion

Relationship to the Suisun Marsh Plan

- The BDCP would restore up to 11,500 acres in Suisun Marsh to tidal wetlands over 50 years; the Suisun Marsh Plan (SMP) calls for 5,000-7,000 acres over 30 years.
- The BDCP would preserve and enhance 8,100 acres of managed wetlands.
- The BDCP can help implement the SMP restoration component.
- SMP and BDCP modeling show that location of restoration is one of the most important factors in managing salinity in the Marsh.

Sediment

- The BDCP North Delta Intake would reduce the sediment load into the Plan Area (Delta) by around 8-10%. However, that material could be reintroduced into the Plan Area for restoration or other beneficial uses. The actual net reduction in sediment is likely to be less than 8-10%.
- Specific hydrodynamics and restoration locations and designs will dictate how suspended sediments move, including if areas will be sediment sinks or sources.
- Recent work by McKee et al. (2013) using updated methods to improve sediment load estimates beyond previous efforts suggests that, despite their small watershed area (5% of total area) and fluvial flow (7% of total flow), the smaller urbanized and tectonically active tributaries to San Francisco Bay are the major contributors (61% of total) of sediment load into San Francisco Bay compared to upstream sources that are affected by SWP and CVP operations (remaining 39% of sediment load). For San Pablo Bay, which is farther upstream, the proportional contribution of sediment load from upstream was estimated by Schoelhamer et al. (2008) to be approximately 50%.

Inflows

- According to the *Delta Atlas* (DWR 1995), average historical tidal flow through the Golden Gate Bridge is 2,300,000 cubic feet per second (cfs) and average historical tidal flow at Chipps Island is 170,000 cfs. According to BDCP CALSIM modeling, the greatest mean monthly reduction in Delta outflow due to BDCP (compared to a baseline that includes the Fall X2 standard [EBC2]) would be 5,613 cfs during September under the low outflow scenario (LOS), which would not include the Fall X2 standard. This equates to 0.2% and 3% of average tidal flow at the Golden Gate Bridge and Chipps Island, respectively.
- Under all outflow scenarios, the BDCP would comply with D-1641. Under the high outflow scenario, spring and fall outflows would be greater than D-1641.