

# SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

455 Golden Gate Avenue • Suite 10600 • San Francisco, California 94102 • (415) 352-3600 • Fax: (415) 352-3606 • www.bcdc.ca.gov

February 14, 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: Commission Briefing on the Bay Delta Conservation Plan**  
(For Commission consideration on February 20, 2014)

## Summary

The Sacramento-San Joaquin Delta (Delta) supplies drinking water to 24 million Californians and water to more than 1,800 agricultural users that produce half the nation's fruits and vegetables. The Delta provides habitat for fish, waterfowl, and threatened and endangered species. Delta freshwater outflows are a key ecological driver of natural processes in the Suisun Marsh, Suisun Bay and San Francisco Bay, affecting habitats for fish and other aquatic organisms and wildlife, sediment transport and seasonal variability.

In response to concerns about the dramatic decline of Delta fisheries, levee instability, urbanization and risks posed by climate change and earthquakes, combined with endangered species litigation related to Delta water exports, policy makers have established several initiatives to "fix the Delta." One of these initiatives, the Bay Delta Conservation Plan (BDCP) includes several components that address Delta management and the impacts of water diversions.

The BDCP is characterized in the draft environmental impact report and environmental impact statement (EIR/S) as "a comprehensive strategy for the Sacramento-San Joaquin Delta." The EIR/S states that the "plan has been designed to restore and protect ecosystem health, water supply and water quality within a stable regulatory framework." The plan is being prepared by regulated entities, state and federal resource agencies and non-governmental organizations as both a habitat conservation plan and a natural communities conservation plan, which would meet the requirements of the federal and state Endangered Species Acts (to conserve listed and non-listed species) while authorizing some take of listed species.



*Making San Francisco Bay Better*

The Commission historically has participated in key decisions regarding Delta management that directly affect the San Francisco Bay and Suisun Marsh. 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 for related ecosystem functions. Staff has identified several issues related to the BDCP that have important implications for the Bay and Suisun Marsh, including fresh water inflows and Delta diversions, levee failures, sediment management, and land use planning and climate change. Staff has invited a representative of the California Department of Water Resources to brief the Commission on the BDCP and has provided a preliminary assessment of issues within the EIR/S discussion for Commission consideration.

### 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, while authorizing take of listed species under certain circumstances. Regulated entities (DWR and the Bureau, state and federal water contractors, other users of Delta water) and resource agencies (California Resources Agency, state and federal fishery agencies) and non-governmental organizations developed the plan.

The long-term goal for the BDCP 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 is also intended 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 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, entails 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. This alternative would pump water from three intake locations on the Sacramento River south of Clarksburg, in Yolo County in the north delta, to a new 40-acre forebay (a man-made reservoir) north of Walnut Grove as the collection point. From there, a maximum of 9,000 cfs of water would be conveyed by gravity 30 miles south under the Delta in dual bore tunnels 150 feet underground, each approximately 40 feet wide, to the newly redesigned Clifton Court Forebay near Stockton in Contra Costa County. Gravity would be relied on to transport the water to save energy and reduce greenhouse gas emissions. At the Clifton Court Forebay, the water would be pumped through the CVP and SWP pumping plants into the California Aqueducts. Alternative 4 would include 153,000 acres of habitat protection and restoration.

The BDCP has identified specific criteria to operate the new and existing facilities to manage the water supply for California. The Clifton Court Forebay will still collect water from the Old and Middle Rivers, using the pre-existing infrastructure and facilities on those rivers to supply water to the CVP and SWP. The flow from these rivers will influence the amounts taken from the rivers and facilities farther north in the Delta. The overall flows from the Sacramento River and the Delta outflow will also influence the amounts diverted from the intake facilities. Depending on hydrological conditions at the new facilities (water year type, actual Sacramento River flows, fish presence, etc.), operational intakes will vary, but there always will be a minimum Sacramento River flow passing the intakes before water could be diverted. Flow criteria and water intake will be determined on a month-by-month basis, and diversions will be ramped up or slowed down as the flow of the river and hydrological conditions change. For example, during a “dry” month, if the flow of the river were 6,400 cfs, only up to 384 cfs would be diverted. During a “wet” or “above normal” month, if the flow is at or above 30,571 cfs, up to 9,000 cfs could be diverted to the project. As a project maximum, no more than 9,000 cfs will be diverted at any one time. If the flow of the river is too low, or hydrological conditions deem it inappropriate, there may be no diversion from the Sacramento River.

The project also includes:

- Monitoring activities;
- Research;
- Recreation within the BDCP reserve;
- Restoration of the Suisun Marsh, including 6,000 acres of brackish wetland restoration, with 1,500 acres of mid- and high marsh; and in the Legal Delta; 24,000 acres of freshwater wetland restoration.
- Restore 25,725 acres of upland natural communities;
- Protect, enhance, and manage 48,625 acres of cultivated lands; and
- Protect, enhance, and manage at least 8,100 acres of managed wetlands in Suisun Marsh.

**Project Impacts.** Potential effects of BDCP on water bodies downstream of the Delta were analyzed and potential effects include:

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

The analysis in the EIR/S concluded 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 Golden Gate and Bay Bridge) were considered, but were not included as a part of the BDCP’s analysis.

**Prior Commission Briefings.** Over the past seven years, the Commission has received regular briefing reports from staff, and briefings from other state agency Commissioners, staff and consultants on a wide variety of Delta issues and developments. These briefings kept the Commission apprised of the evolving Delta planning and management and provided opportunities for Commission input. The following summary provides a snapshot of the Commission’s comments on issues raised during the briefings.

**April 2009 Commission Briefing.** Commissioners inquired whether the habitat restoration contemplated in the BDCP, would add to existing mitigation requirements in resource agency biological opinions. Commissioners were told the BDCP would likely supplant those existing requirements. Commissioners wanted reassurance that the State Water Project would export only water surplus to the needs of communities in the north would be exported.

Commissioners wanted to ensure that water levels in maritime highways in the Sacramento and San Joaquin Rivers to the Ports of Sacramento and Stockton would be maintained at levels to support navigation, particularly under variable levels of rainfall and runoff due to climate change. Commissioners wanted alternatives, such as desalination analyzed in the EIR/EIS, along with a full range of other alternatives, a full range of operational scenarios, specific recommendations for additional protections for the health of the Delta, and the Endangered Species Act assurances the contractors of the projects could hope to receive from the process. Resource agency staff assured the Commission that the BDCP would answer how much water the estuary needs for environmental purposes.

**February 2013 Briefing.** Deputy Natural Resources Secretary Jerry Meral, BCDC Commissioner Barry Nelson, Greg Gartrell, Assistant General Manager of Contra Costa Water District and Jim Fiedler, Chief Operating Officer of the Santa Clara Valley Water District conducted a panel discussion of the BDCP and made the following statements:

- The Delta is a result of a post-Ice Age recession in which sea level changes affected the creation of that 9,000-year-old landform; there was no Delta before then. Human activity ensures that it is a temporary landform. Scientists who have studied the Delta carefully do not believe the Delta cannot persist unaltered beyond the end of the century.
- Estimated costs for BDCP habitat restoration is about \$2 billion. It is unclear who will cover these costs.
- This project will not address drought supplies. California has had two six-year droughts in the last 80 years and there will be more. Agricultural water users who use 80 percent of the Delta water may have a disincentive to pay for the project if persistent droughts occur and they cannot get water from the project. These users may turn to urban areas to pay for the project in these circumstances.
- Size of the conveyance doesn't matter as much as the operational rules regarding how much water is exported and how fisheries are protected. In a seismic event, a levee failure could lead to salt water intrusion (as occurred in 1972). Prior to all the litigation, studies showed water exports could reach about six million acre feet out of the Delta every year. The revised biological opinions would lower that [volume] to about five million or even down to about 4.8 million.
- Recent studies show that operations matter, not tunnel size. How you operate the system determines how much flow you're going to get. 2011 was a very wet year and the pumps shut down in the middle of it, because there was no place to put the water.
- Given the overlapping jurisdiction between the Delta Stewardship Council and BCDC, BCDC's role is to oversee and approve that which is consistent with the Suisun Marsh Plan. Everything that happens in the Delta is going to affect the Bay to some extent. As a responsible agency BCDC will need to look at the EIR/EIS and see if BDCP has adequately covered the impacts on Bay and Marsh species, habitats and processes.

- The total projected expense of BDCP right now is about \$18 billion.
- Storage has to be part of the equation. Those investing in a conveyance system will need a return on their investment. This means in high water years water could be stored off-stream, with conjunctive use below ground. In a dry year, that stored water can be used in lieu of taking the water out of the Delta.
- The potential for flooding and loss-of-life should be a metric used to evaluate the project.

### BCDC's Role, Relevant Policies and Related Agreements

**Bay Delta Governance.** The Commission historically has participated in water and ecosystem management decisions in the Delta that directly affect conditions in San Francisco Bay and Suisun Marsh. 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 for related ecosystem functions. Delta planning and decision-making affects the Commission's jurisdiction by influencing freshwater inflows to the Bay and wetland restoration, particularly in the Suisun Marsh.

The Commission is helping to advance Bay-Delta planning and decision-making by emphasizing the need for adequate fresh water inflow to the Bay and Suisun Marsh and the importance of coordinating planning for habitat restoration and climate change adaptation throughout the estuary. The staff is achieving this goal through making formal comments on draft plans (Delta Plan and BDCP) and related environmental documents, participating in interagency and public meetings, and working directly with staff of other agencies and organizations.

The Commission likely will require a federal consistency determination by the federal agency sponsors for the BDCP. The project elements in the Delta will affect the Coastal Zone (BCDC's jurisdiction) and some project elements will occur within the Coastal Zone in the Suisun Marsh. Such a consistency review process would need to be completed before the federal agencies sign a record of decision on the project.

**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.”

**Salinity Control Structures in Suisun Marsh.** Several facilities have been constructed by DWR and the Bureau, and permitted by BCDC to provide lower salinity water to managed wetlands in the Suisun Marsh. The initial facilities, including the Roaring River Distribution System, Morrow Island Distribution System, and Goodyear Slough Outfall, were constructed in 1979 and 1980. The Suisun Marsh Salinity Control Gates were installed and became operational in 1988. Other facilities constructed under the Suisun Marsh Preservation Agreement include the Cygnus Drain and the Lower Joice Island Diversion.

The Suisun Marsh Salinity Control Gates control salinity by restricting the flow of higher salinity water from Grizzly Bay into Montezuma Slough during incoming tides and retaining lower salinity Sacramento River water from the previous ebb tide. Operating the gates in this fashion lowers salinity in Suisun Marsh channels and results in a net movement of water from east to west. When the channel water salinity decreases sufficiently below the salinity standards, or at the end of the control season, the flashboards are removed and the gates are raised to allow unrestricted movement through Montezuma Slough.

**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 U.S. 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 U.S. 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.

**Commission Involvement in Water Rights and Standards Decisions.** BCDC participated in the State Water Board hearings on Delta water rights from 1982 to 1985. The Commission contracted with Phil Williams Associates to research the potential impacts of increased salinity on Suisun Marsh and, in partnership with Natural Heritage Institute, advocated for adequate freshwater flows to the Marsh. Those hearings led to the 1986 *Racanelli* decision, which required the State Water Board to set Delta water standards in accordance with the federal Clean Water Act, which requires consideration of all “beneficial uses” of water in the Delta.

BCDC staff participated in the development of the Comprehensive Conservation and Management Plan (CCMP) from 1987 to 1993, and served on the working group on aquatic resources. This group developed the water quality standards that came to be known as “X2”. (See “X2 Water Quality Standards” in Background section above.) BCDC staff also participated in the update of the CCMP in 2007.

**Suisun Resource Conservation District’s Local Protection Program Component.** The Commission recently approved a federal consistency determination for the Suisun Marsh Habitat Management, Preservation, and Restoration Plan developed by the Suisun Marsh Charter Group. The plan calls for converting 7,000 acres of existing managed wetland to tidal wetland habitats and enhancing managed wetlands, improving management practices as well as developing a funded exterior levee maintenance program. The plan is being used by the Commission, in partnership with the Suisun Resource Conservation District, to update the SRCD’s component of the Suisun Marsh Local Protection Program.

#### Issue Areas and Initial Questions

Staff has begun to review the approximately 16,000 pages of the BDCP and the related EIR/EIS, and have identified some potential issue areas and initial questions for the Commission’s consideration during the briefing.

1. The EIR/S states in part, that there would be no significant effects on San Francisco Bay, and therefore, areas downstream of the Delta (e.g., San Pablo Bay, San Francisco Bay south to Golden Gate and Bay Bridge) were considered and were not included as a part of the BDCP’s analysis. Does BCDC still have concerns about possible project impacts on San Francisco Bay salinity and sediment supply, and impacts on Bay habitats and species?
2. Will BCDC require a federal consistency determination for the BDCP?
3. The BDCP EIR/S discusses the creation of an Implementation Office that will partner with private and public entities to work cooperatively on conservation goals and measures. The Implementation Office will track and ensure that compliance monitoring is conducted in accordance with provisions of the BDCP and its associated regulatory authorizations, and will provide results to the fish and wildlife agencies as part of the Annual Progress Report. This office, among other responsibilities such as implementing compliance monitoring, will be reporting BDCP progress to the Authorized Entity Group, the Permit Oversight Group, the Stakeholder Council, and the public. Will this entity require legislation, and which agencies will implement its mission? The EIR/S states that this entity will be responsible for implementing adaptive management. Will governance changes be needed to implement adaptive management?

4. Most Conservation Measures are discussed at a programmatic rather than a project level in the EIR/S. Specific locations for habitat improvements are not discussed in the restoration opportunity areas, including in the Suisun Marsh. When will the information be available about the specific location of the proposed restoration actions in the Marsh? How will such restoration activities be researched and implemented? What assurances can be made that such restoration will in fact occur?
5. Climate change is likely to affect the restoration and conservation measures proposed in the EIR/S. There is little discussion in the EIR/S of the evolution of these measures. What further research and findings will be conducted and presented regarding the effects of climate change on these measures?
6. The cumulative impacts of related projects, such as several proposed water storage projects on existing dams and reservoirs, and dredging the ship channel between San Francisco Bay and the Port of Stockton, could affect the BDCP. When taken together, how will the EIR/S account for such cumulative impacts?