Chapter 2: Purpose and Need/Project Objectives [DWR 8/18/11 edits; psi 10/5/11 edits]

2.1 Overview

The primary challenge facing California is how to comprehensively address the increasingly significant and escalating conflict between the ecological needs of a range of at-risk Delta species and natural communities that have been and continue to be adversely affected by a wide range of human activities, while providing for reliable water supplies for people, communities, agriculture, and industry.

This challenge must be addressed, as California law requires that the California Department of Water Resources, the Department of Fish and Game, and the State Water Resources Control Board, through their various decisions on aspects of the BDCP, endeavor to strike a reasonable balance between these competing public policy objectives. The Sacramento-San Joaquin Delta Reform Act of 2009 states that "it is the intent of the Legislature to provide for the sustainable management of the Sacramento-San Joaquin Delta ecosystem, to provide for a more reliable water supply for the state, to protect and enhance the quality of water supply from the Delta, and to establish a governance structure that will direct efforts across state agencies to develop a legally enforceable Delta Plan." (California Water Code, § 85001, subd. (c)). The Delta "serves Californians concurrently as both the hub of the California water system and the most valuable estuary and wetland ecosystem on the west coast of North and South America." (*Id*., § 85002).

As the ecological health of the Delta declines, the conflicts between species protection and Delta water exports have become more pronounced, as amply evidenced by the recent court decisions regarding the intersection of the Federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and the operations criteria of the State and Federal water projects. Other factors, such as the continuing subsidence of lands within the Delta, increasing seismic risks and levee failures, and sea level rise associated with climate change, serve to further exacerbate these conflicts. Simply put, the system as it is currently designed and operated does not work from either an environmental or economic perspective, and so a fundamental, systemic change is crucial. This change is necessary if California is to "[a]chieve the two coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem." (California Public Resources Code, § 29702, subd. (a)).

2.2 Purpose Statement

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

A. Consider the applications for incidental take permits for the covered species that authorize take related to:
    - The operation of existing SWP Delta facilities;

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

B. Improve the ecosystem of the Delta by:
   - Providing for the conservation and management of covered species through actions within the BDCP Planning Area that will contribute to the recovery of the species;
   - Protecting, restoring, and enhancing certain aquatic, riparian, and associated terrestrial natural communities and ecosystems; and
   - Reducing the adverse effects to certain listed species of diverting water.

C. Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of state and federal law and the terms and conditions of water delivery contracts held by SWP contractors and certain members of San Luis Delta Mendota Water Authority, and other existing applicable agreements.

The above Purpose Statement reflects the intent to advance the co-equal 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" 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. Alternatives that depict design capacities or operational parameters that would result in deliveries of less than full contract amounts are consistent with this purpose.

2.3 Project Need

The project need is derived from the multiple, and sometimes conflicting, challenges currently faced within the Delta. The Delta has long been an important resource for California, providing agricultural and recreational uses, fish and wildlife habitat, and water supply for large portions of the State. However, by several key criteria, the Delta is now widely perceived to be in crisis. There is an urgent need to improve the conditions for threatened and endangered fish species within the Delta. Improvements to the conveyance system are needed to respond to increased demands upon and risks to water supply reliability, water quality, and the aquatic ecosystem.

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2.3.1 Delta Ecosystem Health and Productivity

Variability in the location and timing of flows, salinity, and habitat was common in the pre-European Delta[1]. But for the past 70 years, the State has managed the interior Delta as a freshwater system. During the same period, the ecological productivity for Delta native species and their habitats has been in decline. Removal of this heterogeneous balance of fresh and brackish habitats, necessary to support various life stages of some of the Delta native species, has had a limiting effect on the diversity of native habitat within the Delta. In addition, urban development, large upstream dams and storage reservoirs, diversions, hydraulic mining, and the development of a managed network of navigation, flood control, and irrigation canals have all affected water flow patterns and altered fish and wildlife habitat availability. Previous studies have estimated that 95 percent of the original tidal wetlands and many miles of sloughs in the Delta were removed by channelization and levee construction between the 1850s and 1930s. These physical changes, coupled with declines in water quality from urban and agricultural discharges, and changes in constituent dilution capacity from managed inflows and diversions, have stressed the natural system and led to a decline in ecological productivity.

Significant declines have been reported in economically important fish species such as Chinook salmon. Delta smelt, considered by many to be an indicator species for the health of the Delta ecosystem, is just one component species in the community-wide Pelagic Organism Decline. Fishery resource changes may be attributable to numerous factors, including water management systems and facilities, water quality/chemistry alterations, and nonnative species introductions.

2.3.2 Water Supply Reliability

The distribution of precipitation and water demand in California is unbalanced. Most of the State's precipitation falls in the north, yet substantial amounts of water demand are located south and west of the Delta, including irrigation water for southern Central Valley agriculture, and municipal and industrial uses in southern California and the Bay Area. This supply/demand imbalance led to development of two major water projects, the SWP and the CVP.

Together, the SWP and CVP systems are two of the largest and most complex water projects in the nation and provide the infrastructure for the movement of water throughout much of California. They function under a suite of Congressional authorizations, interagency agreements, regulatory requirements, and contractual obligations that govern daily operations and seasonal performance. These include various authorizing legislation, the terms and conditions of the U.S. Fish and Wildlife Service and National Marine Fisheries Service Biological Opinions, including the Reasonable and Prudent Alternatives, and the water right permits issued by the SWRCB, among others. Regulations for the combined SWP and CVP operations are intended to protect the beneficial uses of Delta water, which

[1] For this document, the term pre-European Delta refers to the period prior to the 1840s, when the streams and rivers began being modified by European immigrants with hydraulic mining and dredging, and the construction of diversion dams and levees in the Delta and along the rivers.

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include water supply, fish and environmental protection, flood management, navigation, water quality, power, and recreation.

The water rights of the SWP and CVP are conditioned by the SWRCB to protect the beneficial uses of water within each respective project and jointly for the protection of beneficial uses in the Sacramento Valley and the Delta. Reservoir releases and Delta exports must be coordinated to ensure that each project achieves benefit from shared water supplies and operates in a manner protective of beneficial uses. It is the joint responsibility of the SWP and CVP to meet these obligations regardless of hydrologic conditions. In 2006, Governor Schwarzenegger Executive Order S-17-06 created the Delta Vision Task Force to address some of the issues facing the Delta. In the closing days of the Task Force's work, the SWRCB presented information indicating that several times the average annual unimpaired flows in the Delta watershed have been promised to water users based on the face value of water permits already issued. The current and projected future inability of the SWP and CVP to deliver water to meet the demands identified by certain south of Delta CVP and SWP water contractors, as well as uncertainties in the current and/or future ability of Mirant Delta LLC to use existing intake and discharge facilities for cooling water necessary for power generation activities, are very real concerns. More specifically, there is a declining ability to meet defined water supply delivery volumes and water quality criteria to support water users' beneficial needs for human consumption, manufacturing uses, recreation, and crop irrigation.

2.3.3 Delta Hydrology and Water Quality

Generally, Delta hydrodynamics are defined by complex interactions between tributary inflows, tides, in-Delta diversions, and SWP and CVP operations, including conveyance, pumping plants, and operations of channel barriers and gates. The degree to which each variable impacts the overall hydrology of the Delta varies daily, seasonally, and from year to year, depending on the magnitude of inflows, the tidal cycle, and the extent of pumping occurring at the SWP and CVP pumping plants. Changes in water inflow and outflow throughout the Delta affect the water quality within the Delta, particularly with regard to salinity. It has been estimated that seawater is pushing 3 to 15 miles farther inland since development began in the Delta over 150 years ago (CCWD 2010).

Additionally, other water constituents of concern in the Delta have been identified through ongoing regulatory, monitoring, and environmental planning processes such as CALFED, planning functions of the SWRCB, and the Clean Water Act Section 303(d) list of State water bodies that do not meet applicable water quality standards. In June 2007 (with updates in February and May 2009), the U.S. Environmental Protection Agency gave final approval of a list of 18 constituents indentified in the Section 303(d) list for impaired Delta waters (SWRCB 2007). Included in this list are DDT and other pesticides, mercury, PCBs, and selenium.

To further compound these challenges, fundamental changes to the Delta are certain to occur; the Delta is not a static ecological system. The anticipated effects of climate change will result in elevated sea levels, altered annual and inter-annual hydrological cycles, changed salinity and water temperature

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regimes in and around the Delta, and accelerated shifts in species composition and distribution. These changes add to the difficulty of resolving the increasingly intensifying conflict between the ecological needs of a range of at-risk Delta species and natural communities and the need to provide adequate and reliable water supplies for people, communities, agriculture, and industry. Anticipating, preparing for, and adapting to these changes are key underlying drivers for the BDCP.

Beginning in the 1850s, the construction of a network of levees facilitated the reclamation of the Delta for agriculture, human habitation, and other human uses. Combined with the straightening, widening, and dredging of channels, levee construction increased shipping access to the Central Valley and improved downstream water conveyance for flood control. Since then, the combined effects of continued land subsidence, sea level rise, increasing seismic risk, and worsening winter floods all increase the vulnerability of the extensive levee system. Besides degradation of water quality, levee failure could also result in flooding of Delta communities, farmland, and habitat, exposure of adjacent islands to increased seepage and wave action, and impacts to water supply, communication, and energy distribution systems.

2.4 Project Objectives

TBD (State requirement)

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