Attachment 1: Summary of the Phase II Update

Background

The State Water Resources Control Board (State Water Board or Board) is considering amendments to the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) that was developed and adopted pursuant to the provisions of the Porter-Cologne Water Quality Control Act (Porter-Cologne) and the federal Clean Water Act. A water quality control plan consists of three parts: 1) designation of the beneficial uses to be protected; 2) establishment of water quality objectives; and 3) a program of implementation needed for achieving the water quality objectives. (Wat.Code, § 13050(j).)

Water quality objectives are the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses. (Wat. Code, § 13050(h).)

Components of the Bay-Delta Plan when implemented also: 1) carry out provisions of the reasonable use doctrine (Cal. Const. Art. X, § 2; Wat. Code, §§ 100, 275, and 1050); 2) protect public trust resources (see National Audubon Society v. Superior Court (1983) 33 Cal.3d 419, 189 Cal. Rptr. 346); and 3) carry out statutory principles pertaining to water rights (Wat. Code, §§ 183, 1243, 1243.5, 1251, 1253, and 1256-1258). As such, the Bay-Delta Plan addresses the interrelated fields of water quality and water supply and plans for their coordination.

The Bay-Delta Plan currently includes various water quality, flow and water project operational objectives to protect beneficial uses in the Bay-Delta, including municipal and industrial, agricultural and fish and wildlife uses. Objectives for the protection of fish and wildlife are included in Table 3 on pages 14 and 15 of the 2006 Bay-Delta Plan and its associated footnotes, figures and tables. Among other requirements, Table 3 includes objectives for Delta outflows throughout the year, minimal mainstem Sacramento River inflows from September to December and water project operational constraints in the interior Delta expressed as yearround export limitations and Delta Cross Channel (DCC) gate closure requirements that apply from November through June. Currently, the Department of Water Resources (DWR) and U.S. Bureau of Reclamation (Reclamation) have primary responsibility for meeting the Bay-Delta Plan objectives as required by the Board’s revised water right Decision 1641 (D-1641). In D-1641, the State Water Board accepted various agreements between DWR and Reclamation and other water users to assume responsibility for meeting specified Bay-Delta Plan objectives. As a result, the Board conditioned DWR and Reclamation’s water right permits for DWR’s State Water Project (SWP) and Reclamation’s Central Valley Project (CVP) (collectively Projects) to require water releases and water management actions to meet the flow and water quality objectives. The State Water Board determined in 2009 that the Bay-Delta flow and water quality objectives were out of date and needed revision.

The Scientific Basis Report (Science Report or Report) has been prepared to support the Phase II update of the Bay-Delta Plan. The scientific evidence indicates that current Bay-Delta Plan flow and operational requirements are inadequate to protect fish and wildlife beneficial uses because requirements are nonexistent or not stringent enough. Higher and more comprehensive Delta outflow requirements and tributary inflow requirements from the Sacramento River basin and eastside tributaries to the Delta are needed. New cold water habitat requirements are also needed to ensure that necessary cold water supplies or other measures are taken to address existing cold water needs on tributaries primarily for the protection of salmonids that no longer have access to upstream cold water habitat due to reservoirs. In addition, new or revised interior Delta flow requirements are necessary to address elevated mortality and straying of fish caused by water diversions in the southern Delta to...
complete the protections of fish through their migratory range from the tributaries out to the ocean.

The Science Report includes a determination that while there are other factors that contribute to impairments to fish and wildlife beneficial uses in the Sacramento River and Delta, flows remain a critical component for the protection of these beneficial uses. The Report further acknowledges that estimates of flow needed to protect fish and wildlife beneficial uses are imprecise. This is primarily due to the various complicating factors affecting the survival and abundance of native fish and invertebrate species. Nonetheless, the weight of the scientific evidence indicates that increased flow requirements are needed to protect fish and wildlife beneficial uses. Given the dynamic and variable environment that native fish are adapted to and the imperfect human understanding of these factors, precise flow objectives that will provide absolute certainty with regard to protection of fish and wildlife beneficial uses is likely not possible. The proposed changes to the Bay-Delta Plan are structured to address the complexities of the watershed while responding to new information and changing conditions and providing for meaningful action in the near term to protect the Bay-Delta ecosystem. The proposed changes are structured to work together and with other planning, science, restoration, and regulatory efforts in a timely, adaptive, flexible, and comprehensive manner so that meaningful action can be taken to ensure the protection of fish and wildlife before imperiled species in the watershed are no longer able to be restored.

**Draft Phase II Changes to the 2006 Bay-Delta Plan**

The proposed Phase II changes to the Bay-Delta Plan include: new inflow requirements for the Sacramento River, its tributaries, and eastside tributaries to the Delta; new and modified Delta outflow requirements; new requirements for cold water habitat; new and modified interior Delta flow requirements (Old and Middle River (OMR) flows, Project export constraints, and DCC gate closure requirements); recommendations for complementary ecosystem protection actions that others should take; and adaptive management, monitoring, evaluation, special study, and reporting provisions. Together the proposed changes to the inflow, outflow, cold water habitat and interior Delta flow provisions of the Bay-Delta Plan, along with other habitat restoration actions are proposed to work together to provide comprehensive protection to native aquatic species from natal streams through the Delta and Bay. The Report contains a description of the proposed changes to water quality objectives and the program of implementation (together referred to as requirements). The exact regulatory language, however, is still under development and will be informed by the Science Report, environmental and economic analyses, and public comment as the planning process moves forward. The policy discussion is provided for context.

**Tributary Inflows**

New year round narrative and numeric inflow objectives are proposed for anadromous fish-bearing tributaries in the Sacramento River basin, and Delta eastside tributaries (Mokelumne, Calaveras and Cosumnes rivers). Year-round inflows are needed to protect anadromous and other native fish and wildlife species that inhabit the Bay-Delta and its tributaries throughout the year as juveniles or adults. Specifically, inflows are needed to provide appropriate habitat conditions for migration, spawning and rearing of anadromous fish species (primarily Chinook salmon and steelhead) that inhabit the Delta and its tributaries, and to contribute to Delta outflows needed to support migrating, spawning, and rearing of estuarine species. Preservation of high flow levels that are already being provided in some less impaired tributaries is also proposed where existing flows are providing important functions to ensure that those flows are not reduced (e.g., maintain existing protective conditions). The proposed changes to inflow
requirements are structured to provide necessary flexibility and adaptive management provisions (for specific functional flows, scientifically based experiments, and coordination with other complementary restoration efforts) to address the complexities of inflow needs and constraints in the watershed in a reasonable and protective manner. In recognition of the local expertise within tributaries and the potential benefit of collaborative solutions, the program of implementation would provide a period of time for regional and/or tributary based flow and other measures to be developed by stakeholders, approved, and implemented that achieve the inflow and cold water habitat requirements while also contributing to Delta outflows.

Delta Outflows
New and modified narrative and numeric Delta outflow objectives are proposed throughout the year to support and maintain the natural production of viable native fish populations residing in, rearing in, or migrating through the estuary. Delta outflows have been reduced over time as a result of water withdrawals, resulting in reduced suitable habitat for estuarine species. Existing Delta outflow requirements are far below existing Delta outflows and are likely to be reduced over time without additional requirements as water use intensifies. To ensure that minimum quantities of Delta outflow are provided to the estuary, base Delta outflows that range from 3,000 cubic-feet per second (cfs) to 8,000 cfs based on water year type from July through January and February through June flows of 7,100 cfs from the current Bay-Delta Plan would be maintained. In addition, a new inflow-based Delta outflow objective is proposed that would be consistent with the range for inflows discussed above. The objective specifies that the required inflows from the Sacramento and San Joaquin Rivers and their tributaries and the three Delta eastside tributaries are provided as outflows with appropriate adjustments for depletions and accretions, including adjustments for floodplain inundation flows and other side flows. Fall Delta outflow requirements consistent with the U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BiOp) is also proposed. Like the inflow requirements, the outflow requirements would allow for adaptive management and shifting and sculpting of flows.

Cold Water Habitat
A new narrative cold water habitat objective is proposed to ensure that salmonids have access to cold water habitat at critical times and to ensure that adequate water is available for minimum instream flow purposes downstream of reservoirs. Salmonids require adequate cold water and flow conditions for spawning and rearing. Since construction of dams and other habitat alterations, access to cold water habitat has been eliminated or substantially reduced to the detriment of salmonid populations. Remaining populations are now dependent on maintenance of suitable conditions in the downstream reaches below dams. Effective management of cold water is a critical component of the conservation and recovery strategies for native salmonids, especially with the challenges posed by increasing water demands and climate change. Cold water habitat conditions in the tributaries will differ and the mechanisms for best implementing the narrative objective will vary among the tributaries; thus flexibility is needed to best achieve the objective. Depending on the specific conditions of a tributary, the narrative may be implemented through cold water storage requirements, temperature control devices, flow provisions, passage to cold water habitat, or other measures.

Interior Delta Flows
New and modified interior Delta flow objectives are proposed to protect native migratory and estuarine species from elevated mortality and straying of fish caused by water diversions in the southern Delta, including a new narrative objective and numeric objectives for DCC gate closures, OMR reserves flow limits and export constraints as a function of San Joaquin River flows consistent with existing regulatory requirements (included in the USFWS BiOp and

Program of Implementation, Monitoring, and Evaluation

There are a variety of water right and water quality authorities that the State Water Board may utilize to implement new or changed water quality objectives and the State Water Board has discretion in how it chooses to implement flow-dependent objectives in accordance with state law. (See, Wat. Code, § 13242 [program to achieve objectives shall include a description of the nature of the actions necessary to achieve objectives, including recommendations for appropriate action by any entity, public or private, a time schedule for actions to be taken, and monitoring to determine compliance].)

The proposed program of implementation would include early implementation measures, including the submittal of tributary plans by potentially responsible parties. The tributary plans would include a flow element and cold water management and drought planning and response elements, monitoring, evaluation and reporting elements, as well as other provisions. In each tributary, adaptive management of inflow requirements would allow flows to be sculpted in order to improve their functionality and provide the greatest benefits to fish and wildlife, as well as allow flows to move within a range in response to changed information or conditions. The proposed program of implementation provides a framework for accepting local agreements with alternative methods for enhancing protection of fish and wildlife in the tributaries, and for meeting the tributary inflow and cold water habitat narrative objectives. The program of implementation would direct the State Water Board to initiate a rulemaking or adjudicatory proceeding under its own authorities if a particular tributary plan is not developed or is found to be unsatisfactory.

Implementation of the inflow-based Delta outflow objective would correlate to the development, approval, and implementation of tributary plans. Like the inflow requirements, the inflow-based Delta outflow requirements would allow sculpting of flows and would require the development of implementation measures for adaptive management, in coordination with the Projects and other in-Delta users. Delta outflow implementation measures would include monitoring, evaluation and reporting provisions, development of biological goals, and provisions for coordination with inflows. The implementation measures would address accounting methods for the existing and new requirements, including integration with tributary plans, calculation of accretions and depletions, and evaluation of the existing and new methods of compliance with Delta outflows to ensure they are protective.

The proposed program of implementation would also include measures to ensure that water bypassed or released to meet water quality objectives is protected and actions to ensure that tributaries with flow levels that are already protective are not degraded, including updating the Fully Appropriated Streams list as appropriate and other actions.

The proposed program of implementation would also include monitoring and special studies necessary to fill information needs and determine the effectiveness of, and compliance with, the new and revised water quality objectives. The State Water Board has identified four primary goals for near and long-term monitoring in the Delta in order to: (1) evaluate compliance with specific implementation provisions by responsible parties, including the Projects, pursuant to water right conditions, other orders and/or regulations; (2) evaluate the effectiveness of management measures, management modifications, and remediation efforts aimed at meeting water quality objectives and improving conditions for beneficial uses; (3) track whether conditions are trending toward numeric targets, water quality objectives, and beneficial use
support; and (4) inform when and how to reevaluate the objectives and program of implementation. Approximately five years after adoption, State Water Board staff will conduct a formal assessment of the effectiveness of the implementation plan and make any necessary revisions using monitoring and reporting data, other studies and any other available data, as appropriate.

Finally, the program of implementation would provide recommendations of actions other entities could take that would contribute to achieving the overall goal of improving conditions for fish and wildlife. The program of implementation will include recommendations for non-flow measures that are complementary to the revised objectives and that are expected to improve habitat conditions or improve related science and management within the Bay-Delta watershed.