

Lower San Joaquin River Flow Objectives and Southern Delta Water Quality

Summary: This staff report summarizes (1) the State Water Board's proposal to revise flow objectives for the Lower San Joaquin River and numeric southern Delta salinity objectives, (2) the DSC staff's proposed response to this revision, and (3) the Delta Independent Science Board (ISB) review of this proposal. This is an informational item, and no action is being requested of the Council on this matter.

Background

The State Water Resources Control Board (State Water Board) is updating its Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay Delta Plan) to restore and protect the Delta ecosystem. The draft Delta Plan states: "minimum flows must be established for the Delta and its major tributaries as part of a comprehensive effort to address all ecosystem stressors", and directs the State Water Board to adopt and implement updated flow objectives for the Delta to achieve the coequal goals of ecosystem protection and a reliable water supply by June 2, 2014. The State Water Board's current Bay Delta Plan update will implement this key element of the Delta Plan.

The State Water Board periodically updates the Bay Delta Plan to protect beneficial uses of the water by setting water quality objectives, and a program of implementation to achieve the objectives. The State Water Board is phasing the current update of the Bay Delta Plan. This first phase, initiated in 2009, updates flow objectives to protect fish and wildlife in the San Joaquin River (SJR) and its salmon-bearing tributaries; and salinity objectives to protect agriculture in the southern Delta. Phase I will also establish a program of implementation for these objectives.

Phase II of the State Water Board's Bay Delta Plan update, initiated in 2012, will address the rest of the Bay Delta Plan, including Delta outflow and export objectives, and other measures needed to protect Delta resources. The timing of Phase II ensures that the substantial body of information on Delta outflow, exports, and habitat needs developed through the Bay Delta Conservation Planning (BDCP) process will be fully considered in the State Water Board's Bay Delta Plan update.

The State Water Board has prepared a substitute environmental document on its proposed flow and salinity objectives. Commenting on state environmental impact reports for projects outside the Delta that the Council determines will have a significant effect on the Delta is among the Council's powers (Water Code Section 85210(j)).

(1) Revised Flow Objectives for the Lower San Joaquin River and Numeric Southern Delta Salinity Objectives

The State Water Board is proposing a February through June flow requirement of 35 percent of unimpaired flow for the Lower SJR, not to exceed flood control limits, with minimum base flow requirements. The Lower SJR extends from Vernalis, at the southern margin of the Delta upriver to the San Joaquin's confluence with the Merced River, as well as the San Joaquin's three eastside tributaries – the Stanislaus, Tuolumne, and Merced Rivers. Unimpaired flow is the flow that would occur if all runoff from the watershed remained in the river, without storage or diversion. Currently, median February through June flows in the Merced, and Tuolumne rivers are less than 35 percent of unimpaired flow more than half of the time, so this proposal would require increased flows to meet the proposed requirement.

The southern Delta salinity proposal would revise the water quality objectives for salinity to reasonably protect agricultural beneficial uses, and reflects existing conditions, which the State Water Board reports are suitable for all crops that are currently grown in the area. Salinity levels in the southern Delta would also be within the historical range of salinity levels that the key fish species can tolerate, according to the SED.

The proposal includes adaptive management, not rigid adherence to a specific schedule of flows, in order to respond to evolving scientific information, and to allow for integration of the flow requirements with other regulatory processes. Water managers and state and federal fish agencies may develop proposals to maximize protection of fish and wildlife while minimizing water supply costs by releasing an alternative percentage of unimpaired flow, ranging between 25 percent and 45 percent, and/or shifting equivalent amounts of water into times that may be more beneficial to fishery resources.

These proposals are being released for public comment, along with a draft Substitute Environmental Document (SED) that describes the potential environmental effects of the flow and salinity alternatives that were considered. The draft SED relies upon recent scientific studies that conclude that a higher and more variable flow regime is needed in salmon bearing tributaries to the SJR to protect fish migrating through the Delta. The draft SED also relies upon recent studies that conclude that current surface water salinity conditions in the southern Delta are suitable for irrigation of the agricultural crops grown in the area. Both the scientific support documents and the modeling of water supply, economic, and hydropower effects have been the subject of numerous public workshops and scientific peer review. The approach taken in the proposal has also been reviewed by the National Research Council and the Delta Independent Science Board.

A representative of the State Water Board will be present at the board's discussion of the SED at its February 14-15, 2013 meeting.

Attachment 1 is Appendix K from the SED, and provides the details of the above proposal.

(2) DSC Staff Response to the Proposed Revision to the Bay Delta Plan

DSC Staff have reviewed the proposed revision to the Bay Delta Plan. This proposal is generally consistent with the coequal goals, and with elements included in the Draft Delta Plan. While comments are not due until March 29, 2013, the following represent our initial reaction:

- Overall, the proposal represents an improvement over current environmental conditions in the river and would increase flows in a way that more closely matches the natural flow regime. This has the potential to benefit the ecosystem as a whole, as well as specific native fish species. Neither water supplies nor environmental conditions are fully met, reflecting the tradeoffs in balancing between these two goals.
- The proposed flow of 35 percent is less than the SJR inflow criteria that the State Water Board adopted in 2010, pursuant to the Delta Reform Act (Water Code Section 5086 (c)(1)). The species-specific criteria, which were based on the best available scientific information, suggest a flow of 60 percent of the unimpaired flow from February through June. This reduction from the flows identified by the flow criteria is one of the ways the Board staff proposes to balance water supply reliability with ecosystem health.
- The proposal will result in a decrease in water available for diversion from the SJR and its tributaries in certain years, and a corresponding increase in reliance on groundwater resources. Specific impacts on water supply and water use cannot be known until the proposed flow objectives are implemented through subsequent water rights proceedings and reservoir operations. Outside the Delta, reductions in surface water diversions are expected to result in about a 10% (or greater) reduction in acres of irrigated land for Corn, Field, Pasture, and Rice. Approximately 81,858 acres of Prime or Unique farmland or Farmland of Statewide Importance outside the Delta could potentially be converted to nonagricultural use, according to the draft SED.
- The final SED ought to include a more thorough assessment of whether reducing LSR water withdrawals in compliance with the proposed objectives may shift some water users to greater reliance on water diverted from the Delta, either directly or through potential water exchanges among those affected by the new standards.
- We support the proposal for an Annual Adaptive Management Plan, developed by a Coordinated Operations Group (COG) comprised of the listed agencies and representatives. We recommend that the Executive Director of the State Water Board work with the Delta Lead Scientist regarding the membership of this COG

to ensure there is a strong scientific representation and perspective. Also, the Annual Adaptive Management Plan proposal indicates that the Plan must be agreed to by all members of the COG. The proposal must also include a means for enacting a Plan if the members of the COG cannot reach agreement. Furthermore, the data and information used by the COG and the resulting Plan ought to be publically available to ensure transparency and accountability in this process.

- We support the proposal for a Long-term Adaptive Management Approach. Again, the data and information used for any Long-term Adaptive Management Approach ought to be publically available to ensure transparency and accountability for the resulting flow requirements.
- In addition to consideration of unimpaired flow, the State Water Board should incorporate the concept of Natural Functional Flows into the Annual Adaptive Management Plan and the Long-term Adaptive Management Approach. The concept of Natural Functional Flow is described in Chapter 4 of the Draft Delta Plan, and allows consideration of factors beyond unimpaired flows. Natural Functional Flows consider the **functions** that flows provide to the ecosystem in its current physical condition. These are not the same flows that supported valued ecosystem functions before Delta tributaries were altered by dams and levees and the Delta was transformed into its current landscape of islands, levees and constructed channels. While it is widely recognized that we cannot return the Delta and its watershed to its historical state, there are aspects and functions that can be simulated, such as timely and prolonged inundation of floodplains, interconnection of remaining wetland and riverine environments, and river temperature controls through timed reservoir releases.

As DSC staff continues to review the SED, its comments will be refined. Final staff comments will be prepared and provided to the State Water Board by the March 29, 2013 deadline.

(3) Delta ISB Review of the Proposed Revision

The Delta ISB has been following Phase I of the State Water Board's update to its Bay Delta Plan. At a March 8, 2012 meeting of the Delta ISB, State Water Board staff briefed the board and posed several questions regarding San Joaquin River flows (Attachment 2). In a subsequent memo dated May 22, 2012, the Delta ISB provided responses and some recommendations to the State Water Board regarding San Joaquin River flows (Attachment 3). The Delta ISB did not have sufficient information to fully respond to the March 2012 questions in their May 2012 memo and is revisiting those questions at its February 14-15, 2013 meeting in light of new information presented in the SED.

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A representative of the Delta ISB will be present at the Council's meeting to summarize their discussion of the SED.

List of Attachments

Attachment 1: Appendix K from the Substitute Environmental Document
Attachment 2: March 8, 2012 Update from the State Water Board to the Delta ISB
Attachment 3: May 22, 2012 Memo from the Delta ISB to the State Water Board

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