Delta Diablo Sanitation District

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VIA ELECTRONIC MAIL

Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

SUBJECT: COMMENTS ON THE FOURTH DRAFT OF THE DELTA PLAN (AN "OUT OF THE BOX" CONCEPT)

Dear Chairman Isenberg and Council Members:

The Delta Diablo Sanitation District (DDSD) submits this letter in response to the fourth draft of the Delta Plan issued by the Delta Stewardship Council. The comments provided are consistent with previous comments submitted in response to the December 10, 2010 Notice of Preparation for the Environmental Impact Report (EIR) for the Delta Plan, as well as comments provided during the Bay Delta Conservation Planning (BDCP) process. It is often said in the presentations that are made regarding the Delta Planning process that the Council is looking for all ideas on addressing Delta challenges, including "out of the box" ideas that may not have been considered before.

"Out of the Box" Concept

Analyze a new Delta water supply in the western Delta that could directly supplement or replace portions of the water supply obligations of the State Water project (SWP) and/or the Central Valley Project (CVP).

DDSD Background

DDSD is located at the western edge of the statutory Delta and provides wastewater treatment services to approximately 200,000 residents in the cities of Antioch, Pittsburg and the community of Bay Point. In addition, DDSD provides recycled water service to two major power plants that have a capacity to serve over 1 million homes (3% of the electricity generated in California). A key objective included in DDSD's 2010 Strategic Business Plan is to *"Establish a leadership role in developing regional solutions to common water and wastewater challenges."* To that end, DDSD is leading three regional coalitions that include over 35 Bay Area agencies to proactively and collaboratively pursue water recycling, biosolids to energy, and household hazardous waste solutions.

DDSD recognizes that there likely is not one individual solution that will adequately address the water supply and environmental challenges that the Delta faces. The District fully supports the coequal goals in the Draft Delta plan: "*Achieve the two coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem.*" All Delta solutions should be explored, including, but not limited to re-operation of the state and federal projects; decreasing water supply obligations through conservation, water transfers, and recycling; increased storage (above ground and groundwater); and engineered solutions to redirect flows

through above-ground and below-surface conveyance. It is highly likely that a whole suite of new Delta solutions will need to be implemented over time as water supply demands change, increased environmental regulations are imposed, and climate change impacts the Delta.

Delta Plan Comment:
Include a western Delta water supply alternative in the Delta Plan.

In **Chapter 4** of the Draft Delta Plan, the challenges associated with developing new statewide storage and conveyance are addressed: *"The state must be prepared for the possibility that it could take many more years for the state to select, build, and operate large-scale storage and conveyance improvement projects. As an interim step toward increasing the state's water supply reliability, the state should consider smaller, more incremental operational and storage improvements..... may significantly enhance the operational flexibility of the state's system and improve the state's water supply reliability."* Studies have shown that a western Delta diversion could address the need for operational flexibility in a fish friendly way.

In **Chapter 6** of the Draft Delta Plan, the need to improve the water quality to protect human health and the environment is addressed: *"Improving water quality is key to achieving the coequal goals...Water quality in the Delta is influenced by climatic conditions (freshwater inflows and drought cycles), in-Delta water and land uses, tidal influences, and in-Delta and export diversions and operations. Water quality is generally better in the north Delta than in the central and southern Delta because Sacramento River inflows are greater than inflows from the San Joaquin River, and because the proportion of agricultural drainage discharges into the San Joaquin River is greater than discharges into the Sacramento River."* If water diversions were to occur in the western Delta that included advanced treatment for salts, nutrients, and other constituents of concern, the usage and subsequent return flows to the Delta could result in higher quality return water and less salt distributed in the watershed.

A Western Delta Diversion Concept Defined
The western Delta concept would include the potential use of existing (or construction of new) point(s) of diversion in the western Delta, west of the Antioch Bridge, that would allow the SWP and/or the CVP to divert water during times when those projects diversions are limited by environmental constraints or by increased levels of salinity. Having new point(s) of diversion available would give the **SWP and CVP the flexibility to avoid impacts to protected aquatic species that move from the western Delta into the central Delta during lower flow periods when salinity increases in the western Delta**. During those times, the water in the western Delta is brackish and would require treatment (desalination) prior to being usable for agricultural or domestic supplies. However, that treated water would essentially become a **drought-proof, fish "friendly" new or supplemental water supply that is "on-demand" and could potentially not require any new storage**. A very attractive aspect of an "on-demand" western Delta water supply is that, compared to other alternatives under consideration in the Delta Plan, a western Delta alternative could generate **new yield from water that has already flowed through the Delta and provided many of the environmental benefits**.

A western Delta water supply fits in very well with the goals outlines in **Chapter 4** related to statewide storage and conveyance. A western Delta intake(s) would provide operational flexibility for the state and federal systems. DDSD completed technical studies in 2005 and 2008 that concluded that a western Delta water supply treatment system is very cost competitive with the development of any new water supply, and can be operated in a way to avoid impacts to protected aquatic species. In addition, a western Delta treated water supply addresses the water quality goals outlined in **Chapter 6**. Simply put, if the water diverted from the Delta is treated to reduce or eliminate salts and other water quality constituents of concern before it is delivered to agricultural, industrial or domestic users, then the watershed runoff, tail water, and treated effluent will be of a higher water quality. The impacts associated with land applying salty water south of the Delta would be lessened significantly.

The feasibility level studies the District has completed to date include a fisheries study prepared by Hanson Environmental and a technical feasibility study prepared by RW Beck, Inc. Copies are available on DDSD's website at www.ddsd.org located under the tab titled Regional Coalitions. The studies provide the following conclusions:

1) Location of a brackish desalination plant in the western portion of the Delta costs a third of energy and dollar costs compared to developing a desalination project in the San Francisco Bay or the Pacific Ocean. The main reason this is true is because the salinity fluctuations are a third or less than the bay or ocean (i.e., the Total Dissolved Solids (TDS) in the western Delta ranges from 500 mg/l to 14,000 mg/l, while the bay and ocean TDS are 30,000 mg/l). Depending on the partners investing in the project, the cost to construct and operate a project varies from approximately $500/acre-foot to $900/acre-foot.
2) The water from a brackish water desalination facility can be treated to any level desired, from bottled water quality for human consumption, to a very much improved low salinity water supply for agricultural purposes. Generating and utilizing a high quality, low salinity water source helps to decrease the salinity levels in outfalls and/or runoff.
3) An intake in the western part of the Delta can be operated in a fish-friendly way by installing state-of-the-art fish screens and avoiding pumping periods when protected aquatic species cannot be adequately screened (i.e., during the egg and larvae stage).
4) Brine disposal is feasible in the western portion of the Delta by exporting the brine further to the west where salinity levels rise dramatically as the Delta empties into the bay. A desalination project does not add mass, but it does increase concentration. Brine discharge considerations will need to include not impacting other users of Delta water, as well as not impacting protected species.
5) A brackish western Delta desalination project is scalable. Preliminary capital cost estimates (completed in 2006) indicate that a five million gallon per day (MGD) project could be constructed for approximately $25 million, a 50 MGD project for $250 million, and up to a **million acre foot/year project (i.e., new drought-proof yield) for $3.5 billion (treatment**

facility cost only). A major benefit of a brackish desalination project in the western Delta is that it is "on-demand" and potentially would not require any new storage. While a million acre-foot-facility is larger than any desalination facility in the world and may not be practical in the short run, the projected costs should be appealing for a project of a smaller scale facility that produces new yield, compared to other alternatives being investigated.

6) DDSD has publicly-owned assets that could be made available for a starter project in the 5 to 10 MGD range. A starter project could be used to validate current cost estimates and better measure any environmental impacts of diversion and brine disposal. Some pilot testing has been completed.

Thank you for this opportunity to comment on the Delta planning process. Please do not hesitate to contact me at garyd@ddsd.org, or call me at (925) 756-1920.

Sincerely,

Gary W. Darling
General Manager

GWD:dj

cc: DDSD Board of Directors
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