September 16, 2009

Bay-Delta Conservation Plan Steering Committee
c/o Honorable Karen Scarborough, Undersecretary of Resources
Resources Agency
1416 Ninth Street, Ste 1311
Sacramento, CA 95814

Dear Members of the Steering Committee:

The City of Antioch appreciates the opportunity to provide comments to the BDCP Steering Committee and its consultants regarding both the *Proposed Long-Term BDCP Water Operations Range of Criteria (in Chapter 3 - the Working Draft Conservation Strategy)* and the *Draft Proposed BDCP Near-Term Conservation Measures for Hydrodynamic Modeling and Analysis.* These comments also address the modeling tools and the process that are or will be used to evaluate the impacts of the proposed project

Our concerns are related to the hydrodynamics and water quality within the Delta, and specifically focused on impacts to water quality and flows at the City of Antioch's drinking water intake. Our concerns, issues and requests follow:

- What is the existing condition? We recommend that results for both D-1641 and the current BO be provided.

- It is unlikely that all habitat restoration measures will be completed at once. What is the likely sequence and schedule of construction? Can model runs be provided for several periods of phased construction (e.g., 5 yr, 10 yr, etc. after project start)?

- The proposed project changes the Delta system in several very significant ways – e.g., creation of significant new areas of habitat restoration (changing the tidal prism and tidal dynamics); moving the points of diversion for some fraction of flows; and changes to operational rules, among other alterations. We request that the changes be "layered" one-by-one on existing conditions, so that we can understand the incremental effects of each class or type of major change.

- We are concerned that the move of the D-1641 compliance point from Emmaton to the Three Mile Slough Juncture may have significant water quality impacts at Antioch's intake. We request that the impacts of this adjustment to the existing M&I and Ag salinity requirements be evaluated and document explicitly.

- The results presented to date, while clearly a work in progress, seem to indicate that dramatic increases in salinity could occur in the Western Delta (i.e., at Antioch's intake). To evaluate the impacts of these changes on operations of Antioch's intake, salinity and flow data on a sub-daily (hourly or 15-minute) basis will be required.

- Several of the measures proposed in the BDCP Near-Term Conservation Measures have apparently not been included in model runs to date – e.g., use of 5-month average X2 results for the Feb-Jun time period, and "experimental" fall X2 flows. These measures have the potential to significantly alter salinity in the Delta, and should be evaluated individually rather than as part of a single proposed project run.

- The DSM2 model, as adjusted for the proposed BDCP project (i.e., including habitat areas, north Delta diversion locations and operations, etc.) should be provided to the modeling community. Especially if incremental runs (evaluating individual project components individually) will not be run by the BDCP team, the modeling community will be able to perform these and other runs necessary to evaluate the proposed project and its impacts.

- Hydrodynamic and WQ modeling results presented to date: the results presented by Armin Munevar on 9/10/09 are clearly preliminary and indicate that model development is still underway; the salinity results, for example, don't mimic usual seasonal patterns and are far too low to be credible. It will be necessary to get these modeling runs correct in order to understand the impacts of the project on hydrodynamics, water quality, and biology.

- The model for the future scenario (with changes) is uncalibrated (and can't be calibrated with real data). Nonetheless, a step-wise verification (or re-training) process would be helpful in lending credence to final model results. For example:

    - (1) the RMA 2-D model should be calibrated or validated using the existing condition and geometry, then used to model future scenarios (including habitat restoration)
    - (2) additional information should be provided on DSM2 calibration
    - (3) additional detail should be provided on how the ANN will be re-trained. As we understand it, the existing ANN was trained <u>not</u> on real data for the existing condition but rather using DSM2 model output. How will future condition salinity data (upon which the ANN will be re-trained) be developed? Will that process include a full range of conditions (wet and dry years, etc.)? Will the RMA 2-D or UnTRIM 3-D models be used in the process?

Sincerely,

Phillip L. Harrington
Director of Capital Improvements/Water Rights

c: James Jakel, City Manager
Lynn Tracy Nerland, City Attorney
Matthew Emrick