SOLANO COUNTY WATER AGENCY

March 10, 2015

Paul A. Marshall, Chief
Bay-Delta Office
California Department of Water Resources
1416, 9th Street, Room 215-37
Sacramento, CA 95814

RE: Emergency Drought Barriers IS-MND comments

Dear Mr. Marshall,

This letter is to provide comments on the Initial Study-Mitigated Negative Declaration (MND) for the Emergency Drought Barriers Project dated January, 2015. The Agency and Napa County Flood Control & Water Conservation District (Contractors) receive water supply from the State Water Project via the North Bay Aqueduct (NBA) diversion from Barker Slough in the Cache Slough Complex of the north Delta. Last year, the NBA Contractors expressed concerns to the Department regarding potential water quality degradation at the Barker Slough Pumping Plant (BSPP) with the proposed installation of the two North Delta barriers based on the preliminary modeling results of the proposed barriers by RMA, dated April, 2014. We were disappointed that the Department did not explicitly address the NBA in the recent MND given our known concerns.

Additional information provided by the Department upon request by the Agency shows that the water quality concerns at BSPP may be less than previously predicted by the RMA modeling effort. No mitigation is proposed by the Department based on these new DSM2 modeling results. Further inquiry revealed that differences in boundary conditions and some new assumptions regarding Delta agriculture consumption under drought conditions are important factors for the difference between the two studies. One assumption in particular is that in-delta agriculture diversions would be reduced due to poor water quality conditions in the Delta.

Generally, the NBA flow ranges from 100 CFS to a current max of 130 CFS during peak demand period, summer through fall. The cumulative capacity of Ag diversions in the Cache Slough Complex is an order of magnitude greater than the NBA diversion capacity. During the period peak demand, the water quality at BSPP is typically around 200 EC (i.e. specific conductance in uS/cm). The baseline model (without barriers) scenario confirms this number. This good water quality is maintained by influx of high quality fresh water drawn in from the Sacramento River to cover the cumulative NBA and Ag diversions out of the Cache Slough Complex.

810 Vaca Valley Parkway, Suite 203; Vacaville, California 95688
(707) 451-6090, FAX (707) 451-6099

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This backfill of fresh water supply into Cache Slough comes from three paths: (i) Sutter-Steamboat to Miner Slough, (ii) Steamboat to Cache Slough and (iii) up Cache Slough from the main Sacramento River near Rio Vista. The NBA and local agriculture diversions draw water through these paths providing for their combined diversions. See Figure 1 below.

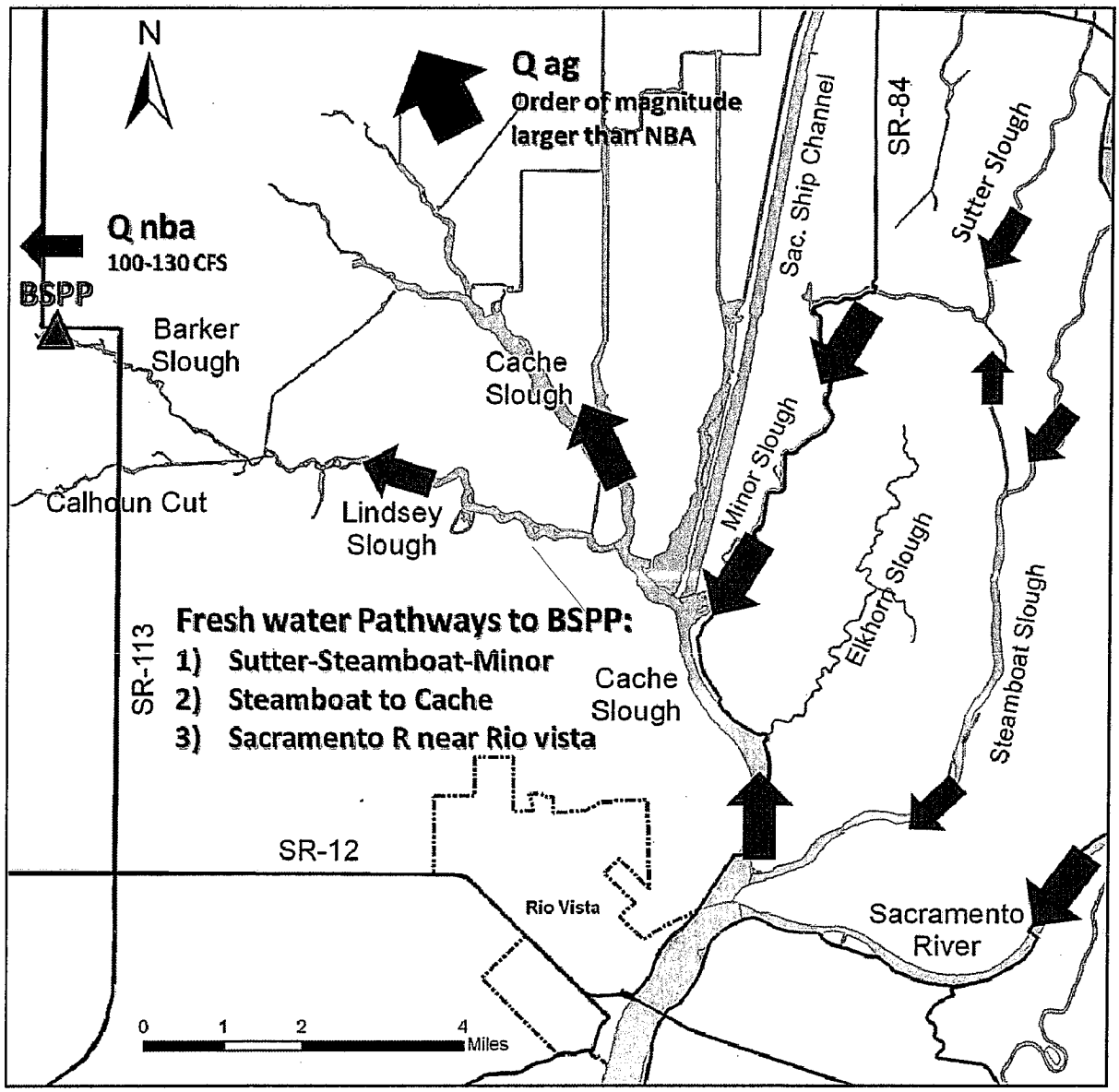

Figure 1: Cache Slough Complex Schematic

The installation of the North Delta barriers significantly reduces the flow through the Miner Slough and Steamboat Slough fresh water pathways. The only way for backfill water to enter Cache Sough would now be from the main stem Sacramento River near Rio Vista pathway. The modeling scenario with barriers shows that the water quality at the confluence of Cache, Lindsey, and Miner Slough (DSM2 Node 316, see Figure 2 below), reaches upwards of 1,800 EC while the water quality at BSPP degrades to approximately 400 EC. The significant difference in EC values between the NBA and the Cache, Lindsey, Minor confluence is unclear, as this confluence is the direct source water to the NBA during summer-fall conditions. Furthermore, under the modeled conditions there should not be any reduction in NBA or Ag diversions due to water quality concerns (because modeled EC remains low). Based on a simple mass-balance analysis of this situation we are not confident that these results are reflective of actual-conditions if the barriers are installed. How can a source water of 1,800 EC be diluted to 400 EC with upwards of potentially 1,000 cfs (from Ag diversions) leaving a shallow dead-end channel system?

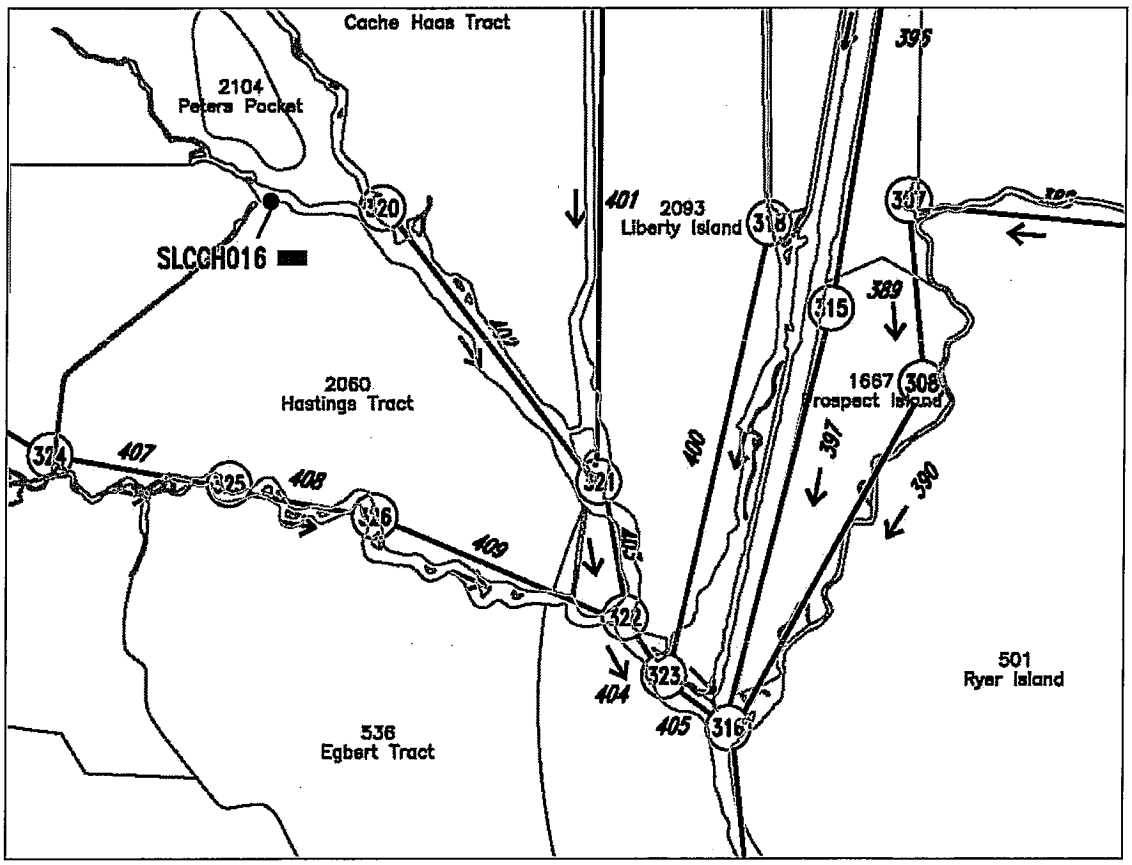

Figure 2: DSM2 Grid-Cache Slough Complex

Our concerns with the latest DSM2 modeling results may be a product of calibration accuracy or unrepresentative boundary condition assumptions. We understand the challenges in modeling situations with considerable uncertainty. We feel that the general accuracy of DSM2 modeling in Cache Slough has not been a high priority for the Department. While the latest DSM2 recalibration effort (Oct 2009) shows improvement

in the Cache Slough portion of the network, the results are still relatively poor especially with respect to water quality. Given the increased focus on this portion of the Delta for future mitigation and restoration efforts, a greater effort should be done to make this portion of the DSM2 model as accurate as possible.

The NBA Contractors with the assistance of CBEC have developed a detailed 2-D MIKE21 model of Cache Slough. We have established flow and water quality monitoring sites, collected recent bathymetry data, and conducted an inventory of agriculture diversions in Cache Slough. Through our initial studies we have gained considerable understanding of the local hydrodynamics in Cache Slough and learned that the system is sensitive to the assumed quantity of local Ag diversions. We would welcome an opportunity to collaborate with the Department's Delta Modeling Section to share information in an effort to improve DSM2 modeling in Cache Slough.

We have the following suggestions to improve the MND:

1. Revise the modeling to assume that agriculture diversions will not reduced with the barriers.
2. Review the work that SCWA did with CBEC to determine if incorporating this information in the DSM2 modeling would improve accuracy
3. Develop and implement a comprehensive monitoring plan if and when the barriers are installed to measure the true affects in real-time to further calibrate the modeling.

.If you have any questions, comments, or need additional information, please contact Thomas Pate at (707) 455-1104 or tpate@scwa2.com.

Regards,

David Okita
General Manager

Cc: Thomas L. Pate- SCWA
Phillip Miller- Napa County FC&WCD
Mike Hardesty- RD 2068

N20.DroughtBarriers-MND (ID 154951)