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May 14, 2009

Ms. Delores Brown  
Chief, Office of Environmental Compliance  
Department of Water Resources  
P.O. Box 942836  
Sacramento, CA 94236

Scoping Issues: Bay Delta Conservation Plan EIS/EIR

Dear Ms. Brown:

The East Bay Municipal Utility District (EBMUD) appreciates this opportunity to provide comments on the Bay Delta Conservation Plan EIR/EIS. EBMUD previously provided comments in letters dated March 21, 2008 and May 23, 2008, and filed additional comments electronically on December 12, 2008. EBMUD provides these consolidated comments that reflect the refinement of the project description provided in the February 13, 2009 Notice of Preparation.

A broad comment that overlies the entire BDCP process is a reminder and affirmation that the BDCP is the product of a self-selected group of willing participants working to develop a conservation plan that addresses a highly specific, focused issue: *developing necessary environmental documentation and obtaining long-term operating permits for water conveyance through and export from the Delta*. Implementation of the plan must be the sole responsibility of the BDCP participants. It is inappropriate to look outside the voluntary participants for solutions to the problems that result from operation of the conveyance and export system. In contrast to CALFED, the BDCP has been relatively successful thus far, in large part because it has remained focused and within its original, limited scope.

EBMUD is also particularly concerned with potential adverse impacts on the Mokelumne River salmonid fishery from operations of the proposed Two-Gate Project on Old River and Connection Slough. While we support the objectives of this project, now identified as a near-term project in the BDCP, impacts on the Mokelumne fisheries must be identified and mitigated as described in greater detail below.

Specific issues that should be addressed in the planning studies and in the EIS/EIR documents are described as follows:

- 1. Any BDCP conveyance facility must protect EBMUD's primary raw water conveyance infrastructure, particularly the Mokelumne Aqueducts.**
  - a. EBMUD's existing Mokelumne Aqueducts cross the route east to west of all alternative conveyance alignments, as shown in Attachment 1. EBMUD and

DWR engineers have met to discuss EBMUD's requirements for DWR's relocation of the three-pipeline Aqueduct, either tunneled below or elevated above the alternative conveyance alignments. EBMUD's primary requirements are that the Aqueduct pipelines, once relocated, must have:

- Forward design life of 75 years, which is standard for contemporary pipeline design and construction.
- Seismic performance needed to ensure reliable operations for this critical water supply facility.
- Flow capacity no smaller and operating head losses no larger than the existing pipelines
- Vehicular, crane and personnel accessibility for maintenance acceptable to EBMUD
- Associated appurtenances such as air valves, blow offs and interconnections.
- No additional maintenance burden over the existing operations.

Furthermore, provision for EBMUD's undiminished supply from its Mokelumne source must be ensured during construction.

Attachment 2 provides a list of requirements and issues to be addressed in regard to Mokelumne Aqueduct relocation. These requirements were discussed with DWR staff on March 3, 2009.

**2. Any BDCP intake facilities upstream of the Freeport Regional Water Authority's intake on the Sacramento River must be constructed and operated without impact to Freeport project operations.**

- a. DWR maps show that both Western and Eastern alignment alternatives for the conveyance facilities may have northerly intakes on the Sacramento River in the vicinity of the Freeport Regional Water Project (FRWP). Locating the intakes for CVP/SWP water upstream of FRWP is likely to have adverse impacts on Freeport operations due to increasing the frequency and duration of reverse river flows, during which time FRWP intake operations will be curtailed to avoid taking in discharged treated water from the Sacramento Regional County Sanitation District. EBMUD requests active participation from the beginning in DWR's modeling efforts to quantify this impact and identify potential mitigation measures.
- b. To the extent that the conveyance's northerly intakes are to be located in very close proximity to the FRWP intake, CVP/SWP diversions may influence river bed scour and/or create deposits detrimentally to the FRWP intake. Again, EBMUD requests active participation from the beginning in DWR's modeling efforts to quantify this impact and identify potential mitigation measures.

**3. Evaluation of conveyance facilities and operations, as well as conveyance construction, must include protection of Mokelumne-origin salmonids.**

- a. The EIS/EIR should consider the sustainability of salmon and steelhead from the Mokelumne River, which may be affected by hatchery reform measures being envisioned by the state and federal fisheries management agencies. These measures are aimed at increasing the genetic integrity and diversity of Central Valley fall-run Chinook salmon and steelhead by developing locally adapted populations. Impacts to Mokelumne origin salmonids should be analyzed separately in the EIS/EIR because the loss of life history diversity will reduce the viability of Central Valley salmonid populations. Mokelumne salmonids contribute to life history diversity through their timing of downstream juvenile outmigration, Delta rearing and timing of ocean entry, timing of upstream migration and fecundity and age composition of adult spawners. Monitoring data has shown that the Mokelumne fall-run population is distinct from the San Joaquin population in timing of both downstream outmigration and phase of cyclical abundance of adult escapement. The development of genetic diversity among Central Valley populations will help guard against the extreme fluctuations in salmon escapements seen in recent years. EBMUD requests active participation from the beginning in DWR's efforts to examine the potential impact of BDCP conveyance alternatives on the Mokelumne salmon population and to identify potential mitigation measures. This request applies equally to points 5, 6 and 7 below.
- b. The BDCP will need to increase survival of salmon and steelhead populations in each river system by not only creating Delta rearing habitat, but by creating more direct migratory pathways to the Bay. This is especially important for Mokelumne origin salmonids where the current Through Delta Conveyance delays the outmigration of juvenile fish, subjects them to increased predation and loss at the export pumps and causes significant straying of adult salmon migrating upstream because of Delta Cross Channel flows. The environmental assessment of Through Delta Conveyance needs to determine the impacts to Mokelumne origin salmonids separately from San Joaquin origin salmonids since measures that improve the survival and migration of San Joaquin salmonids may impact Mokelumne origin salmonids. This is especially true for actions like the isolation of the Old River corridor which might benefit San Joaquin salmonids at the expense of Mokelumne salmonids since the corridor would make it more difficult for Mokelumne fish to migrate out of the Middle River conveyance corridor.
- c. In considering construction and operation of an eastern alignment of the isolated conveyance facility, design and construction of tunnels under the Mokelumne River must sustain full and continual flow in the river to protect salmon migration.
- d. The EIS/EIR alternatives examined should include physical structures to keep Mokelumne-origin salmonids from becoming entrained in the South

Fork/Middle River/Victoria Canal conveyance corridor. Structural mitigation measures could include a method to route Mokelumne-origin salmonids away from the primary water supply conveyance corridor:

- One example of a structural measure is tunneling a Through Delta Conveyance channel under the Mokelumne River into the South Fork to allow the North Fork to be used for fish migration. The channel could be separated from the South Fork using a flood gate. A fish ladder would provide access to upstream migrating salmonids from the South Fork into the Mokelumne River or to the Sacramento River.
- Another structural option would be construction of a fish screen and boat lock at Terminous to prevent fish passage from the South Fork of the Mokelumne River into Little Potato Slough. This option would also facilitate the downstream migration of juvenile salmonids originating in the Mokelumne and Cosumnes Rivers. Alternatively an acoustic bubble barrier should be considered at the entrance to Little Potato Slough off the Mokelumne South Fork (see Attachment 3) to keep fish from being entrained in the through Delta conveyance corridor.<sup>1</sup>
- A third structural option would be to redirect the Mokelumne River flow into the Sacramento River upstream of the Delta Cross Channel, via Meadows Slough. This option would place the migratory Mokelumne and Cosumnes salmonids into the Sacramento River, where they would have a better chance of avoiding entrainment in the central and southern Delta.
- A fourth structural option would route the Through Delta Conveyance originating from the Sacramento River into the South Fork at Beaver Slough. This option should not preclude adult salmon from homing into the Mokelumne River via the South Fork. This option would create reverse flows in the South Fork upstream of Beaver Slough which would keep downstream migrating juvenile salmon from the Mokelumne River from entering the lower South Fork and Middle River conveyance corridor and instead the reverse flows above Beaver Slough would guide them into the North Mokelumne Fork. Hydrologic modeling should be performed to determine how often this condition exists under various tidal conditions.

While these potential structural alternatives may have merit, their inclusion in this letter does not imply that EBMUD has analyzed them and concluded that they will be effective. Rather, EBMUD requests that these alternatives be analyzed.

- e. In addition to consideration of structural measures, operational changes should be explored to protect salmonid passage between the Bay and the Mokelumne

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<sup>1</sup> Technology and methods to be considered should include concepts described in "Program for Consultation Regarding a Non-Physical Barrier on the San Joaquin River: Coordinating, Planning, and Monitoring," a March 2009 proposal by Mark D. Bowena and Steve Hiebert of the US Bureau of Reclamation's Technical Service Center Fisheries and Wildlife Resources Group, Denver, Colorado, and Sam Johnston of Hydroacoustic Technology, Inc., Seattle, Washington.

River, including changes to operating gates and pumping rates during fish-sensitive periods. Fish-sensitive periods vary by hydrologic conditions, as illustrated in Attachment 4, which illustrates changes in Mokelumne salmon outmigration based on water year type.

- f. Near term (<15 years) habitat restoration efforts should include tidal marsh restoration in the Mokelumne, Cosumnes and East Delta restoration opportunity areas.

Again, EBMUD appreciates the opportunity to provide these comments. We look forward to working with you to address these concerns.

Sincerely,



Alexander R. Coate  
Director of Water & Natural Resources

cc: Keith DeVore - Sacramento County Water Agency  
Eric Mische - Freeport Regional Water Authority  
Tom Howard - State Water Resources Control Board  
Michael Chrisman - Natural Resources Agency  
Lester Snow - Department of Water Resources  
Don Koch - California Department of Fish and Game  
Donald Glaser - U. S. Bureau of Reclamation, Mid-Pacific Region  
Russ Strach - National Oceanic & Atmospheric Administration  
Ren Lohofener - U.S. Fish & Wildlife Service, Regional Office  
Tim Quinn - Association of California Water Agencies  
Dennis Diemer - East Bay Municipal Utility District



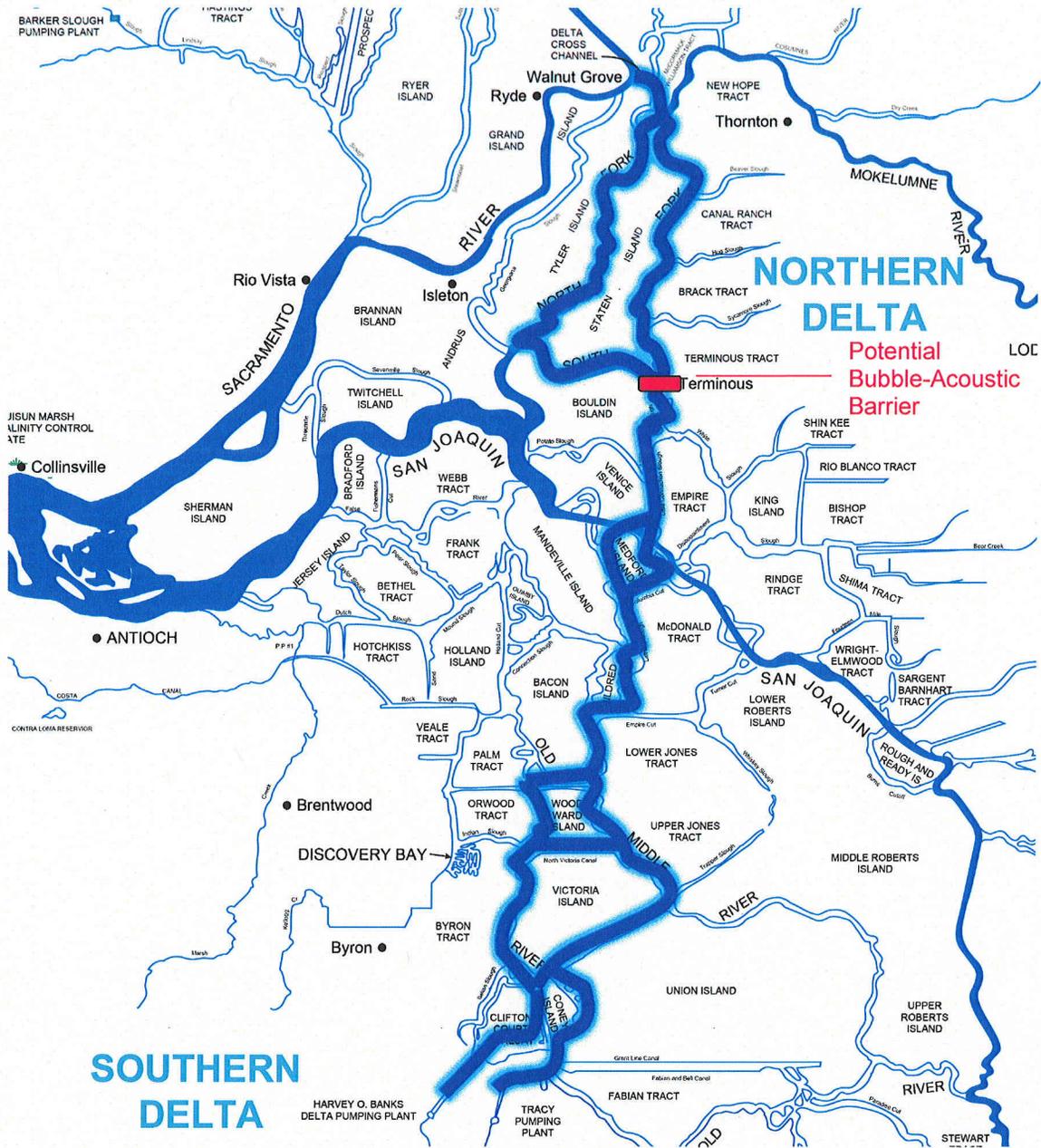
## Attachment 2

### **EBMUD Engineering/Construction Requirements: BDCP Conveyance - Mokelumne Aqueduct Crossings**

- **Locations of BDCP Conveyance crossings of the Mokelumne Aqueducts:** There are two alternative alignment of the BDCP Conveyance – one crosses the Mokelumne Aqueducts near Bixler and one near Holt. At both of these locations, the existing Mokelumne Aqueducts are below ground.
- **Mokelumne Aqueduct Cross Connections:** Include Mokelumne Aqueduct cross connections upstream and downstream of the BDCP Conveyance crossing. The cross connections are needed to facilitate O&M tasks.
- **Number of pipes/aqueducts:** The BDCP Conveyance crossing should include 3 pipes sized at least as large as the existing Mokelumne Aqueducts (65-inch, 67-inch and 87-inch diameters). Three pipes are needed under FSCC operations.
- **Common alignment with other relocated utilities/roads:** The Mokelumne Aqueducts should not be placed in a common alignment with other utilities (Kinder Morgan, PG&E, etc) as it would create a potential security concern.
- **For tunneled option beneath BDCP Conveyance:**
  - Need to maintain access for maintenance, this could be via new tunnel portals on either side of the crossing.
  - The tunnel would need to be situated in good material most likely located >60 -80' deep. A geotechnical study by DWR to confirm location of the tunnel is needed.
  - A tunnel would result in a low spot in the aqueducts and the capability of pumping out the aqueducts would be needed. Pumping capability to evacuate the siphon section should be incorporated into the project.
  - The crossing should be engineered to minimize confined space locations.
- **For elevated crossing option above BDCP Conveyance**
  - The levees of the proposed BDCP Conveyance will elevate the Mokelumne Aqueducts by a significant amount (supporting levee heights may be +20 feet high). This coupled with an elevated structure to support the Mokelumne Aqueducts could result in the Aqueducts being 20 to 30 feet higher than existing. This would create a high spot in the Aqueduct alignment. Appropriate air release valves will be required.
  - Vehicular and crane access is needed for maintenance of air valves and other appurtenances. If the appurtenances (air valves) are at the BDCP Conveyance levee edge and is accessible with vehicles and crane, vehicular access across the remainder of the canal is not necessary but is desired. If no vehicle access, a walkway crossing of the canal capable of supporting a hand cart and work crew would be required.
  - Do not share an elevated structure with the railroad or the gas pipeline.
  - EBMUD should not be responsible for maintenance of the elevated bridge structure. EBMUD does not want to be owners of a bridge.
  - There are seismic issues associated with the Delta and these issues need to be factored into the design of any structure that supports the Aqueducts.
- **Shallow Buried Crossing - Shallow buried crossing (e.g. like our river crossing).** Key concern is locating a buried pipe in suitable foundation material and long term maintenance.

**Attachment 3**

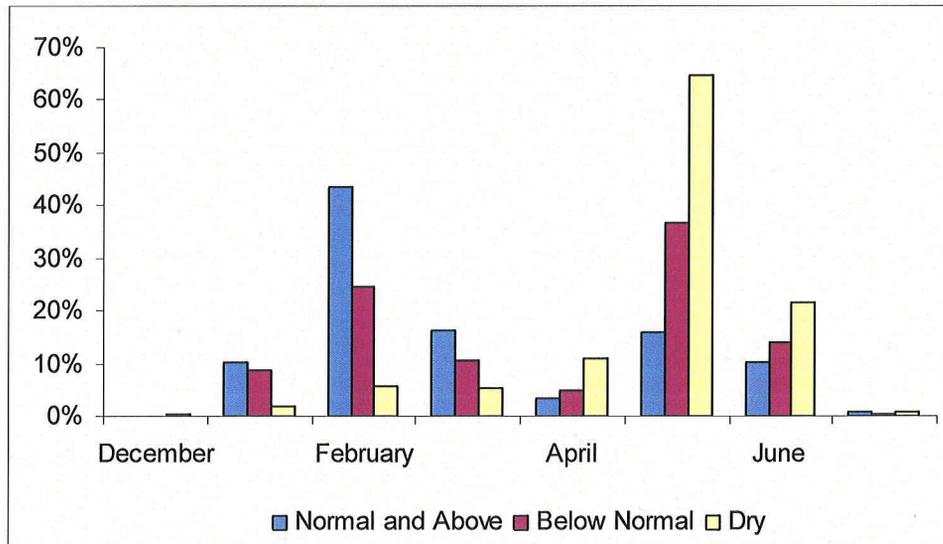
**Location of Air Bubble/Acoustic Barrier to be Considered**



**Attachment 4**

**Variation in Mokelumne Salmon Outmigration by Year Type**

The graph and table below indicate the percentage of total Mokelumne salmon outmigration by month based on water year type.



Month	Normal and Above	Below Normal	Dry
December	0%	0%	0%
January	10%	9%	2%
February	44%	25%	6%
March	16%	11%	5%
April	3%	5%	11%
May	16%	37%	65%
June	10%	14%	22%
July	1%	0%	1%