Preliminary DRAFT –5/26/00

Assessment of Delta Cross Channel operations and a Potential Second Sacramento River to Mokelumne River Connection

Introduction

Presented below is a proposal for water quality and north Delta fisheries and facilities evaluations to address the issues and impacts of Delta Cross Channel (DCC) operations and a potential second diversion between the Sacramento and Mokelumne Rivers. The DCC and the second diversion would serve the same primary purpose of improving water quality in the central Delta, but the second diversion would be screened to protect fish better. The second diversion would most likely be at Hood, but other locations will be considered.

The CALFED Preferred Alternative includes future North Delta water management strategies to improve water quality including the evaluation of various DCC closures and Environmental Water Account (EWA) operations and a possible second connection channel between the Sacramento and Mokelumne Rivers to address water quality degradation. The actions to be implemented will be selected in the context of CALFED's goal of improving fish, water quality and supply reliability.

The June 1999 *Revised Phase II Report* stated that, "A screened diversion at Hood will be evaluated and may be implemented if necessary." The required action is the evaluation and not the implementation. In very general terms, this report describes the nature of the evaluation and the conditions that must be met to proceed with the screened diversion. The evaluation must confirm that water quality goals can not be met by revising DCC operations, and show that a 0-4000 cfs diversion can meet water quality goals without adverse impacts on fish populations.

North Delta Conveyance Decision Steps

The following describes the programmatic decision process for North Delta conveyance.

- Study and evaluate a screened connection between the Sacramento and Mokelumne rivers at Hood with a range of diversion capacities up to 4,000 cfs as a measure to improve drinking water quality in the event that the Water Quality Program measures and DCC operations do not result in continuous improvements toward CALFED drinking water goals. The Hood diversion would include a fish screen.
- The Hood diversion is a contingent action to be considered only after three separate assessments are satisfactorily completed:

  1. A thorough assessment of DCC operation strategies and confirmation of continued concern over water quality impacts from DCC and EWA operations;
  2. A thorough evaluation of the technical viability of a Hood diversion facility; and,
  3. Satisfactory resolution of the fisheries concerns about a Hood diversion facility

  These evaluations will start immediately and will be completed within three years following the CALFED's programmatic EIS/EIR Record of Decision. If these evaluations demonstrate that a Hood diversion facility is necessary to address drinking water quality concerns and it can be constructed without adversely affecting fish populations, design will commence and a project specific EIS/EIR will be prepared. The facility will be constructed as soon as the design, environmental documentation and permitting are finalized.

Major Issues to Be Assessed

The major issues to be addressed in the evaluations include:

1. Can the unscreened DCC be reoperated to provide additional fish protection while achieving CALFED's water quality goals?

2. Can CALFED's Water Quality Program insure continuous improvement in water quality without a new diversion?

3. What water quality improvement and fisheries effects are associated with various levels of flow through a new diversion?

4. Will a Hood diversion be more favorable for fish than a DCC, considering that it would:
   - Exposes young salmon and other fish to a new major diversion and screen,
   - May impair cues of migrating fish on the Sacramento, Mokelumne, and San Joaquin Rivers,
   - May block or impair upstream passage of anadromous species, and
   - Reduces flows in the Sacramento River between the diversion and the DCC.

5. If the answers to the questions above demonstrate a need for a new diversion, what size diversion facility can be built and operated in conjunction with the DCC to improve water quality without adversely affecting fish populations?

Critical Policy Assumptions

The following assumptions will underlie the evaluations:

1. The total combined diversions at the DCC and the Hood diversion will not exceed the capacity of an open DCC.

2. To assess the need for water quality improvements, this program will need to define current conditions and assess how DCC reoperation and a Hood diversion could meet CALFED water quality goals.

3. Any fish screen at Hood will be designed to protect downstream migrant salmon, steelhead, American shad, sturgeon and delta smelt(?).

4. The criteria for downstream migrants at a Hood screen will be based on existing policies of NMFS, USFWS and DFG, as they may be modified based on ongoing studies. No new studies related to criteria for downstream migrants are needed as part of this program.

6. Any Hood screen will not be designed to protect fish eggs and larvae less than 20 mm long. If protection for eggs and larvae is needed, it will be provided through curtailment of diversions.

Proposal

The following is a brief outline of the measures to be taken during the next three years to provide the information needed to decide whether to proceed with construction with a Hood diversion or to rely on some modification of DCC operation to meet water quality and fishery goals.

Implementation of CALFED's Water Quality Program would begin immediately and involve:

- **Refine and clarify CALFED's drinking water quality goal.** CALFED has proposed a programmatic goal of continuous improvement in Delta drinking water quality. Before actions to improve drinking water quality can be selected, the relationship between the CALFED goal and current or potential drinking water quality standards must be clarified.

- **Identify and implement initial actions to improve Delta drinking water quality.** Actions currently described at a programmatic level must be translated into project-level specificity, planned, funded, and implemented.

- **Evaluate initial actions to improve Delta drinking water quality.** The benefits of actions implemented within the next three years will be monitored. For the three-year decision point, however, the primary information on benefits expected from initial actions will be based on modeling studies.

Long-term assessment of the DCC would start immediately and would be conducted by a team with members from the CALFED Operations, fisheries, fish facilities and water quality teams. This assessment would include the general tasks listed below:

- Determine operations to improve fishery protection by monitoring effects of present operating criteria and experimental variations of present criteria.

- Monitoring the water quality effects of the present and experimental operating criteria.

- Determine whether any DCC reoperation in combination with implementation of CALFED's Water Quality Program meet the water quality, water supply reliability and fishery goals.

The Hood diversion facility and joint operation with the DCC assessment will also start immediately an will address the following general tasks:

- **Conduct modeling and analysis of a potential screened diversion.** Study elements would include, but not necessarily be limited to: evaluation and modeling of operation of a Hood screened diversion facility of various sizes up to 4000 cfs; evaluation and modeling of operation of the DCC in conjunction with a Hood diversion structure; consideration of lessons learned from other ongoing fish screen programs; assessment of the effect of a Hood screened diversion on fish populations including upstream migrants and downstream migrants in the Sacramento, Mokelumne and San Joaquin systems; and definition of "adverse effect" on fish populations.

- Determine whether the above evaluation indicates a Hood diversion operated in combination with the DCC and the Water Quality Program would meet water quality, water supply reliability and fishery goals.

In accordance with CALFED policy, progress on all three segments of the program would be shared with the Delta Drinking Water Council or its successor for policy guidance, and both a Delta drinking water quality expert panel and a fishery science panel for technical review and recommendations.

Decision Process at End of Three Years. By the end of three years, staff would summarize results and draft recommendations as to whether to proceed with some modification of DCC operations alone, or to proceed with some modification of DCC operations plus construction of a new Sacramento-Mokelumne Channel. This summary and recommendations would be reviewed and commented on by the Delta Drinking Water Council, a Delta drinking water quality expert panel and a fishery science panel. Staff would then prepare a final summary for policy level review and decision as to a course of action to meet the three-year deadline.