



**CALFED  
BAY-DELTA  
PROGRAM**

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August 11, 2000

Honorable John T. Doolittle  
Chairman  
House Subcommittee on Water and Power  
Washington, DC 20515

Dear Chairman Doolittle:

Over the past several months you have expressed concern with CALFED's plan to improve water supply reliability and have questioned the adequacy of CALFED storage evaluations. Deputy Secretary of Interior David Hayes and other CALFED representatives have testified to your subcommittee and sent you follow up correspondence to help clarify CALFED's general approach to water supply issues. In this letter I would like to provide some additional detail about the role of storage in the CALFED program, and describe the context of yield estimates in our evaluations.

The variety of possible meanings stemming from the term "yield" has spawned significant controversy among water managers in recent years. Traditionally, the yield of a storage project is estimated as the amount of additional water supply that project would provide during an agreed upon dry period. While this definition seems simple enough, difficulty often arises in setting the many assumptions needed to estimate just how much additional supply the project might actually provide. To estimate yield for a new storage project in the Bay-Delta system, planners must make simplified assumptions about unmet water needs serviced by the project, rules for diverting, storing, and releasing water, downstream flow requirements for fisheries and navigation, Delta water quality standards, and rules for Delta exports. Planners must also consider how the new storage project might be operated in conjunction with other storage projects to optimize benefits. Any yield estimate must be conditioned on all of these assumptions and others.

While not discounting the need to provide adequate supplies of water during dry periods for all beneficial uses, contemporary water planning requires equal consideration of other possible water project benefits. Primary among these are water quality benefits, environmental benefits, flood control benefits, and operational flexibility improvements that allow water system operators to deal with unexpected incidents without significantly impacting project water

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**CALFED Agencies**

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<b>California</b>	<ul style="list-style-type: none"> <li>The Resources Agency</li> <li>Department of Fish and Game</li> <li>Department of Water Resources</li> <li>The Reclamation Board</li> <li>California Environmental Protection Agency</li> <li>State Water Resources Control Board</li> <li>Department of Food and Agriculture</li> <li>Delta Protection Commission</li> </ul>	<b>Federal</b>	<ul style="list-style-type: none"> <li>Environmental Protection Agency</li> <li>Department of the Interior</li> <li>Fish and Wildlife Service</li> <li>Bureau of Reclamation</li> <li>U.S. Geological Survey</li> <li>Bureau of Land Management</li> <li>U.S. Army Corps of Engineers</li> </ul>	<ul style="list-style-type: none"> <li>Department of Agriculture</li> <li>Natural Resources Conservation Service</li> <li>U.S. Forest Service</li> <li>Department of Commerce</li> <li>National Marine Fisheries Service</li> <li>Western Area Power Administration</li> </ul>
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supplies or the ecosystem. This integrated planning approach applies particularly well to CALFED, given the Program's multiple objectives of restoring ecosystem health and improving water supply reliability, water quality, and levee system integrity.

As you know, completion of our Record of Decision later this month will mark the end of Phase II of the CALFED Program. Our focus during Phase II was to develop a comprehensive plan for improving Bay-Delta system conditions over the next 30 years, denoted by CALFED as Phase III. This plan includes a variety of actions to improve water supply reliability in the Bay-Delta system. While CALFED's plan includes an implementation plan for actions to be undertaken in the first seven years of Phase III, most identified actions will require further definition of project specifics and site-specific environmental review and permitting. During these site-specific studies, implementing agency planners will develop the detailed information required to better answer your questions about the yield of CALFED storage projects. Equally important, these site-specific studies will also reveal how these projects can contribute to improved water quality, system operational flexibility, flood control, and ecosystem restoration. All of this information will be necessary to accurately estimate total benefit-cost ratios.

During Phase II, CALFED completed a screening process to select potential surface storage projects for more detailed study and possible implementation early in Phase III. Through this screening process, CALFED considered the potential of a long inventory of proposed projects to contribute to Program objectives. CALFED also considered the consistency of each project with all program objectives and solution principles, and eliminated incompatible projects from consideration. Through this process, CALFED selected three surface storage projects with a total of 950,000 acre-feet of new storage to pursue early in Phase III. CALFED also identified two additional storage projects that will be studied in partnership with local entities, leading to subsequent decisions on implementation. As described below, each of these projects exhibits unique characteristics in terms of the combination of benefits it might provide. As noted, dry year water supply is only one of these potential benefits. Based upon existing information, all selected projects are compatible with the Program objectives and solution principles.

Each project discussion is followed by the tasks and due dates for each project as laid out in the Framework for Action. During these processes, specific project purposes will be developed and costs and benefits will be identified.

**Shasta Lake Enlargement** - The Shasta Lake Enlargement would include a 6- to 8-foot raise of the existing dam, expanding capacity by approximately 300 TAF. The enlargement could help offset losses of Trinity River diversions to the Sacramento River, improve the cold water reserve in Shasta Lake to regulate Sacramento River water temperatures, and improve overall water supply reliability. The most significant environmental impact appears to be inundation of a few hundred yards of the McCloud River; the California Public Resources Code Section 5093.542 seeks to protect the free-flowing McCloud River but also provides for investigations for potential enlargement of Shasta Dam.

Detailed studies of the Shasta Lake enlargement have not been completed. However, programmatic estimates suggest that the enlargement may contribute approximately 50 TAF of dry year water supply. Operation more for improved temperatures could reduce water for water supply.

<u>TASK</u>	<u>DUE DATE</u>
Obtain federal feasibility study authorization and resolve legal issues to allow state agency cooperation	End of 2000
Complete feasibility study and preliminary design	End of 2003
Complete NEPA process, obtain federal authorization and funding, and begin construction	End of 2004

**Los Vaqueros Enlargement** - The purpose of the Los Vaqueros Enlargement is to improve drinking water quality. As currently envisioned, this project would not directly provide new yield or increase total water deliveries. A 300 to 400 TAF enlargement of the existing Los Vaqueros Reservoir could provide unique opportunities for water blending to improve overall Bay-Area drinking water quality. This could make water supplies more reliable since they would be less vulnerable to periods of poorer water quality in the Delta. The proximity of Los Vaqueros to the Delta would facilitate filling during times of better Delta water quality.

<u>TASK</u>	<u>DUE DATE</u>
Identify potential local partners and development agreement with CCWD and other partners as needed for necessary studies	March 2001
Secure authorization and funding for feasibility studies	July 2001
Begin feasibility study and environmental review	July 2001
Complete feasibility study	July 2002
Complete environmental review, documentation, and preliminary design on a selected alternative	End of 2003
Finalize agreements with project participants	Mid 2004

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<u>TASK</u>	<u>DUE DATE</u>
Obtain necessary authorizations and funding (including local voter approval)	End of 2004
Begin construction	End of 2005

**In-Delta Storage** – CALFED evaluations have shown the potential advantages of storage near the south Delta export facilities. This storage can provide significant benefits in providing additional flexibility in timing of Delta exports and in improving overall water supply reliability. In-Delta storage would be formed by transforming one or more Delta islands into storage reservoirs with a capacity of approximately 250 TAF. In-Delta storage would be filled at times when Delta fish are less vulnerable to diversions and would be emptied to support Delta exports at times when direct pumping out of the Delta is most critical to the fish. In-Delta storage could be filled and emptied several times each year to aid more flexible management of water based on real-time needs of the fishery resources.

<u>TASK</u>	<u>DUE DATE</u>
Complete reconnaissance level study	August 2000
Make decision as to whether to proceed with feasibility study of alternatives (federal funds)	October 2000
Select project alternative and initiate negotiation with Delta Wetlands owners or other appropriate landowners for acquisition of necessary property	December 2001
Develop project plan and complete any additional needed environmental documentation	July 2002
Complete environmental review and documentation, obtain necessary authorization and funding, and begin construction	End of 2002

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**Millerton Lake Enlargement or Equivalent** - An enlargement of Millerton Lake, or equivalent, should be considered in the context of broader San Joaquin River water management including flow and habitat restoration, flood management, conjunctive use, reservoir re-operation and water transfers. The offstream Montgomery Reservoir would be evaluated as one alternative to a Millerton Lake Enlargement.

An enlargement of Millerton Lake exclusively for increased water supply may only yield relatively small contributions to increased water supply. Early in the Program, CALFED staff performed preliminary evaluations to help rank potential new storage in various parts of the Bay-Delta system. Enlargement of Millerton Lake appeared very expensive due to site conditions and the very large dam embankment quantities required to contain the reservoir. Preliminary cost estimates for a Millerton enlargement of about 700,000 acre feet were \$1000 to \$1500 per acre feet of yield. A feasibility study will better define potential benefits and impacts and how the project could complement other ongoing restoration activities on the San Joaquin River.

<u>TASK</u>	<u>DUE DATE</u>
Begin comprehensive study of alternatives	Middle of 2000
Begin feasibility study on selected project	Middle of 2001
Complete environmental review and documentation	Middle of 2006

**Sites Reservoir** - Sites Reservoir could help water supply reliability for all uses. Reservoir sizes from 1.2 MAF to 1.8 MAF are included in the ongoing study. The project formulation includes consideration of a water exchange program to use the water supply of the project for agricultural and wetland uses within the Colusa Basin in exchange for modifications to diversion patterns from the Sacramento River. The feasibility study will provide information necessary for a decision on implementation of Sites Reservoir or alternatives.

Detailed studies of Sites Reservoir are ongoing. However, preliminary estimates suggest that the reservoir could contribute approximately 200 TAF of dry year water supply. This water supply could be increased or decreased depending on final project formulation and operational rules.

<u>TASK</u>	<u>DUE DATE</u>
Develop joint planning program through an MOU with local water interests	October 2000
Complete environmental review and documentation	August 2004

**Sandridge Off-Stream Reservoir** – Locally developed storage can help improve water supply reliability for individual water purveyors. An example is Sandridge Off-Stream Reservoir, an 8,000 acre-foot surface water reservoir to serve the Dudley Ridge Water District. The site is located on marginal farmland which will be encircled by a dike to contain water. The reservoir will be filled from the California Aqueduct when winter water is available and used early during the following irrigation season. Preliminary estimates indicate that this SWP interruptible entitlement water may be available to fill the reservoir in about half the years. The project is funded under Proposition 13. It is currently in design and is expected to be on line in 2001.

**Groundwater Conjunctive Use** – Groundwater/conjunctive use projects will be implemented through locally managed projects or through partnerships with local and regional interests to obtain local and CALFED Program benefits. These projects will include a combination of purchase, lease or sharing storage space with others, and will include consideration of existing groundwater storage facilities. CALFED has identified project areas in the Sacramento Valley, near the Delta, the San Joaquin Valley and Southern California that could provide 500 TAF to 1 MAF of storage, and as of June 2000 three memoranda of understanding have been negotiated with local agencies.

Since specific sites are yet to be identified, no specific studies of the groundwater contribution to water supplies have been made. However, programmatic estimates suggest that full development of CALFED's Stage 1 goal could contribute approximately 200 TAF of dry year water supply.

<u>TASK</u>	<u>DUE DATE</u>
Finalize agreements with project proponents	February 2001
Begin feasibility studies with CALFED and Proposition funding	March 2001

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<u>TASK</u>	<u>DUE DATE</u>
Report on feasibility studies including potential benefits	Late 2002
Implement early stages of most promising projects	Late 2004
Implement additional projects	By End of Stage 1

As CALFED moves into Program implementation, we will continue to assess our progress in meeting all Program objectives and will make adjustments as necessary. Additional actions needed to meet the water supply reliability needs of the Bay-Delta system will be considered within the framework provided in the CALFED Program Plan. I hope this information is useful in describing the role of storage in the CALFED Program. If I can provide additional information or clarification, please call me at (916) 657-2666.

Sincerely,



Steven R. Ritchie  
Acting Executive Director,  
CALFED Bay-Delta Program

cc: Honorable Dianne Feinstein  
US State Senate  
331 Hart Senate Office Building  
Washington, DC 20510

CALFED Policy Group