

CALFED Bay-Delta Program
Information for Senate Select Committee on CALFED
June 9, 1998

Water storage in the CALFED Bay-Delta Program

The draft PEIS/EIR evaluates a full range of storage options and sizes. Storage of water in surface reservoirs or groundwater basins can provide opportunities to improve the timing and availability of water for all uses. The benefits and impacts of surface and groundwater storage vary depending on the location, size, operational policies, and linkage to other Program elements. By storing water during times of high flow and low environmental impact, more water is available for release for environmental and consumptive purposes during dry periods when conflicts over water supplies are critical. Properly managed, storage turns low value water into high value water for all uses.

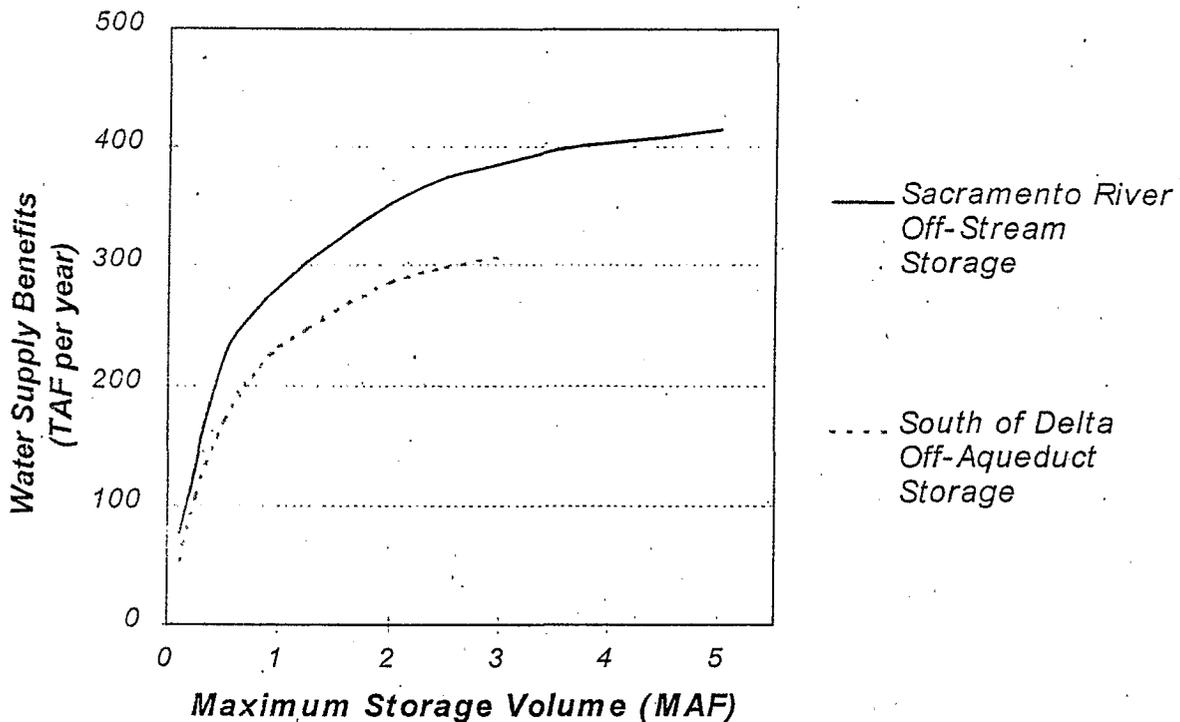
Surface storage can often provide other important benefits including flood control, power generation and regulation, and recreational opportunities. However, construction of surface storage reservoirs can result in significant terrestrial and aquatic impacts and is generally very costly. Groundwater storage, in general, has fewer terrestrial and aquatic impacts and is less costly than surface storage, but is limited in flexibility due to slower rates of storage and withdrawal compared to surface storage. Other issues such as adverse effects on third parties and fish and wildlife, land subsidence, costs of electric power for pumping, and degradation of water quality in aquifers must be addressed before implementing any groundwater storage program.

A significant amount of storage exists in the Sacramento - San Joaquin system today. Beginning in the 1920s, large reservoirs were built in Northern California for hydroelectric power, flood control, and to provide a more reliable source of water supply. There are now over 30 major reservoirs within the Sacramento - San Joaquin system with a combined gross capacity of over 25 MAF. Average annual unimpaired runoff (the amount of runoff that would occur in the absence of dams and diversions) in the two river basins is about 27 MAF.

During Phase II, CALFED evaluated various types of new storage components for their potential to contribute to an overall approach to meeting Program objectives. Different types of storage components would provide different kinds of benefits. Storage upstream of the Delta would function differently than storage adjacent to export canals downstream of the Delta. Off-stream surface storage provides different benefits and generally fewer environmental impacts than on-stream surface storage. Groundwater banking and conjunctive use programs could enhance benefits provided by surface storage.

A preliminary evaluation was performed early in Phase II to determine an appropriate range of storage to be examined at a programmatic level. A rough approximation of water supply benefits for various storage volumes was made for both Sacramento River off-stream storage and south of Delta off-aqueduct storage. Results of this evaluation are summarized in the following chart.

Water Supply Benefits of Surface Storage



This preliminary evaluation indicates that most water supply benefits of Sacramento River off-stream storage are achieved with about 3 MAF of storage, while most water supply benefits of south of Delta off-aqueduct storage are attained with about 2 MAF of storage. Of course, the relationship of water supply benefits to storage volume is highly dependent on operating assumptions. Much more detailed information about specific locations of new storage, potential allocation of storage benefits, and operational goals and constraints would be necessary to determine an optimal volume of storage from a water supply perspective.

Other types of surface storage considered in Phase II include San Joaquin River tributary storage and in-Delta storage. Relatively smaller volumes of storage are practical for these types of storage facilities due to engineering considerations. Groundwater banking and conjunctive use in the Sacramento and San Joaquin Valleys was also considered in Phase II. The practical storage capacity available for groundwater storage in these areas will be determined only after detailed study of specific projects and full consideration of local concerns. For study purposes, groundwater storage volumes of 250 TAF in the Sacramento Valley and 500 TAF in the San Joaquin Valley were considered.

Based on this preliminary evaluation of potential water supply benefits and practical consideration of acceptable levels of impacts and total costs, the range of total new storage considered for evaluation in Phase II was from zero up to about 6 MAF. This amount of

new storage was considered a reasonable range for study purposes; much more detailed study and significant interaction with stakeholders will be required before specific locations and sizes of new storage are proposed. For the purposes of the Phase II evaluation, an inventory of potential new storage projects was compiled. Those projects that appeared most feasible were evaluated to provide representative information on costs and benefits. A more complete screening process, taking into account potential environmental impacts, engineering feasibility, costs, and benefits, will proceed over the coming months.

CALFED has evaluated the following types of new storage:

Upstream surface storage -- New storage upstream of the Delta could store a portion of runoff that occurs in large volumes over short periods of time in the winter and spring.

In-Delta surface storage -- In-Delta surface storage could be developed by converting one or more Delta islands into wetlands.

South of Delta Off-Aqueduct storage -- New, south of Delta off-aqueduct storage could be filled by diversion through the Delta-Mendota Canal or the California Aqueduct during periods of high flow in the Delta.

Groundwater storage -- Groundwater storage can take the form of direct groundwater banking operations or groundwater conjunctive use operations.

There seems to be a general consensus developing on the usefulness of additional storage in all of the alternatives. However, there is not a stakeholder consensus on the appropriate mix of the above types of storage. It is clear that additional storage is the primary means of increasing overall water supplies.

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Land Use Effects

Affected acreage. The draft PEIS/EIR discusses the eight CALFED program elements. Some of these elements would have effects on land use. Most notably, the ecosystem restoration program would affect significant acreage in the Delta for development of habitat needed to enhance fish and wildlife populations, particularly populations of endangered species. The draft PEIS/EIR indicates a range of acreage potentially affected by the Program up to about 365,000 acres, statewide, for all types of land and for all program elements combined. However, this estimate is subject to additional modification as we develop methods to avoid, reduce, or mitigate land use effects.

Other discussions have occurred regarding suggestions for land use changes (retiring or fallowing agricultural land) to redirect water supplies from agricultural uses to other purposes. At the request of the Bay-Delta Advisory Council (BDAC), CALFED staff and agencies prepared a discussion paper on the possible effects of this suggestion. However, the discussion paper is not part of the draft PEIS/EIR. Further, the suggested land retirement policy is not included in the draft PEIS/EIR and has been specifically rejected as a CALFED Program action.

Issues. Comments offered at our hearing suggest these significant issues:

- the CALFED Program should focus ecosystem restoration activities on land in public ownership, as appropriate.
- the CALFED Program should examine opportunities available for preservation of agricultural land.
- the CALFED Program should more thoroughly examine the potential effects of land use changes on local governments' fiscal condition, including retirement of special districts' bonded indebtedness.

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CALFED and water rights.

Water in California is used under a complex set of water laws found in the State Constitution and various statutes, regulations, and court rulings. Some of these laws establish rights to use water, other laws establish procedures for residents to obtain water right permits and licenses, and still other laws establish controls or limits on the exercise of those rights.

CALFED is comprised of State and Federal agencies with the common goal of developing a long-term plan to address water management issues focused on the Delta. The CALFED Program has not proposed any action which would modify water rights. CALFED has no statutory authority to grant, modify, repeal, or change any water right.

The agreement between State and Federal agencies that established the CALFED Program explicitly recognizes that each participating agency has legal responsibilities and authorities and that the agreement does not constrain or limit the participating agencies in carrying out their legal responsibilities.

The State Water Resources Control Board, a participating member of CALFED, is now engaged in a separate water rights proceeding, under its legal responsibilities, to review and possibly place conditions on water rights throughout the Bay-Delta watershed. This proceeding implements part of an agreement between the State and Federal governments regarding protection of beneficial uses of Bay and Delta waters.

The CALFED Bay-Delta Program is a long-term planning activity addressing four resource areas: ecosystem restoration, levee system integrity, water supply reliability, and water quality protection. The SWRCB water rights proceeding is a short-term activity addressing water rights for implementation of the Bay-Delta Water Quality Control Plan adopted by the SWRCB.