Fall 2003

A Joint Project of

Upper San Joaquin River Basin

The Upper San Joaquin River Basin Storage Investigation (Investigation) is a joint feasibility study by the Bureau of Reclamation and the California Department of Water Resources (DWR). The Investigation is being performed in accordance with the CALFED Programmatic EIS/EIR Record of Decision, which recommended evaluation of water storage in the Upper San Joaquin River Basin to "contribute to restoration of and improve water quality for the San Joaquin River and facilitate additional conjunctive water management and water exchanges that improve the quality of water deliveries to urban communities." The first phase of the feasibility study was completed in October 2003.

PHASE I MILESTONE REACHED

Phase I of the feasibility study focused on initial screening of surface storage options and a conjunctive management approach. The screening considered preliminary engineering and environmental issues associated with specific locations throughout the eastern San Joaquin Valley foothills.

The Investigation initially identified 17 surface storage options, of which 6 have been retained for further study. Most of the retained sites are in the San Joaquin River watershed at or upstream of Friant Dam (see figure and descriptions inside). Estimates of construction costs and potential new water supplies were prepared for each of the retained options.

Benefits of additional water storage vary, and would include new supplies to support river needs, current and future water users, flood protection, and hydropower generation. Conjunctive management options are discussed on page 3.

Findings from Phase I Studies

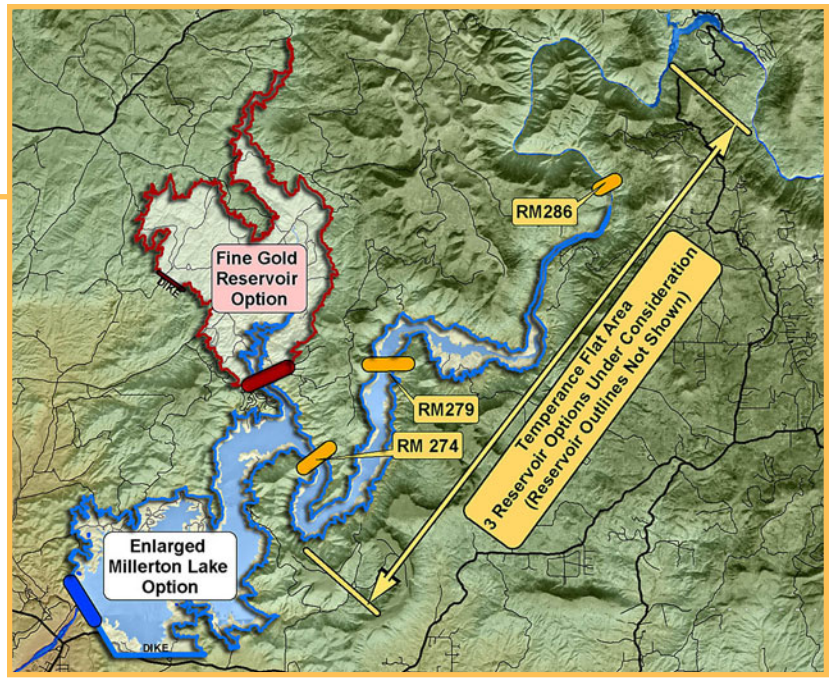
- Water supply in the Upper San Joaquin River Basin is available and could be developed with additional storage
- Six surface storage options that appear technically feasible will be considered further
- Preliminary costs for surface storage options are within the range of other reservoirs under consideration in California
- Public support for further evaluation of water storage is strong
- Interest in regional conjunctive management of surface water and groundwater is high

Benefits of Additional Water Storage

- Reduce groundwater overdraft in the Eastern San Joaquin Valley
- Provide year-round or seasonal flows in the San Joaquin River for ecosystem needs and river water quality improvements
- Increase the level of flood protection to areas downstream of Friant Dam
- Increase hydropower generation flexibility
- Increase flexibility of Delta and south-of-Delta facility operations

SURFACE STORAGE OPTIONS UNDER CONSIDERATION

The following options will be evaluated in greater detail as the feasibility study proceeds.



Raise Friant Dam. Friant Dam is a 319-foot-high concrete gravity dam on the San Joaquin River about 20 miles northeast of Fresno. A dam raise of up to 140 feet would increase storage capacity of Millerton Lake by up to 870 thousand acre-feet (TAF). This option would require a large supplemental earthfill dam or dike on the southwest portion of Millerton Lake and two additional, but considerably smaller, saddle dams.

Fine Gold Creek Reservoir. Fine Gold Creek Reservoir would be located on a small tributary of the San Joaquin River that enters Millerton Lake. Water would be pumped from Millerton Lake into Fine Gold Reservoir and released when needed to meet water demands. A reservoir of up to 800 TAF is being considered, which would require a 580-foot-high main dam and a saddle dam.

Temperance Flat Reservoir. Temperance Flat is a wide, bowl-shaped area in the upper portion of Millerton Lake approximately 13 miles upstream of Friant Dam. Temperance Flat Reservoir would capture the flow of the San Joaquin River downstream of Kerckhoff Dam and before it enters Millerton Lake. Three potential dam sites are under consideration: river mile (RM) 274, RM 279, and RM 286. Multiple sizes and dam types are under consideration at each site.

Yokohl Valley Reservoir. Yokohl Valley Reservoir would be located approximately 15 miles east of Visalia. This reservoir would operate as a pump-back storage reservoir served by the Friant-Kern Canal. It would require construction of a 260-foot-high earthfill dam and two small saddle dams.

A seventh option, the enlargement of Mammoth Pool, is being considered by a group of stakeholders and will not be studied in detail as part of the Investigation.

STAKEHOLDER INVOLVEMENT

Phase 1 was supported by a structured public participation process that integrated public input into early planning and analysis. Stakeholders brought a high level of experience and local knowledge to the process and provided a variety of recommendations, responses, and reviews that informed the plan formulation process. Local support of increased storage on the Upper San Joaquin River is strong, and surface storage is promoted actively by several organizations. Also participating in the public process are representatives of the environmental community, which has stated its support for river restoration and has expressed a preference for operational changes, other non-structural actions, and conjunctive management to develop new water supplies.

The public involvement program will continue into Phase 2 with communication tools that provide the public with timely information and comment opportunities. The public process successfully engaged a large, diverse group of interested parties during Phase 1. As the feasibility study progresses, additional agencies and interest groups are likely to become engaged in the process.

Reclamation and DWR are committed to completing the process in a manner that is open to all concerned parties and fully discloses the effects, both beneficial and adverse, of storage in the Upper San Joaquin River basin. The graphic on the back page of this brochure depicts the schedule for the feasibility study and environmental documentation during Phase 2.

FINDINGS FROM PHASE 1 STUDIES

Water Supply Is Available - New water supply is defined as water that could be made available at Friant Dam, over and above the water supply currently delivered. For each surface storage option, model simulations identified how much water could be available for each Investigation objective (river releases for restoration and water quality, and water supply reliability). Of an average available supply of about 245 TAF/yr, new storage could develop up to 225 TAF/yr.

Facility Costs Appear Reasonable - Preliminary construction cost estimates for dams and other major facilities were prepared during Phase 1. Although detailed study is needed to more fully define project costs, preliminary estimates are within the range of other surface storage facilities under consideration in California.

Estimated Supply from Surface Storage Options

Reservoir Site	Net Additional Storage (TAF)	Estimated New Supply (Average TAF/Yr)	Total Estimated Cost[1] ($Million)
Friant Dam Raise	125 - 870	25 - 150	150 - 840[1]
Fine Gold Creek	120 - 800	15 - 115	200 - 540
Temperance Flat			
River Mile 274	450 - 2,100	95 - 225	610 - 1,000
River Mile 279	450 - 2,700	95 - 235	510 - 1,750
River Mile 286	450 - 1,350	95 - 190	410 - 790
Yokohl Valley	450 - 800	70 - 100	350[2]

(1) Raise Friant Dam costs include land acquisition costs because of the relative significance of residential development at Millerton Lake. Cost estimates for other options do not include land.

(2) Cost for a 450 TAF reservoir was updated from a study completed in 1975. Costs for an 800 TAF reservoir are under development.

All Options Affect Power Generation or Use - Fine Gold and Yokohl Valley reservoirs would require more power to pump water than could be generated from water releases. Temperance Flat and Friant Dam Raise options would generate hydropower but would also affect the operation of existing hydropower facilities in the San Joaquin River watershed. Power generation and use will be studied further as the Investigation proceeds.

Environmental Impacts Are Being Considered - Environmental issues considered in Phase 1 included potential impacts to terrestrial and aquatic vegetation and wildlife, recreational resources, and land uses. Initial screening did not include formal consultations with environmental, resource, or permitting agencies. The initial review indicated that the potential impacts appear mitigable and no fatal flaws exist at this point. Further review is needed to identify potential impacts and mitigation requirements in detail.

CONJUNCTIVE MANAGEMENT OPTIONS

The Investigation is also evaluating opportunities for the conjunctive management of surface water and groundwater resources. Conjunctive management actions can increase available water supplies through additional active or in-lieu recharge or the development of groundwater banking projects.

A structured approach has been established to identify and evaluate conjunctive management opportunities that have the potential to support Investigation objectives. The Investigation is proceeding with a three-step evaluation, consistent with the CALFED policy of supporting voluntary, locally controlled groundwater projects.

Step 1
Identify potential for recharge and stakeholder interest
Jul-Oct 2003

Step 2
Define potential projects
Nov 2003-Mar 2004

Step 3
Evaluate potential projects
Mar-Jun 2004

The Investigation team began by identifying potential for recharge and the level of stakeholder interest; this step is largely complete. A theoretical analysis of potential recharge, given the physical constraints, indicated that the potential exists to recharge groundwater using otherwise uncaptured water from the San Joaquin River.

Working sessions in late 2003 and early 2004 will help identify specific projects, barriers, and policy actions related to conjunctive management.

Potential projects will be evaluated according to hydrologic, physical, institutional, and legal criteria to distinguish projects that could support the Investigation objectives. Where appropriate, conjunctive management projects will be incorporated into Phase 2 evaluations.

To receive updates of study progress and receive notifications for future meetings, please contact:

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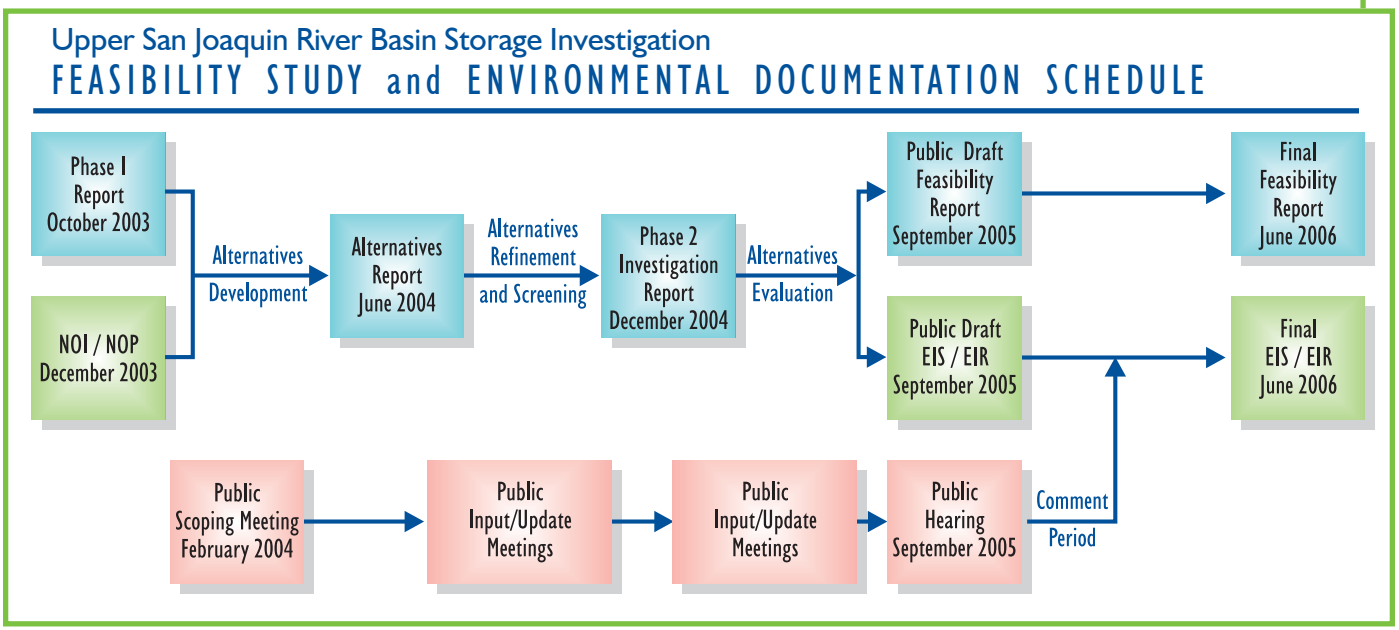
NEXT STEPS

Phase 2 of the feasibility study will include the necessary technical analysis to evaluate alternatives, prepare an Environmental Impact Statement (EIS) and Environmental Impact Report (EIR), and identify a recommended action for consideration by decision-makers.

Formal environmental review begins when Reclamation and DWR publish a Notice of Intent (NOI) and a Notice of Preparation (NOP).



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