Upper San Joaquin River Basin Storage Investigation
Workshop Summary - DRAFT
Workshop # 4 - February 11, 2003

Introduction

This summary describes Workshop # 4 of the Upper San Joaquin River Basin Storage Investigation (Investigation). Charles Gardiner, the workshop facilitator, opened the meeting by discussing the agenda and participation principles for the workshop. Agenda topics included:

- Welcome and Meeting Overview
- In-Progress Phase I Report
- Functional Equivalence and Continuation Criteria
- Modeling Assumptions
- Preliminary Results of Operation Modeling
- Next Steps

Welcome and Meeting Overview

Mr. Gardiner reviewed items in the "parking lot." Some of the parking issues will be addressed in Phase I, while others cannot be addressed until a more detailed study in Phase II. For more information on this topic and others in the workshop, refer to the presentation materials, which are available on the project website: www.mp.usbr.gov/sccao/storage/ .

Jason Phillips, Reclamation's project manager for the Investigation, provided a review of the study area and approach for the Investigation, including Phases I (Appraisal Study) and Phase II (Feasibility Study and EIS/EIR), and the CALFED goals for new storage in the upper San Joaquin watershed.

Participants' comments and questions (*hereafter presented in italics*) about the Investigation purpose and process included:

- *The Fish and Game Code 5937 issue and the FWUA/NRDC settlement process is the same thing and should not be listed separately.*

- *The potential of incorporating conjunctive use as a storage alternative is currently not included in the parking lot issues?* There was a substantial amount of discussion regarding conjunctive use in Workshop #3. Conjunctive use is being considered as a storage option during Phase I. However, details such as specific groundwater storage locations and operations are beyond the scope of the Phase I investigation. Phase II will incorporate more specific information regarding conjunctive use. Conjunctive use is also a focus of other ongoing studies, including CALFED's Conjunctive Water Management Program. Phase II will incorporate data from these other studies.

In-Progress Phase I Report

Bill Swanson presented the components and current working status of the In-Progress Phase I Investigation Report.* The project team is releasing this report now to provide documentation of progress to date, to detail the planning approach, and to provide information on next steps. The project team hopes that by providing this early opportunity to review and comment on this material, the burden of the review/revision process later in Phase I will be lessened.

The main components of the report include: 1) water resources problems and opportunities; 2) study planning approach; 3) initial screening of potential surface storage options; and 4) modeling approach and initial evaluations. Future drafts of the report will include the modeling results, estimated project costs, and potential benefits. A second draft of this report, incorporating comments and new modeling refinements, will be provided in mid 2003.

Workshop participants inquired about the role of cost/benefit analysis, and the method for quantifying water allocation benefits in the Investigation. For Phase I, the objective is to identify quantities of water that additional storage could make available for different beneficial uses. A cost/benefit analysis will require more detailed studies that will be completed during Phase II.

Participants' comments and questions about the surface storage option screening included:

- *How does the study predict what water transfers or exchanges are going to occur?* This study does not focus on specific exchanges that may be made. Instead, it recognizes that increased surface water supply reliability will facilitate the ability of water district to enter into exchange agreements. Currently there are no known discussions of Friant water being transferred out of the Friant Division.

- *The Study Team should evaluate multiple restoration scenarios instead of just one.*

- *Currently there are three Temperance Flat options, yet only one option carried forward for the analysis. Is it possible that one of the Temperance Flat options not included may still provide greater benefits than one of the other retained options?* For this appraisal-level review, Reclamation considered potential dam sites at three locations, one at River Mile (RM) 274, one at RM 279, and another at RM 280. Although detailed evaluations were not completed at any of the three sites, technical information, including cost estimates, was prepared for the RM 279 site. The RM 279 dam site was considered a representative dam site location for consideration of Temperance Flat Reservoir based on a preliminary review of geologic and topographic conditions, potential storage volume, construction access, and cofferdam and main dam size requirements, at the three dam sites. Before a single dam site can be selected, additional study will be necessary to support a more detailed comparison.

* The report is available at the project website, http://www.mp.usbr.gov/sccao/storage .

- *How many houses will be inundated if a Temperance Dam is built?* Relatively few structures will be inundated for any of the Temperance Dam options. A more detailed inventory in Phase II will be needed to assess the relocation requirements of this option.

- *The report states that there are seismic concerns at Pine Flat. Do you have additional information? A* study done by the Corps of Engineers indicated that there are seismic concerns, yet did not elaborate on any specifics. The project team will follow up on this issue.

Workshop participants were asked to submit their comments by **February 28, 2003,** to Jason Phillips, U.S. Bureau of Reclamation, Mid-pacific Region, 2800 Cottage Way, Sacramento, CA 95825 or jphillips@mp.usbr.gov .

Functional Equivalence and Continuation Criteria

Jason Phillips presented the functional equivalence framework, which will be applied to help compare the benefits of potential storage options. The framework is designed to identify desired accomplishments (derived from CALFED ROD guidance and goals), organize results of the operational studies, and compare storage options. A handout shows the framework.*

Goals specific to the CALFED purpose for this investigation are to: 1) facilitate conjunctive use; 2) facilitate exchanges with urban users; 3) contribute water for San Joaquin River Restoration; and 4) improve San Joaquin River water quality. Goals associated with other regional needs are to: 5) reduce flood damage in the San Joaquin River Basin; and 6) increase hydropower generation. Specific objectives have been identified for these goals, and indicators have been developed to measure the relative accomplishments of the surface storage options according to the objectives and goals.

Participants' comments and questions about the functional equivalence framework included:

- *Are there priorities given to functional equivalent purposes? For example, Friant dam was originally for flood control.* The main priority of the study is to evaluate the CALFED problems of water supply reliability, San Joaquin River water quality, and San Joaquin River restoration. However, additional benefits, such as flood control and hydropower, are also addressed.

- *How are non-surface water storage alternatives evaluated?* As noted above, Phase I is not identifying specific conjunctive use facilities. Evaluation of conjunctive use is based on two indicators: 1) change in total surface water deliveries, and 2) water available for additional groundwater recharge. These indicators will be used to measure how well a surface water storage option facilitates conjunctive use.

* The handout is available at the project website, http://www.mp.usbr.gov/sccao/storage .

Modeling Assumptions

Yung-Hsin Sun presented an overview of the modeling procedure and modeling assumptions for Phase I. This information was presented in greater detail at previous workshops.

The Phase I investigation consists of three main modeling tasks: 1) improvements to the CALSIM model by adding Millerton Lake operations; 2) benchmark study; and 3) Single purpose-analysis for storage options. The project team has completed most of the first two tasks and is refining the single purpose analysis.

The single purpose analysis is designed to independently evaluate the amount of water that would be available from a storage option to contribute to the CALFED goals of water supply reliability, San Joaquin River water quality, and San Joaquin River restoration flow. One of the initial steps of this analysis is to evaluate the enlargement of Millerton Reservoir by 700 TAF. Results from these simulations will be used to refine the functional equivalence framework, and to compare the other surface storage options.

Participants' comments and questions about the modeling update included:

- *Are you accounting for temperature, EC, or any other parameters when modeling restoration?* The current objective of the San Joaquin River restoration analysis is to determine how much water is available for restoration. Specific parameters, such as temperature and EC, will not be addressed until the river restoration plan has been developed.

- *San Joaquin River water quality and restoration components could be modeled by: 1) simulating a pulse flow; 2) allowing a month of recovery following a water release (typically dry periods follow wet periods); and 3) accounting for the possibility of exchanges when additional storage behind Friant would allow release of higher flows in other rivers, providing environmental benefits.*

- *Has the Study Team coordinated with Bulletin 160 on incorporating global warming into its planning efforts?* The CALSIM model includes historical hydrologic data, and current and future water demands that are largely based on data developed for Bulletin 160. The project team is also working cooperatively with other CALFED studies toward a consistent set of baseline assumptions.

- *The Investigation should model carry over storage operation.*

Preliminary Results of Operations Modeling

Preliminary results from CALSIM model simulations were presented for each type of retained storage option. For the Friant Enlargement Concept, single purpose analysis

results were presented for water supply, water quality, and restoration flow evaluations.

Participants' comments and questions about the modeling update and preliminary results included:

- *The results do not clearly show how a Friant Dam raise would increase flood protection for the 100-year event.* In order to adequately model flood protection for a 100-year storm, an hourly time-step model will be needed. The more detailed model will be developed during the Phase II study.

- *If a significant amount of flood flows is still being "wasted," a larger reservoir should be evaluated.*

Next Steps

- Provide additional printed copies and receive comments on the In-Progress Report
- Incorporate additional restoration flow patterns into the analysis
- Simulate Temperance Flat Reservoir with a capacity of 2 million acre-feet
- Gather additional information on conjunctive use for inclusion in the Investigation
- Complete the "single-purpose" analyses for all options
- Develop cost estimates for the storage options
- Release technical memoranda that describe the storage options in detail
- Further define the criteria for continuing the Investigation into Phase 2

The next workshop will be on April 30 in Fresno (location TBA). The workshop will include refined results from the single-purpose analyses and cost estimates for storage options.

Workshop Participant	Organization
Jon Basila	Sunmaid
Tom Boardman	San Luis and Delta Mendota Water Authority
Karen Brown	Department of Water Resources
Tony Buelna	Bureau of Reclamation
Steve Burke	Friends of the River
Julie Carpenter	Bureau of Reclamation
David Cehrs	
Marc Christopher	Friends of the River
Jim Cobb	Resource Management Coalition
Valerie Curley	Bureau of Reclamation
Phil Desatoff	Fresno County
Steve Edmondson	National Marine Fisheries Service
Scott Frazer	U.S. Fish and Wildlife Service
Dennis Fox	OSCC
Karla Kay Fullerton	Fresno Farm Bureau
Lyn Garner	KRCD
Sean Geivet	Terra Bella Irrigation District
Merry Harman	
Steve Haze	Millerton Area Watershed Coalition
David Hopelain	Eastern Madera Company
Randy Houk	Columbia Canal Company
Michael Jackson	Bureau of Reclamation
Norman Kuhr	Chowchilla-Redtop
Paula Landis	Department of Water Resources
Stephen Lee	Bureau of Reclamation
Orvil McKinnis	Westlands Water District
Dale Mitchell	California Department of Fish and Game
Chris Montoya	Department of Water Resources
Beatrice Olsen	U.S. Fish and Wildlife
Allan Oto	Bureau of Reclamation
Steve Ottemoeller	Madera Irrigation District
Malia Pickering	Table Mountain Rancher*í*a
Phil Pierre	Root Creek Water District
Kevin Richardson	Army Corps of Engineers
Stephen Roberts	Department of Water Resources
Mario Santoyo	Friant Water Users Authority

James Sims	Farmer
Neil Sims	San Joaquin River Association
Kevin Shakespeare	Congressman Devin Nunes
Al Solis	Kruzzan & Associates
Jim Staker	SJRECWA/SLCC
Ernie Taylor	Department of Water Resources
Ieal Tredbatch	Greenleaf Orchards
Doug Welch	Chowchillla Water District
Dennis Wichelms	California Water Institute
Carolyn Yale	U.S. Environmental Protection Agency

Study Team Members Present

Reclamation	Jason Phillips Marian Echeverría
DWR	Richard Hayes Waiman Yip
PAM	Charles Gardiner
MWH	Bill Swanson Yung-Hsin Sun
CDM	Coral Cavanagh Courtney Black Carrie Metzger
MBK	Walter Bourez
SKS	Russ Grimes
Daniel B. Steiner, Consulting Engineer	Dan Steiner