

CHAPTER XII SUMMARY OF FINDINGS

Major findings of this report include the following:

- Potential to raise Shasta Dam and enlarge Shasta Reservoir has been found technically and economically feasible in past studies. It is one of five surface water projects recommended for further consideration in the CALFED Bay-Delta Program.
- A continuing significant need exists to implement actions to help increase survival of anadromous fish populations in the upper Sacramento River.
- Demands for water in the Central Valley and elsewhere in the State of California exceed available supplies; this condition is expected to become more pronounced in the future.
- To avoid major impacts to the economy and overall environment of the State, developing water sources to increase the reliability of providing adequate supplies of water for urban, agricultural, and environmental purposes is necessary to meet future demands.
- A significant need exists to restore ecosystem resources in the upper Sacramento River area, including wetlands, riparian, and aquatic habitat, and water quality conditions in the study area.
- Other identified problems and needs include the threat of flooding and related flood damages along the Sacramento River downstream from Keswick Dam, and a need for increases in renewable energy supplies in the State.
- Primary and secondary planning objectives were developed to address identified problems and needs, including the following:

Primary Objectives – Formulate alternatives specifically to address the following:

- Increase the survival of anadromous fish populations in the Sacramento River primarily upstream from the RBDD.
- Increase water supplies and water supply reliability for agricultural, M&I, and environmental purposes to help meet future water demands, with a primary focus on enlarging Shasta Dam and Reservoir.

Secondary Objectives – To the extent possible, through pursuit of the primary planning objectives, include as opportunities features to help accomplish the following:

- Preserve and restore ecosystem resources in the Shasta Lake area and along the upper Sacramento River.
- Reduce flood damages along the Sacramento River.
- Develop additional hydropower capabilities at Shasta Dam.

- On the basis of identified problems and needs, relationships to other programs and projects, and Federal planning guidance, the following Mission Statement was developed:

To develop an implementable plan primarily involving the enlargement of Shasta Dam and Reservoir to promote increased survival of anadromous fish populations in the upper Sacramento River and increased water supply reliability, and to the extent possible through meeting these objectives, include features to benefit other identified ecosystem, flood control, and related water resources needs.

- Of the numerous water resources management measures identified and evaluated, seven were retained for potential inclusion into concept plans to address the two primary planning objectives, and five measures were identified to address the three secondary objectives.
- The No-Action plan and twelve concept plans were formulated from the retained resources management measures. Three concept plans focused on anadromous fish survival, four concept plans focused on water supply reliability, and five concept plans combined various measures to address the two primary and one or more of the secondary objectives.
- Six concept plans were identified for recommended further development as alternative plans in the remainder of the feasibility study, including the following:

No-Action (No Federal Action) – No change in estimated future water supplies to address reliability problems in California, opportunities to help increase anadromous fish survival, or opportunities to help restore ecosystem values, flood control, or hydropower needs in the upper Sacramento River watershed.

WSR-1 – Increased water supply reliability with a 6.5-foot raise of Shasta Dam and 290,000 acre-foot enlargement of Shasta Reservoir.

WSR-2 – Increased water supply reliability with an 18.5-foot raise of Shasta Dam and 636,000 acre-foot enlargement of Shasta Reservoir.

WSR-4 – Enhance water supply reliability with an 18.5-foot raise of Shasta Dam, 636,000 acre-foot enlargement of Shasta Reservoir, and increased conjunctive water management in the Sacramento River watershed.

CO-2 – Increase anadromous fish habitat and water supply reliability with an 18.5-foot Shasta enlargement similar to WSR-4 that also includes features to increase anadromous fish survival through restoring inactive gravel mines along the upper Sacramento River.

CO-5 – Multipurpose plan similar to CO-2 that includes features for ecosystem restoration around Shasta Reservoir and along the upper Sacramento River.

- Enlarging Shasta Dam and Reservoir and related actions for the purpose of increasing AFRP flows were eliminated as a viable component of the alternative plans because the increased minimum flow would not result in significant increases in spawning habitat for anadromous fish. However, because of a strong interest in this measure, further study is believed warranted. Should the study demonstrate a significant beneficial relationship between increasing minimum flows and increased fish survival, this component could be included in future alternative plans.

- Each of the initial alternatives recommended for further development addresses the primary objectives and to varying degrees the secondary objectives. Each also would contribute directly and indirectly to the four CALFED objectives of water quality, water supply reliability, ecosystem restoration, and delta levee system integrity. In addition, each would support implementation of other important resources programs such as EWA.
- One of the without-project condition assumptions is that Banks Pumping Plant capacity remains at 6,680 cfs. Increasing the projected pumping capacity to 8,500 cfs would result in proportionally greater water supply reliability accomplishments from each of the plans evaluated. This would not change the relative findings of this report.
- Next steps in the plan formulation process include detailed development of full alternative plans, completing environmental baseline studies, identifying potential impacts and mitigation features, developing a tentatively selected plan, completing environmental compliance investigations; and, supporting technical analyses. These tasks will lead to completion of the Integrated Feasibility Report, which will serve both Federal decision-making and NEPA/CEQA compliance purposes.
- Public involvement and participation will play a key role in the development of detailed alternative plans and selection of a recommended plan.
- Important factors in future study efforts include State of California participation in the SLWRI to address concerns raised in California Resource Code 5093.342(c), and identification of non-Federal sponsor(s) for the two primary project purposes.

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