

Enlarging Shasta Lake feasible, U.S. report says

by Peter Fimrite, San Francisco Chronicle

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The billion dollars it would cost to raise the dam holding back the largest reservoir in California would, at least on the surface, be money well spent, a federal study concluded this week.

A study by the U.S. Bureau of Reclamation found that the maximum possible enlargement of Lake Shasta near Redding - a scheme that would add 18.5 feet to the top of the dam - would be both feasible and "economically justified."



Lake Shasta water flows through five penstocks to the hydroelectric power plant at the base of Shasta Dam. A proposal to raise the dam's height drew approval in a federal report and concern in some circles. (Photo: Paul Chinn / The Chronicle)

The report is part of an ongoing effort by the department to find ways to increase the state's water supply, and it provides the first comprehensive analysis of the proposed expansion of a reservoir that provides drinking water to some 2 million people and irrigates about 3 million acres of farmland.

"This planning process is crucial in trying to balance water supply stability with ecosystem improvements," said Pete Lucero, spokesman for the Bureau of Reclamation. "The water supply in California was built for 20 million people 50 years ago and now there are 38 million people, so we're going to have to do something to fix the aging infrastructure we have in the state."

The study analyzed four possibilities, including doing nothing. It determined that raising the dam 6.5 feet would be "marginally justified." Height increases of 12.5 and 18.5 feet were judged the more feasible options.

Raising Shasta Dam would, no doubt, be a massive undertaking. The increased height of the dam would mean some buildings, businesses and resorts would have to be moved, and a few camping spots and secondary roads would be inundated.

The Winnemem band of Wintu Indians has expressed concerns that cultural and religious sites next to the lake would be flooded.

The good thing is that storage capacity would increase 14 percent, which would improve hydropower, recreation and fish habitat, and help alleviate California's perpetual water shortages, according to the report.

It would also cost \$1.07 billion to increase the height of the dam 18.5 feet, a price that many politicians, fisheries experts and environmentalists are likely to question.

'Tiny sliver' of water

Jay Lund, the director of the Center for Watershed Sciences at UC Davis, said the extra water wouldn't be very useful without major improvements to the Sacramento-San Joaquin River Delta.

"About seven-eighths of this water supply is for south of the delta," Lund said. "It would be hard to make use of this water without improving the delta for water exports."

One such improvement being contemplated, he said, is the highly controversial peripheral canal, which would divert water around the delta and send it through aqueducts to Central and Southern California. Some water managers believe a peripheral canal is needed to replace the current system, which sucks water directly from the delta, causing salinity levels to fluctuate and creating unnatural flows that confuse fish and disturb the estuary's ecological balance.

Lund stopped short of accusing the bureau of proposing the dam expansion as part of a scheme to get a peripheral canal built. He said the amount of water being talked about - enough to supply between seven and 13 cities the size of Davis - is too small to make such a plan viable.

"This would not solve California's water problem. It would be just a tiny sliver," Lund said "The amount they are talking about is about one-thousandth of California's water supply."

Shasta Dam, which was completed in 1945 on the upper Sacramento River northwest of Redding, is the second-largest reservoir run by the Bureau of Reclamation in the country, behind Grand Coulee Dam in Washington. It is part of the Central Valley Project, a huge federal system designed to provide flood protection, irrigation, drinking water and hydropower for California.

The 602-foot-tall dam holds back 4.5 million acre-feet of water - an acre-foot is enough to cover one acre in a foot of water - and is fed by rain and snow from the Cascade range.

The water from Shasta and five other federal dams provides drinking water and irrigates farmland from Redding to Bakersfield. The bureau is also required to release enough cold water to support fish populations, which have been steadily declining since the dam was built.

A dam helping fish?

Tens of thousands of spawning chinook salmon and steelhead trout once used the Sacramento River for their yearly migrations. There were so many fish in the old days that legend has it the pioneers could pluck a meal from the river using a pitchfork. The Sacramento still has the largest run of chinook in California, but studies have shown that the vast majority of the remaining fish were raised in hatcheries.

The feasibility report contends that a larger dam would allow the department to release more of the cold, fresh water into the Sacramento River that salmon and steelhead need for spawning. In all, \$49 million of the \$92 million a year in benefits the report claims a higher dam would generate would be for fish, Lund said.

"It's kind of an interesting argument - that dams are good for fish," Lund said. "The salmon that spawn just below Shasta Dam used to hang out way upstream. We've basically been maintaining an artificial cold water pool below the dam for fish to live" because the dam blocked off the historical spawning grounds.

The Shasta report is one of five surface water storage studies that are part of the CALFED Bay-Delta Authorization Act, which was passed by Congress in 2004 and authorized \$389 million for water system improvements in the state.

Lucero said the dam expansion plan, in the works for a decade, is still in the early stages. It will take another two or three years before an official proposal is ready to be presented to the public, but he said the analysis clearly shows that enlarging the reservoir is a legitimate option.

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