

Torpedo the dam idea

Water desalination winning support as best option for Santa Cruz's future

BY PAUL ROGERS
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After two years of detailed studies, Santa Cruz leaders are strongly leaning toward a saltwater desalination project — rather than building a dam — to meet projected water shortages into the next century.

Preliminary plans recommend a \$39.5 million system that would not pump water directly from the ocean, as is done in Santa Barbara, Catalina Island and Saudi Arabia, but from deep wells underneath coastal bluffs on Santa Cruz County's rural north coast.

Water officials and city leaders familiar with the idea say desalination could provide water far more cheaply for Santa Cruz's growing population than building a new dam. It would also come sooner and without a dam's controversial environmental impacts.

"I think it's probably the most practical solution," said Mayor Neal Coonerty. "Major dam projects are dinosaurs."

The idea received the highest recommendation from among nine options in Santa Cruz's Water Alternatives Study, begun in 1991 by Camp, Dresser & McKee, a Walnut Creek engineering firm. A finished draft of the study is scheduled to be released in December.

Controversy likely

The issue is certain to become a hot political topic in the coming years. Desalination would be the first large water project in slow-growth Santa Cruz since 1962, when the city's only reservoir, Loch Lomond, was constructed.

Large questions remain, however. Oil companies in the 1950s discovered the wa-

ter under north coast cliffs during fruitless searches for oil. But no one knows how much is there. How much the project would increase water rates or affect population growth also is unclear.

Under the scenario, crews would dig eight wells on the bluffs above the Pacific Ocean, each 1,500 feet deep. There would be two well sites, one between Bonny Doon Road and Back Ranch Road, and the other at an area known as Majors, just north of Red-White-and-Blue Beach.

Piped down coast

The underground water, a mixture of salt and fresh, would be piped down the coast to a small facility on Santa Cruz's west side.

Because brackish water has a much lower content of salt than sea water, it would not require a full-scale treatment plant, said Santa Cruz Water Director Bill Kocher.

"You won't see much," Kocher said. "Just a relatively small building, no bigger than a house."

Water would be forced through a membrane in a process known as "reverse osmosis" and pumped to the Bay Street Reservoir, a 39 million-gallon tank on Santa Cruz's west side at Cardiff Place and High Street. Salty brine left over would be dumped in the ocean three miles out to sea through Santa Cruz's existing sewage outfall pipe.

Engineers estimate the project could provide 4.9 million gallons of fresh water a day, or about 36 percent of Santa Cruz's supply during summer drought months.

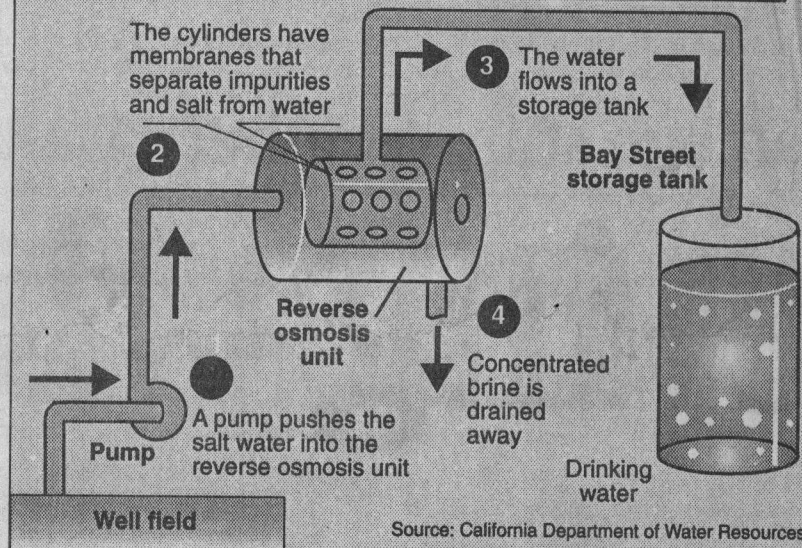
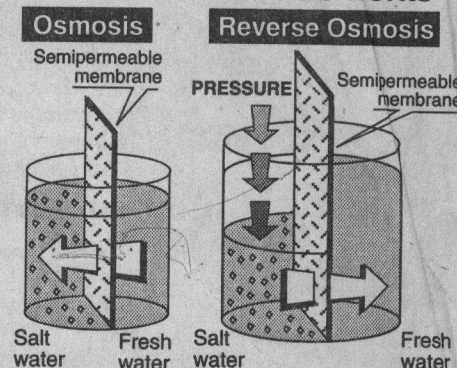
The project would need approval from the California Coastal Commission, federal and regional water officials.

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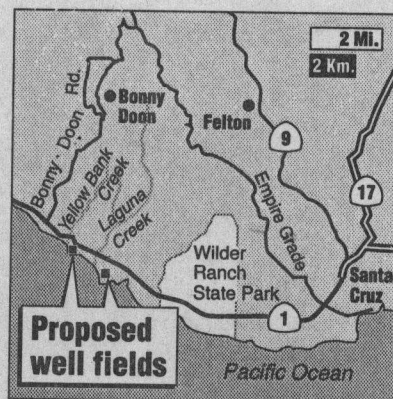
Santa Cruz's plans to treat water

In natural osmosis, fresh water normally would pass through a semipermeable membrane toward salt water on the other side. The process is reversed when the salt water is under pressure. That causes the membrane to filter out salts and other impurities, producing fresh drinking water from brackish well water.

How reverse osmosis works



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— Mayor Neal Coonerty

Desalination winning support in Santa Cruz

■ WELLS

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Santa Cruz's future water picture is best summed up as too many people and not enough water, say planners. Last year, 80,000 customers were served by the Santa Cruz Water Department. By 2005, there will be 105,000.

"We just can't bury our heads and pretend we don't need the water," Kocfier said. "We do."

City engineers predict water use will increase 23 percent, from the current 4.2 billion gallons a year to 5.17 billion gallons in 2005. Mandatory low-flush toilets, landscaping changes and rationing are expected to cut use somewhat, but not enough.

Because of the environmental damage and growth pressures that would come with a new dam, locals for years have torpedoed suggestions that a new dam be built to solve water problems.

During the latest study engineers visited potential dam sites, reviewed zoning maps and geologic tables and contacted dozens of government agencies.

Desalination came out far ahead of other options, ranking highest on environmental, political, ease of operation and implementation categories. A new reservoir on the north coast could cost as much as \$117 million, the study found. A reservoir in the redwood forests above Boulder Creek could take up to 18 years to fill or would require the realignment of 2.4 miles of Highway 9.

Proposals to increase the height of Loch Lomond Dam could be implemented relatively cheaply, the study found. But officials from the state Department of Fish and Game likely would

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Santa Cruz water director

require much of the water to be released for coho salmon and other threatened species.

Desalination would not affect fish. Both potential well sites are located in agricultural fields, where there is little likelihood of encountering endangered species or environmental problems that could hobble dam projects.

Desalination also would be the quickest project. Engineers estimate drinkable water would be flowing within 4.5 years.

"It's quite realistic," said Bill Cox, a water commissioner who dropped his support of a new dam in favor of desalination.

The plan will go before the city council in January. If approved, water officials would need up to \$1.5 million to conduct test drilling, said Kocher.

There are critics.

City councilman Louis Rittenhouse said he likes the idea, but wants a bigger project.

The study allows for 15 percent rationing, he noted, meaning that in droughts city residents would still have to ration even with desalination.

"We're still locked into the mentality that water is a planning tool," he said.

Rittenhouse said he will propose that the idea be put on a future ballot, so voters can choose how large a desalination operation they want to pay for.