was demoted and forced to leave the county Engineering Department because he wound up opposing state water.

Deputy County Engineer Glen Priddy, who replaced Laurn on the state project, said his predecessor's cost figures are too high.

But the final cost of state water is still in flux, Priddy said. The bill each community will pay depends on how many sign up and if the county Board of Supervisors agrees to request any unallocated reserve.

Costs will rise if there are unallocat-

water would cost Pismo Beach and Oceano \$600 to \$700 per acre-foot and Nipomo \$700 to \$750.

Costs could also vary slightly depending on plans the state has for adding to the project.

Every water agency that joins, he said, would have to pay a share of future construction costs. That could add \$50 per acre-foot to the cost of state water in this county and more if the Peripheral Canal project is revived.

An acre-foot equals 326,000 gallons and is enough to serve a family of four to five for a year.

The California Aqueduct would be Nipomo's newest source of water if voters give the go-ahead

## Water

## Continued from Page 1

Ray isn't as worried about the cost or quality of state water as he is the reliability because of environmental issues involved with taking state water from the troubled Sacramento Delta.

The bottom line, he said, is Nipomo "will need every damn source it can get and then rely on conservation."

Nipomo will need more water, Gulyash said, but there is no need to rush into a decision, especially if it leads to taking unreliable and expensive state water.

State water has a lot of disadvantages, he said. The primary ones are the costs and how soon the district would get all the water.

If Nipomo doesn't now need 1,500 acre-feet of state water, Gulyash

asked, "Where will it keep the wawhen the state pipeline is built about five years? And who will pay

"You'll have this huge bill. You going to be forced to grow to pay that water. "You don't get to say want 25 percent the first five yea You have to take and pay for all a right away.

"Then what happens?"

- Jerry Bu

## County should look west, not east, for water

Poly professor says distillation costs are better deal than state water

NIPOMO — State water isn't needed by Nipomo or anyone in the county, according to a Cal Poly professor.

Safwat Moustafa, professor of mechanical engineering, said using distillation to desalt water would cost less than importing state water.

Deputy County Engineer Glen Priddy isn't sure distillation is cheaper than either state water or using reverse osmosis to desalt water.

Desalting costs vary, he said. And final state water costs are unknown until the county knows how many local water agencies are going to join the state project, how much state water they want and if the county is going to take all the water it has reserved.

Charles Gulyash, leading the fight against bringing state water to Nipomo, said fewer local agencies would join the project if they got accurate information from the county about desalting.

There are several ways to desalt seawater, said Priddy, the lead member of the county staff on the state project.

Distillation, he said, heats water until it evaporates into steam, leaving the salt behind, while reverse osmosis uses high pressure in an electrochemical process to force water through a membrane that won't allow salt molecules to pass.

Most desalting plants in the world use distillation, he said, but they are in places with cheap energy, such as the Middle East. Plants designed for Morro Bay and Santa Barbara use reverse osmosis.

"But we can't say distillation is better than reverse osmosis," Priddy said. "Each application is unique. And both are close in costs."

The cheapest of the two is about \$2,000 per acre-foot, he said. That is two to three times more expensive than his estimates for bringing state water to different spots in the county.

Moustafa, who spent seven years

helping design the distillation system for Kuwait, said the county cost estimates and thinking are wrong.

"Reverse osmosis is the wrong technology. Reverse osmosis is better for brackish water with a low salt content," he said. "It is plain insanity to use it on seawater."

More than 95 percent of the desalting plants worldwide use distillation, said Moustafa, who has taught at Poly for six years.

Simply by using waste heat the Diablo Canyon Nuclear Power Plant throws away, he said, distillation could produce enough water to serve Los Angeles, San Francisco and everyone in between.

Distilled water would cost \$600 to \$700 an acre-foot if a plant was built for that purpose and less than \$1,000 an acre-foot if Diablo or the Morro Bay Power Plant were retrofitted for distillation.

The county and the utility companies would have to work together, he said. Most of the cost for distillation would be for equipment depreciation, not for using energy.

"The cost all depends on what energy source is used," Moustafa said. "Distillation uses waste heat, very low temperature. That is much cheaper than reverse osmosis."

Power plants generally throw away waste heat, said Moustafa, "so you don't have to pay much for it.

"Reverse osmosis can only use electricity, the highest grade of energy and the most expensive."

People who claim desalting is too expensive are looking at the wrong technolgy, said the professor. "Distillation is less expensive than state water."

- By Jerry Bunin





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