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District thinks deep when it comes to Lake O water disposal

Officials to spend \$250K to analyze deep-well injection

By Kate Spinner

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Instead of dumping dirty Lake Okeechobee water into the Caloosahatchee River estuaries, water managers might begin discarding the lake water by pumping it 3,000 feet below the Earth's surface.

Bob Verrastro, lead hydrologist for the South Florida Water Management District, said the district will spend about \$250,000 this year to analyze deep-well injection for disposing Lake Okeechobee water.

"I'm optimistic. It looks like it's a reasonable application of the technology," Verrastro said, adding he thinks deep-well injection is likely to be used. "It's going to be a question of how many of these things do we really want to do to get the most benefit."

The feasibility study should be complete within the next eight months and test wells are likely to follow, Verrastro said.

Before the technology is put into place, the district's governing board will have to approve it. Each injection well could cost upward of \$6 million and dispose of 20 million to 30 million gallons of water a day.

Last week, Verrastro briefed an advisory committee to the governor-appointed board about the deep-well injection feasibility study.

Beverly Grady, a Fort Myers attorney and an advisory committee member, said all options are on the table to reduce harmful releases to the Caloosahatchee River on the west coast and the St. Lucie Canal on the east coast.

The lake is contained by a massive earthen levee that cannot withstand high water levels. When the lake rises too high, water managers lift the floodgates to the rivers.

The water historically flowed south to feed the Everglades, but now sugar farms, citrus farms and small communities stand between the lake and the sodden sawgrass prairie. Even if the sugar farms were taken out of the picture, the lake water could not be flushed untreated to the Everglades because it is loaded with nitrogen and phosphorus, which trigger the explosive growth of cattails and other invasive plants.

So, the estuaries take the blows.

Last year, the lake releases reached such high levels that Lee County leaders and environmentalists lobbed lawsuit threats at water managers and pleaded for a quick reprieve from the damaging flows.

Paul Gray, Lake Okeechobee watershed program director for Audubon of Florida, said the deep-well injection idea has been around for quite some time. But, he said, the lake's condition and the damage it wrought on the estuaries last year and the year before caused water managers to take another look.

"After watching the last few years, people are paying more attention to it," said Gray, who also serves on the advisory committee.

The technology is not without controversy or concern.

Pumping water into the ground might not take up as much valuable land as a reservoir, but it carries a hefty price tag and does require a lot of electricity.

"It's a pretty expensive way to dump water," Gray said.

The water would be injected into a saltwater stream beneath a layer of rock that ostensibly would keep it from bubbling up into drinking-water aquifers. But fresh water tends to float on top of salt water.

Verrastro said that bubbling-up phenomenon has occurred with deep-well injection pumps used by wastewater utilities. He said it is a concern that will not be overlooked during the feasibility study.

Wastewater plants in St. Petersburg and on the east coast already use deep-well injection to get rid of water. Each well costs about \$5 million to \$6 million and disposes of about 18 million gallons of water a day. The pumps the district are envisioning would be about 30 percent larger.

Gray and Grady both said that disposing of water is also not exactly the best way of dealing with South Florida's ecosystem troubles.

Too much rain often falls in the rainy season, but very little rain falls in the dry season. That used to be just fine for the birds, but when Americans settled the area 120 years ago, they demanded both good drainage and plenty of water for drinking and irrigation.

Those demands parched the Everglades and turned Lake Okeechobee into a muddy mess.

The key to restoring a semblance of balance in the system is to retain the summer rainwater outside of the lake so it can be used for irrigation and drinking water in the winter.

Whether the water is dumped into the estuaries or pumped out of sight by deep-well injection, the resource is still being discarded.

On the other hand, Gray and Grady said, the technology could be valuable during exceptionally rainy summers.

"The last couple of years it would have been ideal, but it still is wasting water," Gray said. "Right now we waste it by killing the estuaries."

Grady said the advisory committee has been compiling a list of every possible strategy to take the freshwater burden off the Caloosahatchee.

"I am expecting, as the other stakeholders are, that we will look at everything. We don't want anything to be summarily dismissed," Grady said.

She said the deep-well injection potential was not on the list of options the advisory committee had considered, but she said she appreciates the district's study.

"I've got to credit the district that they are telling us in May 2006 about a study they expect to have done in 2007," Grady said. "It gives us an opportunity to propose issues and points that need to be addressed in the study."

Looking long-term, Grady said, a healthy Lake Okeechobee would solve a lot of South Florida's problems with water flow.

"If we had clean water, we would have an easier time finding a home for this excess water," Grady said.