

A solution or more problems?



Using the St. Johns to supplement water gets mixed reviews

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By DINAH VOYLES PULVER

ENVIRONMENT WRITER

For boaters and others who enjoy the scenic beauty of the historic St. Johns River, the debate over using it for drinking water raises many questions.

Donn and Beth Dobberstein of Port Orange, for example, like to take the family to Volusia County's west side to enjoy the river.

"The St. Johns still feels like old Florida," said Beth Dobberstein.

"You'd hate to see that change."

All along the river, people share the same concerns, at fish camps near DeLand and high-rise office buildings on Jacksonville's riverfront.

For years, the river connected communities on the river — Sanford, DeBary, Green Cove Springs and Jacksonville — but now it has split them apart.

Seminole County wants to use the river to supplement its treated wastewater supply during times of drought when there isn't enough treated wastewater to go around.

The St. Johns River Water Management District had announced its intention to give the county a permit to use about 5.5 million gallons a day. But the city of Jacksonville and a river advocacy group, the Riverkeeper, blocked the move by asking for a state administrative hearing judge to review the case.

Other supporters and opponents quickly lined up on either side.

The judge's decision is expected in January, but experts say it's likely the legal battles will continue.

The problem isn't really the 5.5 million gallons, opponents say, it's the eventual 150 million gallons or more that Central Florida governments plan to pull from the river with the district's blessing as part of the region's long-term water supply planning.

For more than a decade, the water district has pushed communities in this region to look to the river to supplement the need for more water. District officials say they will allow no additional groundwater pumping in the region after 2013, in order to protect springs, lakes and wetlands.

The district has committed cash to help with the effort, including \$23 million to three facilities. In addition to Seminole County's Yankee Lake facility north of Sanford, another plant is being considered at State Road 46 south of DeLand. The city of Deltona is among a group of Central Florida governments considering that plant. Volusia officials haven't signed on to a plant, though the county has helped pay for some of the feasibility studies. County officials say they don't like the rate hikes their customers will see from using river water, even though they expect it to be significantly cheaper than using water from the ocean.

Two County Council members, Patricia Northey and Andy Kelly, said recently they want the county to get more serious about conservation before turning to the river.

"Until we look more closely at the opportunities in conservation," Northey said, "we don't know whether we need the St. Johns for drinking."

Conservation should get more of a focus in all of Central Florida, Kelly said, particularly in the affluent areas of Seminole County, where per capita water use is among the highest in the state.

DeLand city engineer Keith Riger said he isn't sure his city can conserve enough to make up for the district's projected shortfall. DeLand has considered using the river to supplement its peak demands for treated wastewater and for drinking water.

But it's the environmental impact of all those projected withdrawals that have others, especially in North Florida, concerned. They fear the withdrawals could harm wildlife, threaten wetlands along the river and damage the delicate environment where the river meets the Atlantic Ocean. They don't want a repeat of the effect seen in other river basins, such as the Rio Grande and Colorado. At the request of its governing board members, the St.

Johns district has convened a national panel of experts to study the potential impact, spending nearly half a million dollars to enlist the help of the National Research Council. The scientists are studying fish, larvae, snails, worms and sea grass to determine how they might be affected by changes in salinity, water levels or changes in water color. The results are expected sometime in 2010.

Beth Dobberstein is one of many interested in the outcome.

"When you mess with nature, there's always going to be some sort of consequence," Dobberstein said.

But given the harm district officials say will come from continued groundwater pumping, ultimately the decision on whether Central Florida drinks from the St. Johns River may come down to a question of balancing negative consequences.

THE AVERAGE 5-MINUTE SHOWER TAKES 15-25 GALLONS OF WATER. A BATH USES 70 GALLONS. OF ALL RESIDENTIAL INDOOR USE IN THE U.S., 17 PERCENT IS USED FOR SHOWERS — 1.2 TRILLION GALLONS PER YEAR.

Solutions are available, but consensus is difficult

Desalination is an option, but doesn't come cheap

By DINAH VOYLES PULVER
ENVIRONMENT WRITER

Beth Dobberstein pays about \$25 a month for the water her family uses to shower, brush their teeth and wash dishes. She feels like the family gets a good deal, compared to what other people pay around the country.

If the family's water rates were five or 10 times as high, though, Dobberstein said it might be a different story.

That's the kind of bill officials say local residents might see if and when area utilities, such as Palm Coast and Flagler County, turn to the Atlantic Ocean to supplement the demand for fresh drinking water.

Considering 97 percent of the Earth's water is salt water, the ocean represents a vast supply of drought-proof fresh water — but at a steep cost. Just how high the bills go — and when — depends on a variety of factors to be decided in the coming year, such as what kind of plant is chosen and how many utilities participate.

St. Johns River Water Management District officials term the fresh water situation in Flagler County “desperate,” indicating utilities in the county need to move toward desalination immediately.

So, while utilities in Volusia County push back against the district's urging to develop alternative supplies to supplement fresh ground water, Palm Coast leads a group of utilities moving forward on desalination.

“Rather than get into a long-term battle with the district that we might or might not win, we decided , ‘Why risk it ?’ ” said Palm Coast utility director Richard Adams. “We needed to take the actions necessary to get us on a long-term water supply that's going to be sustainable.”

The city would rather avoid the controversy in proving that every gallon it uses won't affect the environment, Adams said.

Palm Coast is banking on its commitment to the desalination plant to help the city get temporary approval from the water management district to pump brackish ground water to help meet its customers' demand for water until the plant is built.

Florida utilities, including Palm Coast, have used technology similar to that used in desalination plants for years, to filter minerals from water.

The state's first major desalination plant was built on Tampa Bay at a cost of \$141 million. The plant was plagued with problems during construction, but has been fully operational for about a year.

Tampa Bay Water customers pay a blended rate that combines the cheaper prices of fresh groundwater and the more expensive treated salt water. It costs the utility about \$2.14 per 1,000 gallons to treat water from the bay, which is sold at a slightly higher rate to area utilities.

So far, estimates for the Flagler plant range between \$600 million and \$700 million, based on its projected size and the distance water lines will have to be laid to deliver water to customers in Palm Coast and areas farther west.

One factor that could lower costs is the increasing popularity of desalination worldwide.

The industry has undergone huge changes in the past year, with several big facilities under way in California, as well as Australia and the Orient. The total amount of water treated grew by 25 percent last year, said George Stubbs, senior editor with the Environmental and Business Journal.

A contract agreement for the local project's first phase was reached in early December by the group of utilities working with Palm Coast, known as Coquina Coast. The group includes: Bunnell, Flagler County, the Dunes Community Development District, Leesburg, Mount Dora and St. Johns County.

Another group of utilities put up \$10,000 each to remain at the table during discussions. That group includes DeLand, Flagler Beach, the Water Authority of Volusia and Marion County.

The utilities will split with the water management district the \$950,000 cost of the first phase.

The study will determine how much water each of the member utilities will need from the plant and whether a ship-based or land-based facility is better and will complete about a third of the plant's design.

However, one consultant on desalination, who has already done some work on the Flagler project, said it appears ship based desalination may not work, because of the complications of getting rid of the minerals and salt taken from seawater and discharged back into the environment as brine.

Called concentrate, the mix of dense, salty water sinks to the bottom of the ocean and kills marine life, said Fred Bloetscher, a civil engineer and assistant professor at Florida Atlantic University. "In areas where it's done off the coast of Saudi Arabia, he said, there are "large black areas where everything is dead."

It appears most places will have an easier time disposing of the concentrate if it's blended back into the ocean at an inlet, where a great deal of water moves in and out each day with the tide, Bloetscher said. "If you have a big enough inlet, a lot of the toxic issues are resolved."

That's not the only negative environmental consequence of desalination. It also takes great amounts of energy to treat the water, a rising concern as governments around the world work to reduce the consumption of energy in an effort to cut greenhouse gas emissions.

The Tampa Bay Water facility was built next to an energy plant. But there are no power plants in Flagler County. Once built, the Flagler desalination facility could be the largest on the East Coast.

If, in the long run, using salt water will help protect the environment, preventing harm to the area's wetlands and waterways from over-pumping, Dobberstein said, she'd be willing to pay higher monthly water bills.

"All these years we've gotten a pretty good deal," she said.

"When you're on a tight budget, nobody wants to pay more for it."

To her, if desalination protects the environment and benefits everyone, it seems like a worthy goal.



Associated Press file

Desalination is one of the options Volusia County is looking at to help offset the growing demand for fresh water. Several cities, like Tampa, and some countries have already built desalination plants.



Changing climate may only add to our water woes

By DINAH VOYLES PULVER
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For years, cities along Florida's coast have grappled with seawater seeping into freshwater wells, but scientists say the problem may get much worse as global climate change pushes the sea further inland, both above and below ground.

It's one of a number of problems Florida's water supply faces from climate change.

"It could do it (the water supply) in," said Harold Wanless, chairman of geological sciences at the University of Miami. "That's basically it."

The sea has risen 9 to 10 inches along the Florida

coast since the 1930s, according to tidal gauges kept by the federal government, Wanless said.

The next foot of sea level rise would be a bit of trouble, but after that a flood of problems is expected. Wanless said a sea level rise of 2 to 5 feet, which some experts predict by 2100, would "really change the character" of Florida.

Officials across the state and nation have begun talking about how to explore — and prepare for — potential impacts from the changing climate and sea level rise.

For example, the federal Environmental Protection Agency released a climate change strategy this year to address the likely effects of climate change on the nation's water supply, and the agency has said it plans to step up research.

In November, a coalition of environmental groups released a report urging states in the Southeast to do more to prepare for greater climate variability and to conserve water.

Conservation may be especially important, Wanless said, because if groundwater levels are high, it would make it harder for the saltwater to push into the state's freshwater supply.

But groundwater is pumped heavily throughout much of Central and South Florida, creating low water levels, especially during times of drought. That would make it easier for the intruding seawater to sweep into the underground aquifers.

Another problem foreseen by Wanless and others is the access the sea will gain to inland areas through the canals along the coast of Florida. It gives the saltwater another pathway toward those underground sources of fresh water.

An issue Fred Bloetscher, an assistant professor at Florida Atlantic University, has looked at is the intrusion of underground saltwater into utility pipes that carry treated freshwater. Bloetscher said that could especially be a problem in beachside areas.

It seems hard to start planning with a time frame 100 years away, the secretary of the state's Department of Environmental Protection, Michael Sole, said at a September meeting. But given what the experts see so far, in terms of variability in rainfall and droughts, Sole said the potential impacts to Florida's water supply must be considered.