

# Orlando Sentinel



## Altamonte Springs takes steps to make wastewater drinkable

The view from the top of Altamonte Springs' wastewater plant is of brown water gushing into open tanks.

On the ground and a short walk away, city manager Frank Martz stood during a recent morning in a warehouse of laboratory-like gear. From a black hose, he filled a tall glass with water purified from that torrent of incoming sewage.

He drank it all in unbroken slugs.

Martz is energetically optimistic that his moment of refreshment previewed the future of potable water.

"It's cleaner than drinking water," Martz said of the output from a home-grown treatment system more evolutionary than any other in Central Florida and among the most advanced in the world, according to an international competition this year.

The concept of recycling sewage into potable water has been nudged along for decades. Yet today, only one U.S. city does it: Big Spring, Texas, which was motivated by severe drought.

California and Arizona are among other states actively considering the option.

In Florida, converting wastewater into drinking water, while perhaps years away, is now getting a hard look by a group of utility operators, academics, state officials and others.

The Potable Reuse Commission is probing the economics, legalities, technology and public perception of what has been derided in past years as "toilet-to-tap."

That reference ignores the phalanx of treatment technologies assembled by Altamonte Springs to filter out pharmaceuticals, industrial chemicals, pathogens and organics of municipal wastewater.

The 30,000 gallons produced each day by the experimental system is, except for what Martz samples occasionally, being piped back into the city's wastewater system.

Among what remains uncertain is how state authorities would evaluate and approve public distribution of the recycled water. A goal of the Potable Reuse Commission is to help establish a legal pathway for that to happen.

Proponents of recycling sewage for a supply of potable water point out that the practice essentially happens already along the Mississippi River, for example, where a succession of cities simultaneously get drinking water and discharge effluent.

But getting to the day of routing sewage effluent directly into a city's purification system will require advanced technology, intensive monitoring and public engagement, said Jeff Mosher of the Water Research Foundation, a nonprofit group helping the state's Potable Research Commission.

"We have work to do," Moser said. "The public may be skeptical and not accepting at first, but once they get the information and understand this is safe – that's a big part of the job."



*"We have figured out how to do this," says Altamonte Spring city manager Frank Martz. (Kevin Spear / Orlando Sentinel)*

Brain Wheeler, former executive director and now a consultant at Kissimmee's Toho Water Authority, said Florida will have to "go above and beyond" in demonstrating that recycled wastewater can safely be rendered into potable water.

"We have to show the public that the standards for reuse are even higher than standards for drinking water," Wheeler said.

But Linda Young, director of the Clean Water Network in Florida, vows to counter that messaging.

She said available science is not advanced enough to detect or evaluate potentially risky contaminants in drinking water produced from sewage effluent. And it's costly, she said.

"It makes no sense to do it," Young said.

Other environmental and public-health advocates are encouraging the state's utilities to examine recycling wastewater for potable needs.

"We have to be super watchful and use every technology available to us," said Donna Petersen, dean of the University of South Florida College of Public Health and a member of the Potable Reuse Commission.

Another commission member, Garrett Wallace, manager of government relations for the Nature Conservancy in Florida, said the state's population and tourism will continue to grow and threaten to deplete aquifers, rivers and lakes.

"We have to ensure we have adequate and safe drinking water," Wallace said. "It's a finite resource and we need to explore all the alternatives."

Altamonte Springs' purification process won the city a coveted prize last month from the International Water Association as among the world's most innovative technologies for producing drinking water.



*Altamonte Springs was a pioneer in advanced treatment of sewage, converting it to irrigation water.*

It cost about \$1 million to construct, with half of that covered by a state grant, and about \$10,000 a year to operate.

As the only U.S. entrant to win the prize, Altamonte Springs officials on Thursday celebrated the achievement.

But the city long ago established its water credibility in a far-reaching manner.

Altamonte Springs took the region to water school in the late 1980s with the development of sewage treatment that today produces irrigation water for nearly every home and business in the city.

It was then the first and only such system in the region and is now standard for Central Florida utilities.

A conventional method for making salty or contaminated water drinkable has been the brute-force technique of reverse osmosis, a system that squeezes water under high pressure through membranes.

While it impressively strips away impurities, "RO" requires a costly supply of electricity.

Wary of RO's power appetite, Altamonte Springs devised another approach, relying on intense filtration and aggressive application of ozone and ultraviolet light.

Martz said drinking water pumped and treated from the Floridan Aquifer costs roughly about \$1 per 1,000 gallons, while RO treatment of seawater can cost \$12 to \$15 per 1,000 gallons.

The Altamonte Springs system can produce drinking water for \$6 to \$8 per 1,000 gallons, Martz said.

Purified water would be mixed with traditionally produced water, he said, accounting for only a fraction of what residents receive.

“We have figured out how to do this,” Martz said. “We have designed it, and we have designed it to be scale-able and our pureAlta water is a better quality water than our drinking water.”



*Altamonte Springs city manager Frank Martz and the city's utility directors view their pilot project as a step toward the future of the city's water.*