



pureALTA is a potable reuse pilot that provides an opportunity for the City of Altamonte Springs to investigate the development of a safe, secure and sustainable water supply for the future. pureALTA aims to further diversify the City's water portfolio while also utilizing novel and energy-efficient treatment technologies.



Due to population increases and dwindling Floridan aquifer levels, experts have long predicted the state will not have enough groundwater to satisfy the public's drinking water needs. To address this issue, the City is creating an innovative pilot that evaluates a safe, reliable and drought-resistant water source for the community.

Why create a potable reuse pilot in Altamonte Springs?

The City's goal is to maintain a high-quality, viable water supply for today's community and future generations. The pilot aims to demonstrate energy-efficient technologies that will create a safe and sustainable water supply and also extend the City's use of existing sources. The City is aware that:

- The Central Florida Water Initiative (CFWI) has shown fresh traditional groundwater resources alone cannot meet future water demands or current permitted allocations without resulting in unacceptable impacts to water resources and related natural systems.
- Increasing population densities in the City's service area over time will require more water, more efficient use of water, and an expanded portfolio of alternative water supplies (groundwater, stormwater, reclaimed water and a small portion of potable reuse).
- Most of our seemingly abundant yearly rainfall is lost to the ocean through past "ditch and drain" practices that provide flood protection.
- We have also experienced periodic prolonged droughts in the past, such as in 1984, 1998 and 2006, during which water supply sources were threatened and natural systems experienced added stress.

These facts signify the need to plan and develop additional water sources to meet our future demands.

What will the pilot accomplish?

Beyond producing purified water that meets all drinking water quality standards, data from the pilot will allow the City to:

- Develop cost and process treatment data as a model for other potable reuse projects throughout the state.
- Explore, construct and demonstrate treatment processes that when combined exceed drinking water standards and reduce long-term operating costs.
- Demonstrate advanced monitoring technologies that help ensure the resulting purified water is safe and reliable.
- Share the project findings with regulatory agencies for the future development of potable reuse regulations.
- Introduce potable reuse and treatment technologies to Seminole County students annually through the Altamonte Springs Science Incubator (AS₂I) program. This will help expand awareness of the pilot project in the community and enable students to gain a deeper understanding of our precious water resources.

How much water will the pilot treat?

The potable reuse pilot project will treat approximately 28,800 gallons per day (gpd), which is less than 1 percent of the total water currently produced in the City (6 million gallons per day). If the pilot project is successful, we might build a full-scale treatment system with a capacity of 300,000 to 500,000 gpd (approximately 5 percent of the City's future water demand, 9 million gallons per day) to provide a purified water supply that supplements the City's drinking water system.

What type of treatment will the pilot test?

The pilot will test an advanced treatment process that includes the following components: ozonation and biological activated carbon filtration (O3/BAF), ultrafiltration (UF), granular activated carbon filtration (GAC) and ultraviolet light with advanced oxidation process (UV AOP) all coupled with advanced system monitoring techniques. This process has been tested at large and small-scale facilities elsewhere in the United States and internationally. In Florida, it is a new approach.

Traditionally, Reverse osmosis (RO) membranes have been a component of treatment systems used for the production of purified water; however, a concern with RO is its high energy consumption along with the need to dispose of the concentrated waste that is a byproduct of this treatment process. In order to mitigate issues associated with RO, the City is testing the O3/BAF process which uses less energy, does not produce a waste stream and successfully removes the similar trace organic compounds as RO membranes.

How is the purified water used during this pilot?

The pilot project is operating in a testing phase. During this testing, the purified water is blended with reclaimed water from the Water Reclamation Facility and beneficially reused for irrigation in the City's existing urban reclaimed water system. In the future, based on the success of the pilot, the City might build a full-scale treatment system to produce purified water to supplement the City's drinking water system by up to five percent.

How is the purified water tested?

The resulting purified water is tested to ensure it meets drinking water standards and removes pharmaceuticals and personal care products (PPCPs) which are not currently regulated.

The water quality data gathered both before and after the advanced process treatment is extremely helpful in the development of potable reuse regulations for the State while providing a pathway for yet another alternative water supply source as recommended in the Senate Bill 536 Study and Report (expansion of beneficial reuse).

How is the pilot's educational component accomplished?

The City developed the Altamonte Springs Science Incubator (AS₂I) program as a hands-on S.T.E.M. learning experience for Seminole County students through field trips at City locations including Lake Lotus Park, the Regional Water Reclamation Facility and its certified environmental laboratory. The field trips will include a tour of the pureALTA project site and discussions of treatment processes, safety, drought and diversified water alternatives.

Where else is potable reuse currently being done?

California, Texas, Arizona, Georgia and Virginia, as well as Clearwater, Florida, all have potable reuse projects, some of which have been in operation since the 1970s. Similar projects can be found outside of the United States, including Windhoek, Namibia, where potable reuse has been in place since the 1960s, the NEWater facilities in Singapore and the purification facilities in Perth, Australia. These projects include a wide range of treatment technologies, ranging from natural systems (wetlands) to ozone-based treatment to reverse osmosis.

How is the pilot being funded?

pureALTA is co-funded with the St. Johns River Water Management District (SJRWMD) under its REDI Community & Innovative Cost-Share program. SJRWMD is contributing 50 percent of the \$1 million construction cost for the project. pureALTA is one of two potable reuse projects to be funded under this program.

Any additional information?

The State of Florida has been a leader in environmental protection and water reuse development. The City of Altamonte Springs implemented one of the first reuse projects in the late 1980s—Project APRICOT (a Prototype Realistic Innovative Community of Today). In fact, the Florida APRICOT Act of 1994 facilitated the development of more reuse projects throughout the State.

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