



## PLANNING FOR THE FUTURE

### FAST FACTS:

**Need:** 10 million gallons per day by 2028

**Source:** Seawater

**Project yield:** 10 million gallons per day

**Key points:** expands existing facility; proven technology; permittable; drought-proof supply; near high-growth area

# Tampa Bay Seawater Desalination Plant Expansion

Tampa Bay Water's Seawater Desalination Plant is co-located with the Big Bend Power Plant in Apollo Beach. The facility is supplied with up to 50 million gallons per day (mgd) of seawater from the power plant's cooling supply to produce up to 25 mgd of high-quality drinking water. Since late 2007, the desalination plant has produced more than 33.4 billion gallons of drinking water.

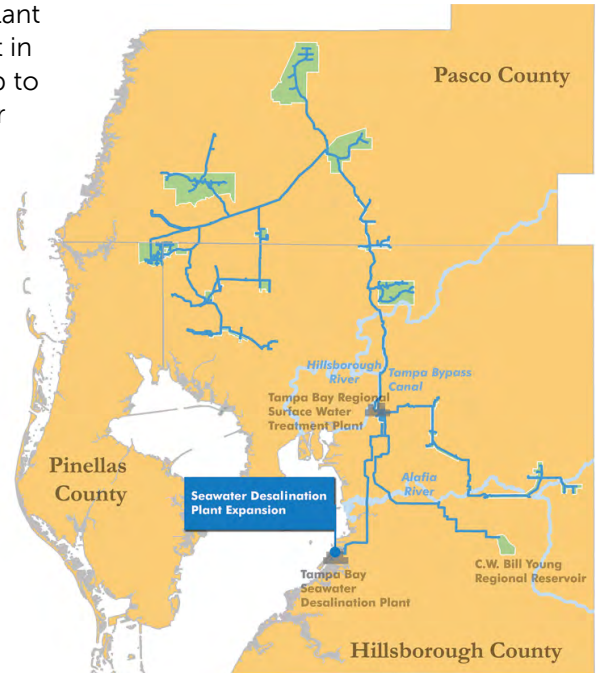
The desalination plant was designed to accommodate future expansion. The power plant's cooling supply could provide more water to the desalination plant to yield an additional 10 million gallons per day of drinking water.

## Expansion Details

A 10 mgd increase in the desalination plant's yield requires the following modifications:

- Upgrading pre-treatment system.
- Expanding the reverse osmosis system and associated feed pumps, cartridge filters, high-pressure pumps and elements.
- Expanding the post-treatment process.
- Replacing the existing 48-inch concentrate discharge pipeline with a new 60-inch pipeline, replacing the existing 36-inch pipeline with a new 42-inch pipeline, and installing a new tunnel connection to ensure adequate concentrate disposal capacity.
- Adding a fourth pump to the finished water pump station.

Some of the desalination plant's components, including the finished water transmission main and existing carbon dioxide and post-disinfection system, are sufficient for the expansion.





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## **Next Steps**

In 2019, Tampa Bay Water will begin feasibility studies and analysis for the Tampa Bay Seawater Desalination Plant Expansion Project, including:

- Detailed discussions with TECO regarding co-located infrastructure and impacts of changes to TECO plant operations on the concentrate management system; evaluating opportunities to increase recoveries and reduce concentrate disposal quantities.
- Environmental analyses associated with additional concentrate discharge.
- Permitting.
- Examining new technologies and membrane alternatives to reduce power costs and increase energy recovery.
- Conducting pilot-scale testing of potential pretreatment systems and alternate membranes that could reduce operating costs and improve recoveries.

## **Public Outreach**

Tampa Bay Water conducted focus groups, public opinion surveys, telephone town halls and speakers bureau presentations to obtain input used in the Long-term Master Water Plan. Public outreach will continue for those projects selected for continued evaluation.

## **Long-term Master Water Plan**

This project is one of three top-ranked projects under further evaluation to meet the region's drinking water needs in the 2028 timeframe. The potential projects are the culmination of five years of analysis through Tampa Bay Water's Long-term Master Water Plan. This 20-year framework for meeting the region's future drinking water needs includes analyses of future demand, conservation potential, supply reliability, water shortage mitigation planning and hydrologic uncertainty along with potential water supply projects to ensure adequate drinking water in the future. For more information, visit [tampabaywater.org /future-drinking-water-sources](http://tampabaywater.org/future-drinking-water-sources) .



***High pressure pumping system at the Tampa Bay Seawater Desalination Plant***