

ENHANCED SURFACE WATER SYSTEM:
THE REGION'S FIRST ALTERNATIVE

**TAMPA
BAY 
WATER**

AN IMPORTANT ALTER

Since late 2002, Tampa Bay Water's state-of-the-art surface water treatment plant has provided high-quality drinking water to the Tampa Bay region. The plant is the hub of Tampa Bay Water's Enhanced Surface Water System—the first alternative water supply built to serve local governments that traditionally relied on groundwater to meet their residents' drinking water needs.

The Enhanced Surface Water System is designed to take advantage of the more than 50 inches of rain that falls in an average year in the Tampa Bay region. When available, water is skimmed from the Tampa Bypass Canal, Hillsborough and Alafia rivers. Some is treated for immediate use at the Tampa Bay Regional Surface Water Treatment Plant, and surplus water is stored in the 15-billion gallon C.W. Bill Young Regional Reservoir to supply the water treatment plant during dry times.

The amount of water supplied by the surface water treatment plant varies daily depending on a number of factors, including how much water is available from rivers or the regional reservoir. The surface water treatment plant has a maximum rated capacity of 72 million gallons per day (mgd), enabling it to regularly produce 66 mgd when supply is available.

Care has been taken to ensure Tampa Bay Water's withdrawal permits for the Alafia River, Tampa Bypass Canal and Hillsborough River are conservative and based on available flows. When river flows are lower, less water is withdrawn. When river flows are higher, more water is withdrawn. And no water is withdrawn below a designated low-flow amount. This environmental approach protects both the low- and high-flow regimes of the rivers.

BUILDING ON OUR SUCCESSES

The Tampa Bay Regional Surface Water Treatment Plant has been central to helping Tampa Bay Water meet the region's drinking water needs and the agency's goals for environmental stewardship through reduced groundwater production. It is also central to meeting the region's future water needs.

Tampa Bay Water plans to quench the region's thirst in 2011 and beyond through a series of projects that would build on the Enhanced Surface Water System. The new projects include modifying existing water use permits at the Hillsborough River and Tampa Bypass Canal and adding pumping capacity, so more mid-range (higher) river flows can be captured for treatment or storage, without environmental harm.

Also, the surface water treatment plant will be expanded, using the same treatment processes that have performed successfully since 2002, to a rated maximum capacity of 120 mgd to achieve an annual average delivery of up to 99 mgd when supply is available. With the plant expansion, the surface water treatment plant and the sources that supply it will comprise 40 percent of Tampa Bay Water's system.

Veolia Water North America was awarded the design-build-operate contract for expansion of the surface water treatment plant in April 2007. The expanded plant is scheduled for completion by the end of 2010.



A WALK THROUGH THE WATER TREATMENT PLANT

The treatment plant, which is fully automated and monitored 24-7, 365 days a year, uses a state-of-the-art, multi-barrier method to treat the surface water. Picture an assembly line where the water goes from one treatment process to another, each step reinforcing and augmenting the one before it.

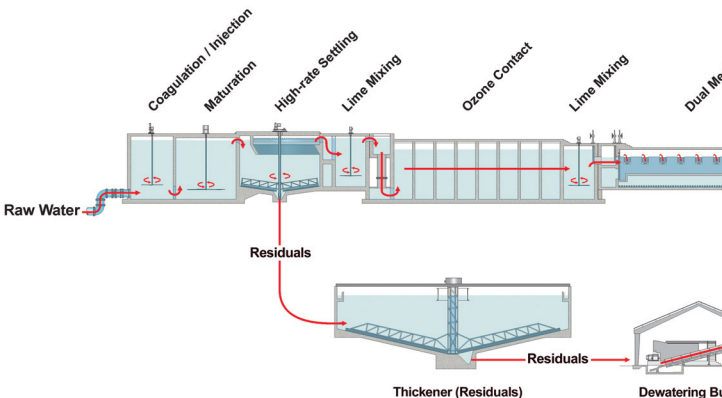
Water quality criteria for the plant are stricter than those required by the United States Environmental Protection Agency's Safe Drinking Water Act and the even tougher parameters specified by Tampa Bay Water's governance agreements with its members.

Pretreatment process

Tampa Bay Water pumps water from the Tampa Bypass Canal, Hillsborough and Alafia rivers and the C.W. Bill Young Regional Reservoir through pipelines into two large tanks that can hold a combined 12.5 million gallons of water. Blended water stored in the tanks then moves through the treatment process.

ACTIFLO®

Veolia Water's patented ACTIFLO process removes the color, organics and particles from the water. ACTIFLO is widely used throughout the world and is especially designed to treat large flow rates with variable raw water quality—exactly the conditions found in the surface water treatment plant.



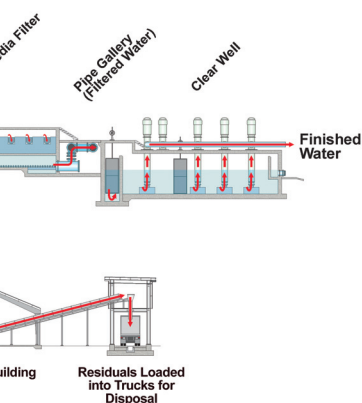


Addition of fine grain sand (injection tank)

This stage illustrates the major difference between the trademarked ACTIFLO process and the traditional treatment process. Traditionally, a mixture of chemicals is used to separate the particles. The ACTIFLO process builds on the traditional process by adding fine grain sand with polymer, allowing for water to be processed more quickly and efficiently.

Particle separation (maturation tank)

The water then moves into the maturation tank for further mixing. The mixing allows for large particles called “floc” to form. The sand acts as the nucleus of the floc, and the polymer acts as the glue holding the floc together. After the floc removes the color and organic matter from the raw water, the water passes into the settling tank.



Completion of particle separation (settling tank)

In the settling tank, the floc and raw water are completely separated. The sand’s weight forces the floc to fall to the bottom of the basin and allows the water to rise to the top for further treatment. Water flowing over the top moves onto the next process.

At this point, the pH level of the water is lower than normal, so it must be slightly increased before ozone disinfection.

Ozone disinfection

Ozone gas is added as a primary disinfectant, and static mixers are employed to transfer ozone to the water. Ozone kills microorganisms that may be left in the water, including bacteria, viruses and protozoa. Used throughout the United States, it is the most powerful disinfectant in water treatment today.



After the ozone disinfection process, which takes about 15 minutes, the pH is readjusted to normal levels to prepare it for filtration.

Biologically active filtration process

Water moves from the ozone tank to the biologically active filtration area where “good bacteria” aid in removing remaining organic molecules. After that, layers

of sand and granular activated carbon filter out remaining particles.

Secondary disinfection

The water moves to a storage area (or clearwell) for a second disinfection process. A two-step process, which includes chlorine and chloramines, is used to disinfect the water and maintain a disinfectant residual in the supply system to ensure it remains free of bacteria.

Water distribution

After this extensive filtration, high-quality drinking water is the final product. In nearby storage tanks, Tampa Bay Water blends the finished surface water with water treated at its desalination plant. The blended water is then stored until needed or pumped into Tampa Bay Water’s distribution system, where it is further blended with groundwater supplies and delivered to local governments.

Public-Private Partnership Benefits The Region

The public-private partnership between Tampa Bay Water and Veolia Water is a cost-effective and reliable solution to providing the Tampa Bay region with high-quality affordable water.

After a competitive procurement process, Veolia Water North America (formerly US Filter Operating Services) was awarded a \$144 million contract in 2000 to design, build and operate the current facility. Tampa Bay Water estimates that this partnership will save the region approximately \$80 million or 21 percent over the 15-year term of the original contract.

Similar savings are expected with the plant expansion. These savings are important to keeping more-costly alternative water supplies affordable for the public. The partnership also provides the region with access to the latest in water treatment technology developed by the private sector.

TAMPA BAY WATER, Florida's largest wholesale water supplier, provides drinking water at cost to its members: Hillsborough County, Pasco County, Pinellas County, New Port Richey, St. Petersburg and Tampa. The member governments serve more than 2.4 million residents in the Tampa Bay region either directly or indirectly through the re-sale of water to other smaller utilities.

VEOLIA WATER NORTH AMERICA is the leading provider of comprehensive water and wastewater services to municipal and industrial customers, providing services to approximately 14 million people in more than 600 communities. The company is part of Veolia Water, the No. 1 water company in the world serving more than 108 million customers. Veolia Water is the Water Division of Veolia Environment (NYSE: VE and Paris Bourse: VIE), the largest environmental services company in the world with more than 300,000 employees in 67 countries.

Together
MEETING THE
DEMAND
for NEW WATER



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Up to 50 percent of the eligible capital costs for the Enhanced Surface Water System expansion will be funded by the Southwest Florida Water Management District and local Basin Boards through a cooperative funding agreement.

Participating Basin Boards include:

- Alafia River Basin
- Coastal Rivers Basin
- Hillsborough River Basin
- Northwest Hillsborough Basin
- Pinellas-Anclote River Basin
- Withlacoochee River Basin



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