



Water

Drinking Water

Client

City of Tampa Water Department

Location

Tampa, FL, USA

David L. Tippin (Hillsborough River) WTP

Project Highlights

- Project received the Water Systems Quality Award from the Design-Build Institute of America, February 2003
- State-of-the-art ozone generation facilities to treat up to 120 mgd of flow
- Addition of 40 mgd treatment capacity to the existing 80 mgd flocculation/sedimentation basins
- Design, construction, and initial operation based on a Guaranteed Maximum Price

Project Description

CH2M HILL was issued a Notice to Proceed for Phase I of the Hillsborough River Water Treatment Upgrade project on September 17, 1999. For this unique project in Tampa, Florida, CH2M HILL is served as the Construction Manager and General Contractor responsible for all aspects of design, construction, and initial operation.



This project was designed and constructed at a fixed cost. The City's budget limitation provided a major project challenge and CH2M HILL, through design, cost, and schedule control techniques, provided continuous feedback to the City to ensure that plant upgrades did not exceed the Guaranteed Maximum Price (GMP).

The Hillsborough River WTP is one of two water treatment plants owned and operated by the City of Tampa Water Department. It was first constructed in 1925 and has been expanded and modified numerous times since. This upgrade included the addition of 40 mgd treatment capacity to the existing 80 mgd flocculation/sedimentation basins. This additional capacity, through an Actiflo® process, performs the same function as the traditional basins, but with a much smaller footprint.

New ozone generation facilities were installed to treat up to 120 mgd of flow, including two 3,500 ppd ozone generators, two new ozone contactor basins, two new 300 ton ozone chillers. In addition, a liquid oxygen storage system was installed, including three 13,000-gallon cryogenic LOX storage tanks. Ozone was added to the plant process as a replacement for chlorine for primary disinfection and to improve taste and odor. Chlorine, along with ammonia will still be added after the effluent filters to maintain a residual in the distribution system.

The Hillsborough upgrade included the installation of new, low-profile underdrains and filter media for 29 of the 30 existing effluent filters. The filter media is Granular Activated Carbon (GAC) operating in the biological mode. The project also included the installation of two new belt filter presses for sludge dewatering, improvements to plant-wide electrical systems, including a new switchgear building, and three new 2 MW electrical generators.

The Phase 1 Preliminary Design effort culminated in the development of a Guaranteed Maximum Price (GMP) in January 2000. Once the GMP was



accepted, Phase 2 Final Design was initiated, which resulted in a final revised estimate delivered in June 2000. CH2M HILL contractually guaranteed the City of Tampa that 100 mgd of water would be available to send to its customers by January 7, 2002 (Revenue Water Date), and met this obligation.