

Hydration on the Horizon

AUSTIN, TEXAS, IS DELIVERING A NEW WATER TREATMENT PLANT.

BY BRIAN SALGADO



» Austin, Texas's new water treatment plant will treat 50 million gallons of water per day that will serve the city's north and northwest pressure zones. The plant has future capacity potential of up to 300 million gallons per day.



The city of Austin, Texas, has broken ground on its first new water treatment facility in 40 years, and it certainly hasn't been an easy task to get to this point. As Jason Bybel, project manager for the Austin Public Works Department, tells it, this project was set to break ground in 1984 before a series of environmental concerns delayed construction until 2010.

"This has been planned for construction for 27 years, but it has been off and on ever since the 1980s," Bybel says. "It has always been contentious for city council members, and it remains contentious today."

A bond originally was passed in 1984 for the construction of a new water treatment plant, but the initial site proved too environmentally sensitive. The project was placed on the back-burner until three or four years ago, Bybel says, when the current site was labeled as less sensitive than the previous location.

The \$508 million Water Treatment Plant No. 4 (WTP4) and will treat 50 million gallons of water per day that will serve the north and northwest pressure zones of Austin. The design of the plant allows for future expansion to 300 million gallons of water per day.

The first phase of the project, which started

MMH Constructors – Austin Water Treatment Plant No. 4

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- *Project cost: \$508 million*
- *Location: Austin, Texas*
- *Employees on site: 350*

"This has been planned for construction for 27 years, but it has been delayed for various reasons since 1983."

– Jason Bybel, project manager

» WTP4 will be constructed to exceed the highest federal and state regulations.



in November 2010, has a three-level lake intake pump, which will occupy 4.5 acres in Lake Travis.

The gravity-fed tunnels will feed a pump station, located on a 12.2-acre site, raw water through a 108-inch-diameter cast-in-place concrete-lined tunnel.

This station sends water 0.75 miles away to an up gradient plant that will treat it with a combination of solids contact upflow clarifiers and dual media filters before it is funneled to two 5 million-gallon clearwells before being pumped through an 84-inch-diameter transmission tunnel.

This 6.5-mile pre-stressed concrete pipe will deliver water to an existing 10 million-gallon water storage tank from where it is distributed to the community.

The treatment plant sits on a 92-acre site, which required the clearing of about 45 acres of land, Bybel says. He adds the construction team – led by MWH Constructors as the construction manager at-risk – has maintained the site in an excellent manner by preventing stormwater discharges and any unnecessary disturbances to the land.

Recently, the city council considered deferring completion of the project for five to 10

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years. However, when a study determined the costs of a five-to-10-year delay would add approximately \$160 million to \$200 million to the overall budget, respectively, the city council gave up on requesting any delay in the completion of the project. The project is scheduled to be completed in May 2014.

Big Job

The enormity of the project is a challenge in every way imaginable, according to Bybel. For instance, the raw water intake system requires a lake tap constructed more than 100 feet below the water surface into the bottom of Lake Travis. That process alone will keep construction crews busy for four to six months.

The treatment plant will utilize an onsite generation of sodium hypochlorite system that will be the first of its kind installed in a city of Austin water plant. The existing water treatment plants use traditional chlorine gas, but there are plans to convert these systems over to sodium hypochlorite systems.

The city of Austin instituted an environmental commissioning process on the project to act as additional oversight during design and construction. The environmental commissioning process has enacted additional environmental requirements and restrictions above the standard city of Austin construction

Commerce Controls, Inc. is proud to be selected as the Prime Subcontractor to MWH Constructors to supply the Plant-wide Process Control and Information Systems for the City of Austin Water Treatment Plant 4. The control infrastructure will serve as the backbone for the automation intelligence directing the operation and monitoring of plant equipment and subsystems. Commerce Controls’ services include Project Management, design and manufacture of control panels, control room, instrument procurement and site commissioning.

'We bid out early construction projects for about \$8 million ourselves.'

project standards. "This is above city, state, and federal regulations, so that has really worked out well for us," Bybel says.

Due to the unique environmental challenges on the project, the city of Austin maintains a full-time dedicated environmental compliance manager to ensure that the project is meeting its contractual environmental obligations and goals. The environmental compliance manager coordinates with the engineer, contractor, environmental commissioning team and regulatory agencies to ensure compliance for the project as a whole.

This project is being delivered as the first construction manager at-risk infrastructure contract in the City of Austin. The city has built buildings in this manner, Bybel says but this is the first time a construction manager at-risk has been hired to construct a multidisciplinary structure like WTP4.

"We bid out early construction projects for about \$8 million ourselves, and we managed those contractors through that construction," according to Bybel.

"With a cost limitation of \$359 million, we brought in MWH Constructors as a CM at-risk," he adds. "The CM at-risk model has worked really well for us, as they performed constructability review, managed costs, schedule and subcontractor coordination."

Safety Program

With 300 workers on site, Bybel is especially proud there has not been a single lost-time incident in more than 200,000 hours worked thus far. The city of Austin has implemented its Rolling Owners Control Insurance Program (ROCIP) for this job, which is a standard procedure for projects valued at more than \$2 million.

This program requires MWH Constructors to adhere to a variety of safety regulations as dictated by Austin. These include having a safety manager, safety supervisors and safety superintendents performing oversight on the project at all times.

"This has been a pretty big success for the project overall," he adds.

Meeting Requirements

According to MWH Constructors, the company has exceeded the city of Austin's goals for inclusion of minority business and women business enterprises by hiring more than 25 percent local minority and women-owned businesses during WTP4's preconstruction phase. MWH Constructors also is aiming for LEED Silver certification, it says.

"We're pleased to see the continuation of this new water treatment plant through this construction work authorization," Larry A. Laws, MWH Constructors project manager, said in a statement. ♦



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