



Aquifer storage, recovery secures San Antonio future water needs

Home to the Alamo, the Riverwalk and more than one million people, San Antonio is the ninth largest city in the United States. It also is one of the few remaining metropolitan Meccas sustained solely by groundwater resources.

Faced with a rapidly increasing population, intermittent drought conditions and legal requirements to preserve habitat for endangered species, the Texas city has been forced to find alternatives to its sole reliance on the Edwards Aquifer...enter CH2M HILL.

After four years of working together on feasibility assessments, the San Antonio Water System selected CH2M HILL in December 2000 to serve as program manager for the utility's \$215 million Aquifer Storage and Recovery Program. With extensive experience and a strong reputation in ASR, the firm is successfully overseeing design and construction of what will be the second largest underground storage facility in the United States. Water will be pumped from the Edwards Aquifer and will travel 30 miles via a 60-inch steel pipeline to the Carizzo Aquifer, where it will be stored and used to offset demand during peak times and drought conditions.

"Unlike most ASR projects that store surface water, this is one of the first large groundwater-to-groundwater projects in the country," said James Dwyer, an

ASR technologist. "With a capacity of up to 60 million gallons a day, the project should help San Antonio and the surrounding region meet water demands through the next several decades."

In addition to pipelines, the project also includes design and construction of a water treatment plant. Located near the Carizzo Aquifer, the plant allows the system to take existing water directly from Carizzo and treat and distribute it, even before the ASR component is online.

Web-based tools enable program management success

To successfully manage the many complexities of the project, the water utility recognized the need for a broad information management and dissemination system. In response, CH2M HILL developed a Web-based program management tool to enhance the availability and accessibility of information.

Team members developed a Web portal to provide a basic platform for the many essential project management tools required to support the program. These tools include a scheduling program (calendar), electronic document management system (Meridian Prolog), financial management system (BMS) and a project controls map.

"The tools developed as part of the project delivery methodology really supported the coordination and interaction of several different teams located in geographically-dispersed areas," said



Construction workers install a pump and connecting pipeline leading from the Edwards Aquifer to the Carizzo Aquifer.

John McNitt, the project manager.

The team further enhanced communication using electronic requests for information, interactive messaging tools, parallel editing/comment tools, and immediate access to information stored in standardized formats across the project.

"Our system is really a poster child for effective program management tools," McNitt said. "It made managing five design firms and nine construction contractors extremely easy and efficient, and allowed us to provide the client with project

information at a moment's notice."

The CH2M HILL project team is developing yet another Web-enabled system—an Electronic Operations Manual System. This database-driven, electronic/interactive document will be the first of its kind for the San Antonio utility and is expected to vastly improve its future operations and maintenance efforts.

For more information about Web-based program management tools, contact John.McNitt@ch2m.com or Rick.Myrick@ch2m.com.

Words of Wisdom

"A key component of success is listening to the customer with the company store in your back pocket, and figuring out how to tailor our internal capabilities to meet our customer's needs."

CLIENT SERVICE MANAGER FOR MILITARY CLIENTS IN THE ASIA-PACIFIC REGION
MIKE WALWORTH