



Mapping  
Summer 2010



## Robotics accelerate Gainesville Utility GIS



Jack Goff uses a hand-held data collector with robotic total station to plot points and survey water lines.

**G**ainesville Regional Utilities (GRU), one of Florida's largest utilities, added equipment from Topcon Positioning Systems to enhance data-collection which is critical to its geographical information systems (GIS) effort. As a result of doing so, the utility's GIS is poised for continued growth as the organization and its various departments start to tap its full potential.

Once heavily dependent upon often-outdated techniques, GRU's Utility GIS Technician Steve McElroy says they wanted to move past a paper mapping system and, at the same time, link multiple aspects of the utility operation through an enterprise geodatabase (GDB). "However, I think what really turned GRU's Water and Wastewater Engineering (W/WWE) Department's attention to the GDB was the streamlined as-built data entry process, the capability of multi-editing and the connectivity of GDB features which would open up the door for more in-depth tracing and modeling.

The value of a GDB is linked to the speed and accuracy of the data which is collected, then channeled into it. To improve that aspect of the system, GRU recently enhanced its data gathering

**Company:** Gainesville Regional Utilities (GRU)

**Location:** Gainesville, Florida

**Project:** Expansion of the utility's Geographic Information System (GIS)

**Location:** Gainesville, Florida

**Topcon Products:**

Topcon HiPer XT GPS receivers  
GPT-9005A robotic total station  
FC-100 field controllers  
FC-200 field controllers

**Topcon Dealer:**  
Lengemann of Florida  
Altoona, Florida  
[www.lengemann.us](http://www.lengemann.us)

*Continued on page 2*

## Robotics accelerate Gainesville Utility GIS

'We were able to do the entire [as-built] process – from gathering data to having it mapped and available – in roughly one-quarter the time it used to take. The return on investment was huge.' – Steve McElroy, GRU's Utility GIS Technician

*Continued from page 1*

operation with the addition of a pair of Topcon HiPer XT GPS receivers, a GPT-9005A robotic total station, two FC-100 field controllers and a pair of FC-200s.

According to McElroy, the new gear is primarily used in conjunction with the utility's new construction projects.

"By adding the new equipment, data collection, particularly in our as-builts, is dramatically faster," he says. "Shortly after purchasing and testing the equipment, we did a comparison. We had Jack Goff, our survey supervisor, and his crew perform a small wastewater as-built the traditional way: finding property corners, establishing a baseline, shooting top inverts of manholes, measuring distance down and over for every cleanout, etc. At the same time, we used the HiPer XT receiver and Topcon FC-100 controller to gather RTK data."

With data gathered, McElroy says they came back to the office and, using a script written in-house, they were able to bring in all the GPS points and the system automatically created the laterals, the stationing info of the cleanouts and the slopes of the

gravity mains.

"We were able to do the entire process, from gathering data to having it mapped and available in roughly one-quarter the time it used to take," says McElroy. "The return on investment was huge."

Today, more than nine years after their initial push toward GIS began, the system in place at GRU is an award-winning (the 2008 Geospatial Information & Technology Association Excellence Award) model of how to do things right. The database is accessible by almost all departments within the GRU including Water/Wastewater Engineering; Water/Wastewater Construction (both Water Distribution and Wastewater Collection); Water Reclamation Facilities; New Services; Real Estate; and Strategic Planning.

"We're not totally there yet," says McElroy. "But we've made some excellent strides with our GIS and, based on the success we've had so far, I can see a chance for even bigger things ahead."



Jack Goff, Rodney Dougherty and Kyle Wheeler.

To read other Topcon At Work stories go to [www.topconatwork.com](http://www.topconatwork.com)

## Topcon's GPT-9005A

**Smaller – Lighter – Faster – Longer. The Topcon GPT-9000 series of robotic total station is the latest, most advanced system on the market today**

- Innovative, completely cable-free system design
- New RC-3 with Superior XTRAC™ Quick-Lock tracking technology
- The most advanced, longest range, and most powerful reflector less technology available
- New FC-200 with optional, snap-in radio module
- Faster servo motor technology, faster tracking technology
- Full-color, graphical Windows Mobile instrument & field controller interface
- Lighter weight than the competition

