

South Cobb Tunnel Shaft Remote *iSiteCentral*™ Automated Monitoring

Client:

Shea/Traylor
JJG/Parsons

Location:

Cobb County, GA

Services Provided:

- Installation of automated extensometer monitoring system
- Developed monitoring system to automatically identify movement

Value Provided:

- Enable multiple users simultaneous access to critical project data
- Real-time alerts enable project team adequate response time

Background & Project Challenges

Responding to historic and projected increases in service requirements, the Cobb County Water System (CCWS) began overall improvements to their water, sewer, and stormwater management system. As part of the overall improvements, two primary interceptor sewers and two primary pump stations were identified as nearing capacity and required improvements. With the construction and completion of the South Cobb Tunnel, the CCWS will increase wastewater transmission and flow equalization for the Cobb County metropolitan area.

Geocomp's challenge was to develop and equip the South Cobb Tunnel with a monitoring system that would automatically identify significant movement in the shaft and simultaneously send alerts to the project team enabling team members adequate response time to potential risks affecting safety and scheduling.

Geocomp Role & Accomplishments

Geocomp provided an automated instrumentation and monitoring program for the pump station shaft at the South Cobb Water Reclamation Facility in Cobb County, Georgia. Using real-time monitoring, Geocomp was able to provide the project team simultaneous access to critical project data and to broadcast warnings to alert the team to significant movement in the shaft that could jeopardize safety and project schedule.

The 120-ft diameter shaft is the largest constructed for a tunnel project in Georgia. An early identified shear zone in the shaft posed a significant risk of sliding instability. A system to monitor movement and provide information for performance assessment of support structures was required.

Visual monitoring of the project addressed initial concerns that the project team had regarding rock-mass movements, but as the project progressed, ground movements above the shear zone elevated concerns. A period of heavy rain contributed to the concerns by significantly increasing the deformation rate. The project team met to address the concerns and identify stabilization measures. Ultimately, they turned to Geocomp to implement a system to automate extensometer readings which would register any sudden displacement rates and alert the team. Instrument data output was automatically uploaded over the Internet to Geocomp's proprietary data management platform - *iSiteCentral*™.

With the safety of the construction crew a top priority, Geocomp designed the system to automatically recognize and read any movements that exceeded the established limits and alert the project team through email and text messaging. Geocomp's system proved to be valuable in detecting movement, enabling the project team adequate time to proactively respond and mitigate concerns.

