

# DEKALB COUNTY DEPARTMENT OF WATERSHED MANAGEMENT (DWM) ITRACKER PILOT STUDY



<b>CLIENT</b> DeKalb County Department of Watershed Management	<b>LOCATION</b> DeKalb County, GA	<b>DURATION</b> 12 months	<b>ROLE</b> Technical Lead
	<b>BUDGET</b> \$64,000	<b>COMPLETED</b> Est. December 2020	



In an effort to reduce wet weather Sanitary Sewer Overflows (SSOs), Dekalb Department of Watershed Management (DWM) purchased 25 Eastech iTracker sensors to identify sources of Inflow and Infiltration (I&I) in its collection system. Finding and reducing or eliminating sources of I&I can reduce peak wet weather treatment loads at wastewater treatment plants, prevent wet weather capacity-related sanitary sewer overflows, and maximize existing conveyance capacity to enable continued economic growth. Blue Cypress Consulting was selected to support the development of DWM's iTracker program. The goal of this project was to detect likely sources of I&I and identify potential cost-effective methods of remediating the identified issues. To accomplish this goal, Blue Cypress broke the project into 4 phases: data and document discovery, pre-deployment analysis, post-deployment analysis, and development of best practices documentation.

The purpose of the discovery phase was to develop an understanding of the existing goals, policies, processes, and procedures of the iTracker program, assess existing DWM data sources that are available to support the program, and develop a project guidelines document. Blue Cypress analyzed existing documentation to develop a detailed workflow document indicating each step in the iTracker deployment process from study area selection and prioritization through final analysis and recommendation generation. One key aspect of the workflow process was developing and documenting procedures for determining appropriate actions when possible sources of I&I have been identified (continued iTracker deployment, CCTV, smoke testing, lining, etc.).

The scope of this project included data analysis and technical support for the deployment of 25 iTracker temporary level sensing monitors for 3 data collection periods, including pre-deployment and post-deployment analysis. Prior to each deployment, Blue Cypress analyzed GIS data, rain sensor data, water meter data, and flow meter data to determine the optimum locations to deploy the iTracker sensors. The locations were selected to create actionable-size study areas for follow-up work and ensure consistent data quality. After each data collection period, Blue Cypress analyzed the iTracker data using iTracking software to determine which areas within the study were the highest contributors of I&I. This data was then used, in conjunction with unit cost information for a variety of rehab and inspection strategies, to determine the most cost-effective solutions for reducing I&I in the area. After multiple rounds of data analysis, Blue Cypress created best practices documentation and Standard Operating Procedures (SOPs) for the field and office portion of the data collection and analysis process to ensure that all steps were clearly documented and repeatable for future DWM staff.

Blue Cypress was able to start with known I&I problem areas of up to 18 linear miles of collection system and identify several thousand linear feet of pipe on which to focus more intensive inspection and rehab strategies. This allowed DWM to effectively prioritize inspections and repairs within the target areas and deploy resources to reduce inflow and infiltration efficiently and cost-effectively. Further, the documentation of field and data analysis best practices ensured that the program could continue to operate consistently and effectively in the future.