

SMARTCOVER



REAL-TIME SEWER MONITORING

ENABLES SSO REDUCTION IN COLUMBIA, SC

BACKGROUND

Situated in the heart of South Carolina, the City of Columbia is a community with a centuries old history that brings together state capital government, modern universities, a thriving business environment and a high quality of life for city residents.

Columbia's Wastewater Management Department collects wastewater from 63,000 approved connections located along over 1,000 miles of pipe line both inside the City limits and in portions of both Richland and Lexington Counties.

The sewage is treated at the City's Metropolitan Wastewater Treatment Plant.

THE CHALLENGE

Columbia is operating under an EPA Consent Order that requires monitoring of critical manholes as part of their program to prevent sanitary sewer overflows (SSOs).

Compliance necessitates real-time monitoring and alerts to prevent SSOs, along with longer term data collection and analysis to mitigate problem areas and reduce the incidence of sewer spills.

THE SOLUTION

Columbia has installed 15 SmartCover units throughout the collection system. Primarily, the units are used to monitor critical manholes and to alert field crews of rising levels so that they can respond and remove a blockage or document an SSO in the event the levels continue to rise.

THE RESULTS

Before using SmartCover, some lines in critical areas such as those with numerous restaurants were on recurring maintenance cycle with cleaning approximately every 3 months. Now, with the trending data from SmartCover, crews can see when the levels in these lines are starting to trend upward and crews are then scheduled to go and clean the lines.

This saves unnecessary cleaning costs and prevents excess cleanings, which in time wears down pipe by removing a small amount every time the high pressure is used, especially on the extensive reinforced concrete pipe in the system.

"I have been in Collection System Management for 25 years, and really like SmartCover. The customer service and product are a good value for the money."

-- Robert L. Judy, Superintendent, Utilities & Engineering

IDENTIFYING INFLOW AND INFILTRATION DURING RAIN EVENTS

DONE-FOR-YOU ANALYTICS PROVIDE EASY INTERPRETATION OF LEVEL OR FLOW CHANGES AFFECTED BY RAINFALL.

Data fusion pinpoints I&I to prevent overflows.

Columbia also uses the optional SmartRain features to show trends in I&I during rainfall events. These integrated software tools in the SmartCover dashboard show rainfall amounts and overlay a graph of rainfall over the flow in the sewer lines to provide a clear picture of the extent of I&I occurring in certain areas.

The staff especially appreciate the feature which allows all the data to be archived when a cover is moved from one place to another so that they can always retrieve the data history as needed.



SUMMARY:

Using SmartCover technology, the City of Columbia, SC has been able to assure compliance with the EPA Consent Order while also reducing the costs of unnecessary cleanings and the negative impacts on pipes that can occur from over cleaning. At the same time, they've been able to improve responsiveness during rainfall events and to mitigate the impact of I&I.



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