CASE STUDY: METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI – COMBINED SEWER OVERFLOW (CSO) MONITORING

THE CHALLENGE

NO REAL-TIME REMOTE WATER COLLECTION DATA

The Metropolitan Sewer District of Greater Cincinnati (‘MSDGC’), a wastewater operator providing collection and treatment services to more than 800,000 residents in Cincinnati, Ohio, operates a combined sewer system. This design, typical of collection systems constructed during the 19th and 20th centuries, mixes stormwater and domestic and industrial wastewater in the same pipes. Combined sewer systems, such as MSDGC’s, are susceptible to overflows which occur when the volume of waste they contain exceeds the available capacity of sewage treatment plants. Combined Sewer Overflows (CSOs) pose a challenge to network operators. To mitigate the potential health hazards of these events, they must dispatch costly crews along with vacuum trucks and antiseptic materials.

Before implementing Ayyeka’s technology, MSDGC utilized several hundred flow monitors. Data drawn from these systems was downloaded intermittently by crews that were deployed to change batteries and check operational parameters. Unfortunately, this monitoring network did not provide real-time data from the network. This hindered decision-making that otherwise could have contributed to preventing CSOs.

As part of its modernization strategy, MSDGC wanted to implement a system that could both provide real-time data from the network and monitor precipitation. The latter could enable the operator to develop predictive models to assess the impact of unusual precipitation events on the population served by its collection system.

Once immediate actionable data of high and low pressure levels become available, the gas engineer and field teams can identify critical problems in the distribution system and take immediate steps to correct them.

With Ayyeka, sending personnel into the field to collect days or even week old data - a costly and inefficient endeavor - can now be a thing of the past.
THE SOLUTION

SCADA CONNECTIVITY TO DELIVER REMOTE DATA

MSDGC chose Ayyeka as the technology provider to implement a comprehensive system of sewer level system devices sensing from critical parts in its network. Precipitation monitoring systems, also using Ayyeka's technology, were also installed. This enabled the operator to gain real-time insights into the level within critical parts of its wastewater network – allowing it to implement proactive preventative strategies that would otherwise have been impossible.

The operator also chose to use Ayyeka's cloud-hosted service plan. Ayyeka's cutting-edge cybersecurity enabled MSDGC's employees to access the data from the network in a manner that was quick and convenient for them. The solution also drew plaudits from the operator's purchasing department - MSDGC has found that the modular nature of Ayyeka's solution has allowed it to streamline its entire procurement process.

Ayyeka's remote monitoring devices are also able to interface seamlessly with MSDGC's SCADA systems. The full autonomy and energy efficiency of Ayyeka's remote monitoring systems significantly decreases operational costs associated with battery replacements and sending crews to the field to manually download data.

Thanks to Ayyeka's scalable, modular remote monitoring solutions, MSDGC can continue to roll out additional and different types of Wavelet Kits across its infrastructure. Extending and developing new smart networks with Ayyeka's remote monitoring solutions enables operators like MSDGC to make better, faster decisions.