Case Study
Cleaning Optimization and SSO Prevention - Florida Utility

A large community-owned utility in Florida whose sewer collection system handles more than 80 million gallons of wastewater every day, turned to ADS® technologies to improve their cleaning program. With more than 3,900 miles of wastewater collection lines, over 1,300 pumping stations, and eleven wastewater treatment plants, it is one of the largest wastewater systems in the country.

With such an extensive network, the utility needed a method to gain visibility to its underground collection system, including over 100 "hot spots" that required frequent cleaning and often experienced blockages, to avoid Sanitary Sewer Overflows and optimize its cleaning and maintenance efforts.

Project Objectives

Utility management had multiple objectives to make life easier for its collection system maintenance team. The objectives included (1) minimizing Sanitary Sewer Overflows; (2) optimizing its cleaning of frequently visited locations; (3) prevent "false alarms" at locations to avoid unnecessary travel; and (4) incorporate the level data and alarms into the legacy WinCC/PI system to avoid the use of another proprietary software in their Central Command Center.

Utility managers determined that the strategic deployment of level-only monitors throughout its collection system would provide the best solution. After evaluating several monitors and field testing these units in its Innovation Lab area of its collection system, the utility selected the ADS **ECHO™** level monitor as its eyes for its wastewater system. The **ECHO** level monitor allows for easy installation at the top of the manhole, eliminating the need to descend the manhole and allowing quick transport to other locations. This Intrinsically Safe (IS) monitor protects against any sparks that may cause explosions in a gas-filled collection system and is battery-powered with a typical battery life of 1½ to 2 years.

ECHO Monitoring Advantages

The **ECHO** monitor provides wastewater flow depth measurements down to 20 feet and has the capability of measuring surcharged flow up to 8 feet above the monitor. Each monitor communicates collected depth data via cellular communication to a cloud-based software, **PRISM™**, and the software delivers real-time alarms via email or text messages to personnel when flow depth reaches cautionary, owner-determined levels.

Project History

The utility set out over a two-year period to install the **ECHO** level monitors at locations that needed visibility. During this time frame, they installed over 100 **ECHO** units throughout the system. Then they used Application Programmable Interfaces (APIs) to push the data and alarms to their legacy PI system. By establishing a system using High level and High-High level alarms, they could also trigger work orders and maintenance crew dispatches to respond in real-time to emergent conditions.

Additionally, the utility employed the ADS machine-learning application, **Blockage PREDICT™**, that provides daily blockage status for every monitor site. This proactive tool predicts formation of future blockages and gives the system owner significant time address the issue before the flow surcharges the pipe or manhole.

Summary

By monitoring the depth, using **Blockage PREDICT**, and strategically applying the data gained from the **ECHO** monitors, this Florida utility has seen significant benefits for its maintenance team and the environment. During the 2021 calendar year, they recorded success with using the **ECHO** level monitors based upon the previous year's workload and requirements. The 2021 calendar year saw a reduction in number of work orders issued by 246. A typical year prior to the installation of the **ECHO** monitors resulted in approximately 730 work orders issued for the field maintenance team. Therefore, this reduction led to over a 35% decrease in Work Orders.

By decreasing the number of Work Orders, they estimate a savings of $110,000 in 2021 by eliminating the need to visit troubled locations. Also, ADS monitoring was effective in reducing the number of SSOs experienced in their collection system, with data showing that it intercepted ten likely SSOs via alarm notification and was able to arrive at a site, perform maintenance, and prevent the sewer flow from reaching the environment.

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Learn more about ECHO:
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