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Let's Solve Water

Suffolk County Case Study
Water Utilities (Automation & Controls)

Optimizing automation and controls improves operations and minimizes maintenance

Modern analytics empowers Suffolk County DPW with smarter wastewater management

The Suffolk County Department of Public Works in Long Island, New York, boasts 26 sewage treatment plants and sewer districts, over 80 pumping stations, and more than 1,250 miles of sewers. The plants range in size from 35,00 gallons per day up to 30.5 million gallons per day.

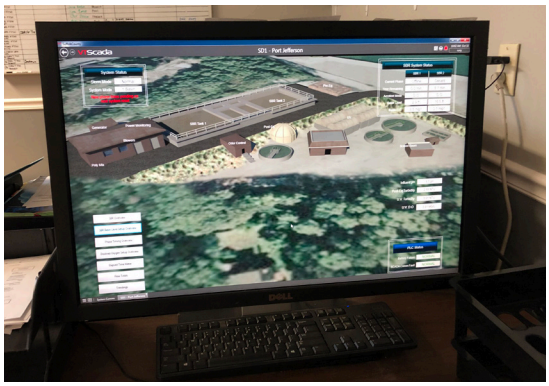
Suffolk County sought to upgrade its SCADA system in an effort to leverage smart technology and data analytics to optimize processes and lower operating costs.

The agency sought to use automation and controls as a means to more effectively manage their manpower, proactively maintain their assets, and optimize energy and performance by gaining better visibility into, and control of, critical water and wastewater operations.

The Challenge

With such a large district to manage, Suffolk County DPW needed a SCADA system to more effectively manage their assets remotely so they didn't need staff constantly in the field. As an example, staff often spent up to four hours traveling to and from a single site to respond to nuisance call-outs.

Benefit	Impact
Reduced labor costs from fewer call-outs	Saved $182,000 per year
Capital avoidance with streamlined inventory	Saved $24,000 per incident
Cost avoidance for proactive sewer system management	Saved $2 billion in sewage infrastructure repairs as a result of Superstorm Sandy
Reduced energy consumption with Concertor installation	Reduced energy consumption at the pump station by 45 percent
Reduces sanitary overflows	Improved environmental quality of the watershed



Suffolk County DPW implemented the next generation of Xylem's Flygt Outpost SCADA system to more proactively manage their sewer system and better manage their inventory.

Customer: Suffolk County Department of Public Works, Long Island, New York

Challenge: Outdated monitoring and control systems for the county's wastewater pumping stations costing thousands of dollars per year in labor costs for call-outs and false alarms, and equipment repair and replacement costs as a result of ineffective inventory management.

Xylem Solution: Suffolk County DPW partnered with Xylem to install Flygt Outpost SCADA system to leverage the Internet of Things as a way for seamless communication between controllers and effective real-time reporting. Xylem also installed MultiSmart® Intelligent Pump Station Manager (iPSM) to collect data and prioritize issues that require a technician call-out.

Result: Xylem's Flygt Outpost SCADA system and MultiSmart® iPSMs gives Suffolk County the ability to proactively manage their sewer systems, saves $182,000 per year in unnecessary labor cost and allows the DPW to more effectively manage their inventory, resulting in a cost avoidance of $24,000. Suffolk County's installation of their first Concertor pump resulted in an additional $6,000 in capital savings and on-going operational savings.

FLYGT
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Along with the Flygt Outpost SCADA system, Suffolk County DPW installed Xylem's MultiSmart® Pump Station Managers (iPSM) to simplify its waste and sewage water management processes.

The MultiSmart® iPSMs provide Suffolk County a sophisticated technology that can collect data and alarm control system alerts from their stations, and prioritize issues that truly require a technician call-out.

What's more, technicians were physically checking pump stations every day to ensure they were operating properly. With more than 80 pump stations, that practice added $182,000 per year in labor costs.

The Suffolk County DPW management team recognized the need for a more effective SCADA system. Additionally, the utility wanted the ability to more proactively manage their sewer system and better manage their inventory in order to repair or replace equipment more quickly. Having a long history with Xylem and their Flygt pumps and mixers, Suffolk County engaged Xylem and their local Flygt distributor, GA Fleet, on the ability to pair their Flygt mechanical equipment with a Flygt automation and control solution. As a result, Suffolk County partnered with Xylem and GA Fleet again on a solution.

The Xylem Solution

The Suffolk County DPW opted to implement the next generation of Xylem's Flygt Outpost SCADA system. The utility based its decision on its success with a previous version of Flygt Outpost SCADA network, which enabled the utility to manage the flow and peaks of its collection system in real time during Super Storm Sandy in 2012. Suffolk County expertly utilized the strength of the Flygt Outpost SCADA tool to remotely monitor their lift stations and field assets during Super Storm Sandy, so they could proactively make system corrections to ensure that there were no wastewater spills. The ability to leverage real-time data and analytics from the Flygt Outpost SCADA system during severe weather events represents a major cost avoidance for Suffolk County and demonstrates the utility's environmental stewardship.

Along with the Flygt Outpost SCADA system, Suffolk County DPW installed Xylem's MultiSmart® Pump Station Managers (iPSM) to simplify its waste and sewage water management processes. Beyond being a local controller with data-logging capability that seamlessly communicates with Flygt Outpost SCADA, the MultiSmart® iPSM is another effective preventative maintenance tool. With the built-in automation to measure flow without a flow meter and regularly clean the sump, the MultiSmart® iPSM avoids problems before they materialize.

For Suffolk County, the MultiSmart® iPSMs provided a sophisticated technology that could collect data and alarm control system alerts from their stations, and prioritize issues that truly require a technician call-out. Additionally, the intelligent controller monitors and calculates power usage in real time. This enables the utility's operators to identify and control any inefficiencies by leveraging the most efficient pump and reducing overall power consumption in the facility.

Results

The implementation of an effective remote monitoring system has enabled Suffolk County DPW personnel to recognize the true priority of an alarm. Now, rather than sending personnel to remote locations to collect data and monitor the wastewater system, the Suffolk County DPW can track, manage, report, archive and control equipment and settings from a central location. The SCADA system not only informs operators of existing issues, but more importantly, it alerts the team to future situations, enabling the utility to take preventive action and avoid unforeseen expenses.

Remote monitoring also reduced the need for technicians to physically check pump stations from once per day to once per week. At a cost of $50 per hour to dispatch a technician to each pump station, Suffolk County is saving $182,000 per year in labor costs.

With the MultiSmart® iPSM, Suffolk County now has the ability to quickly diagnose, repair and, if necessary, replace equipment in the field. Rather than carrying a highly diverse set of controllers that would be difficult to have all technicians trained on, Suffolk County's inventory consists of MultiSmart® iPSMs. By streamlining their inventory, the Suffolk County DPW realizes a cost avoidance of $24,000 versus having multiple controllers on the shelf.

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Suffolk County had the added challenge of having one of their lift stations constantly causing them headaches with a high frequency of clogging events. The utility installed the Concertor at its Stony Brook pump station in 2015. Positive results were evident within a month of installation. Pump clogging was completely eliminated and it was no longer necessary to check the rotation of the pump, saving time and money. Previously, maintenance call-outs were as frequent as once every three months to this lift station. Since the installation of the Flygt Concertor system, maintenance costs have been reduced by $4,100 per year. Additionally, the pump station has seen a reduction in energy consumption of 45 percent and has avoided $6,000 in pump replacement costs.

Conclusion

Once the monitoring and control system was fully commissioned, the Suffolk County DPW saw immediate results in reduced costs, reduced overflows, and improved asset management. The data collected on the MultiSmart® iPSM is communicated throughout the entire system via the Flygt Outpost SCADA network.

With the help of smart automation and control technologies, the Suffolk County Department of Public Works now has the ability to actively monitor its operations and make real-time adjustments based on data-driven decisions to better serve the community.

Xylem [ˈzīləm]

1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com

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