

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 35,000 gallons per day up to 30.5 million gallons per day.

Suffolk County sought to upgrade its SCADA system in order to leverage smart technology and data analytics to optimize processes and lower operating costs. The agency also wanted to use automation and controls to more effectively manage manpower, proactively maintain 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, the DPW management team recognized the need for a more effective SCADA system, which could better manage assets remotely and reduce the constant need for staff in the field. Before the upgrade, staff often spent up to four hours traveling to and from a single site to respond to nuisance call-outs. What's more, technicians were physically checking pump stations every day to ensure they were operating properly.

Additionally, the utility wanted the ability to more proactively manage their sewer system and improve inventory so equipment could be repaired or replaced quicker. Suffolk County engaged Xylem and their local Flygt distributor, GA Fleet, based on the ability to pair Flygt mechanical equipment with a Flygt automation and control solution.

The Xylem Solution

The Suffolk County DPW opted to implement the next generation of Xylem's Flygt Outpost SCADA system -- a decision based 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 Superstorm Sandy in 2012. 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.



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- CHALLENGE:** Outdated monitoring and control systems
- XYLEM SOLUTION:** Install Flygt Outpost SCADA system and MultiSmart® Intelligent Pump Station Manager (iPSM)

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	

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 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.

The result

Implementing an effective remote monitoring system has enabled Suffolk County DPW personnel to recognize the true priority of an alarm. Now, rather than sending staff to remote locations to collect data and monitor the wastewater system, the 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 replace equipment in the field. And by streamlining their inventory to solely MultiSmart® iPSMs, the Suffolk County DPW eliminated the need for extensive training and realized a cost avoidance of \$24,000 versus having multiple controllers on the shelf.

Suffolk County had the added challenge of a lift station that experienced frequent clogging. The utility installed the Flygt Concertor at its Stony Brook pump station in 2015. Within a month, clogging was completely eliminated and it was no longer necessary to check the rotation of the pump, saving time and money. Since installing the Concertor, maintenance costs have been reduced by \$4,100 per year. Additionally, the pump station saw a reduction in energy consumption of 45% and 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 DPW now has the ability to actively monitor its operations and make real-time adjustments based on data-driven decisions to better serve the community.



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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