



Xylem and Kennedy Industries Provide the City of Flint with Smart City Technology for Every Application

THE CITY OF FLINT experienced their last collection system upgrade back in 1979 and began facing high costs associated with failing infrastructure. The City's operations personnel were all too familiar with expensive and potentially unsafe emergency overtime due to pumps plugging on flushable wipes, rags, and other long stringy material that would build up on the leading edge of their enclosed impellers.



Clogging debris – that previously posed a safety risk

SUMMARY:

Customer:
City of Flint, Michigan

Project:
Pump Systems Upgrade

Equipment:
Flygt N-Series Pumps
Flygt Model CT-3356
Dry Pit Submersible Pumps
Flygt Concertor Pumps
Smart Technology Controls

Results:
An upgraded system that saves energy costs, minimizes downtime, and provides state-of-the-art monitoring.

THE PROBLEM

John Florshinger from the City of Flint stated "We kept operators on standby in anticipation of the pump stations clogging during rain events, and they clogged every time." In addition to failing pumps and increasing maintenance, the archaic bubbler level control system was becoming too much to handle. The City needed a streamlined, cost-efficient control scheme that would easily tie in with their SCADA system.

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Above: Flygt's Power Analyzer allows immediate voltage, phase, current, power factor and energy feedback.

Below: The Flygt Smartrun control system can even recognize when a pump is starting to clog and will self clean the pump, so it is always running at peak performance.

THE SOLUTION

PHASE ONE: The City embarked on the first phase of their overall Smart City initiative by upgrading all seven of their pump stations with Flygt N Series Hi-Chrome pumps equipped with Flygt Smart Run VFD's. This complete solution guarantees non-clog performance, eliminates outdated controls, lowers power consumption, and reduces maintenance. Florshinger added, "Since upgrading our first pump station with new Flygt pumps and Smartrun controls we have not had a call out." The Smartrun full control system replaced the problematic bubbler system without needing other external controls, saving tens of thousands of dollars. Each pump is run by a Smartrun control that insures the most efficient performance and highest reduction in energy cost possible.

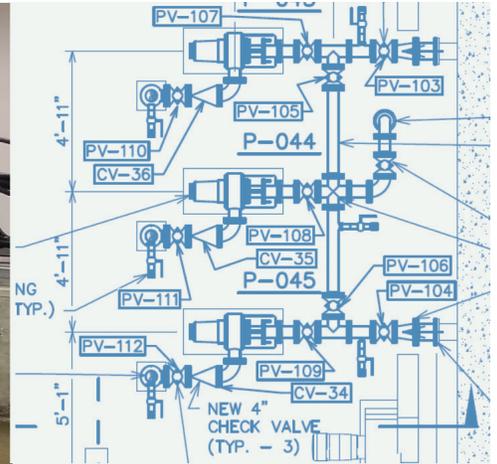


Human Machine Interface allows quick and easy access to important pump data without having to access the pump area (shown at right).



PHASE TWO: The City was so happy with their collection system upgrade that when the second phase of the Smart City initiative kicked off to replace their East Pump Station, the four specified pumps were Flygt Model CT-3356, 280 HP Dry Pit Submersible pumps. This design removed five floors of shafting and intermediate bearing supports, couplings, and guards. The pumps will never require specialty personnel for alignment and include a glycol closed

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loop system that keeps the motor cool without external cooling sources. The project was installed with state-of-the-art MAS 801, which provides 24/7 pump monitoring technology. Each pump is equipped with a smart module that provides information on vibration, seal fail, high temperature within the motor windings, bearing temperature, pump current, runtime, starts, average run time, three phase voltage, voltage imbalance, power factor, and energy usage in kilowatts. The Flygt MAS 801 provides best-in-class smart technology, which allows the City of Flint's personnel to sleep peacefully at night knowing their pumps are performing at maximum efficiency. Gone are the nightmares of phones ringing in the middle of the night due to pump failures. This critical pump information is transmitted in real time through a single cable back to the human machine interface located in the main control room eliminating the need to traverse down five stories to check on equipment.

PHASE THREE: Having proven confidence in the smart city, market-leading technology, a third phase is underway for Flint's Grit Collection system. The specified basis of bid was the most advanced smart pumping technology available, three Flygt horizontal dry pit submersible pumps equipped with service carts and Concertor technology. Flygt's Hi-Chrome impeller and insert ring construction reduces wear nearly 10 times greater than standard cast iron impellers. The impeller is equipped with a single trimming screw to insure clearances are tight and the pump is running at top efficiency. The clearances can easily be adjusted by rolling the pump on its service cart. It removes the need to install an expensive and dangerous lift/removal system. John Florshinger replied "We're excited for the Concertor technology as it will eliminate VFD buckets in our Motor Control Center and make process adjustments easier." – "An operator must have thought of that."



"We're excited for the Concertor technology as it will eliminate VFD buckets in our Motor Control Center and make process adjustments easier." As many of our customers have said – "An operator must have thought of that."



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