

Altona, Canada Water Utilities

Lift station upgrades position town of Altona for future growth

Modern automation and controls, prefabricated lift stations improve operations

The town of Altona is located 100 kilometers south of Winnipeg, the capital of Manitoba, which places it along the Mid-Continental Trade Corridor, 10 kilometers north of the U.S. border. Just a one-hour drive from Winnipeg and Grand Forks, North Dakota, Altona is perfectly located to enjoy quiet small-town living while still being able to take advantage of city resources.

Challenge

Altona's public works department operates a collection system that serves the town's nearly 5,000 residents. When two of Altona's four lift stations began experiencing frequent clogging issues a decade ago, the department replaced the existing pumps at lift stations 2 and 3 with Flygt N style impeller conversion kits for each of their pumps. While these conversions resolved the town's clogging issues, the public works department knew the lift stations would eventually need to be upgraded to better accommodate Altona's current population and future growth.

"Stations 2 and 3 were originally designed as one-pump stations back in the 1960s. We installed a duplex system in each in the mid-2000s to keep up with town growth and for redundancy," said public works manager Clint Derksen. "That setup served us well, but it made maintenance extremely tight and unsafe by current standards. The N style upgrade translated into a huge reduction in callouts, but at the end of the day our hands were once again tied for future growth in those areas. There just wasn't any room for larger pumps."

Solution

To address the need for upgrades, the public works department worked with the Manitoba Water Services Board, a local Manitoba engineering consultant and Xylem to design a solution that would be sustainable for the many years to come. Ultimately, the Flygt Concertor packaged system was selected as the best option for both lift stations.

The design of the Concertor pump, which includes a built-in pump reversing program, efficiently self-adapts to reduce standard debris issues, such as those created by non-disposables, sand, sludge and other debris. The Concertor pumps were key in addressing the stations' ongoing issues with flow and modern trash. As an added benefit, the flexibility to use the same pump in each station at different flow rates and different total dynamic heads (TDH) was essential to providing a single solution for multiple applications.



An aerial view of one of two prepackaged FRP fiberglass stations installed in the town of Altona to address frequent clogging and future growth.

CUSTOMER:	Lift stations 2 and 3, Altona, Canada
Challenge:	Pumps at two lift stations needed to be upgraded to better accommodate the community's current population and future growth. Concrete wetwells also needed replacing due to poor condition and working conditions.
XYLEM	
Solution:	The town of Altona replaced two existing pump stations with four Concertor pump packages, tw Concertor Duplex IPS panels, two FRP fiberglass stations and the Flygt Cloud SCADA system.



Additionally, the public works department valued the two-year clog-free guarantee the Concertor pump carries. Installing Concertor pumps in both lift stations 2 and 3 also means less inventory for the town of Altona. "Being able to supply the same equipment to both stations helps ensure the need for spare parts is reduced and any downtime nearly eliminated," said Richard Phelan, technical sales representative, Xylem.

The new design also called for replacing the existing lift stations with two prepackaged FRP fiberglass stations. This prepackaged solution required less onsite mechanical labor and design, and because the town needed two stations, the solution was a cost-effective alternative to building a standard concrete station. Two 2.43m x 8.20m stations were selected and carry a remarkable 50-year warranty on all FRP internal components including the tanks themselves.

The addition of automation and controls provides the public works department a means to more proactively maintain their assets and optimize energy and performance by gaining better visibility into, and control of, critical operations. The Flygt Cloud SCADA system allows operations and maintenance staff to review both real-time performance and historical performance, complete with trending analysis.

Results

Completing the upgrades to lift stations 2 and 3 has provided numerous, immediate benefits in operating costs, efficiencies and the reduction of additional maintenance costs. Since installation of the Concertor pumps, the lift stations have not experienced any clogs.

"Our old pumps experienced clogging," said Derksen. "In the two years that we've had the Concertor pumps, we have not needed to pull one yet to unclog. The SCADA has recorded instances that the pump is running less efficiently, but the Concertor is smart enough that it reverses itself and either spits out or shreds whatever is causing the issue and carries on like normal, without a callout. We don't have a huge staff so we can't afford to spend our time pulling equipment just for a clog."

Derksen added that the layout of the new fiberglass lift stations provides more visibility, which enables easier service and safer working conditions, due to the mid-level floor, isolation valves and user-friendly layout. Additionally, the glossy white NPG Gelcoat interior and LED lighting provides a brighter station to view any concerns from the surface. The Gelcoat finish also provides a cleaner station with very little debris sticking to the walls.

With the installation of the new Flygt Cloud SCADA system, the public works department is able to reap the benefits of the information provided, including monitoring the overall efficiency of the lift stations. The team has found the system easy to use, informing operators of issues to be addressed in present time as well as future situations that enable them to take preventative action, saving time and money.

"We were looking for a few key items with this upgrade. We wanted to guarantee fewer callouts, and capacity for future development and longevity. With the new Concertor system, which can provide higher future flows on demand, and the 50-year warranty provided for the FRP lift station, I'm confident in the infrastructure we have in place at stations 2 and 3," said Derksen.



The new fiberglass lift stations provide more visibility for easier service and safer working conditions.



The new Flygt Cloud SCADA system enables monitoring of the overall efficiency of the lift stations.



Altona's public works department selected the Flygt Concertor packaged system to address the lift stations' ongoing issues with flow and modern trash.

Xylem, Inc. 4828 Parkway Plaza Blvd., Suite 200 Charlotte, NC 28217 Tel 704.409.9700 Fax 704.295.9080 855-XYL-H2O1 (855-995-4261)

www.xylem.com

Flygt is a trademark of Xylem Inc. or one of its subsidiaries. © 2022 Xylem, Inc. NOVEMBER 2022