Sticking with Innovation That Works

Due to the age of its wastewater control system, Steinbach, Manitoba, decided it was time for some new technology.

With a population of about 15,000, Steinbach is the third largest city in Manitoba and one of the fastest growing areas in Canada. The Waterworks Department treats and distributes potable water as well as wastewater for all residents.

The city has three wells that draw water from a limestone aquifer. The distribution system consists of a network of more than 80 km of underground pipes, which carry treated water from the water treatment facility to homes, businesses, and fire hydrants. Steinbach's four reservoirs' combined capacity is about two to three days of storage depending on demand. The treatment and storage of all water, which is disinfected with chlorine gas and sodium hypochlorite, is designed for continual movement so water never gets stale.

Scope

Mike Heppner, the Waterworks Department Head and Manager, oversees all aspects of water and wastewater for the city. Heppner states, "The first part of our upgrade was to the wastewater system, which includes five remote sewage lift stations, one lagoon blower building, and six controllers, with one main terminal receiving all data and compiling it on a central PC located in the office."

There was only one issue with Steinbach's current system: age. It had been operating since 1993, an eternity in the world of technology.

Solution

Because the wastewater department was already familiar with operating the existing Xylem/Flygt M&C SCADA system with Aquaview software and APP controllers, they decided to inquire what new technologies the company could offer. Steinbach contacted the manufacturer through its Winnipeg Branch to inquire about the possibility of completely upgrading their Aquaview SCADA system throughout the department with the latest technology. With help from the firm's Monitoring & Control Support Department (Charlotte, NC), the existing system was assessed and an upgrade quotation was presented to the city.

City of Steinbach Logo

Lift Station number status screen
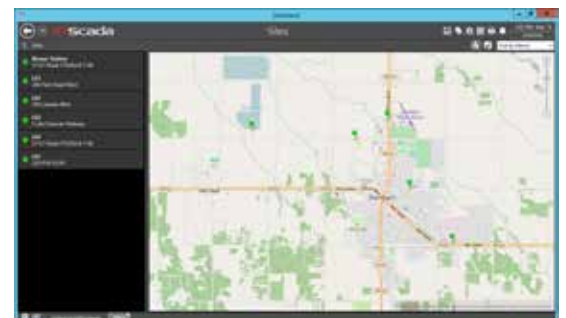
SCADA program map representation

Customer: City of Steinbach
Challenge: Need for updated technology
Products: SCADA

Results

Controllers were already installed in half of the stations prior to the VTScada installation. The manufacturer began the switchover by running some in-house sessions for staff to familiarize themselves with the units. "We had one station that had an APP controller that was not working with VTScada so this unit was changed out a while later, and this was the only issue we encountered during the entire upgrade," reports Heppner. He continues: "We have had some efficiency increases with VTScada, such as each station can be checked on and confirmed it is operating properly at a glance, and it is easy to monitor multiple stations during storms or emergencies." Heppner also likes that detailed information gets tracked on the alarm page and critical information appears on the front page of every station.

In 2008, Trihedral, a SCADA software vendor, began discussions with lift station control and monitoring specialist, Xylem (then MultiTrode), makers of the MultiSmart pump station manager. MultiSmart–some elements of which still remain in Steinbach's new SCADA system–features over 400 tags per site, providing unparalleled data for water and wastewater utilities for their lift stations.

Trihedral and Xylem worked together to create a Site Import Utility that users can launch each time they add a new MultiSmart device to their SCADA system. VTScada uses DNP3 to remotely download the device's XML configuration file. Since many utilities employ radios with limited bandwidth, this file is compressed and decoded on the fly by both the MultiSmart unit and VTScada. The resulting small transmission size does not interfere with site polling. Alternatively, VTScada can also use a local configuration file in the case of Modbus protocol.

After prompting the user to make a few simple configuration choices, the utility automatically generates all the necessary tags and a selection of key application pages. Users can also easily create more specialized pages using VTScada's drag-and-drop toolset.

The SCADA system remains fully operational during this process. This is a key feature of VTScada and a prime concern of utilities, which must maintain a watchful eye on operations at all times. The newly added site can be tested on one server and then the validated configuration settings can be automatically propagated to all hot back-up servers and clients in real-time. Offline servers are also updated automatically upon restart.
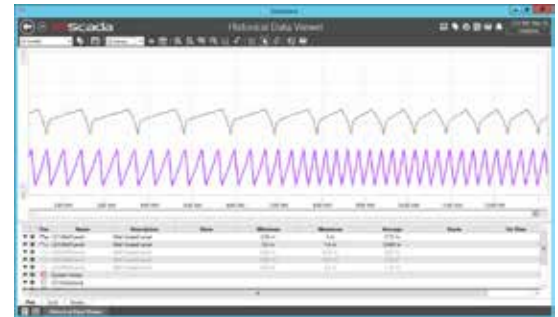
Mike Heppner: "Once we saw what we could get with VTScada, it was a no-brainer! There are simply too many things to adequately describe what we can do now as opposed to before."

Blower station status screen
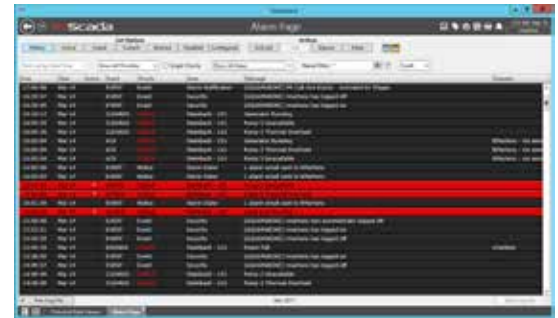
SCADA program alarm page

SCADA Historical Data Viewer

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