

District of Barriere
REPORT TO COUNCIL
Request for Decision

Date: February 3, 2025	File: 530.20/Rpts
To: Council	From: Public Works Manager
Re: SCADA System Implementation	
Recommendation: THAT Council instructs Staff to implement a Supervisory Control and Data Acquisition (SCADA) system from Exceed Electrical Engineering for the Water and Wastewater systems utilizing COVID-19 relief funds and estimated at up to \$110,000.	

Purpose

For Council to consider providing approval to modernize the District’s water and wastewater systems by implementing a Supervisory Control and Data Acquisition (SCADA) system that ensures enhanced operational efficiency, integrate all utility systems, and maintain system reliability.

Background

The District has never had a SCADA system, and its implementation will significantly enhance operational efficiency and system reliability. A new SCADA system will support real-time monitoring and control of water and wastewater utilities, improving service delivery and reducing maintenance costs. Additionally, the system will reduce the need for facility site visits and potential call-outs, reducing overtime costs, and thereby freeing up staff to focus on other critical projects. Our current electrical engineering consultant, Exceed Electrical Engineering Ltd (Exceed), has extensive knowledge of our operating systems, equipment, and installation, ensuring seamless integration and operational efficiency.

In addition, the soon to be constructed wastewater treatment plant will incorporate this type of system and should the other treatment facilities be upgraded to the same SCADA system it will ensure system wide compatibility with a centralized management interface instead of a variety of independent systems.

During the recent staffing shortage in the Water and Wastewater Department is also became apparent how critical a SCADA system would be to continue our operations by utilizing for example remote support resources during staff vacancies.

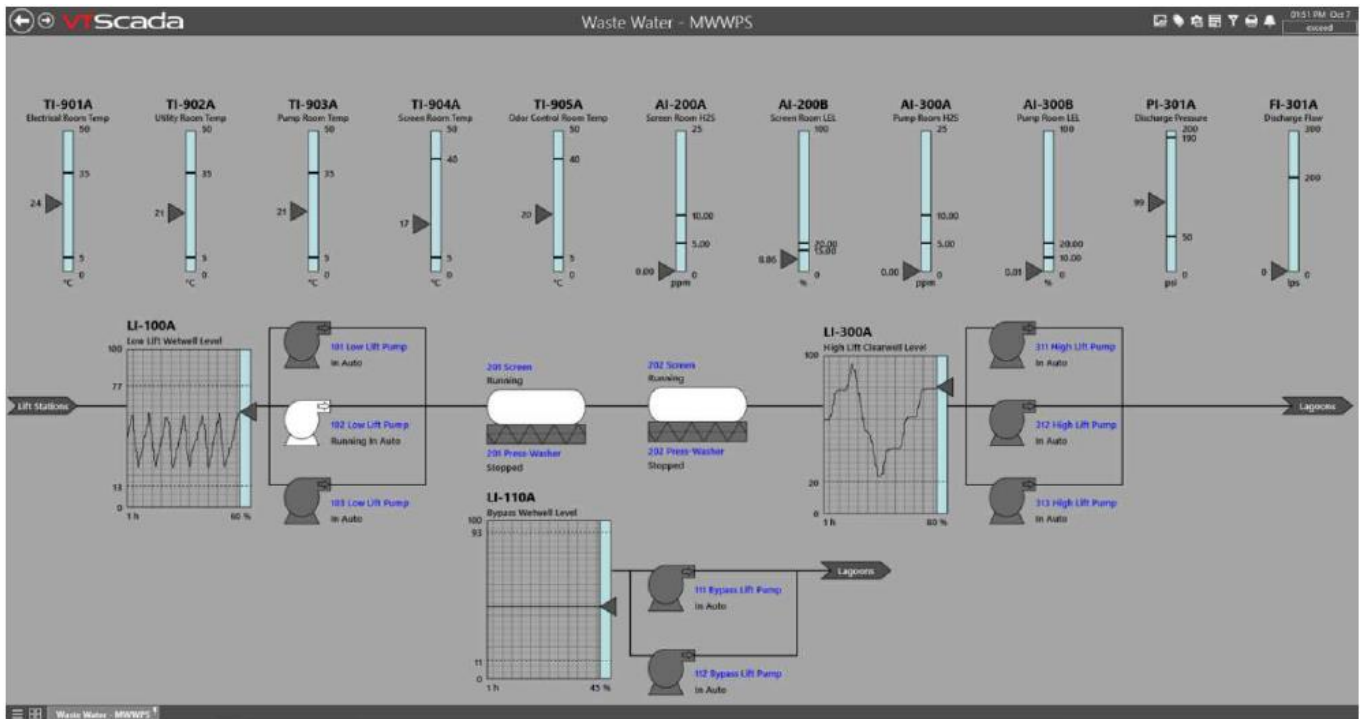
The funding for this project is available through the remaining COVID-19 relief funds, which allow for computer and other electronic technology costs. Given the technical complexity of the SCADA system and the consultant’s familiarity with our current infrastructure, a sole-source procurement is recommended to maintain system compatibility, reduce implementation risks, and ensure cost-effectiveness. Total initial costs to implement including hosting and licensing are estimated at \$110,000 including taxes and disbursements.

The current procurement policies prevent Staff from sole sourcing this equipment even though all parameters are in line with standard processes & procedures, and the project is included in Council’s Strategic Plan. As such, Council has to approve this sole sourcing request.

Below are some screenshots of similar SCADA systems:



Above: showing a simple trending graph.



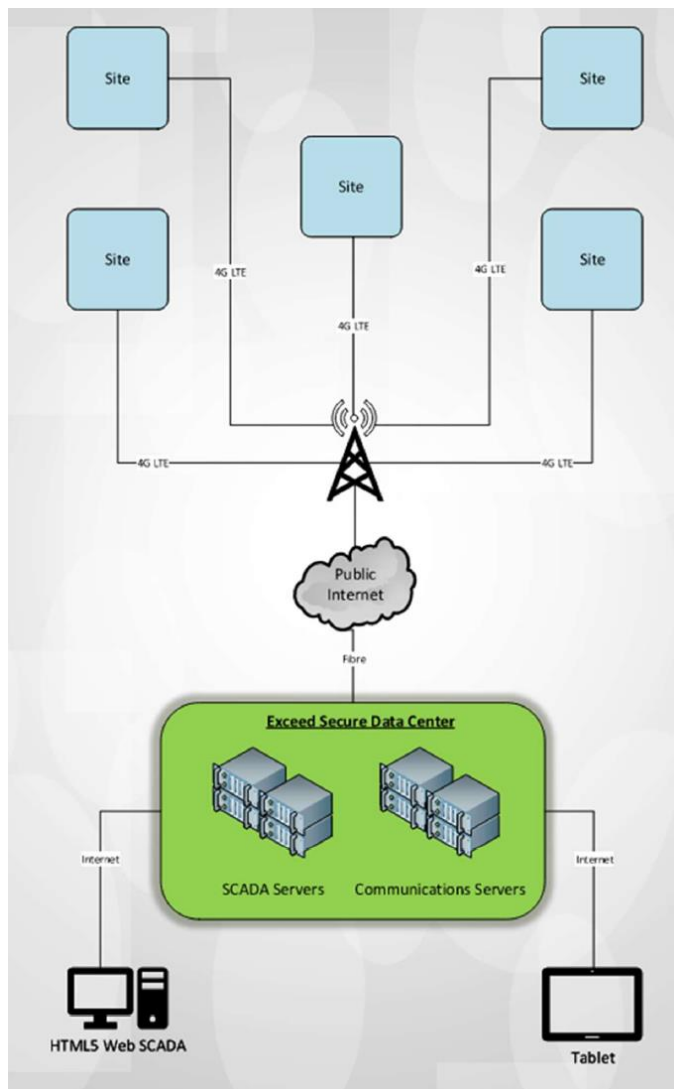
Above: showing water pump activity and water levels

To the Right: Showing a basic network communication diagram.

Benefits or Impact

General

1. **Enhanced System Performance:** A new SCADA system will provide better data accuracy, improved automation, and increased operational control.
2. **Reduction in Site Visits:** The system will allow for remote monitoring and control, reducing the need for staff to conduct on-site inspections, thus increasing efficiency.
3. **System Compatibility & Integration:** Exceed has designed and implemented previous SCADA system upgrades and is familiar with our current infrastructure, minimizing integration challenges.
4. **Efficiency & Cost Savings:** Implementing a new system with an experienced consultant reduces the need for extensive training and system overhauls, leading to lower costs and reduced downtime.
5. **Technical Expertise & Continuity:** The consultant's prior experience with our systems ensures continuity in design, troubleshooting, and long-term support, reducing operational risks. Other local governments such as Clearwater use the same proposed technology which would subsequently allow for collaboration and potential emergency support if needed.
6. **Funding Utilization:** The use of COVID-19 relief funds provides a timely opportunity to modernize and enhance our SCADA infrastructure while ensuring compliance with funding requirements.



Finances

The project is fully funded through unused COVID-19 relief funds. We're structuring the purchase so that the first three years of support fees are included. After the initial 3 years, there would be annual operational technology costs of roughly \$5,000 or \$415 per month. We anticipate that this cost would be fully recovered by a combination of reducing call-outs and efficiency gained for staff to focus on other critical tasks.

Hard costs for SCADA System supply and implementation at all sites, including up front licencing and technology costs, are roughly \$95,000 + taxes and disbursements.

Strategic Impact

The SCADA integration aligns with Priority #3, Goal 1 to complete the wastewater treatment plant project and SCADA System as per the 2025/26 Strategic Plan. Further, this also aligns with Priority #2 – Fiscally Responsible Operations in particular this project is intended to reduce operational costs to fund additional contributions to reserves.

Risk Assessment

Compliance:

The acquired system data is easily tabulated and could then be sent to the Ministry of Environment as part of our quarterly reporting thus eliminating human errors and saving time manually compiling data. The funding to be used are eligible costs under the Covid Safe Restart Grant. This project would be included in the Financial Plan Bylaw as a Capital Project.

Risk Impact: low

Internal Control Process:

Current procurement policy prohibits sole sourcing by Staff for this monetary amount. Staff is asking council to allow Exceed to supply, install and maintain the SCADA system.

Next Steps / Communication

- Finalize the procurement process and begin implementation of the systems.
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Attachments

- N/A

Recommendation:

THAT Council instructs Staff to implement a Supervisory Control and Data Acquisition (SCADA) system from Exceed Electrical Engineering for the Water and Wastewater systems utilizing COVID-19 relief funds and estimated at up to \$110,000.

Alternative Options

1. Maintain the Current Operations Without SCADA: This would require continued manual monitoring and facility visits, increasing labor costs and operational inefficiencies. Remote support would be limited during staffing shortages.
2. Deferring the Project: This would delay necessary upgrades, potentially impacting system reliability and compliance.

Prepared by: C. Matthews, Public Works Manager

Reviewed by: D. Drexler, CAO