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The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2025-W-10
Date:	April 2, 2025

Subject:

Sole Source Procurement of Engineering Services Support for the SCADA Division's Design Group

Recommendations:

That the Works Committee recommends to Regional Council:

A) That staff be authorized to negotiate and award a sole source contract to Eramosa Engineering Ltd. to provide engineering services support for the Supervisory Control and Data Acquisition Design Group for an amount not to exceed $172,000*; to be financed from savings in the approved 2025 Water Supply and Sanitary Sewer Operating Budgets; and

B) That the Commissioner of Finance be authorized to execute the necessary engineering services agreement.

Report:

1. Purpose

1.1 The purpose of this report is to obtain Regional Municipality of Durham (Region) Council authorization to negotiate and award a sole source contract to Eramosa Engineering Ltd. (Eramosa) to provide engineering services support to the Supervisory Control and Data Acquisition Design Group (SCADA) Division from May 1, 2025, to December 31, 2025.

1.2 Dollar amounts followed by an asterisk (*) are before applicable taxes.

2. Background

2.1 The Region owns, operates and maintains 14 water treatment systems and 11 wastewater treatment systems, each equipped with automation, control and networking infrastructure that comprises the Region's SCADA systems. These systems are critical to providing remote and automated operation of the water and wastewater systems and collecting historical data for regulatory reporting. The SCADA Division supports approximately 145 facilities across Durham Region.

2.2 For public safety, efficiency, cost-effectiveness, and regulatory compliance, the Region's water and wastewater systems are monitored through various SCADA applications and networks consisting of approximately 320 programmable logic controllers (PLCs), SCADA servers and workstations at most treatment facilities. Reliable SCADA systems are crucial for monitoring and operating these extensive and decentralized systems. Without them, significantly more staff would be needed to operate, collect data and report on facility performance.

2.3 Modern SCADA systems consist of multiple layers that must function together. Each layer requires specific design, planning, support, and troubleshooting skills for the systems to remain robust and reliable.

2.4 The Region's SCADA Division currently has 17 full-time staff members, with five vacancies that are actively being filled. The Division has a six-year plan to increase staffing levels to keep pace with technology and compliance requirements. Due to labour market conditions, filling the vacant SCADA positions has been challenging, limiting the group's ability to support capital projects in the design and construction phases.

2.5 The project-level burden has increased as several SCADA team members have been redeployed to address priority work, such as the cyber security event at the Duffin Creek Water Pollution Control Plant (WPCP) in October 2024. This event required an urgent response and will lead to a rebuild of Duffin Creek WPCP's SCADA system. Additionally, upgrades to the Water SCADA Wide Area Network (WAN) are being deployed due to mandated changes in the radio spectrum by Innovation, Science and Economic Development (ISED), as detailed in the Council Information Package Report #2025-INFO-12.

2.6 There were 53 active capital projects in 2024, either in the design or construction phases, varying in size and complexity, requiring support from the SCADA Division. Each project requires SCADA Division staff to review deliverables at various stages for a wide range of system requirements, from modern SCADA system architectures to modifications of existing legacy SCADA systems that are proprietary and require specialized knowledge. The SCADA team also provides guidance on SCADA standards and documentation and guiding consultants through contract-specific requirements.

3. Justification for the Sole Source

3.1 Eramosa has been providing specialized SCADA engineering services to the Region for over 20 years, including the following key projects:

Various Duffin Creek WPCP SCADA Upgrades (2006-2010)

a. Water SCADA Upgrade Program. Completed contracts below and future sites are currently in design.

- Bowmanville Water Supply Plant (WSP), Blackstock Wells #7 and #8 and Well #6 (T-725-2010)
- Pilot WAN (T-726-2011)
- Newcastle WSP (T-730-2011)
- Remaining SCADA WAN (T-607-2014)
- East Water Remaining Remote Sites (T-1057-2018)
- Ajax SCADA Server Upgrades (2024)

b. Corbett Creek WPCP Digester Upgrade (D2015-048)

c. Newcastle WPCP SCADA Upgrades (T-616-2015)

d. Harmony Creek WPCP and SCADA Upgrades including new Administration Building (D2017-017)

e. Duffin Creek WPCP SCADA Software / Hardware Upgrades (2018)

f. Newcastle WSP and Sanitary Sewage Pumping Station (D2020-35, currently in construction)

g. Duffin Creek WPCP Blowers Update (D2021-09)

h. Whitby WSP Clearwell 3 Addition

i. Newcastle WSP SCADA Server Upgrades

j. Water, Wastewater and Duffin eRIS Deployment, Implementation and Training

3.2 Eramosa also helped develop the Region's SCADA standards and guidelines as part of the Water SCADA Upgrade project.

3.3 Considering the above, Eramosa has an intimate knowledge and understanding of the Region's complex water and wastewater SCADA systems. If another consulting firm were to be retained for the same task, considerable time and expense would be required for them to research and assess the existing systems and standards before they could deliver reliable engineering support services. It would also create more opportunities for errors and omissions, creating a greater burden on SCADA staff and additional costs to the Region's projects.

4. Proposed Consulting Services

4.1 Services provided under the assignment will include:

a. SCADA project management and coordination;

b. Technical reviews of milestone deliverables of capital projects;

c. Preparation of contract documents;

d. Engineering design and construction support;

e. Condition assessments;

f. Planning growth and state-of-good-repair projects;

g. Annual capital budgeting support;

h. SCADA system optimization;

i. Research and development, including implementation of innovative idea and technology; and

j. Technical guidance to assist the Region in meeting its targets.

4.2 The expected benefits of the SCADA Engineering Services Support assignment include:

a. Streamlined approach of managing and planning Regional SCADA projects within complex, fully operational facilities that must be maintained throughout construction activities;

b. Continued high standard of service excellence, cost control, and project execution;

c. Flexibility to support a wide array of projects ranging from ad hoc assignments, studies, and minor upgrades to capital project delivery;

d. Subject matter expertise to quickly support issues where the consequences of failure may result in compliance and maintenance challenges as well as significant costs; and

e. Agile project management and improved resource utilization by reducing the effort and time to retain and administer separate engineering services contracts for individual projects or operational initiatives.

5. Financial Implications

5.1 Section 7.2 of the Region's Purchasing By-law #16-2020 permits the sole sourcing of goods or services under specific circumstances, including where a change of supplier is not recommended due to compatibility/continuity concerns and cost impacts. The by-law requires Regional Council approval for any negotiated purchases of $100,000 and greater in value.

5.2 Financing for the engineering support services agreement will be provided from savings in the approved 2025 Water Supply and Sanitary Sewer Operating Budgets.

6. Relationship to Strategic Plan

6.1 This report aligns with the following strategic goals and priorities in the Durham Region Strategic Plan:

a. Strong Relationships

- S5. Ensure accountable and transparent decision-making to serve community needs, while responsibly managing available resources.

7. Conclusion

7.1 That staff be authorized to negotiate and award a sole source contract to Eramosa Engineering Ltd. to provide engineering services support for the Supervisory Control and Data Acquisition Design Group, at an amount not to exceed $172,000*.

7.2 This report has been reviewed by the Finance Department and the Commissioner of Finance concurs with the financial recommendations.

7.3 For additional information, contact Tyler Wilson, Manager, SCADA, at 905-668-4113 extension 3117.

Respectfully submitted,

Original signed by:

Ramesh Jagannathan, MBA, M.Eng., P.Eng., PTOE
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer