



The Regional Municipality of Durham

Works Committee Agenda

Wednesday, April 2, 2025, 9:30 a.m.

Regional Council Chambers

Regional Headquarters Building

605 Rossland Road East, Whitby

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 2097.

Note: This meeting will be held in a hybrid meeting format with electronic and in-person participation. Committee meetings may be [viewed via live streaming](#).

	Pages
1. Roll Call	
2. Declarations of Pecuniary Interest	
3. Adoption of Minutes	
3.1 Works Committee meeting - March 5, 2025	4
4. Statutory Public Meetings	
There are no statutory public meetings	
5. Presentations	
There are no presentations	
6. Delegations	
There are no delegations	
7. Waste	
7.1 Correspondence	
7.2 Reports	
There are no Waste Reports to be considered	
8. Works	
8.1 Correspondence	
a. Certificate of Proclamation, dated February 18, 2025	13
Re: "Dig Safe Month" (April)	

Recommendation: Receive for Information

8.2 Reports

- | | | |
|----|--|----|
| a. | Report #2025-W-7
Sole Source Procurement of Engineering Services for the Implementation of the Ephyra® Technology and Post Implementation Support for Digester #2 at the Courtice Water Pollution Control Plant in the Municipality of Clarington | 15 |
| b. | Report #2025-W-8
Sole Source Procurement of Engineering Services for the Duffin Creek Water Pollution Control Plant located in the City of Pickering | 22 |
| c. | Report #2025-W-9
Approval of Unbudgeted Capital Project and Financing to Undertake the Stage 3 Influent Pumping Station Toshiba Control System Upgrades for the Duffin Creek Water Pollution Control Plant, located in the City of Pickering | 34 |
| d. | Report #2025-W-10
Sole Source Procurement of Engineering Services Support for the SCADA Division's Design Group | 38 |
| e. | Report #2025-W-11
Approval for Unbudgeted Capital Work and Financing for the Refurbishment of Four Vehicle Hoists at Durham Region Transit East Bus Repair Garage in the City of Oshawa | 44 |

9. Advisory Committee Resolutions

There are no advisory committee resolutions to be considered

10. Confidential Matters

10.1 Reports

- | | |
|----|--|
| a. | Report #2025-W-12
Confidential Report of the Commissioner of Works – Proposed or Pending Acquisition of Land for Regional Corporation Purposes as it relates to Property in the Township of Brock

Under Separate Cover |
|----|--|

11. Other Business

12. Date of Next Meeting

Wednesday, May 7, 2025 at 9:30 AM

13. Adjournment

Notice regarding collection, use and disclosure of personal information:

Written information (either paper or electronic) that you send to Durham

Regional Council or Committees, including home address, phone numbers and email addresses, will become part of the public record. This also includes oral submissions at meetings. If you have any questions about the collection of information, please contact the Regional Clerk/Director of Legislative Services.

The Regional Municipality of Durham

MINUTES

WORKS COMMITTEE

Wednesday, March 5, 2025

A regular meeting of the Works Committee was held on Wednesday, March 5, 2025 in Council Chambers, Regional Headquarters Building, 605 Rossland Road East, Whitby, Ontario at 9:30 AM. Electronic participation was offered for this meeting.

1. Roll Call

Present: Councillor Barton, Chair
Councillor Marimpietri, Vice-Chair
Councillor Cook*
Councillor Foster*
Regional Chair Henry attended the meeting at 9:31 AM
Councillor Mulcahy attended the meeting at 9:32 AM
***denotes Councillors participating electronically**

Absent: Councillor Lee was absent on municipal business
Councillor Nicholson

Also
Present: Councillor McDougall
Councillor Woo*
Councillor Wotten*
***denotes visiting Councillors participating electronically**

Staff
Present: N. Andres, Manager, Water and Wastewater Infrastructure Planning
E. Baxter-Trahair, Chief Administrative Officer
B. Bridgeman*, Commissioner of Community Growth & Economic Development
S. Ciani, Committee Clerk, Corporate Services – Legislative Services
S. Dessureault, Committee Clerk, Corporate Services – Legislative Services
D. Dunn, Director, Transportation & Field Services
A. Evans, Director of Waste Management Services
C. Goodchild, Director of Community Growth
B. Holmes, General Manager of Transit
J. Hunt, Regional Solicitor/Director of Legal Services
R. Inacio, Systems Support Specialist, Corporate Services – IT
R. Jagannathan, Commissioner of Works
E. Lamain, Manager, Maintenance Operations
L. Saha*, Manager, Waste Services
K. Smith, Committee Clerk, Corporate Services – Legislative Services

N. Taylor*, Commissioner of Finance
P. Veiga, Manager, Waste Management Operations
D. Waechter, Director, Capital Projects Delivery
* **denotes staff participating electronically**

2. Declarations of Pecuniary Interest

There were no declarations of pecuniary interest.

3. Adoption of Minutes

Moved by Councillor Marimpietri, Seconded by Councillor Cook,
(16) That the minutes of the regular Works Committee meeting held on
Wednesday, February 5, 2025, be adopted.
CARRIED

4. Statutory Public Meetings

There were no statutory public meetings.

5. Presentations

5.1 Andrew Evans, Director, Waste Management Services, and Peter Veiga, Manager, Waste Management Operations, re: Update on the Automated Cart-Based Garbage Collection Pilot Project and Future Waste Collection Contract Delivery (2025-WR-2) [Item 7.2 A)]

Andrew Evans, Director, Waste Management Services, and Peter Veiga Manager, Waste Management Operations, provided a PowerPoint presentation regarding an update on the Automated Cart-Based Garbage Collection Pilot Project and future waste collection contract delivery.

Highlights from the presentation included:

- What is Automated Cart Waste Collection?
- Automated Cart Collection in Action
- Benefits of Automated Collection
- Automated Collection Pilot Results
- Options for Cart Sizes – 120L and 240L
- Health and Safety – Automated vs. Manual Collection
- Financial Impacts
- Cart Distribution
- Next Steps

Moved by Regional Chair Henry, Seconded by Councillor Marimpietri,
(17) That the order of the agenda be altered to consider Item 7.2 A) Report #2025-WR-2: Update on the Automated Cart-Based Garbage Collection Pilot Project and Future Waste Collection Contract Delivery next.

CARRIED

7. Waste

7.2 Reports

A) Update on the Automated Cart-Based Garbage Collection Pilot Project and Future Waste Collection Contract Delivery ([2025-WR-2](#))

Report #2025-WR-2 from R. Jagannathan, Commissioner of Works, was received.

Staff responded to questions from the Committee regarding whether waste audits will be conducted before and after the implementation of the automated cart-based garbage collection; whether residents will be charged for the carts, what the carts will look like, and if they will lock to prevent animals getting in; the new technology on the trucks that will allow workers to see what is inside the bags as they are being tipped into the trucks; whether the pilot program can be continued or expanded; whether there will be a replacement program put in place for broken/damaged carts; where the carts will be acquired from; and what the feasibility of the carts is for rural residents with long driveways.

Moved by Regional Chair Henry, Seconded by Councillor Marimpietri,
(18) That we recommend to Council:

- A) That Report #2025-WR-2 of the Commissioner of Works, “Automated Cart-Based Garbage Collection Pilot Project Results and Future Waste Collection Contract Delivery”, be received for information;
- B) That Regional Council approve the transition of Durham Region’s future residential curbside waste management collection contracts for garbage and organics from manual collection to automated collection;
- C) That Regional Council direct staff to amend By-law #2024-009, A By-law to Regulate the Provision of Waste Management Services Under the Jurisdiction of the Regional Municipality of Durham, effective April 1, 2028, to reflect an automated residential curbside waste collection program;
- D) That the costs resulting from the procurement for automated cart-based waste collection services be included in 2028 and future Waste Management Business Plans and Budgets; and

- E) That staff develop a process for recovering the future cost of carts issued to new homes and the cost to replace broken carts subject to the satisfaction of the Commissioner of Finance and the Commissioner of Works.

CARRIED AS AMENDED
(See Following Motion)

Moved by Regional Chair Henry, Seconded by Councillor Marimpietri,
(19) That the main motion (18) of Regional Chair Henry and Councillor Marimpietri be amended to include a new Part F) to read as follows:

- F) That staff be requested to investigate and report back on the feasibility and costs of continuing the current pilot program in the Town of Ajax and the Township of Scugog locations, as well as what the costs would be to expand the pilot program to the rest of the Region's waste collection areas within the existing contractual framework(s).

CARRIED

The main motion (18) of Regional Chair Henry and Councillor Marimpietri was then put to a vote and CARRIED AS AMENDED.

6. Delegations

6.1 Claire Malcolmson, Executive Director, Rescue Lake Simcoe Coalition and Ontario Salt Pollution Coalition, re: Provincial Action on Salt Pollution [Item 9.1 A)]

Claire Malcolmson, Executive Director, Rescue Lake Simcoe Coalition and Ontario Salt Pollution Coalition appeared electronically before the Committee and provided a PowerPoint presentation with respect to Item 9.1 A) Provincial Action on Salt Pollution.

Highlights from the delegation included:

- Our Ask
- Water Quality Stressor
- Lake Simcoe Watershed Salt Vulnerable Areas
- Ontario Leads Canada in Salt Pollution
- Opportunity to Regulate Snow and Ice Management Sector in Ontario
- Industry Association Landscape Ontario is Asking for Limited Liability

Moved by Councillor Mulcahy, Seconded by Councillor Marimpietri,
(20) That the rules of procedure be suspended in order to extend C. Malcolmson's delegation by 2 minutes to finish their delegation.

CARRIED ON A 2/3rds VOTE

- Environment and Natural Resources 2001 Assessment Report of Road Salts

- Canadian Water Quality Guideline
 - Daphnia Species
- Hidden Costs of Salt
- Our Ask

C. Malcolmson responded to questions from the Committee.

It was the consensus of the committee to alter the agenda to consider Item 9.1 A) Resolution regarding Provincial Action on Salt Pollution, next.

9. Advisory Committee Resolutions

9.1 Durham Environment and Climate Advisory Committee

A) Resolution regarding Provincial Action on Salt Pollution

This item was referred from the February 4, 2025, Community Growth & Economic Development Committee.

Moved by Councillor Mulcahy, Seconded by Councillor Cook,
(21) That we recommend to Council:

That the following motion from the Ontario Road Salt Coalition be endorsed:

Whereas road salt is a known toxic substance designated under the Canadian Environmental Protection Act because of tangible threats of serious or irreversible environmental and health damage from road salt; and

Whereas salt levels in Ontario's groundwater aquifers, creeks, rivers, and lakes have increasingly worsened since the 1970s, seriously affecting municipal drinking water sources and aquatic life; and

Whereas the Ontario and Canadian governments have taken many actions over the past 25 years including setting water quality guidelines, developing voluntary codes of practice, signing the Canada-Ontario Great Lakes Agreement, and holding workshops, yet still the salt problem continues to grow; and

Whereas numerous situation analyses have recommended salt solutions involving liability protection, contractor certification, government-approved Best Management Practices (BMPs) and salt management plans; and

Whereas increased numbers of slips and falls claims, and other injury/collision claims related to snow and ice, are resulting in salt applicators overusing salt beyond levels considered best practices; and

Whereas unlimited contractor liability is making it difficult or expensive for snow and ice management contractors to obtain insurance coverage, resulting in

contractors leaving the business, thereby making it difficult for municipalities and private owners to find contractors; and

Whereas the Snow and Ice Management Sector (SMS) of Landscape Ontario is working with the Ontario government to institute a limited liability regime for snow and ice management, including enforceable contractor training/certification and government approved BMPs for salt application; and

Whereas many Ontario municipalities have Salt Management Plans, but these often require updating in light of improved science and better salt management practices now available.

Therefore be it resolved that:

1. That Durham Region urges the province of Ontario to work urgently with key stakeholders to develop limited liability legislation, including enforceable contractor training and a single set of provincially endorsed standard Best Management Practices for snow and ice management; and
2. That Durham Region urges the province of Ontario to create and fund an expert stakeholder advisory committee to advise the province and municipalities on the best courses of action to protect freshwater ecosystems and drinking water from the impacts of salt pollution; and
3. That Durham Region commits to the reduction of the use of road salt as much as possible while maintaining safety on roads and sidewalks; and
4. That this resolution be sent to all municipalities in Durham Region, Association of Municipalities of Ontario (AMO), local MPPs, Conservation Ontario, Minister Andrea Khanjin (MECP), Interim Minister Todd McCarthy (MECP), Attorney General Doug Downey, and Premier Doug Ford.

REFERRED BACK TO STAFF ON A

RECORDED VOTE

(See Following Motion)

Moved by Councillor Mulcahy, Seconded by Councillor Cook,

- (22) That the main motion (21) of Councillors Mulcahy and Cook be referred to Legal and Finance staff in order to review the resolution from a legal/risk management standpoint; that the resolution also be forwarded to the Lake Simcoe Region Conservation Authority (LSRCA) for review and input; and that a resolution be brought back to a future Works Committee meeting for consideration.

CARRIED ON THE FOLLOWING

RECORDED VOTE:

Yes

No

Councillor Cook
Councillor Foster
Regional Chair Henry
Councillor Marimpietri
Councillor Mulcahy
Councillor Barton, Chair

None

Absent: Councillor Lee
Councillor Nicholson

Declarations of Interests: None

7. Waste

7.1 Correspondence

- A) Correspondence from Atif Durrani, Project Director, Residual Waste, Business Transformation, City of Toronto, dated February 20, 2025, re: City of Toronto - Request for Expression of Interest (REOI) – Residual Waste
-

Moved by Regional Chair Henry, Seconded by Councillor Marimpietri,
(23) That the correspondence from Atif Durrani, Project Director, Residual Waste, Business Transformation, City of Toronto, dated February 20, 2025, regarding the City of Toronto's request for Expression of Interest (REOI) – Residual Waste be referred to staff with the direction to decline.
CARRIED

7.2 Reports

- A) Update on the Automated Cart-Based Garbage Collection Pilot Project and Future Waste Collection Contract Delivery ([2025-WR-2](#))
-

This item was dealt with earlier in the meeting. Refer to pages 3 and 4 of these minutes.

8. Works

8.1 Correspondence

There were no communication items considered.

8.2 Reports

A) The Regional Municipality of Durham's Drinking Water Systems 2024 Summary Report (2025-W-5)

Report #2025-W-5 from R. Jagannathan, Commissioner of Works, was received.

Moved by Regional Chair Henry, Seconded by Councillor Marimpietri,
(24) That we recommend to Council:

- A) That the 2024 Summary Report for the Regional Municipality of Durham Drinking Water Systems be received for information;
- B) That receipt of Report #2025-W-5 of the Commissioner of Works be confirmed by resolution of Regional Council; and
- C) That a copy of this resolution be forwarded to the Ontario Ministry of the Environment, Conservation and Parks' York-Durham District Office to indicate that the conditions of Schedule 22 of Ontario Regulation 170/03 have been fulfilled.

CARRIED

9. Advisory Committee Resolutions

9.1 Durham Environment and Climate Advisory Committee

A) Resolution regarding Provincial Action on Salt Pollution

This item was dealt with earlier in the meeting. Refer to pages 5 to 7 of these minutes.

10. Confidential Matters

10.1 Reports

A) Confidential Report of the Commissioner of Works – Proposed or Pending Acquisition of Land for Regional Corporation Purposes as it relates to Property in the Township of Brock (2025-W-6)

Confidential Report #2025-W-6 from R. Jagannathan, Commissioner of Works, was received.

Moved by Councillor Mulcahy, Seconded by Councillor Marimpietri,
(25) That we recommend to Council:

That the recommendations contained in Confidential Report #2025-W-6 of the Commissioner of Works be adopted.

CARRIED

11. Other Business

There was no other business considered.

12. Date of Next Meeting

The next regularly scheduled Works Committee meeting will be held on Wednesday, April 2, 2025 at 9:30 AM in Council Chambers, Regional Headquarters Building, 605 Rossland Road East, Whitby.

13. Adjournment

Moved by Regional Chair Henry, Seconded by Councillor Mulcahy,
(26) That the meeting be adjourned.

CARRIED

The meeting adjourned at 10:30 AM

Respectfully submitted,

D. Barton, Chair

S. Ciani, Committee Clerk



**The Regional
Municipality of
Durham**

Office of the Regional Chair

605 Rossland Rd. E.
Level 5
PO Box 623
Whitby, ON L1N 6A3
Canada

905-668-7711
1-800-372-1102
john.henry@durham.ca
durham.ca

John Henry
Regional Chair and CEO

February 18, 2025

Dear Friends:

Re: "Dig Safe Month"

I am pleased to present to you the enclosed certificate proclaiming April, 2025 as "Dig Safe Month" in Durham Region.

Kindest personal regards,

A handwritten signature in blue ink, appearing to read 'John Henry', with a stylized flourish.

John Henry
Regional Chair and CEO



THE REGIONAL MUNICIPALITY OF DURHAM

Certificate of Proclamation

presented to

ORCGA

On behalf of the Council of
The Regional Municipality of Durham,
it is my pleasure to proclaim

April 2025

as

Dig Safe Month

in Durham Region

A blue ink signature of John Henry, written over a horizontal line.

John Henry
Regional Chair and CEO



If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



The Regional Municipality of Durham Report

To: Works Committee
From: Commissioner of Works
Report: #2025-W-7
Date: April 2, 2025

Subject:

Sole Source Procurement of Engineering Services for the Implementation of the Ephyra® Technology and Post Implementation Support for Digester #2 at the Courtice Water Pollution Control Plant in the Municipality of Clarington

Recommendations:

That the Works Committee recommends to Regional Council:

- A) That staff be authorized to enter into a sole source agreement with CIMA+ Canada Inc. for engineering services for the design and construction of the Ephyra® technology as part of the proposed upgrade of Digester #2 at Courtice Water Pollution Control Plant, with an upset limit of \$2,150,000*, to be financed from within the approved project budget;
 - B) That staff be authorized to enter into a sole source agreement with Royal Haskoning DHV to provide operational and process optimization support following the commissioning of the Ephyra® technology, for a period of five years, at an upset limit of \$850,000, to be financed from the approved operating budget; and
 - C) That the Commissioner of Finance or designate be authorized to execute the necessary documents related to the sole source agreements.
-

Report:**1. Purpose**

- 1.1 The purpose of this report is to obtain Regional Municipality of Durham (Region) Council approval to award sole source contracts to CIMA+ Canada Inc. for engineering services for the detailed design and construction of the Ephyra® technology and for operational and process optimization support from Royal Haskoning DHV for the upgrade of Digester #2 at the Courtice Water Pollution Control Plant (WPCP), in the Municipality of Clarington.
- 1.2 CIMA+ Canada Inc. (CIMA+) was retained through a competitive bid process (Request for Proposal (RFP) #1036-2022) to provide preliminary and detailed design consulting services for the upgrade of Digester #2 at the Courtice WPCP. CIMA+ will engage Royal Haskoning DHV as a subconsultant for the design and implementation of their technology for the project.
- 1.3 The Region will also establish a new agreement directly with Royal Haskoning DHV for operational and process optimization support for a five-year period, following the implementation of Ephyra® technology at the Courtice WPCP Digester #2.
- 1.4 Dollar amounts followed by an asterisk (*) are before applicable taxes.

2. Background

- 2.1 The Courtice WPCP was completed in 2008 and has a rated capacity of 68 million Litres per Day (MLD).
- 2.2 The Courtice WPCP utilizes a conventional activated sludge process with disinfection to treat raw sewage and discharges treated effluent to Lake Ontario.
- 2.3 Average day flow to the Courtice WPCP is approximately 65 per cent of its rated capacity. A Class Environmental Assessment (EA) is forecasted to commence in 2025 for the expansion of the plant.
- 2.4 The Courtice WPCP has two primary anaerobic digesters, Digester #1 and Digester #2. The cleaning of Digester #2 in 2018 revealed significant grit build up, and as well, the gas proofing membrane inside the digester had bubbled and delaminated in various locations.

- 2.5 The preliminary design for upgrade to Digester #2 at the Courtice WPCP is underway.
- 2.6 CIMA+ completed a capacity review of the digesters in 2024. The capacity review identified the following:
- a. As plant flows increase towards the rated capacity with growth, Ministry of the Environment, Conservation and Parks' (MECP) guidelines will not be met without both digesters in operation.
 - b. The plant is currently operating at the lower end of the desired performance range.
- 2.7 Digesters are typically taken offline for an extended period. For example, Digester #2 has been offline for several years due to the deficiencies. As part of the preliminary design, CIMA+ recommended reviewing alternatives for increasing digester capacity.
- 2.8 Several options for increasing digester capacity were reviewed including constructing a third digester or implementing Ephyra® technology.
- 2.9 Ephyra® is a proprietary technology owned by Royal Haskoning DHV.
- 2.10 Ephyra® technology increases digestion capacity by controlling the three stages of digestion through isolated zones and optimizes performance.
- 2.11 Ephyra® technology has been implemented in several wastewater treatment plants (WWTP) around the world. The first installation was at Tollebeek Wastewater Treatment Plant in the province of Fevoland, in the Netherlands. The installation was completed in 2017 and has been in operation for eight years.
- 2.12 Ephyra® technology was piloted at the Waterloo Water and Wastewater Treatment Plant (WWTP) in 2021-2023 through a partnership between Ontario Clean Water Agency (OCWA) and Royal Haskoning DHV. The Region of Waterloo, University of Waterloo, MECP and Partners-for Water were amongst the stakeholders of the pilot test. Region staff visited the pilot site and had the opportunity to discuss the design, construction, operation and performance matters with operators, other municipal representatives, and the vendor.

2.13 The objectives of the Ephyra® technology pilot test were as follows:

- a. Validation and approval of the Ephyra® technology by the relevant authorities for full-scale application in Ontario.
- b. Operating Ephyra® under different Canadian (climate) conditions with different types of Canadian sludges.
- c. Demonstrating the added value of Ephyra® for WWTPs in Ontario.
- d. Showing sustainability and resource recovery potentials, enabling the further stimulation of the circular economy.
- e. Positioning Ephyra® as a state-of-the-art, best-in-class anaerobic technology for digestion on municipal sludge.
- f. Disseminate third-party validated pilot results (by the University of Waterloo) throughout Ontario and Canada.

2.14 Results from the Ephyra® technology pilot test are as follows:

- a. Accepted by MECP as a valid and approved technology in Ontario.
- b. Demonstrated stable operation during four seasons in Southern Ontario.
- c. Demonstrated stable operations with different Canadian sludge compositions.
- d. Demonstrated capacity can double in an existing digester.

2.15 Implementation of Ephyra® technology was selected as the preferred option for increasing digester capacity at the Courtice WPCP.

3. Previous Reports and Decisions

3.1 There are no previous reports and decisions.

4. Justification for Sole Source

4.1 The following summary provides a justification for a sole source:

- a. Implementation of Ephyra® increases digester capacity to operate within MECP guidelines including when one digester is down for maintenance or refurbishment.
- b. Increases biogas production which is a renewable resource the Region can utilize for revenue generation or heating at the plant.

- c. Reduces greenhouse gas emissions through increased digestion and methane capture. This is in line with the Region's greenhouse gas reduction strategy.
- d. Allows for phased implementation to ensure MECP's approval and optimized efficiency and control costs during implementation. Only Digester #2 will incorporate Ephyra® as part of the current project. The Region will explore implementation of the same technology in Digester #1 once Digester #2 performance data is analyzed.
- e. The most cost-effective solution for increasing digester capacity, according to CIMA+'s assessment, offers savings of over \$6.5 million compared to building another digester.
- f. Increases digester capacity to accommodate future expansion. Future expansion will require separate Waste Activated Sludge (WAS) thickening to take advantage of increased digester capacity. This will also reduce future trucking costs and emissions (recommended to be further investigated during the upcoming Class EA).
- g. Ephyra® is the only technology piloted in Ontario and Canada, reviewed by the MECP, that increases digester capacity without pretreatment of sludge.
- h. There are no other technologies that perform the same as Ephyra® to increase digester capacity. If new technologies were developed or introduced, it would take approximately three years to be validated by the MECP.
- i. Implementing Ephyra® allows the project to proceed within its current approved schedule and minimizes impacts on operations at the Courtice WPCP.

5. Financial Implications

- 5.1 Section 7.2 of the Region's Purchasing By-Law #16-2020 permits the acquisition of goods and services through sole source negotiations under specific circumstances outlined in Appendix 'C'. Section 1.1 of Appendix 'C' permits negotiations for goods or services to be supplied only by a particular supplier if no reasonable alternative or substitute goods exist due to the absence of competition for technical reasons. The By-law also requires Regional Council approval for any negotiated purchases of \$100,000 and greater in value.

5.2 It is recommended that staff be authorized to enter into a sole source agreement for the procurement of the Ephyra® technology as part of the proposed upgrade of Digester #2 at Courtice Water Pollution Control Plant, with an upset limit of \$2,150,000* and for post implementation operation and process optimization support with Royal Haskoning DHV for a period of five years with an upset limit of \$850,000*.

5.3 Financing for the implementation and licensing of Ephyra® technology will be provided from within the approved project budget for the Remediation at the Courtice WPCP (Project ID: D1920).

6. Relationship to Strategic Plan

6.1 This report aligns with the following strategic direction and pathways in the Durham Region's 2025 Strategic plan:

a. Connected and Vibrant Communities

- C1: Align Regional infrastructure and asset management with projected growth, climate impacts, and community needs.

b. Environmental Sustainability and Climate Action

- E1: Reduce corporate greenhouse gas emissions to meet established targets.

7. Conclusion

7.1 It is recommended that staff be authorized to award a sole source engineering services agreement to CIMA+ Canada Inc. for the detailed design and construction of the Ephyra® technology, with an upset limit not to exceed \$2,150,000 and to Royal Haskoning DHV for post implementation operational and optimization support for five years, at an upset limit not to exceed \$850,000 for use in Digester #2 as part of the Remediation at the Courtice Water Pollution Control Plant (Project ID: D1920).

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: Sorin Manta, Manager, Engineering Support, at 905-668-4113 extension 3840.

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

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



The Regional Municipality of Durham Report

To: Works Committee
From: Commissioner of Works
Report: #2025-W-8
Date: April 2, 2025

Subject:

Sole Source Procurement of Engineering Services for the Duffin Creek Water Pollution Control Plant located in the City of Pickering

Recommendations:

That the Works Committee recommends to Regional Council:

- A) That staff be authorized to award a sole source contract to Veolia Water Technologies & Solutions for the provision of engineering field services for the Incineration Equipment Inspection, Process Monitoring and On-Site Support for the Duffin Creek Water Pollution Control Plant, located in the City of Pickering, in the amount of \$300,000*, to be financed from within the approved project budget;
 - B) That staff be authorized to award a sole source contract to Metro Connect International Inc. for the provision of engineering services for the Incineration Process Control Programming, Commissioning and Support for the Duffin Creek Water Pollution Control Plant, located in the City of Pickering, in the amount of \$430,000*, to be financed from within the approved project budget; and
 - C) That the Commissioner of Finance be authorized to execute the necessary agreements and associated amendments related to the sole source agreements.
-

Report:**1. Purpose**

1.1 The purpose of this report is to seek Regional Municipality of Durham (Region) Council approval to award sole source contracts as follows:

- a. **Veolia Water Technologies & Solutions (Veolia)**, for engineering field services for the inspection of all Incineration Equipment, Process Monitoring and On-Site Support at the Duffin Creek Water Pollution Control Plant (WPCP), in the City of Pickering; and
- b. **Metro Connect International Inc. (Metro Connect)**, for engineering services for supporting the Incineration Process Control Programming, Commissioning and Support at Duffin Creek WPCP in the City of Pickering.

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

2. Background for Veolia

2.1 In 2010, Infilco Degremont (Formerly IDI, now known as Veolia), was the Original Equipment Manufacturer and Supplier (OEM) for the two High Temperature Fluidized Bed (HTFB) Incineration Trains (Units #3 and #4), Boiler and High-Pressure Steam and Condensate Systems in the North Incineration Facility. They were awarded the pre-purchased Equipment Contract under York/Durham Capital Project (P-06-95 Incineration Heat Recovery) through a competitive bidding process in 2007 with a final bid price of \$70 million dollars, excluding applicable tax. In early 2022, Veolia was also awarded another pre-purchased Equipment Contract under York/Durham Capital Project (P-20-12 Fluidized Bed Equipment Supply) through a sole source contract to design and supply two new HTFB Incineration Trains (Units #1 and #2) in the South Incineration Facility. The total contract bid price was \$85 million dollars, excluding applicable taxes. Veolia is the only equipment manufacturer and supplier who can design and supply a 105 dry tonne per day fluidized bed reactor, which is the largest size of reactor in the incineration market. Construction of P-20-12 is anticipated to commence in mid 2026.

2.2 In 2013, under York/Durham Capital Construction Project of the Stage 3 Solids Expansion Program (T-08-59 New Dewatering and Incineration Facilities), the installed incineration systems faced challenges in starting up the turbines with

the Fluidized Air Blowers (FABs) as part of the HTFB Incineration Trains. Due to the size of Low-Pressure Steam (LPS) piping and control valves, the amount of cooling water to the LPS Condensers was determined to be inadequate to condense the steam to condensate, resulting in a major delay of the capital construction project by more than 1.5 years. The issue was eventually detected by field staff from Veolia (Former IDI), and rectified.

- 2.3 In October 2021, while commissioning a new Enhanced Mercury Removal (EMR) system under York/Durham Capital Construction Project (T-13-50), a major corrosion problem arose unexpectedly. The EMR vessel housed five levels of nine Sorbent Polymer Composite (SPC) modules, which were used to remove mercury and a small fraction of Sulphur Dioxide (SO₂) from the flue gas. Since the modules had exceeded its performance in removing the SO₂, the by-product (i.e. extremely acidic sulphuric acid condensate) was causing the interior wall of the vessel to corrode at the welds during the operation. The system had to shut down for temporary repair and the Plant had a difficult time to process sludge during the high demand haulage season. Veolia field service representatives suggested several recommendations at the emergency moment, for example: (1) To remove all the modules immediately from the SPC vessel, preventing the SO₂ to react with water and form acidic solution; (2) To design and install an emergency bypass duct for repair work; (3) To apply coating on the interior vessel, protecting the stainless shell from corrosion due to the acidity of condensation; and (4) To monitor the shell thickness by Ultrasonic Thickness tester in the field regularly as a temporary measure until the vessel has been repaired completely. The prompt responses and assistances from Veolia on-site allowed the project teams and the Plant to resolve the unforeseen crisis quickly and to ensure the system reinstated its service without extended delay and operated safely.

- 2.4 Recently, several critical incineration equipment has shown significant signs of wears, corruptions, and leakages, resulting in long-term shutdown of the Incineration Trains for inspection and repair. Incineration Units #3 and #4 have been operating for 12 years since 2013 and have shown signs of mechanical and corrosion problems. The following is a list of major equipment and components that must be inspected immediately and conduct a detailed overhaul for repair work. This work is urgent and very critical to the current state at the Plant as Unit #1 is aging and has passed its end of service life whereas Unit #2 is under construction. Should Units #3 and #4 cease to operate due to the following equipment failure, the Region's ability to dispose of sludge will be compromised.

- 2.5 Since January 2024, FAB #4 has experienced high vibration issues due to alignment and heavy deposits on the impeller and casing. If this blower is out of service, both Incineration #3 and #4 process trains cannot be started up and operated to burn sludge which could result in compliance issues.
- 2.6 In September 2024, the turbine drive associated with this FAB #4 was found with an alignment issue with the clutch and blower. Failure to repair this turbine will cause the Plant to not be able to utilize the steam generated from the boiler and drive the FAB. The FAB must then be operated with electric motor, increasing electric cost of the Plant.
- 2.7 In November 2024, the Economizer #4 in the Waste Heat Boiler unit experienced a leak in the high-pressure boiler feed water tubes due to erosion and the abrasiveness of ash. Failure to repair the water tubes could lead to the entire train out of service for a long time (approximately six to eight months).
- 2.8 In December 2024, the ID Fan #3 discharge duct (36" Ø) and silencer had a leak due to corrosion, allowing Sulphur Dioxide (SO₂) from the flue gas emitted to the surrounding. Failure to repair/replace the duct and silencer would become a major health and safety issue in the workplace.
- 2.9 Extensive knowledge of the HTFB Incineration system installed under Projects P-06-95, T-08-59, and T-13-50 is required to provide a thorough inspection of work, to identify the root cause of equipment failure, and to resolve and mitigate the operational and mechanical problems of critical equipment. Veolia is the overall design and supply of the original equipment of the HTFB Incineration systems, in which they are subject matter experts in the Incineration Industry across North America and Europe.

3. Background for Metro Connect

- 3.1 In 2010, Metro Connect were the original Programmable Logic Controller (PLC) programmers, Supervisory Control and Data Acquisition (SCADA) developers and in-field commissioning representatives to start up and operate the two High Temperature Fluidized Bed (HTFB) Incineration Trains (#3 & #4). They were selected by IDI, the Original Equipment Manufacturer (OEM) who was awarded the Pre-purchased Equipment Contract under York/Durham Capital Project (P-06-97 Incineration Heat Recovery) through a competitive bidding process.

- 3.2 In 2013, under York/Durham Capital Construction Project of the Stage 3 Solids Expansion Program (T-08-59 New Dewatering and Incineration Facilities), the newly installed incineration systems had challenges in starting up the turbines with the Fluidized Air Blowers (FABs) as part of the HTFB Incineration Trains. Due to the size of Low-Pressure Steam (LPS) piping and control valves, the amount of cooling water to the LPS Condensers was determined to be inadequate to condense the steam to condensate, resulting in a major delay of the capital construction project by more than 1.5 years. The issue was eventually detected by the field staff from Metro Connect and IDI and it was rectified.
- 3.3 In 2021, the upgrade of a new Enhanced Mercury Removal (EMR) system began construction in York/Durham Capital Construction Project (T-13-50). The new system was retrofitted into the existing HTFB Incineration Trains #3 and #4 with two Sorbent Polymer Composite (SPC) units. During the commissioning period, the installed SPC experienced a very high differential pressure across the vessel, causing the entire incineration train being tripped every three to five days of operation. This operational interruption was very disruptive to the Plant as the sludge processing rate could not be maintained at the Plant's disposal rate target. With comprehensive knowledge of Incineration process control along with proficient troubleshooting skills, Metro Connect and Veolia (Former IDI) field staff were able to identify the issues in the field, in which the excessive water accumulated in the SPC Inlet duct causing the high differential pressure across the SPC vessel and tripped the operating train. Metro Connect then implemented a new automatic draining system to extract the water accumulating at the Inlet Duct to relieve the pressure.
- 3.4 In 2022, Metro Connect was awarded the Region's consulting services contract (RC00002765) for the Incineration Process Control Programming and Support for Duffin Creek WPCP as the lowest compliant bidder. They provided process control programming and remote support, in-field training, and process recommendations of the HTFB incineration systems and other common steam systems with high complexity in process control to the Incineration Team.
- 3.5 Extensive knowledge of the HTFB Incineration system at Duffin Creek WPCP is required to provide process control programming, commissioning, process support and in-field training at Duffin Creek WPCP to the Engineering Support Division, SCADA Division, and Incineration Team. Metro Connect is a subject matter expert in the Incineration industry in North America with an in-depth knowledge of HTFB incineration reactors and complex steam systems.

4. Justification for the Sole Source for Veolia

- 4.1 Veolia has extensive knowledge and understanding of the existing Incineration equipment in Trains #3 and #4, including the design and process operation at Duffin Creek WPCP. Veolia's senior field service representatives have been working with the Region's stationary engineers in the North Incineration Facility for approximately 15 years. They are familiar with the existing equipment configuration and the complexity of how each process equipment is interconnected. They also have an in-depth understanding of the process control and troubleshooting experience in the field, particularly during startup and commissioning of the Incineration equipment. This knowledge will benefit the diagnosis of the root causes of the equipment failures and the resolution of process operational and mechanical issues due to their familiarity with the design and existing process equipment and control.
- 4.2 For a new engineering field service representative to inspect the Incineration equipment, to investigate the underlying problems, and to generate practical recommendations and repair plans for the Incineration system at Duffin Creek WPCP, they would need to become familiar with the work area in the Incineration Facility, the existing equipment arrangement, the complexity of how each specialized process equipment is interconnected, and the local regulations such as Technical Standards and Safety Authority (TSSA) requirements. Wastewater incineration is a very small and niche industry, in which a senior field service representative requires exceptional engineering and in-field experience during operation and troubleshooting in large-scale HTFB incineration plants (comparable size as Duffin Creek WPCP). The Region would also be required to coordinate multiple inspection services assignments, resulting in considerable time and resources, which could lead to prolonged production downtime of burning sludge and unnecessary operational challenges in meeting health and safety and regulatory requirements.

5. Justification for the Sole Source for Metro Connect

- 5.1 Metro Connect has an enhanced comprehension of the existing Incineration Process Control Programming, including PLCs and Human Machine Interfaces (HMI) of Trains #3 and #4 and associated common steam systems at Duffin Creek WPCP. They are familiar with the existing equipment configuration and the complexity of how each process equipment is interconnected. They also have extensive commissioning and troubleshooting experience during construction

and startup of each incineration train. This knowledge will benefit the process upgrades and optimization, system startup and resolution of process operational issues due to their familiarity with the existing process control strategies, PLCs programs, HMI systems, and integration into the Plant PLCs.

- 5.2 For another consulting engineer to provide Incineration Process Control Programming, Commissioning and Support for the Duffin Creek WPCP, they would need to become intimately familiar with the existing process control narratives and programming logics of the overall incineration systems. Wastewater incineration is a very small and niche industry, in which an expert requires extensive experience designing and commissioning large projects to gain the knowledge from large-scale HTFB incineration plants (similar size as Duffin Creek WPCP). The Region would also be required to invest significant time and resources to provide all the background information, OEM documentation, and conduct many workshops and site plant tours to bring a different consultant up to speed prior to commencing any upgrade/modification work. Critical incineration equipment (such as fuel oil, high pressure boiler and steam systems) are regulated under TSSA authority. Without fully understanding the complexity of the incineration process, fuel and steam systems could lead to operational challenges in meeting health and safety and regulatory requirements.
- 5.3 In April 2022, the awarded consulting services contract (RC00002765) for the Incineration Process Control Programming and Support for the Incineration Staff commenced. Metro Connect has been providing 24/7 remote process control support and training sessions for the Incineration Staff to ensure reliable operation of Trains #3 and #4. During the support period, Regional staff, including Engineering Support Division, SCADA Division and the Incineration Team, continue to acquire valuable incineration process knowledge and skills from Metro Connect staff through formal knowledge transfer sessions and hands-on guidance. This invaluable knowledge will be leveraged to resolve operational process problems efficiently, allowing the HTFB reactors to reliably operate at its sludge disposal targets and to meet the MECP's emission requirements.
- 5.4 The Region does not have internal resources with the knowledge and skills in this niche area to perform the programming for the incineration process control systems, which include reactors, primary heat exchangers, waste heat boilers, scrubbers, quenchers, SPCs, FAB blowers, induced draft fans, de-aerators, steam and condensate systems, etc.

6. Proposed Consulting Services for Veolia

6.1 Staff have met with Veolia to determine the scope of work to provide engineering field services for the Incineration Equipment Inspection, Process Monitoring and On-Site Support at the Duffin Creek WPCP.

6.2 The proposed engineering field services scope of work will include:

- a. Development of inspection, maintenance and repair work plans and reports of each assignment;
- b. Investigation into each equipment failure and problem, including background review of original equipment design, site visits, and engaging with OEMs;
- c. Reporting to include background information, site observation and finding, comparison from previous conditions, photos with timestamp, recommendation, suggested mitigation and process modification.
- d. Process data analysis of the Incineration system of Unit #3 and #4 and common steam systems to proactively identify hidden operational problems and provide recommendations for rectification;
- e. On-site verification prior to startup and during operation of Units #3 & #4 and common steam systems to identify potential operational challenges, followed by submission of startup reports and suggested resolutions;
- f. Development of Standard Operating Procedures (SOPs) for the Incineration Systems as required by the Engineering Support Division and Incineration Team; and
- g. Support for Incineration startup, commissioning and troubleshooting activities as required by the Engineering Support Division.

6.3 The estimated engineering services fee of \$300,000* includes the following services:

- Project management;
- Meetings and workshops;
- On-Site Inspection, Diagnosis, & Repair Work;

- Documentation of Work Plans & Reports for each service & assignment;
- Process Monitoring and Process Data Analysis;
- On-Site Support During Startup, Operation, Commissioning & Troubleshooting;
- Development of SOPs; and
- Additional services as required by the Capital Projects.

7. Proposed Consulting Services for Metro Connect

7.1 Staff have met with Metro Connect to determine the scope of work to provide Incineration Process Control Programming, Commissioning, In-Field and Remote Support at the Duffin Creek WPCP.

7.2 The proposed engineering services scope of work will include:

- a. Review of existing PCNs and update of the existing PCN versions to reflect the latest and modified incineration systems;
- b. Development of SOPs for the Incineration Systems as required by the Engineering Support Division and Incineration Team.
- c. Classroom and hands-on training sessions for the Incineration Team and SCADA Division;
- d. Modification of existing Process Control Programming and Loop Diagram drawings to reflect the latest and modified incineration systems;
- e. Development of PLC Health Programming for the existing Incineration Allen Bradley and Emerson PLCs of the Stage 3 Incineration systems;
- f. Update on the existing HMI Programming to existing PLC Health Screens;
- g. Development of HMI PLC Overview Graphic and modification of miscellaneous HMI screens for process operational improvement;
- h. Integration of new equipment process control logics into the existing PLC programs; and

- i. Support for commissioning activities as required by the Engineering Support Division, and remote process control support during operation.
- 7.3 The estimated engineering services fee of \$430,000* includes the following services:
- Project management;
 - Meetings and workshops;
 - Updating of Existing Incineration PCNs and Loop Diagram drawings to reflect as-built conditions;
 - Development of SOPs;
 - PLC Health Programming;
 - PLC Health Screen HMI and Miscellaneous HMI Screen Modifications
 - Remote and In-Field Process Control and Commissioning Supports;
 - Additional services as required by the Capital Projects; and
 - Incineration and SCADA Operational Training.

8. Financial Implications

- 8.1 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.

- 8.2 Financing for the purchase of consulting services estimated at \$730,000* will be provided from within the following approved project budgets:

2025 Sanitary Sewage Capital Budget

Duffin Creek WPCP – Engineering Field Services for Incineration Equipment Inspection, Process Monitoring and On-Site Support

User Revenue (Project ID: Y1503)

Durham's Share (26.2%)	<u>\$191,260</u>
------------------------	-------------------------

York's Share (73.8%)	<u>\$538,740</u>
----------------------	-------------------------

Total Financing	<u>\$730,000</u>
------------------------	-------------------------

9. Relationship to Strategic Plan

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

- a. Connected and Vibrant Communities
- C1: Align Regional infrastructure and asset management with projected growth, climate impacts, and community needs.

10. Conclusion

- 10.1 It is recommended that Regional Municipality of Durham Council authorize a sole source contract with Veolia Water Technologies & Solutions for engineering field services for the Incineration Equipment Inspection, Process Monitoring and On-Site Support at the Duffin Creek Water Pollution Control Plant.
- 10.2 It is also recommended that Regional Municipality of Durham Council authorize a sole source contract with Metro Connect International Inc. for engineering services for the Incineration Process Control Programming, Commissioning and Support at the Duffin Creek Water Pollution Control Plant.
- 10.3 This report has been reviewed by the Finance Department and the Commissioner of Finance concurs with the financial recommendations.

10.4 For additional information, contact Mike Hubble, Director, Environmental Services, at 905-668-4113 extension 3460.

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

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



The Regional Municipality of Durham Report

To: Works Committee
From: Commissioner of Works
Report: #2025-W-9
Date: April 2, 2025

Subject:

Approval of Unbudgeted Capital Project and Financing to Undertake the Stage 3 Influent Pumping Station Toshiba Control System Upgrades for the Duffin Creek Water Pollution Control Plant, located in the City of Pickering

Recommendations:

That Works Committee recommends to Regional Council:

- A) That unbudgeted capital project in the amount of \$90,000* for the design of the Stage 3 Influent Pumping Station Toshiba Control System Upgrades for the Duffin Creek Water Pollution Control Plant, located in the City of Pickering, be approved; and
- B) That financing in the amount of \$90,000* be provided from the following source:

2025 Sanitary Sewerage Capital Budget

Item 424: Allowance for unknown requirements

User Revenue	\$90,000*
--------------	-----------

Report:**1. Purpose**

- 1.1 The purpose of this report is to obtain Regional Municipality of Durham (Region) Council approval for unbudgeted capital work for the design of the Stage 3 Influent Pumping Station (IPS) Toshiba Control System Upgrades of the proprietary Toshiba based Programmable Logic Controller (PLC) equipment associated with Raw Sewage Pump (RSP) control and operation in the East Wet Wells at Duffin Creek Water Pollution Control Plant (WPCP) in the City of Pickering.
- 1.2 Dollar amounts followed by an asterisk (*) are before applicable taxes.

2. Background

- 2.1 In 2011, Toshiba International Corporation (Toshiba) was the Original Equipment Manufacturer (OEM) and supplier of the four Variable Frequency Drive Synchronous Transfer Control (VSTC) systems for a total of eight RSPs in the two East Wet Wells. Toshiba was awarded the Pre-purchase Equipment Contract under York/Durham Capital Project (P-11-56, 4160 Volts Motor Control Center with Synchronous Transfer Capability) as part of the Stage 3 Liquid Process Expansion Program. In 2013, Toshiba was also the sole source manufacturer and supplier of the four VSTC systems for all the RSPs installed in the West Wet Wells under York/Durham Capital Project (T-13-50, Stages 1 and 2 Influent Pumping Station and Headworks) as part of the Stages 1 and 2 Upgrades and Refurbishment Program.
- 2.2 The Stage 3 IPS was placed into service in 2013 with a Toshiba based PLC system that includes two VSTC system panels associated with a medium voltage switchgear, a motor starter and two Local Control Panels (LCPs) with a Toshiba Operator Interface Terminal (OIT). Each VSTC system panel controls one Wet Well that is equipped with a total of four RSPs and communicates via the Plant's Supervisory Control and Data Acquisition (SCADA) network. At the time of design and construction, Toshiba was the only manufacturer who could provide the Toshiba PLC programming and OIT on their proprietary platform to control the RSPs.
- 2.3 The existing Toshiba S2T PLC and OIT products are no longer available. In addition, the OEM is only available to provide their services for maintenance and repair up to the beginning of 2026.

- 2.4 Replacing the obsolete Toshiba based PLC control systems in the Stage 3 IPS with a new Regional standard PLC product is critical to ensure reliable operations in the Stage 3 IPS. Failure to expediently upgrade the Toshiba PLC control systems to Regional standard products could cause a significant reduction in RSP capacity. This may result in flooding of the pumping station during peak flow events, posing serious health and safety risks to the environment and the public.
- 2.5 Design work must be completed expediently with the objective of completing the implementation work prior to the OEM repair services termination date at the beginning of 2026.
- 2.6 Stage 3 IPS is fully funded by York Region. Given the urgency of the work, the Region will cover the costs upfront and later invoice York Region to recoup the expenses.

3. Financial Implications

- 3.1 Section 14.2 of the Budget Management Policy requires the approval of the Treasurer and C.A.O. and the applicable Standing Committee and Regional Council to approve project financing in excess of \$50,000 prior to the award of the applicable contract.
- 3.2 Financing for Stage 3 IPS Toshiba Control System Upgrades at the Duffin Creek Water Pollution Control Plant in the City of Pickering in the amount of \$90,000* will be provided from the following source:

2025 Sanitary Sewerage Capital Budget

Item 424: Allowance for unknown requirements

User Revenue (Project ID: M2509)	<u>\$90,000</u>
----------------------------------	-----------------

Total Project Financing	<u>\$90,000</u>
-------------------------	------------------------

The total Project Financing is fully recoverable from York Region.

4. Relationship to Strategic Plan

4.1 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.

5. Conclusion

5.1 Staff recommends the approval of unbudgeted capital to undertake the Stage 3 IPS Toshiba Control System Upgrades at the Duffin Creek WPCP in the City of Pickering. The Region will cover the costs upfront and later invoice York Region to recoup the expenses.

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

5.3 For additional information, contact Mike Hubble, Director, Environmental Services, at 905-668-4113 extension 3460.

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

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.



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



The Regional Municipality of Durham Report

To: Works Committee
From: Commissioner of Works
Report: #2025-W-11
Date: April 2, 2025

Subject:

Approval for Unbudgeted Capital Work and Financing for the Refurbishment of Four Vehicle Hoists at Durham Region Transit East Bus Repair Garage in the City of Oshawa

Recommendations:

That the Works Committee recommends to Regional Council:

- A) That approval be granted for unbudgeted capital work in the amount not to exceed \$800,000 to refurbish four vehicle hoists at the Durham Region Transit East bus repair garage located in the City of Oshawa; and
- B) That financing in the amount of \$800,000 for the construction of the proposed refurbishment be provided from the following sources:

2025 Approved Transit Capital Budget

Tire-Bay Hoist Replacement (Project ID: H2515)

General Tax	\$450,000
-------------	-----------

Previously Approved Financing

2022 Transit Capital Budget

Hoist Replacement (Project ID: H2221)

Provincial Gas Tax	\$167,000
--------------------	-----------

2021 Transit Capital Budget

Bus Wash Replacement (Project ID H2102)

Provincial Gas Tax	\$30,000
--------------------	----------

2019 Transit Capital Budget

Facility Rehab Works (Project ID H1918)

General Tax	\$87,000
-------------	----------

Facility Rehab Main Shop (Project ID H1919)

General Tax	<u>\$66,000</u>
-------------	-----------------

Total Previously Approved Financing	\$350,000
-------------------------------------	-----------

Total Reallocated Financing	<u>\$800,000</u>
------------------------------------	-------------------------

Report:**1. Purpose**

- 1.1 The purpose of this report is to obtain approval for unbudgeted capital work and related financing for the refurbishment of four vehicle hoists at Durham Region Transit (DRT) East (DRTE) bus repair garage, in the City of Oshawa (Oshawa).

2. Background

- 2.1 The DRTE bus repair facility is equipped with eight in-ground vehicle hoists, installed between 2015 and 2016 to support transit maintenance operations.
- 2.2 In 2020, the Regional Municipality of Durham (Region) enhanced its vehicle hoist maintenance program to better align with the industry standards and manufacturer's recommended maintenance guidelines. As part of this initiative, the Region transitioned to Novaquip, the Eastern Canada service provider for the hoist manufacturer, which assumed responsibility for the hoist maintenance contract. During initial inspections, Novaquip identified significant corrosion in multiple hoist cassettes. To mitigate further deterioration, rust protection was applied as a cost-effective preventative measure; however, its effectiveness was limited. By the 2023 certification inspection, the corrosion had progressed further, reinforcing the need for cassette replacement to maintain operational reliability.

- 2.3 By early 2024, the corrosion in the hoist cassettes of Bays 3, 5, and 6 had advanced beyond repair. Given the critical role of these hoists in transit operations, an emergency refurbishment project was undertaken, and these hoists were successfully restored under an emergency declaration in 2024.
- 2.4 During the planning phase, potential refurbishment needs for hoists in Bays 2, 4, 7, and 8 were noted. However, these refurbishments were not included in the 2025 Capital Budget. In January 2025, inspections confirmed that these four hoists had also reached a point of failure due to advanced corrosion, rendering them inoperable.
- 2.5 The loss of these additional hoists has had a significant impact on DRTE repair facility operations, reducing the garage's in-ground hoist capacity by half. As a temporary solution, the affected bays are currently being utilized with mobile hoists. However, these alternative lifting systems offer limited functionality, imposing restrictions on the types of repairs that can be performed in these bays.
- 2.6 The hoist manufacturer, Stertil-Koni, has confirmed that the planned refurbishment of the remaining four hoists will extend their service life by an additional 10 years. This approach aligns with the previous refurbishments completed under the emergency declaration, ensuring standardized maintenance practices and long-term operational reliability.
- 2.7 In mid-September 2024, the hoist manufacturer informed the Region through Novaquip that the operating system controlling the hoists would be discontinued, necessitating an update to maintain functionality. To ensure continued operational reliability, these updates have been integrated into the current refurbishment plan, covering both the four hoists slated for refurbishment and the three hoists refurbished last year.
- 2.8 Given the essential role of vehicle hoists in supporting transit fleet maintenance, immediate action is required to secure funding for this unbudgeted capital project. The proposed reallocation of funds will enable the necessary refurbishments to proceed, thereby minimizing disruptions to DRTE's repair and maintenance operations.

3. Previous Reports and Decisions

- 3.1 There are no previous reports/decisions related to this report.

4. Financial Implications

- 4.1 Section 14.2.2 of the Region's Budget Management Policy requires approval of the Treasurer and CAO and applicable Standing Committee and Regional Council for unbudgeted capital expenditures in excess of \$50,000.
- 4.2 Financing for the construction of the proposed refurbishment of four vehicle hoists in the City of Oshawa be provided from the following sources:

2025 Transit Capital Budget

Tire-Bay Hoist Replacement (Project ID H2515)

General Tax	\$450,000
-------------	-----------

Previously Approved Financing

2022 Transit Capital Budget

Hoist Replacement (Project ID H2221)

Provincial Gas Tax	\$167,000
--------------------	-----------

2021 Transit Capital Budget

Bus Wash Replacement (Project ID H2102)

Provincial Gas Tax	\$30,000
--------------------	----------

2019 Transit Capital Budget

Facility Rehab Works (Project ID H1918)

General Tax	\$87,000
-------------	----------

Facility Rehab Main Shop (Project ID H1919)

General Tax	<u>\$66,000</u>
-------------	-----------------

Total previously approved financing	\$350,000
-------------------------------------	-----------

Total Reallocated Financing	<u>\$800,000</u>
------------------------------------	-------------------------

- 4.3 Funding is available for reallocation from the 2025 hoist replacement project and previously completed projects for bus wash replacement and facility rehabilitation. The cancelled hoist replacement project will be budgeted in future years.

5. Relationship to Strategic Plan

5.1 This report aligns with/addresses the following Strategic Direction(s) and Pathway(s) in Durham Region's 2025-2035 Strategic Plan:

a. Connected and Vibrant Communities

- C1. Align Regional infrastructure and asset management with projected growth, climate impacts, and community needs.
- C3. Improve public transit system connectivity, reliability, and competitiveness.

6. Conclusion

6.1 It is recommended that the reallocation of funding for the unbudgeted capital work to refurbish four vehicle hoists at Durham Region Transit East bus repair garage located in Oshawa be approved.

6.2 This report has been reviewed by the General Manager of DRT and the Finance Department, and the Commissioner of Finance concurs with the financial recommendations.

6.3 For additional information, contact: Christine Dunkley, Director, Corporate Infrastructure and Strategic Business Services, at 905-668-4113 extension 3475.

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