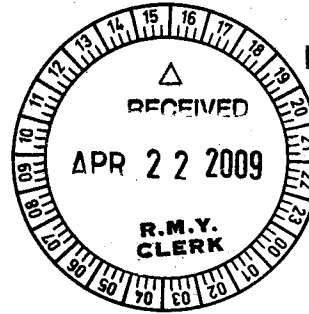




April 17, 2009

D. Kelly, Regional Clerk  
The Regional Municipality of York  
17250 Yonge Street  
Newmarket, ON L3Y 6Z1



FILE No. - 206

The Regional  
Municipality  
of Durham

Clerk's Department

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Pat M. Madill, A.M.C.T., CMM I  
Regional Clerk

**RE: PRE-SELECTION OF PROGRAMMABLE LOGIC CONTROLLERS (PLCS) FOR THE DUFFIN CREEK WATER POLLUTION CONTROL PLANT (WPCP) SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) UPGRADE CONSTRUCTION CONTRACT, IN THE CITY OF PICKERING (2009-W-26) (Our File No.: 012)**

Please be advised the Works Committee of Regional Council considered the above matter and at a meeting held on April 1, 2009 Council adopted the following recommendations of the Committee:

- "a) THAT the pre-selection of the Programmable Logic Controllers from General Electric for inclusion in the Regional Municipality of Durham's Tender for the Supervisory Control and Data Acquisition Upgrades at the Duffin Creek Water Pollution Control Plant at an estimated total cost of \$320,000 (before applicable taxes in all instances) be approved;
- b) THAT financing for the purchase of the equipment be provided from the approved project budget of \$5.6 million for the Supervisory Control and Data Acquisition Upgrades at the Duffin Creek Water Pollution Control Plant; and
- c) THAT a copy of Report No. 2009-W-26 of the Commissioner of Works be forwarded to the Regional Municipality of York."

As directed, please find enclosed a copy of Report #2009-W-26 of the Commissioner of Works for your information.

P.M. Madill, AMCT, CMM I  
Regional Clerk

PMM/cb

Encl.

c: C. Curtis, Commissioner of Works, Region of Durham





**The Regional Municipality of Durham**  
**To: The Works Committee**  
**From: Commissioner of Works**  
**Report: 2009-W-26**  
**Date: March 24, 2009**

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**SUBJECT:**

Pre-selection of Programmable Logic Controllers (PLCs) for the Duffin Creek Water Pollution Control Plant (WPCP) Supervisory Control and Data Acquisition (SCADA) Upgrade Construction Contract, in the City of Pickering

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**RECOMMENDATIONS:**

THAT subject to the approval of the Finance and Administration Committee (recommendations a and b), the Works Committee recommends to Regional Council that:

- a) The pre-selection of the Programmable Logic Controllers from General Electric for inclusion in the Regional Municipality of Durham's Tender for the Supervisory Control and Data Acquisition Upgrades at the Duffin Creek Water Pollution Control Plant at an estimated total cost of \$320,000\* be approved;
- b) Financing for the purchase of the equipment be provided from the approved project budget of \$5.6 million for the Supervisory Control and Data Acquisition Upgrades at the Duffin Creek Water Pollution Control Plant; and
- c) A copy of this report be forwarded to the Regional Municipality of York.

\* (before applicable taxes in all instances)

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**REPORT:**

The purpose of this report is to seek Regional Council approval to pre-select equipment to include in the tender for the Supervisory Control and Data Acquisition (SCADA) upgrade at the Duffin Creek Water Pollution Control Plant (WPCP), in the City of Pickering.

**1. BACKGROUND**

The Regional Municipality of Durham (Region) is planning SCADA upgrades at the Duffin Creek WPCP to replace a now obsolete and currently proprietary

SCADA system.

The Region has three (3) distinct functional process areas based on physical geographical location and operational requirements. These are:

- i) Water Systems
- ii) Wastewater Systems
- iii) Duffin Creek Water Pollution Control Plant

The above systems include as many as ten (10) different manufacturers of programmable logic controllers that are the backbone of the SCADA systems. As a result, Regional personnel responsible for the maintenance of the SCADA system must be proficient in ten (10) different sets of programming software tools. In addition to the above, each family of programmable logic controller utilizes custom communication standards and protocols making integration of the facilities and the passing of process data between field controllers more complex, increasing the risk of communications failures that may lead to failures within the SCADA system.

## **2. REASONS FOR PRE-SELECTION FOR THE DUFFIN CREEK WPCP PROJECT**

The Duffin Creek WPCP was initially completed in 1980. In the early 1990's, a SCADA that was based on a unique platform was installed. Over the years, this unique platform has become increasingly more difficult to support and maintain, given the software coding and aging system hardware.

Specific to the Duffin Creek WPCP system, there currently exists the following programmable logic controllers:

| Controller                                                | Age       | Comments                                                                                          | Action Plan                                                                                                                     |
|-----------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| State RTU with T1 I/O Subsystems                          | >30 years | Original installation, obsolete, proprietary system.                                              | Replace under tender T-600-2009                                                                                                 |
| Modicon 984-Existing Dewatering Facility                  | >15 years | Becoming a legacy product with little planned support according to discussions with manufacturer. | New dewatering facility being constructed under the Stage III Expansion has same PLC manufacturer as recommended in this report |
| General Electric 90-30; Aeration, Incineration & Boundary | <5 years  | Installed under the recent Liquid Capacity Upgrade and Incineration Upgrade projects tendered by  | Same manufacturer as recommended project within this report                                                                     |

|                                                           |         |                                                                |                                                        |
|-----------------------------------------------------------|---------|----------------------------------------------------------------|--------------------------------------------------------|
| Road                                                      |         | Ontario Clean Water Agency (OCWA) for York and Durham.         |                                                        |
| General Electric PACs; New Stage III Expansion Facilities | <1 year | Specified in all York Region contracts for Stage III Expansion | Same manufacturer, model as recommended in this report |

The General Electric (GE) product lines have a large installed base and support is readily available throughout the Greater Toronto Area. The GE programming environment supports three (3) languages commonly used in Water and Wastewater applications. The GE product also allows for the insertion of English language comments throughout the programming which is an invaluable troubleshooting tool for Regional operations staff.

The selection of the latest GE product provides the most cost-effective solution for the Duffin Creek Facility in that the existing hardware installed under the recent liquid capacity and incineration projects can be re-utilized. Also, it reduces the potential risks to plant operations during the construction period, as the critical processes are not required to be touched. Plant Information System technicians who are responsible for maintaining the system have already received training and valuable practical experience with the GE products. Maintaining a uniform platform will permit a more efficient construction and commissioning process throughout the Duffin Creek WPCP expansion project.

An additional benefit of the GE product is that it is available through multiple vendors and there is exceptional technical support for the equipment within the Greater Toronto Area.

### **3. FINANCIAL IMPLICATIONS**

#### **3.1 Purchasing By-Law 68-2000**

The Region's Purchasing By-Law 68-2000, Section 14, permits acquisition of goods and services through a pre-qualification of suppliers' process under certain circumstances, including situations where the pre-qualification would prove more cost effective or beneficial. The by-law also requires approval of the appropriate Standing Committee, the Finance and Administration Committee and Regional Council for any pre-qualified supplier exceeding \$100,000 in value.

#### **3.2 Financing**

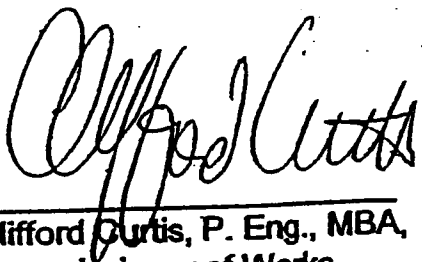
Financing for the purchase of the Programmable Logic Controllers in the estimated amount of \$320,000\* will be provided from the approved project budget of \$5.6 million. This project is cost shared with York Region, with York

responsible for 79.2% of the costs and the Region of Durham responsible for the remaining 20.8%.

#### 4. **CONCLUSION**

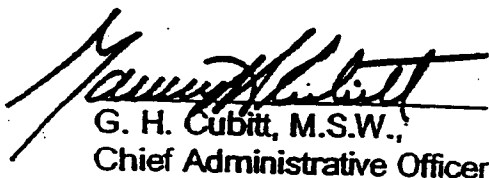
It is recommended that Regional Council approve the pre-selection of Programmable Logic Controller equipment from General Electric for the Regional Municipality of Durham's Tender for Supervisory Control and Data Acquisition upgrades at the Duffin Creek Water Pollution Control Plant, in the City of Pickering.

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



Clifford Curtis, P. Eng., MBA,  
Commissioner of Works

Recommended for Presentation to Committee



G. H. Cubitt, M.S.W.,  
Chief Administrative Officer

PO2/rw/em



CORPORATE SERVICES DEPARTMENT

Clerk's Division

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clerks@city.pickering.on.ca

APR 24 '09 AM 9:55 CLERK

REGION OF YORK  
CLERK'S OFFICE

FILE No. -

pol

April 21, 2009

P.M. Madill, Regional Clerk  
Region of Durham  
605 Rossland Road East  
Whitby, ON L1B 6A3

-and-

Denis Kelly, Regional Clerk  
Region of York  
17250 Yonge Street  
Newmarket, ON L3Y 6Z1

Subject: Pickering's Waterfront Trail  
CORR 42-09  
File: A 1410-005-09

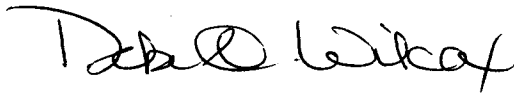
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The Council of the Corporation of the City of Pickering considered the above matter at a meeting held on April 20, 2009, and endorsed the following recommendation from the Waterfront Coordinating Committee:

1. That the Waterfront Coordinating Committee recommend to Council that York Region be obliged to complete the process of costing out, approving and delivering funds for the completion of the agreed modifications to the Eastern part of Pickering's Waterfront Trail, as a condition to Pickering's continued permission for York Region's work on its sewage project;
2. That this process be completed by the end of April 2009; and,
3. That a copy of this recommendation be forwarded to the Region of Durham, the Region of York, Ministry of the Environment and MPP Ajax-Pickering.

Should you require further information, please do not hesitate to contact the undersigned at 905.420.4660 extension 2153.

Yours truly



Debi A. Wilcox, CMO, CMM III  
City Clerk  
DW/lcr

Copy: Ministry of the Environment  
York-Durham District Office  
230 Westney Road South, 5<sup>th</sup> Floor  
Ajax, ON L1S 7J5

Joe Dickson, MPP Ajax-Pickering  
50 Commercial Ave., Suite 201A  
Ajax, ON L1S 2H5

Councillor O'Connell, Chair, Waterfront Coordinating Committee  
Chief Administrative Officer  
(Acting) Chief Administrative Officer  
Director, Operations & Emergency Services