



**City of Kingston
Report to Council
Report Number 18-097**

To: Mayor and Members of Council

From: Denis Leger, Commissioner, Corporate & Emergency Services

Resource Staff: Speros Kanellos, Director, Facilities Management & Construction Services

Date of Meeting: May 15, 2018

Subject: Budget Amendment for the Fleet Maintenance Facility and related approvals for the Municipal Greenhouse Gas (GHG) Challenge Fund Agreement

Executive Summary:

The Ministry of the Environment and Climate Change had recently advised City staff that the application for the New Fleet Maintenance Facility with Campus-wide Geothermal & Rooftop Solar PV Systems as identified in Report 17-292 was successful and has been selected for funding under the Municipal GHG Challenge Fund. The Mayor and Clerk have executed the funding agreement as authorized by Report 17-292. As indicated in that report, the applicable project to which the grant submission related was part of the capital plan in 2019. As grant confirmation has been received, the project is being advanced for approval in order to proceed.

The Municipal GHG Challenge Fund will provide funding of up to \$1,750,000 to the City for design, installation, commissioning and monitoring of a geothermal system, solar PV systems, premium energy efficiency measures, retrofits and re-commissioning for the Division Street municipal campus which includes 701 and 705 Division Street (the Public Works Operations Centre and Kingston Police Headquarters) as well as the soon to be constructed 4,000 m² Fleet Maintenance Facility (collectively referred to as the "Fleet Maintenance Facility Project"). The scope of the architectural contract for the Fleet Maintenance Facility Project needs to be expanded to include the greenhouse-gas reduction requirements must be added as part of the Municipal GHG Challenge Fund grant submission.

The budget for the Fleet Maintenance Facility Project was forecasted in the 2019 capital budget, with the site preparation component budgeted prior. Due to the success of the Municipal GHG Challenge Fund Grant application, the 2019 budget is being advanced to proceed with the

May 15, 2018

Page 2 of 10

project per the participation requirements of the grant program. Report Number 17-292 directed that the City Treasurer be authorized to make the necessary budget amendments for any project approved in the Municipal GHG Challenge Fund. However, given the scope of the amendments, staff is seeking Council's further approval.

Recommendation:

That Council authorize the Mayor and Clerk to sign an expanded scope of services under Architecture 49's contract for the Fleet Maintenance Facility project to include: the design, GHG design coordination, contract documents, and contract administration for the additional work covered by the funding agreement as well as any related amendments thereto or other documents required to complete the work, in a form satisfactory to the Director of Legal Services and as directed by the Director, Facilities Management & Construction Services, and

That Council approve advancing the Fleet Maintenance Facility capital project from 2019 to 2018 with a budget of \$20,375,000 for the Division Street municipal campus, incorporating a geothermal system, rooftop solar photovoltaic (PV) installations and retrofits and re-commissioning of the Public Works Operations Centre (701 Division Street) and Kingston Police Headquarters (705 Division Street) in order to utilize the Municipal GHG Challenge Fund grant approved; and

That Council approve the funding for the project as follows:

- a) \$1,750,000 GHG Challenge Fund grant¹
- b) \$3,400,000 from Municipal Equipment Reserve Fund – PAYG
- c) \$10,000,000 from debt issuance, with funding from Municipal Equipment Reserve Fund
- d) \$5,225,000 from Development Charges.

¹ This is a maximum. The eligible grant funding will depend on actual expenditures and greenhouse gas reductions achieved. Any shortfall in the amount received will be financed by the Municipal Equipment Capital Reserve Fund.

May 15, 2018

Page 3 of 10

Authorizing Signatures:

ORIGINAL SIGNED BY COMMISSIONER

Denis Leger, Commissioner, Corporate & Emergency Services

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Gerard Hunt, Chief Administrative Officer

Consultation with the following Members of the Corporate Management Team:

Lanie Hurdle, Commissioner, Community Services

√

Jim Keech, President & CEO, Utilities Kingston

√

Desirée Kennedy, Chief Financial Officer & City Treasurer

√

May 15, 2018

Page 4 of 10

Options/Discussion:

The Municipal GHG Challenge Fund is operated by the Province's Ministry of the Environment and Climate Change (MOECC) and is aimed at supporting community-led action on climate change. This program is funded by the proceeds from Ontario's carbon market. Council received [Report Number 17-292](#) on October 17, 2017, which authorized City staff to submit grant applications to the Municipal GHG Challenge Fund for eligible projects.

The MOECC had recently informed City staff that the application for the "New Fleet Maintenance Facility with Campus-wide Geothermal & Rooftop Solar PV Systems" has been selected for funding under the Municipal GHG Challenge Fund. The Municipal GHG Challenge Fund will provide funding of up to \$1,750,000 (50% of total costs) for design, installation, commissioning and monitoring of a geothermal system, solar PV systems, premium energy efficiency measures, retrofits and re-commissioning for the Division Street municipal campus which includes 701 and 705 Division Street as well as the soon to be constructed fleet maintenance facility.

The site works and designs had previously been budgeted and the building was earmarked for construction in 2019 in the latest 15-year capital plan presented to Council during 2018 budget deliberations. The rooftop solar PV arrays will be installed on all three buildings – the Public Works Operations Centre, the Kingston Police Headquarters and the new Fleet Maintenance Facility. Likewise, the underground geothermal system will serve all three buildings on the campus. The scope of work covered by the grant also includes retrofits and re-commissioning of the existing buildings on the site.

To participate in the Municipal GHG Challenge Fund program, construction of the project must start by March 2019. As a result of this timeline and due to the comprehensive three-building energy solution being funded, it is imperative that the Fleet Maintenance Facility construction budget be accelerated by one year. Council Report Number 17-292 recommended that the Mayor and Clerk be authorized to sign funding agreements, in a form satisfactory to the Director of Legal Services, related to the applications outlined in that report. The Mayor and Clerk have executed the funding agreement per this authorization.

Participation Requirements:

Municipalities receiving a grant are required to possess or demonstrate a commitment to completing or reviewing their existing Community-wide GHG Emissions Inventory, Community-wide GHG Reduction Targets and Community-wide GHG Emission Reduction Plan. The City of Kingston satisfies this requirement through its implementation and updating of the Kingston Climate Action Plan, and specifically has:

- Completed updates of the original 2000 Community GHG Emissions Inventory for reporting years 2006 through 2011, 2014 and 2015;
- Committed funding to updating the Community GHG Emissions Inventory for reporting years 2016 and 2017;

May 15, 2018

Page 5 of 10

- Committed funding to examine the City’s current GHG emission reduction targets with respect to targets implied by the Paris Agreement and Ontario’s Climate Change Action Plan so that updates to our community GHG reduction targets can be considered; and
- Completed an update to the Kingston Climate Action Plan and committed to undertaking and evaluating additional GHG reduction actions as per [Report to Council 18-048](#) (February 6, 2018).

The Project:

The City is scheduled to build a new 4,000 m² fleet maintenance facility at its municipal campus on Division Street. The campus currently houses the Public Works Operations Centre, the existing maintenance facility, Kingston Police headquarters, a sand/salt dome and seasonal maintenance equipment and vehicle storage.

In order to contribute to the City’s greenhouse gas (GHG) reduction targets, the new facility is being designed to achieve as close to a net-zero carbon emission target as is technically and financially feasible. The building will be designed to be highly energy efficient. The project will include a campus-wide geothermal system as well as rooftop solar photovoltaic (PV) arrays on several buildings. Collectively, these two systems are expected to significantly reduce the GHG impact of the project. This initiative supports the vision and objectives of the 2015 City of Kingston Corporate Climate Action Plan (CCAP).

In the past, geothermal systems have not been widely adopted due to initial capital and ongoing operating costs. Although they reduce the consumption of natural gas for heating, geothermal systems require increased electricity use to operate the pumps. Because electricity in Ontario is significantly more expensive than natural gas this, along with the cost of installation, has been a deterrent. However, the switch from natural gas to electricity results in a marked reduction in GHG emissions. This project is expected to demonstrate that a geothermal system in combination with a net-metered solar PV system is a feasible, cost-effective means for a municipality to meet GHG reduction targets, particularly when implemented on a campus-wide basis.

The estimated overall GHG emission reduction for the Municipal GHG Challenge funded works is 305 tonnes annually, or approximately 42%. This reduction is calculated using an estimated baseline of 732 tonnes equivalent carbon dioxide (CO₂e) emissions annually, before the installation of geothermal, solar PV, and energy retrofits to existing buildings:

705 Division (Police building)	330 tonnes CO ₂ e
701 Division (Public Works building)	64 tonnes CO ₂ e
New Fleet Maintenance Facility ²	<u>338 tonnes CO₂e</u>

² The baseline annual emission rate for the new facility is estimated based on the building being constructed to minimum building code compliance.

May 15, 2018

Page 6 of 10

Total site emissions	732 tonnes CO ₂ e
Less estimated reductions	<u>305 tonnes CO₂e</u>
Net site emissions	427 tonnes CO ₂ e

The majority of the estimated 305 tonnes of CO₂e reduction is attributed to the new geothermal and solar PV systems that will reduce emissions from the new facility and existing buildings.

Further emission reductions will be realized through the implementation of premium energy efficiency measures for the new Fleet Maintenance Facility and retrofits of the existing buildings located at 701 and 705 Division Street.

Contract for Expanded Scope of Work:

Council received Report Number 16-206 on June 21, 2016, which authorized the Mayor and Clerk to enter into an agreement with Architecture 49 Inc. to provide prime consultant services for the fleet maintenance facility project. Council approval is now required to include the additional scope covered under the Municipal GHG Challenge Fund agreement in the scope of this contract.

Architecture 49's team is providing comprehensive, integrated architectural, civil, structural, mechanical, electrical and energy-related design services. The initial contract included feasibility studies to explore options for optimizing energy efficiency and reducing the carbon footprint of the project. In anticipation of finding feasible, affordable solutions, the contract included provisions for expanding the scope of work to include the design and implementation of selected energy efficiency and carbon reduction measures. Having now determined that significant reductions in energy consumption and carbon emissions are achievable, and having been successful in our Municipal GHG Challenge Fund grant application, the consultants' scope of work needs to expand accordingly. Awarding the expanded scope to Architecture 49 will ensure the continued integration of the various elements of the design, procurement and contract administration and allow us to meet the timelines of the funding agreement. The team at Architecture 49 is familiar with the existing buildings and the complexities of the project and is best positioned to carry this work forward.

The additional scope of work will include design, GHG design coordination, contract documents and contract administration of the following (with potential reduction as noted below):

- Campus-wide geothermal system;
- Rooftop solar PV arrays on the Fleet Maintenance Facility, Public Works Operations Centre and Police Headquarters (this might be done as a design build component and would require less of Architecture 49's services);

May 15, 2018

Page 7 of 10

- Energy retrofit feasibility studies of the Public Works Operations Centre and the Police Headquarters;
- Energy retrofits arising from the feasibility study;
- Re-commissioning of building systems at the Public Works Operations Centre and Police Headquarters;
- Premium energy efficiency measures in the new Fleet Maintenance Facility; and
- Commissioning, monitoring and verification requirements.

Budget Amendments:

The Municipal GHG Challenge Fund will provide up to 50% funding to the City, to a maximum of \$1,750,000, for the geothermal system, solar PV systems, premium energy efficiency measures for the new Fleet Maintenance Facility and retrofits and re-commissioning of the existing Public Works Operations Centre and Kingston Police Headquarters with the various elements and cost estimates noted below. There is also potential for funding from the federal government and Utilities Kingston's High Performance New Construction (HPNC) program, which City staff will explore.

The Campus-wide Geothermal & Rooftop Solar PV Systems, premium energy efficiency measures for the new Fleet Maintenance Facility, and retrofits and re-commissioning of the existing Public Works Operations Centre and Police Headquarters, are part of the larger building project for the Division Street campus. The budget for the project is partially approved through the 2014-15 (site servicing, design and feasibility studies) and 2018 (geothermal) capital budgets and building construction costs had initially been forecast in the 2019 budget. Due to the success of the Municipal GHG Challenge Fund Grant application, acceleration of the fleet maintenance facility by one year and the eventual consolidation of this with a portion of the 2018 budget is required to proceed with the project per the participation requirements of the grant.

The budget for the entire project is outlined as follows:

May 15, 2018

Page 8 of 10

Previously Approved Budgets	Budget	Eligible Funding*
Design and site servicing (2014-2015)	5,000,000	0
Geothermal (2018)	900,000	351,850
Subtotal	\$5,900,000	\$351,850
Acceleration of costs from 2019 forecast		
Solar PV	2,200,000	772,750
Generator	700,000	0
Building	³ 16,975,000	375,400
Design and re-commissioning (Campus Energy Conservation Measures)	200,000	100,000
Energy retrofit of existing buildings	300,000	150,000
Budget Amendment (this report)	\$20,375,000	\$1,398,150
Overall Project Budget	\$26,275,000	\$1,750,000

The funding sources for the budget amendment as per the recommendation section of this report are consistent with the long term capital financing plans as presented to Council as recently as the 2018 budgets. At that time grant funding was not known, and that has now been included as part of the funding sources as noted.

Report Number 17-292 directed that the City Treasurer be authorized to make the necessary budget amendments for any project approved in the Municipal GHG Challenge Fund. However, given the scope of the amendments, staff is seeking Council’s further approval per the recommendations of this report.

³ Building Costs forecasted to be expended in 2019 as per our 15-year forecast was \$15,475,000. This amount has now been adjusted to \$16,975,000 to reflect the Class “B” estimate (based on 90% building design drawings) and 5%, for construction costs inflationary impacts. The funds for the construction of the building are to be provided with the recognition that staff would seek cost reductions through value engineering.

May 15, 2018

Page 9 of 10

Existing Policy/By-Law:

Corporate Climate Action Plan: By 2020, the corporation is to achieve an 8% reduction in GHG emissions below its 2011 levels.

Kingston's Strategic Plan 2015-2018

Kingston Climate Action Plan

Notice Provisions:

Not Applicable

Accessibility Considerations:

The new Fleet Maintenance Facility will be designed and built in conformance with the City of Kingston Facility Accessibility Design Standards (FADS).

Financial Considerations:

The financial considerations are as described in the body of the report. Essentially, it is the acceleration of a project that was identified in the City's 15-year capital forecast to be brought to Council for consideration in 2019. The City Treasurer has confirmed that the City has the financial capacity to proceed at this time and leverage up to the \$1,750,000 of available grant funding. The debt component of this project is already considered within the forecasted debt structure and as reported to Council. The issuance of debt will proceed at the same time as forecasted. This recommendation serves to move the project forward only so that the grant can apply which enables both project commencement and ultimate GHG reductions.

Contacts:

Speros Kanellos, Director, Facilities Management and Construction Services, 613-546-4291 extension 3133

Other City of Kingston Staff Consulted:

Peter Huigenbos, Director, Real Estate & Environmental Initiatives

Stephen Dickey, Director of Financial Services and Deputy Treasurer

Susan Nicholson, Director of Legal Services and City Solicitor

Sheila Kidd, Deputy Commissioner of Transportation & Infrastructure Services

Mary Rae, Senior Legal Counsel

Lana Foulds, Manager, Financial Planning

May 15, 2018

Page 10 of 10

Exhibits Attached:

Not Applicable