



**STAFF REPORT  
ACTION REQUIRED**

**Agreement with Enbridge for the Installation of  
Compressed Natural Gas Refuelling Stations at City  
Facilities**

<b>Date:</b>	October 20, 2015
<b>To:</b>	Public Works and Infrastructure Committee
<b>From:</b>	General Manager, Solid Waste Management Services Division
<b>Wards:</b>	All
<b>Reference Number:</b>	P:\2015\Cluster B\SWM\November\019PW (AFS#22036)

**SUMMARY**

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As part of the City's Green Fleet Plan, Solid Waste Management Services (SWMS) has successfully utilized Compressed Natural Gas (CNG) vehicles and refueling equipment on a trial basis generating cost savings and operational efficiencies. The current Fleet plan will result in replacement of diesel vehicles with CNG vehicles at the time of scheduled replacement. This CNG vehicle replacement initiative supports the City's Green Fleet Plan to reduce harmful emissions.

This report seeks authority for new agreements with Enbridge Gas Distribution Inc. ("Enbridge") to expand existing refuelling stations at the City-owned facility at Ellesmere Yard and Bermondsey Yard, as well as related agreements for the installation and maintenance of natural gas refuelling stations at additional City facilities as required.

## RECOMMENDATIONS

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### **The General Manager of Solid Waste Management Services recommends that:**

1. City Council authorize the General Manager of Solid Waste Management Services (SWMS) or designate(s) to negotiate and enter into agreements with Enbridge Gas Distribution Inc. to construct, commission and maintain natural gas vehicle refuelling stations at the City-owned facilities located at 1050 Ellesmere Road (Ellesmere Yard) and 25 Old Eglinton Road (Bermondsey Yard) and at future City facilities if required, together with any related agreements, each refuelling agreement containing the terms and conditions satisfactory to the General Manager of Solid Waste Management Services and in a form satisfactory to the City Solicitor.

### **Financial Impact**

As a result of the plan to change from diesel vehicles to CNG vehicles, it is anticipated that the Inter-divisional charge (IDC) from Fleet Services will be reduced as the costs associated with the expanded refueling stations is more than offset by savings in fuel costs once the program is fully implemented.

The annual rental and associated maintenance fees for the required fuelling equipment at the Ellesmere Yard and Bermondsey Yard is approximately \$486,720 and \$675,120 respectively totalling \$1,161,840 excluding HST (\$1,182,288 net of HST recoveries). These fees are based on the anticipated costs for the refuelling equipment requirements at each yard, the estimated installation costs and the estimated metered amount of (CNG) that will flow through the refuelling equipment. These cost estimates are subject to change if the actual purchase price of the equipment differs from the estimated equipment cost or if the estimated installation costs changes due to unforeseen construction issues. These fees will be initially paid by Fleet Services and will be charged back to SWMS through an IDC to the operating funds centre SW1030 and SW1040, Commitment Item 7105.

The cost to supply the CNG is not included in this agreement and will be part of a separate gas supply agreement with Enbridge. It is expected that there will be savings in fuel costs as CNG is considerably less expensive than diesel. The current price for the diesel litre equivalent amount of CNG is 72 cents/litre lower than diesel (26 cents/litre for CNG compared to 98 cents/litre for diesel). Based on the current annual volumes of diesel fuel used for collection vehicles converted to the equivalent amount of CNG gas that will be used when the scheduled trucks are replaced over the next three years, including the costs for the equipment rental and maintenance fees, the anticipated net annual fuel savings is approximately \$1,639,320 annually excluding HST (\$1,668,172 net of HST recoveries) after all vehicles are operating on CNG.

The annual net fuel savings of \$1.639 million excluding HST will offset the cost the refuelling equipment rental and maintenance fees and additional vehicle replacement costs. The plan is to replace the current diesel vehicles with CNG vehicles at the scheduled replacement time. CNG vehicles currently cost approximately \$30,000 more than diesel vehicles for a total estimated cost of \$4.5 million excluding HST. The payback period will be approximately three years per vehicle.

**Provision for Contract Termination**

The refuelling station agreements with Enbridge will contain termination fees for each facility that will be enacted in the event the City ends a contract prior to reaching the maximum term (10 years). The termination fees set by Enbridge are based on the cost of the equipment invested in the refuelling stations amortized over the 10 year term. These termination amounts exceed the Division's approval authority. In the event the City decides to terminate the agreement(s) with Enbridge prior to their term, Table 1 below specifies the potential termination fees for each year of the contract for the Ellesmere and Bermondsey Yard agreements.

**Table 1 – Enbridge Refuelling Station Termination Fees**

<b>Year</b>	<b>Ellesmere Yard</b>	<b>Bermondsey Yard</b>
1	\$2,511,000	\$3,286,800
2	\$2,242,000	\$2,931,600
3	\$1,973,000	\$2,576,500
4	\$1,704,200	\$2,221,400
5	\$1,435,000	\$1,866,300
6	\$1,166,500	\$1,511,300
7	\$897,700	\$1,156,250
8	\$628,900	\$801,300
9	\$360,150	\$446,300
10	\$0	\$0

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

## DECISION HISTORY

City Council on June 10, 11, 12 and 13, 2014, adopted the "City of Toronto Consolidated Green Fleet Plan 2014-2018". The City of Toronto's Consolidated Green Fleet Plan 2014-2018 primary goal is to choose vehicles, equipment, fuels and practices that consume less fuel and emit less greenhouse gas (GHG) and air pollution, meet the City's operational requirements, are sustainable and are economically viable. This report responds to that direction and supports the Green Fleet Plan. The report on the Consolidated Green Fleet Plan can be viewed at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.GM30.12>

## ISSUE BACKGROUND

Climate change and air pollution present important challenges for the City to address now and in the future. The burning of fossil fuels to power motor vehicles emits greenhouse gasses (GHG), such as carbon dioxide (CO<sub>2</sub>) that contribute to climate change, and other air pollutants, such as nitrogen oxides (NO<sub>x</sub>) that negatively impact air quality and public health. Reducing such impacts on our communities depends in part on the City's willingness to use effective green technologies and adopt practices to reduce harmful emissions. Green fleet planning aims to reduce fossil fuel consumption, fuel costs, and emissions of GHG and air pollutants.

## COMMENTS

### 1. Green Fleet Plan

In support of the Green Fleet Plan, SWMS will be replacing collection vehicles operating on diesel with CNG vehicles at the time of the scheduled vehicle replacement over the next three years.

CNG is methane stored at high pressure which can be used in place of gasoline or diesel. CNG combustion produces fewer undesirable gases than gas or diesel. The number of vehicles in the world using CNG has grown 33.7 percent since 2009 and 22.9 percent average annual growth over the past decade (Source: <http://www.ngvglobal.com/blog/ngv-global-2011-statistics-show-irrepressible-growth-of-ngvs-0704>) and this trend is occurring in the waste management collection industry as well (Source: <http://www.solidwastemag.com/columns/shifting-to-natural-gas-truck-fleets>).

CNG is a more environmentally friendly burning fossil fuel compared to petroleum based fossil fuels typically derived from crude oil such as diesel. Recent academic literature has shown that 100 percent CNG adoption results in GHG reductions of around 25 percent compared to fully diesel operated collection fleets. More importantly, this is a step towards the Division's goal of eventually creating and utilizing its own renewable natural gas (RNG) from the biogas produced from the Organics processing facilities to fuel our fleet and potentially other City vehicles.

There are also strong economic reasons why converting to CNG and eventually RNG are beneficial. Maintenance costs associated with natural gas vehicles are typically similar to its diesel counterparts; therefore, this report has not factored in any potential maintenance savings. Moreover, natural gas prices are relatively static and do not suffer from the same "price spikes", which are common in the petroleum fuel sector. Furthermore, there are additional environmental and health benefits achieved by switching to the cleaner burning CNG fuel for transportation purposes.

## **2. Solid Waste Efforts**

In 2013, Solid Waste Management Services commenced the installation of a small scale CNG fuelling station at its Ellesmere Yard and began operating in the summer of 2014. Based on this work with City of Toronto, Enbridge now has a standard agreement that streamlines the process moving forward to install CNG fuel stations. Enbridge has indicated that the timeframe from time of order to installation and activation of a CNG fuelling station is now approximately eight months.

Since the small scale Ellesmere Yard refuelling station became operational significant time savings in refuelling has been realized by eliminating the need to travel to a privately operated fast-fill refuelling station. Fast-Fill stations only fill the tanks to 60 percent of its capacity as it is set up to fuel vehicles quickly and get them back on the road. By having fuelling stations at City yards, the vehicles will be able to use the "Slow-Fill" overnight fuelling, which allows for 100 percent fuel capacity. The vehicles are then ready to go on the road in the morning and do not need refuelling again during the day.

The City is the owner and the operator of two facilities located at 1050 Ellesmere Road and 25 Old Eglinton Road, Toronto, where it houses and maintains City's Fleet vehicles, including Solid Waste collection diesel trucks. Diesel collection vehicles are being replaced with CNG vehicles and large scale refuelling stations are required at these two collection facilities.

## **3. Environmental Attributes**

Consistent with the City's 2013 Revised Carbon Credit Policy, City staff will use reasonable efforts to safeguard the City's ownership of the GHG reductions and other environmental attributes that result from the work undertaken pursuant to the agreement.

#### **4. Non-Competitive Procurement**

Pursuant to Section 3.0 of the City's Procurement Processes Policy (Refer to link below), the procurement described in this report is eligible to be undertaken without a competitive process because there is a statutory or market based monopoly and there are no reasonable alternatives, substitutes or accommodations.

[http://www1.toronto.ca/City%20Of%20Toronto/Purchasing%20and%20Materials%20Management/Selling%20to%20the%20City/Purchasing%20&%20Material%20Management/Policies-Legislation/policy\\_procurement\\_process.pdf](http://www1.toronto.ca/City%20Of%20Toronto/Purchasing%20and%20Materials%20Management/Selling%20to%20the%20City/Purchasing%20&%20Material%20Management/Policies-Legislation/policy_procurement_process.pdf)

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#### **SIGNATURE**

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