




CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Corporate Asset Management

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	June 17, 2024
SUBJECT/REPORT NO:	Policy 11 - Compressed Natural Gas Mobile Refuelling Equipment (PW22003(a)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Tom Kagianis (905) 546-2424 Ext. 5105
SUBMITTED BY:	Andrea Vargas Acting Director of Corporate Asset Management Public Works
SIGNATURE:	

RECOMMENDATION

- (a) That Council approves the expansion of the Policy #11 – Non-competitive Procurement, previously approved through Report PW22003, for the supply, installation, and management of compressed natural gas and mobile refuelling equipment. This expansion is estimated to cost \$300K annually for a three-year period for a total of \$900K and will support the operational requirements of the Compressed Natural Gas Waste Collection Trucks;
- (b) That the General Manager, Public Works, or their designate, be authorized to negotiate, enter into, and execute a contract and any ancillary documents required to give effect thereto with Compression Technology Corporation, in a form satisfactory to the City Solicitor;
- (c) That the General Manager, Public Works, or their designate, be authorized and directed to submit and sign an application with supporting documentation relating to applicable grant funding opportunities, including but not limited to the Green Initiative grant funding application with supporting documentation including an application attestation and final agreement, on behalf of the City of Hamilton;
- (d) That the General Manager of Finance and Corporate Services, or their designate, be authorized and directed to confirm the City of Hamilton's funding contribution, on behalf of the City of Hamilton and sign the required proof of

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

funding forms related to Green Initiative grant funding; and any resulting funding agreements and associated ancillary documents that may also include a contribution to funding, in a form acceptable to the City Solicitor; and,

- (e) That the City Solicitor be authorized and directed to prepare any necessary by-laws for Council approval, for the purpose of giving effect to the City's acceptance of grant funding opportunities.

EXECUTIVE SUMMARY

The purpose of this report is to seek approval for expanding the existing single-source agreement with Compression Technology Corporation.

The temporary mobile Compressed Natural Gas Fuelling Station at 1579 Burlington Street East was previously approved in Report PW22003 to fuel compressed natural gas waste collection trucks. Report PW22003(a) is requesting to expand the single source approval to support compressed natural gas fuelling for the approved compressed natural gas waste collection trucks. The existing diesel-powered trucks reached their full life expectancy and were approved for replacement with compressed natural gas trucks through the 2023 Tax Capital Budget process.

In August 2022 City Council approved Hamilton's Climate Action Strategy that includes the 'ReCharge Hamilton – Our Community Energy and Emissions Plan. The Community Energy and Emissions Plan provides a low-carbon scenario to help achieve net zero by 2050.

The City's waste collections section currently operates 37 diesel-powered trucks. The purchase of 19 compressed natural gas trucks (ten approved in 2022 and nine approved in 2023) represents 51% of waste collection vehicles powered by compressed natural gas by 2025. This initiative will result in an 1190-tonne reduction of greenhouse gas emissions over the seven-year life of these waste collection trucks.

The expanded single-source approval to utilize Compression Technology Corporation for the temporary mobile fuelling station will enable the fuelling of nine compressed natural gas waste collection trucks until the new compressed natural gas station at Hamilton Transit Maintenance and Storage Facility, 281 Birch Avenue adjoining 330 Wentworth Street North is operational with permanent, fast flow natural gas dispensers.

The compressed natural gas waste collection trucks align with Low-Carbon Transformation #3: Changing How We Move, which will help incrementally decrease greenhouse gas emissions from our transportation sector until cleaner forms of heavy-duty vehicle technology become economically available such as clean hydrogen.

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Compression Technology Corporation is the only known company in Canada that offers this combination of equipment for a compressed natural gas mobile refuelling solution with an approximate cost of \$300K annually. This is for the supply of 100% renewable natural gas which is the most economical option offered. This expense will continue until the compressed natural gas station at the new Hamilton Transit Maintenance and Storage Facility is in service where the cost to fuel the waste collection trucks will be reduced and is estimated at \$110-\$130K annually.

Currently, there are grant funding opportunities available through the Federation of Canadian Municipalities - Green Municipal Fund to assist with green initiative projects. Staff will review these and any future submission requirements of the offered funding programs and submit application(s) for consideration and approval.

Recently, Term of Council priorities have accelerated the City's current Climate Change Action Strategy goal of a 50% reduction in total corporate greenhouse gas emissions from the 2005 baseline by 2030, to achieve a 55% reduction by the end of 2026.

Alternatives for Consideration – See Page 6

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The recommended single-source procurement for the compressed natural gas and mobile refuelling equipment required to fuel the compressed natural gas waste collection trucks is estimated to cost \$300K annually for up to three years until the Hamilton Transit Maintenance and Storage Facilities' Compressed Natural Gas Station is operational. Fuel use estimates are based on a historical annual average fuel consumption rate. This figure can fluctuate due to operational changes.

There are no budget impacts as the fuel cost to operate the waste management fleet is pre-established as part of the 2024 operating budget. The cost for the delivery of fuel and equipment was included in the 2024 capital budget request in ProjectID 5120051501 - Waste Collection Fleet Replacement.

Future refuelling at the Hamilton Maintenance and Storage Facility Natural Gas Station based on the best available information today is expected to cost \$100K-\$130K annually over the remaining life of the vehicles which would result in savings to the current base operating budget for fuel estimated to be in 2027.

Staffing: N/A

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Legal: Fleet Services/Energy staff will work with Legal to draft a Compressed Natural Gas Supply Agreement with Compression Technology Corporation in a form satisfactory to the City Solicitor.

HISTORICAL BACKGROUND

In July 2019 Marathon Technical Services was contracted to perform a Compressed Natural Gas Packer Truck Fuelling Study in consideration of replacing all City-owned waste collection trucks from diesel-powered to compressed natural gas powered as they became due for replacement.

The analysis included an evaluation of several compressed natural gas refuelling scenarios, a cost analysis, an estimated reduction of greenhouse gases and some commentary on other chassis power options that are currently available in the industry.

In January 2022 Fleet Services previously received single source approval under Report (PW22003) (City Wide) to utilize Compression Technology Corporation for the supply, installation and management of the temporary compressed natural gas and mobile refuelling equipment, and operational requirements for the life of the nine compressed natural gas waste collection trucks.

Currently, the City has one compressed natural gas fuel site located at 2200 Upper James Street. This location is used to refuel transit buses. A previous site at 330 Wentworth Street North, was installed in the mid-1990's with a Pro Logic Controller and compressors that were no longer supported by the manufacturer for parts supply therefore the site was decommissioned.

Ten diesel-powered trucks reached their full life expectancy and were approved for replacement with compressed natural gas trucks in the 2022 Capital Budget process. In addition, nine diesel-powered trucks reached their full life expectancy and were approved for replacement with compressed natural gas trucks through the 2023 Tax Capital Budget process.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

RELEVANT CONSULTATION

The following departments provided input into the development of this report:

- Corporate Services Department, Financial Planning Division.
- Corporate Services Department, Procurement Division.
- Public Works Department, Waste Management Division.
- Public Works Department, Energy and Facilities Management Division.

- External Consultation: Marathon Technical Services

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The recommended option is provided by Compression Technology Corporation. This is the lowest cost for a short-term solution.

If successful, the grant funding opportunities of the Federation of Canadian Municipalities - Green Municipal Fund would result in reducing the funding contribution from the City.

The Federation of Canadian Municipalities Capital offers a program that focuses on alternative fueled vehicles and the required infrastructure. The Federation of Canadian Municipalities program is structured as a loan or grant depending on how the application is approved. The City may qualify to receive a low-interest loan of up to \$5 Million and/or a grant worth up to 15% of the loan, covering up to 80% of eligible costs.

ALTERNATIVES FOR CONSIDERATION

Alternative 1 – Dedicated Station

Option to install a dedicated compress natural gas compressor station at 1579 Burlington Street. This option would require the retention of a consultant, engineered specification, and tender issuance. By pursuing this option, the compressed natural gas waste collection trucks will be required to fuel at an alternate location or install a temporary mobile refuelling station until a dedicated station can be installed at 1575 Burlington Street.

Fleet does not recommend investigating the option to install a dedicated compressed natural gas compressor station at 1579 Burlington Street due to extensive lead times, and significant increase in cost. Additionally waste collection operations would incur additional cost and operating impacts as they would be forced to fuel at an alternative site such as 2200 Upper James Street in the time period between the arrival of new trucks and the building of the permanent station at 1579 Burlington Street.

Financial: New station estimates approximately \$5 Million

Staffing: Additional resources are required to investigate options and feasibility

Legal: N/A

Alternative 2 – Hamilton Street Railway Location

Fuel new compressed natural gas waste collection trucks at the 2200 Upper James Hamilton Street Railway location. The round-trip distance from 1579 Burlington Street to 2200 Upper James is 46km with a drive time of 42 minutes.

Financial: Additional cost of approximately \$430,000 annually to drive to 2200 Upper James. The cost of both the driver time and the truck cost per km were included for a one-year period from Wentworth to Mount Hope. This was included as a 23.2 km round trip (at \$1.88 inflation-adjusted per km).

Staffing: This option adds 42 minutes of unproductive staff time each operating day and may impact waste collection operations

Legal: N/A

APPENDICES AND SCHEDULES ATTACHED

N/A