

Item 7.2
Public Works Committee
April 22, 2014



Hamilton
Public Works

Public Works
Transportation Division
Corporate Assets & Strategic Planning
Division

**2014 Transit Capital Fleet Replacement and
Compressed Natural Gas (CNG) Station
Replacement (PW12017b)(City Wide)**
April 22, 2014

Providing services that bring our City to life !

RECOMMENDATION

- (a) Purchase (60') articulated vs. forty-foot (40');
- (b) Single source CNG fuelled buses;
- (c) Single source low excavation shop hoists;
- (d) Facility upgrades at the Mountain Transit Centre;
- (e) Agreements with Union Gas for the design, construction, maintenance, and ownership a CNG station;
- (f) CNG station upgrades at 330 Wentworth Street;
- (g) Long-term land lease with Union Gas.

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- Processes
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EXECUTIVE SUMMARY

- Report (PW12017a) - BCA respecting Transit Fuel - report back prior to a 2014 Transit Fleet replacement purchase
- Report recommends a strategy for leveraging Capital to mitigate future Operating Budget pressures by:
 - Purchase sixty-foot (60) articulated buses to increase Transit passenger capacity on bus routes that continue to experience overcrowding and bypassing
 - CNG versus Diesel
 - estimated \$1.9M in cost avoidance via replacement of the remaining thirty-five (35) CNG with CNG;
 - estimated annual savings of \$1.49M in 2016 and an average of up to \$3.75M annually to 2024 due to replacement of Diesel fleet with CNG.
- Opportunity to pilot the use of CNG fueled fleet, such as in Waste Management;

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EXECUTIVE SUMMARY - BCA

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- CNG return of \$41 Million over a 20 year period with a payback of 7 years;
- CNG – possible long term contract to lock in savings and reduce risk;
- 12-year life conservative assumption since a longer life would favor CNG;
- Estimated savings of 86 Kilo-tons of CO₂ over the 20 years;
- CNG economically and technically feasible with positive environmental;
- Net benefits of expanding the natural gas fleet:
 - fuel cost savings of up to 50% per kilometre and;
 - reduced greenhouse gas emissions by 20% to 25%.

FINANCIAL IMPLICATIONS

- Hoist replacement - previously approved capital projects #5301151500 and #5301351500 - \$1.08M;
- MTC facility upgrades - Transit Capital Grant Reserve (#101027) - \$350K;
- Construction of a CNG station at MTC - Transit Provincial Gas Tax Reserve (#112204) - upset \$3.6M;
- CNG Station upgrades at 330 Wentworth Street - Reserve #108027 - \$300K.

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LEGAL IMPLICATIONS

- MOU executed between the City of Hamilton and Union Gas Limited.
- Negotiate a contract with Union Gas for the design, construction, maintenance and ownership of CNG infrastructure at MTC.
- Negotiate long term land lease for CNG compressor site at MTC.

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POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

- This report recommends a managed incremental migration from Diesel fuelled transit buses to CNG fuelled.

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RELEVANT CONSULTATION

- Office of Energy Initiatives and Central Fleet of the Corporate Assets and Strategic Planning Division of Public Works.
- Transportation Division of Public Works.
- Procurement, Financial Services, Corporate Services.
- Legal Services, City Manager's Office.
- Real Estate Section, Economic Planning and Development.

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ANALYSIS AND RATIONALE FOR RECOMMENDATION

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- Sixty-foot (60) articulated buses present an opportunity to increase passenger capacity on routes that continue to experience overcrowding and bypass in the alternative to Operating cost of adding Bus Operators.
- The managed migration from Diesel fuelled buses to CNG fuelled buses opportunity for cost avoidance and savings as follows:
 - Estimated \$1.9M annualized in cost avoidance due to the replacement of the remaining thirty-five (35) CNG with like CNG;
 - Estimated annual savings of \$1.49M in 2016 and an average of up to \$3.75M annually to 2024 due to replacement of Diesel with CNG.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

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- CNG at 330 Wentworth Street - dual purpose of an emergency backup for transit and opportunity to pilot CNG in other city fleet.
- Federal regulations mandating emission after treatment on diesel engines, diesel experiencing lower reliability rates and higher maintenance costs than in pre-2007 model years.
- Estimated savings of 86 Kilo-tons of CO₂ over the 20 years
 - reduced greenhouse gas emissions by 20% to 25%;
- Ability to hedge NG price on a forward basis.

ALTERNATIVES FOR CONSIDERATION

- Purchase 60-foot diesel fuelled articulated buses in the alternative to 60-foot CNG fuelled articulated buses.
- Purchase 40-foot diesel fuelled buses in accordance with the 2014 approved transit fleet replacement capital budget in the alternative to purchasing 60-foot articulated buses.

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ALIGNMENT TO THE 2012-2015 STRATEGIC PLAN

- Strategic Priority #2 – Valued & Sustainable Services
 - We deliver high quality services that meet citizen needs and expectations, in a cost effective and responsible manner.
 - Strategic Objective
 - 2.1 Implement processes to improve services, leverage technology and validate cost effectiveness and efficiencies across the Corporation.
- Corporate Culture Pillars
 - Collective Ownership
 - Courageous Change

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