

**CITY OF HAMILTON**

***PUBLIC WORKS DEPARTMENT  
Transit Division***

<b>Report to:</b> Mayor and Members Committee of the Whole	<b>Submitted by:</b> Scott Stewart, C.E.T. General Manager Public Works Department
<b>Date:</b> June 29, 2006	<b>Prepared by:</b> Don Hull Extension 1860  Doug Murray Extension 2804  Mark Selkirk Extension 5968  Liz Embleton Extension 1870

**SUBJECT: Conventional Transit Fleet Purchase (PW06092) - (City Wide)**

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**RECOMMENDATION:**

(a) That, for 2006, staff be authorized to:

Purchase five (5) replacement 40-foot Hybrid (Diesel/Electric) Conventional Transit Low Floor buses from the low bidder, New Flyer Industries, at an upset net unit cost of \$553,285 and a total upset net cost to the City of \$2,766,425.

Purchase seven (7) replacement 60-foot Articulated Hybrid (Diesel/Electric) Conventional Transit Low Floor buses from the low bidder, New Flyer Industries, at an upset net unit cost of \$822,634 and a total upset net cost to the City of \$5,758,438.

Purchase five (5) replacement 40-foot Diesel Conventional Transit Low Floor buses from the low bidder, New Flyer Industries, at an upset net unit cost of \$385,840 and a total upset net cost to the City of \$1,929,200.

Expenditures in the amount of \$10,454,063 be directed to the 2006 Capital Project 5300683101 to be funded as follows:

\$1,960,000 Ontario Transit Vehicle program subsidy approved 2006 Capital  
\$3,938,000 Transit Fleet Replacement Reserve approved 2006 Capital  
\$742,500 Development Charges (Articulated bus expansion of Route #10)  
\$3,813,563 "One-time" dedicated Federal Gas tax for Transit Capital

Undertake a Marketing initiative, at the direction of the Transit Master Plan Steering Committee to re-brand the current Beeline Express, Route #10.

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Draw \$150,000 from the Provincial Gas Tax reserve on an ongoing basis to offset the additional operating costs of a 60-foot articulated bus when replacing a single 40-foot bus.

- (b) That Council pre-approve the 2007 Capital Budget for the purchase of:

Seventeen (17) replacement 40-foot Diesel Conventional Transit Low Floor buses from the low bidder, New Flyer Industries, at an upset net unit cost of \$385,840 and a total upset net cost to the City of \$6,559,280.

Two (2) 35-foot Trolley Replica buses, to replace 2 Conventional Transit buses, on the basis of a "sole-source" negotiation at an upset net unit cost of \$550,000 and a total net cost to the City of \$1,100,000.

Draw \$50,000 from the Provincial Gas Tax reserve for 2007 only to provide for the re-introduction of the Gore-to-Shore shuttle beginning in 2007.

Investigate the potential for co-funding the Operating costs of re-instating the Gore-to-Shore shuttle with Tourism Hamilton.

Expenditures in the amount of \$7,659,280 be directed to the 2007 Capital Project 5300783101 to be funded as follows:

\$3,938,000 Transit Fleet Replacement Reserve per 2007 Budget  
\$1,500,000 Transit Provincial Gas Tax Reserve (12-year bus life)  
\$2,221,280 Federal Gas Tax

- (c) That staff be authorized and directed to enter into negotiations with Clean Energy for a contract to provide maintenance and CNG fuel supply for the Mountain Transit Centre CNG fuelling station and report back to Council.
- (d) That an activity-based costing model be established to monitor and measure the operating costs for hybrid transit fleet and articulated bus fleet and that a report be brought back to Council, at least annually, in advance of the annual budget process as a prerequisite to any further hybrid or articulated bus purchases.

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Scott Stewart, C.E.T.  
General Manager  
Public Works

**EXECUTIVE SUMMARY:**

A tender for Conventional Transit (HSR) fleet was issued in accordance with the Transit Division's annual vehicle replacement plan and Council's 2006 Capital budget approval. A provision to purchase 2007 fleet was included in the Tender in acknowledgement of the long lead time to acquire fleet.

The tender included requests for bidder responses to available engine technologies including: Diesel, Compressed Natural Gas (CNG) and Hybrid (Diesel-Electric, an

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emerging technology) and 60-foot articulated buses. This approach was undertaken to afford staff the opportunity to assess and ultimately Council to decide upon an engine technology and vehicle size for the Transit fleet that will best reflect Council's desired blend of environmental, social and economic goals and objectives.

Council has an approved Conventional Transit Fleet of 204 buses. This requires a replacement schedule of 17 vehicles/year (204/12), minimum, to meet Council's commitment to an expanded fleet arising from increased HSR service levels approved in the 2005 budget and to a 12-year bus life approved in the 2006 budget. Further, the contribution to the dedicated Transit fleet reserve contained in the Transit Operating budget has been reduced to mitigate Transit budget increases. Going forward, the reserve is intended to fund the annual replacement of 11 vehicles, with the balance of 6 vehicles to be funded from Provincial or Federal Gas Tax dedicated to Transit. An updated Provincial Gas Tax reserve balance sheet of committed and planned expenditures is attached as Appendix 1.

The Federal Government has confirmed the provision of "one-time" dedicated Capital funding for Transit, for 2006/07, in the order of \$10 million. The funding for the entire Province has been transferred to the Association of Municipalities of Ontario (AMO) for allocation to the Municipalities which is expect to flow in the foreseeable future. The Federal Government has also tentatively "earmarked" an additional \$10 million for transit Capital in 2007/2008 conditional upon favourable year-end budgets.

Council's Development Charges (DC's) policy collects development charges that are dedicated to Transit and must be used for Capital to support expansion. This report recommends the use of DC's to purchase 60-foot Articulated buses to replace 40-foot conventional buses on a one-for-one basis. The need to address the requirement for service expansion is achieved through increasing system capacity with the added benefit of not being required to add to the overall numbers of the fleet or Bus Operators.

This Fleet Tender has resulted in a very favourable financial outcome to the City. Comparatively, the low bidder New Flyer Industries, bid a base price of \$348,000/unit for a 40-foot, Diesel low floor bus or \$30,000/bus lower than their successful bid of \$377,988 in 2004. This represents a savings to the City of over \$500,000 in 2006 and the potential for savings exceeding \$1,000,000 overall if the City elects to purchase 2007 fleet as part of this procurement relative to the last purchase.

An evaluation metric comprised of 22 criteria, included in the Analysis section of this report, was developed to assist the bid evaluation team in arriving at the report recommendation. Overall, before any weighting was applied, 40-foot low floor diesel fleet had the best scores by a substantive margin, the key reasons being:

- lowest risk for the City;
- lowest capital cost;
- most familiar fleet type to the transit users (66% of fleet);
- no associated supplementary capital costs related to facility expansion or hoist purchase;
- no Operator or Fleet Maintenance staff training required;
- meets commitment to 12-year life cycle timing,

When weighting was applied to the criteria, such as the expressed preference of the Transit Master Plan Steering Committee for 60-foot Articulated buses and Hybrid engine

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technology, the bid team reached unanimous agreement on some key principles that drive the ultimate staff recommendations:

- in recognition of Council's/staff's commitments to improving Hamilton's air quality, and Council's/staff's desire to mitigate future major extraordinary cost drivers within the operating budget associated with uncontrollable fuel price increases, that the purchase include to the limit of the City's risk tolerance, the maximum number of Hybrid buses. This is in view of the mitigating implications on the 2007 and future fleet maintenance costs related to fuel, and longer expected life of engines, transmissions and brakes.
- in recognition of the Transit Master Plan Steering Committee's (TMSC) priority commitment to Bus Rapid Transit (BRT), that the purchase include some Articulated buses as a demonstrated introduction to BRT;
- the balance of the recommended purchase of replacement fleet be 40-foot Diesel buses;
- no further purchases of CNG at this time.

The bid team defined risk tolerance as the threshold capability of the Division to meet scheduled service commitments in the event of an unforeseen catastrophic failure that could not be anticipated with the lack of experience with Hybrid engine technology and Articulated buses.

The 2006 Capital budget was submitted and approved with sufficient funding based on the purchase of conventional 40-foot Diesel buses.

Sixty-foot Hybrid Articulated buses are quoted at \$436,794/unit more than the bid price for a 40-foot Diesel bus. Forty-foot Hybrid buses are quoted at \$167,445/unit. The recommended purchase for 2006 requires an additional \$4.6 million not budgeted for. The report recommendation is to fund the \$4.6 million from the "one-time" dedicated Federal Gas Tax for Transit Capital and from Development Charge reserves.

The Transit Master Plan Steering Committee strongly advocates for the purchase of Articulated buses for the BeeLine Express route to improve capacity and to introduce the concept of Bus Rapid Transit (BRT) which is normally associated with Articulated buses. As there is no provision in the 2006 Capital budget for this increased expenditure, the Transit Master Plan Steering Committee endorsed the use of Provincial and Federal Gas tax and development charges to address the funding gap. Replacement of 40-foot buses with 60-foot buses on the BeeLine is expected to relieve the ongoing problem in this corridor with insufficient service capacity to meet ongoing demand. Ongoing operating funding from Provincial Gas tax in the amount of \$150,000/year is required to support the higher operating cost of this type of fleet and is included in the recommendations within this report.

Similarly, the Transit Master Plan Steering Committee strongly advocates for the purchase of alternate fuelled vehicles to address Council's commitment to the environmental component of the triple-bottom-line. The bid team is supportive of the purchase of Hybrid buses on a "one-time" basis, subject to a review of cost and performance as identified in recommendation (d) of this report to achieve this objective. The purchase of hybrid buses will allow for a "first-hand" evaluation of the financial and environmental advantages of the three engine technologies, diesel, CNG and Hybrid. Although this technology has only been in full revenue service for about 2 years, case

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studies released by New York City indicate that if the reduced operating expenses experienced to date continue, the higher capital costs may be fully offset by lower operating costs over the life of the vehicle. Lower fuel consumption has resulted in savings of \$5,000 to \$10,000/bus/year. Based on current experience longer brake, engine and transmission life is anticipated. At the very least, Staff will be able to reflect operating savings on the hybrid fleet for fuel in the 2007 Operating budgets and beyond.

The purchase of Articulated and Hybrid fleet at this time is viewed as a “one-time” pilot to allow staff the opportunity to evaluate all fleet types on a first hand basis. Should Council approve the purchase of 2006/07 replacement fleet at this time, the next replacement fleet purchase will be in 2008. Should experience demonstrate that Council/Staff wish to purchase additional articulated or hybrid fleet, the current transit fleet reserve contribution is insufficient to fund the higher capital cost. Alternate funding in the form of Provincial or Federal Gas Tax or higher contribution to reserve, would be required at that time to continue with the purchase of this type of fleet.

Staff was previously directed to report back to Council on the re-introduction of the Gore-to-Shore Shuttle service for the summer of 2007 and to include the purchase of trolley replicas as a required component of the report. As this direction involves the purchase of fleet, Staff is responding to Council’s direction within this report so as to address all fleet purchases in a single report. Staff support the re-introduction of the Gore-to-Shore shuttle in 2007 as a desirable high-profile initiative to raise the image of Transit in the community. Also, the purchase of the Trolley replicas will serve to promote Transit in Hamilton at over 20 Special Events that the Transit Division provides transportation to/from over the course of the year. As there is only one Canadian manufacturer of these buses, Staff is seeking authorization for the Purchasing Department to employ Policy #11 (b), (f) towards the purchase of this fleet.

**BACKGROUND:**

The information/recommendations contained within this report have City wide implications.

Staff consulted the other Large Municipal Transit operators in the Province to determine their intentions on upcoming Fleet purchases. Toronto, Ottawa, Mississauga and Brampton all confirmed their intention to recommend the purchase of 40-foot Diesel buses exclusively for the foreseeable future. Toronto, however, has committed to the purchase of 125 hybrid buses for pilot testing that will be co-funded by all three levels of government.

The Province’s recent announcement to discontinue funding incentives for alternate fuelled vehicles (CNG and Hybrid), previously offered through their Ontario Transit Vehicle Subsidy program (OTVP) which is currently under review and planned for re-launch in 2007 has given some municipalities cause to defer consideration of Hybrid fleet acquisitions. Decisions already communicated to the Municipalities through recent consultation sessions confirmed that the new program would contribute to funding for:

- replacement vehicles only (refurbishments and expansion no longer eligible);
- there would be no incentive for alternate fuel (CNG and Hybrid);
- there will be a cap on available funding. Current estimates are that the program discontinued in 2006 was in the order of \$25 million under funded. There will be a

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new program introduced in 2007, but not likely until late fall, which places risk on the municipalities considering bus purchases in 2007;

- the Province further intends to pilot a Provincial procurement of 40-foot diesel only fleet in 2007 with a small number of selected municipalities.

The bid team is recommending a limited purchase of Hybrid buses at this time in the context of supporting Council’s commitment to “triple-bottom-line” (TBL) decision-making. In isolation, the purchase of 34, 40-foot Diesel buses, makes the best financial sense. However, the recommendation to purchase Hybrid fleet has the environmental advantage of reduced emissions and noise pollution. The Articulated bus purchase recommendation attempts to respond to the social aspect of the TBL in that service level capacity will be added to the system where demand continues to exceed supply without the need for additional bus operators. Articulated buses operating on express routes (limited stops) is viewed as a “higher-order” transit service that will assist with attracting and retaining travellers that might otherwise travel by auto thereby contributing to higher traffic congestion, accidents, and pollution.

Staff is supporting proceeding with a Marketing initiative recommended by the Transit Master Plan Steering Committee, to re-brand the current Beeline Express, Route 10, to include a unique paint scheme for Articulated bus fleet announcing Hamilton’s entry into Bus Rapid Transit (BRT).

**ANALYSIS/RATIONALE:**

**Decision Evaluation: Ranked 1- 5 (1 being most desirable, 5 being least desirable)**

<b>Issue</b>	<b>40 ft. Diesel</b>	<b>40 ft. CNG</b>	<b>40 ft. Hybrid</b>	<b>60 ft. Diesel</b>	<b>60 ft. Hybrid</b>
(1) Preferences of Operators *	4	5	3	2	1
(2) Preferences of Mechanics	1	2	4	3	5
(3) Preferences of Stores	1	2	4	3	5
(4) Preferences of Staff (Administration)	3	5	3	1	1
(5) Preferences of Customers *	4	5	3	2	1
(6) Storage Capacity (MTC)	1	1	1	4	4
(7) Ongoing Operating Cost (60 ft. vs 40 ft.)	2	3	1	5	5
(8) Capital Cost	1	2	3	4	5
(9) Life-cycle Cost (Internal)	1	3	2	4	5
(10) Risk Tolerance (Catastrophic Failure)	1	2	4	3	5
(11) Passenger Capacity	3	3	3	1	1
(12) Supplemental Capital (Non-Fleet Infrastructure)	1	1	3	4	5
(13) Training	1	2	4	3	5
(14) Noise	3	5	1	4	2
(15) Commitment to 12 year life cycle (1:1)	1	1	1	1	1
(16) Staff resources (Maintenance)	1	2	4	3	5
(17) Commitment to full low-floor fleet	1	1	1	1	1
(18) Contracting out (Maintenance i.e. – engine)	1	2	5	3	5
(19) Risk Assessment (Reliability)	1	5	3	2	4
(20) Environmental	5	4	2	3	1
(21) Staffing (Operators)	3	3	3	1	1
(22) Preference of TSC *	5	4	3	2	1
<b>Total Score</b>	<b>45</b>	<b>63</b>	<b>61</b>	<b>59</b>	<b>69</b>

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**ALTERNATIVES FOR CONSIDERATION:**

The bid evaluation team would recommend the purchase of 34 low floor Diesel buses in the alternative to the recommendations advanced in this report.

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

Adoption of the recommendations in this report has no increased levy impact on either the current or 2007 capital or operating budgets. All additional funding, whether operating or capital is derived from an alternate source: Provincial Gas Tax; "one-time dedicated Federal Gas Tax for Transit, or development charges.

Staff had advised Council in a prior communication that the Province had recently announced the elimination of the previous 10-year commitment, 2001 through 2010 to fund 33.33% of Transit fleet replacements, expansions and refurbishments through their subsidy program most recently named the Ontario Transit Vehicle Replacement program (OTVP). The Province did, however, confirm its intention to provide "one-time" funding for 2006, the last year of the program and also to replace the program with a new program. The Province has delivered a cheque to the City in the amount of \$2.6 million representing 33.33% of the planning expenditure on replacement fleet (HSR & DARTS) in 2006.

The Province is conducting consultation sessions with the Municipalities over the summer to assist them in arriving at a replacement program. The first consultation session was held in June. Staff attended and were able to confirm that there will be a future program, for a specified number of years, access to the subsidy will probably be conditional on participating in a Provincial procurement, fleet expansion will no longer be eligible for funding from this source, fleet refurbishment will no longer be fundable from this source, there will be a cap on the available funding, pre-approved 2007 replacement fleet Capital expenditures will be eligible providing the fleet is delivered in 2007. Staff will issue further Information Updates to Council as additional information becomes available.

<b>C11-35-06 Financial Analysis - Bid Results</b>					
<b>New Flyer - Lowest Bid and Compliant with Delivery Date</b>					
Technology Model	Diesel D40LF	CNG C40LF	Hybrid DE40LF	Diesel D60LF Low Floor Articulated	Hybrid DE60LF Low Floor Articulated
Description	Low Floor Complete With Ramp	Low Floor Complete With Ramp	Low Floor Complete With Ramp	Complete With Ramp	Complete With Ramp
Base Price - Unit Price Per Vehicle	\$348,000	\$408,273	\$543,285	\$588,988	\$812,634
Ontario PST @ 8%	27,840	32,662	43,463	47,119	65,011
GST @ 7%	24,360	28,579	38,030	41,229	56,884
<b>Total Bid Price</b>	<b>400,200</b>	<b>469,514</b>	<b>624,778</b>	<b>677,336</b>	<b>934,529</b>
PST Exemption	0	(32,662)	(43,463)	0	(65,011)
GST Exemption	(24,360)	(28,579)	(38,030)	(41,229)	(56,884)
Make Ready Costs	10,000	10,000	10,000	10,000	10,000
<b>Net Capital Cost Per Bus</b>	<b>385,840</b>	<b>418,273</b>	<b>553,285</b>	<b>646,107</b>	<b>822,634</b>

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2006 & 2007 Transit Capital Purchase of Conventional Buses					
Technology Model Description	2006 Capital Purchase			2007 Capital Purchase	
	Diesel D40LF Low Floor Complete With Ramp	Hybrid DE40LF Low Floor Complete With Ramp	Hybrid DE60LF Low Floor Articulated Complete With Ramp	Diesel D40LF Low Floor Complete With Ramp	Diesel Trolley Low Floor Complete With Ramp
Base Price - Unit Price Per Vehicle	\$348,000	\$ 543,285.00	\$812,634	\$348,000	\$500,000
Ontario PST @ 8%	27,840	43,463	65,011	27,840	40,000
GST @ 6%	20,880	32,597	48,758	20,880	30,000
<b>Total Bid Price</b>	<b>396,720</b>	<b>619,345</b>	<b>926,403</b>	<b>396,720</b>	<b>570,000</b>
PST Exemption	0	(43,463)	(65,011)	0	0
GST Exemption	(20,880)	(32,597)	(48,758)	(20,880)	(30,000)
Make Ready Costs	10,000	10,000	10,000	10,000	10,000
Net Capital Cost Per Bus	<b>385,840</b>	<b>553,285</b>	<b>822,634</b>	<b>385,840</b>	<b>550,000</b>
<b># of Buses</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>17</b>	<b>2</b>
<b>Net Gross Total Cost Per Model</b>	<b>1,929,200</b>	<b>2,766,425</b>	<b>5,758,438</b>	<b>6,559,280</b>	<b>1,100,000</b>
<b>Total Net Gross Cost Per Capital Budget</b>	<b>10,454,063</b>			<b>7,659,280</b>	
<b><u>Funding Sources</u></b>					
OTVP 2006	1,960,000			0	
OTVP 2007 *	0			0	
Transit Fleet Replacement Reserve per 2006 Budget	3,938,000			0	
Federal Gas Tax	3,813,563			2,221,280	
Transit Fleet Replacement Reserve per 2007 Budget	0			3,938,000	
Provincial Gas Tax - 12 Yr Bus Life (2007+)	0			1,500,000	
Development Charges	742,500			0	
<b>Total Capital Funding</b>	<b>10,454,063</b>			<b>7,659,280</b>	

\* OTVP 2007 - new program to be announced, funding unknown at this time

A Provincial Gas Tax reserve balance sheet reflecting the implications of the recommendations included in this report is provided for Council information as follows:

<b>PROVINCIAL GAS TAX (TRANSIT) RESERVES</b>					
<b>(Surplus) / Deficit</b>					
<b>Transit Gas Tax Reserve</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Balance Forward	(1,811,139)	(1,959,371)	(834,977)	(52,400)	(1,996,997)
Annual Gas Tax Allocation	(9,413,200)	(11,800,000)	(11,800,000)	(11,800,000)	(11,800,000)
<b>Total Ongoing \$\$ to June 22, 2006</b>	<b>4,395,690</b>	<b>5,865,690</b>	<b>7,365,690</b>	<b>7,365,690</b>	<b>7,365,690</b>
Report PW06XXX Gore to Shore		50,000	50,000	50,000	50,000
Report PW06XXX Artic Fleet Maintenance		150,000	150,000	150,000	150,000
<b>Total Ongoing \$\$ Including Report PW06XXX</b>	<b>4,395,690</b>	<b>6,065,690</b>	<b>7,565,690</b>	<b>7,565,690</b>	<b>7,565,690</b>
<b>Total Capital \$\$</b>	<b>4,925,000</b>	<b>6,900,000</b>	<b>5,030,000</b>	<b>2,320,000</b>	<b>2,000,000</b>
Interest Income	(55,722)	(41,296)	(13,114)	(30,287)	(93,425)
<b>Balance Dec 31 - (Surplus) / Deficit</b>	<b>(1,959,371)</b>	<b>(834,977)</b>	<b>(52,400)</b>	<b>(1,996,997)</b>	<b>(4,324,732)</b>

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**POLICIES AFFECTING PROPOSAL:**

The recommendations support to the extent of the recommended risk tolerance, a commitment to Council's Green fleet policy.

**RELEVANT CONSULTATION:**

A bus bid evaluation team was assembled to evaluate and recommend to Council on this purchase. The bid team was comprised of representation from Transit, Central Fleet & Facilities, ATU Bus Operators, ATU Fleet Maintenance, Corporate Purchasing, Corporate Finance & Administration. Additional representation was added in the latter stages of the evaluation from Council's Transit Steering Committee and included Councillors McHattie and Bratina, and citizen representative Daniel Rodriguez.

Five meetings were held that included: an assessment of bid compliance; confirmation of low bidder, review of available research/case studies on CNG and Hybrid life-cycle costing; financial analysis of available funding sources (Provincial Gas Tax, "One-time" Federal Gas Tax for Transit, Development Charges, Ontario Transit Vehicle Subsidy Program, Transit Fleet Reserve); creation of bid evaluation metric; life-cycle costing of HSR fleet review; Council policies (Roadmap to Sustainability, Green Fleet, Vision 2020, GRIDS, "Triple-Bottom-Line"); and sharing input from external sources (peer municipalities, Clean Energy).

Tony Tollis, Director of Budgets & Finance was consulted regarding available Federal Gas Tax Funding.

Joe Spiler, Manager of Budgets & Finance was consulted about 2006 available funding from Development Charges.

**CITY STRATEGIC COMMITMENT:**

By evaluating the "**Triple Bottom Line**", (community, environment, economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

**Community Well-Being is enhanced.**  **Yes**  **No**

Modern fleet adds to the customer acceptance and support of the Transit program. Replacing conventional 40-foot fleet with 60-foot articulated fleet increases system capacity, without adding bus operators or fleet, on routes where demand continues to exceed demand. Articulated fleet on express routes is viewed as "higher-order" transit that tends to attract choice riders who would have otherwise travelled by auto. Increased auto usage contributes to traffic congestion, high number of vehicular and pedestrian accidents.

**Environmental Well-Being is enhanced.**  **Yes**  **No**

Low-emission Hybrid fleet is recommended to the greatest reasonable extent as an effective and measurable contributor to lower emission and noise pollution.

**Economic Well-Being is enhanced.**  **Yes**  **No**

2007 and future Fleet Maintenance Budget extraordinary cost increases associated with fleet maintenance are mitigated to the greatest extent possible through the purchase of Hybrid fleet. Hybrid fleet has demonstrated longer engine, drive-train and brake life than conventional fleet (CNG or Diesel). Exposure to the ongoing trend of extraordinary fuel cost increases (CNG and Diesel) which are major cost driver of transit operations is minimized.

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**Does the option you are recommending create value across all three bottom lines?**

Additional capacity afforded by Articulated buses will reduce overcrowding and “pass by” situations. 91% of the Fleet will be Low Floor/Accessible. BRT (Bus Rapid Transit) enhances the viability of Public Transit by providing point to point service at reduced travel times and is more competitive with automobile travel. Hybrid buses have the lowest aggregate emissions of all available propulsion technologies (Diesel, CNG, Hybrid) as well as help to mitigate ongoing maintenance and fuel costs.

Yes  No

**Do the options you are recommending make Hamilton a City of choice for high performance public servants?**

Yes  No