

**REPORT NO. 279** of the  
**ENVIRONMENT, TRANSPORTATION & PUBLIC SAFETY**  
**STANDING COMMITTEE**  
of its meeting held June 17, 2015

**Present:**                    **Councillor P. Borrelli**  
                                 **Councillor F. Francis**  
                                 **Councillor C. Holt**  
                                 **Councillor H. Payne**  
                                 **Councillor B. Marra (Chair)**

That the following recommendations of the Environment, Transportation and Public Safety Standing Committee **BE APPROVED:**

Moved by Councillor Holt, seconded by Councillor Borrelli,  
That the Environment, Transportation and Public Safety Standing Committee **RECEIVE** for information the update on the actions taken by Administration with regard to the electric bus pilot project with Proterra.

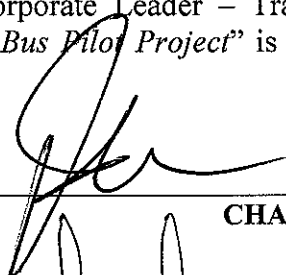
AND

That Environment, Transportation and Public Safety Standing Committee **APPROVE** the transfer of \$1.5 million that was set aside in the 2012 Capital Budget for the electric bus pilot, for the acquisition two clean diesel buses included in Transit Windsor's 2015 Bus Acquisition request, reported under separate cover; and that the remaining funds (\$500,000) be transferred the ITS Project for the purchase of surveillance cameras to be installed in the Transit Windsor fleet of buses.

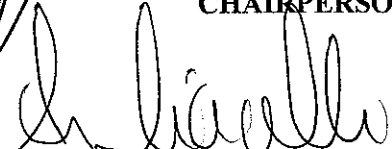
Carried.

**Livelihood #17772, MT2015**

Clerk's Note: The administrative report authored by the Corporate Leader – Transportation Services dated June 4, 2015 entitled "*Electric Bus Pilot Project*" is attached as background information.

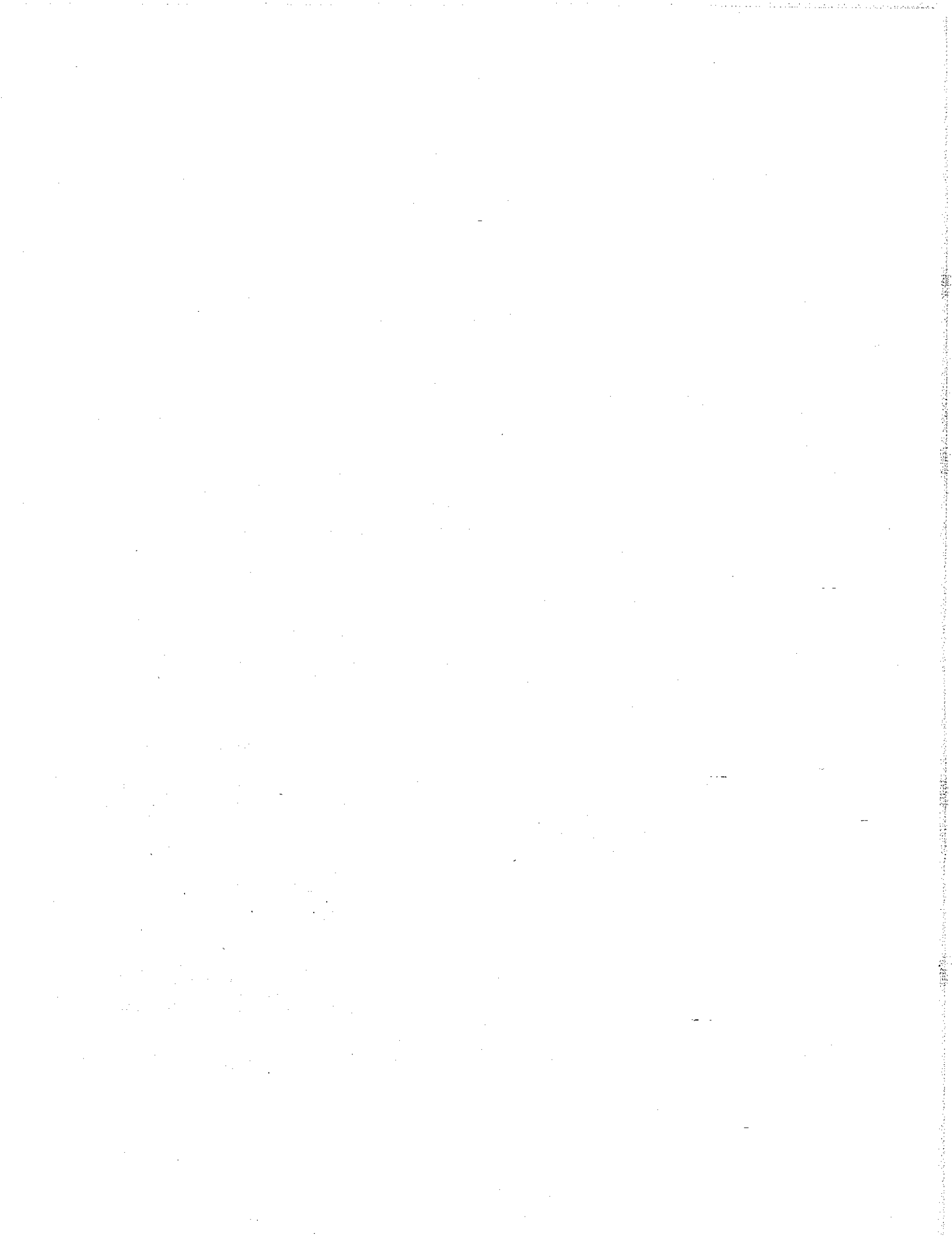


**CHAIRPERSON**



**SUPERVISOR OF COUNCIL SERVICES**

NOTIFICATION:	
NAME	CONTACT INFORMATION



**THE CORPORATION OF THE CITY OF WINDSOR**  
**Transportation Services – Transit Windsor**



**MISSION STATEMENT:**

*"Our City is built on relationships – between citizens and their government, business and public institutions, city and region – all interconnected, mutually supportive, and focused on the brightest future we can create together"*

<b>LiveLink REPORT #:</b> 17772 MT2015	<b>Report Date:</b> June 4, 2015
<b>Author's Name:</b> Carolyn Brown Patrick Delmore Penny Williams	<b>Date to Standing Committee:</b> June 17, 2015
<b>Author's Phone:</b> 519 944-4141 Ext 232 519-944-4141 Ext 242	<b>Classification #:</b>
<b>Author's E-mail:</b> cbrown@citywindsor.ca pdelmore@citywindsor.ca pwilliams@citywindsor.ca	

**TO:** Environment, Transportation and Public Safety Standing Committee

**SUBJECT:** ELECTRIC BUS PILOT PROJECT

1. **RECOMMENDATION:** City Wide:  Ward(s): \_\_\_\_\_

That the Environment, Transportation and Public Safety Standing Committee **RECEIVE** for information the update on the actions taken by Administration with regard to the electric bus pilot project with Proterra.

AND

That Environment, Transportation and Public Safety Standing Committee **APPROVE** the transfer of \$1.5 million that was set aside in the 2012 Capital Budget for the electric bus pilot, for the acquisition two clean diesel buses included in Transit Windsor's 2015 Bus Acquisition request, reported under separate cover; and that the remaining funds (\$500,000) be transferred the ITS Project for the purchase of surveillance cameras to be installed in the Transit Windsor fleet of buses.

**EXECUTIVE SUMMARY:**

N/A.

## 2. BACKGROUND:

Transit Windsor, in conjunction with the Mayor's office, has been investigating the feasibility of adding an electric bus to the Transit Windsor fleet.

The goals of the electric bus project were fourfold:

- To complement the City of Windsor's green energy initiatives.
- To position Windsor as a pioneer of electric buses within its public transit system.
- To assist Transit Windsor with its cost reduction initiatives.
- To generate employment opportunities for residents through future economic development.

Since September 1999, Transit Windsor has been reducing its Diesel Exhaust Emissions. Initially Transit Windsor equipped its fleet with ultra low sulphur fuel and catalytic converters. The next phase saw the procurement of hybrid diesel-electric transit buses to maximize fuel savings. To date, Transit Windsor has purchased 29 hybrid buses that are deployed on its heavily used routes. Phase 3 contemplates the conversion to zero emissions using electric buses when they become a viable alternative.

In 2011, Transit Windsor first investigated electric buses that were manufactured by BYD of China. Those discussions did not result in an agreement and the project was abandoned. Staff subsequently looked at the buses manufactured by Proterra and then recommended that the City proceed with a pilot project, utilizing one of Proterra's electric buses.

On September 8, 2014, City Council passed the following resolution:

***THAT Administration BE DIRECTED to proceed with the lease option as outlined in the confidential memo from outside legal counsel and that the CAO and City Clerk be authorized to sign the necessary agreements associated with such lease, such agreements to be approved as to financial content by the CFO/City Treasurer, as to legal content by the City Solicitor and technical content by the Executive Director of Transit Windsor. Further, that if the leasing and operating costs of this pilot program exceed the 1.5M dollars already allocated in the capital budget, that the amount be accepted as an increase in the Transit Windsor deficit for which Transit Windsor will not be asked to mitigate by reducing other programs.***

On that same date, the EnWin Energy Board authorized funding the installation of the electrical infrastructure required for the bus' Charging System, for an amount not to exceed \$300,000.

The pilot project was expected to commence in December 2014 so that Transit Windsor could evaluate the vehicle's performance during the winter months. The project was subsequently delayed because the buses that Proterra had in production were 35' in length and not the 40' buses that Transit Windsor had in its fleet. Since it would take some time to construct a 40' bus and the winter testing period would be missed, the project's start date was deferred for a year. Further, the City and Proterra required some time to reach agreement on the contract documentation and the protocols for the pilot.

Accordingly, the earliest Transit Windsor could reasonably test the 40' electric bus in winter conditions would be in 2015. Transit Windsor identified the Transway 1A route, between the downtown terminal and Devonshire Mall, as the optimum route for this pilot. The pilot project would allow Transit Windsor to perform a cost benefit analysis, to quantify anticipated savings and to determine operating efficiencies, maintenance and serviceability requirements, and electricity consumption. This evaluation would assist Transit Windsor in making an informed decision about recommending the acquisition of electric buses for its fleet.

### 3. DISCUSSION:

Various factors resulted in a number of changes to the terms of the project originally approved by City Council, namely:

- The cost of the project escalated to the point at which additional budget approvals would have to be obtained from City Council. City Council approved a preliminary budget of \$1,500,000. Estimated costs for the Pilot are \$2,177,000. Additional costs are attributed to the following:
  - Ancillary Project Costs for Training, Marketing, Project Management, Legal and Consulting Fee, and a contingency amount.
  - Fluctuations in the exchange rate.
- The required approvals from Transport Canada to import the bus and to operate it as a revenue service vehicle could not be secured on a timely basis. Without those approvals, Transit Windsor would have been limited to operating the bus in shadow service only.

On May 4, 2015, City Council received a confidential verbal report from External Legal Counsel respecting advice subject to solicitor-client privilege and further authorized Administration to proceed on the verbal direction of Council. City Council approval for the pilot project was not obtained.

#### **4. RISK ANALYSIS:**

The financial commitment of the electric bus pilot to the City is projected to be \$2,007,000; the project cost of \$2,177,000, less EnWin's contribution of CDN\$170,000 for the cost of the transformer. There is a risk that the pilot project will not meet expectations. Should the pilot not be successful, the financial risk to the City would be reduced by US\$200,000, which is the buy back of the charger. There is a risk that the exchange rate could fluctuate during the course of the pilot project and result in a further cost variance to the project. There are also risks associated with increasing energy costs and the future cost of fuel, as well as concerns that purchasing this technology could restrict the City to sole sourcing electric buses in the future.

Since the Proterra bus will not have the required Canadian Motor Vehicle Safety Standard (CMVSS) approval when the pilot bus enters Canada, Proterra would be required to obtain all the necessary approvals from Transport Canada to meet Canadian regulations. In the absence of securing Transport Canada approvals, the bus cannot be put in revenue service and its operation will be limited to shadowing a regular Transit Windsor bus.

Finally, there is a risk that the public may perceive this project as being too expensive and that Transit Windsor should use the funding to improve the current transit service.

#### **5. FINANCIAL MATTERS:**

During the 2012 Capital Budget deliberations, City Council approved the allocation of \$3,360,500 for fleet replacement. The purchase of those buses was put on hold. In 2013, \$1,860,500 was used to purchase diesel buses and spare parts and \$1,500,000 set aside for electric buses. This latter amount remains unspent and unencumbered.

Administration is projecting increased costs of \$507,000 for the Electric Bus Project if it were to proceed. The total revised project cost is \$2,177,000 less \$1,500,000 in available funding and \$170,000 funded by EnWin. The additional funds that would be required are due in part to fluctuations in the exchange rate (\$380,000) and various ancillary project costs such as Marketing, Project Management, Legal and Consulting fees contributing to the remaining (\$127,000).

The projected costs of the electric bus pilot are detailed as follows:

	U.S. \$	CDN \$ Equivalent <sup>1</sup>	Comments
Six (6) Month Lease	\$525,000	\$ 683,000	Includes duty since delivery is FOB to Windsor. These costs are non refundable but can be applied to purchase price of the bus.
Charging Station	\$540,000	\$ 702,000	Includes duty since delivery is FOB to Windsor. Proterra will buy back the charger for US\$200,000 if the pilot is not successful.
Charger Installation	\$200,000	\$ 260,000	Work to be performed by Proterra
<b>Sub-total</b>	<b>\$1,265,000</b>	<b>\$1,645,000</b>	
Non recoverable HST on above		\$ 32,000	
Transformer		\$ 170,000	Enwin will pay 100% for the cost of the transformer
Legal Fees		\$ 65,000	Includes legal fees, disbursements and HST
Operator Training		\$ 10,000	Proterra will train 20 bus operators. Transit Windsor to provide additional training.
Marketing Plan		\$ 25,000	
Project Management		\$ 70,000	.5 FTE
Consulting Fees		\$ 20,000	Consulting services to evaluate KPIs of the bus' operation
Contingency		\$ 140,000	10% of lease and charger
<b>Total</b>		<b>\$2,177,000</b>	
<b>Council Approved Budget</b>		<b>\$1,500,000</b>	
<b>Projected Deficit</b>		<b>\$ 507,000</b>	Excludes \$170K that Enwin will pay for the Transformer.

<sup>1</sup> Based on a projected exchange rate of approximately 30%.

In light of the projected costs of the electric bus project and the marginal return on investment, Administration is recommending that City Council not proceed with the electric bus project; but in the alternative approve the use, as follows, of \$1.5 million that was set aside:

- To purchase two clean diesel buses (\$923,776).  
Rationale: Transit Windsor currently has a fleet of 112 buses, 48 of which are 12+ years old. In the transit industry, the optimum bus replacement age is 12 years.
- To purchase surveillance cameras for installation in the existing fleet (\$500,000).  
Rationale: In 2014, Transit Windsor received funding and approval to implement an Intelligent Transportation System (ITS) that allows for modular expansion as funding becomes available. The proposed ITS will include a number of options, namely: a core Computer-Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system; a real time Passenger Information Website; a new interactive Voice Response System and Automated Stops Announcements. An expansion option available on the ITS is the installation of Security Cameras. The benefits of this option speak for themselves in addressing concerns regarding public safety and security for passengers and drivers, as well as incident management. Under this option, cameras and a digital video recorder for on-board recording would be installed on each bus.

## 6. CONSULTATIONS:

Transit Windsor  
EnWin  
City Public Works  
City Legal  
City Finance  
McTague Law

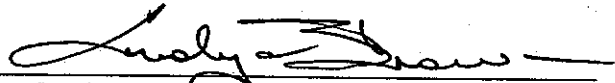


**7. CONCLUSION:**

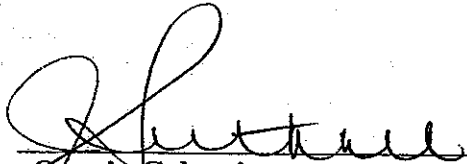
Administration remains supportive of the concept of the addition of electric buses to Transit Windsor's fleet. However, the required cost of \$2,007,000 plus the \$170,000 funded by EnWin for the charger to put a single bus into shadow service on a pilot project basis is not defensible.



**Patrick Delmore**  
**Executive Director**



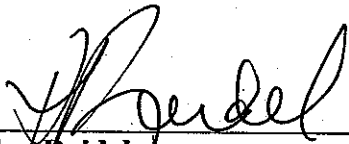
**Carolyn Brown**  
**Corporate Leader - Transportation Services**



**Onorio Colucci**  
**Chief Financial Officer/City Treasurer**  
**and Corporate Leader Finance and**  
**Technology**



**Shelby Askin Hager**  
**City Solicitor and Corporate Leader**  
**Economic Development and Public Safety**



**Helga Reidel**  
**Chief Administrative Officer**

**APPENDICES:**

**NOTIFICATION :**

Name	Address	Email Address	Telephone	FAX
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