

TORONTO TRANSIT COMMISSION REPORT NO.

MEETING DATE: May 21, 2008

SUBJECT: WATERFRONT WEST STREETCARS EXTENSION
CNE TO DUFFERIN – EA MODIFICATION

ACTION ITEM: X **INFORMATION ITEM:**

RECOMMENDATION

It is recommended that the Commission:

- 1) Approve the Environmental Assessment (EA) Modification Report;
- 2) Forward this report to Toronto City Council for approval;
- 3) Upon approval by Toronto City Council, forward this report to the Ministry of the Environment for approval of the recommended modification to the original Waterfront West LRT EA.

FUNDING

Funds for this EA modification are included under Program 3.9 Buildings & Structures – Environmental Assessment Waterfront West Streetcars CNE to Roncesvalles as outlined on pages 945-948 of the TTC's 2008-2012 Capital Program which was approved by Toronto City Council on December 11, 2007

Funds for the construction of the extension are included as part of the Transit City Program below the line as set out on pages 1601-1603 of the TTC's 2008-2012 Capital Program.

BACKGROUND

In 1993, the TTC and the former Municipality of Metropolitan Toronto completed an EA for the Waterfront West Light Rail Transit (WWLRT) to improve the transportation system along the waterfront between downtown Toronto and south Etobicoke. The WWLRT EA, approved by the Minister of the Environment in 1995, concluded that additions to the transit system in the waterfront corridor were needed to satisfy existing and future travel demands.

The short-term improvements approved in 1995 for the WWLRT consisted of the following (Figure E-1 of the Executive Summary):

- An extension to the Harbourfront LRT line from Spadina Avenue via Queens Quay, Lake Shore, Ontario Place and Dufferin Street to a new loop on the east side of Dufferin Street north of the CN Rail corridor;
- Improvements to the existing streetcar line from the Humber Loop to a new terminus at Legion Road in south Etobicoke.

The long term improvement consisted of the following:

- A higher speed/higher capacity transit line between downtown Toronto and Roncesvalles Avenue to meet the long-term travel demand forecasts. This requires a connection between Dufferin Street and Roncesvalles Avenue.

While this concept was approved, a preferred alignment from Dufferin Street to Roncesvalles Avenue was not selected and therefore it was not included in the undertaking at that time.

Since the original approval in 1995, some of the proposed short-term improvements have been implemented and changes to the originally approved alignment east of Dufferin Street have occurred as follows:

- In 1995, the original loop within Exhibition Place was relocated under an EA exemption to make way for the new National Trade Centre. A new Exhibition Place loop was constructed on the north side of the building along the Gardiner Expressway corridor.
- In 1999, an EA Modification for the service along Queens Quay to Bathurst Street recommended a modified routing of the Queens Quay/Portland/Lake Shore route to a Queens Quay/Bathurst/Fleet Street route. The modification was found to better serve transit riders and reduce construction cost.
- In 2006, an EA Modification for a Streetcar right-of-way (ROW) on Fleet Street recommended that the previously approved alignment in the middle of a combined Lake Shore Boulevard/Fleet Street roadway right-of-way be modified and replaced with a reserved streetcar right-of-way along Fleet Street, between Bathurst Street and Strachan Avenue, resulting in lower cost, improved traffic operations and better transit service to customers. This modification will be completed in 2008.

DISCUSSION

Travel congestion in the Lake Shore corridor has significantly increased since the original EA. The need to complete the reserved ROW link between Exhibition Place and Roncesvalles to improve transportation service is more evident than ever. The portion of this link from the existing CNE Loop to Dufferin has been the subject of an EA Modification study initiated in

2006 and completed in March 2008. The Executive Summary of the EA Modification report is attached to this report as Exhibit 1.

Three basic alignment options, as shown on Figure E-2 of the Executive Summary, were developed and evaluated. The combination of the evaluation and public input resulted in Option 1 (Figure E-3 of the Executive Summary) being recommended as the preferred option.

This option involves an extension of the streetcar line west from the existing CNE Loop, parallel to the Gardiner Expressway, to Dufferin Street. At this point, it would continue west as part of the Dufferin to Roncesvalles segment and also north where it would connect with existing track on Dufferin Street. The order of magnitude estimate for the section between the CNE Loop and Dufferin Street is \$34M, excluding bridge replacement costs. The preferred alignment of any extension of the line west of Dufferin Street will be determined by the Class EA currently underway for that section and will be the subject of separate report to the Commission and the City.

A complete copy of the Waterfront West Streetcars EA Modification Report is available for viewing at the TTC General Secretary's office.

In addition, a feasibility study and EA have recently been initiated for the Park Lawn to Long Branch section of the Waterfront West line. This will also be the subject of a separate report to the Commission and the City.

JUSTIFICATION

The EA Modification Report provides a recommended alignment that supports the provision of streetcar service between Union Station and Dufferin Street, achieves the objectives of the original WWLRT and sets the stage for achieving the longer term objective of providing higher speed/higher capacity transit service between Union Station and south Etobicoke.

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Attachment: Exhibit 1

EXHIBIT 1



WATERFRONT WEST STREETCARS EXTENSION



ENVIRONMENTAL ASSESSMENT MODIFICATION REPORT

EXECUTIVE SUMMARY

Extension of Streetcar Service from Exhibition Place to Dufferin Street

May 2008

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- ▶ *Archaeological Services Inc.*
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1. Introduction

1.1 Waterfront West Light Rail Transit EA (1993)

The Toronto Transit Commission (TTC) and former Metropolitan Toronto (City of Toronto) completed the Waterfront West Light Rail Transit (WWLRT) Individual Environmental Assessment (IEA) (WWLRT EA Report, August 1993) to address transportation system deficiencies along the waterfront between downtown Toronto and south Etobicoke.

The WWLRT IEA studied an extension of streetcar service and recommended a light rail transit system that would improve the transportation system connections between downtown Toronto and south Etobicoke. An overall concept plan for the light rail transit (LRT) system was developed that included both short term and long term improvements (see **Figure E-1**).

The short term improvements consist of an extension of the Harbourfront Light Rail Transit (LRT) line from Spadina to the north side of the Dufferin bridge and improvements to the existing streetcar line from the Humber Loop to a new terminus at Legion Road in south Etobicoke. Streetcars to operate in a protected right-of-way separated from other road traffic. In the longer term, it was recommended that the higher speed, higher capacity streetcar line on the Queensway be connected with the Harbourfront LRT by means of a line that extended from the terminus at the new Dufferin Street Loop to the Queensway streetcar track at the Roncesvalles Avenue and King Street West intersection.

The WWLRT IEA study concluded that together these short term and long term improvements would create a continuous streetcar route in an exclusive transit right-of-way (ROW) between downtown Toronto and south Etobicoke that would offer improved service through a higher speed, higher capacity line.

The WWLRT IEA received approval in 1995 for the short term improvements and endorsement of the concept plan as a whole; however, the long term improvements were not included as part of the undertaking, and were, therefore, not part of the approved project. As a result, the long term improvements were not implemented and were deferred to a later date.

1.2 Purpose for the Current EA Modification

The WWLRT IEA envisioned the extension of the Harbourfront LRT to the existing streetcar track on Dufferin Street. Many changes have occurred since the WWLRT IEA was approved in 1995: the physical environment has changed, including new development and changes to the local community, and the TTC operational priorities have also changed. Where the WWLRT IEA heavily favoured a streetcar line that followed Lake Shore Boulevard in order to provide greater access to the waterfront, the existing Harbourfront LRT currently follows Fleet Street and continues to the northern boundary of Exhibition Place where it loops and returns.

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Figure E-1. Waterfront West Streetcar Line



LEGEND

- Existing Streetcars
- TTC Subway
- - - Proposed Streetcars in Dedicated Right-of-Way
- - - Upgraded Queensway ROW
- 1993 EA Approved Undertaking



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Based on these changes to the Harbourfront Streetcar service, the existing conditions in the Study Area, and TTC priorities, the TTC and the City of Toronto commenced the current Study in order to review the approved WWLRT IEA alignment along Lake Shore Boulevard, and consider potential new alignments that take into consideration current conditions, including the relocated Exhibition Place loop. This Study, therefore, is to provide an extension of streetcar service from the existing streetcar loop on the grounds of Exhibition Place to the existing streetcar track on Dufferin Street north of the Gardiner Expressway.

In order to consider the potential effects associated with changes to the existing environment since 1993, including alternative new routes, a modification to the 1993 WWLRT IEA is required. The purpose of the current Study is to undertake an EA Modification in keeping with the requirements of Chapter 11 of the approved WWLRT IEA for the identification of a preferred route between Exhibition Place and Dufferin Street.

1.3 EA Modification Requirements

Chapter 11 of the WWLRT IEA describes the procedures that must be followed in order to accommodate modifications and changes to the IEA after its approval by the Ministry of the Environment (MOE).

This EA modification is considered a major change with significant variances to the original concept of the undertaking. New corridors have been identified due to the change in location of the Exhibition Place loop, realignment of the existing streetcar track on Fleet Street rather than along Lake Shore Boulevard, and changes to the Study Area.

The EA modification proposed by this Study does not alter or affect the conditions of approval of the undertaking as outlined in the 1993 WWLRT IEA, and only applies to the components of the undertaking described in this EA Modification Report.



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2. Alternative Design Concepts

Based on the current conditions within the Study Area and the relocated Exhibition Place loop, several route options, other than the WWLRT IEA approved route, were developed. The optional streetcar routes developed were identified as:

- **Alternative Route #1** (parallel to, and on the south side of the CN/GO rail corridor)
- **Alternative Route #2** (parallel to, and on the north side of the CN/GO rail corridor)
- **Alternative Route #3A** (centre of Lake Shore Boulevard and north on an extended Dufferin Street)
- **Alternative Route #3B** (south side of Lake Shore Boulevard and north on an extended Dufferin Street)

These routes are depicted in **Figure E-2**. It should be noted that options 3A & 3B following the originally approved WWLRT route include some modifications to Strachan Avenue between Fleet Street and Lake Shore Boulevard to reflect the Fleet Street dedicated streetcar right-of-way. A “Do Nothing” alternative was also included in the evaluation as a “base case” for comparison.

2.1 Methodology for Evaluation of the Alternative Streetcar Routes

The methodology used for evaluating the streetcar routes involved the following five Tasks:

Evaluation of the Alternative Streetcar Routes and Selection of a Recommended Route

- Task #1: Develop evaluation criteria, indicators, and measures*
- Task #2: Apply the evaluation criteria, indicators, and measures to each route*
- Task #3: Develop avoidance/mitigation/compensation/enhancement measures*
- Task #4: Apply the avoidance/mitigation/compensation/enhancement measures to the potential effects and identify the “net effects”*
- Task #5: Undertake a comparative evaluation and identify the Recommended Streetcar Route*

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Figure E-2. Alternative Streetcar Routes





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2.2 Ranking of the Alternative Routes

Based on the results from the five tasks above, the alternative routes were then ranked in order of preference according to their net effects on the environment based on a “Reasoned Argument” approach (Trade-off Method). The results were as follows:

Rank	Alternative Route
1 st	Route #1 – Parallel to and south of the CN/GO rail corridor
2 nd	Route #2 – Parallel to and north of the CN/GO rail corridor
3 rd	Route #3A – Centre of Lake Shore Boulevard and north on Dufferin Street
4 th	Route #3B – South side of Lake Shore Boulevard and north on Dufferin Street
5 th	Do Nothing

2.3 Evaluation Results: Alternative Route #1 – Most Preferred

Based on the net effects comparative evaluation, Alternative Route #1 was identified as the recommended route and presented to the public and agencies for comment at PIC #3. From the results of the public consultation undertaken, Alternative Route #1 was confirmed as the preferred route.

The Project Team concluded that Alternative Route #1 was found to have several key advantages over the other routes, thus accounting for its ranking as most preferred. These advantages include:

- Best serving the sporting, cultural and trade events at Exhibition Place while still providing easy access for residents/workers travelling to/from Liberty Village (via the existing GO transit pedestrian tunnel)
- No requirement for expropriation of private property, and no known archaeological sites or built heritage resources disturbed along the route
- The most direct of the routes, having the lowest travel time.
- Offering efficient connectivity with the existing and future transit network
- Lowest potential capital costs, operation costs and maintenance costs
- Removing the smallest amount of vegetation and the least number of trees

There are, however, a number of potential adverse environmental effects associated with constructing this preferred route based on the existing project area conditions and the input received from external agencies and the public. The greatest potential technical effect of the project is on the Dufferin Street bridges, which will need to be modified or reconstructed to accommodate the new streetcar ROW. However, through consultation with the City of Toronto, it is



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understood that the two bridges (one over the Gardiner Expressway and the other over the GO/CN corridor) require rehabilitation and/or replacement independent of this project.

Construction of the preferred route may have minor impacts to operations on Manitoba Drive; however, traffic volumes on this road are low and minimal vehicle delays are expected. A traffic management plan will be developed to minimize any such adverse effects.

The preferred route has the potential to remove approximately 23 trees, which will be replaced with urban-tolerant native tree species. The removal of one utility/washroom building in the area of the Dufferin Gate, and the removal of buildings used for the children's area of the Canadian National Exhibition (CNE) may have to be replaced in another suitable location pending discussions with Exhibition Place and the CNE. Short-term nuisance and access effects during construction are to be mitigated.

3. Description of the Preferred Route

The preferred route consists of an extension of the existing streetcar tracks westerly from the Exhibition Place streetcar loop to Dufferin Street. At that point, it would continue west as part of the Dufferin to Roncesvalles segment,¹ and north across the Gardiner Expressway and CN/GO rail corridor to connect to the existing Dufferin Street track just north of the Gardiner Expressway and CN/GO rail corridor. The preferred route can be technically described as follows (see **Figure E-3**):

Existing Exhibition Place Streetcar Loop Area: A new westbound track will be constructed through the existing streetcar loop at Exhibition Place with a new platform, directly north of the existing eastbound tracks. A new loop connection will be constructed at the east end to allow eastbound streetcars to turn around. A well delineated pedestrian crossing will be provided across Manitoba Drive on the east side of Nova Scotia Avenue.

Section from Nova Scotia Avenue to Dufferin Street: The track will be placed as close to the Gardiner Expressway corridor as possible with minimal impact to Manitoba Drive. Westerly to Dufferin Street, the horizontal alignment is shown to meander somewhat to the south. The purpose of this is to locate the alignment outside of the area required for a possible future Front Street Extension (eastbound Gardiner off-ramp).

West of Dufferin Street: At Dufferin Street, the streetcar tracks would operate north of the Dufferin Gates (between the Gates and Gardiner Expressway). A signalized intersection would be provided to separate conflicting movements between vehicles, streetcars and pedestrians. The line

¹ A separate Class EA study (Waterfront West Streetcars – Dufferin Street to Roncesvalles Avenue) is currently underway to identify a new dedicated streetcar route that would extend from Dufferin Street west to Roncesvalles Avenue, where it would tie into the existing Queensway dedicated track.



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would continue west as part of the Dufferin to Roncesvalles segment, for which the preferred alignment will be defined by the Municipal Class EA evaluation currently underway¹.

North on Dufferin Street: To go north, the existing bridge over the Gardiner Expressway would require a widening in the southeast corner to facilitate the streetcar turn and provide adequate area for pedestrians to cross the bridge on the east side. North of the Dufferin Street bridges, the streetcar track would connect with existing streetcar tracks on Dufferin Street and the existing streetcar/bus loop on the west side of Dufferin Street, north of the CN bridge.

Dufferin Street Bridges: There are currently two bridges on Dufferin Street over the Gardiner Expressway and CN corridors, respectively. The south bridge is a twin-span rigid frame bridge, which spans the Gardiner Expressway and, although it is wide enough to accommodate two lanes, it currently has a single lane of traffic in each direction. The north bridge over the CN corridor is a slab on girder bridge, which through its unique design, provides vertical and horizontal clearance for the trains operating below, between each bridge beam. The bridge has a single lane of vehicle traffic in each direction.

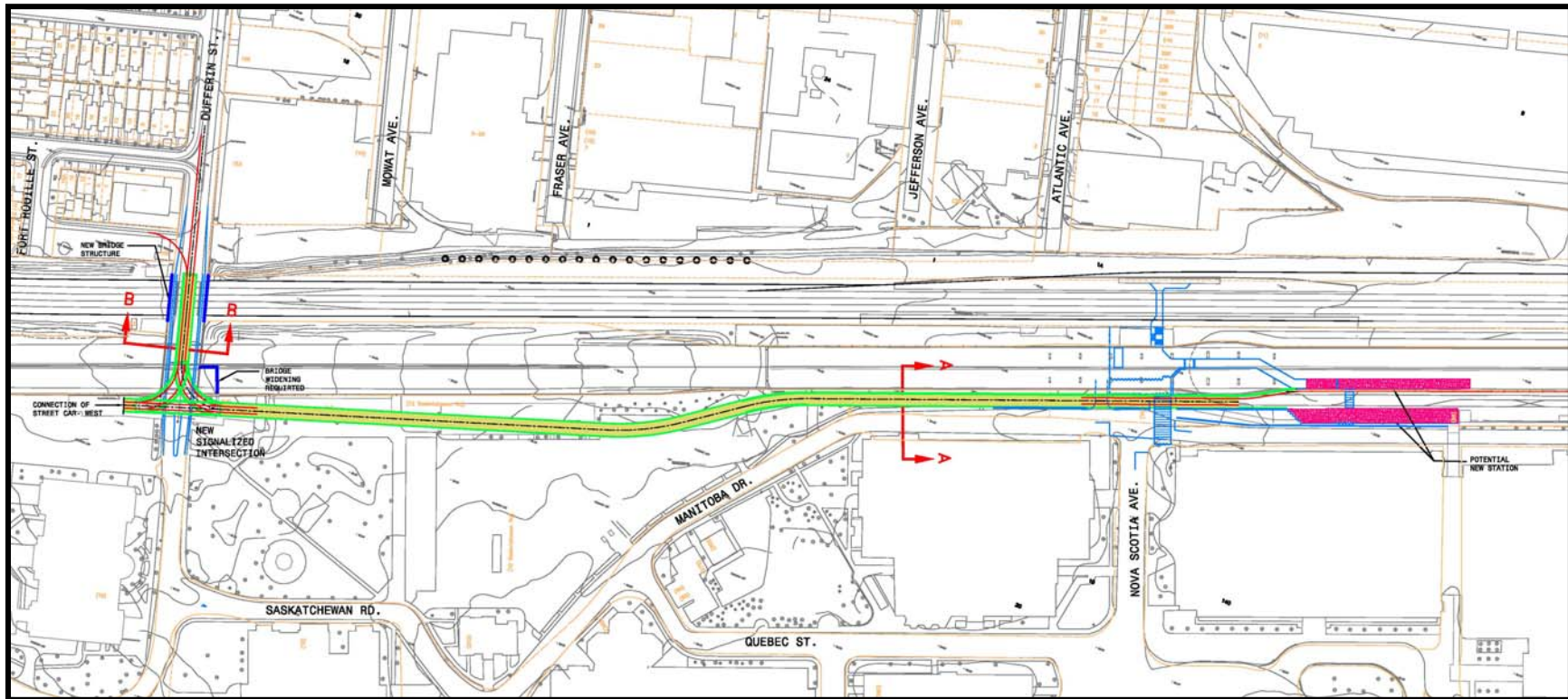
At the time of preparing this report, the City of Toronto could not provide confirmation of their plans for the two bridges. What is known at this time is that, as a minimum, the two bridges require rehabilitation and/or replacement independent of this project going forward.

As noted above, the Gardiner Expressway bridge requires widening in the southeast corner to accommodate the streetcar track turns from Exhibition Place to Dufferin Street, and eliminate conflicts between streetcars and pedestrians on the east side of the bridge.

¹ A separate Class EA study (Waterfront West Streetcars – Dufferin Street to Roncesvalles Avenue) is currently underway to identify a new dedicated streetcar route that would extend from Dufferin Avenue west to Roncesvalles Avenue, where it would tie into the existing Queensway dedicated track.

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Figure E-3. The Preferred Route





4. Public Consultation

The EA modification process outlined in Chapter 11 of the WWLRT IEA for major changes requires a consultative process at key milestones. Public involvement has been an integral part of this study. This extensive consultation program with stakeholders and community groups was undertaken in parallel with the technical/planning work.

Public consultation activities included: the creation of a Community Advisory Group (CAG) and a Technical Advisory Committee (TAC); consultation with various stakeholders, including the Mississaugas of the New Credit First Nation; three Public Information Centres (PICs); the use of a project website; and direct contact with stakeholders in response to comments received.

Public notification of project events included letters mailed to individuals on the established project stakeholder list; distribution of a flyer by Canada Post to nearly 25,000 residents and businesses in the Study Area; a media release; and an advertisement placed in Now Magazine.

Full details of the consultation process and results are included in the body of this EA Modification Report.

5. Future Commitments

Modifications to the Dufferin Street bridges (over Gardiner Expressway and over GO/CN corridor) are not resolved at this time, due to ongoing discussions between the City of Toronto, TTC, GO Transit and CN Rail of the requirements for rehabilitation and replacement. These discussions will continue to address the needs of all parties.

The Exhibition Place GO and TTC station and platforms require further discussions between GO Transit, TTC, Exhibition Place, and the City of Toronto in order to develop a consolidated transit station.

During the detail design phase of the project, construction scheduling, traffic management and staging plans will be developed in consultation with City staff, GO Transit and CN Rail representatives, Exhibition Place representatives and any other stakeholders affected by the construction. Mitigation plans for affected traffic flows, noise and dust will be developed. Traffic diversions/detours will be publicised in advance of the work, as required.

