



**WATERFRONT WEST
STREETCARS EXTENSION:
DUFFERIN STREET TO RONCESVALLES AVENUE**



ENVIRONMENTAL ASSESSMENT

TERMS OF REFERENCE

April 2007





TABLE OF CONTENTS

	Page
1. Introduction.....	1
1.1 Previous Studies.....	3
1.2 Outline of the Terms of Reference.....	4
2. The Proposed Undertaking.....	5
2.1 Description of the Proposed Undertaking.....	5
2.2 The Study Area.....	7
2.2.1 Overall City Transportation Network.....	7
2.2.2 Existing Connections from Etobicoke to Downtown Toronto.....	9
2.3 Purpose of the Proposed Undertaking.....	12
2.4 Rationale for the Proposed Undertaking.....	12
3. Alternatives to be Evaluated.....	14
3.1 Alternative Methods of Carrying Out the Undertaking.....	14
3.1.1 Alternative Corridor #1: Gardiner Expressway / CN Rail South.....	14
3.1.2 Alternative Corridor #2: Gardiner Expressway / CN Rail North.....	15
3.1.3 Alternative Corridor #3: Dufferin Street and King Street.....	15
4. Description of the Existing Environment and Potential Effects in the Study Area.....	19
4.1 Preliminary Description of the Existing Environment.....	19
4.1.1 Natural Environment.....	19
4.1.2 Land Use Environment.....	20
4.1.3 Social Environment.....	22
4.1.4 Cultural Environment.....	22
4.2 Description of the Potential Effects.....	23
4.2.1 Technical.....	23
4.2.2 Natural Environment.....	24
4.2.3 Land Use Environment.....	24
4.2.4 Social Environment.....	24
4.2.5 Cultural Environment.....	24
4.2.6 Financial / Economic Environment.....	24
4.3 Detailed Description of the Existing Environment.....	24
5. Environmental Assessment Methodology.....	27
5.1 Step No. 1: Screening of the Alternative Corridors.....	28
5.2 Step No. 2: Generation of the Alternative Streetcar Routes.....	28
5.3 Step No. 3: Screening of the “Long List” of Alternative Streetcar Routes.....	29
5.4 Step No. 4: Evaluation of the “Short List” of Alternative Streetcar Routes and Selection of a Preferred Route.....	29



5.4.1	Net Effects Analysis	29
5.4.1.1	Proposed Evaluation Criteria	30
5.4.2	Comparative Evaluation of the Alternatives	33
5.5	Step No. 5: Preparation of the Mitigation and Enhancement Plan	33
6.	Development of a Monitoring Strategy and Schedule	34
7.	Process for Amending the Undertaking Following EA Approval	35
8.	Consultation During the Preparation of the ToR	36
8.1	Consultation Activities Undertaken During the Terms of Reference	36
9.	Consultation During the EA	38
9.1	Consultation Objectives	38
9.2	Major Consultation Elements	39
9.2.1	TAC Meetings	39
9.2.2	CAG Meetings	39
9.2.3	Public Information Centres	40
9.2.4	Newsletters / Brochures	40
9.2.5	Newspaper Advertisements and Letters	40
9.2.6	Project Web Site	40
9.2.7	First Nations Consultation	41
9.3	Key Consultation Milestones	41
10.	Other Approvals Required	43
10.1	Canadian Environmental Assessment Act (CEAA)	43
10.1.1	Co-ordinated Provincial / Federal EA Process	43
11.	Documentation (EA Report and Submission)	44



LIST OF FIGURES

Figure 1-1: Key Plan	2
Figure 2-1: The Primary Study Area.....	8
Figure 2-2: Inventory of Key Road Segments.....	10
Figure 2-3: Existing Transit Network	11
Figure 3-1: Alternative #1 - Gardiner Expressway / CN Rail Corridor South.....	16
Figure 3-2: Alternative #2 – Gardiner Expressway / CN Rail Corridor North	17
Figure 3-3: Alternative #3 – Dufferin Street and King Street Corridor	18

LIST OF TABLES

Table 4-1: Existing Parks, Schools and Institutions in the Study Area	20
Table 4-2: Proposed Considerations/Areas of Study and Investigative Studies	25
Table 5-1: Proposed Criteria For Assessing Alternative Streetcar Routes	31

LIST OF APPENDICES

Appendix A: Glossary of Terms	
Appendix B: List of References	



SUPPORTING DOCUMENTS

The following documents have been provided under separate cover in support of these Terms of Reference:

Supporting Document No. 1: Waterfront West Light Rail Transit Environmental Assessment Report Executive Summary (August 1993)

Supporting Document No. 2: Summary of Previous Studies

CONSULTATION RECORD

A Consultation Record Document summarizing the consultation activities carried out during the preparation of these Terms of Reference is provided under separate cover. This document is intended to be read in conjunction with these Terms of Reference.



1. Introduction

These Terms of Reference (ToR) set out the proposed framework that will be followed during the preparation of the Waterfront West Streetcars Extension Environmental Assessment (EA) to satisfy the requirements of Section 6(1)¹ of the *Environmental Assessment Act* (EA Act).

The Toronto Transit Commission (TTC), the proponent for this Individual EA, has initiated this undertaking to obtain EA Act approval for an extension of the streetcar service from Dufferin Street (in the vicinity of the Dufferin Gate) to the existing streetcar track at the intersection of Roncesvalles Avenue and Queen Street West (see **Figure 1-1**).

Development and submission of these ToR is the first step of a two-step EA Act approval process for a proposed undertaking in the Province of Ontario. The second step is completion of the EA. Since the ToR sets out the proposed framework for preparation and review of the EA, it represents an agreement between the proponent and the Minister of the Environment (Minister) concerning the requirements for the EA.

For the Waterfront West Streetcars Extension EA, these ToR have been prepared in accordance with the requirements set out in subsection 6(2)(c)² of the EA Act. Accordingly, the EA document described by these ToR will be prepared in accordance with the requirements set out in subsection 6.1(3)³. Consequently, the current undertaking will only consider an extension of streetcar track between Dufferin Street and Roncesvalles Avenue as the alternative to the undertaking. Alternative methods of carrying out the extension of the streetcar line (i.e., streetcar routes) will be developed and assessed during the EA.

The purpose of the Waterfront West Streetcars EA is to satisfy existing and future travel demand between downtown Toronto and south Etobicoke by means of a high speed, high capacity streetcar transit service. The need to provide additional streetcar service within the City of Toronto, and the Waterfront West corridor specifically, was established in the approved “Waterfront West Light Rail Transit Environmental Assessment” (WWLRT) Report (1993)⁴ and supported through various studies completed subsequently.⁵ As a result, the EA will not provide additional detail with regard to the purpose and need/rationale for the undertaking other than that documented in these ToR and already established in WWLRT EA and other studies.

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1. 6(1) The proponent shall give the Ministry proposed terms of reference governing the preparation of an environmental assessment for the undertaking.
 2. 6(2) The proposed terms of reference must ...(c) set out in detail the requirements for the preparation of the environmental assessment.
 3. 6.1(3) The approved terms of reference may provide that the environmental assessment consist of information other than that required by subsection (2).
 4. A copy of the Executive Summary from the WWLRT EA is contained in **Supporting Document No. 1**.
 - ⁵ A summary of key studies relevant to the need and rationale for the current undertaking is contained in **Supporting Document No. 2**.



Figure 1-1: Key Plan





1.1 Previous Studies

In the 1990s, the TTC and the former Metropolitan Toronto conducted an EA for the WWLRT to improve the transportation system 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 (refer to **Supporting Document No. 1** for more detail regarding the WWLRT EA).

The WWLRT EA identified short-term and long-term improvements. The short-term improvements approved in the WWLRT consisted of an extension to the Harbourfront LRT line from Spadina Avenue to the north side of the Dufferin Gate, and improvements to the existing streetcar line from the Humber Loop to a new terminus at Legion Road in south Etobicoke. These two improvements were defined as the “undertaking” of the WWLRT EA. The long-term improvements envisioned by the WWLRT EA involved a higher speed, higher capacity transit line between downtown Toronto and Roncesvalles Avenue to meet the long-term travel demand forecasts; however, these long-term improvements were not included in the undertaking, and were therefore not approved as part of the WWLRT EA. It was recommended that the long-term improvements be undertaken as part of a separate EA process in the future when they were needed.

Based on long-term travel demand forecasts in the study area, the WWLRT EA concluded that a streetcar connection between Dufferin Street and Roncesvalles Avenue would be required at some point in the future, and such a line would significantly reduce travel times from south Etobicoke to downtown Toronto by liberating the streetcars from the constraints of operating in mixed traffic. This would in turn encourage more people to use public transit and reduce dependence on personal automobiles.

The conclusions reached by the WWLRT EA clearly establish the need and rationale for the current undertaking as a requirement for creating a continuous, high speed, high capacity streetcar line from downtown Toronto to south Etobicoke.

Since approval of the WWLRT EA in 1995, numerous studies have been completed that support its conclusions regarding light rail expansion. Each of these studies address public transit requirements in the City of Toronto, and together, they demonstrate the need and rationale for the current undertaking. The key studies that best reflect these conclusions are:

- **Waterfront West Light Rail Transit Environmental Assessment (1993)**
- **Transportation Tomorrow Survey (2001)**
- **Central Waterfront Secondary Plan (2003)**
- **Front Street Extension Environmental Assessment Study (2003)**
- **Toronto Transit Commission Ridership Growth Strategy (2003)**
- **Toronto Transit Commission: Building a Transit City Program (2005)**
- **Toronto West-Central Area Strategic Transportation Network Review (2006)**
- **City of Toronto Official Plan (2006)**
- **Toronto Transit City – Light Rail Plan (2007)**



In general, these studies show the importance of an inclusive and efficient transit system to make the City of Toronto more liveable and vibrant by:

- Providing increased mobility for people so that they can take advantage of the employment, educational, recreational, and other opportunities Toronto offers;
- Improving air quality by reducing dependence on private automobiles, and in doing so, improving people's health and their ability to enjoy outdoor spaces and activities;
- Ensuring long-term economic stability and environmental sustainability by reducing climate-changing emissions and reliance on fossil fuels; and,
- Freeing up road space for goods movement and reducing the wear-and-tear on city roads and the need to spend tax dollars on repairing and expanding road infrastructure.

Supporting Document No. 2 provides an overview of the most relevant information and conclusions from each of these previous studies as they relate to the current undertaking.

1.2 Outline of the Terms of Reference

The body of the ToR consists of:

- The purpose, rationale and description of the proposed undertaking (**Section 2**).
- The proposed alternatives to be considered (**Section 3**).
- The existing environment and potential effects (**Section 4**).
- The evaluation methodology for the assessment of alternatives (**Section 5**).
- The commitments to monitoring after the proposed undertaking has occurred (**Section 6**).
- The process for amending the undertaking following EA approval (**Section 7**).
- The consultation that was undertaken during preparation of these ToR (**Section 8**).
- The Consultation Plan for the EA process (**Section 9**).
- The other approvals required during the course of the proposed undertaking (**Section 10**).
- The EA Report documentation and submission (**Section 11**).



2. The Proposed Undertaking

2.1 Description of the Proposed Undertaking

The proposed undertaking is directly related to, and an outcome of, the results from the WWLRT EA. The WWLRT EA concluded that a light rail transit line would be the best way to improve the transportation system along the waterfront between downtown Toronto and south Etobicoke.

In order to come to this conclusion, the WWLRT EA undertook a three step process to evaluate alternatives to the undertaking, which involved consideration of:

- (1) Alternatives which fulfil the purpose of the undertaking in functionally different ways;
- (2) Potential rapid transit corridors; and
- (3) Alternative rapid transit technologies.

In relation to Step 1, the study concluded that introducing new rapid transit lines was the highest rated functionally different alternative for achieving the objectives of the EA. Therefore, “new rapid transit lines” was identified as preferred and subsequently carried forward to the second step.

Of the various streetcar corridors examined in Step 2, a short-term, relatively low cost LRT route was selected along the lakeshore for consideration in the EA. However, a commitment was made to provide for a long-term, higher cost LRT route in the Front Street / railway corridor to connect to the Queensway LRT at Roncesvalles Avenue once travel demands required it (it was noted that the selection of an alignment for this long-term route would be the subject of a future EA).

Finally, in Step 3, various rapid transit technologies were considered with the conclusion that expansion of the streetcar network was the most appropriate approach. Streetcars were chosen as the preferred technology based on the following rationale:

- A network of streetcar lines already existed in the study area;
- Streetcars are an important component of the TTC’s existing services; streetcars are well received by the public in terms of both level of service and environmental responsibility;
- There is little to be gained by replacing the existing streetcar network with a system of bus lanes;
- Diesel buses would have to be replaced with electric buses in order to eliminate air and noise emissions; and
- Subway trains and rapid transit vehicles would not be able to interline with the streetcars and are normally built above ground or below ground.



Based on the alternatives to the undertaking chosen in this three step process, the WWLRT EA defined short-term and long-term streetcar improvements to connect downtown Toronto with south Etobicoke. In the short-term, the improvements approved by the WWLRT EA consisted of an extension to the Harbourfront LRT line from Spadina Avenue to the north side of the Dufferin Gate, and improvements to the existing streetcar line from the Humber Loop to a new terminus at Legion Road in south Etobicoke. The TTC subsequently completed the Harbourfront LRT to a terminus at Exhibition Place, and is currently undertaking an EA Modification to extend that streetcar line to Dufferin Street. Similarly, the TTC is currently proceeding with an EA Modification and design of the relocated Legion Road Loop (now to be located at Park Lawn Road).

In the long-term, the WWLRT EA concluded that a higher speed, higher capacity streetcar line between downtown Toronto and Roncesvalles Avenue would be required within the Front Street / railway corridor in order to satisfy long-term travel demand. Since these long-term improvements were not included as part of the “undertaking” of the WWLRT EA, the TTC would be left with a “missing link” between the streetcar service at Dufferin Street and the streetcar service at Roncesvalles Avenue following implementation of the short-term improvements.

Twelve years following approval of the WWLRT EA, travel demand and service requirements have made it necessary to implement the WWLRT EA’s long-term recommendations. Therefore, the current undertaking proposes to establish a streetcar route between Dufferin Street and Roncesvalles Avenue that will allow for the continuous, high speed, high capacity connection between downtown Toronto and south Etobicoke envisioned in the WWLRT EA.

The current undertaking supports the conclusions of the WWLRT EA regarding the alternatives to the undertaking, and therefore, only streetcar service will be considered. This recognizes that introducing a new rapid transit line is the best “functionally different” alternative for achieving the purpose of the EA; that fulfilling the long-term recommendations of the WWLRT for a connection to Roncesvalles Avenue is now required to meet existing and future travel demand; and that expansion of the streetcar network is the most appropriate technology.

Also in keeping with the conclusions of the WWLRT EA, the TTC is doing an EA to determine the best route for an extension of the existing streetcar line from its location at Exhibition Place to a point at Dufferin Street. This EA Modification is being done in parallel to the current undertaking because of the relationship between the two and the intent to provide a continuous streetcar route from downtown Toronto to south Etobicoke.

A detailed description of the proposed undertaking will be provided in the EA following establishment and evaluation of alternative methods (i.e., routes).



2.2 The Study Area

To accommodate a new streetcar route between Dufferin Street and Roncesvalles Avenue, these ToR will consider both Primary and Secondary Study Areas.

The Primary Study Area is focused on the local context as it relates to the potential construction and operational effects of the streetcar line. It is the area where most of the potential effects will be realized, and therefore, the area of focus for most of the impact studies. It is generally bounded by Queen Street to the north, Dufferin Street to the east, Lake Ontario to the south, and Roncesvalles Avenue to the west. **Figure 2-1** provides an overview of the Primary Study Area. However, if an environmental effect (positive or negative) identified during the EA has the potential to result in an impact outside of the Primary Study Area as described, the area will be expanded as necessary to encompass the full environmental effect. The area includes lands within the communities of Roncesvalles (Ward 14), High Park – Swansea (Ward 14), South Parkdale (Ward 14), and a portion of Liberty (Ward 14) and Niagara (Ward 19), and contains a large number of residential, commercial, industrial and institutional land uses, as well as a significant transportation corridor (CN Rail, Gardiner Expressway and Lake Shore Boulevard).

The Secondary Study Area takes into consideration the larger transit service area that will benefit from this undertaking, as well as the larger environmental benefits, such as air quality, that will be realized by improvements to public transit. This Secondary Study Area does not have a defined boundary, but rather draws its boundaries in relation to a particular effect. During the EA, the appropriate boundaries for the Secondary Study area will be defined to reflect the various “regional” effects identified.

The Primary and Secondary Study Areas will be reviewed and confirmed in the EA by the TTC in consultation with agencies and the public. Modifications to the boundaries will be made where necessary. The Primary Study Area will be used for developing the alternative methods (corridors and routes) and will be the area where the majority of the potential effects on the environment (natural, social, cultural, economic) and potential technical effects, are identified. The Secondary Study Area will be used for establishing the larger context for potential effects resultant from the undertaking.

2.2.1 Overall City Transportation Network

The City Transportation Network comprises a system of roads and transit lines to provide for the mobility of people and goods. The transportation system serves long distance, inter-regional trips from/to locations within the GTA, intra-regional trips within the City of Toronto, as well as local travel needs.

Controlled access highways and urban expressways such as Highway 427, Gardiner Expressway and Don Valley Parkway provide high capacity road access to the downtown core. GO Transit and VIA Rail provide high capacity, inter-regional rail service from the Greater Toronto Area into downtown Toronto at Union Station. Similarly, inter-regional bus services are provided on the highway network by GO Transit. The intra-regional and local travel needs are served by the integrated TTC subway, streetcar and bus network.



Figure 2-1: The Primary Study Area





2.2.2 Existing Connections from Etobicoke to Downtown Toronto

The Waterfront West Streetcars EA Study Area is served by a range of road and transit infrastructure.

In terms of road infrastructure, the Waterfront West area is served by a freeway (Gardiner Expressway), major roads (Lake Shore Boulevard, King Street, Queen Street, Roncesvalles Avenue and Dufferin Street) and local streets (mostly within residential neighbourhoods). The key road segments within the Study Area are shown in **Figure 2-2**. The existing transit network is shown in **Figure 2-3**.

From a transit perspective, bus routes provide predominantly north-south feeder services to the TTC Bloor Subway while east-west service is provided by a streetcar network. Bus routes include Route 47 on Lansdowne Avenue (connecting Parkdale to Lansdowne Subway Station) and Route 29 on Dufferin Street (connecting Exhibition Place to Dufferin Subway Station). The buses operate on Dufferin Street in mixed traffic and use the Dufferin Street loop or (seasonally) go to Exhibition Place to connect with the GO Station and TTC Streetcar Loop.

However, streetcars offer capacity advantages over buses and represent a cost effective means of filling the intermediate-capacity niche between buses and heavy rail technologies (subway, GO and VIA rail). Additionally, streetcar service costs a fraction of what it costs to build and operate subways, and yet still offers significant advantages with respect to the environment and city building. Existing streetcar routes in the Study Area include:

- *Route 504:* King Street streetcar service operating in mixed traffic between Dundas West Subway Station and Broadview Station via Roncesvalles Avenue, King Street and Broadview Avenue.
- *Route 501:* Queen streetcar service operating between the Beaches (Neville) and Long Branch (Brown's Line) along Queen Street, the Queensway and Lake Shore Boulevard West. The service operates in mixed traffic on Queen Street and Lake Shore Boulevard West, and in an exclusive right-of-way on the Queensway.
- *Route 508:* Lake Shore streetcar operating rush hour service between Long Branch/Kipling Avenue and Parliament Street via King Street West. The service operates in mixed traffic on King Street and Lake Shore Boulevard West, and in an exclusive right-of-way on the Queensway.
- *Route 509:* Harbourfront streetcar service operating along Queens Quay, Bathurst and Fleet Street from Union Station terminating at Exhibition Station. Operates in exclusive right-of-way, except for a section of Fleet Street, which will be converted to exclusive streetcar service in 2007.
- *Route 511:* Bathurst streetcar service operating in mixed traffic from Bathurst Subway Station terminating at Exhibition Station.



Figure 2-2: Inventory of Key Road Segments

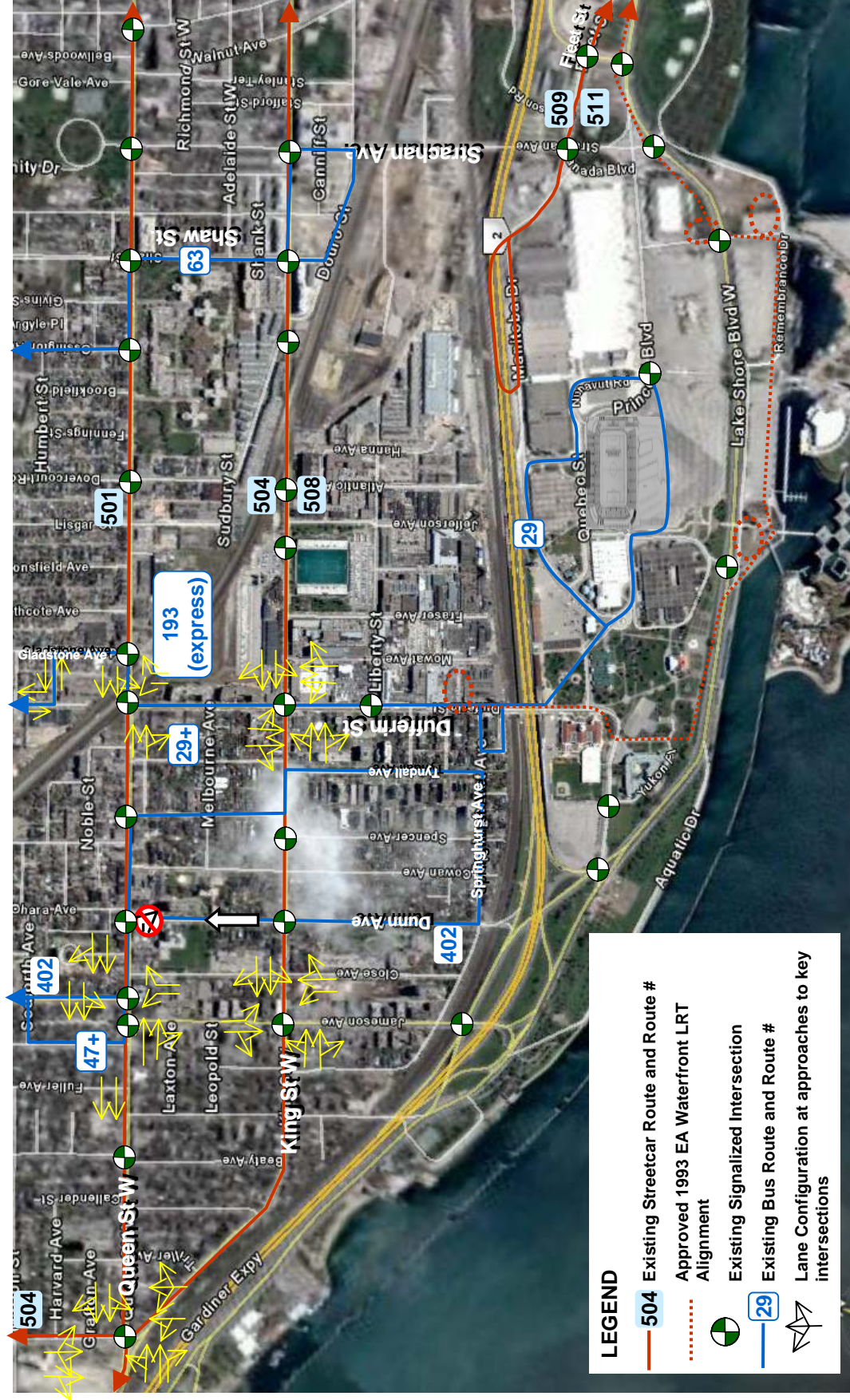




Figure 2-3: Existing Transit Network



LEGEND

- Existing Streetcar Route
- Existing Streetcar Route #
- Existing Signalized Intersection
- Existing Bus Route
- Bus Route #
- GO Rail Lakeshore



However, streetcars operating in mixed traffic on a congested road network (e.g., King Street and Queen Street streetcars) limit the number of passengers that can be efficiently served, thereby reducing the quality of the service. The quality of service is key to encouraging a significant number of people to change their mode of travel from car to transit. Therefore, providing exclusivity for streetcars is crucial for improving the level of service and increasing ridership.

The Waterfront West area is also served by inter-regional transit with GO Transit rail service at Exhibition Station on the CN Lake Shore West rail corridor. Further west, Mimico and Long Branch GO Stations also provide service to/from south Etobicoke.

2.3 Purpose of the Proposed Undertaking

The purpose of this undertaking is fulfill the long-term recommendation of the WWLRT EA for the provision of a continuous, high speed, high capacity streetcar line between downtown Toronto and south Etobicoke. In order to achieve this, a new line is required to fill in the “missing link” between Dufferin Street and Roncesvalles Avenue left by implementation of the short-term improvements. Providing this streetcar connection will help overcome the existing and projected future deficiencies in the transportation system through this corridor, while supporting the City of Toronto’s Official Plan vision to provide a high quality transit system that allows people to move around the city quickly and conveniently.

2.4 Rationale for the Proposed Undertaking

In the time since approval of the WWLRT EA, numerous other studies have confirmed its recommendation for additional high speed, high capacity streetcar lines to meet current and future travel demands. Together, these studies have established the need and rationale for providing additional higher order transit corridors and “streetcars in their own rights-of-way” throughout the Toronto area.

The TTC’s Ridership Growth Strategy (2003) and Building a Transit City (2005) contain a wide range of transit initiatives intended to make transit in Toronto a more attractive and viable option. These documents highlight the need to establish a network of bus and streetcar rapid transit lines in their own rights-of-way, efficiently serving the city in order to entice people out of their private automobiles. A streetcar alignment from Exhibition Place to south Etobicoke is identified as one such initiative.

The City of Toronto recognized the importance of transit and built it into its Official Plan (partially approved by the Ontario Municipal Board in 2006). The Official Plan states that its focus is on altering behaviour in order to reduce dependence on the private automobile through high-quality transit services, including priority measures for buses and streetcars. The Official Plan says no new roads will be built in Toronto. Instead, all growth in travel demand is to be carried on transit. The Official Plan calls for improving the attractiveness and reliability of transit by giving transit more priority on the city’s roads, through means such as exclusive rights-of-way for transit. The Official Plan designates a Higher Order Transit Corridor from the terminus of the existing streetcar line at Exhibition Place, through to south Etobicoke. The Central Waterfront Secondary Plan also highlights the importance of these objectives and emphasizes the need for transit, pedestrian and cycling links to and from the waterfront.



In addition, the growing crisis of global warming and climate change has focused attention on the need for increased use of public transit as a means of reducing reliance on private vehicles and thereby helping to reduce harmful emissions and greenhouse gases. Support for this type of thinking may be reflected in the increase in transit usage of 27 million additional riders (from 418 million per year to 445 million per year) between 2004 and 2006, and ridership is continuing to increase at a steady rate.

Finally, the March 2007 release of a “National Transit Strategy” by the Big City Mayors’ Caucus of the Federation of Canadian Municipalities, and the “Toronto Transit City – Light Rail Plan” by the TTC together clearly speak to the immediate need to move people out of their cars and onto public transit. These documents signal strong support for improving transit in Toronto and across the country.

The National Transit Strategy speaks to improving the liveability of Canada’s major cities by attracting people out of their cars and onto transit. The Strategy reflects a consensus among all the major cities in Canada regarding the need for improving transit across the country.

The Transit City Report specifically calls for the development of a network of electric light-rail lines (streetcar lines) across Toronto, including the Waterfront West Corridor, which is the subject of this EA. The report describes a light rail service for the Waterfront West Corridor that would operate entirely in a dedicated surface right-of-way from the existing Exhibition streetcar loop to the existing Queensway and Lake Shore streetcar tracks (at Roncesvalles Avenue). The estimated annual ridership in 2021 for this corridor would be 21 million customer-trips.

Together with the WWLRT EA, these previous studies establish the need for improved public transit within the City of Toronto, and the Waterfront West Corridor specifically. They all focus on increased public transit service as a means of reducing congestion, reducing infrastructure costs and improving our environment, including the social well-being of Toronto’s residents. **Supporting Document No. 2** provides additional detail about these studies and their role in establishing the need and rationale for the current undertaking.



3. Alternatives to be Evaluated

The current undertaking supports the conclusions of the WWLRT EA and subsequent transportation studies regarding the need for streetcar service to connect Dufferin Street with Roncesvalles Avenue. Consequently, the TTC is proceeding with this undertaking following the requirements set out in subsection 6(2)(c) and subsection 6.1(3) of the *EA Act*. Accordingly, the EA document described by these ToR will only consider alternative methods of providing streetcar service, namely alternative streetcar routes.

3.1 Alternative Methods of Carrying Out the Undertaking

In order to focus its efforts on identification of potential streetcar routes that could reasonably be constructed with minimum adverse effects, the TTC established broad “corridors” for the placement of streetcar routes. In consultation with agencies and the public during development of these ToR, the TTC has identified the following three corridors for consideration in the EA:

Alternative Corridor #1: Gardiner Expressway / CN Rail South

Alternative Corridor #2: Gardiner Expressway / CN Rail North

Alternative Corridor #3: Dufferin Street and King Street

During the EA, the TTC will screen these corridors based on their ability to provide technically reasonable and environmentally responsible routes for connecting Dufferin Street and Roncesvalles Avenue with a high speed, high capacity streetcar line.

These potential corridors represent a broad area and are not intended to define an exact route. The specific routes within these broad corridors will be identified in detail in the EA. The methodology for identifying the routes is provided in Section 5.

A brief description of each of the preceding alternative corridors is provided in the sections below and depicted in the figures that follow.

3.1.1 Alternative Corridor #1: Gardiner Expressway / CN Rail South

This alternative, depicted in **Figure 3-1**, would allow for the development of streetcar routes within a broad corridor that starts out on the south side of the Gardiner Expressway / CN Rail, and then crosses over to the north side at some point west of Dufferin Street before connecting with King Street / Roncesvalles Avenue.⁶

⁶ This corridor includes much of the area described as the “Lake Shore Boulevard Corridor” presented to the public and agencies during development of the ToR.



3.1.2 Alternative Corridor #2: Gardiner Expressway / CN Rail North

This alternative, depicted in **Figure 3-2**, would allow for the development of streetcar routes within a broad corridor entirely along the north side of the Gardiner Expressway / CN Rail, from Dufferin Street to King Street / Roncesvalles Avenue.

3.1.3 Alternative Corridor #3: Dufferin Street and King Street

This alternative, depicted in **Figure 3-3**, would provide improvements to the existing Dufferin Street and King Street streetcar lines. The type and extent of improvements would be considered as alternative methods.

Figure 3-1:

Alternative Corridor #1: Gardiner Expressway / CN Rail South





Figure 3-2:

Alternative Corridor #2: Gardiner Expressway / CN Rail Corridor North





Figure 3-3:

Alternative Corridor #3: Dufferin Street and King Street West





4. Description of the Existing Environment and Potential Effects in the Study Area

4.1 Preliminary Description of the Existing Environment

As illustrated in **Figure 2-1**, the Primary Study Area exists entirely within the City of Toronto and therefore represents an urban landscape. While the Primary Study Area borders onto Lake Ontario, the existing open space along the lakeshore is comprised of manicured parkland. Adjacent to this parkland is a major transportation corridor consisting of Lake Shore Boulevard, the Gardiner Expressway, and the CN Rail corridor. The remainder of the Primary Study Area to the north and east is almost entirely developed and made up of the communities of Roncesvalles (Ward 14), High Park – Swansea (Ward 14), South Parkdale (Ward 14), and a portion of Liberty (Ward 14) and Niagara (Ward 19).

A preliminary overview description of the existing natural environment (biological and physical), land use environment (the built form, including residential, commercial, institutional, as well as transit and road networks, bicycle and pedestrian networks, etc.), social environment (socio-economic conditions that influence the life of residents, business owners and employees, etc.) and cultural heritage environment (archaeological and built heritage features) within the Primary Study Area are provided in the subsections below.

4.1.1 Natural Environment

Over ninety percent of the subject lands between Dufferin Street and Roncesvalles Avenue are composed of buildings and their associated landscaped grounds. Along Dufferin Street and King Street the associated landscaped grounds consist primarily of manicured lawn with individual saplings or mature trees. Trees planted along these streets range from young (21 cm diameter) to mature (82 cm diameter) maples.

The areas between the eastbound and westbound lanes of Lake Shore Boulevard are manicured lawn with large, mature deciduous trees planted in a park-like fashion. The land to the south of Lake Shore Boulevard is dominated by mown lawn with a mixture of mature deciduous and coniferous tree species. Tree species identified in the landscaped lands are both native and exotic.

Cultural woodland⁷ comprises half of the vegetated area of the subject lands, and is found north of the train tracks between Dufferin Street and Dowling Avenue. This young woodland is highly disturbed by surrounding land uses and has a high component of exotic species. The woodland has a heavy shrub understory and appears to have been a thicket in the recent past.

7. *Cultural Woodland*⁷ is defined as an area with a relatively recent history of human disturbance and tree canopy cover between 35% and 60%.



A 1.3 ha band of cultural thicket exists opposite the cultural woodland, on the south side of the railway tracks. The shrubs are young and sparse, indicating that it was disturbed in the recent past. A narrow strip of cattails lines the tracks in this vegetation community.

In summary, vegetation communities are small, young and exist in disturbed patches. No species at risk were identified in the survey area. Plant species include common native species and exotics often used in urban landscaping.

4.1.2 Land Use Environment

The built environment within the Study Area is composed of a mix of employment, residential and commercial uses. The recreational/tourist features in the area include the Exhibition Place and Ontario Place lands. The transportation features include the Frederick G. Gardiner Expressway, Lake Shore Boulevard and a CN Rail corridor. A preliminary list of the existing parks, schools, and institutions can be found in **Table 4-1**:

Table 4-1: Existing Parks, Schools and Institutions in the Study Area

Parks	Schools	Institutions
<ul style="list-style-type: none"> ▪ Grafton Avenue Park ▪ Beaty Boulevard Park ▪ Beaty Avenue Park ▪ Masaryk Park ▪ Dunn Avenue Park ▪ Close Avenue Playground ▪ Close-Springhurst Parkette ▪ Spencer-Cowan Park ▪ Dufferin-King Parkette 	<ul style="list-style-type: none"> ▪ Parkdale Collegiate Institute ▪ Holy Family Catholic School ▪ Queen Victoria Public Elementary School 	<ul style="list-style-type: none"> ▪ St. Joseph's Health Centre ▪ Parkdale Public Library ▪ Toronto Rehabilitation Centre - Queen Elizabeth Centre ▪ Parkdale United Church

Estimated employment and population growth in the Study Area projected from 2001 levels (11,510 jobs and 13,717 people) is 4,370 additional jobs (total of 15,880) and 958 additional residents (total of 14,675) by the year 2031.⁸

8. Source: City of Toronto, City Planning Division, Policy and Research Section.



Planning Policy Context

At a provincial level, there are certain key policies/plans of relevance to this project, including the Provincial Policy Statement (PPS), the Places to Grow Act (2005) and the associated regional “Growth Plan for the Greater Golden Horseshoe” (the Growth Plan, 2006). The Growth Plan directs that “transit will be the first priority for transportation infrastructure planning and major transportation investments” and that transit infrastructure will be used to shape growth and support the Plan’s implementation. The Growth Plan is rooted in the principles of “sustainability” and envisages increasing intensification of the existing built-up area, with a focus on transit-supportive urban growth centres.

There are also local planning documents that address the current status of the Study Area. “In force” planning documents include the City of Toronto Council Approved Official Plan (2002) and the former City of Toronto Zoning By-Law (1986). For the purposes of this EA, the OP provides all of the municipal policy context.

The City of Toronto OP sets out general growth and development objectives and land use designations, and establishes an urban structure for the city. The OP indicates that future growth in Toronto will be directed to the centres, avenues, employment districts, and the downtown, and that these areas will be characterized by the highest concentration of jobs and residents. The OP intends these designated areas be characterized by compact mixed-use development, be pedestrian oriented and be well served by surface transit and rapid transit stations. Therefore, a key element of the OP influencing the Waterfront West Streetcars EA is the promotion of growth that is less reliant on the private automobile and in particular calls for a transit-based growth strategy by diverting development to areas with good transit, while improving transit in major growth areas.

The Central Waterfront Secondary Plan (2003) was developed with the intent of guiding development in the Central Waterfront area so that City building is encouraged at a compact scale that is accessible and appropriate to the surrounding context. Consistent with the Official Plan the Secondary Plan identifies a Transit Plan to guide the development of communities along the waterfront area. The existing streetcar network is to be extended east and west from the downtown with connections to north-south routes to connect the waterfront and existing communities. New streetcar routes will operate in exclusive rights-of-way within streets or separate dedicated routes to ensure efficient transit movement.

In addition, the City of Toronto issued a Report dated August 29, 2006, which outlines the steps and resources needed to develop a comprehensive master plan for the western waterfront areas from Marilyn Bell Park (south of Lake Shore Boulevard, west of Jameson Avenue) to the Humber River. Among other items, the master plan is to address transit, parking and transportation requirements and maintaining public realm requirements, improving access and connections between the waterfront and adjacent neighbourhoods. This study is expected to commence in 2007.



Zoning By-Laws in the city reflect the implementation of the intent of the Official Plan. The zoning techniques employed are the main factors influencing the urban form and development pattern within the Study Area. Residential districts, mixed-use districts, industrial districts and park districts are all included within the Study Area boundary.

There are currently 12 known proposed or approved development applications within the Study Area.⁹

4.1.3 Social Environment

Currently, the Study Area between Dufferin Street and Roncesvalles Avenue is densely populated and contains a mix of residential, commercial, recreational, and institutional uses. The corridor along Queen Street West between Dufferin Street and Roncesvalles Avenue consists primarily of mixed retail/residential and commercial uses. South of Queen Street West to the Gardiner Expressway are densely populated neighbourhoods consisting of mixed multi-unit residential and single family or semi-detached homes. The area on the eastern side of Dufferin Street north of the Gardiner Expressway (generally between Atlantic Avenue and Strachan Avenue) is currently under residential/commercial development. As indicated in the Land Use section, there are also various public and secondary schools in the Study Area, along with several community facilities

Green space along the waterfront is a prominent feature of the Study Area. The presence of the western portion of the Exhibition Place and Ontario Place lands provides a large amount of green space and are dominant recreational features. There are also several parks within the neighbourhoods of the Study Area. These parks provide services such as playgrounds, baseball diamonds, a track, picnic areas, and bicycle routes. The City of Toronto Trail Network passes through lands in the southern portion of the Study Area.

4.1.4 Cultural Environment

Archaeological Resources

Background research was completed to identify any archaeological sites previously registered within the Study Area and to assess the archaeological potential. No archaeological sites have been registered within the Study Area; however, 11 sites have been registered within a 2 km radius of the Study Area.¹⁰ The general proximity of the Great Western Railway Line and the proximity of both the Humber River and Lake Ontario, contribute to the historic potential of the subject property.

9. Source: City of Toronto, City Planning Division

10. Three sources of information were consulted: the site record forms for registered sites, housed at the Ministry of Culture; published and unpublished documentary sources; and the files of Archaeological Services Inc., including the interim report of the Master Plan of Archaeological Resources for the City of Toronto (ASI 2004).



Built Heritage Features and Cultural Landscapes

A total of nine (9) cultural heritage features were identified within the Study Area.¹¹ Four roadscape are located within the Study Area, including the Gardiner Expressway, Lake Shore Boulevard, Dufferin Street, and King Street. The intersection at King Street, Queen Street and Roncesvalles was also identified as a cultural heritage feature because it is an historic crossroads with landmark quality. Other features of cultural heritage interest within the Study Area include a bridge, an industrial complex, a railscape and Exhibition Place, which includes the Dufferin Gate.

Features located within the Exhibition Place cultural landscape are the only identified cultural heritage features within the Study Area that are listed and/or designated in the Toronto Heritage Property Database and under the *Ontario Heritage Act*. There are, however, a number of heritage properties in the vicinity of the Study Area limits that are included in the Toronto heritage inventory, such as the Sunbeam Incandescent Lamp Factory, Bank of British North America, and the George Faulkner House.

4.2 Description of the Potential Effects

The potential effects that will be assessed during the preparation of the EA have been grouped into five factors reflective of the broad definition of environment as provided for in the *EA Act*. In addition, a “technical” factor has been identified as a means of grouping together the non-environmental attributes potentially affected by the proposed undertaking.

The types of potential effects for each factor may include, but are not limited to, those that are summarized below. These potential effects are based on the alternatives presented in Section 3.1 and the preliminary description of the existing environment presented above. However, this is a preliminary overview that will be confirmed through investigative studies undertaken in the EA. The detailed list of identified potential environmental effects will be documented in the EA.

4.2.1 Technical

Technical effects reflect how the alternative methods may affect transit operations, such as transit ridership and transit service, and traffic operations, such as roadway traffic, intersection operations, and roadway parking and loading. In addition, pedestrian and bicycle facilities and operations are both included as “technical” considerations. Other technical effects that will be considered in the EA include the constructability of the undertaking (e.g., staging opportunities and constraints), the operation and maintenance requirements, and the approval requirements of the alternative corridors and routes.

11. For the purposes of determining the existence of previously identified built heritage features and cultural landscapes within, and in the vicinity of the study areas the City of Toronto’s Heritage Preservation Services Department’s inventory of heritage properties was consulted as well as the Ministry of Culture’s Ontario Heritage Properties Database and a site visit.



4.2.2 Natural Environment

The various alternative streetcar routes may result in adverse effects on the natural environment, including disturbance to and/or loss of terrestrial ecosystems, wildlife, and greenways/open spaces and natural linkages. These potential effects may be construction related and therefore, short-term in duration, and/or may persist during the operational phase of the streetcar. In either case, the effects will be fully investigated and documented in the EA. Similarly, the proposed undertaking has the potential to result in beneficial effects on the environment (e.g., air quality), which will be fully investigated and documented in the EA.

4.2.3 Land Use Environment

The new streetcar will result in a physical change to the existing landscape by virtue of its presence where it currently does not exist. In order to construct the streetcar line, the potential effects on land uses may include the alteration and/or removal of existing and/or planned developments. In addition, there may be effects on the existing/proposed land use designations and zoning, as well as implications related to development applications.

4.2.4 Social Environment

The social environment may be affected by construction and operation of the streetcar route, including, but not limited to, disruption and/or displacement of existing residences, businesses, institutions and recreational features, as well as alteration of existing urban design and streetscapes (aesthetic and safety effects), loss of private property, and alteration of existing property access.

4.2.5 Cultural Environment

Cultural environmental effects associated with the alternative methods may include alteration to and/or loss of known and not yet known archaeological sites, and disruption to and/or removal of built heritage features and cultural landscape units.

4.2.6 Financial / Economic Environment

Each alternative has a capital cost associated with it, as well as property acquisition costs and operation and maintenance costs.

4.3 Detailed Description of the Existing Environment

A detailed inventory of the existing environmental conditions within the Primary Study Area will be undertaken as part of the EA in order to augment and expand on the preliminary description provided earlier. This detailed description of the existing environment will focus on the areas associated with the alternative corridors and routes, and later in the EA study, the preferred undertaking. Where relevant, aspects of the larger Secondary Study Area will be included and documented in the EA.



Our assessment of the existing environmental conditions will be completed through a number of investigative studies currently proposed for the EA, including, but not limited to, those summarized in **Table 4-2** below. The specific nature and extent of each investigative study will be determined in the EA, where it may be necessary to make changes to the studies listed below and/or conduct additional studies to ensure a comprehensive inventory of the existing conditions. From these investigative studies, a detailed description of the environment will be developed.

Table 4-2: Proposed Considerations/Areas of Study and Investigative Studies

Factor	Considerations / Areas of Study	Description of Investigative Study
1. Technical	<ul style="list-style-type: none"> ▪ Transit Network (including projected Transit Ridership Growth, projected effects on King Street and Queen Street streetcar service, projected speed/level of service of streetcar service in the Study Area, potential for use of low-floor streetcars, etc.) ▪ Road Network (including local roads, Gardiner Expressway, parking, loading/unloading effects on traffic, etc.) ▪ Rail Corridor and Network ▪ Bicycle and Pedestrian Network (including access to the waterfront) 	<ul style="list-style-type: none"> ▪ Review the future road and transit networks and the population and employment forecasts used to forecast travel demands, the auto and transit mode split assumptions and the peak hour auto and transit volumes assigned by the model to the road and transit networks. ▪ Obtain the most recent a.m. and p.m. peak hour turning movement counts, AADT, and signal timing from the City for the key signalized intersections and the Gardiner Expressway. ▪ Obtain rail information from GO Transit and CN Rail. ▪ Review Toronto Bike Plan and draft Pedestrian Plan. Correspondence/discussion with City staff to confirm findings, followed by field verification.
2. Natural Environment	<ul style="list-style-type: none"> ▪ Terrestrial Ecosystems 	<ul style="list-style-type: none"> ▪ Conduct field surveys to confirm vegetation and vegetation communities, and wildlife and wildlife habitat within the Primary Study Area. ▪ Review Natural Heritage Information Centre (NHIC) database and consult other secondary sources, including the TRCA, to identify the presence/absence of rare species, significant features, etc.
3. Land Use	<ul style="list-style-type: none"> ▪ Existing Land Uses (residential, commercial, industrial, etc.) ▪ Official Plan Designations, Zoning, Proposed Development, Projected Population/Employment Growth, Provincial Policies, etc. 	<ul style="list-style-type: none"> ▪ Review Official Plan, Secondary Plan, and Zoning By-laws to identify permitted uses and policies associated with land use designations. ▪ Discussions with City planners to confirm findings, identify proposed developments, and obtain any additional relevant information. ▪ Conduct field surveys to confirm information gathered and document existing conditions.



Factor	Considerations / Areas of Study	Description of Investigative Study
4. Social	<ul style="list-style-type: none"> ▪ Existing Communities (including residences, businesses, community facilities, parks, etc.) ▪ Noise / Vibration / Air Quality ▪ Urban Design (opportunities for urban design and streetscaping improvements, including integration with existing land uses, as well as safety issues such as lighting and design at stations) ▪ Access to Properties ▪ Private Property 	<ul style="list-style-type: none"> ▪ Review available background documentation, including land use documentation and community studies (e.g., Secondary Plan, Roncesvalles Streetscape Strategy, etc.). ▪ Conduct field surveys to document the existing conditions. ▪ Implement Consultation Plan and obtain information from stakeholders. ▪ Undertake air photo / base mapping interpretation and field investigations to identify noise-sensitive and vibration-sensitive receptors. ▪ Conduct sound level measurements or noise modeling to determine baseline ambient outdoor noise levels. ▪ Conduct vibration measurements at representative locations. ▪ Complete air quality assessment using available secondary source documentation (e.g., historical air quality data, review existing traffic/transit/rail traffic emissions, identify proposed changes in land uses, etc.). ▪ Review parcel fabric data to determine property ownership and property access.
5. Cultural	<ul style="list-style-type: none"> ▪ Archaeology ▪ Built Heritage Resources and Cultural Landscapes 	<ul style="list-style-type: none"> ▪ Conduct a Stage 1 Archaeological Assessment ▪ Conduct a Built Heritage and Cultural Landscape Assessment
6. Financial	<ul style="list-style-type: none"> ▪ Capital Costs ▪ Land Acquisition Costs ▪ Operation and Maintenance Costs 	<ul style="list-style-type: none"> ▪ Determine current operating, maintenance, capital and land acquisition unit costs.

Overall, the purpose of the existing environmental conditions inventory is to establish the baseline for comparison that will allow for the identification of any potential changes to the environment resulting from the undertaking. This baseline will be conducted to obtain a uniform level of detail across the Primary Study Area for all alternatives being considered.



5. Environmental Assessment Methodology

During the EA, the evaluation of “alternative methods” will follow a step-wise process, as outlined below:

Step No.1: Screening of the Alternative Corridors

Task #1: Identify screening criteria

Task #2: Apply screening criteria

Task #3: Identify Alternative Corridors for further consideration

Step No.2: Generation of a “Long List” of Alternative Streetcar Routes

Task #1: Identify and map constraint features within the Study Area

Task #2: Establish a “long list” of potential routes

Step No.3: Screening of the “Long List” of Alternative Streetcar Routes and identification of a “Short List”

Task #1: Identify screening criteria

Task #2: Applying the screening criteria to the alternative routes

Task #3: Identifying a “short list” of alternative routes

Step No.4: Evaluation of “Short List” of Alternative Streetcar Routes and selection of a Preferred Route

Task #1: Develop evaluation criteria, indicators, and measures

Task #2: Apply the evaluation criteria, indicators, and measures to each route

Task #3: Develop the avoidance / mitigation / compensation / enhancement measures

Task #4: Apply the avoidance/mitigation/compensation/enhancement measures to the potential effects

Step No.5: Preparation of a Mitigation and Enhancement Plan

Task #1: Make environmental commitments for the construction, operation, maintenance and use of the preferred route.

The remainder of this section provides an overview of these five steps and their respective tasks. However, in carrying out the work contemplated by the ToR during the EA, it may be necessary to add to, remove or modify these steps and/or their tasks in order to address new information that arises during the EA, or to respond to issues raised by the public and/or other stakeholders.



5.1 Step No. 1: Screening of the Alternative Corridors

In recognition of the fact that only reasonable alternatives should be considered in an EA, the three alternative corridors described earlier will be reviewed and screened based on their ability to meet the purpose of the undertaking. As a result, only those corridors that can reasonably be expected to improve streetcar service and take into consideration the needs of roadway users, pedestrians and existing/future land users will be carried forward.

The screening process itself will generally involve the following three tasks:

- Task #1:** Identify appropriate screening criteria (such as frequency, speed, reliability, comfort and convenience) that determine whether the alternative corridors have the potential to meet the purpose of the undertaking, while taking into account technical and environmental considerations.
- Task #2:** Apply the screening criteria to each of the alternative corridors.
- Task #3:** Identify the alternative corridor(s) that best meet the screening criteria and pass the screening process (“screened in” versus “screened out”).

The screening process and the conclusions reached will be clearly documented in the EA so that a rationale is provided for the selection of the alternative corridor(s) carried forward.

5.2 Step No. 2: Generation of the Alternative Streetcar Routes

The “screened in” alternative corridor(s) will serve as the basis for identifying reasonable streetcar routes (i.e., specific locations of streetcar tracks) within the Primary Study Area. For each “screened in” alternative corridor, reasonable streetcar routes will be identified through the following process:

- Task #1:** Identify and map constraint features (i.e., features that pose a constraint to constructing a new streetcar route) within the Primary Study Area.
- Task #2:** Establish a “long list” of reasonable streetcar routes between Dufferin Street and Roncesvalles Avenue within the alternative corridor(s) that take into consideration the constraint features.



5.3 Step No. 3: Screening of the “Long List” of Alternative Streetcar Routes

Should an extensive “long list” of alternative streetcar routes be identified for each “screened in” corridor, a screening process may be applied to each corridor in order to reduce the total number of routes for detailed comparative evaluation in the next step.

Therefore, the purpose of this screening step is to create a “short list” of alternative routes for each “screened in” corridor that can reasonably be expected to be constructed. The screening process itself will generally involve the following three tasks:

- Task #1:** Develop screening criteria that determine whether the alternative routes can reasonably be expected to be constructed;
- Task #2:** Apply the screening criteria to the alternative routes; and,
- Task #3:** Identify a “short list” of alternative routes that meet the criteria and pass the screening process.

Once the alternative routes have been screened, the “short list” will be carried forward for detailed evaluation in the next step. The screening process will be clearly documented in the EA Report so that a rationale is provided for the “short list” of alternatives selected for more detailed evaluation.

5.4 Step No. 4: Evaluation of the “Short List” of Alternative Streetcar Routes and Selection of a Preferred Route

The “short-listed” alternative routes identified through the preceding screening step will then be comparatively evaluated in consultation with agencies and the public in order to identify a Recommended Route, and ultimately a Preferred Route. In order to identify a Recommended Route, the “short list” of alternative streetcar routes will be subject to a two-step process consisting of:

1. A “Net Effects Analysis”; and
2. A Comparative Evaluation.

These evaluation approaches are described in more detail the following sections.

5.4.1 Net Effects Analysis

A “net effects analysis” is a process whereby the environmental effects remaining after the application of reasonable mitigation measures are identified. In general, this process consists of the following tasks:



- Task #1:** Develop the appropriate evaluation criteria, indicators, and measures for each factor of the environment being considered (technical, natural, land use, social, cultural and financial) based on the purpose of the undertaking, the existing/future environmental conditions, the range of alternative routes being considered, and the type, scale and significance of the potential environmental effects anticipated from the alternative routes.
- Task #2:** Apply the evaluation criteria, indicators, and measures to each alternative route in order to identify the potential effects on the environment from the routes.
- Task #3:** Develop the appropriate avoidance/mitigation/compensation/enhancement measures based on accepted procedures, historical performance, and existing environmental conditions.
- Task #4:** Apply the avoidance/mitigation/compensation/enhancement measures to the identified potential effects. Once the appropriate measures have been developed and applied to the potential environmental effects from each alternative route, the remaining negative or positive effects are known as the “net effect”. Where the potential negative or positive effect cannot be addressed through the application of avoidance / mitigation / compensation / enhancement measure(s), the potential effect(s) will remain unchanged and are still identified as the “net effect”. The remaining net effects will be documented in the EA for each criterion or indicator and carried forward to the comparative evaluation step. Therefore, by the end of Task #4, a complete list of the “net effects” for each of the alternative routes will be documented.

Following the last step, the net effects of each alternative route will be comparatively evaluated against each other (see Section 5.4.2).

5.4.1.1 Proposed Evaluation Criteria

The proposed evaluation criteria to be applied to the alternative routes as part of the net effects analysis in the EA will include, but may not be limited to, those set out in **Table 5-1**. This table links evaluation criteria to the potential environmental effects associated with the undertaking (as described earlier). However, this is a preliminary identification of criteria based on the current understanding of the existing/future conditions of the Primary Study Area, and these criteria may be revised during the EA as required. Additionally, once the existing/future conditions have been established in the EA, indicators and measures will be developed for each criterion that provide a clear method of identifying and measuring the potential effects associated with that specific criterion. The evaluation criteria, indicators, and measures will be developed and finalized in consultation with agencies and the public during the EA process and subsequently documented in the EA Report.



Table 5-1: Proposed Criteria For Assessing Alternative Streetcar Routes

Factor	Potential Environmental Effects	Proposed Criteria
Technical	<ul style="list-style-type: none"> ➤ Improved / degraded roadway and intersection traffic operations. ➤ Improved / degraded roadway parking/loading. ➤ Increases to transit ridership and transit service. ➤ Improved public accessibility to transit services. ➤ Improved transit network connectivity. ➤ Improved / degraded pedestrian and bicycle facilities and operations, including effects on access to the waterfront. ➤ Constraints on CN Lakeshore West rail corridor expansion. ➤ Constraints on urban expressway redevelopment. ➤ High complexity / difficulty in construction. ➤ High operation and maintenance requirements. ➤ Extensive approval requirements for implementation. 	<ul style="list-style-type: none"> ➤ Potential effects on intersection operations. ➤ Potential effects on traffic operations. ➤ Potential effects on roadway parking/loading. ➤ Potential increase in transit ridership (projected). ➤ Potential increase in speed and improvement in Level of Service for streetcar users. ➤ Ability to meet transit ridership objectives. ➤ Potential effect of using low-floor streetcars ➤ Potential effects on transit network integration. ➤ Potential effects on King Street and Queen Street streetcar service. ➤ Potential effects on pedestrian and bicycle facilities and operations. ➤ Potential effects on CN Lake Shore rail corridor. ➤ Potential effects on urban expressways. ➤ Potential constructability issues. ➤ Potential operation and maintenance requirements. ➤ Potential approval requirements.
Natural Environment	<ul style="list-style-type: none"> ➤ Disturbance to and/or loss of terrestrial ecosystems. ➤ Disturbance to and/or loss of wildlife. ➤ Disturbance to and/or loss of greenways/open spaces and natural linkages. 	<ul style="list-style-type: none"> ➤ Potential effects on terrestrial habitats, functions and biota. ➤ Potential effects on greenways/open spaces and natural linkages



Factor	Potential Environmental Effects	Proposed Criteria
Land Use Environment	<ul style="list-style-type: none"> ➤ Alteration and/or removal of planned or proposed developments. ➤ Non-conformance with existing Official Plan designations and zoning, Regional and Provincial plans and policies. 	<ul style="list-style-type: none"> ➤ Potential effects on approved/proposed land uses. ➤ Conformity with existing Official Plan designations and zoning. ➤ Conformity with existing Regional and Provincial plans and policies. ➤ Potential effects on projected population / employment growth in the Study Area.
Social Environment	<ul style="list-style-type: none"> ➤ Disruption to, or displacement of, existing residences, businesses, institutions and recreational features. ➤ Alteration of existing urban design and streetscapes (aesthetic and safety effects) ➤ Loss of private property. 	<ul style="list-style-type: none"> ➤ Potential for displacing existing residences, businesses, institutions and recreational features. ➤ Potential short-term effects of noise, vibration, and air quality on existing residences, businesses, institutions and recreational features as a result of construction (disturbance). ➤ Potential short-term effects of construction on the use of roadways, driveways, sidewalks and pathways (restrictions to access, including access to the waterfront). ➤ Potential long-term effects of noise, vibration and air quality on existing residents, businesses, institutions and recreational features. ➤ Potential long-term effects on use of roadways, driveways, sidewalks and pathways (changes to access, including access to the waterfront). ➤ Alteration of existing property access. ➤ Potential opportunities for urban design and streetscape improvements (including safety considerations at stations). ➤ Potential for requiring private property.
Cultural Environment	<ul style="list-style-type: none"> ➤ Alteration to and/or loss of known and not yet known archaeological sites. ➤ Disruption to and/or removal of built heritage features. ➤ Disruption to and/or loss of cultural landscape units. 	<ul style="list-style-type: none"> ➤ Potential effects to archaeological resources. ➤ Potential effects to built heritage features and cultural landscapes.
Financial	<ul style="list-style-type: none"> ➤ Capital Costs. ➤ Property Acquisition Costs. ➤ Operation and Maintenance Costs. 	<ul style="list-style-type: none"> ➤ Potential capital costs. ➤ Potential land acquisition costs. ➤ Potential operation and maintenance costs.



5.4.2 Comparative Evaluation of the Alternatives

The net effects information completed in Task #4 of the “net effects analysis” for each alternative route will then be carried forward for comparison against each other in order to identify a Recommended Route. This comparison of alternatives will be completed using a “Reasoned Argument” method, also referred to as a “Trade-off” method. This method will highlight the relative advantages and disadvantages of each alternative route based on its identified net effects. This will provide a clear presentation of the key trade-offs between the various evaluation factors and the reasons why one alternative route is preferred over another. As a result, the relative differences and key impact trade-offs between each alternative route for the various factors will be clearly understood, and a traceable rationale for selection of the preferred route provided.

The information generated through the “net effects analysis” and subsequent comparison of alternatives will be summarized in a series of tables and elaborated upon in the text of the EA Report. The rationale for the decision-making process undertaken will be provided in a clear manner to ensure that the process undertaken is traceable and replicable.

5.5 Step No. 5: Preparation of the Mitigation and Enhancement Plan

As part of the evaluation of alternative routes and the identification of potential environmental effects, avoidance/mitigation/compensation/enhancement measures will be developed for the adverse effects by experienced professionals in consultation with appropriate agency staff and project stakeholders. Only reasonable, technically feasible and economically viable measures that are based on industry accepted practices will be recommended. These avoidance/mitigation/compensation/enhancement measures will become the basis for the development of a mitigation and enhancement plan for the preferred route during the EA. The various identified measures will be translated into environmental commitments reflecting agency/public input for future implementation and adherence during the construction, operation, maintenance and use of the route.



6. Development of a Monitoring Strategy and Schedule

The TTC is committed to developing a monitoring strategy and associated schedule during the EA that will address both environmental effects and EA compliance.

The purpose of the environmental effects monitoring will be to ensure that the net effects associated with the construction, operation, maintenance and use of the preferred undertaking are monitored, as necessary, and further mitigation measures, enhancements, monitoring, and contingency plans be implemented, where possible, to ensure that: (1) predicted net negative effects are not exceeded; (2) unexpected negative effects are addressed; and (3) the predicted benefits are met.

The EA will describe how the TTC will achieve compliance (e.g., permits and approvals from regulatory agencies) and how the compliance will be reported. The purpose of the EA compliance monitoring will be to ensure that the commitments made in the EA are followed through in the construction, operation, maintenance, and use of the preferred undertaking. The TTC or its contractor will be required to obtain all permits and approvals from regulatory agencies at the appropriate time and will ensure compliance with them and their conditions throughout the work.



7. Process for Amending the Undertaking Following EA Approval

An amending procedure will be incorporated into the EA to address changes to the preferred alternative that may occur following approval of the EA by the Minister of the Environment. The amending procedure will:

- Identify changes as either “minor” or “major” in accordance with the significance of the change.
- Outline how the proposed changes will be examined (process for approval).
- Detail the stakeholder consultation to be undertaken when considering the changes.
- Outline the documentation requirements.
- Outline the public review requirements.

The intent of the amending procedure is to allow changes to occur which address future conditions without having to submit a new EA to the Minister of the Environment. The amending procedure could also be used to address alignment and station location issues if these could not be resolved during the EA.



8. Consultation During the Preparation of the ToR

As required by Section 5.1 of the EA Act,¹² review agencies, stakeholders, and the general public were consulted during preparation of these ToR. The City of Toronto's Public Consultation Unit was engaged to ensure that a proactive, comprehensive consultation program was developed and implemented during the preparation of these ToR. A Consultation Record describing the consultation activities undertaken during ToR preparation is provided under separate cover.

8.1 Consultation Activities Undertaken During the Terms of Reference

Consultation undertaken during the development of these ToR included:

- Review agency meetings (e.g., Ministry of the Environment, TRCA, Canadian Transportation Agency).
- Meetings with Toronto City Councillor Gordon Perks and Deputy Mayor Joe Pantalone, and discussions with various City Councillors who attended an Open House at City Hall exclusively for City Councillors.
- Meetings with Key Stakeholders (e.g., CN Rail, GO Transit, Exhibition Place, Ontario Place).
- Establishing a Technical Advisory Committee (TAC) made up of staff from City of Toronto and TRCA.
- Advising the Toronto Waterfront Revitalization Corporation (TWRC) of the study and inviting its staff to participate.
- Creation of a project web site:
(http://www.toronto.ca/involved/projects/waterfront_transit/), which was also linked from the TTC homepage (www.ttc.ca).
- Hand delivery of a project brochure to every mailing address in the Study Area (24,989 notices) in advance of the Public Information Centre (PIC) providing notification of the start of study and the PIC. The brochure was also made available at the PIC as a handout.
- A newspaper advertisement in Now Magazine providing notification of the start of study and the PIC.
- Mailing of 125 notices to an established stakeholder list of community, resident, and business associations providing notification of the start of study and the PIC.

¹² 5.1 When preparing proposed terms of reference and an environmental assessment, the proponent shall consult with such persons as may be interested.



- One round of PICs (two separate locations were used) held to solicit agency and public input and provide an opportunity for public members to discuss their concerns/issues directly with the project team.
- Comment Sheet handed out at the PICs and available from the project website.
- First Nations Consultation with the Ontario Secretariat for Aboriginal Affairs (OSAA), Indian and Northern Affairs Canada (INAC) and the Mississaugas of the New Credit.



9. Consultation During the EA

Consultation is an integral component of the EA process and functions to provide input to assist the Project Team in making decisions in light of the potential environmental effects and the feedback provided. Consultation activities provide opportunities throughout the process for two-way communication with interested stakeholders to bring forward comments/issues that can be given appropriate consideration before final decisions are made. As with the consultation activities developed for the ToR, the City of Toronto's Consultation Unit will be leading the consultation activities in the EA, which will maintain continuity between the two stages.

9.1 Consultation Objectives

The consultation activities undertaken during preparation of these ToR will be built upon and implemented in the EA to achieve the following consultation objectives for the EA:

- a) To provide ample opportunities for stakeholders/interested parties to become aware of and informed about the EA and its studies.
- b) To proactively seek the input, comments and suggestions from these stakeholders/interested parties regarding the EA.
- c) To proactively work with stakeholders/interested parties to identify concerns and, wherever possible, resolve those concerns in advance of completing the EA.
- d) To fairly document the stakeholder concerns, where they cannot be resolved, and TTC's reasons explaining why the concerns could not be resolved.
- e) To increase the openness, transparency and access to the information, research and data being developed and analyzed for purposes of the EA.

As a result, the consultation requirements of the EA Act will be addressed through activities that will be flexible and responsive to agency/public and project needs, and may be amended through input from the community and other key stakeholders.



9.2 Major Consultation Elements

A number of major consultation elements are proposed as part of the consultation plan for the EA:

1. **Technical Advisory Committee (TAC) Meetings**
2. **Community Advisory Group (CAG) Meetings**
3. **Public Information Centres (PICs)**
4. **Newsletters / Brochures**
5. **Newspaper Advertisements and Letters**
6. **Project Web Site**
7. **First Nations Consultation**

Each of the preceding elements are briefly described in the following sub-sections:

9.2.1 TAC Meetings

The multi-stakeholder TAC established during the preparation of these ToR will continue to meet during the EA at regularly scheduled intervals to provide input before final decisions are made by the Project Team.

9.2.2 CAG Meetings

A CAG will be established early in the EA stage. The members of the CAG will be identified in consultation with the Study Area ward councillors, Councillor Gord Perks and Deputy Mayor Joe Pantalone. The aim of the CAG will be to represent the interests of the local community stakeholders. The CAG will help ensure that issues and concerns are identified early in the study, community input is incorporated, and project decisions are based on the best information available.

The CAG will meet at regularly scheduled intervals in order to provide input before final decisions are made by the Project Team. Meetings of the CAG will take place before the PICs to provide an opportunity for the CAG members to comment before the information is made available to the general public. The following is a list of potential items that may be discussed at CAG meetings; however, the specific items for discussion may change based on public and agency input:

- Preliminary results of the screening process for alternative corridors, and identification of the “screened in” corridor(s).
- Generation of the proposed “long list” of alternative streetcar routes for the “screened in” corridor(s).
- Development of the screening criteria for the “long list” of alternative routes and identification of the “short list” of alternative routes (if necessary).
- Proposed evaluation criteria, indicators, and measures for evaluating the “short list” of alternative streetcar routes, and identification of the “net effects”.



- Preliminary results of the comparative evaluation of the “short list” of alternative routes and identification of the Recommended Alternative Route.
- Impact assessment of the Preferred Alternative Route, including opportunities to mitigate potential adverse effects and enhance beneficial effects.

9.2.3 Public Information Centres

Three additional PICs are proposed during the EA. Similar to CAG meetings, the PICs will be held in order to obtain input before final decisions are made by the Project Team. The PICs will present information in a format similar to the PICs held during preparation of these ToR. Each PIC will be advertised in the local media, brochures will be delivered to the Study Area, and letters will be mailed to those on the project’s contact list. Meeting summaries will be posted to the project website following the PICs. Additionally, comment sheets with specific questions will be handed out at the PICs and will be available via e-mail through the project website.

9.2.4 Newsletters / Brochures

Additional newsletters/brochures will be regularly distributed to residents and stakeholders during preparation of the EA similar to those released for the PICs held during the preparation of these ToR. The intent of the newsletters/brochures is to enhance the other public consultation efforts and increase awareness within the community.

9.2.5 Newspaper Advertisements and Letters

Notification of key project milestones/activities will be provided to the general public through advertisements in local community newspapers, and to key project stakeholders through letter mailings. An initial list of all ratepayer organizations, community groups, and business associations in the study area has been established. The initial contact list for letter mailings will be updated throughout the EA as additional stakeholders identify themselves.

9.2.6 Project Web Site

The project web site established for this project during the preparation of these ToR (http://www.toronto.ca/involved/projects/waterfront_transit/) will continue to be used throughout the EA as a means of providing detailed project information that is regularly updated. The web site will function as a means of providing information in-between project advertisements and mailings. The public will be able to send comments directly to the project team via e-mail from the project website and have access to the comment sheets handed out at PICs via e-mail.



9.2.7 First Nations Consultation

Discussions with the First Nations, specifically the Mississaugas of the New Credit, will continue into the EA in a manner appropriate to them. As necessary, the consultation efforts will be adjusted throughout the EA to meet the specific needs of the First Nations. The First Nations will be asked to contribute comments at each key consultation milestone before regular notification is made with other stakeholders. In addition, the First Nations will be kept informed of any relevant archaeological and cultural materials that may be found during the course of the study.

9.3 Key Consultation Milestones

During the EA, consultation will be undertaken with the project stakeholders to obtain input before key decisions are made. The following are the key consultation milestones in the EA process where stakeholder input will be sought before any final decisions are made. This list of milestones and points of contact may change during the course of the EA to reflect developments resulting from the study.

1. Screening of the Alternative Corridors and Generation of the Proposed “Long List” of Alternative Streetcar Routes

During this first milestone, the preliminary results from the screening of the alternative corridors the generation of the “long list” of alternative streetcar routes will be presented to the TAC and the CAG for review and comment. These meetings will also provide the opportunity for reviewing the constraint features and other existing conditions within the Primary Study Area.

2. Screening of the “Long List” of Alternative Streetcar Routes

The preliminary results of the screening of the “long list” of alternative streetcar routes will be presented to the TAC and CAG for review and comment. At the same meetings, the two groups will also review the proposed evaluation criteria, indicators, and measures for evaluating the “long list” and developing the “short list”. This information, along with the results from the first milestone, will subsequently be presented at the first PIC for public review and comment. Following public comment, the “long list” will be confirmed along with the evaluation criteria, indicators and measures necessary to establish the “short list” of alternative routes.

3. Evaluation of the “Short List” of Alternative Streetcar Routes and Selection of a Recommended Route

During the third milestone, the TAC and CAG will review and comment on the results of the “net effects analysis” and comparative evaluation of the “short list” of alternative routes. This will include the Recommended Route. The public will have an opportunity to review and comment on this information at the second PIC.



4. Identification of the Preferred Route and Impact Assessment

Following the second PIC, the information obtained from the stakeholders will be used to confirm the Preferred Route. With a Preferred Route, the detailed impact assessment work will be undertaken and the results reported back to the TAC and CAG for review and comment. Once their comments have been incorporated, details of the Preferred Route, including designs, potential effects and recommended mitigation measures, will be presented to the project stakeholders at the third, and final, PIC.

5. Preparation of a Mitigation and Enhancement Plan

Following the selection of a Preferred Route and vetting of the potential effects at the third PIC, the TAC and CAG will each meet one final time to discuss the commitments to mitigation and enhancement.

In support of each milestone, newsletters and brochures will be prepared and distributed to residents and stakeholders, and updates will be prepared for the project web site. Newspaper advertisements and letters will also be prepared for the first three milestones.

The description of key consultation milestones provided above does not preclude changes or additions from occurring during the EA to address unforeseen circumstances. Similarly, the specific consultation elements identified during each milestone may change to accommodate stakeholder or public requests.



10. Other Approvals Required

Other approvals required for each alternative will be identified as appropriate. Also, any further approvals for the preferred undertaking will be identified in the EA. For example, these could include:

- | | |
|-------------------|---|
| Municipal | <ul style="list-style-type: none">▪ City of Toronto Official Plan Amendment and zoning by-law changes.▪ City of Toronto noise by-law amendment/exemption.▪ City of Toronto building permit. |
| Provincial | <ul style="list-style-type: none">▪ Permit to take water (MOE). |
| Federal | <ul style="list-style-type: none">▪ Canadian Transportation Act▪ Railway Act |
| Other | <ul style="list-style-type: none">▪ Utility approvals (phone, gas, hydro, etc.) |

10.1 Canadian Environmental Assessment Act (CEAA)

The proposed undertaking may also be subject to the requirements of the Canadian Environmental Assessment Act (CEAA) if a CEAA trigger is identified. At this point in time, no CEAA triggers have been identified. However, a representative of the Canadian Environmental Assessment Agency has been invited to join the TAC to monitor progress and determine an appropriate course of action if a CEAA trigger arises.

10.1.1 Co-ordinated Provincial / Federal EA Process

If a CEAA trigger is identified, the TTC intends to work in a co-ordinated way with the provincial and federal governments to satisfy both levels of environmental assessment legislation pursuant to the Canada-Ontario Agreement on EA Cooperation (November, 2004).

In order to ensure an effective and efficient coordination of the provincial and federal EA processes, a Project Description document will be prepared in a timely fashion for circulation to the appropriate federal authorities to confirm a trigger under CEAA.



11. Documentation (EA Report and Submission)

An EA Report will be prepared at the conclusion of the EA to document the environmental assessment undertaken in accordance with the approved ToR. At a minimum, the EA Report will provide the following:

- A description of the undertaking.
- A description of the environment potentially affected by the undertaking.
- A description and assessment of the alternative methods of carrying out the undertaking (alternative corridors and alternative streetcar routes), including a description of the advantages and disadvantages to the environment as a result of the alternatives.
- A description of the effects that will be caused or might reasonably be expected to be caused to the environment by the undertaking.
- A description of the recommended mitigation measures that are necessary to prevent or reduce significant adverse effects on the environment.
- A description of the advantages and disadvantages to the environment as a result of the undertaking.
- A description of the consultation undertaken by the TTC in association with the EA.

The EA Report will provide a clear, logical account of the planning process undertaken and the conclusions reached. The EA Report will show how comments received were considered, and provide the rationale for the decisions made.

The final EA Report will be formally submitted to the Minister for review and approval. MOE will then undertake a formal public and agency review process for the EA Report. Copies of the final EA Report will also be made available at the proponent's office, the City of Toronto, community facilities, and on the project website.



Appendix A

Glossary of Terms



Glossary of Terms

Alternative	A well-defined and distinct course of action.
Alternatives To the Undertaking	Feasible and reasonable alternative means of solving an identified problem or addressing an opportunity (e.g., solutions to address the problem/opportunity statement).
Alternative Methods of Carrying Out the Undertaking	Feasible and reasonable alternatives for implementing the preferred solution to the identified problem or opportunity.
Avoidance Measure	Taking actions that aim to prevent the occurrence of negative effects associated with the implementation of an alternative.
Built Form	Any man-made structure(s).
Canadian Environmental Assessment Act	Ensures that the environmental effects of projects are carefully reviewed before federal authorities take action in connection with them so that projects do not cause significant adverse environmental effects.
Compensation Measure	To counterbalance a negative environmental effect through replacement in kind, or provision of a substitute or reimbursement in order to offset or neutralize the negative effect.
Criteria / Criterion	A set of principles or standards used to compare and judge alternatives. (plural = “criteria”, singular = “criterion”)
Enhancement Measure	Taking actions that augment or increase to some degree the positive environmental effects associated with the implementation of an alternative.
Environment	The Environmental Assessment Act defines environment broadly to include: i) air, land or water; ii) plant or animal life, including man; iii) social, economic, and cultural conditions influencing the life of man or community; iv) any building, structure, machine or other device or thing made by man; v) any solid, liquid, gas, odour, heat, sound, vibration, or radiation resulting directly or indirectly from the activities of man; vi) any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.
Environmental Assessment	The purpose of environmental assessment (EA) is to ensure that the environmental effects of a project receive due consideration before the proponent and responsible authorities take actions in connection with the project. It is a planning process that predicts, interprets and evaluates environmental effects, and identifies mitigation and environmental protection measures to reduce, eliminate or compensate for the environmental effects associated with a proposed undertaking.
Environmental Assessment Act	Legislation that defines a decision-making process used to promote good environmental planning by assessing the potential effects of certain activities on the environment. The purpose of the EA Act is to provide for the: <ul style="list-style-type: none">• protection;• conservation; and,• wise management of Ontario’s environment.
Environmental Effect	Any change, whether positive or negative, that an undertaking (project) may cause in the environment.



Evaluation	The process that appraises the advantages and disadvantages of alternatives (see evaluation method).
Evaluation Method	A formal procedure for establishing an order of preference among alternatives.
Factor	A broader category, group or element of the environment used for classifying a given set of criteria.
Higher Order Transit	Consists of corridors through which greater priority is provided to rapid transit (buses, streetcars/LRT and subways) through exclusive transit lanes and signal priority.
Indicator	An aspect of a criterion that characterizes the potential effects on the environment.
Individual EA	Individual Environmental Assessment. An application for approval to proceed with a project or undertaking under the <i>Environmental Assessment Act</i> (EAA) involving a two-step approval process as defined in Section 5(2).
Jog	An abrupt change in direction.
Measure	A basis or standard for comparison. An expression of the potential effects associated with an indicator for a criterion in qualitative and/or quantitative terms.
Mitigation Measure	Action(s) that remove or alleviate to some degree the negative effects associated with the implementation of an alternative. Mitigation measures may include: Avoidance, Compensation, and Enhancement.
Mixed Traffic	Where transit, cars, trucks, motorcycles and bicycles operate together in the same traffic lanes.
MOE	Ministry of the Environment.
Net Effect	The remaining negative or positive effect of an alternative after the application of avoidance/mitigation/compensation/enhancement measures.
Net Effects Analysis	The process of determining and documenting the net effects associated with each indicator for each alternative being considered.
Official Plan	The Official Plan (OP) is a comprehensive framework of goals, objectives, land use designations, and policies that guides the development of a City over a set period of time.
Ontario Heritage Act	Gives municipalities and the provincial government powers to preserve the heritage of Ontario. The primary focus of the <i>Act</i> is the protection of heritage buildings and archaeological sites.
Planning Act	The purposes of this Act are, <ol style="list-style-type: none">to promote sustainable economic development in a healthy natural environment within the policy and by the means provided under this Act;to provide for a land use planning system led by provincial policy;to integrate matters of provincial interest in provincial and municipal planning decisions;to provide for planning processes that are fair by making them open, accessible, timely and efficient;to encourage co-operation and co-ordination among various interests;to recognize the decision-making authority and accountability of municipal councils in planning.
Potential Effect	An effect that is deemed possible to result from the implementation of a particular alternative.
Proponent	The person or organization that puts forward a proposition or proposal.



Provincial Policy Statement	The Provincial Policy Statement (PPS) is issued under the authority of Section 3 of the <i>Planning Act</i> . It provides direction on matters of provincial interest related to land use planning and development, and promotes the provincial “policy-led” planning system.
Rank	Of a specified order or position in relation to others in a series.
Ranking	To arrange (alternatives) according to their rank.
Reasoned Argument / Trade-off Method	A comparative evaluation method based on net effects / advantages and disadvantages and explained in narrative terms (rationale). The process of examining the net effects and key trade-offs of each alternative in order to provide a clear rationale for the preferred alternative.
Replicable	Refers to evaluation methods that are sufficiently unambiguous such that the same or equivalent results would be obtained by the application of the method by different users.
Screening	Process of applying screening criteria/criterion to alternatives and eliminating those that do not meet minimum conditions or categorical requirements from further consideration.
Screening Criteria/Criterion	A set of minimum conditions or categorical requirements that an alternative must satisfy in order to be carried forward for further consideration.
Terms of Reference	The first step in an application for approval to proceed with a project or undertaking under the <i>Environmental Assessment Act</i> (EAA) is the submission of a Terms of Reference (ToR) for the Environmental Assessment (EA). Public and agency consultation is required on the preparation and submission of the ToR to the Ministry of the Environment. Approval is required by the Minister of the Environment. If approved, the ToR provides a framework / work plan for the EA.
Traceability	The characteristic of an evaluation process that enables its implementation to be followed with ease.
Trade-offs	A balancing of attributes, all of which are not attainable at the same time. Giving up of one thing in return for another.
Transportation Network	A system of roads and transit lines to provide for the mobility of people and goods.
Travel Demand Forecasting	Used to predict how travel demand will evolve based on specific criteria, such as population and employment information.
Undertaking	An enterprise or activity, or a proposal, plan or program in respect of a commercial or business enterprise or activity of a person or persons that has potential environmental effects and is carried out in accordance with the requirements of the EA Act.
WWLRT EA	Waterfront West Light Rail Transit Environmental Assessment. An Individual Environmental Assessment study undertaken by the TTC and the City of Toronto to improve transportation between downtown Toronto and south Etobicoke. The final report was completed in 1993 and the project received approval from the Ministry of the Environment in 1995.



Appendix B

List of References



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