

Waterfront West Light Rail Transit

ENVIRONMENTAL ASSESSMENT REPORT EXECUTIVE SUMMARY

AUGUST 1993



RAPID TRANSIT
EXPANSION PROGRAM



 **Ontario**

DS-Lea Associates Ltd.



OVERVIEW

The Waterfront West Light Rail Transit project (WWLRT) would improve the transportation system along the waterfront between downtown Toronto and south Etobicoke in an environmentally acceptable manner. This was the conclusion reached in an Environmental Assessment (EA) of the WWLRT carried out by Metropolitan Toronto and the Toronto Transit Commission (TTC) according to the requirements of the Environmental Assessment Act. The results of this EA indicate that additions to the transit system in the waterfront corridor are needed to satisfy existing and future travel demands.

The short term improvements consist of an extension to the Harbourfront light rail transit (HLRT) line from Spadina Ave. to the north side of Dufferin Gate and improvements to the existing streetcar line from the Humber Loop to a new terminus at Legion Rd. in south Etobicoke. Streetcars would operate in protected rights-of-way largely separated from other road traffic. These two improvements, which comprise the "**undertaking**", would enhance public accessibility to many of the recreation and cultural facilities located along the waterfront and would improve transit service for existing residents and businesses along Harbourfront, as well as the redevelopment areas in southeast Etobicoke. This would encourage greater use of transit in the study area.

Based on long term travel demand forecasts in the study area, and recognizing the operating

speed and capacity constraints of an extension to the HLRT line, this EA also concludes that a higher speed/higher capacity transit line between downtown Toronto and Roncesvalles Avenue would be required in the longer term in the Front Street/railway corridor. Along with some minor upgrading of the existing streetcar line along The Queensway, such a line would significantly reduce travel times from south Etobicoke to downtown Toronto. This would encourage even more people to use public transit and reduce dependence on the automobile.

These short and long term improvements form the components of a concept plan for the study area. In this EA, Metro and the TTC are seeking approval to construct the short term undertaking and endorsement for the concept plan as a whole.

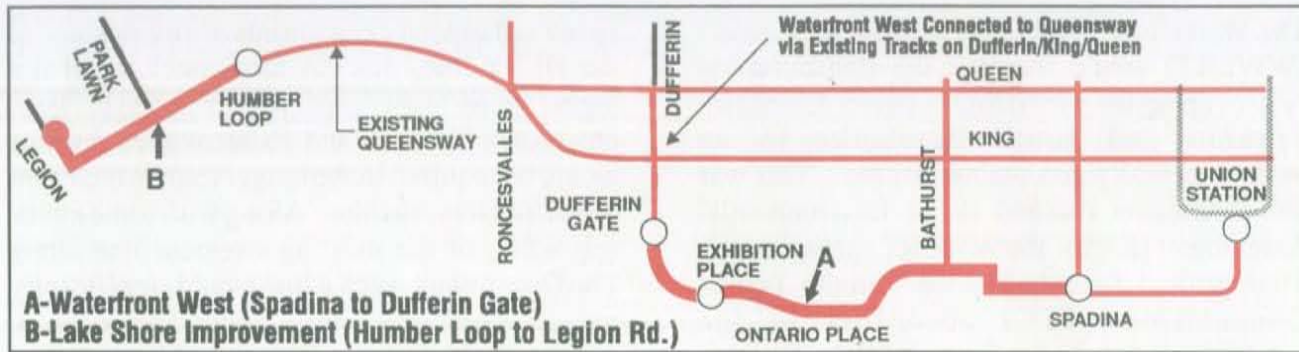
Throughout the study the project team worked closely with many public agencies (e.g. Exhibition Place, Ontario Place, Waterfront Regeneration Trust) and requested the public's participation to identify transit improvements which would best satisfy the needs of specific interests in the study area as well as the concerns of the general public.

This Executive Summary highlights the key findings of the EA study and is structured according to the requirements of the EA Act. Details concerning the existing transportation system, the need for improvements, the identification and evaluation of alternatives and environmental concerns are presented in the full EA report.

Table of Contents

- E1: The Proposed Undertaking and Longer Term Plan
- E2: The Purpose of the Undertaking
- E3: Objectives
- E4: Alternatives to the Undertaking
- E5: Alternative Methods of Carrying Out the Undertaking
- E6: Description of the Undertaking
- E7: Potential Environmental Impacts and Mitigation Measures
- E8: Consultation With Affected Parties
- E9: Related Studies and Projects

E1: THE PROPOSED UNDERTAKING AND LONGER TERM PLAN



Proposed Undertaking

The Undertaking

A Waterfront-West LRT Extension

The 4 km extension of the Harbourfront LRT from Spadina to the Dufferin Gate. (Capital cost: \$138 million, excluding property and rolling stock)

B Humber Loop - Legion Rd. Improvements

The 1.4 km improvement of the existing streetcar line from the Humber Loop to Legion Rd. (Capital cost: \$16 million, excluding property and rolling stock)

The Technology

It is proposed to operate streetcars on the WWLRT line which would allow the WWLRT line to be interconnected with other streetcar lines. As the existing fleet ages, it will be replaced with low floor, wheelchair accessible streetcars. Stations would be designed to accommodate both types of vehicles.



Existing Streetcar



Low Floor Streetcar

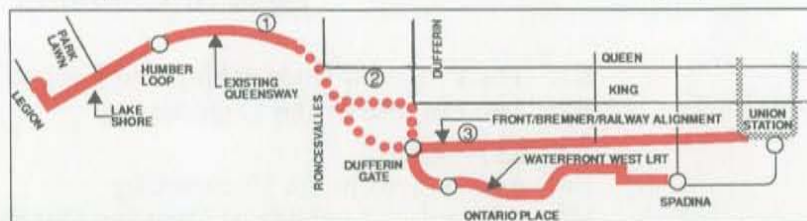


Low Floor Access

The Longer Term Plan

For the longer term transit plan, the following improvements and new transit lines are proposed:

1 Upgrade the existing Queensway tracks (3.1 km) and transit stops and install priority traffic signals for streetcars at intersections.



Longer Term Plan

2 Construct a new rapid transit line between Roncesvalles Ave. and Dufferin Gate, either along the railway corridor (2 km) or below grade on Dufferin St. and King St. (2.2 km).

3 Construct a new 3.5 km rapid transit line along the Front St. or Bremner Blvd./Railway corridor between the Dufferin Gate and the downtown.

Rapid Transit Expansion Program

The WWLRT is one of the rapid transit initiatives announced in April 1990 by the Government of Ontario to expand rapid transit systems serving the GTA.

The WWLRT study area extends from Yonge St. to south Etobicoke and from the Bloor-Danforth subway to Lake Ontario in the City of Toronto and the City of Etobicoke.



Rapid Transit Expansion Program Map

E2: THE PURPOSE OF THE UNDERTAKING

The undertaking and the other components of the concept plan are designed to help overcome existing and future deficiencies in the study area transportation system. Most of the recreation and cultural facilities along the waterfront suffer from poor transit accessibility. For example, most facilities are located far from existing transit services; access by transit from Union Station and south Etobicoke is indirect; streetcars are often filled to capacity during large crowd events; and, it is difficult to move easily by transit from one part of the waterfront to another.

The Gardiner Expressway and Lake Shore Blvd. are important elements of the Metropolitan Toronto transportation system. However, during weekday peak periods, the main east-west roads in the corridor are operating at, or near, capacity. In spite of this congestion, the percentage of people travelling by transit between south Etobicoke and downtown Toronto is one of the lowest in Metro for the following reasons:

- Transit operating speeds between Roncesvalles and downtown Toronto are very low;
- Headways are often irregular;
- Transfers at the Humber Loop are inconvenient; and
- There is no direct transit service from south Etobicoke to employment opportunities south of King St.

As population and employment levels in the study area increase, these conditions will worsen, unless transit availability and efficiency is improved.

In summary, when compared to the convenience of car travel there is little incentive to use transit in this corridor. Unless transit becomes more competitive, continued dependence on the automobile will inhibit the redevelopment of the waterfront and the creation of additional public open space.



Harbourfront and Downtown



Exhibition Place/Ontario Place



South Etobicoke & Humber Bay Park



Recreational and Cultural Facilities in Study Corridor

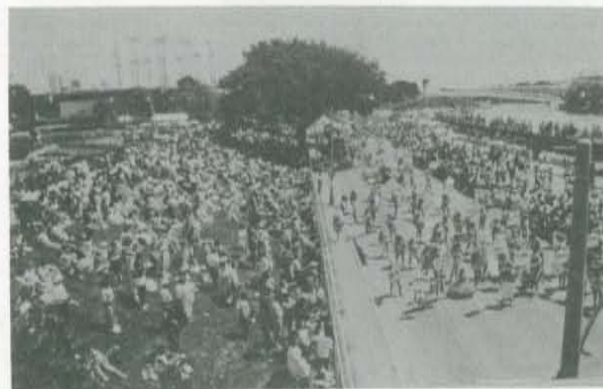
E3: OBJECTIVES

The two primary objectives shown opposite were formulated to address the deficiencies in the study area transportation system. Improvements to the waterfront transportation system should be designed to achieve these objectives by:

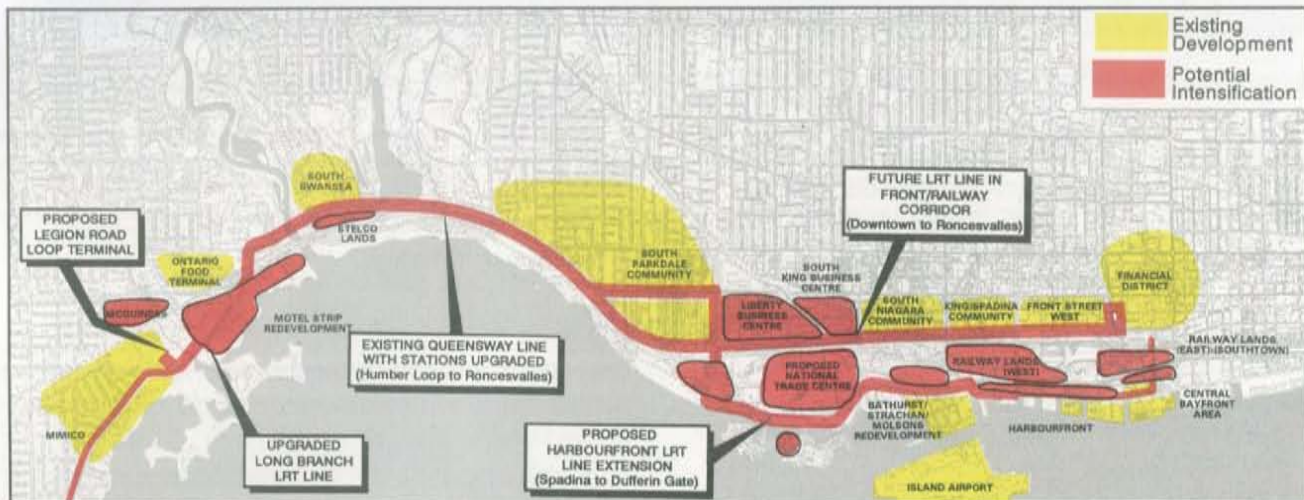
- Providing a continuous east-west transit service linking recreation and cultural facilities and development nodes in the study area;
- Improving the integration of the regional and local transit systems;
- Reducing walking distances to transit stops;
- Reducing transit travel times between south Etobicoke and downtown Toronto;
- Improving the reliability of transit service;
- Providing adequate transit capacity to meet travel demands during peak periods;
- Encouraging development to concentrate in areas compatible with land use plans and policies currently being formulated.

PRIMARY STUDY OBJECTIVES

OBJECTIVE	EXAMPLES OF BENEFITS
1. Provide an enhanced level of public accessibility to recreational and cultural facilities along the waterfront.	<ul style="list-style-type: none"> • Improved year round access to: <ul style="list-style-type: none"> • Ontario Place. • Exhibition Place. • Fort York. • Waterfront / Martin Goodman Trail. • Harbourfront. • Humber Bay Amenity Areas.
2. Provide improved transportation facilities to support existing and future development nodes in the corridor.	<ul style="list-style-type: none"> • Interconnections with regional transit facilities (subway and GO systems). • Improved speed and reliability of transit service to: <ul style="list-style-type: none"> • South Etobicoke including Motel Strip and Mimico/Park Lawn Gateway. • Proposed National Trade Centre at Exhibition Place. • Bathurst/Strachan Redevelopment Area. • Railway Lands Redevelopment.



The Waterfront is a gathering place for celebrations, entertainment and simple pleasures associated with the meeting of land and water.



Urban Development Opportunities and Existing Communities in Study Corridor

OTHER STUDY OBJECTIVES

OBJECTIVE	EXAMPLES OF BENEFITS
3. Assist in achieving urban design policies for development nodes along the waterfront.	<ul style="list-style-type: none"> • Compact pedestrian oriented development. • Reduced need for extensive new roads and parking. • Reduced walking distance to transit stops. • Achieve compatibility between transit system and pedestrian environment.
4. Improve the quality of the environment by encouraging higher transit use to reduce dependence on the automobile.	<ul style="list-style-type: none"> • Reduced demands for surface parking. • Increased potential for public open space. • Reduced air and noise pollution by decreasing automobile traffic.
5. Provide a transportation system which is cost effective.	<ul style="list-style-type: none"> • Satisfy travel demands by developing a system which is flexible, affordable and maximizes the use of existing infrastructure.

The two primary objectives were supplemented by three other objectives as shown opposite to ensure that improvements to the transportation system will:

- Promote compact, pedestrian-oriented developments by reducing the need for extensive new roads and surface parking.
- Enhance and preserve those features of the natural environment which attract people to the waterfront in the first place.
- Achieve the objectives of this EA in a cost effective manner.

The WWLRT project would provide a catalyst and a linear framework to help achieve the planning, social, environmental and economic objectives in the study area. The degree of achievement may, however, depend on the cooperation of the agencies which have some jurisdiction or interests in the study area and their willingness to undertake other projects to complement the implementation of the WWLRT short and long term plan.



Current dependence and domination of the automobile at Exhibition Place/Ontario Place

E4: ALTERNATIVES TO THE UNDERTAKING

In accordance with the requirements of the EA Act, a three step process for the WWLRT EA was established to evaluate alternatives to the undertaking and the other components of the longer term concept plan. These steps include evaluations of:

- Alternatives "which fulfil the purpose of the undertaking in functionally different ways";
- Potential rapid transit corridors;
- Alternative rapid transit technologies.

**Step 1
Evaluation of
Functionally Different Alternatives**

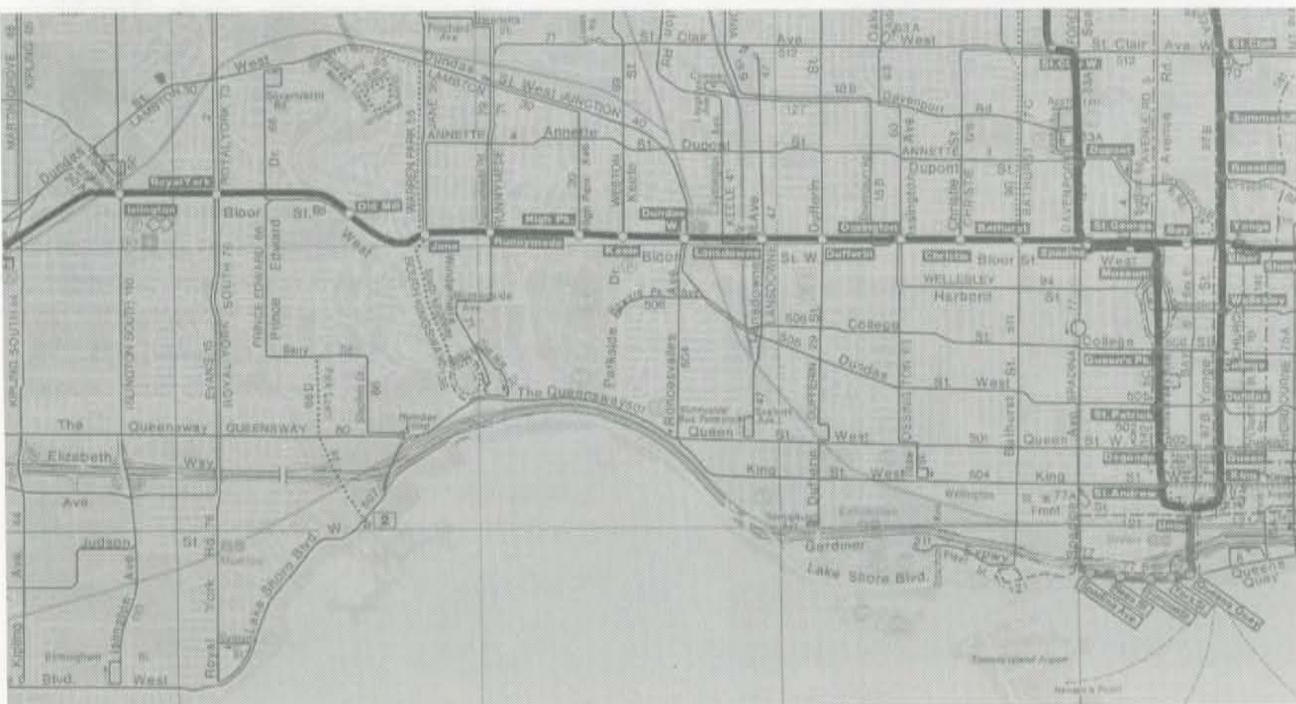
The purpose of this step was to screen or eliminate those alternatives which clearly would not meet the project objectives. In this way, subsequent evaluations could focus on a more manageable range of alternatives in progressively greater levels of detail.

The project objectives concerning urban design and cost effectiveness were not considered applicable to this level of evaluation. The three

project objectives used to screen functionally different alternatives are shown in the table opposite.

The results of the screening for each alternative are summarized below:

- **Do Nothing:** Operational improvements would not improve significantly accessibility to recreation facilities or emerging development nodes located along the waterfront. Moreover, it is unlikely that the existing transportation system would be able to support the development forecasts for the study area. Consequently, there would be no reduction in dependence on the automobile and, as a result, no improvement to the natural environment.
- **Improve Existing Bus/Streetcar Services:** These measures alone would not be sufficient to improve the level of service to meet peak demands, nor to induce a sufficient shift from automobile to transit use. Although they may be required to meet changes in local demands, their benefits to the natural and built environment would be limited.



Transportation Facilities in Study Corridor

Objective Alternative	Improve public accessibility to recreation & cultural facilities		Improve transportation facilities to support existing & future development nodes		Improve quality of environment by reducing auto use		OVERALL RATING	
Do-Nothing	POOR	•	POOR	•	POOR	•	POOR	•
Improve existing TTC services	POOR-MODERATE	•	POOR-MODERATE	•	POOR-MODERATE	•	POOR-MODERATE	•
Introduce new rapid transit line(s)	GOOD	●	GOOD	●	GOOD	●	GOOD	●
Improve Lakeshore West GO services	POOR-MODERATE	•	MODERATE-GOOD	●	MODERATE-GOOD	●	MODERATE	•
Reduce travel demands	POOR	•	MODERATE	●	POOR-MODERATE	•	POOR-MODERATE	•
Create HOV lanes	POOR	•	MODERATE	●	POOR-MODERATE	•	POOR-MODERATE	•
Widen existing roads	POOR-MODERATE	•	MODERATE	●	POOR	•	POOR-MODERATE	•
Construct new roads	MODERATE-GOOD	●	MODERATE-GOOD	●	POOR	•	MODERATE	•

Alternatives and their Potential to Attain Corridor Objectives

- **Introduce New Rapid Transit Lines:** This alternative has the potential to improve the level of transit service to the point where it serves as an attractive alternative to automobile travel, thereby satisfying environmental concerns and land use plans and policies.
- **Improve GO Transit Services:** This would increase the level of service to the downtown core for commuters and to special events at Exhibition Place. However, there would be relatively little enhancement in accessibility to other destinations in the study area unless combined with other transit improvements.
- **Reduce Travel Demands:** Measures to reduce travel demand (e.g. increasing the housing stock in downtown Toronto) would not improve accessibility to recreation facilities along the waterfront and, unless combined with other measures, would not be sufficient to meet the potential demand for commuting to downtown Toronto.
- **Create HOV Lanes:** HOV lanes may persuade some commuters to switch to transit and may increase vehicle occupancy rates; however,

they are very unlikely to have a measurable effect on recreation travel.

- **Widen Existing Roads and Construct New Roads:** Within the study area, some changes to the road network are being assessed (e.g. Front St. extension, Bremner Blvd.) However, road improvements on their own would not satisfy the total travel demand and do not encourage transit use.

It is recognized that, except for the "do nothing" option, each of these alternatives can help to meet the needs of the study area. However, only those combinations which include rapid transit best satisfy the project objectives.

Introducing new rapid transit lines in the study area rates the highest for each of the three objectives used to evaluate functionally different ways of achieving the objectives of this EA. Therefore it was concluded that the rapid transit alternative be carried forward to the next level of evaluation in the EA process. This should not preclude other agencies from pursuing some, or all, of the other initiatives.

Step 2
Evaluation of Alternative Corridors

The following rapid transit corridors were evaluated in terms of their potential to improve transportation service and support land use plans and policies for the study area:

- Lake Shore Blvd.
- Front/Bremner/Railway
- King St.
- Queen St.

The results of the evaluation indicate that a transit line near the water's edge enhances accessibility to most of the recreation and cultural facilities along the waterfront better than any of the other corridors.

On the other hand, this waterfront line would not be able to satisfy the long term (20+ years)

commuter travel demands forecast for the entire corridor. Because the land uses which create the greatest demands are concentrated north of Harbourfront, a transit line along Front St. (or Bremner Blvd.) and the railway corridor may be required in the long term to serve the development nodes in the northern part of the study area. This would also improve access to those recreation and cultural facilities not served as conveniently by a line immediately adjacent to the lake.

In conclusion, a relatively low cost LRT route along the lake shore is required in the short term. In addition, an alignment in the Front St. (or Bremner Blvd.)/Railway corridor should be protected for an LRT line which could be constructed in the longer term as new development occurs in the study area. The selection of an alignment would be subject to a separate EA.



Existing Peak Hour Transit Travel Demands



Future (2011+) Peak Hour Transit Travel Demands



Long Term Concept Plan

Step 3 Evaluation of Alternative Rapid Transit Technologies

Various types of rapid transit technology were assessed against specific criteria. One of the primary requirements of the transit system in the study area is to interconnect with the regional transit network (subways and GO Transit) and existing bus and streetcar routes. This is important, since the transit system has to respond to the large fluctuations in travel demand generated by facilities and events along the waterfront. Secondly, to maximize convenience to transit users, a continuous east-west system through the study area is desired.

Most of the existing transit network in the study area consists of streetcar lines. Streetcars are an important component of the TTC's service and are generally well received by the public in terms of transit service and environmental acceptance. It was concluded that there was little to be gained in terms of transit level of service by replacing the existing streetcar network with a system of bus lanes. Furthermore, to offset the air and noise emissions produced by diesel buses, it would be necessary to convert from diesel to electrically powered trolley buses. Consequently, it was considered more appropriate to expand the existing streetcar network.

With subway trains and RT vehicles, opportunities to interline streetcars from other routes would be lost. Secondly, these types of systems are almost always elevated or underground which is not considered compatible or cost effective with a recreation oriented route along the waterfront. For these reasons, a combination of low floor, wheelchair accessible vehicles and existing streetcars is proposed for the WWLRT line, for both the short term undertaking and the longer term plan.



Subway



Scarborough RT



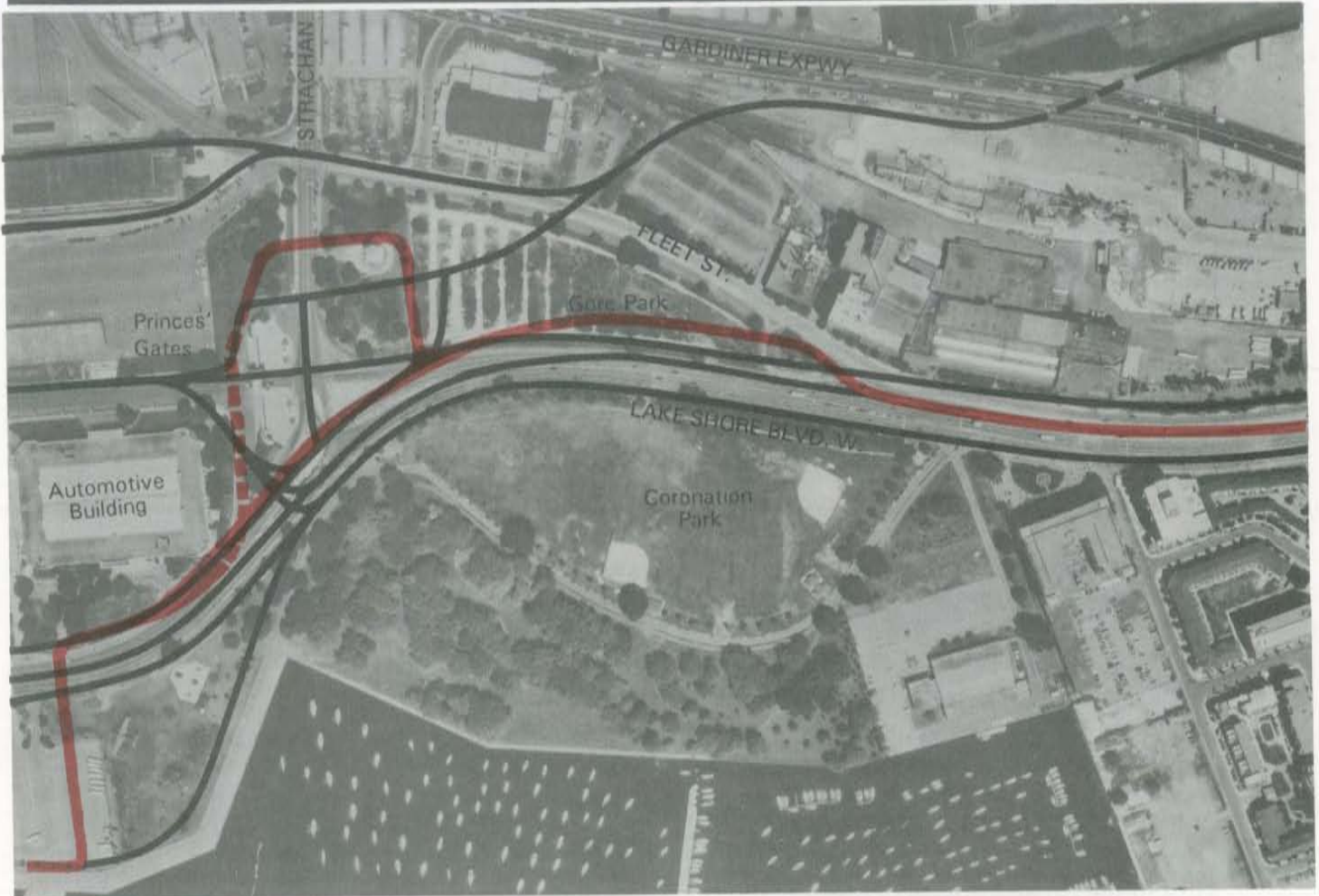
Articulated Low Floor Streetcar



Articulated Streetcar (ALRV)



Articulated Bus

E5: ALTERNATIVE METHODS OF CARRYING OUT THE UNDERTAKING***Spadina Ave. to Princes' Gates***

This part of the corridor was split into two sections: Spadina Ave. to Bathurst St. and Bathurst St. to Princes' Gates.

Spadina Ave. to Bathurst St.

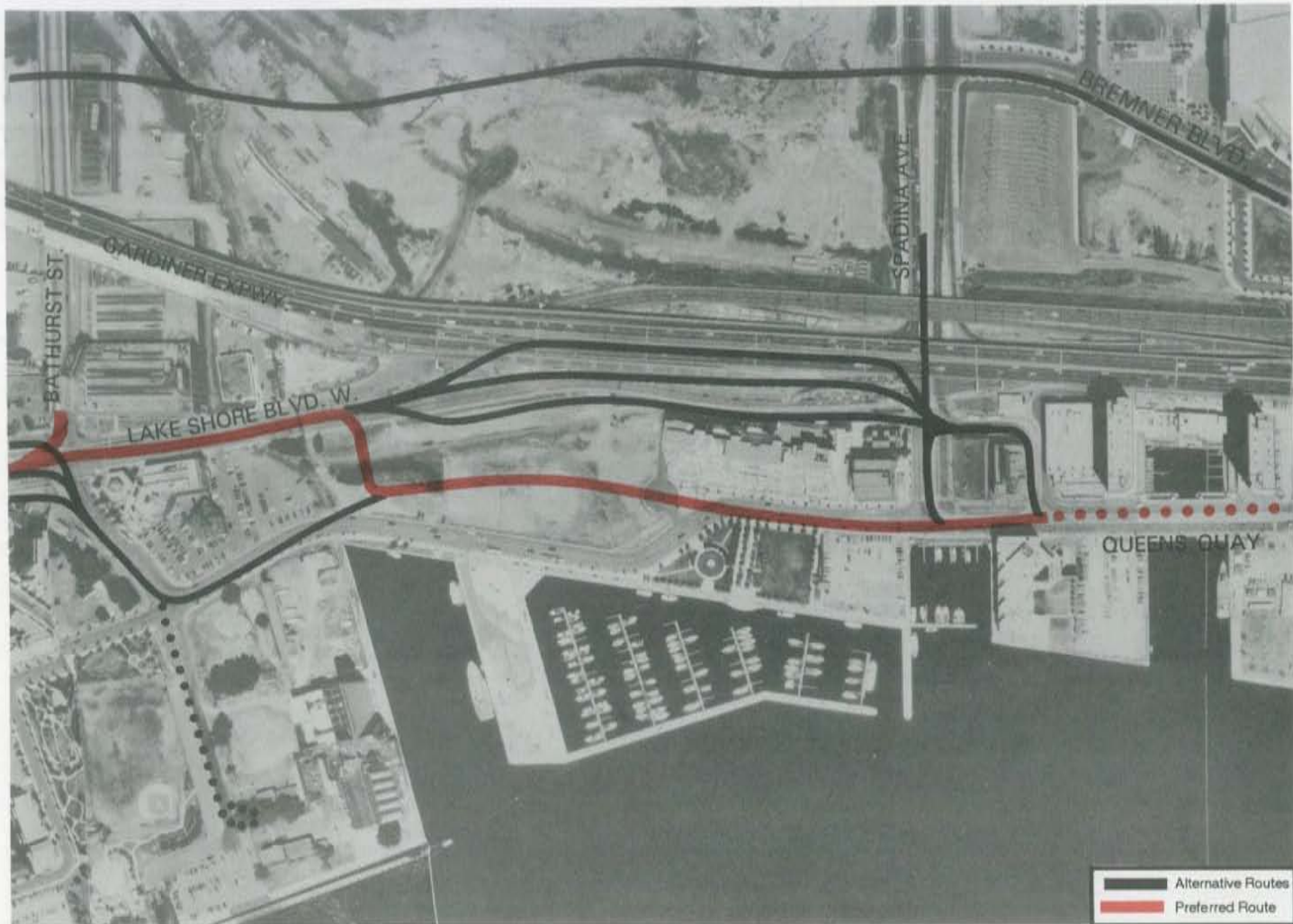
The following alignments were evaluated for the westerly extension of the HLRT line from its present terminus at the foot of Spadina Ave.:

- In the centre of a realigned Queens Quay;
- Along Queens Quay and up Portland St. (a new street) and then westerly along a centre median on Lake Shore Blvd.;
- Along the south side of Lake Shore Blvd.;
- Immediately south of the Gardiner Expwy., or beneath the Gardiner, and then along Lake Shore Blvd. in a new centre median.

The alignments along Queens Quay were preferred because they would provide the most direct service to buildings and public open space along the waterfront. The alignments to the rear of the buildings, alongside or under the Gardiner Expressway did not satisfy urban design and safety criteria.

Of the two alignments along Queens Quay it was found that the Queens Quay/Portland/Lake Shore option provides the best trade-off between capital cost, impacts on transit and road traffic operations (particularly at the Lake Shore/Bathurst intersection), rider enjoyment and transit passengers' personal safety.

Modifications to the cross-section for Queens Quay are being proposed to improve street landscaping and to reduce conflicts for pedestrians crossing Queens Quay (page ES-19).



Bathurst St. to Princes' Gates

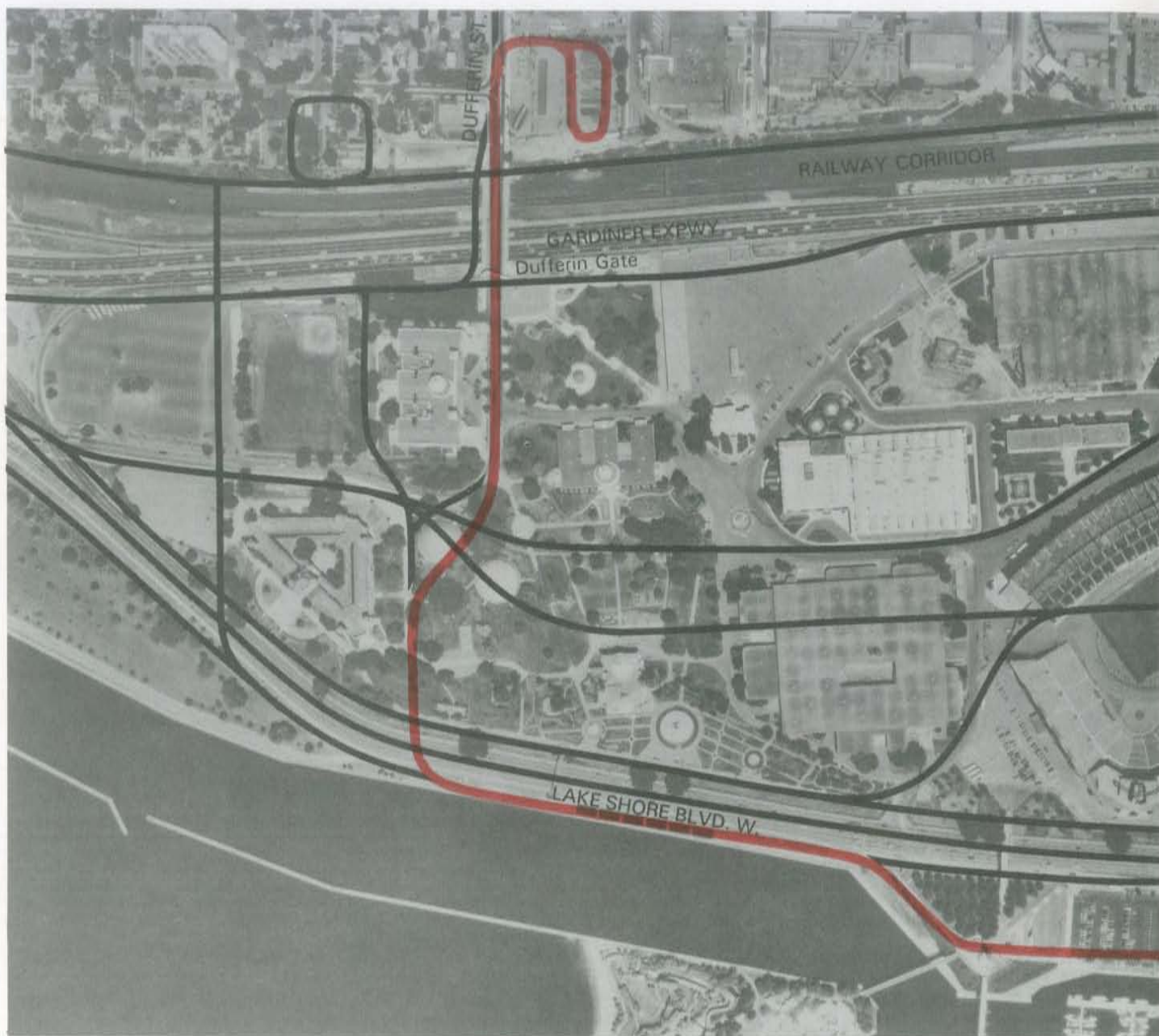
The road system in this section is complex, with Lake Shore Blvd. and Fleet St. running parallel to each other along the Molson Brewery frontage. Traffic volumes can be very heavy, particularly when there are large crowd events at Exhibition Place or when there are accidents or construction on the Gardiner Expressway which cause traffic to be diverted onto Lake Shore Blvd.

The following alignments were considered:

- The south side of Lake Shore Blvd.;
- In the middle of Lake Shore with either Fleet St. in its present configuration or consolidated with Lake Shore Blvd.;
- The north side of Lake Shore Blvd.;
- The proposed extension of Bremner Blvd.;
- Either underground at major intersections or taken fully below grade.

The preferred alignment is in a reconfigured centre landscaped median in Lake Shore Blvd. in the Lake Shore Blvd./Fleet St. right-of-way. This option achieves the best balance between transit and traffic service, urban design, land use compatibility and construction costs. Although the vehicular capacity of Lake Shore Blvd. would decrease, which would increase traffic congestion in the future, overall person carrying capacity (road and transit) of Lake Shore Blvd. is greatly enhanced.

If the other planned road improvements, such as the extensions of Bremner Blvd. and Front St. are not to be implemented, an alternative design to improve traffic flow through the Bathurst/Lake Shore/Fleet intersection may be required.



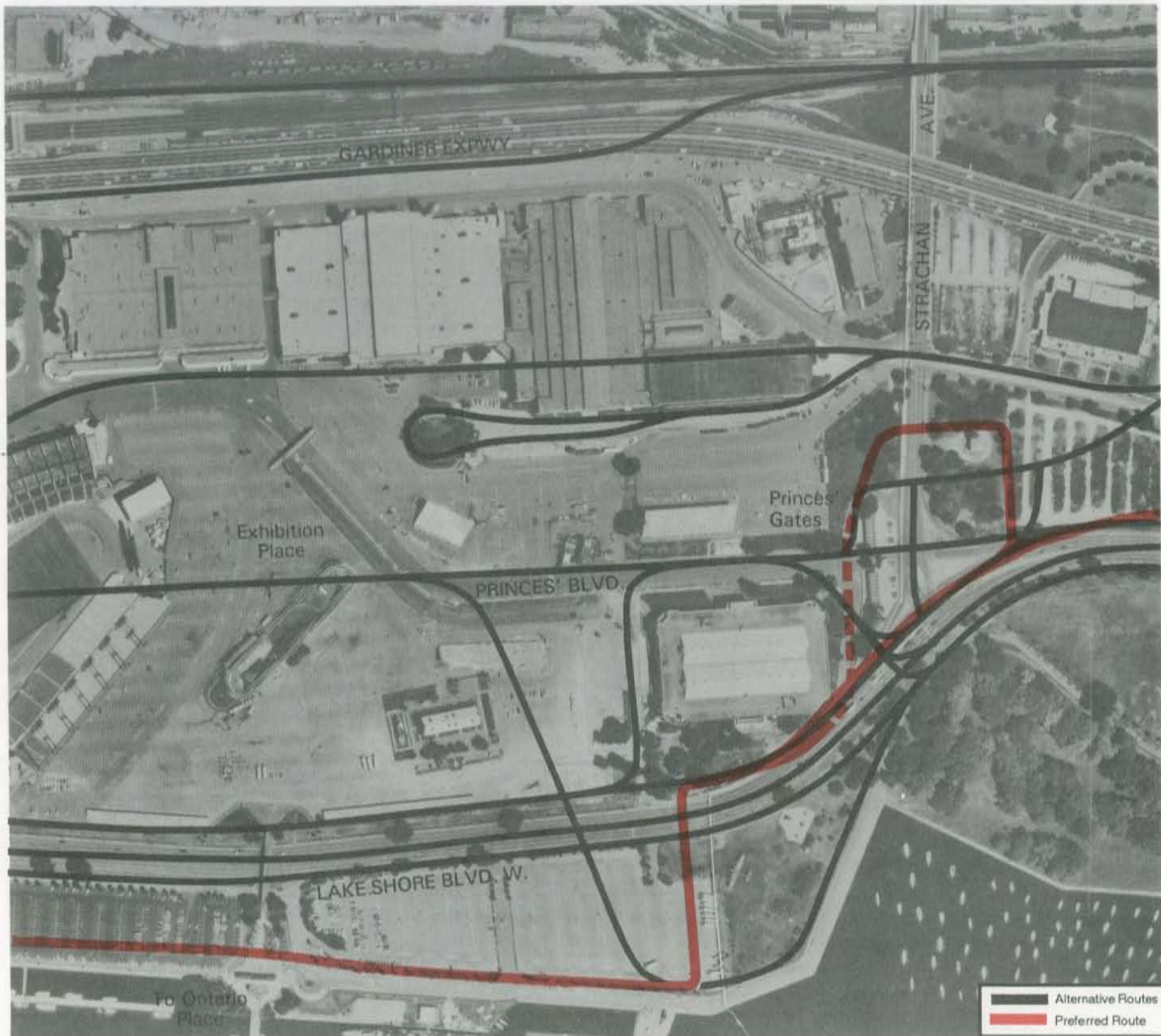
Princes' Gates to Dufferin Gate

The section of the line providing direct service to Exhibition Place and Ontario Place has been the subject of considerable review.

Several alignments through the eastern part of Exhibition Place were considered. An at grade transit line could not function efficiently during large crowd events and would probably have to be closed to secure the grounds. Below and above grade alignments were deemed unacceptable because of aesthetic, cost and functional considerations.

Rather than providing a single transit line to serve Exhibition Place, the study objectives could be better achieved by constructing one line in the short term along Lake Shore Blvd. to serve both Exhibition Place and Ontario Place. In the longer term, a second line could be constructed on the north side of Exhibition Place in the Front St./Railway Corridor.

In the evaluation of at grade alignments along the south side of Exhibition Place, the traffic impacts associated with a streetcar line crossing Lake Shore Blvd. were traded off with the desire to take passengers close to major points of entry to



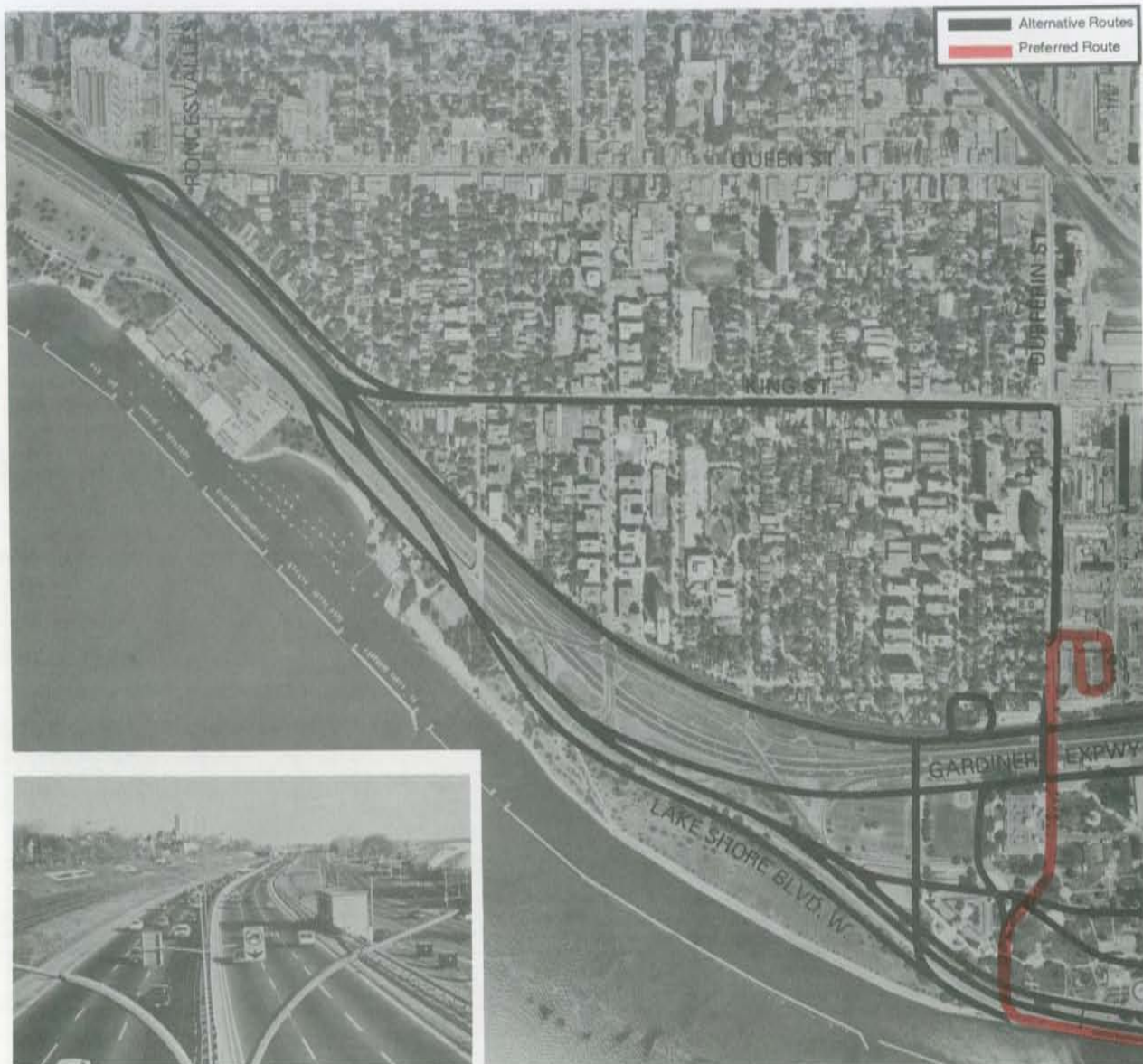
Exhibition Place and Ontario Place, to enhance the open space and urban form along the waterfront, and to help create uniquely identifiable places and points of reference for visitors.

Consideration was also given to placing the line in the slope on the north side of Lake Shore Blvd. However, since this terrace is an important area for viewing waterfront events, such as air shows, Indy racing and fireworks, it was screened out.

After much consultation with Exhibition Place,

it was agreed that from Ontario Place to the Dufferin Gate an at grade alignment to the east of the Ontario Government and Arts, Crafts and Hobbies buildings was preferred to minimize capital costs. As outlined on page ES-23, measures could be taken to minimize LRT/pedestrian conflicts.

The line, and its stations, should also be located a sufficient distance from major attractions so that visitors to large crowd events can assemble and disperse safely.



Lake Shore Blvd. / Railway Corridor

Exhibition Place to Roncesvalles Ave.

It is recommended that streetcars on the waterfront line operate in the short term in mixed traffic on the existing tracks on Dufferin St. and King St. to connect with the tracks on The Queensway.

Due to the lack of space between the lake and Parkdale, the cost of constructing an LRT line between the west end of Exhibition Place and The Queensway could exceed \$100 million. This expenditure would not significantly reduce travel time between Roncesvalles and downtown Toronto via the waterfront.

Therefore, it is not considered cost effective to construct an LRT in this section unless it is constructed as part of a new transit line along the Front St./Railway corridor between the downtown and The Queensway.

There are two long term preferred alternative alignments between Dufferin and Roncesvalles:

1. Along the north side of the railway tracks;
2. Below grade on Dufferin St. and King St.

These and other alignments would be evaluated when it is considered timely to implement the longer term concept plan.



Interlining streetcar routes along the Waterfront



Interlining streetcar routes will disperse crowds in several directions from the waterfront.

Interlining of Streetcars

The transit system along the waterfront should be designed to handle a variety of events with attendance ranging from small crowds typical of the winter, up to 100,000 people watching, for example, a fireworks display or attending a major sporting event. The transit system should have the flexibility to adjust its capacity and service levels in response to changes in attendance levels. The proposed design of the WWLRT addresses this requirement in terms of right-of-way exclusivity, spacious stations and bypass capabilities.

With the construction of a continuous transit line from Spadina Avenue to Dufferin Gate, it would be possible to interline the Harbourfront, Spadina, Bathurst, Roncesvalles/King and Queen/Queensway streetcars down to and along the waterfront. This would create the opportunity to provide direct streetcar service from four subway stations to and from the waterfront.

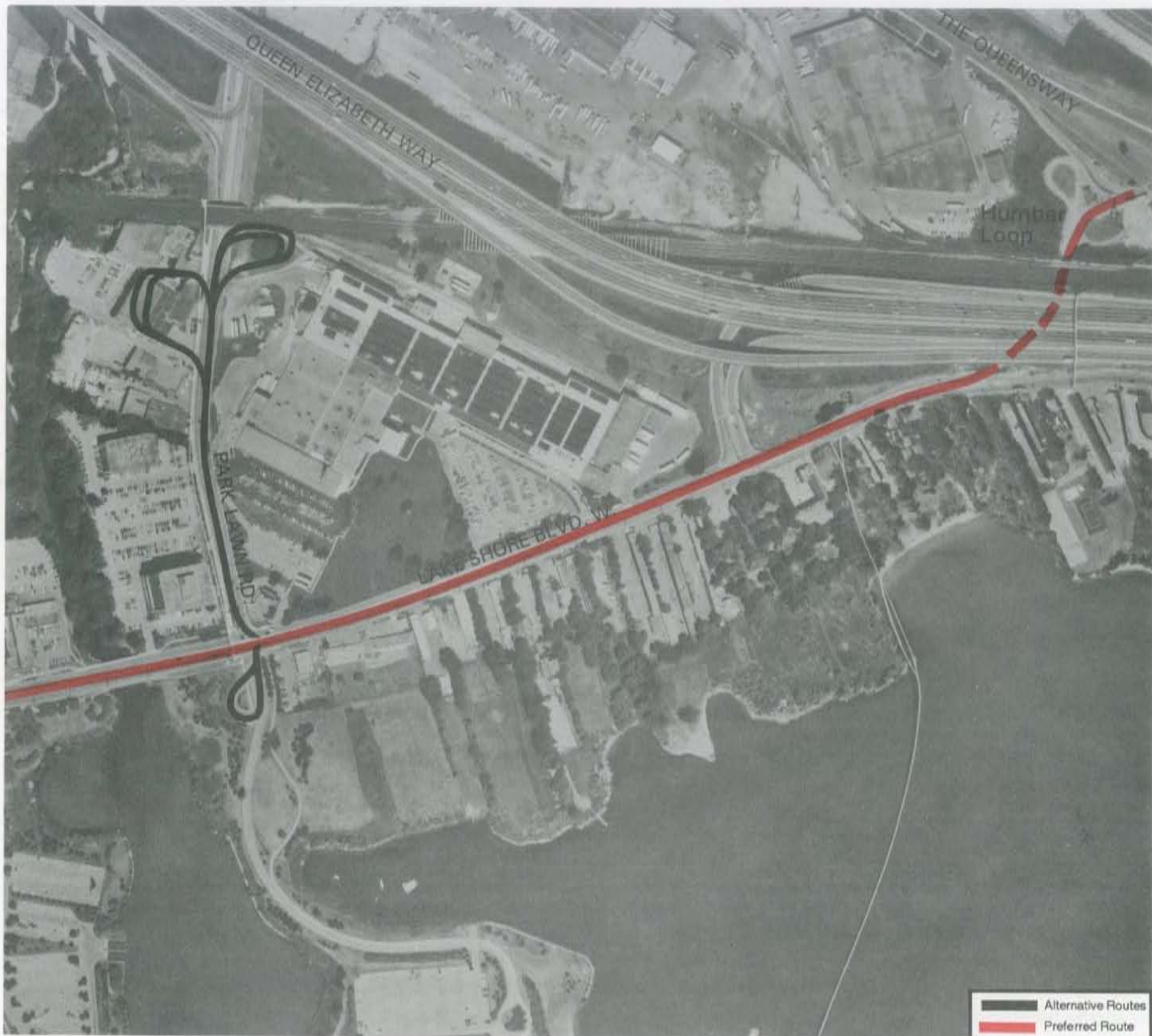
With this configuration, the capacity of the transit system would not be limited to the capacity of a single line.



Humber Loop to Legion Road

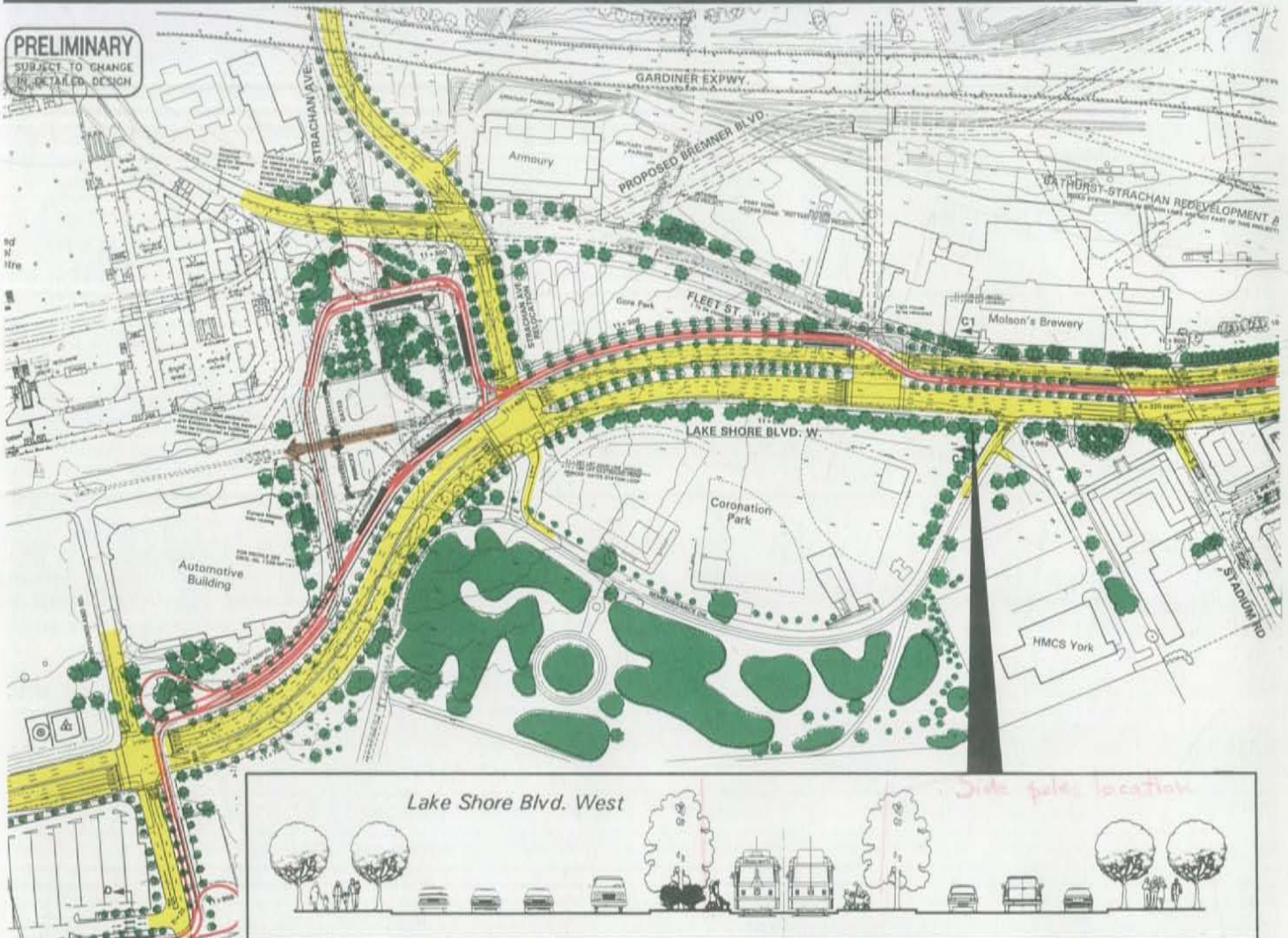
Most of the Queen streetcars now terminate at the Humber Loop and passengers must transfer to the Long Branch line which operates in mixed traffic along Lake Shore Blvd. to the Etobicoke/Mississauga boundary. To transit users, the transfer between these two lines is an inconvenience. This condition will worsen as travel demands in the area increase with planned development in southeast Etobicoke. Therefore an extension of the "LRT" service from The Queensway into southeast Etobicoke is desired.

The area in the vicinity of Park Lawn Rd. is designated an "Intermediate Centre" in Metro's draft Official Plan (Etobicoke-Park Lawn) and generally coincides with the Park Lawn Rd. / Q.E.W. Secondary Centre designated in Etobicoke's Official Plan. There are proposals for residential development which could increase the population in this area by 9,000 people. Therefore, improved service is required to encourage higher transit use.



Several alignment and loop location options were evaluated. The proposed extension of the WWLRT to a new loop at Legion Road was selected for the following reasons:

- The proposed right-of-way for Lake Shore Blvd. westerly to Legion Road is wide enough to accommodate a separate LRT line in a raised median. Beyond Legion Road, the right-of-way is too narrow to provide a separate LRT line because the existing buildings are located close to the roadway and widening would be very disruptive.
- Service could be extended from a loop on Legion Road to a new GO station to the north, in the event that the existing GO station at Royal York Rd. is relocated.
- The loop would be within easy walking distance of existing and future high density residential land uses and employment opportunities in southeast Etobicoke.

E6: DESCRIPTION OF THE UNDERTAKING**Spadina Avenue to Princes' Gates**

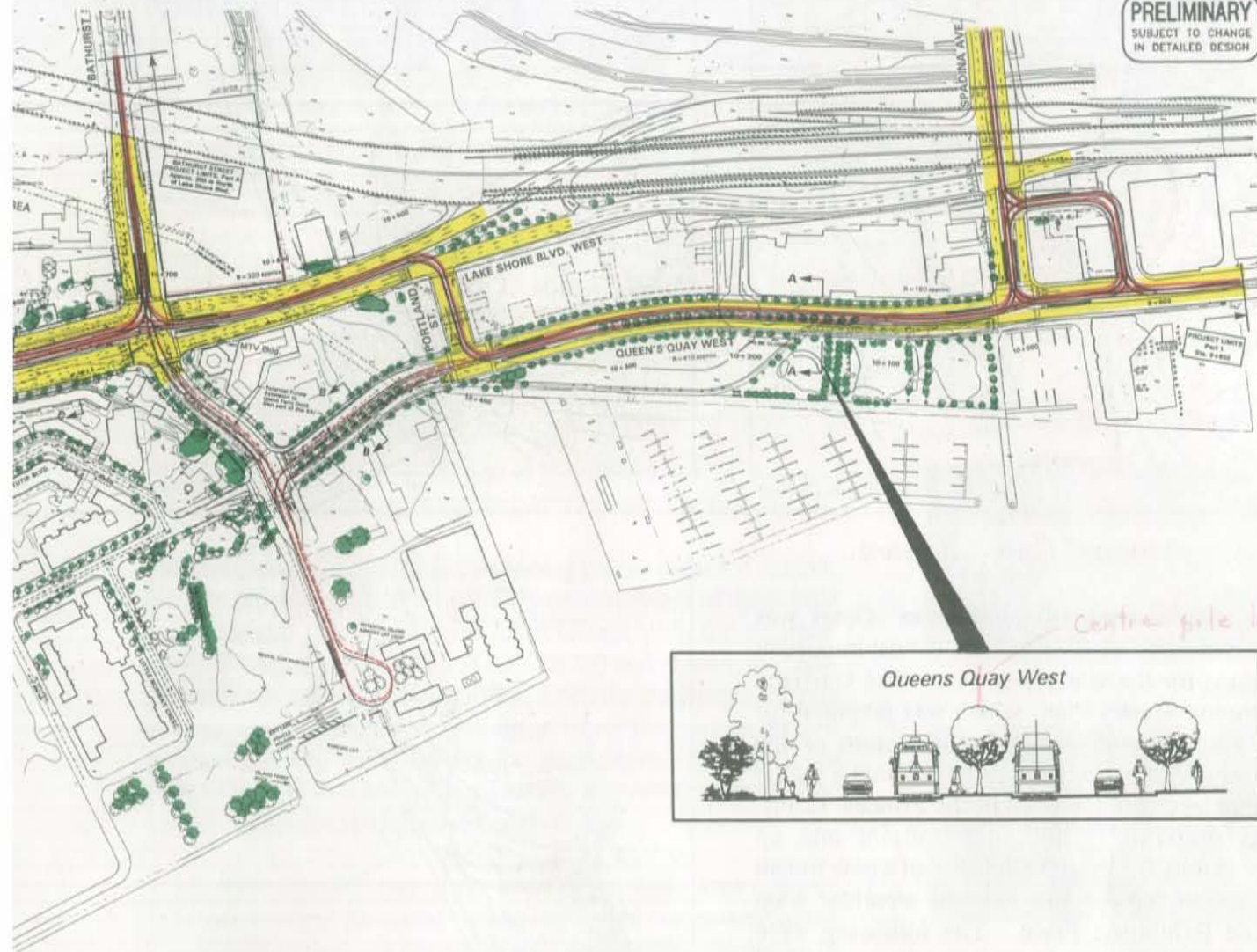
West from Spadina Ave., the streetcar tracks would be located on Queens Quay in a landscaped centre median (page ES-19). Although the tracks would not be fully segregated from other traffic, they would be constructed, for example, in a heavily textured pavement to discourage use by other types of vehicles and would be segregated from other traffic approaching intersections.

This configuration provides opportunities to enhance the streetscape and gives pedestrians a safe refuge while crossing Queens Quay. The proposed alignment departs Queens Quay at Portland St. (a new north/south roadway), crosses the eastbound lanes of Lake Shore Blvd. and

continues along Lake Shore Blvd. in a centre median. The Bathurst streetcar line could be extended along Bathurst Quay at some time in the future to improve access to the Island Airport. This is not part of the present undertaking.

The main reason for diverting the alignment along Portland St. to Lake Shore Blvd. is to achieve the best possible operation for transit and vehicular traffic at the Bathurst/Lake Shore intersection. In this EA, as well as in the City of Toronto's Part II Plan for Bathurst/Strachan, it is proposed to consolidate Fleet St. and Lake Shore Blvd. into a single roadway and place the LRT in a landscaped median. This creates the opportunity to "normalize" Lake Shore Blvd. with intersections and pedestrian crossings.

PRELIMINARY
SUBJECT TO CHANGE
IN DETAILED DESIGN



The consolidation, as proposed, assumes that an extended Front St. or Bremner Blvd. will be constructed. If a commitment is not forthcoming for at least one of these roads, an underpass of the eastbound to northbound automobile left turn would be required. This option is being carried forward for approval as an alternative design option for this intersection. If this alternative is needed, extensive consultation will be required with the City and adjacent property owners.

West of Bathurst St., the design treatment for Lake Shore Blvd., a tree-lined boulevard, emphasizes historic sight-lines and complements the prominence given to Princes' Gates through the creation of a formal yet functional public square (page ES-21).

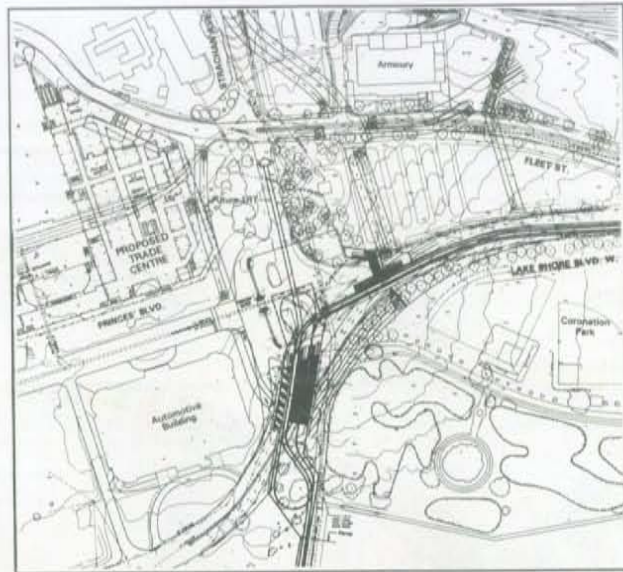
Some changes to the edges of Coronation Park and Gore Park along Lake Shore Blvd. would be necessary, including transplanting trees and new plantings. However, these changes would enhance, rather than detract, from the public use and visual attractiveness of the area.

Vehicular and transit accessibility to the lands north of Fleet Street, including the redevelopment of the Molson Brewery site and adjacent lands, would be improved. The scheme is considered supportive of the redevelopment and intensification of these lands.

The centre median location and proposed track arrangement would reduce delays to transit vehicles during those times when Lake Shore Blvd. is congested and would minimize any adverse impacts on adjacent residential lands.



At-grade Option



Below Grade Option

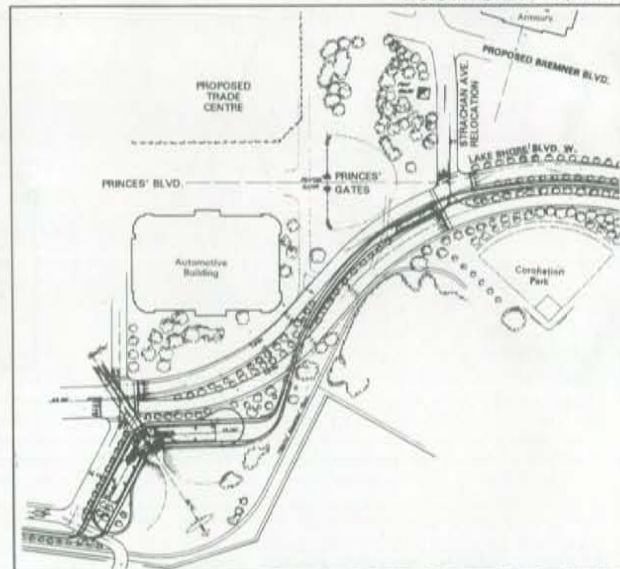
Princes' Gates Square

The area in front of the Princes' Gates was selected as the site for one of the most important stations for the waterfront line. The Garrison Common Master Plan, which was prepared for the Royal Commission on the Future of the Toronto Waterfront, has proposed that a public square be created in front of the Princes' Gates. This proposal is both a constraint and an opportunity for the development of a new transit station to replace the existing streetcar loop inside Exhibition Place. The following were considered the most important criteria to select the preferred option:

- Supporting the development of an active public square and providing a sense of arrival at Princes' Gates and Exhibition Place;
- Providing efficient transit operations for through and looping streetcars;
- Reducing walking distances and conflicts between pedestrians, streetcars and other vehicular traffic;
- Reducing capital costs.

Many at grade and below grade alignments and station configurations were examined.

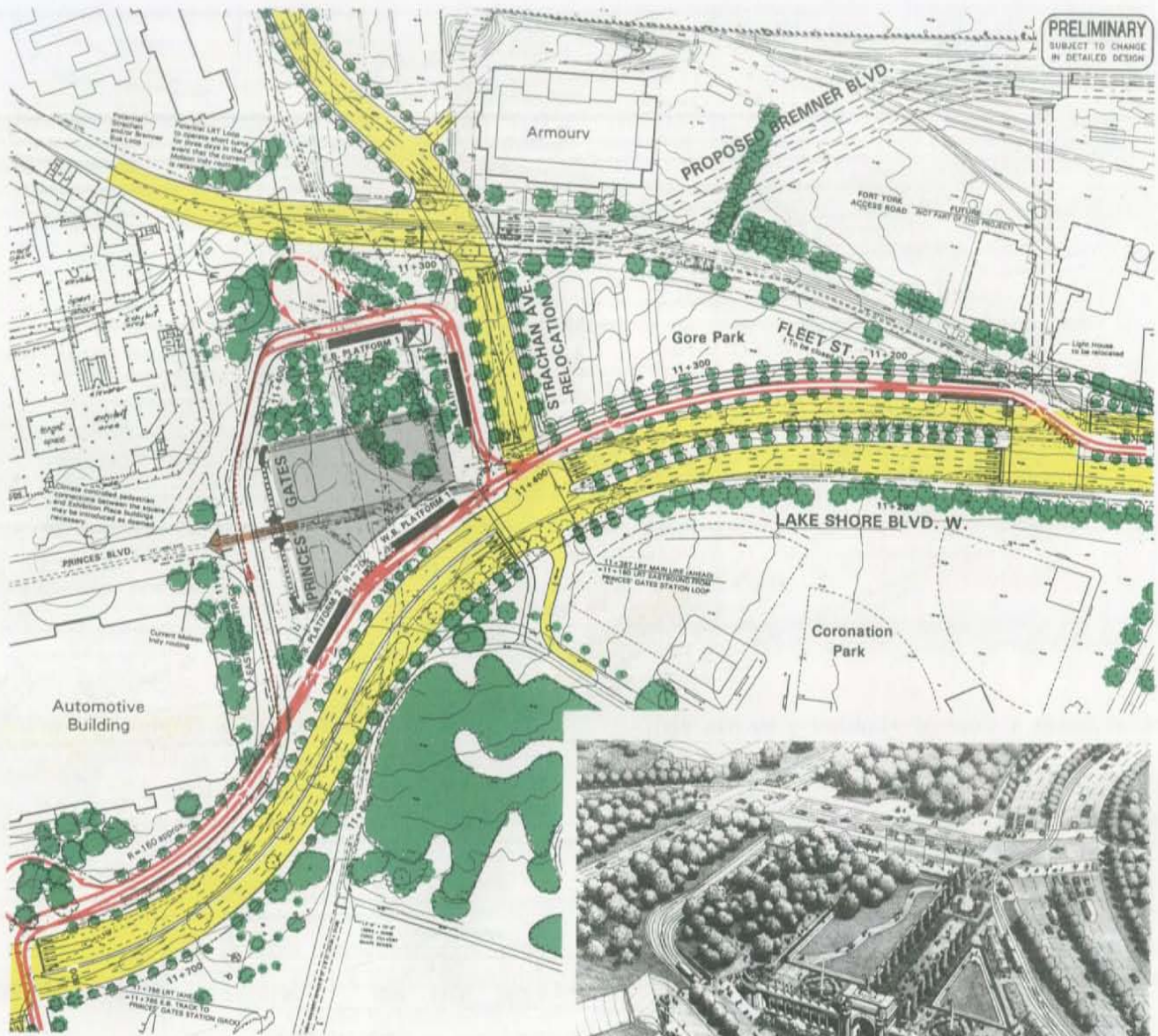
The proposed design, a public square in front of Princes' Gates, could be created by relocating Strachan Avenue to the east and by a minor



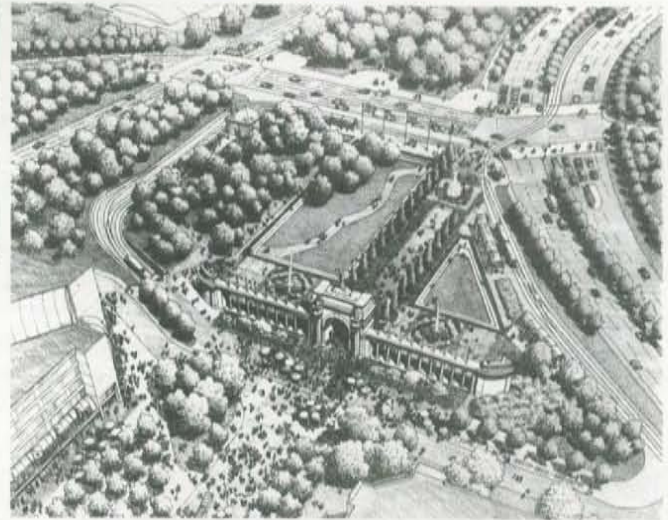
South of Lake Shore Blvd. Option

realignment of Lake Shore Blvd. The westerly face of the Square is formed by the Gates, the Automotive Building and the proposed National Trade Centre.

Passengers would get off westbound streetcars on the south side of the Square. Eastbound streetcars would descend into a cut and cover tunnel behind Princes' Gates, then ascend to the surface in the northern part of the Square, where there would be two platforms for picking up eastbound passengers. Transit riders and other visitors would be able to enter and leave the public square through Princes' Gates without crossing any major roads or transit lines.



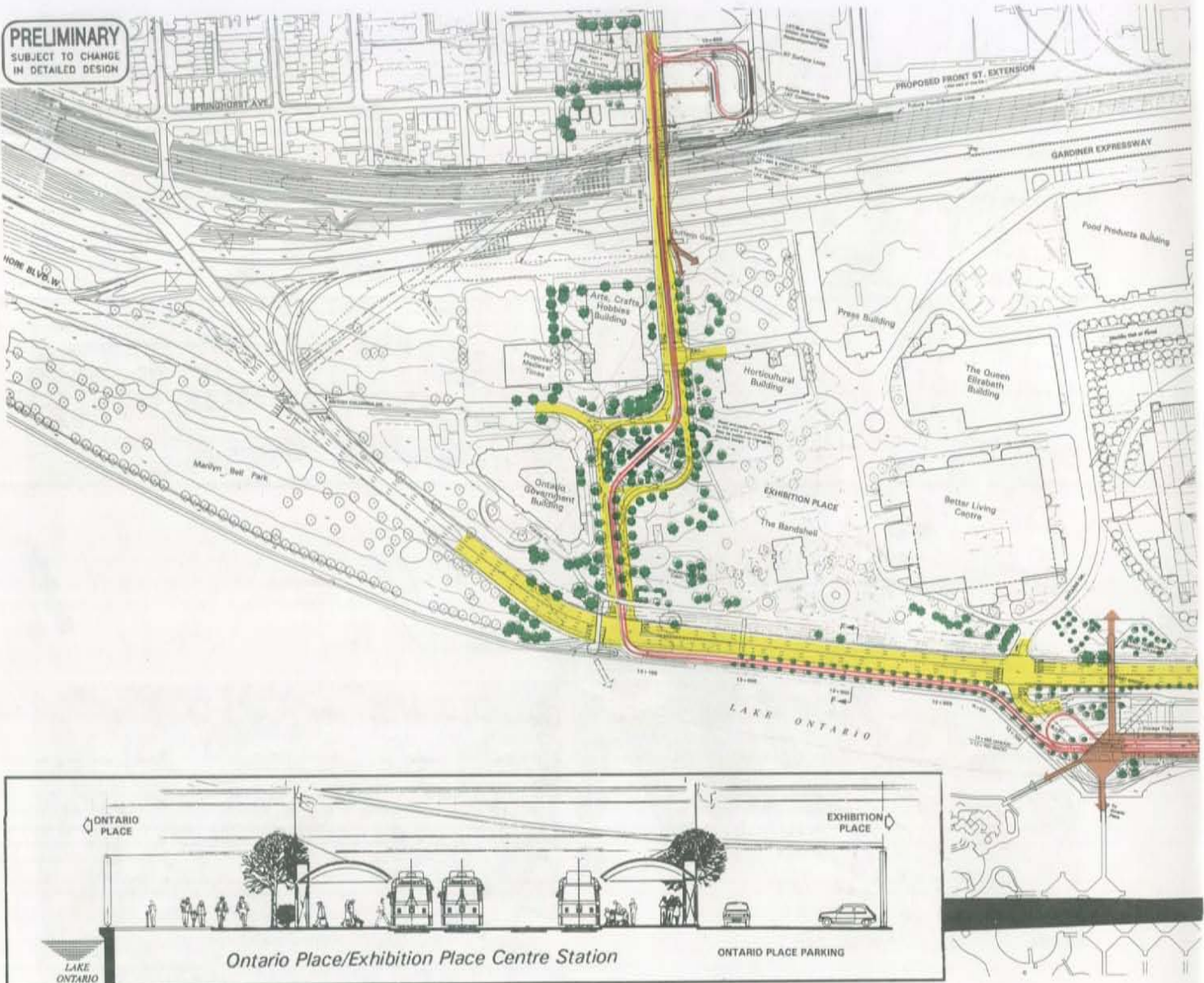
An example of an urban design which illustrates how a pedestrian oriented plaza could replace the present vehicle dominated space in front of the Gates is shown to the right.



Princes' Gates Square would act as both a transit station and a symbolic and ceremonial plaza and setting for the Gates. In the concept plan, most of the existing trees in the northern part of the Square would be retained.

The final design of the Square would be the subject of a comprehensive urban design assessment and would be subject to public review and comment during the planning approval process.





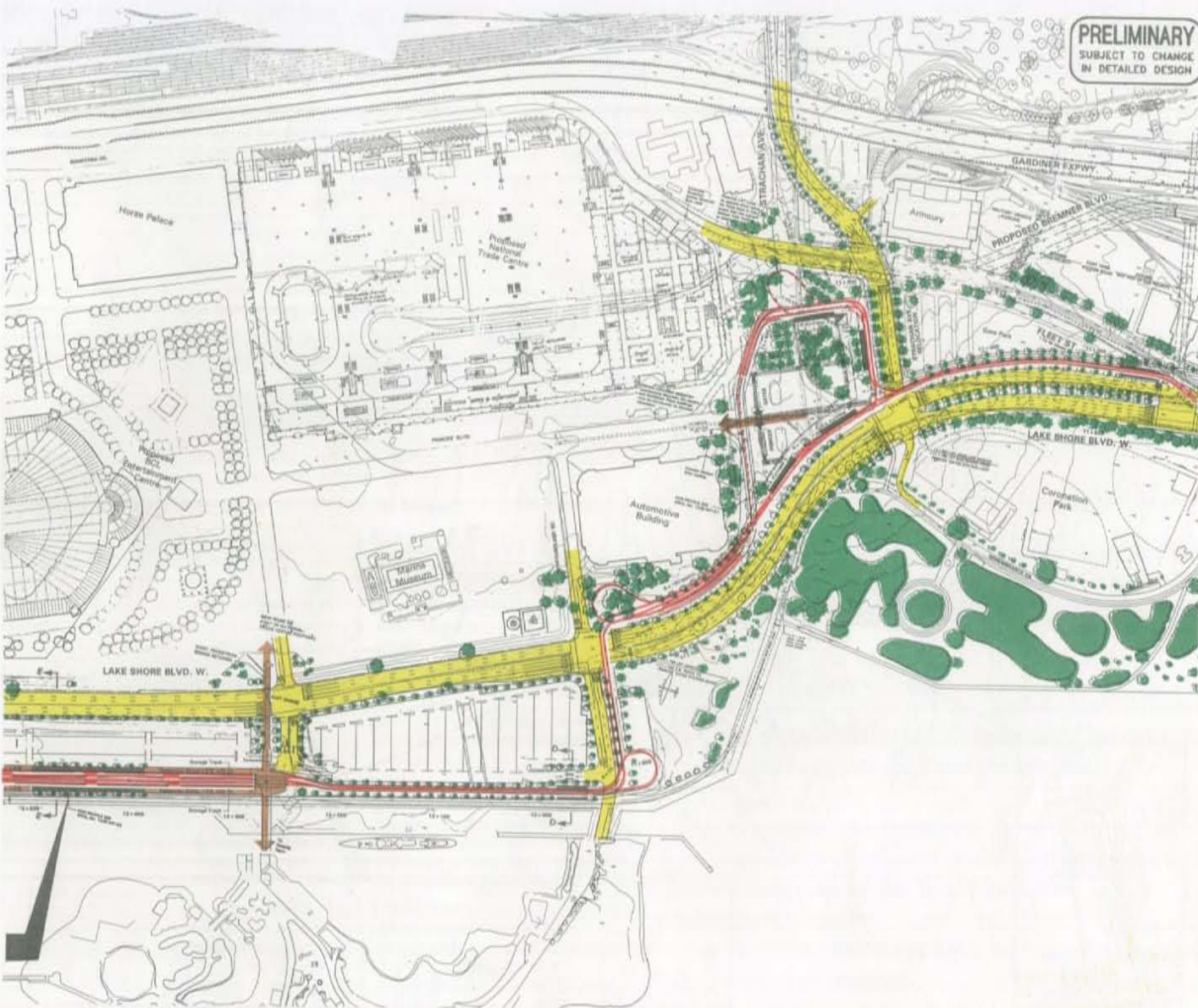
Princes' Gates to Dufferin Gate

The preferred alignment for the WWLRT line crosses Lake Shore Blvd. at Newfoundland Dr. and then follows the waterfront past the HMCS Haida to a station located between the two pedestrian bridges that connect Ontario Place and Exhibition Place. The station platforms would be connected to the bridges by gently sloping pedestrian ramps permitting easy access for strollers and wheel chairs. This would also help to disperse crowds on both arrival and departure. The final design of this station would need to be integrated with its immediate surroundings and must take into account the requirements of Ontario Place.

The activity centres in this area will continue to expand: Exhibition Place plans to replace the Stadium with an Amphitheatre - a year round venue for concerts and sporting events for up to 30,000 spectators. Ontario Place is negotiating with Molsons to redevelop and expand the Forum to handle events with audiences of up to 20,000 people. Therefore, improved service to this area of the waterfront is critical.

The Waterfront line, and its integration with other streetcar routes, is considered necessary to support these and other plans to increase year-round activity and to reduce the dominance of automobile traffic and surface parking lots in the waterfront area.

PRELIMINARY
SUBJECT TO CHANGE
IN DETAILED DESIGN

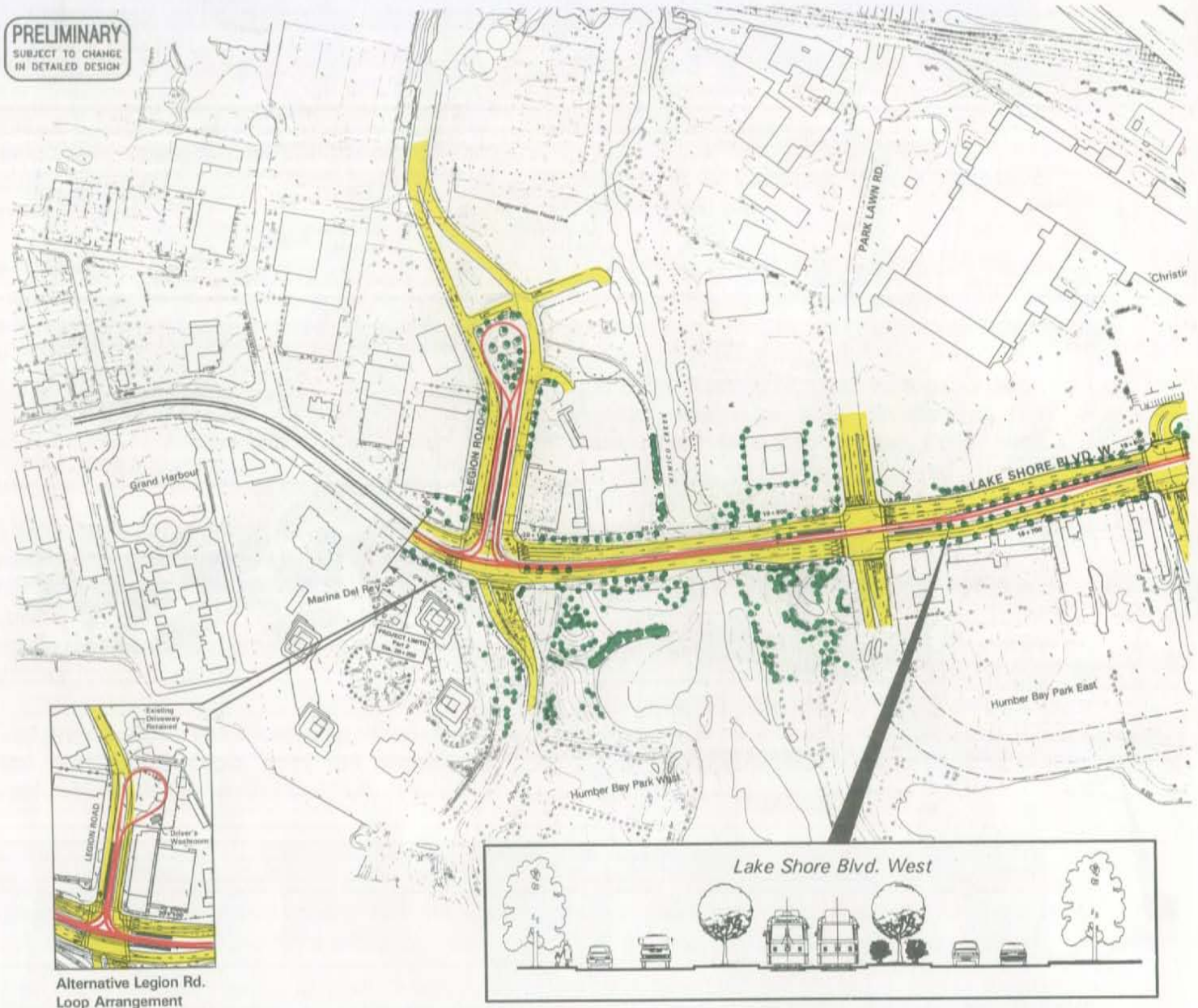


West of Ontario Place, it would be necessary to relocate the bleachers which are used during the CNE. The transit line would be constructed in a landscaped right-of-way, which would provide a buffer between a pedestrian promenade and bicycleway (Martin Goodman Trail) and the parking lots and vehicular traffic on Lake Shore Blvd.

Through the western part of Exhibition Place consideration was given to a fully separated (below grade) LRT line to minimize the impacts on the grounds, particularly during major events. The recommended scheme however proposes an at-grade alignment with a station in a small landscaped square adjacent to the Ontario

Government and the Arts and Crafts Buildings. The final design arrangement for the station, adjacent roads and pedestrian pathways would be established in conjunction with Exhibition Place. The design would minimize disturbance of existing vegetation and would support the year round use of the buildings located in this part of the grounds.

A new loop on the industrial lands in the northeast corner of Dufferin St. and the railway tracks would replace the existing bus and streetcar loop on the west side of Dufferin St. In the longer term, it would also be possible to connect the loop to a new rapid transit line along the Front St./Railway corridor.



Humber Loop to Legion Road

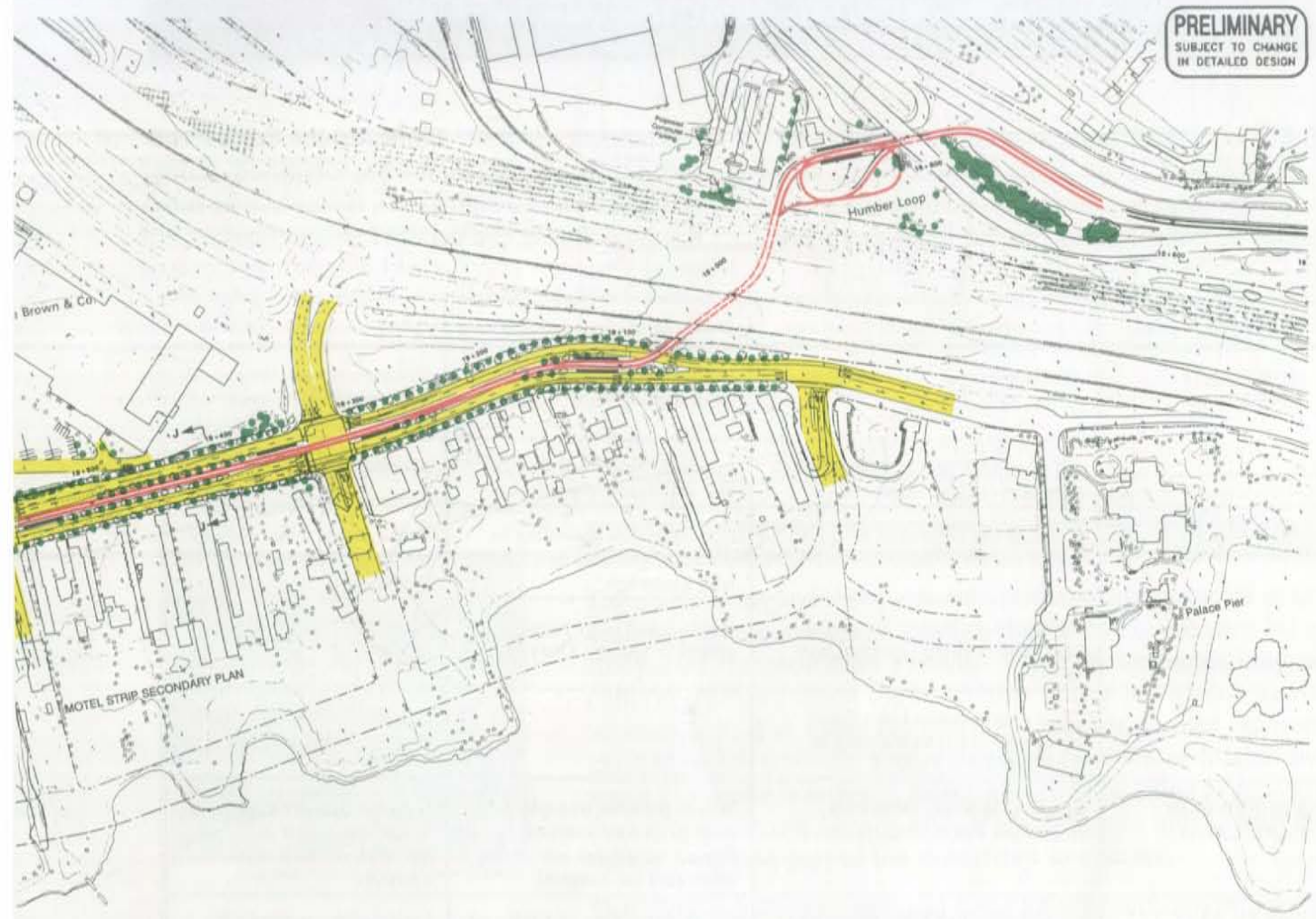
The westerly improvement of the streetcar line to Legion Road in southeast Etobicoke would involve an upgrade to the easterly section of the Long Branch streetcar line. Currently, this line operates in mixed traffic and streetcars are often delayed by automobiles and other types of vehicles making left turns.

The construction of a fully exclusive right-of-way for the WWLRT line would occur gradually, over time, and as development of the lands progresses. This would be achieved in conjunction

with the widening of the Lake Shore Blvd. right-of-way easterly from Park Lawn Road. The additional right-of-way would be secured through property dedications associated with the redevelopment of the Motel Strip.

The streetcar tracks would be located in a landscaped centre median, with platforms designed for low floor accessible streetcars. Phased implementation of these improvements could include, as a first priority, the construction of the Legion Road loop and intersection improvements at Park Lawn Road and the QEW ramps to the east of the Christie Brown plant.

PRELIMINARY
SUBJECT TO CHANGE
IN DETAILED DESIGN



Future Needs in South Etobicoke

Should the Mimico GO station be relocated to a site near Legion Road, the LRT line could be extended northerly through lands largely owned by Metropolitan Toronto to connect with a new GO station.

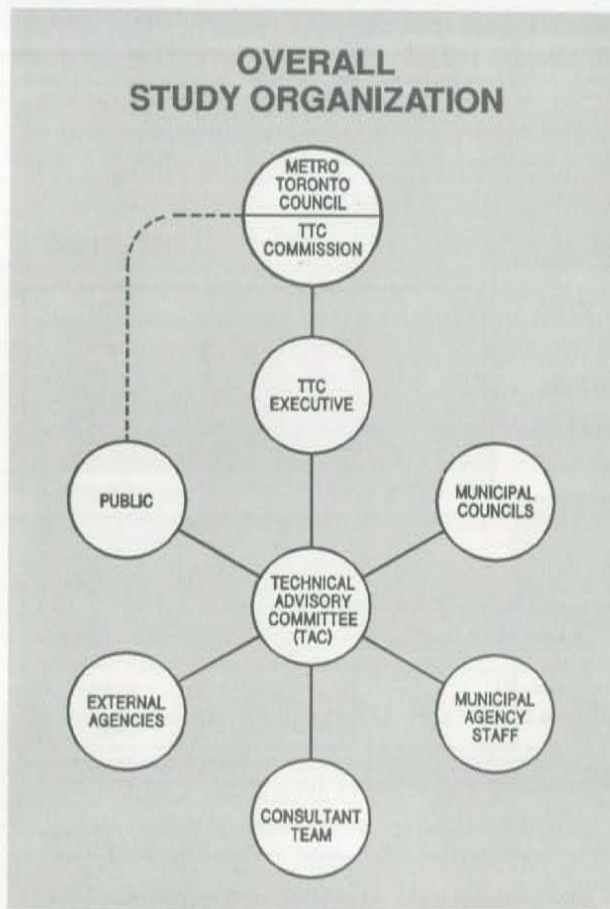
According to the longer term concept plan, this section of the line could ultimately form part of a high capacity transit line in the Front/Railway/Queensway corridor between south Etobicoke and downtown Toronto.

E7: POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The types of impacts associated with the WWLRT are illustrated in the table below, along with possible mitigation measures and the parties that would be consulted to resolve these and other

outstanding issues. Some of the issues and specific locations which were identified during this EA are listed below. All issues will be fully resolved during the detailed design phase.

Type of Impact	Issues/Partial List of Locations	Types of Mitigation Measures	Commitment
NOISE AND VIBRATION	Wheel squeal at loops and tight turns	Lubricate tracks, increase track turning radii	Vehicle specifications; TTC research program; liaison with MOEE
	All new track and tracks on which service would be reinstated	Improved track bed design and maintenance practices	Monitor with MOEE
PROPERTY	Property acquisition (e.g. Queens Quay, Dufferin Gate, Legion Rd.)	Compensation according to the Expropriation Act, or land exchange	Negotiations with property owners and affected agencies.
	Reduced access (e.g. proposed land uses abutting Queens Quay West)	Reconfigure (e.g. possible access to Queens Quay)	Negotiations with property owners
	Clearance between Lake Shore Blvd. and Loblaws building at Bathurst (2.5 m)		Negotiations with property owners during detailed design
VEGETATION, PARK LAND	Spadina Gardens, Gore Park, Exhibition Place, Ontario Place	Where possible transplant trees prior to construction; Protect vegetation not scheduled for removal	Develop detailed landscaping plan in consultation with affected agencies
URBAN AND STREETSCAPE DESIGN	Consolidation of Lake Shore Blvd. and Fleet St., Bathurst-Strachan redevelopment area	Integrated design of LRT and roads with secondary plan	Liaise with property owners, City of Toronto, Metro
	Design of Princes' Gates Square, Ontario Place/Exhibition Place Centre and Exhibition Place West Stations	Integrated urban design of LRT, roads, pedestrian and bicycle ways, landscaping and development	Liaise with City of Toronto, Metro, Ontario Place, Exhibition Place and other agencies
	Heritage/recreation facilities (e.g. Gore Park lighthouse, Exhibition Place bleachers)	Relocate, as required	Liaise with affected agencies
	Impact of LRT line and station on boardwalk and Martin Goodman Trail in front of Ontario Place	Incorporate design in a landscaped buffer between the Lake and parking lots	Liaise with Metro and Ontario Place/Exhibition Place and other agencies
	Legion Rd. loop/Legion Rd. widening and Flood Plain constraints	Incorporate design of LRT and roads with secondary plan	Liaise with property holders, Etobicoke, Conservation Authority and other affected agencies
TRAFFIC OPERATIONS	Pedestrian movements, vehicular delay, access (e.g. Humber Bay Park West, Ontario Place)	Incorporate changes in preliminary and final designs	Liaise with affected agencies and property owners
	Traffic movement at Bathurst/Lake Shore intersection	Alternative design option	Monitor traffic volume, status of Bremner Blvd, Front St. extension

E8: CONSULTATION WITH AFFECTED PARTIES

The Technical Advisory Committee (TAC) was created to provide the project team with a broad range of views and technical feedback from the public agencies involved in the planning process in the study area.

In addition to the agencies on the TAC and the various departments and committees of the proponents, many other stakeholders were consulted during the study. These included elected representatives for constituencies in the study area, residents associations, other public agencies (e.g. Exhibition Place, Ontario Place, Harbourfront Corp, the Waterfront Regeneration Trust, the Toronto Historical Board) CN and CP railways and private sector organizations.

The organizations responsible for many of the recreation and cultural facilities in the study area recognized the need to improve access to the waterfront by transit. The responses to the proposals presented to these organizations were generally very positive and the study team worked closely with these organizations to determine and address their requirements.

The general public was requested to participate directly in the study process through:

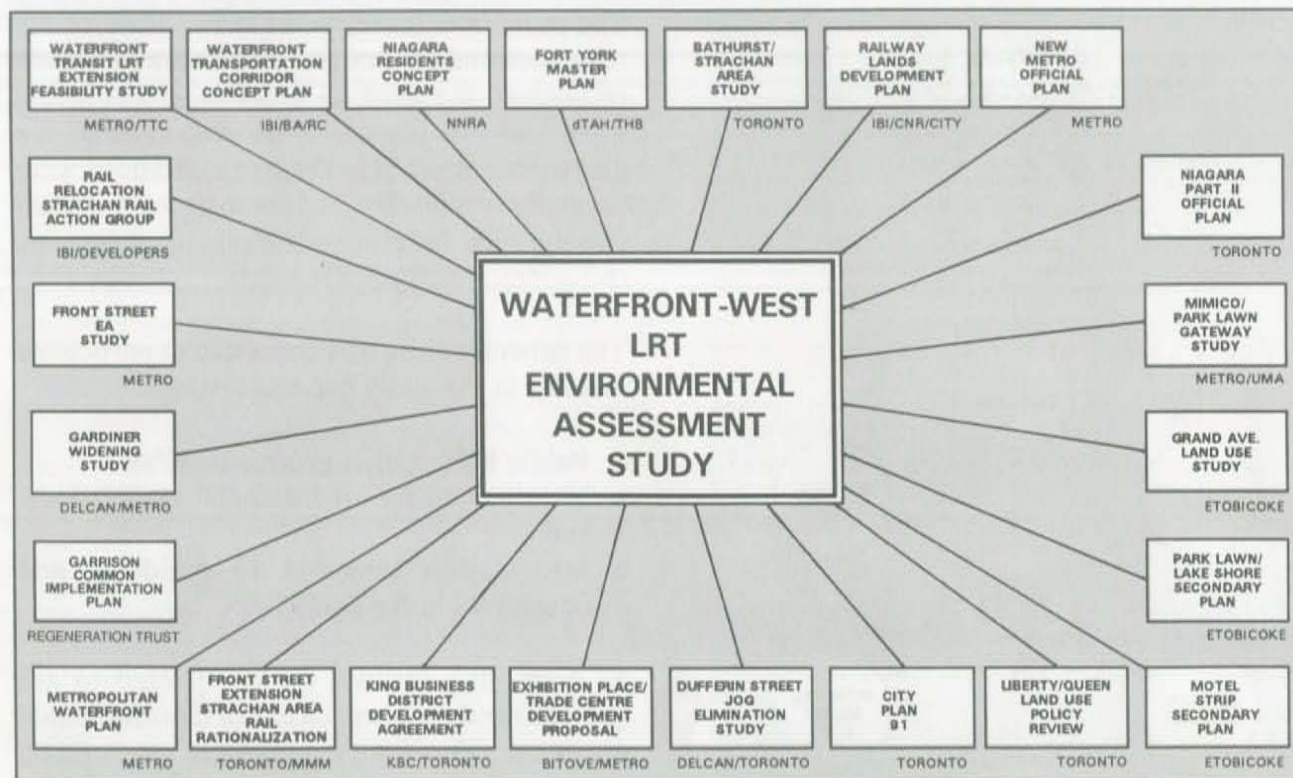
- Public information centres (PIC's);
- Meetings set up for residents' associations; and
- Information sent out to residents and businesses in the study area.

At each PIC, visitors were requested to ask questions and comment on any of the information presented. These comments were reviewed by the consultant team, and, where relevant, were taken into account in the EA process.

In general, there was considerable support for the undertaking and the components of the longer term plan to improve the transportation system along the waterfront. Many visitors to the PIC's indicated that they would like the construction to begin as soon as possible.

Of the written comments that were received at the final set of PIC's only about 12% of the respondents were opposed to the preferred option. There were a few general concerns about the capital cost and potential ridership of the WWLRT as well as some specific concerns about the impacts of the WWLRT on traffic conditions, park land and access to the lake.

The TTC and Metro acknowledge these concerns and are committed to further consultation and liaison with all affected parties in the study area.

E9: RELATED STUDIES AND PROJECTS

There are many other land use and transportation studies being undertaken in the study area. These studies are relevant to this EA in the sense that implementation of the results will:

- Create new demands on transportation;
- Alter travel patterns;
- Change the capacity and extent of the road network and, hence, the balance between roads and transit;
- Create new policies designed to reduce dependence on the automobile;

- Encourage new forms of urban development (mixed use, intensification of housing in the Central Area, deconcentration of employment to centres outside the Central Area).

These, in turn would have an impact on the types of transportation services needed to satisfy the needs of the study area. Therefore, to the extent possible, these studies were taken into account in the WWLRT EA study.

One of the most recent and relevant projects is the Garrison Common Implementation Plan prepared by the Waterfront Regeneration Trust. This plan has been endorsed by the Province and the Municipal agencies. The WWLRT from Spadina to Dufferin Gate is an integral part of this Plan.