Muncipal Class • **ENVIRONMENTAL STUDY REPORT**

QUEENS QUAY REVITALIZATION ENVIRONMENTAL ASSESSMENT

Waterfront Toronto
and the City of Toronto

December 2009

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TORONTO

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December 18, 2009

Honourable John Gerretsen
Minister of the Environment
77 Wellesley Street West
11th Floor, Ferguson Block
Toronto ON M7A 2T5

Dear Mr. Gerretsen,

On behalf of Waterfront Toronto it is my pleasure to submit the Environmental Study Report for the Queens Quay Revitalization.

The revitalization of Toronto's waterfront will have an important impact on our economy, our people, our province and our country. As the most heavily used area along Toronto's waterfront, the Central Waterfront is where Toronto's aspiration for a truly great waterfront begins. Queens Quay, its main waterfront street, spans 3.5 kilometres from Bathurst to Parliament Streets and touches all precincts currently under revitalization. The transformation of Queens Quay into one of the world's most beautiful waterfront boulevards will finally allow the area to live up to its remarkable potential.

A project of this scale and importance requires not only a great vision but also a rigorous process of testing alternatives and obtaining feedback. The vision for Queens Quay has since been studied as part of a Municipal Class Environmental Assessment process that fully meets provincial requirements. This Environmental Study Report represents the culmination of years of thorough analysis, input and refinement.

The preferred design selected through the Queens Quay Environmental Assessment process meets longstanding policy objectives for the revitalization of Queens Quay. It will connect the waterfront with the city by creating a better pedestrian experience and it will improve the balance between different modes of travel. It ensures appropriate access to all properties and the broader road network, and creates a transit and cycling corridor for the waterfront with a linear park for pedestrians. Ultimately, the Queens Quay Revitalization Environmental Assessment sets a framework for Queens Quay to become a destination boulevard and a priceless public asset.

The Environmental Study Report summarizes the extensive work undertaken to ensure that the future vision for Queens Quay is not only the technically preferred alternative but a key component in the overall revitalization of Toronto's Waterfront.

Sincerely,

John Campbell
President and CEO

Waterfront Toronto and
City of Toronto

Queens Quay Revitalization Municipal Class Environmental Assessment

Environmental Study Report

December 2009

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1 Executive Summary

Toronto's aspiration for a truly great waterfront begins with the transformation of Queens Quay. As the connecting spine of Toronto's waterfront, it spans 3.5 kilometres from Bathurst to Parliament Streets and touches all precincts currently under revitalization along its length. A project of this scale and importance requires not only a great vision but also a rigorous process of testing alternatives and obtaining feedback. This Environmental Study Report (ESR) represents the culmination of over two years of thorough analysis, input and refinement.

In September 2007, Waterfront Toronto and the City of Toronto, as co-proponents, initiated a Municipal Class Environmental Assessment (EA) to revitalize Queens Quay. This EA focused on the stretch of Queens Quay between Bathurst and Yonge Streets. A companion EA was undertaken by TTC to assess opportunities for extending transit east from Union Station to the Waterfront. The Queens Quay Revitalization EA was conducted under Schedule C of the Municipal Class EA process.

A thorough review of the City of Toronto Official Plan and other applicable policy frameworks for the area was conducted early in the process. This review identified that: "Queens Quay will become a scenic water view drive and an important component of the Toronto street network from Bathurst to Cherry Streets providing ready access to the public activities of the waterfront and pedestrian connections to the water's edge. It will be designed to meet the diverse needs of motorists, transit users, cyclists and pedestrians as well as providing opportunities for vistas to the harbor and lake." (Making Waves, Waterfront Secondary Plan)

In Phase 1 of this EA, the Problem and Opportunity Statement was developed in close collaboration with stakeholders and the public over a five-month period. At the onset, Waterfront Toronto organized a Stakeholder site walk. Participants were provided with disposable cameras and asked to photograph problems they saw as they walked along the length of Queens Quay. These photos were studied by the project team and helped to develop the Problem and Opportunity Statement. The result was not only a clear declaration that Queens Quay is deficient in its connectivity, coherence and civic vision but also confirmed the need for change. The following statement, guided the project team, Stakeholders and Public at-large through the duration of the EA process:

Queens Quay is Toronto's main waterfront street, yet in its current configuration acts as a barrier rather than a gateway to the waterfront. North-south connections to the water's edge are limited, unwelcoming and Queens Quay is difficult for pedestrians to cross. East west connections between individual destinations, including the Martin Goodman Trail are constrained or absent creating an unpleasant experience for commuter and recreational cyclists, in line skaters, joggers, residents and visitors moving along the lakefront. Aesthetically it fails to provide the kind of atmosphere conducive to economic vitality, ground floor retail activity and urban vibrancy. Operationally it suffers from sub-standard streetcar platforms, conflicting and illegal parking activities, and major points of conflict at intersections. Civically it fails to provide a grand and beautiful public realm befitting its role as the primary address for Toronto's waterfront. A revitalized Queens Quay presents the opportunity to implement long-standing City of Toronto policy objectives while more effectively balancing the needs of its residential, business, recreational and visitor users and coordinate with other planned waterfront projects and infrastructure by the TTC.

The Public outreach for this project far exceeded the Municipal Class EA statutory requirements, was creative in its approach and critical in decision-making. Three Public meetings and one drop-in centre were held with between 250 – 500 participants at each. Stakeholder meetings were conducted at key milestones with over fifty focused landowner meetings as specific site issues arose. At-large dissemination included multiple advertisements in both daily and local newspapers, a community mail drop and regular updates via Waterfront Toronto's email database to approximately 9000 individuals.

The project team undertook a robust data collection tailored by initial Stakeholder input regarding the uniqueness of Queens Quay as an active tourist destination. This process was geared both at understanding how Queens Quay was functioning environmentally and technically but also its seasonal characteristics. Data collection included the following: phase one archaeological assessment; base mapping and topographic survey; automatic traffic recording and turning movement counts for both summer weekend and autumn weekday; aerial, on-street and time lapse photography; and traffic micro simulation modeling.

Key findings of the data collection highlighted that the ratio of users to the space allocated for each transportation mode is disproportionate on summer weekends and that Queens Quay operates much like a two lane road despite its four lane cross-section because of existing curbside uses, for example. These finding, among many others, served as valuable input in the development and assessment of alternatives.

In Phase 2, four Alternative Planning Solutions were developed based on the Problem Statement and existing conditions analysis. Following a detailed assessment, it was determined that the challenges highlighted in the Problem and Opportunity Statement could only be fully met by the Physical Modifications within the Existing Right of Way alternative.

In Phase 3, five Alternative Design Concepts were developed based on the recommended Planning Solution identified in Phase 2. These alternatives were explored and assessed through 90 measures in the areas of land use planning and policies; transportation; safety and emergency response; urban design; socio-economic conditions; natural environment; cultural environment; and cost. It was determined that while some options were favourable in the traffic and transit measures, the Southside Transit with Enhanced Public Realm was the overall best performing alternative and best satisfied the Problem and Opportunity Statement. In addition, it was the preferred alternative of Stakeholders and the Public at-large; in fact, it was the near unanimous favourite at the third Public Forum. Therefore Southside Transit with Enhanced Public Realm was, selected as the recommended preferred alternative.

Southside Transit with Enhanced Public Realm accommodates recreational, transit, bicycle, pedestrian and automobile traffic, both locally on Queens Quay and network wide. It will enhance landscape features and the public realm within the Queens Quay corridor from end-to-end. More specifically, it reconfigures the street by locating two-way automobile travel lanes north of the transit right-of-way with enhanced pedestrian and bicycle facilities on the southside of Queens Quay where the existing eastbound lanes are located. This configuration enables a generous pedestrian promenade on the lakeside of Queens Quay and improved sidewalks on the north side of the street.

The preferred design meets longstanding policy objectives to transform Queens Quay into a main waterfront street. It will connect the waterfront with the city by creating a better pedestrian experience from north to south and along the waterfront. It represents a better balance between different modes of travel, hardscape and landscape, and automobile and non-automobile realm. It will perform as a minor arterial providing access to all properties

and the broader road network, a transit and cycling corridor for the waterfront and a linear park for pedestrians and other visitors to the waterfront. The Queens Quay Revitalization Environmental Assessment sets a framework for Queens Quay to become a destination boulevard and possibly one of the greatest streets of the world.

The preferred design represents an opportunity to create system improvements to the existing traffic and transit infrastructure. Optimized traffic signals will accommodate Queens Quay's existing and future auto demand. Dedicated turning lanes and on-street laybys will address conflicts along the corridor and make more effective use of the street space. Dedicated cycling infrastructure will increase safety and non-automobile modal split. Transit will operate at an improved speed. Transit platforms will be enhanced to accommodate new accessible low floor transit vehicles.

Once the preferred alternative was determined and Public engagement and focused outreach meetings were concluded, Toronto City Council on October 1, 2009 granted authority with a vote of 33-1 for Waterfront Toronto to issue a Notice of Completion following the conclusion of the Environmental Study Report. The Environmental Study Report summarizes the extensive work undertaken to ensure that the future vision for Queens Quay is not only the technical preferred alternative but also pivotal in the revitalization of Toronto's Waterfront into a place in which we can all take pride.

2 Study Process and Structure

2.1 Purpose

The purpose of the Queens Quay Revitalization EA was defined by Waterfront Toronto and the City of Toronto as:

- Creating a plan for Queens Quay that successfully accommodates the various users – recreational, transit, bicycle, pedestrian, vehicular – while enhancing landscape and the public realm within the corridor.
- To develop, examine and evaluate a number of alternative solutions and design concepts for vehicular, transit and pedestrian routes along Queens Quay.

2.2 Ontario Environmental Assessment Act

The Ontario Environmental Assessment Act (EA Act) identifies two types of environmental assessment planning and approval processes: the Individual Environmental Assessment (EA); and Streamlined EA processes. Included in the Streamlined EA processes are Class EAs. One approved Class EA under the EA Act is the Municipal Class EA (MCEA), October 2000 (Amended 2007). This Class EA outlines a process by which municipal infrastructure projects (e.g., road, transit, water and waste water projects) are planned in accordance with the EA Act. Municipal projects, as defined in the MCEA document can be planned, designed, constructed, operated, maintained, rehabilitated and retired without having to obtain project specific approvals under the EA Act, provided the MCEA process is followed.

The Queens Quay Revitalization EA Study contemplated municipal improvement projects as defined in the MCEA. The study was therefore undertaken in accordance to the MCEA process.

2.3 Municipal Class Environmental Assessment Process

The MCEA enables the planning of municipal infrastructure projects in accordance with a proven procedure for protecting the environment.

2.3.1 Municipal Class Environmental Assessment Phases

This study was undertaken in accordance with the first four Phases of the Class EA process (Figure 2-1). These phases are:

Phase 1: Identify the Problem or Opportunity

This phase involves identifying the problem or opportunity and describing it in sufficient detail to lead to a clear problem or opportunity statement. The Problem and Opportunity Statement is provided in Chapter 6 of this report. As part of describing the problem/opportunity, input from review agencies and the public can be solicited. Chapter 6 discusses the development of the Problem and Opportunity Statement and Chapter 3 summarizes the public and stakeholder consultation program. The Public Consultation Summary Report is also provided in Appendix A.

Phase 2: Identify and Evaluate Alternative Planning Solutions to the Problem / Opportunity

This phase involves six steps:

1. Identify all reasonable alternative solutions to the problem or opportunity;
2. Prepare a general inventory of the existing natural, social and economic environments in which the project is to occur;
3. Identify the net positive and negative effects of each alternative solution including mitigating measures;
4. Evaluate the alternative solutions;
5. Consult with review agencies and the public to solicit comment and input; and
6. Select or confirm the recommended solution.

Chapter 7 of this report describes the identification and evaluation of the Alternative Planning Solutions developed for this study.

Phase 3: Identify and Evaluate Alternative Design Concepts for the Recommended Alternative Solution

This phase follows the same steps as Phase 2, except it addresses the designs that can fulfill the recommended solution.

Chapter 8 of this report describes the identification and evaluation of the Alternative Design Concepts developed for this study.

Phase 4: Prepare the Environmental Study Report

Following completion of Phase 4, documentation of the three phases must be prepared. Once the documentation has been completed, it must be placed on public record for a period of at least 30 calendar days to allow review agencies and the public an opportunity to review it.

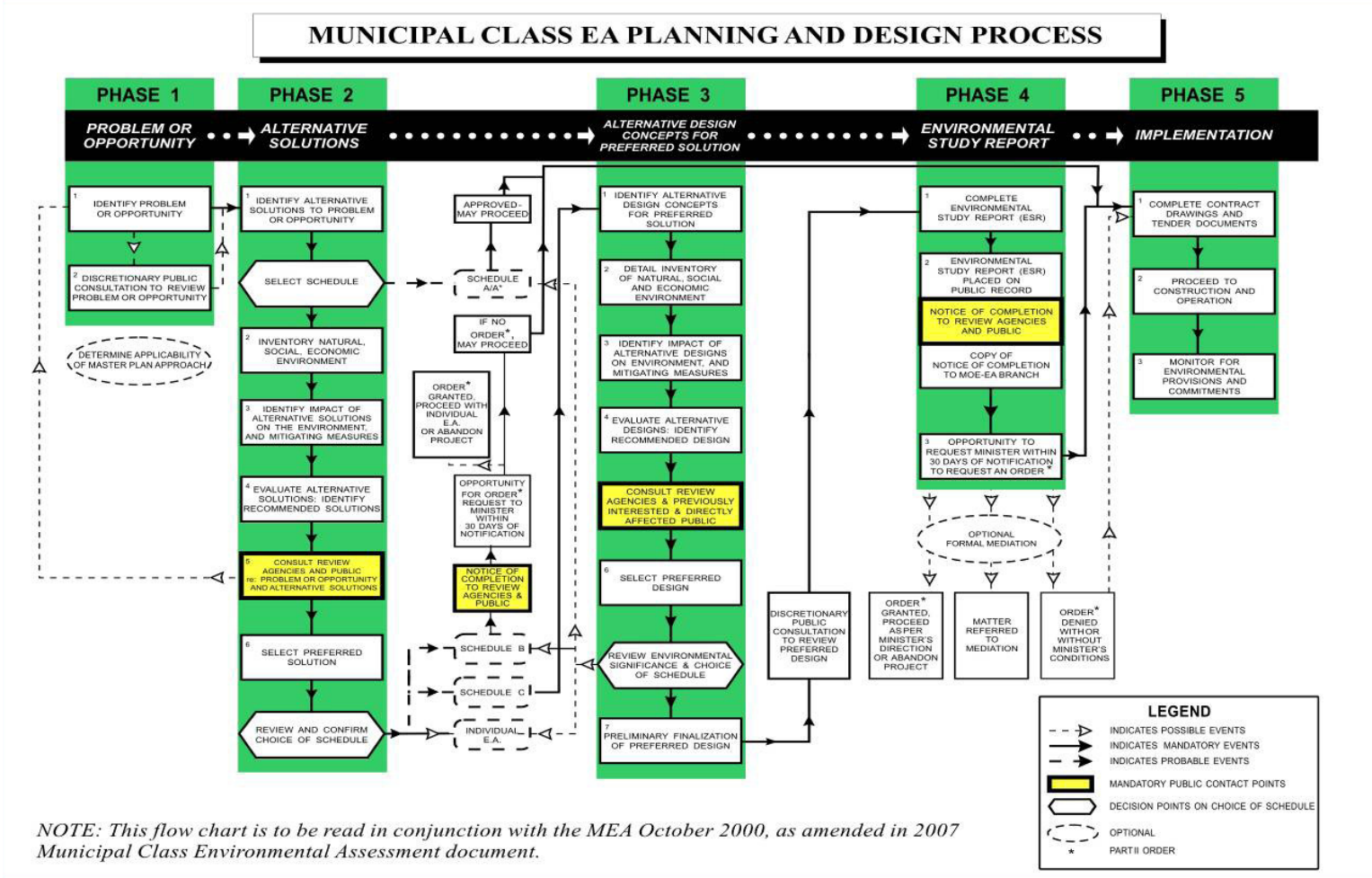
During this review period, concerned individuals have the ability to raise issues with the proponent and if they are not resolved, they can request the Minister of the Environment to issue a Part II Order under the EA Act. If a Part II Order is granted, it will require the proponent to prepare an Individual EA. The decision on whether the project should be subject to a Part II Order rests with the Minister of the Environment.

Once the public review period has expired and there are no outstanding Part II Order requests or if the Minister refuses a Part II Order request, the proponent may proceed to the final phase of the planning and design process.

Phase 5: Complete Contract Drawings and Documents and Proceed to Construct, Operate, and Monitor the Project

This phase involves completing contract drawings and tender documents incorporating the recommended solution and mitigating measures documented in the Environmental Study Report. Once contracts are awarded, construction can take place and the project is implemented. Any monitoring programs identified during the Class EA shall be undertaken to ensure that the environmental provisions and commitments made during the process are fulfilled and effective.

Figure 2-1: Environmental Assessment Process



Source: Municipal Class Environmental Assessment (2007)

2.4 Municipal Class Environmental Assessment Schedules

Since projects undertaken by municipalities vary in their potential environmental effects, the Municipal Class EA classifies the projects into four schedules according to their potential environmental significance.

The Queens Quay Revitalization EA Study was conducted as a Schedule C project, as required by the Municipal Class EA. For the purposes of the MCEA, this project was classified as, "Reconstruction or widening where the reconstructed road or other linear paved facilities will not be for the same purpose, use, capacity or at the same location as the facility being reconstructed," otherwise known as item 17 in Appendix I – Project Schedules (Municipal Road Projects) of the MCEA document.

The Schedule C Class EA process includes public and review agency consultation, an evaluation of alternative solutions, an evaluation of alternative design concepts, an assessment of the effects on the environment, and identification of reasonable measures to mitigate any adverse effects. In completing the Class EA, the project team documented the problem or opportunity to be addressed by the study and developed and evaluated alternative solutions that address the problem. Based on the preferred alternative solution, alternative design concepts for Queens Quay were identified and evaluated and a preferred design concept was selected.

There were a number of opportunities during the Class EA process for public input, including the Public Forums and review of this Environmental Study Report. The public consultation activities and comments received during the EA process are documented in Chapter 3 of this report.

2.5 City of Toronto Council and Executive Committee

Prior to this Environmental Study Report being filed with the Ministry of the Environment and placed on the public record for review, the study's findings and recommendations were reviewed and approved by first the City of Toronto Executive Committee and then by Toronto City Council.

The Executive Committee's mandate is to monitor and make recommendations on the priorities, plans, international and intergovernmental relations, and the financial integrity of the City. The committee consists of the Mayor, the Deputy Mayor, the chairs of all Standing Committees and four members at-large who are members of Council. As a part of the city's policy of open and accessible government, the City of Toronto encourages public participation in its decision making process. The public are provided opportunities to make deputations at the committee meetings.

On June 2, 2009, the study's recommendations and findings were presented to the Executive Committee and documented in a Staff Report (May 14, 2009). This staff report is included in Appendix D and was made available to the public on May 28, 2009. Several area stakeholders made deputations, as detailed in the Committee Meeting Minutes (refer to Appendix C).Those making the deputations supported the study's findings. They indicated that they would continue to work with the study team to resolve their concerns through to the Detailed Design and were in agreement for the Committee to make a recommendation to Council to approve the filing of the Environmental Study Report. Subsequently, the Executive Committee made a unanimous decision to recommend to Council that:

Authority be granted to Waterfront Toronto to issue a Notice of Completion following completion of the Environmental Study Report to the satisfaction of the General Manager, Transportation Services, substantially in the form outlined in this report, and to file the ESR for the Queens Quay Revitalization Environmental Assessment Study in the public record for 30 days in accordance with the requirements of the Municipal Class Environmental Assessment.

The Executive Committee Report to Council is included in Appendix C. Its recommendation, along with a supplementary staff report (Appendix D) were presented and considered at Toronto City Council on October 1, 2009. City Council voted 33 to 1 in favour of adopting the recommendations. The final decision is included in Appendix B and provides:

City Council grant authority to Waterfront Toronto to issue a Notice of Completion following completion of the Environmental Study Report to the satisfaction of the General Manager, Transportation Services, substantially in the form outlined in the report (May 14, 2009) from the Deputy City Manager, Richard Butts, and to file the ESR for the Queens Quay Revitalization Environmental Assessment Study in the public record for 30 days in accordance with the requirements of the Municipal Class Environmental Assessment.

In addition the Council decision included an amendment to the Executive Committee recommendations, providing for an egress-only (northbound right turn) traffic signal at the Robertson Crescent/Queens Quay West intersection. Chapter 9 describes this intersection in greater detail.

2.6 Canadian Environmental Assessment Act (CEAA)

The Canadian Environmental Assessment Act (CEAA) sets out responsibilities and procedures for the environmental assessment of projects involving the federal government. CEAA applies to the federal government when they are taking an action in support of a project including where the federal government:

- is the proponent;
- makes or authorizes payment or any other form of financial assistance to the proponent;
- leases, sells or otherwise disposes of lands; and/or
- issues a permit, license or other form of approval identified in the federal Law List Regulations.

This project has not triggered CEAA to date and as a result no CEAA assessment has been required.

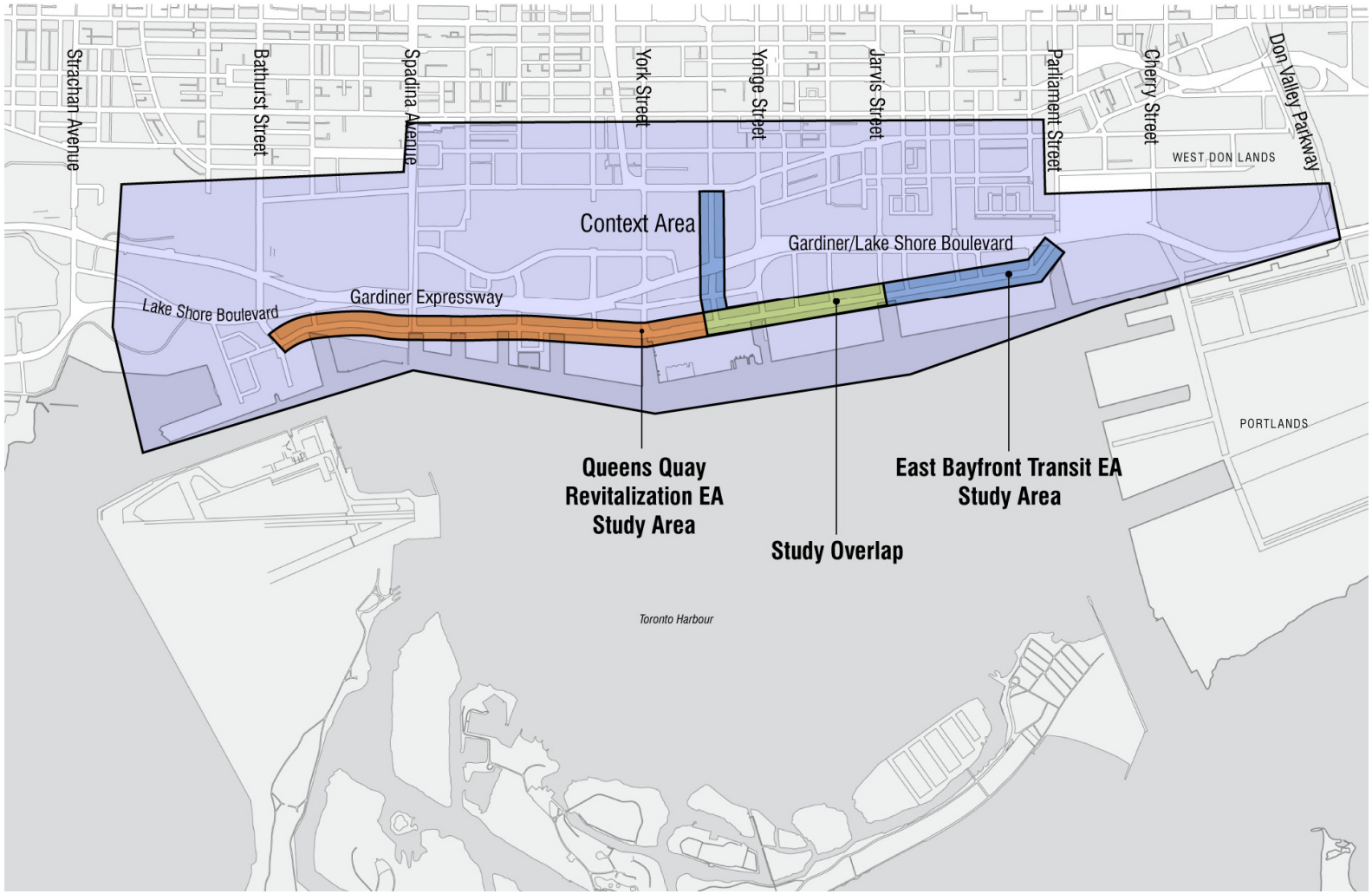
2.7 Queens Quay Study Area

The Queens Quay EA study area limits, shown in Figure 2-2, are Bathurst Street to the west, Jarvis to the east, Lake Ontario to the south and Lake Shore Boulevard to the north. A larger Context Area was also defined to address indirect impacts outside of the study area as required.

Initially the west limit was Lower Spadina Avenue, but was expanded to Bathurst Street to study the effects of improvements to this area to the west. The alternatives being assessed for Queens Quay had direct impacts on the area west of Lower Spadina Avenue, so the study area was expanded accordingly. In addition, this was necessary to study the operational feasibility of alternatives at the intersection of Spadina and Queens Quay.

The study area is located within Toronto's Central Waterfront. Historically, the study area was developed to serve as a port for marine shipping. By the 1970's the marine shipping activity was in decline with focus on land-based containerization shipping. Since then, various planning and redevelopment strategies transformed the area into its current condition: an urbanized area with a mix of land uses, including public parks and spaces, commercial and retail development, institutional uses and dense residential developments in the form of hi-rise condominiums. Major transportation facilities include Queens Quay, TTC LRT service, Lake Shore Boulevard, Gardiner Expressway and arterial connections into the downtown core.

Figure 2-2: Map of Study Area



2.8 Adjacent and Related Studies

Since the start of the study, additional studies, EAs and projects were initiated in precincts (refer to Figure 2-3) either adjacent to or within parts of the Queens Quay study area, including:

- East Bay Front Transit Environmental Assessment Study;
- East Bay Front Precinct Plan Implementation
- Lower Don Lands Infrastructure Municipal Class Environmental Assessment & Keating Precinct Plan;
- Gardiner York/Bay/Yonge Ramps Class Environmental Assessment;
- Lower Yonge Development Framework;
- Gardiner Environmental Assessment and Integrated Urban Design Study; and
- Spadina, Rees and Simcoe WaveDeck construction.

In general, studies initiated since the start of this Class EA process considered the decisions made during this study wherever possible. In addition, the Study Team coordinated the outcomes of other studies with a view to minimizing conflicting recommendations and coordinating future plans for the area.

Figure 2-3: Map of Queens Quay Area Precincts

The study area overlaps with the East Bayfront Transit EA Study Area undertaken by Waterfront Toronto, the Toronto Transit Commission (TTC), and the City of Toronto. The East Bayfront EA was undertaken concurrently with the Queens Quay Revitalization EA and its study area limits were Bay Street in the east and Parliament Street in the west.

The East Bayfront EA, documented in a separate ESR, studied new transit service on Queens Quay. The study recommendations include a new Light Rail Transit (LRT) line on Queens Quay east of Bay Street to connect with the future East Bayfront and Lower Don Lands community with Union Station. This East Bayfront LRT line is proposed to be below grade under Bay Street (from Union Station to Queens Quay) and at-grade along Queens Quay (from Bay Street to east of Yonge Street). On Queens Quay between Yonge Street and Freeland Street, the LRT line rises to grade through a portal and continues at street level into the East Bayfront and beyond to Lower Don Lands.

For documentation purposes, the Queens Quay ESR reports on the assessment of Planning Solutions and Design Concepts for Queens Quay from Bathurst Street to just east of Yonge Street (the preferred portal location). The East Bayfront ESR reports on the assessment from Yonge Street to Parliament Street.

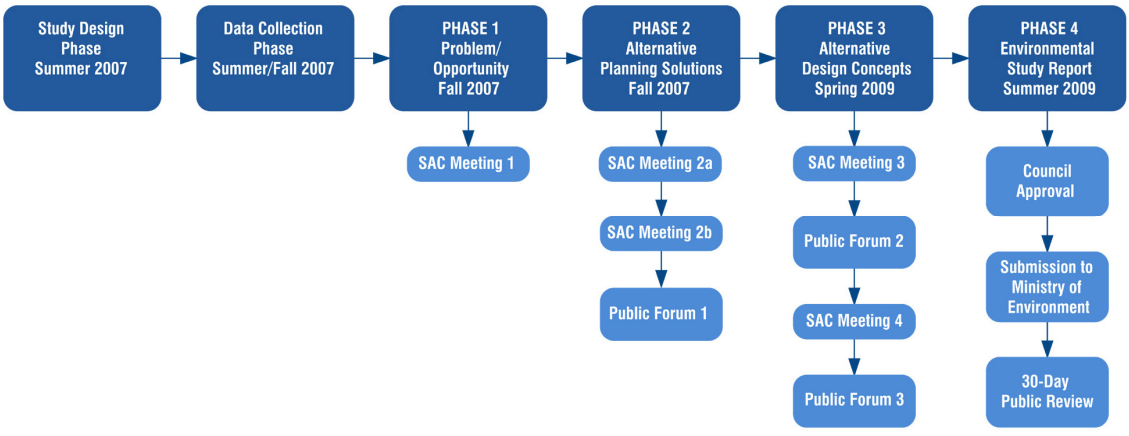
While the Transit EA is documented in a separate ESR, the study teams coordinated the two EA projects to jointly form a consistent and coherent plan for Queens Quay.

The coordination of the two EA studies was also reflected in the public consultation. The study teams jointly undertook a public consultation program, which demonstrated to the public comprehensive options for Queens Quay from Bathurst Street through the East Bayfront..

2.9 Study Schedule

The Queens Quay Revitalization EA study was initiated in September 2007 and the anticipated completion date for the EA study is 2009 (refer to **Figure 2-4**). Subject to securing appropriate approvals, design and construction may follow the EA study.

Figure 2-4: Study Schedule



2.10 Study Team

Waterfront Toronto and the City of Toronto are co-proponents in undertaking the Queens Quay Revitalization Class Environmental Assessment. As there was a major coordination effort required with the East Bayfront Transit EA, TTC representatives leading that study also participated as members of the Queens Quay EA project team. Table 2-1 lists the members of the study team.

Table 2-1: Study Team

Organization/Position/Department	Representative
City of Toronto – Transportation Services, Manager Infrastructure Planning, **Study Project Manager**	John Kelly
City of Toronto – Waterfront Secretariat, **Study Project Manager**	Jayne Naiman
Waterfront Toronto, **Study Project Manager**	Pina Mallozzi
City of Toronto – Planning – Transportation, Program Manager	Tim Laspa
City of Toronto – Planning – Urban Design, Manager of Urban Design	Eric Pedersen
City of Toronto – Traffic Operations, Manager of Traffic Operations (East Area)	Jacqueline White
City of Toronto – Traffic Operations, Manager of Traffic Operations (West Area)	Ron Hamilton
City of Toronto – Transportation Services, Manager, Urban Traffic Control Systems	Bruce Zvaniga
City of Toronto – Waterfront Secretariat, Director	Elaine Baxter-Trahair
Toronto Transit Commission, Superintendent – Route and System Planning	Bill Dawson
Toronto Transit Commission, Project Engineer	Jim Sinikas
Waterfront Toronto, Planning and Design, Vice President	Christopher Glaisek

The consultant component of the study team was led by the joint venture of West 8+DTAH and included civil engineering and transportation specialists from Arup. Technical expertise was also provided by a number of sub-consultants:

- Environmental Assessment Coordination – West8+DTAH with Arup
- Environmental Assessment Process Advisor – MMM Group Limited
- Public Consultation – Lura Consulting
- Urban Design, and Landscape Architecture – West8+DTAH
- Transportation Planners and Civil Engineers – Arup
- Transit Micro-simulation – PTV America
- Traffic Advisor – BA Consulting Group Limited
- Structural Advisor – Halsall Associates Limited
- Cost Estimator – Rider Levett Bucknall | Marshall & Murray
- Cultural/Archaeological – Archaeological Services Incorporated

Valuable input to the study was also gained from the general public, a Stakeholder Advisory Committee (SAC) and a Technical Advisory Committee (TAC). Additional detail on the input received and membership of these groups is discussed in Chapter 3 and in the Public Consultation Summary Report provided in Appendix A.

3 Public and Stakeholder Consultation Program

The overall objective of the public consultation undertaken during the Queens Quay Revitalization Environmental Assessment (EA) Study was to inform non-government stakeholder groups, the general public and municipal staff and review agencies about the project and to invite input at key stages throughout. Waterfront Toronto's consultation program included the following methods of public engagement:

- Queens Quay Revitalization EA Stakeholder Advisory Committee (SAC);
- Queens Quay Revitalization EA Technical Advisory Committee (TAC);
- Interactive Public Forums and Open Houses; and
- Multiple individual meetings with area landowners, resident groups and community organizations.

Consultation for the Queens Quay EA built on earlier efforts of the Central Waterfront Design process, including those carried out as part of the design competition and the "Quay to the City" pilot project. Summaries of the earlier efforts are provided in Public Consultation Summary Report in Appendix A.

The consultation program was documented by an independent facilitator, Lura Consulting. It included communications activities and the specific consultation activities. These were centred on the various Phases prescribed by the Municipal Class EA process. The study team presented the findings and sought out public input at formal meetings, including public forums, Stakeholder Advisory Committee (SAC) meetings and one-on-one individual meetings for each of the phases of the EA.

Problem and Opportunity Statement

There was particular focus on Phase 1 – Problem or Opportunity Statement – of the study. The study team and interested stakeholders saw this phase as particularly critical, as the Problem and Opportunity Statement would guide the study and serve as the basis for examining the proposed solutions against the project goals. As such, the study team engaged the public in an enhanced consultation effort for this phase.

The Problem and Opportunity Statement was developed over a five-month period. It was based on several past efforts—the Innovative Design Competition, Quay to the City pilot project, Queens Quay Traffic Feasibility Study, as well as established City and Waterfront Toronto policies and guidelines. It was refined through considerable input and collaboration with the public. Two Stakeholder Advisory Committee meetings and one public forum were dedicated to build consensus among the study team and stakeholders. Additional discussion on the Problem and Opportunity Statement is provided in Chapter6.

3.1 Communications Activities

3.1.1 Project Mailing List & Database

Over the duration of the study, Waterfront Toronto maintained a database of over 9,000 individuals, stakeholders, agencies, businesses and organizations interested in projects being undertaken by Waterfront Toronto, including:

- Waterfront residents, businesses and community associations;
- City-wide groups with an interest in urban design, culture, heritage, recreation, environment, and transportation;
- Local media;

- First Nations;
- Municipal, provincial and federal politicians with constituencies in the project study area;
- Representatives of municipal, provincial and federal government agencies with a likely interest in the EA.

Those on the mailing list received notices of meetings and public consultation and study updates.

3.1.2 Notice of Commencement

The purpose of a Notice of Commencement is to advise those who may be affected by an undertaking, that an EA is commencing, and that there will be opportunities for them to participate in the study process.

In accordance with the guidelines for a Schedule C Municipal Class EA, a Notice of Commencement for the Queens Quay Revitalization EA was issued on September 13th, 2007 and e-mailed to all contacts in Waterfront Toronto's database. The Notice of Commencement was also published in the Toronto Star on September 21st, 2007 and posted on the Waterfront Toronto website. A copy of the ad is included in Appendix A.

3.1.3 Postcard Mailer

Prior to the first public forum (January 10th, 2008), a postcard was mailed to all residents and businesses in the study area. Approximately 11,000 households and businesses received the postcard as unaddressed ad-mail distribution through Canada Post.

The postcard invited recipients to attend Public Forum #1 and to add their names to the project mailing list. A copy of the postcard is included in Appendix A.

3.1.4 Meeting Notices

In addition to the Notice of Commencement and the postcard mailer, meeting notices were published in the local media and distributed via email to the project mailing list. Meeting notices were published in the local newspapers for each of the three Public Forums that were held over the course of the EA, as follows:

- Public Forum #1 (January 10, 2008): notice published in the Toronto Star on January 9, 2008;
- Public Forum #2 (December 8, 2008): notice published in the Metro on December 2nd, 2008;
- Public Forum #3 (March 25, 2009): notice published in the Toronto Star on March 20, 2009;
- Drop-In Centre (March 28, 2009): notice published in the Toronto Star on March 20, 2009.

Copies of the Public Forum meeting notices are included in Appendix A.

3.1.5 Project Website

The Queens Quay Revitalization webpage was launched at the time of project initiation and publishing of the Notice of Commencement. The website consists of a dedicated page on the Waterfront Toronto website (waterfrontoronto.ca). Information posted on the website includes general information about the project, the Notice of Commencement, Stakeholder Advisory Committee presentations and meeting summaries, public forum notices, display panels, presentations, workbooks, and meeting summaries. Waterfront Toronto's website also provides a "contact us" form through which online visitors can request information or ask questions.

An email address (central@waterfrontoronto.ca) specific to the Central Waterfront was set up, monitored and provided on all correspondence for this study.

3.1.6 Notice of Completion

At the end of the study, a Notice of Completion was issued to the public and review agencies through mailings to those on the study contact list and ads placed in local newspapers. The Notice of Completion constitutes the final mandatory point of contact with the public, provides notice of the filing of the Environmental Study Report and contains the date of the start of the 30-day public review period. The notice also included a provision to request a Part II Order.

Notices of Completion were circulated to those on the study contact list on December 18, 2009, appeared in the Toronto Star on December 18, 2009 and indicated December 18, 2009 as the start of the review period. The last day of the review period was identified as January 26, 2010 in the Notice.

Additional discussion on the Municipal Class EA process is provided in Chapters 2 and 11.

3.2 Consultation Activities

3.2.1 Public Forums

The study team hosted three public forums and one drop-in centre to provide the public, particularly residents and business representatives in the Queens Quay study area, with information about the project and to invite input and feedback. Each of the three public forums followed a similar format, with an open house at the outset of the session, followed by a presentation by the study team, and then an interactive feedback session either involving small table discussions and/or facilitated plenary sessions. Worksheets were distributed to the participants so that they could record their thoughts and provide comments in writing.

The open house sessions held prior to each public forum gave participants the opportunity to review display boards and speak one-on-one with Waterfront Toronto, City of Toronto and the study team consultants. Public forum #3 was followed by an extended drop-in centre held on a separate day to provide participants additional time to review the proposed design plans and discuss concerns one-on-one with the study team.

Lura Consulting provided neutral facilitation services for the three public forums. Lura Consulting also prepared summary reports for each meeting. All of the materials from each of the public forums, including presentations, workbooks, and meeting reports, were made available on the Waterfront Toronto website.

Reports documenting the Public Forums, including input received, comments and questions raised at these meetings, are included in the Public Consultation Summary Report in Appendix A. Responses to comments and input provided during these meetings are provided in Table 3-3 located at the end of this chapter.

Public Forum 1

On January 10th, 2008, the first public forum was held at the Westin Harbour Castle Hotel between 6 p.m. and 9 p.m. This first forum was introduced the Queens Quay Revitalization EA process and provided an initial opportunity for the public input on how Queens Quay could be improved.

An estimated 300 people participated in the meeting, along with members of the study team from Waterfront Toronto, City of Toronto, Toronto Transit Commission (TTC), West 8+DTAH and Arup.

Following the open house portion of the evening between 6:00 and 7:00 p.m., the study team gave a presentation that was divided into two parts. Part 1 provided background on

the EA process, on the Central Waterfront Master Plan, the Queens Quay Revitalization EA purpose and Problem and Opportunity Statement, and the planning policy context for the EA. Part 2 included a description of the four alternative planning solutions, how each alternative solution was evaluated, and the preferred planning solution.

Option 3 (Physical Modifications Within Existing Right-of-Way) was presented as the preferred planning alternative because it favourably addressed nine of the ten evaluation criteria against which all four options were assessed.

Following the question and answer period, participants worked in small groups in round table discussions.

Public Forum 2

On December 8th, 2008, the second public forum was held at the Harbourfront Community Centre between 6 p.m. and 9 p.m. The purpose of the Public Forum 2 was to provide a progress update on the Queens Quay Revitalization EA and to present and invite feedback on a "short list" of alternative design concepts for a revitalized Queens Quay corridor. At the meeting, there was also a discussion regarding next steps in identifying a preferred design concept, including opportunities for public input.

Approximately 250 participants attended. The format for the evening was a one-hour open house followed by a presentation by the study team, a question and answer period, roundtable discussions, and a final facilitated plenary session.

To further define how the preferred planning solution (which was presented at the first Public Forum) might be implemented on the ground, the study team presented five alternative design concepts:

1. Do Nothing (no physical or operational changes);
2. Centre Transit With On-Street Bike Lanes;
3. Centre Transit with Martin Goodman Trail;
4. South side Transit with Martin Goodman Trail with One-Way Traffic.
5. South side Transit with Martin Goodman Trail and Two-Way Traffic;

After reviewing the evaluation criteria, the study team recommended that alternatives 2, 4, and 5 be short-listed for further evaluation.

A question and answer period was provided for participants to seek clarification on any of the information presented to them.

Participants felt that the study team should consider the seasonality of the design, liability issues in winter, more frequent transit service along Queens Quay, restricting vehicular access to Queens Quay, accessibility for people with physical disabilities, increased signage, a pathway from Union Station, speed limits for cyclists, and additional public washrooms along the Central Waterfront.

Public Forum 3

On March 25th, 2009 a third public forum was held at the Westin Harbour Castle Hotel. It was followed by an extended Drop-in Centre on March 28th, 2009, at the Harbourfront Centre.

An estimated 350 people participated in Public Forum #3 on March 25th. The format for the evening was a half-hour open house followed by a presentation by the study team, and a facilitated plenary feedback session. The purpose of the public forum was to provide a comprehensive overview of the EA process undertaken; and to present and invite feedback on preferred alternative designs for a revitalized Queens Quay corridor.

The presentation on the preferred design alternatives for the Queens Quay Revitalization included a detailed description of the criteria that were used to assess each of the alternative design concepts, and whether or not each alternative met these criteria. Based on the feedback received at the second public forum and detailed evaluation of each option against the project goals and evaluation criteria, the study team recommended proceeding with Alternative #4 (South Side Transit: Martin Goodman Trail, One-Way Traffic) or Alternative #5 (South Side Transit: Martin Goodman Trail, Two-Way Traffic). The study team noted that more work remained to decide if one-way or two-way traffic along Queens Quay is preferred, and that the team was open to feedback on this matter.

Participants were generally pleased with the proposed plan for Queens Quay, the landscaping designs, the pedestrian and cycling realms, and public transit. There was overall support for the south side options (Options 4 and 5), with more participants supporting the 2-way traffic option (Option 4), or being comfortable with either of the two south side options (Option 4 or 5). This was a major consideration in determining the final preferred design.

Drop-In Centre

In addition to the public forums, the study team held a drop-in centre. The extended drop-in centre, held at Harbourfront Centre on Saturday, March 28, 2009, provided participants with the opportunity to meet informally with study team members during a three-hour open house session. An estimated 150 participants attended. While circulating among participants, the study team recorded comments and suggestions on clipboards.

There was an opportunity for participants to gain a understanding of how the preferred alternatives function in detail at a block-by-block scale, with long roll plans of the preferred alternatives on display and team members present to work one-on-one with individuals.

3.2.2 Stakeholder Advisory Committee

The Queens Quay Revitalization Stakeholder Advisory Committee (SAC) was formed to provide an ongoing forum for feedback and advice to the Queens Quay Revitalization EA study team on key aspects of the Class EA process. The SAC comprised of representatives from the following organizations and individuals:

- Waterfront Regeneration Trust
- Central Waterfront Neighbourhood Assoc.
- York Quay Neighbourhood Assoc.
- Queens Quay Harbourfront Business Improvement Assoc.
- Residents-at-large
- Toronto Island Community Assoc.
- Loblaw Properties Ltd.
- Redpath Sugar
- Radisson Hotel
- Brookfield Properties
- Harbourfront Centre
- Toronto Passenger Vessel Assoc.
- Bus and Boat Company
- Premier Conference & Events
- Toronto Bicycling Network
- West Don Lands Committee
- St. Lawrence Neighbourhood Assoc.
- Port Lands Action Committee
- Waterfront Action
- Gooderham & Worts Neighbourhood Assoc.
- Bathurst Quay Neighbourhood Assoc.

- Transit Advocate
- Pedestrian Advocate
- Councillor Pam McConnell's Office
- Councillor Adam Vaughan's Office

The SAC met six times over the course of the EA study, as well as prior to the study. The SAC's mandate was to provide feedback and advice on:

- The problem and opportunity statement;
- Issues and opportunities to be addressed in the planning process;
- Alternative solutions and design considerations;
- Evaluation method and criteria;
- Preferred alternative strategies and design concepts;
- Proposed presentations for public forums; and
- Other relevant matters referred to the SAC for comment.

Input and comments provided by the SAC and the study team's responses to them are summarized in Table 3-3 at the end of this chapter and in the Public Consultation Summary Report (Appendix A). Meeting summaries are also provided in Appendix A.

SAC Preliminary EA Meeting, July 24, 2007

Prior to the official commencement of the environmental assessment process, the study team met with the SAC to seek input on the Study Design prepared for the EA. The Study Design contained the team's base assumptions and corresponding plan of action for conducting a Municipal Class Environmental Assessment (EA). The purpose of the Study Design document was to set out a systematic evaluation, clear documentation procedure and traceable decision-making framework for the Class EA.

Members provided the team with several considerations in carrying out the study, including: that the team needs to recognize the disconnect in the bike route through the central waterfront; the design competition scheme and other alternatives need to be studied; traffic operations needs to be a studied in detail; and there were suggestions for the limits of the study area.

SAC Meeting 1, September 24, 2007

The inaugural meeting of the Queens Quay Revitalization EA SAC was convened on September 24, 2007. The study team provided an overview on the work program and schedule prepared for the Queens Quay Revitalization EA. In addition, there was a detailed presentation of the proposed Problem and Opportunity Statement.

The discussions focused on issues that should be taken into consideration as part of the study as well as debate and refinement of the Problem and Opportunity Statement

SAC Site Walk, October 23, 2007

Waterfront Toronto invited the Queens Quay Revitalization EA Stakeholder Advisory Committee to participate in a site walk of the study area. Disposable cameras were provided so that participants could photograph their experiences along the way.

The goal of the site walk was to collect valuable insight on the functional requirements and challenges that users of Queens Quay experience. What became clear on the site walk was the level of conflict which currently exists on Queens Quay.

SAC Meeting 2, November 15, 2007

The second SAC meeting provided an opportunity for the study team to receive further feedback on the revised Problem and Opportunity Statement and to present the four alternative planning solutions and the preferred solution to the SAC before they were made public at the first public forum.

At the meeting, a few more refinements to the Problem and Opportunity Statement were suggested. It was noted that the revised Problem and Opportunity Statement was largely acceptable to the SAC and would be the subject of further consultation at the upcoming public forum. The full Problem and Opportunity Statement, as approved by the SAC, is included in Chapter 6 of this report.

Following the presentation of the four planning solutions and the preferred planning alternative, SAC members had several comments regarding the potential for transportation conflicts and loss of traffic capacity along Queens Quay. These comments and the study team's responses to them are summarized in Table 3-3 at the end of this chapter and in the Public Consultation Summary Report.

SAC members also suggested some modifications to how the planning alternatives should be presented at the first public forum.

SAC Meeting 2B, December 11, 2007

This special additional meeting was called so that SAC members would have an opportunity to review the revised presentation and meeting format before it was presented to the public at the first public forum in January 2008. They were briefed on the proposed format for the upcoming public forum and given the opportunity to provide feedback.

SAC Meeting 3, November 27, 2008

This meeting was held approximately 11 months after the previous meeting of the Stakeholder Advisory Committee. During this period, the study team worked to resolve technical concerns related to the various design alternatives. An update newsletter to the SAC was sent during this time to keep them informed of progress.

The purpose of the meeting #3 was to seek feedback on the alternative design concepts associated with the preferred planning solution that was selected following the first public forum in January 2008. The study team also wanted the SAC's comments on the content, length and level of detail in the presentation. Comments from the SAC included:

- **South side Transit:** SAC members expressed strong support for transit (i.e., streetcar tracks) on the south side of Queens Quay. Design alternatives #4 and #5 presented the south side transit options, and SAC members generally recommended focusing on these options.
- **Parking and Access:** Tour bus parking and driveway access remained unresolved in the opinion of some SAC members.
- **Quantitative Data:** More quantitative data on traffic and servicing impacts were requested to assess fully the impacts on landowners.
- **Preferred Alternatives:** The study team explained that each alternative was evaluated against the Problem and Opportunity Statement, which was developed in collaboration with the SAC, and that the purpose of the meeting and the upcoming public forum was to obtain feedback on the evaluation of the alternatives.

SAC Meeting 4, March 11, 2009

This meeting was the final meeting of the SAC prior to the preferred design concepts being presented to the public at Public Forum #3 in late March 2009.

This meeting focused on the major elements of the preferred alternative in detail – the south side transit option with either one-way or two-way traffic on the north side of Queens Quay. These included reviewing a bus plan, servicing plan, parking plan, transit plan, site access plan, and site specific drawings for several properties. SAC members sought clarifications on many of these elements, with many comments focused on concerns about access to properties along the south side of Queens Quay, potential impacts on vehicle traffic, and issues regarding buses, taxis and cyclists. SAC members raised a number of suggestions on how these concerns could be addressed in the proposed plans.

In addition, a detailed presentation on traffic and transit operations was provided in response to requests from the SAC for further quantitative transportation analysis on Queens Quay.

The study team closed the meeting with information on next steps in the EA process. Public Forum #3 would be the final public meeting, but the study team will continue to receive and respond to public comments before the Environmental Study Report goes to City Council for approval. SAC members were told that once it is approved by City Council, the Environmental Study Report will be filed with the City's Clerk office for a public review period. Prior to finalizing the study report, the study team will continue to meet with landowners and other stakeholders to address any specific issues and concerns.

3.2.3 Focused Stakeholder Meetings

Face-to-face meetings with stakeholder groups, resident groups, local businesses, landowners and government agencies were a vital component of the consultation process. Over the course of the EA, Waterfront Toronto held more than 50 meetings, including roundtable discussions, presentations, town hall meetings, workshops, and one-on-one briefings. The goal of these meetings was to ensure that there was broad understanding of the objectives of the EA and the revitalization, to obtain input on very detailed components of the alternatives being considered and to collaboratively resolve issues and concerns. A list of meetings with stakeholders is provided in Table 3-1.

Waterfront Toronto's approach to public consultation also took into consideration the concerns of city-wide interest groups, including cyclists, pedestrians, and environmental groups. Waterfront Toronto met and worked closely with these and other community groups to ensure that the preferred design alternative balances these city-wide interests with localized concerns about access to properties and the prosperity of Queens Quay businesses.

The following table lists meetings that took place over the course of the Queens Quay Revitalization EA process:

Table 3-1: Stakeholder Meetings and Interviews

Group	Meetings	Dates
Landowners & Resident Groups	10 & 20 Bay Street	January 23, 2008
	65 Harbour Street	February 21, 2008
	Redpath Sugar	July 29, 2008 September 19, 2008 January 15 & 23, 2009 March 31, 2009 May 5, 2009
	401 Queens Quay	October 22, 2008 January 15, 2009
	Harbourfront Centre	January 16, 2009
	Radisson Hotel	October 10, 2008 January 22, 2009 March 24, 2009
	Queens Quay Terminal	September 30, 2008 January 27, 2009 March 9, 2009 March 10, 2009 March 31, 2009
	211 Queens Quay	February 11, 2009
	251 Queens Quay	February 11, 2009 April 7, 2009 April 28, 2009
	Pier 27/Cityzen	February 24, 2009
	250 Queens Quay 260 Queens Quay 270 Queens Quay	November 16, 2009 November 23, 2009
Landowners & Resident Groups	Harbour Square	January 25, 2008 September 23, 2008 January 22, 2009 March 10, 2009 March 24, 2009
	Harbour Square Retail	November 20, 2009
	Bus & Boat Company	February 17, 2009 March 31, 2009
	Rabba Novem	ber 17, 2009
	Westin Harbour Castle	January 21, 2008 March 31, 2009
	260 Queens Quay West Osmington/ 1 Yonge Street	March 31, 2009 June 19, 2008 April 1, 2009
	Mariposa Boats	March 10, 2009

Table 3-1: Stakeholder Meetings and Interviews

Group	Meetings	Dates	
Community Organizations	Queens Quay Harbourfront Business Improvement Association	August 29, 2008 February 3, 2009 March 5, 2009 March 10, 2009 March 13, 2009	March 24, 2009 April 16, 2009 May 7, 2009 November 19, 2008 December 15, 2008
	Bathurst Quay Neighbourhood Association	April 15, 2009	
	York Quay Neighbourhood Association	April 30, 2009	
	Toronto Island Community Association	April 30, 2009	
Government Agencies	Toronto Fire Services and Emergency Medical Services	June 25, 2008 January 22, 2009 May 6, 2009	
	Police Marine Unit	January 27, 2009	

3.2.4 Review Agency Consultation

Technical Advisory Committee

Technical staff with the City and other partner agencies provided review, comment and direction throughout the EA process. The Technical Advisory Committee (TAC) held three formal TAC meetings during each phase of the EA, serving as a checkpoint prior to the three public forums. Additional focused meetings were held with numerous technical agencies throughout the process to address specific concerns and another level of confirmation.

The project TAC, formed to provide in-progress review of the EA, included representatives from Toronto Fire, Emergency Medical Services, Toronto Police, Toronto Hydro, Toronto Transit Commission, Toronto Port Commission , Harbourfront Centre, numerous City technical departments such as Community Planning, City Planning – Transportation, Transportation Services and Traffic Operations. Table 3-2 is a listing of the individuals representing these agencies that participated in the TAC.

The TAC also provided valuable input to the documentation of this study. All representatives of the TAC were provided the opportunity to review and comment on this ESR prior to filing. Comments ranged from suggestions for provisions (such as the study of emergency access) that should be considered during the design phase, to suggestions to help clarify and improve the traffic analysis reporting, to clarifications on area features such as storm water facilities, area neighbourhoods and bike paths. The study team used this input to help finalize the ESR.

Table 3-2: Technical Advisory Committee Membership

Organization/Position/Department	Representative
City of Toronto – Community Planning	Kathy Thom
City of Toronto – Community Planning, Manager – Downtown Section	Al Rezoski
City of Toronto – Community Planning, Manager – West Section	Lynda MacDonald
City of Toronto – Emergency Medical Services, Senior EMS Planner	Caroline Mellor
City of Toronto – Emergency Medical Services, Senior EMS Planner	Steve Deuchars
City of Toronto – Fire Services	Terry Bruining
City of Toronto – Heritage	Sherry Pedersen
City of Toronto – Parks Supervisor, Community Design and Planning	Sean Harvey
City of Toronto – Planning – Transportation, Program Manager	Tim Laspa
City of Toronto – Planning – Urban Design, Director of Urban Design	Robert Freedman
City of Toronto – Planning – Urban Design, Manager of Urban Design	Eric Pedersen
City of Toronto – Technical Services	Nhat Nguyen

Table 3-2: Technical Advisory Committee Membership

Organization/Position/Department	Representative
City of Toronto – Technical Services, Senior Project Engineer	Harry Persaud
City of Toronto – Traffic Operations, Manager of Traffic Operations (East Area)	Jacqueline White
City of Toronto – Traffic Operations, Manager of Traffic Operations (West Area)	Ron Hamilton
City of Toronto – Transportation Services, Manager – Pedestrian and Cycling Infrastructure	Dan Egan
City of Toronto – Transportation Services, Manager Infrastructure Planning	John Kelly
City of Toronto – Waterfront Secretariat	Jayne Naiman
Harbourfront Toronto, Director Site Operations and Services	Helder Melo
Toronto and Region Conservation Authority	Adele Freeman
Toronto Hydro, Supervisor City Coordination & Policy Planning	Girma Tewolde
Toronto Parking Authority, Strategic Operations and Services	Ian Maher
Toronto Police, Marine Unit, Constable	Gary Gibson
Toronto Port Authority	Michael Riehl
Toronto Transit Commission, Project Engineer	Jim Sinikas
Toronto Transit Commission, Superintendent – Route and System Planning	Bill Dawson
Tourism Toronto, Tourism Development	Rob Berry

TAC Meeting 1, November 05, 2007

The first meeting on November 05, 2007 was held at the offices of Waterfront Toronto. The study team presented the initial phase of the process and invited feedback and comment on the Problem and Opportunity Statement. TAC members were also asked to help identify the alternative planning solutions and evaluation criteria.

TAC Meeting 2, February 8, 2008

The second meeting on February 08, 2008, also at the offices of Waterfront Toronto, focused on the presentation of the preliminary alternative design concepts. TAC members were asked for their feedback and critique of the concepts, and to help direct the selection of the appropriate evaluation criteria.

TAC Meeting 3, March 12, 2009

The third and last formal TAC meeting on March 12, 2009 was at Waterfront Toronto. The study team presented the technically preferred design alternative, and asked for comments and to highlight any concerns or issues they may have with the recommendation.

Key issues raised during the TAC meetings and further agency consultation captured a wide range of topics, from road operations to construction timing and coordination. Specifically, the primary issues included:

- Providing emergency vehicles access to both the roadway and TTC right-of-way;
- Developing a flexible street design to accommodate potential one-way conversion, if necessary;
- Identifying techniques to indicate to other vehicles that TTC right-of-way is not a driving lane;
- Resolving the unique asymmetrical intersection design;
- Providing signage and control of the Martin Goodman Trail;
- Designing traffic and transit signal operations;
- Accommodating access to utilities and scheduling for construction;
- Removal of snow from the Martin Goodman Trail and if required, the TTC right-of-way.

Ministry of the Environment

Affected municipalities and the Ministry of the Environment are considered to be mandatory review agencies and required to be contacted, in accordance to the Municipal Class Environmental Assessment. The Ministry of the Environment was included in the Study's contact list, and was contacted at all mandatory points of contact for a Schedule C Environmental Assessment. In addition, there was a meeting between the study team and the MOE on February 26, 2009 to gain input on the study process, findings to date and expectations in filing the Environmental Study Report.

3.3 First Nations Outreach

While much of the Central Waterfront area is urbanized, the Lake Ontario shoreline and vicinity is historically important to several Aboriginal groups. Waterfront Toronto has previously identified these groups, and included a representative of the Mississaugas of the New Credit First Nation as a participant on the Central Waterfront Stakeholder Committee.

On November 14, 2007, the following First Nations were sent a letter notifying them of the study commencement and offering an opportunity to discuss the project in more detail:

- Mississaugas of the New Credit First Nation;
- Alderville First Nation;
- Mississaugas of Scugog Island First Nation;
- Six Nations of the Grand Territory;
- Hurons-Wendat First Nation;
- Metis Nation;
- Chippewas of Georgina Island;
- Chippewas of Rama;
- Curve Lake First Nation;
- Hiawatha First Nation;
- Iroquois and Allied First Nation;
- Beausoliel First Nation .

On January 22, 2008, these First Nations were sent a package of information on Public Forum #1, and on November 24, 2008, a notice of Public Forum #2 was mailed.

At the time of completion of this Environmental Study Report, no replies or responses were received from the First Nations.

On December 18, 2009 (at the time of filing of this Environmental Study Report) a Notice of Completion was sent to the First Nations listed above.

3.4 Summary of Consultation Responses

Several issues emerged as key concerns among participants in the EA consultation activities. In brief, the study team's responses to the major feedback and issues that emerged are provided in Table 3-3.

Appendix A of this ESR consists of the Public Consultation Summary Report that serves as the consultation record for the study. It documents more detailed comments, including comments received in writing or verbally throughout the duration of the project. The Comments covered a broad range of topics, and were categorized under the following:

- Vehicle Parking
- Vehicle Traffic
- Boat / Marine Access
- Cycling
- Martin Goodman Trail
- Pedestrians
- Public Transit
- Taxis
- Tour Bus Access and Parking
- Access to Residential Properties
- Access to Business / Institutional Properties
- Safety and Security
- Social Concerns
- Urban Design
- Green Space
- Schedule and Timelines
- Other Waterfront Projects
- Planning Solution 1 (Do-Nothing)
- Planning Solution 2 (Operational Changes)
- Planning Solution 3 (Physical Changes within Existing Right-of-Way)
- Design Concept 4 (South Side Transit with Martin Goodman Trail and 2-Way Traffic)
- Design Concept 5 (South Side Transit with Martin Goodman Trail and 1-Way Traffic)
- Local Business and Attractions
- Study Area

Table 3-3: Responses to Agency, Stakeholder and Public Input/Feedback

Agency, Stakeholder and Public Input/Feedback	Study Team Response/Action
Opportunities for improvement in study area: Opportunities exist to improve traffic congestion, noise and air pollution, north-south connections, illegal parking, public transit, cycling lanes, economic activity, the Martin Goodman Trail, and seasonal activities in the study area.	These are all factors in evaluating planning solutions and design concepts and in determining the preferred design.
Preferred planning solution: The preferred planning solution was pedestrian friendly, beautified the waterfront, created a neighbourhood, provided space for cycling, increased economic activity, discouraged car use, and increased recreational activities.	Comments noted.
Shortlisted design concepts: Most participants at Public Forum 2 preferred to abandon Alternative 2 in favour of the south side alternatives. Participants were happy with the expanded pedestrian zone, the bike lanes that incorporate the Martin Goodman Trail, the "destination feel" of the design, plentiful trees and excellent landscaping, easily accessible public transit, increased safety of cyclists and pedestrians, and the traffic calming effect of the design.	Comments noted.
Technically Recommended Alternative: Participants at Public Forum 3 were generally pleased with the proposed plan for Queens Quay, the landscaping designs, the pedestrian and cycling realms, and public transit. There was overall support for the south side options, with more participants supporting the 2-way traffic option.	Comments noted.
Access to south side properties: Throughout the consultation, residents and property owners expressed concern that the reconfiguration of Queens Quay would result in access challenges for properties located on the south side of Queens Quay. Specific concerns were expressed about the elimination of signalized intersections at 55/65 Harbour Square, the closure of Robertson Crescent that encircles the Radisson Hotel (249 Queens Quay), and the consolidation of other access routes and driveways.	The south side transit alternatives require a change in access condition for all properties on the south side of Queens Quay. Changes are required primarily to accommodate vehicular movements over the transit right-of-way; however, a great effort has been made to ensure that all sites both north and south of Queens Quay are accessible from Queens Quay and/or Lake Shore Boulevard. The preferred design maintains access to all properties.

Table 3-3: Responses to Agency, Stakeholder and Public Input/Feedback

Agency, Stakeholder and Public Input/Feedback	Study Team Response/Action
Bicycle/pedestrian/automobile interaction: Many participants in the consultation process expressed concern with how the multiple modes of transportation could be accommodated as part of a redesigned Queens Quay corridor. Many pedestrians were concerned about the risks posed by cyclists using a trail adjacent to the sidewalk, whereas cyclists were concerned about the risks of sharing road space with cars. Cyclists and pedestrians were both concerned about safety at intersections. Many motorists felt that the narrowing of road space to accommodate pedestrians and cyclists in their own right-of-ways would result in greater traffic congestion along Queens Quay.	Multi-modal travel is an existing condition on Queens Quay. The current interaction between modes is not ideal and results several conflicts. The redesign of Queens Quay includes the off-street Martin Goodman Trail which will help to minimize conflicts by providing more pedestrian space and dedicated bicycle space. The movements on the Martin Goodman trail will need to be coordinated with the traffic signals along Queens Quay to allow cyclists safe movements through the intersections. Features such as separate cycling signals will be considerations during the design and implementation stage of the project, in addition to a comprehensive way-finding and signage program along Queens Quay. Bollards and “cattle gates” to calm traffic on the Martin Goodman Trail are other features that will be considered as a part of the traffic control strategy.
Loss of road capacity: As previously mentioned, many motorists were concerned that the narrowing of road space to accommodate public transit, cycling, and walking would result in increased traffic congestion.	There is a physical reduction in road space but this is mitigated by a greatly improved operational system which includes more east-west green time and coordinated signals. Specifically, Queens Quay is the southernmost street in downtown, so much of the traffic using Queens Quay is oriented to the north. This results in significant traffic volume making eastbound left turns towards downtown. With south side transit, the eastbound left turns can operate on a permissive phase and not conflict with transit. There is also a benefit to westbound through traffic because the eastbound turns can operate permissive (i.e. turn through gaps in westbound traffic).These operational improvements add capacity and reduce stopping and queuing. Queens Quay will still be busy as it is today during peak tourist times and special events. The plan for Queens Quay is not a traffic solution, but an overall transportation solution which attempts to provide sufficient space for all modes to encourage a well balanced transportation corridor.

Table 3-3: Responses to Agency, Stakeholder and Public Input/Feedback

Agency, Stakeholder and Public Input/Feedback	Study Team Response/Action
Tour bus and taxi parking: Throughout the consultation process, many participants expressed their concerns about the operation of taxis and tour buses along Queens Quay, including the traffic congestion, air and noise pollution and illegal parking.	A feature of the Preferred Design arrangement is that it may provide dedicated space, typically in the form of lay-bys to accommodate curbside activity such as short term bus loading, auto parking and service loading. The spaces may be provided outside of the traveled way, promoting more efficient traffic flow. Dedicated lay-bys can be provided at Spadina Avenue, Rees Street, York Street, Bay Street and Yonge Street. Waterfront Toronto and the City of Toronto are undertaking a study of a broader parking strategy and program to improve operations across the city. The space available in the Preferred Design will be subject to this initiative, which will help define the best use of these spaces.
Issues relating to the eastbound access to the EMS/Fire in the two-way option: no room for dedicated right-turn lane; EMS/Fire drivers will have to be aware of the potential for streetcar traffic as they make the right turn; streetcars will not have the same signal as traffic and this may create conflicts; There will be signs indicating no right turn on red, but there is potential for it to be disobeyed. Other issues relating to the two-way option for consideration; opposing travel of eastbound cars and westbound streetcars create a contra-flow condition; potential of cars disobeying right-turn signals may result in collisions with streetcars approaching from behind.	The south side option consolidates turning movements at several entrances on the south side of Queens Quay; that is, due to a limited street right-of-way either a left turn or right turn is provided for access to the properties, not both. In the existing condition, the intersection is unsignalized, has no dedicated turn lanes and requires an uncontrolled westbound left turn over the TTC right-of-way. The south side option includes a signal at the intersection. Westbound left turns would be provided with a dedicated turn lane and an “advanced green” phase for turning over the tracks, while street cars would be stopped. Fire and EMS vehicle operators would need to signal their intentions to make right-turns over the TTC right-of-way. The project team will continue to work and consult with TTC, the City, EMS and Fire during design to ensure access/egress issues and protocols are addressed. Sufficient lane widths will be provided and the additional physical separation between eastbound traffic and westbound transit will be studied during detailed design to address the contra-flow condition. As a commitment to future work, a traffic safety and operations consultant will be retained during the design process to ensure the safety of all right-of-way users.

Table 3-3: Responses to Agency, Stakeholder and Public Input/Feedback

Agency, Stakeholder and Public Input/Feedback	Study Team Response/Action
Issues relating to the one-way option: EMS/Fire primary access eastbound from the station would be via the tramway. The right-of-way should limited to TTC streetcars and cleared of snow; the selection of tramway surface needs to consider that the tramway would be a primary access for EMS and Fire; the streetcar portal may obstruct the EMS primary access route; there will need to be coordination between TTC and EMS/Fire on the use of the tramway. Toronto Fire Services can not consider the dedicated transit right-of-way as a primary access route but rather a secondary route that may or may not be free of all barriers (ie. Snow & ice buildup or street cars). Fire vehicles responding to emergencies east of station 334, must first travel west, then north to find alternate route to travel eastbound. This will add significant time to the response.	Comments noted. These were all considerations in the selection of the preferred design. The project team will continue to work and consult with stakeholders, including TTC, the City, EMS and Toronto Fire Services during design to ensure detailed design and operational issues are addressed.
Toronto Fire Services prefers the two-way vehicle travel lanes over the one-way option, as it permit access to all properties located along Queens Quay West.	Comments noted.
During the Environmental Assessment process, much of the detail design is not available. Often it is the detail design issues have a more significant impact on Toronto Fire Services ability to deliver its services. The project team needs to continue to consult with Toronto Fire to address design issues, including: Provisions for Fire Fighting as prescribed by the Ontario Building Code for all existing buildings will be maintained as per original design and construction. Continued involvement and input on the design of the Transit ROW as it impacts the emergency response route along Queens Quay. Details such as pole locations, curb/barrier designs, platform locations and maintenance need further refinement. Street Width (curb to curb) remains a major concern for Toronto Fire. A minimum width of nine metres should be maintained.	Comments noted. The project team will continue to work and consult with stakeholders, including TTC, the City, EMS and Toronto Fire Services during design to ensure detailed design and operational issues are addressed. As a commitment to future work, a traffic safety and operations consultant will be retained during the design process to ensure the safety of all right-of-way users.

Table 3-3: Responses to Agency, Stakeholder and Public Input/Feedback

Agency, Stakeholder and Public Input/Feedback	Study Team Response/Action
There is no answer as to where motor coach drivers will take the motor coach in the area after they have dropped off their passengers. Telling driver that they cannot remain in the lay-by is fine, however there must be viable options for these drivers provided in the area. The provision for short term motor coach parking is lacking in the area.	The co-proponents will continue to develop and refine a curbside management plan for the street, including a waterfront-specific bus parking strategy. The bus strategy will focus specifically on the tourism related activity that takes place along and in close proximity to Queens Quay. The plan will identify locations for short-duration drop-off/pickup zones for buses, short-term parking, and long-term parking. The plan will also identify a management system to better direct how bus related traffic occurs on the waterfront. Further to the issue of curbside management, the recommended preferred plan will include a number of dedicated parking/loading zones where possible. This will minimize conflicts between illegal stopping and parking activities with through traffic.

4 Policy and Planning Context

4.1 Introduction

Over the past several decades the City along with the Federal and Provincial governments have recognized the enormous potential of Toronto's waterfront. Several initiatives have preceded the current planning, design and implementation efforts by Waterfront Toronto:

- In 1988, the Government of Canada established the Royal Commission on the Future of the Toronto Waterfront with Honourable David Crombie as Commissioner.
- In 1992, the Government of Ontario established the Waterfront Regeneration Trust to implement the recommendations of a Royal Commission report including the creation of a continuous waterfront trail along the Lake Ontario shoreline.
- In 1999, all three levels of government established a Task Force led by Robert Fung to find ways to revitalize the waterfront and realize its potential as a major asset to the public life of the city; the Task Force published a report in March of 2000 entitled "Our Toronto Waterfront"
- In 2001, all three levels of government established the Toronto Waterfront Revitalization Corporation (TWRC) and committed funds to its operation. In the spring of 2007, the TWRC was re-branded as WATERFRONTToronto.

There is a foundation of a number of adopted City of Toronto planning policies, guidelines and initiatives to guide Toronto's waterfront revitalization and its evolving transportation network. These informed the EA study, including the development of the Problem and Opportunity Statement, evaluation criteria, and identification and evaluation of alternatives. Highlights from these documents relevant to the Queens Quay Revitalization EA study are included below.

4.2 Toronto Official Plan

Adopted by Council on November 2002 and approved in part in July 2006, the Official Plan contains policies that support the need to improve conditions for pedestrians and non-vehicular movement by re-balancing priority of use within the city's public rights of way. Section 2.4 of the Official Plan states:

In a mature city like Toronto, the emphasis has to be on using the available road space more efficiently, to move people instead of vehicles and on looking at how the demand for vehicle travel can be reduced in the first place. Reducing car dependency means being creative and flexible about how we manage urban growth. We have to plan in 'next generation' terms to make transit, cycling and walking increasingly attractive alternatives to using the car and to move towards a more sustainable transportation system.

These goals are reflected specifically in the following Toronto Official Plan policies:

- ***Policy 2.2.1.8:*** *Priority will be given to improving transit access to the Downtown while the expansion of automobile commuting and all-day parking will be discouraged.*
- ***Policy 2.2.1.10****: Priority will be given to surface transit vehicles on key Downtown streets, particularly those with streetcars.*
- ***Policy 2.4.1:*** *Travel demand management (TDM) measures will be introduced to reduce car dependency and rush hour congestion by: increasing the proportion of trips made by transit, walking and cycling; Increasing the average car occupancy rate; Reducing demand for vehicular travel; and shifting travel times from peak to off-peak periods.*

- ***Policy 2.4.7:*** *Policies programs and infrastructure will be introduced to create a safe, comfortable and bicycle friendly environment that encourages people of all ages to cycle for everyday transportation and enjoyment, including: an expanded bikeway network; … measures to improve safety of cyclists through the design and operation of streets…*
- ***Policy 2.4.8:*** *An urban environment and infrastructure will be created that encourages and supports walking throughout the City through policies and practices that ensure safe, direct, comfortable, attractive and convenient pedestrian conditions, including safe walking routes to schools, recreation areas and transit.*
- ***Policy 3.1.1.5:*** *City streets are a significant public open space that serve pedestrians and vehicles, provide space for public utilities and services, trees landscaping, building access, amenities such as view corridors, sky view and sunlight, and are public gathering places. Streets will be designated to perform their diverse roles, balancing the spatial needs of existing and future users within the right-of-way. This includes pedestrians, people with mobility aids, transit, bicycles, automobiles, utilities and landscaping*
- ***Policy 3.1.1.6:*** *Sidewalks and boulevards will be designated to provide safe, attractive interesting and comfortable spaces for pedestrians by providing well designed and coordinated tree planting and landscaping, pedestrian-scale lighting, and quality street furnishings and decorative paving as a part of street improvements…*
- ***Policy 3.1.1.14:*** *New streets will be designed to: …allow the public to freely enter without obstruction; create adequate space for pedestrians, bicycles and landscaping as well as transit, vehicles, utilities and utility maintenance*

4.3 City of Toronto Central Waterfront Secondary Plan

The Central Waterfront Secondary Plan (CWSP), approved by Toronto city council in April 2003, contains principles and policies developed to enable and support changes in the Central Waterfront and specifically on Queens Quay:

The Core Principles of the secondary plan are:

A. Removing Barriers/Making Connections

B. Building a Network of Spectacular Waterfront Parks and Public Spaces

C. Promoting a Clean and Green Environments

D. Creating Dynamic and Diverse New Communities.

The following more specifically apply to Queens Quay:

- ***Principle A4:*** *Queens Quay will become a scenic water view drive and an important component of the Toronto street network from Bathurst Street to Cherry Street providing ready access to the public activities on the waterfront and pedestrian connections to the water's edge. It will be designed to meet the diverse needs of motorists, transit users, cyclists and pedestrians as well as providing opportunities for vistas to the harbour and lake.*
- ***Principle A5:*** *The Martin Goodman/Waterfront Trail will be completed through the Central Waterfront and connected to the city-wide trail or pathway system.*
- ***Policy 2:*** *Required rights-of-way to accommodate the proposed waterfront road and transit network over time appear on Schedule A of this Plan. The rights-of-way will be sufficient to accommodate travel lanes, transit, pedestrian and cycling requirements as*

well as landscaping and other urban design elements. The exact location of road alignments will be refined through further detailed study.

- ***Policy 4:*** *New streetcar and some bus routes will operate in exclusive rights-of-way on existing and proposed streets to ensure efficient transit movement.*
- ***Policy 5:*** *Waterfront streets will be remade as "places" with distinct identities. Streets will act as lively urban connections as well as traffic arteries. The needs of motorists will be balanced with efficient transit service and high-quality amenities for pedestrians and cyclists.*
- ***Policy 7:*** *Physical connections between the Central Waterfront, the downtown core and adjacent neighbourhoods will be enhanced through high-quality urban design and landscaping on the north/south connector streets.*
- ***Policy 10:*** *The design of the public realm will be of a standard of excellence characteristic of the great city waterfronts of the world.*
- ***Policy 11:*** *The public realm will be defined by a coherent framework of streets, parks, plazas, buildings, viewing areas, walkways, boardwalks, promenades, piers, bridges and other public infrastructure and open space elements…*
- ***Policy 12:*** *The termination of each of the north-south streets within East Bayfront and other streets within the Port Lands, or on the Quays… will be celebrated by the creation of a series of unique public places… to reflect their history and the character of the surrounding community. They will provide a focal point for their neighbourhood.*
- ***Policy 18:*** *As part of the strategy to reduce car dependence and shape people's travel patterns early, a comprehensive range of efficient and competitive transportation alternatives will be provided in tandem with the development of new waterfront communities…*
- ***Policy 20:*** *New traffic management approaches will be pursued to accommodate non-auto modes of transportation, make more efficient use of existing roads…*
- ***Policy 21:*** *Pedestrian and cycling routes will be safe, attractive, comfortable and generously landscaped.*

4.4 Metrolinx Regional Transportation Plan

The Greater Toronto Transportation Authority (now formally known as Metrolinx) adopted the Regional Transportation Plan (RTP) in the Fall 2008. Included in its vision for the Greater Toronto and Hamilton Area, is that:

Public transit will compete effectively with the automobile with service that is fast, convenient, integrated, comfortable, safe, reliable and valued by its users. Walking and cycling will be attractive choices for travel.

The RTP identifies the Toronto downtown core as an "area of focus for active transportation", including the waterfront area. The RTP also identifies a continuous waterfront trail extending from east Toronto through to Burlington and beyond.

4.5 Pedestrian Charter

Adopted by Toronto City Council, May 21, 2002, the Toronto Pedestrian Charter The was envisioned as a document that would serve as reminder both to decision-makers within the City and to the community at large that walking should be valued as the most sustainable of all forms of urban travel.:

An urban environment that encourages and facilitates walking supports community health, vitality and safety. It will increase use of public transit; decrease car dependence; reduce conflict between vehicles and pedestrians; lead to cleaner air; green public space; and support green tourism. Such an environment creates opportunities for the informal social interaction that is one of the main attributes of a vibrant, liveable city.

4.6 City of Toronto Bike Plan

The Bike Plan, adopted by City council in 2001, sets out a vision for cycling in Toronto. It addresses principles, programs and objectives for improving cycling opportunities in Toronto. The Plan also identifies proposed streets for extending the bike network in Toronto.

The Plan identifies Queens Quay as part of the cycling network in Toronto and proposes the completion of the Martin Goodman Trail with bike lanes on Queens Quay between Spadina Avenue and Yonge Street in order to provide continuity in the cycling network in the Waterfront area. The plan also proposes new bicycle lanes along Lower Spadina Avenue, Rees Street and Lower Simcoe Street (to connect to downtown via the new Simcoe Street underpass). Various other City initiatives propose bike facilities on Bremner Boulevard and Dan Leckie Way.

4.7 “Our Common Grounds” Strategic Parks Plan

Our Common Grounds is Toronto Parks and Recreation's strategic plan that received unanimous approval by Toronto City Council in July 2004. It is a 15-year action plan that focuses on three strategic goals: Environmental Stewardship, Child and Youth Development and Lifelong Active Living. The 53 recommendations in the plan provide a roadmap for Parks and Recreation in relation to the health and well-being of residents. The recommendations include increasing Toronto’s current tree canopy coverage of 17 per cent to 30 to 40 per cent and improving growing conditions to increase the average life span of street trees in Toronto.

4.8 Toronto Green Development Standards

Adopted in January 2007, the Toronto Green Development Standard contains the following policies:

- Automobile Infrastructure: Discourage single-occupancy automobile use
- Cycling Infrastructure: Encourage cycling as a clean air alternative
- Public Transit Accessibility: Encourage public transit as a clean air alternative

Pedestrian Infrastructure: Encourage walking as a clean air alternative

4.9 Toronto Waterfront Revitalization Corporation Sustainability Framework

Instituted in August 2005, the Sustainability Framework outlines the following goal:

Make alternative transportation options such as walking, cycling, and public transit the natural choice for residents and visitors to the waterfront area.

Minimizing car use and increasing walking, cycling and public transit use are the primary objectives within the framework's transportation goal. Specific performance measures within include:

- Dedicated bike lanes within the rights-of-way of all arterial roads;
- Residential units located within 350 metres from a light rail transit, streetcar, or bus stop.

4.10 Waterfront Toronto Central Waterfront Innovative Design Competition

In 2006, Waterfront Toronto initiated an international design competition to beautify the Central Waterfront. This effort was borne of numerous City of Toronto policy goals explicit to the waterfront. The competition brief called for the creation of a comprehensive concept design for a continuous waters edge and revitalized Queens Quay from "end to end", as well as "specific design proposals for each of the eight heads of slip" (now referred to as WaveDecks). Waterfront Toronto unveiled the five finalist designs at a public exhibition and solicited public input.

A prestigious jury was tasked with selecting the winning design: the transformation of the south side of Queens Quay into a cycling and pedestrian zone, complemented by a family of eight new WaveDecks at the head of each slip, and a public promenade along the waters edge with six new bridges. Collectively these design elements fulfill Waterfront Toronto's core objective of creating continuous public access to the water's edge.

While Waterfront Toronto advocated for the Queens Quay's vision, it fully supported a Traffic Feasibility Study, a pilot project to 'test-run' the design competition concept, and the mandatory Class EA process before any implementation could take place. The competition informed the design alternatives

4.11 Central Waterfront Master Plan

The results of the 2006 Innovative Design Competition for the Central Waterfront public realm are being refined and turned into a master plan document to be brought forward for Council approval in early 2010. That plan will include the framework for revitalizing Queens Quay evaluated in this ESR.

4.12 'Quay to the City' Pilot Project

The Quay to the City pilot project—carried out for a 10-day period in August 2006—simulated one potential street reconfiguration to observe how pedestrians, cyclists, and one-way traffic operations would adjust. The study team proactively collected data, monitored traffic operations, and gathered feedback through public and local business surveys.

For the purposes of the pilot, the two westbound travel lanes on the north side of Queens Quay were maintained. Due to limitations posed by a temporary installation (major modifications to traffic signals and intersections would be required to accommodate both eastbound and westbound traffic on the north side of the transit right-of-way), eastbound traffic was rerouted to Lakeshore Boulevard.

Overall, the pilot was a positive experiment. Many respondents felt that changes to Queens Quay are "much needed" and "overdue". Most agreed that the trail provided a safer area to cycle, and that the landscape improvements—although temporary—were welcome. Seventy percent of the 1000 public survey responses supported a permanent design.

Area businesses expressed concerns about parking, traffic flow and general impact on businesses. Despite this, forty percent of business survey responses supported a permanent installation.

A major challenge identified by the pilot was to ensure safe and efficient access to properties on the south side of the street.

Key observations of the pilot were:

- The street reconfiguration supported an overwhelming increase in pedestrian and cyclist activity. The peak cyclist volume measured during the evening rush hour on a Thursday during the pilot was 160 cyclists per hour per lane. The volume measured during the same period on a Thursday before the pilot was approximately 40 cyclists per hour per lane.
- Queens Quay westbound saw an initial peak in traffic during the first couple of days. After one week, the volumes settled to typical levels; Lake Shore Boulevard eastbound saw an increase in traffic volumes. This increase was distributed throughout the day and not confined to the peak hours. Lake Shore Boulevard continued to operate below capacity in the off-peak hours during the event. During the peak hours, traffic volumes on Lake Shore Boulevard were close to capacity.

4.13 Planning Horizon

The planned improvements for the Central Waterfront are intended to accommodate the range of future transportation needs – walking, cycling, transit, and private automobile. The planning horizon is the future full build-out scenario and includes:

- East Bayfront development parcels (e.g., Corus, George Brown College);
- West Don Lands;
- Railway Lands development blocks (e.g., Pinnacle);
- Other future Queens Quay developments (e.g. York Quay project, Pier 27, Waterpark Place).

This study assumes that all of the additional residential, retail and commercial development currently being planned or constructed have been implemented and are fully occupied. The full build-out scenario may occur in the medium or long-term.

5 Existing Conditions

5.1 Introduction

Queens Quay is Toronto's main waterfront street, one that is heavily used by residents and tourists alike. In its existing condition, Queens Quay is not a great waterfront street. Simply, it is without balance. Pedestrian boulevards are constrained – the sidewalk width varies between three to five metres but is as narrow as two metres in certain locations. North-south crossings are difficult and infrequent – the average spacing between signalized pedestrian crossings is 250 metres and the longest stretch is 450 metres. Bike facilities are absent, creating challenging conditions for those who choose to cycle. Transit service is inefficient, with no transit priority provided. Auto traffic dominates – curb lanes are occupied with illegally parked vehicles, while a notable proportion (10 to 20 percent) of the traffic between Yonge Street and Lower Spadina Avenue is infiltration or "cut-through" traffic. Street trees suffer from inadequate growing conditions. Street finishes and treatments are basic, common and inconsistent.

The space allocated to each user group is inequitable. During the peak months, the overwhelming majority of traffic is non-auto. Pedestrians, cyclists and transit patrons constitute up to 70% of the intersection users, all in less than 50% of the available cross section space. A successful waterfront main street requires balance to better accommodate all types of movement, putting to better use the space now dedicated to vehicles.

Queens Quay is classified as a minor arterial in the City of Toronto Road Classification System. While arterials are important for conveying traffic, the Road Classification states that *arterial roads are also important for pedestrians and cyclists.*

Queens Quay consists of five or six segments of differing widths, transit infrastructure, streetscape conditions, lane configurations and landscaping that have little relationship to one another. A comprehensive plan for the street is needed to guide its redevelopment as a visually consistent main street for the waterfront. The well-utilized streetcar right-of-way west of Bay Street needs to be rehabilitated, and City and Waterfront Toronto plans call for its extension to the east.

These observations were arrived at through an inventory of existing conditions, compiled based on secondary source information (such as studies undertaken as part of the West Don Lands Transit EA and East Bay Front Master Plan), consultation with stakeholders, site investigations and traffic surveys. Existing conditions data collection and analysis were undertaken within the Study Area and Context Area (refer to Figure 1-4). The following sections describe the existing conditions of the area in terms of Transportation Infrastructure, Safety and Emergency Response, Urban Design, Natural Environment, Socio-Economic Environment, Cultural Environment and Land Use.

5.2 Transportation Infrastructure

Queens Quay is classified as a minor arterial road. Minor arterials range between two and four through lanes and convey between 8,000 and 20,000 vehicles per day. Other examples of minor arterials in Toronto's downtown include Wellesley Street, Harbord Street and Church Street. . Queens Quay conveys between 12,000 and 26,000 vehicles per day during the peak summer months, which is consistent with its class. Minor arterials are multi-functional, providing access to a mix of residential and commercial properties for all modes of surface transportation.

The Road Classification System states that *arterial roads are also important for pedestrians and cyclists. As motor vehicle speeds and volumes are higher on these roads than on local and collector roads, special facilities such as bicycle lanes will often be necessary to ensure the safety of cyclists. Sidewalks, while important on all streets except expressways, are particularly necessary on collector and arterial roads*[1].

For comparison purposes, Table 5-2 lists the characteristics of minor arterials along side those of the other road classes.

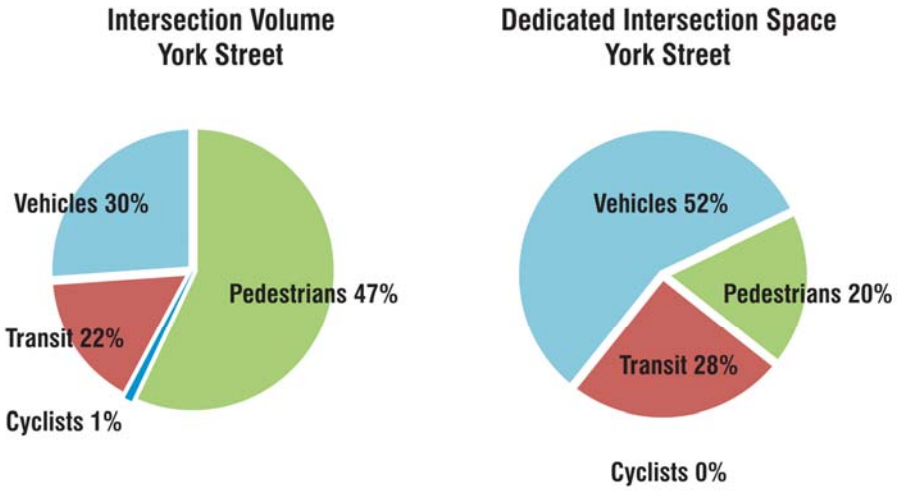
5.2.1 Allocation of Queens Quay Right-of-Way

A study of the traffic data collected during a summer festival on Queens Quay in 2007 (Ilha Formosa) indicated that space allocated to each user group is inequitable. An overwhelming majority of the traffic volume was non-auto. Pedestrians constituted up to 47% of the intersection users, all in approximately 20% of the available cross section space, as shown in Table 5-1 and Figure 5-1.

Table 5-1: Proportion of Users Travelling East-West, Summer Weekend Afternoon Peak Hour

Queens Quay @	Vehicles Entering	Pedestrians Crossing	Transit Patrons	Cyclists Entering	Total
Lower Simcoe	1287 (39%)	1129 (34%)	835 (25%)	64 (2%)	3315
York	1221 (30%)	1910 (47%)	925 (22%)	48 (1%)	4104
Bay	1280 (29%)	2043 (46%)	1065 (24%)	16 (1%)	4404

Figure 5-1: Existing Volume vs. Dedicated Space on Queens Quay at York Street (Ilha Formosa Festival, Sunday August 26th)



[1] http://www.toronto.ca/transportation/road_class/index.htm#minorarterial

Table 5-2: Street Classification Criteria (City of Toronto January 2000)

Characteristic	Locals	Collectors	Minor Arterials	Major Arterials	Expressways
Traffic movement versus property access	Property access primary function	Traffic movement and property access of equal importance	Traffic movement primary consideration; some property access control	Traffic movement primary consideration; subject to property access control	Traffic movement primary consideration; no property access
Typical daily motor vehicle traffic volume (both directions)	< or = 2,500	2,500 - 8000	8,000 - 20,000	> 20,000	> 40,000
Min. number of peak period lanes (excluding bike lanes)	One (one-way streets) or two	One (one-way streets) or two	Two	Four	Four
Desirable connections	Locals, collectors	Locals, collectors, arterials	Collectors, arterials	Collectors, arterials, expressways	Major arterials, expressways
Flow characteristics	Interrupted flow	Interrupted flow	Uninterrupted except at signals and crosswalks	Uninterrupted except at signals and crosswalks	Free-flow (grade separated)
Legal speed limit, km/h	40 - 50	40 - 50	40 - 60	50 - 60	80 – 100
Accommodation of pedestrians	Sidewalks on one or both sides	Sidewalks on both sides	Sidewalks on both sides	Sidewalks on both sides	Pedestrians prohibited
Accommodation of cyclists	Special facilities as required		Wide curb lane or special facilities desirable		Cyclists prohibited
Surface transit	Generally not provided	Permitted	Preferred	Preferred	Express buses only
Surface transit daily passengers	Not applicable	< or = 1,500	1,500 - 5,000	> 5,000	Not applicable
Heavy truck restrictions (e.g. seasonal or night time)	Restrictions preferred	Restrictions permitted	Generally no restrictions	Generally no restrictions	No restrictions
Typical spacing between traffic control devices, m	0 -150	215 -400	215 -400	215 -400	Not applicable
Typical right-of-way width, m	15 - 22	20 - 27	20 – 30	20 – 45	> 45
Examples	Little Norway Cr; Market St; Hazelton Avenue	Bremner Blvd; The Esplanade; Victoria St	Wellesley St; Harbord St; Church St; Queens Quay.	Yonge St; Bloor St; Davenport/Dupont Rd.	Gardiner; Don Valley Parkway

5.2.2 Pedestrian Network

Pedestrian Access Issues

On Queens Quay, the current distances between signalized crossings create a barrier to accessing the waterfront from the city. Pedestrian crossing facilities along Queens Quay are provided at fully signalized intersections at spacing in the order of 200 metres to up 450 metres (refer to Figure 5-3). Between Dan Leckie Way and Lower Simcoe Street, signalized pedestrian crossings are spaced between 320 and 450 metres.

The frequency of signalized crossing opportunities poses an inconvenience to those wishing to access waterfront amenities from the north side of Queens Quay. For example, the crossing between the residential condominium at 350 Queens Quay on the north side of the street and HTO Park located directly across on the south side is not signalized. To use the nearest signalized crossing at Lower Simcoe Street, one would need to walk an additional 300 metres to access the park which is located directly across the street.

This crossing frequency does not compare well with those areas of Toronto that are perceived to be the walkable streets of the City. The table below compares the Queens Quay crossing frequency with other streets in Toronto. Bloor Street West, in Bloor West Village for example, has a pedestrian crossing frequency between 100 and 350 metres at crossings between Jane Street and Runnymede Road. King Street from Spadina Avenue to University Avenue has a crossing distance frequency between 200 and 300 metres. Church Street from Wellesley Street to Carlton Street has crossing facilities every 100 to 125 metres.

Crossing frequencies on Queens Quay are also less than those of North American cities that are considered to be walkable. New York City has a typical block size of 80 by 220 metres, while Portland, Oregon has a typical block size of 80 by 80 metres in its downtown grid.

Table 5-3: Comparison of Typical Crossing Frequencies (Toronto, New York, Portland)

Street	Crossing Frequency (metres)
Queens Quay between Dan Leckie Way and Simcoe Street	320 to 450
Bloor Street West (in Bloor West Village) between Jane Street and Runnymede Road	100 to 350
King Street between Spadina Avenue to University Avenue	200 to 300
New York City Streets (Typical)	80 to 220
Typical Portland, Oregon Streets (typical downtown)	80

In these walkable cities and areas of Toronto, higher frequency of crossings promotes walking as a viable mode of transportation and provides convenient access to create active and vibrant neighbourhoods. On Queens Quay, the distances between crossings create a barrier to the waterfront.

Pedestrian access into downtown is provided via several major north-south streets: Lower Spadina Avenue; Lower Simcoe Street; York Street; Bay Street; and Yonge Street. Currently, all pedestrian connections from the area to downtown are at street level with no direct connections to the underground (and climate controlled) PATH system. The closest

access point to the PATH system is at the Air Canada Centre which connects to downtown via Union Station.

North-south crossing distances are wide. Crossing distances at key waterfront intersection are a minimum of 20 metres with most approximately 25 metres and up to 28 metres at York Street. Pedestrian crossing distances in areas of Toronto considered more pedestrian "friendly" such as Yonge Street, Queens Street, King Street and College Street (little Italy) have total crossing distances under 15 metres. The crossing distances on Queens Quay are long for pedestrians (especially for vulnerable users) and also limit the flexibility of signal timing schemes because of the length of the pedestrian clearance time.

Pedestrian Amenities Issues

All streets within the study area have sidewalks on both sides. Sidewalk widths vary but are generally in the order of three to five metres.

There are several locations where pedestrian space is limited and sidewalk width is not consistent with the volumes of pedestrian traffic present during the peak summer months. This was confirmed by observations made and traffic and pedestrian survey taken during the Ilha Formosa Festival on Sunday August 26th, 2007.

Figure 5-5 and Figure 5-17 are photos taken on the south sidewalk between Simcoe and York Streets during the festival. It was evident that sidewalks were crowded with some pedestrians using the road as an alternative area to walk.

The recently opened WaveDecks at Spadina, Rees and Simcoe slips provide some relief at those locations.

Many sidewalks along Queens Quay re in poor condition require attention. For example, sidewalk surfaces between Rees Street and Lower Simcoe Street, as shown in Figure 5-2,are in poor condition and would benefit from rehabilitation.

Figure 5-2: Photo of Sidewalk Conditions on Queens Quay at Simcoe Slip

Figure 5-3: Plan of Pedestrian Crossings

Existing Pedestrian Facilities

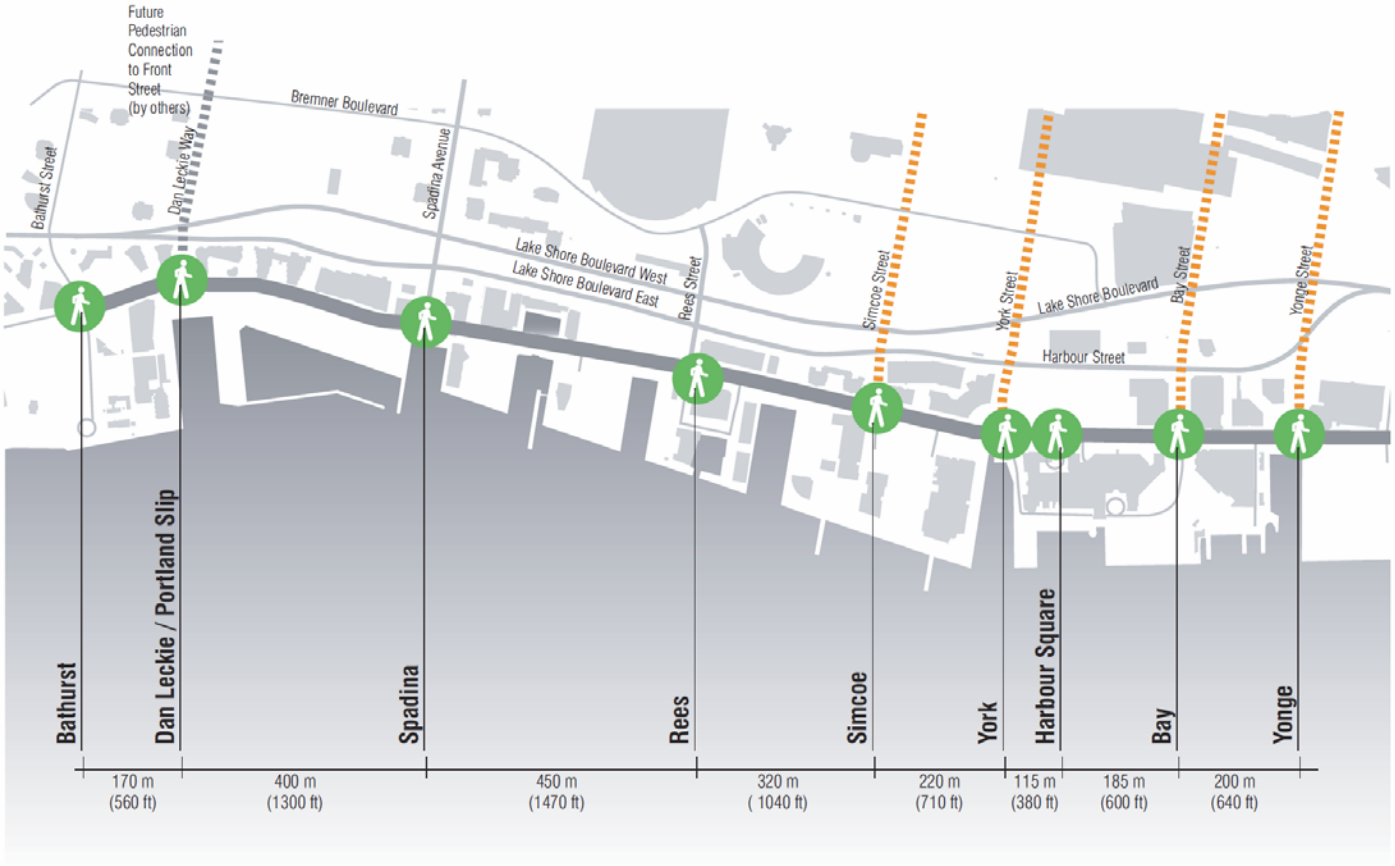
9 north-south signalized crossings

Maximum distance between: 450m

Average distance between: 240m

Signalized Crossing

Future Pedestrian Promenades (by others)



5.2.3 Transit Network

Regional Relationship

The hub of the transit system serving downtown Toronto area is Union Station. Current and proposed transit service on the waterfront terminates at Union Station. It is located just to the north of the study area and south of the City's financial district, on Front Street between Bay and York Streets. The station links Toronto with the surrounding 905 areas, the Golden Horseshoe area and beyond. Ongoing revitalization of Union Station is intended to improve the delivery of local, regional and national rail passenger services. The City of Toronto and other parties with an interest in Union Station are facilitating the revitalization process. These parties are working together to coordinate rail, transit and pedestrian planning initiatives. The station is also the southern terminus of the PATH system, providing a connection for transit and rail commuters to an underground pedestrian tunnel network that extends into the financial district and north to Dundas Street.

Study Area Transit

Existing TTC transit service along Queens Quay east of Bay Street is provided by the Route 6 Bay bus service. The bus service generally serves Bay Street and a short section on Queens Quay between Bay Street and Jarvis Street. West of Bay Street within a dedicated streetcar right-of-way. The existing corridor provides a connection to Union Station for the Route 510 Spadina and Route 509 Harbourfront streetcars.

The elevated track bed is approximately 6.7 metres wide with pedestrian platforms approximately 1.5 metres wide. The platform widths do not meet current accessibility standards for TTC, which include a minimum platform width of 2.4 metres at transit stops. The platforms are also not at the right height for access to the new low-floor vehicles that will be serving the area in the future.

Seven LRT stops are located on Queens Quay at Bathurst Street, Lower Spadina Avenue, Rees Street, Lower Simcoe Street, Harbourfront Centre, York Street and Bay Street, as shown in Figure 5-4. The average distance between stops is approximately 325 metres, which is considered well-served under TTC recommended practice.

Field measurements on Route 510 Spadina indicated that the Queens Quay streetcars currently operate at speeds between 12 and 14 km/h during the morning peak period. To achieve a transit modal split that supports expected growth and development along Queens Quay east of Bay Street and into the Port Lands, average speeds would need to be in the order of 17 km/h. The transit speeds are based on work undertaken by the TTC and documented in the TTC-TWRC Waterfront Transit EAs Demand Forecasting Report and Addendum.

Currently there is no priority provided to the transit service on Queens Quay. Transit runs on "phase insertion", which provides two opportunities per cycle (three at Spadina) for a dedicated transit phase to be served. During the transit phase, no other movement is permitted for either vehicles or pedestrians. This type of operation is inefficient not only for transit but for all users at the intersection, including autos and pedestrians.

Figure 5-4: Plan of Existing Transit Network

Existing Transit

2 LRT routes, 7 stops

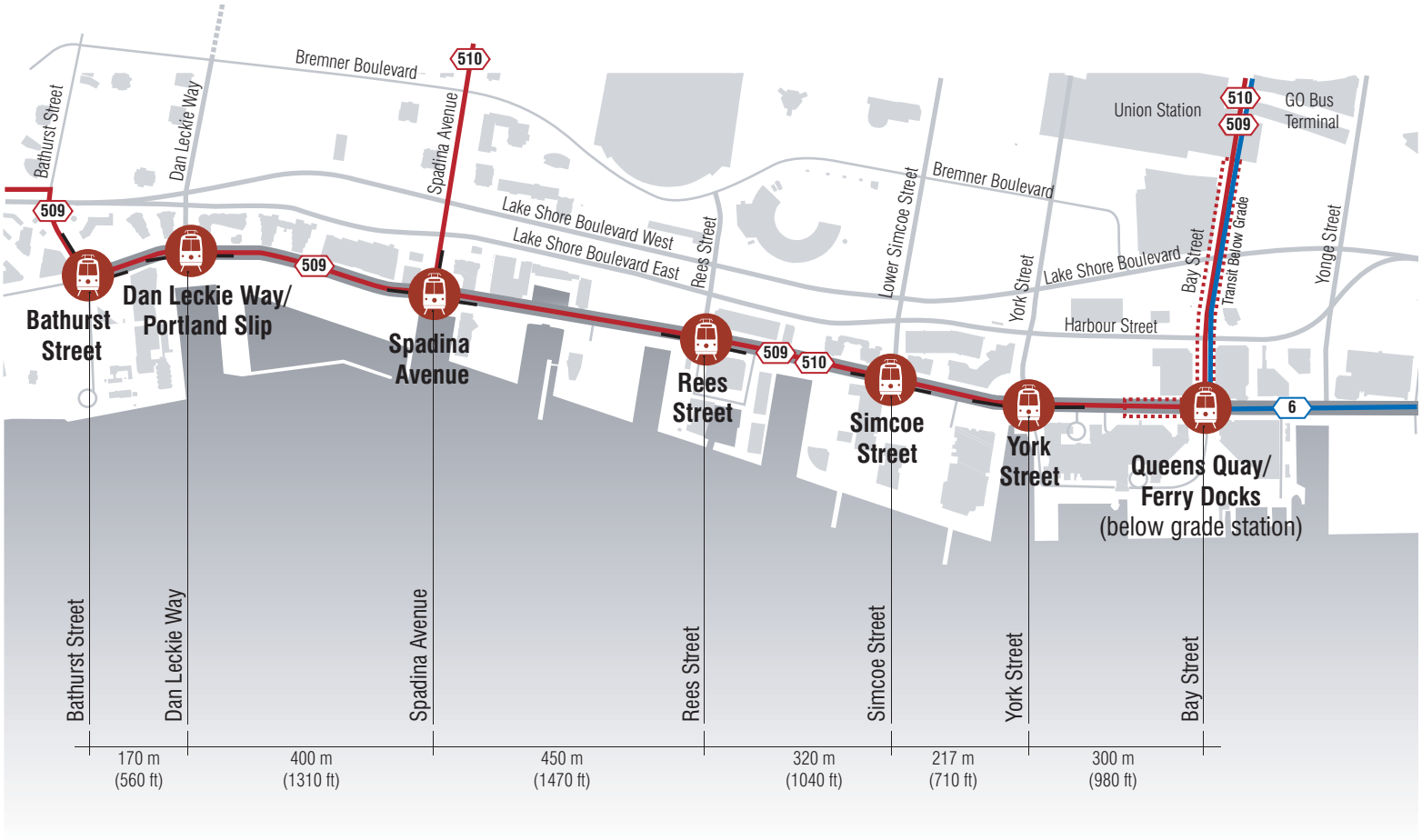
Average stop spacing: 310m

Platforms: 1.5m by 30m

Transit Stops

555 TTC LRT Route Numbers

555 TTC Bus Route Numbers

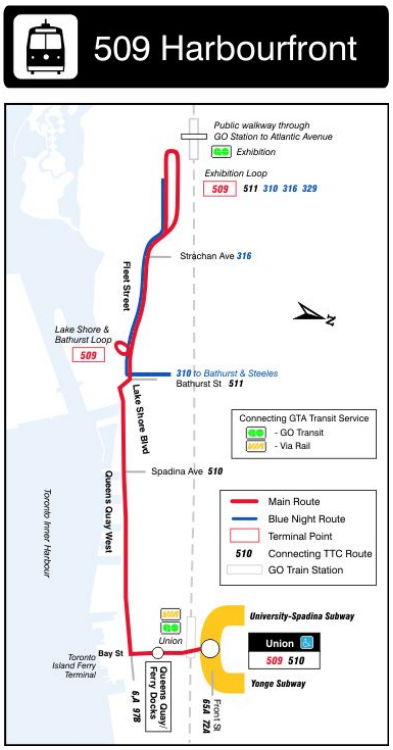


Toronto Inner Harbour

Not to Scale

The following discussion centres on the existing transit service on Queens Quay.

Route 509 Harbourfront



Route 509 Harbourfront is a streetcar service. It travels along Bay Street from Union Station to Queens Quay, along Queens Quay West from Bay Street to Bathurst Street, and along Fleet Street to the Canadian National Exhibition (CNE) grounds within a dedicated transit right-of-way. The Bay Street portion of the route is underground within a tunnel and the Queens Quay portion from west of Bay Street to CNE is at-grade.

Route 509 Harbourfront enters the CNE grounds at Strachan Avenue and turns at the Exhibition Loop to return to Union Station.

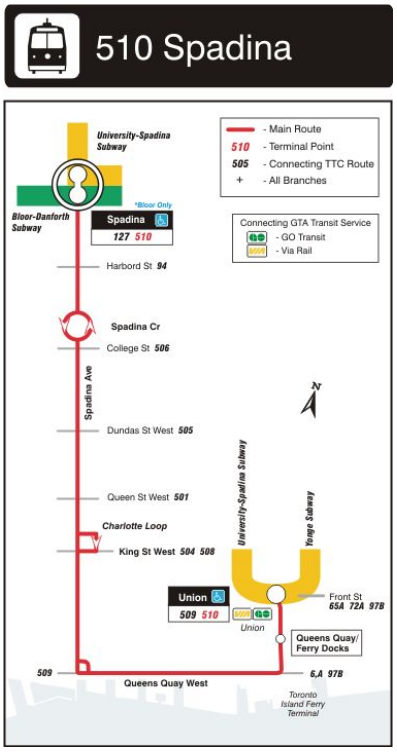
Table 5-4 summarizes weekday and Saturday combined headways.

Table 5-4: Route 509 Harbourfront Headways

Weekday	AM Peak	Mid Day	PM Peak
Avg. Headway	6.5 min	6.5 min	7 min
Saturday	**Early AM**	**AM**	**PM**
Avg. Headway	12 min,	6 min	6 min

*TTC Service Summary June 21 to September 5, 2009 rounded to the nearest 0.5 minutes.

Route 510 Spadina



Route 510 Spadina is a 24-hour streetcar service. It travels from Spadina Station on the Bloor-Danforth subway line to Union Station via Spadina Avenue, Lower Spadina Avenue, Queens Quay West and Bay Street (underground) within a dedicated transit right-of-way.

Route 510 Spadina can short turn at King Street (Charlotte Loop), short turn at the Spadina Loop (at Queens Quay) or travel the full route to Union Station. During late night hours when Union Station is closed, the 510 Spadina short turns at the Spadina Loop.

Table 5-5 summarizes weekday and Saturday combined headways.

Table 5-5: Route 510 Spadina Headways (along Queens Quay)

Weekday	AM Peak	Mid Day	PM Peak
Avg. Headway	7.5 min	6 min	6.5 min
Saturday	**Early AM**	**AM**	**PM**
Avg. Headway	6.5 min	5 min	6 min

*TTC Service Summary June 21 to September 5, 2009 rounded to the nearest 0.5 minutes.

Route 6 Bay

The 6 Bay bus route operates generally in a north-south direction along Bay Street and serves Queens Quay between Bay and Jarvis Streets. It also serves the Bay Station on the Bloor-Danforth Subway, and the Union Station on the Yonge-University-Spadina Subway.

Two services are provided along Queens Quay. The 6 (Dupont-Queens Quay & Jarvis via Ferry Docks) is the main branch, and operates at all times, seven days a week. The 6A (Bloor-Queens Quay & Yonge) short-turn branch operates during the afternoon peak period from Monday to Friday only.

Table 5-6 summarizes weekday and Saturday combined headways.

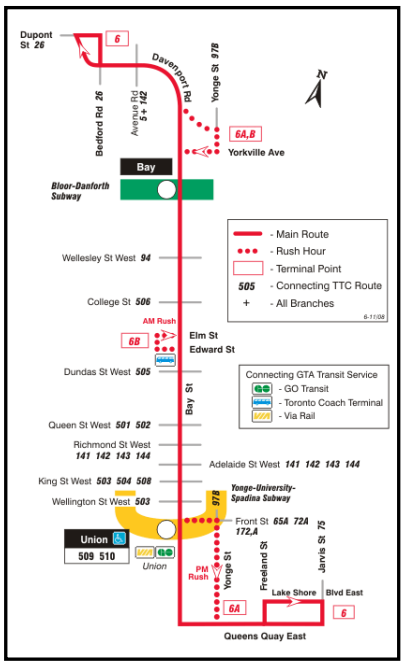


Table 5-6: Route 6 Headways (along Queens Quay 6)

Weekday	AM Peak	Mid Day	PM Peak
Avg. Headway	8.5 min	10 min	5.5 min
Saturday	**Early AM**	**AM**	**PM**
Avg. Headway	30 min	15 min	15 min

Future Transit Service

Proposed transit improvements affecting the Queens Quay study area include the future East Bay Front LRT Line. The TTC-TWRC East Bay Front Transit EA was undertaken concurrently with the Queens Quay Revitalization EA and studied new transit service on Queens Quay. The study recommends a new Light Rail Transit (LRT) line on Queens Quay east of Bay Street to connect the East Bay Front, future Lower Don Lands, West Don Lands and Port Lands communities with Union Station.

The East Bay Front LRT line is proposed to be below grade under Bay Street from Union Station to Queens Quay and under Queens Quay from Bay Street to east of Yonge Street. On Queens Quay between Yonge Street and Freeland Street, the LRT line will rise to grade through a portal and continues at street level into the Lower Don Lands at the east end of the East Bay Front EA study limits.

The West Don Lands Transit EA recommended LRT service on Cherry Street to connect with existing the King Street street car and future lines on Queens Quay and in the Lower Don Lands.

5.2.4 Bicycle Network

Regional Relationship

The primary cycling facility serving Toronto's waterfront is the Martin Goodman Trail. The recreational trail provides a popular route for many tourists, local cyclists, joggers and inline skaters. It is primarily an off-street facility that connects the western beaches along the Etobicoke lakeshore to Cherry Beach to the south, the Beach area to the east and downtown to the north.

Study Area Bicycle Network

Just west of the study area the off-street trail ends and trail users are routed to Queens Quay. On-street bicycle lanes are provided on Queens Quay from Bathurst Street to Lower Spadina Avenue. There are no bicycle lanes on Queens Quay from Lower Spadina Avenue to Yonge Street, even though Queens Quay serves as the connection between the east and west sections of the Martin Goodman Trail. Autos and cyclists share curb lanes (see Figure 5-5) with widths ranging between 3.25 and 4.0 metres. This is in contrast with the 4.0 to 4.5 metre wide off-street Martin Goodman trail that the street connects to east and west of the Central Waterfront.

The Central Waterfront and Martin Goodman Trail attracts a range of visitors and cyclists, including leisure riders, families and children. While shared lanes may serve the needs of some commuter cyclists, they are less amenable to the mix of riders who travel and visit the waterfront. The attraction to an off-street trail was evident during the Quay to the City event (August 2006). Bicycle counts indicated a substantial increase in bicycle traffic when the eastbound lanes were closed and a temporary off-street trail was open. The number of cyclists increased from 10 (on a Thursday before the closure) to 660 (on a Thursday when the off-street trail was open). The Quay to the City Report is included in Appendix G.

There are presently no bike lanes on the north-south streets intersecting with Queens Quay. Future bike lanes on Dan Leckie Way, Spadina Avenue, Rees Street, Simcoe Street, Bay Street and Yonge Street are supported by the Central Waterfront Secondary Plan, the Toronto Bike Plan and are being studied as a part of the Cities Promenade Plan studies.

Figure 5-5: Photo taken of shared curb lane on Queens Quay during Hot and Spicy Food Festival.

The existing cycling network in the study area is illustrated in Figure 5-6.

Figure 5-6: Plan of Existing and Future Bicycle Network

Existing Bicycle Facilities

No Bike Facility between Spadina to Yonge

On Street Bike Lanes: Stadium to Spadina

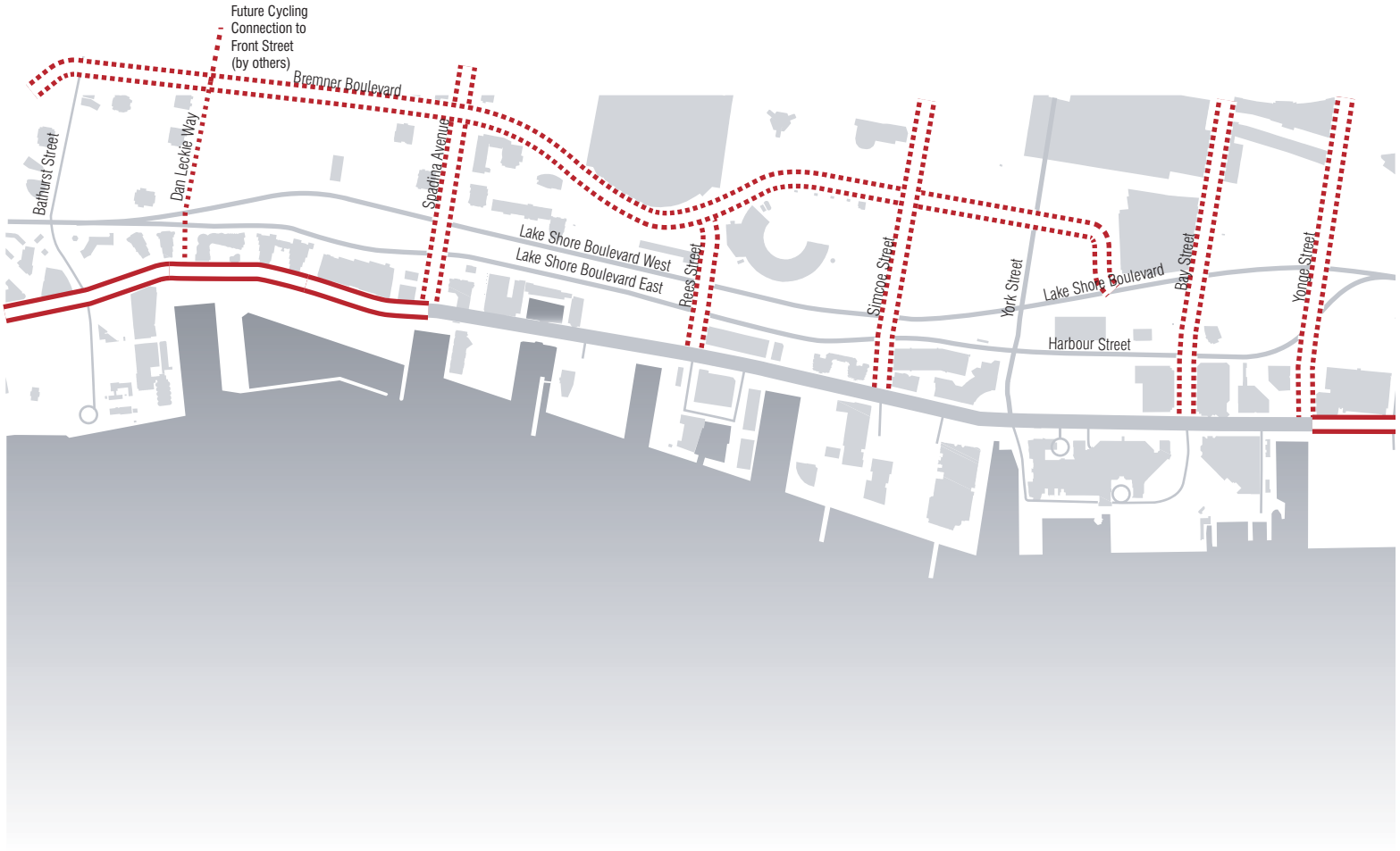
On-Street Bike Lanes

existing

proposed: Toronto Bike Plan/ other City initiatives

Cycling Routes

proposed: other City initiatives



Toronto Inner Harbour

Not to Scale

5.2.5 Road Network

Regional Relationship

The Frederick G. Gardiner Expressway (Gardiner Expressway) is a major east-west auto route within the Toronto Central Waterfront. It is a controlled access expressway which connects the Queen Elizabeth Way (QEW) and Highway 427 in the west with the Don Valley Parkway and Lakeshore Boulevard in the east through downtown Toronto.

The Don Valley Parkway is a north-south expressway east of the study area and downtown. Via the Gardiner Expressway, it provides regional connections to the east. The Don Valley Parkway connects the study area to York Region and Durham Regions via Highway 401 and 404.

Lake Shore Boulevard is also aligned on the north limit of the study area. It follows a similar route to the Gardiner Expressway from Etobicoke into the Central Waterfront where it provides access to arterials in the downtown. Lake Shore Boulevard continues east beyond the Don Valley Parkway providing access to the eastern Port Lands, Ashbridges Bay and the Beach community terminating at Woodbine Avenue.

Study Area Roads

The main roads serving the study area (as shown in Figure 5-7)are the Gardiner Expressway, Lake Shore Boulevard, Harbour Street, Queens Quay, Bathurst Street, Dan Leckie Way, Lower Spadina Avenue, Rees Street, Robertson Street, Lower Simcoe Street, York Street, Bay Street and Yonge Street. Typical cross sections of these roads are provided in Figure 5-10. Table 5-7 summarizes the classifications for the area streets and number of lanes. Complete classification criteria is in Table 5-2.

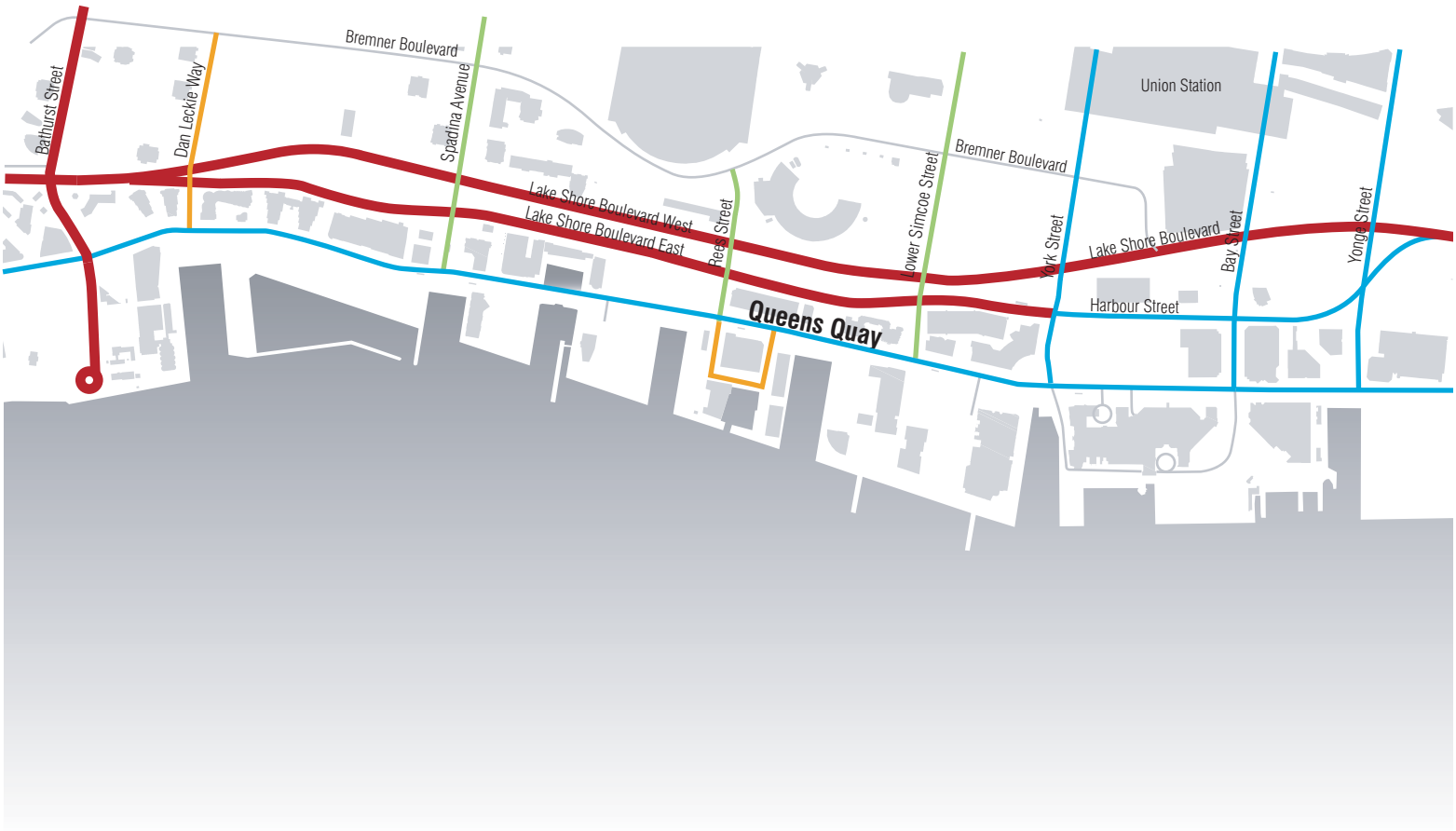
Table 5-7: Street Classifications

Street	Classification	Number of Through Lanes
Gardiner Expressway	Expressway (2 way)	6
Lake Shore Boulevard	Major Arterial (2 way)	6
Harbour Street	Minor Arterial (1 way eastbound)	3
Queens Quay	Minor Arterial (2 way)	4
Bathurst Street	Major Arterial (2 way)	4
Dan Leckie Way	Local Street (2 way)	2
Lower Spadina Avenue	Collector (2 way)	4
Rees Street	Collector (2 way)	4
Robertson Street	Local (2 way)	2
Lower Simcoe Street	Collector (2 way)	4
York Street	Minor Arterial (2 way)	3
Bay Street	Minor Arterial (2 way)	5
Yonge Street	Minor Arterial (2 way)	4

Figure 5-7: Plan of Existing Road Network

Existing Street Classifications

- Major Arterial
- Minor Arterial
- Collector
- Local



Toronto Inner Harbour

Not to Scale

Queens Quay

Queens Quay acts as the spine of the Central Waterfront, providing primary access to many sites in the area. It is a two-way minor arterial with a four lane urban cross-section of varying width and a dedicated LRT right-of-way in the median. Cross sections of Queens Quay are provided in Figure 5-8

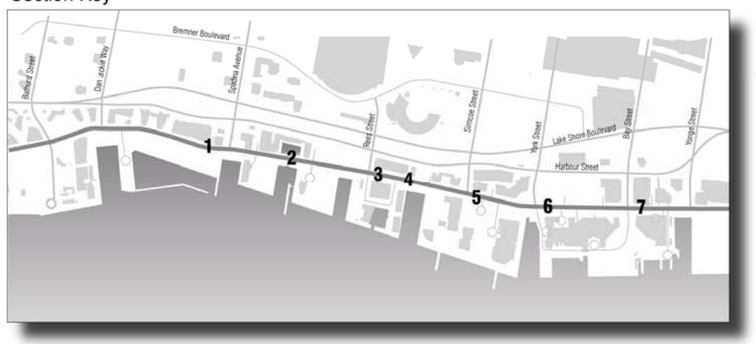
As captured by time lapse photography taken during a summer event and observed during site visits made by the study team, there is frequent stopping and standing activity that occupy the curb lanes. The four-lane section effectively operates as a two-lane road. Additional discussion on curbside activity is provided in Section 5.4.

Signalized control is provided at intersections with Lower Spadina Avenue, Spadina Loop (TTC), Rees Street, Lower Simcoe Street, York Street; Bay Street; and Yonge Street. The Queens Quay / Beer Store / Emergency Medical Services (EMS) unsignalized intersection was constructed to be converted to signalized operation. Dedicated left turn/U-turn lanes are provided at signalized intersections except westbound and Rees Street and York Street where left turns operate from shared left/through lanes. Traffic signals, stop controls and turn movements at street intersections are shown in Figure 5-12.

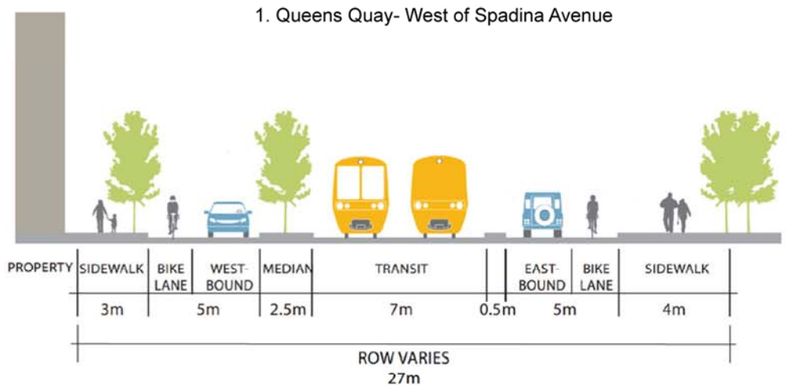
As shown in the access plan provided in Figure 5-14, 29 driveways and intersections provide direct access to various land uses between Bathurst Street and Yonge Street on Queens Quay. There are eight intersections (Bathurst Street, Dan Leckie Way, Lower Spadina Avenue, Rees Street, Lower Simcoe Street, York Street, Bay Street and Yonge Street), which provide signal controlled direct access between the sites along Queens Quay and downtown. Movements at these intersections include signal controlled movements across the LRT right-of-way. Intersections or driveways located mid block (i.e., away from the signalized intersections) provide for right-turn access to and from Queens Quay only. With the LRT right-of-way aligned between the east and westbound lanes of Queens Quay, left turns are not permitted at these unsignalized access point. This reduces conflicts between streetcars and automobiles. Left turn access to and from these sites are made via u-turn movements at the signalized intersections.

Figure 5-8: Existing Cross Sections – Queens Quay (Average Dimensions)

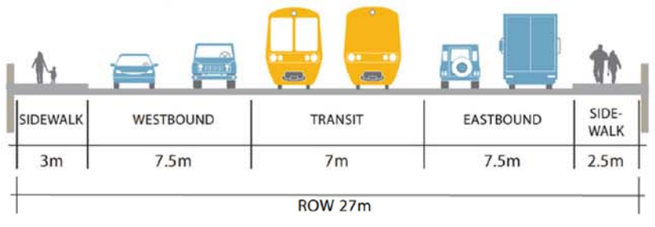
Section Key



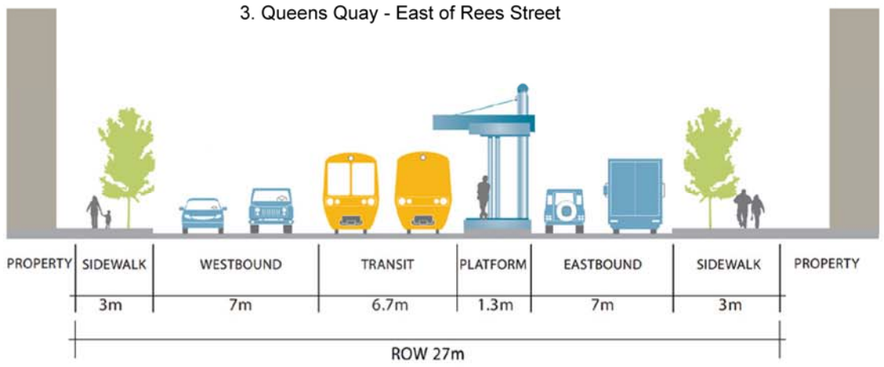
1. Queens Quay- West of Spadina Avenue



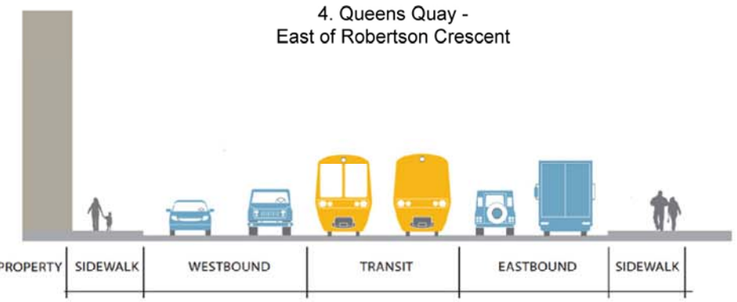
2. Queens Quay - Peter Slip Bridge



3. Queens Quay - East of Rees Street



4. Queens Quay -
East of Robertson Crescent



5. Queens Quay -
East of Lower Simcoe Crescent

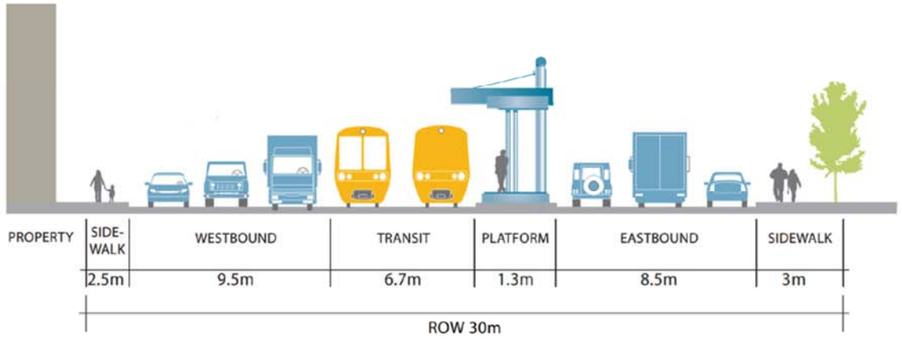
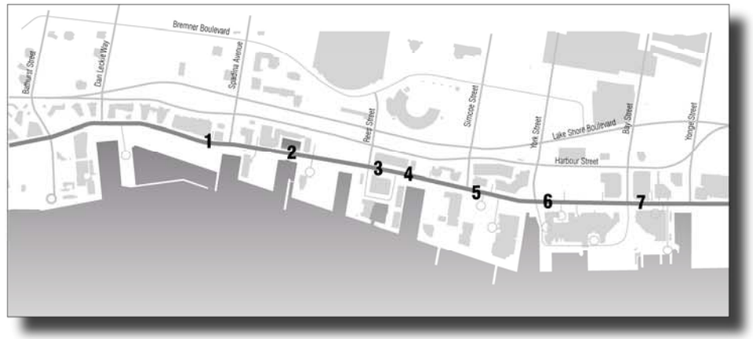
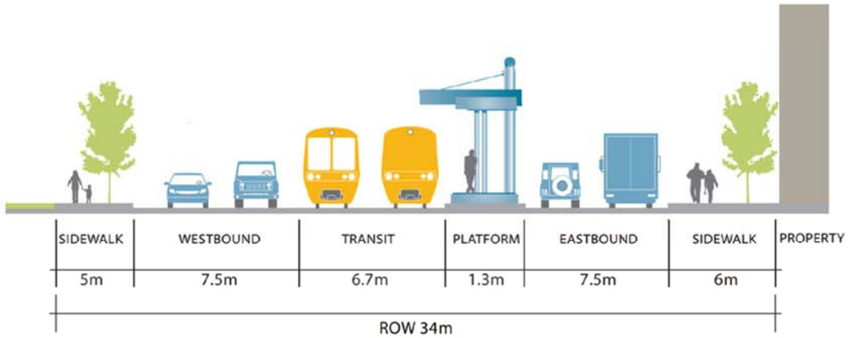


Figure 5-9: Existing Cross Sections – Queens Quay (Average Dimensions) - continued

Section Key



6. Queens Quay - East of York Street



7. Queens Quay - East of Bay Street

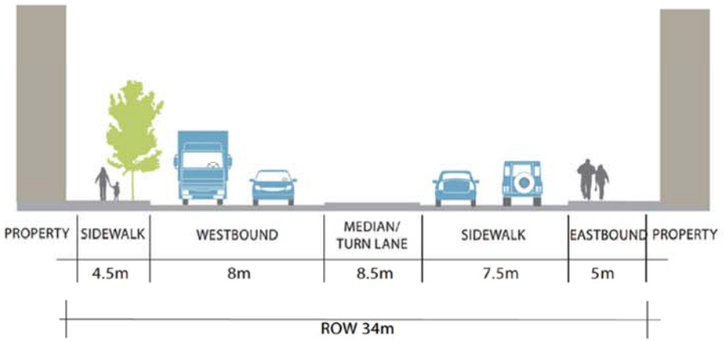
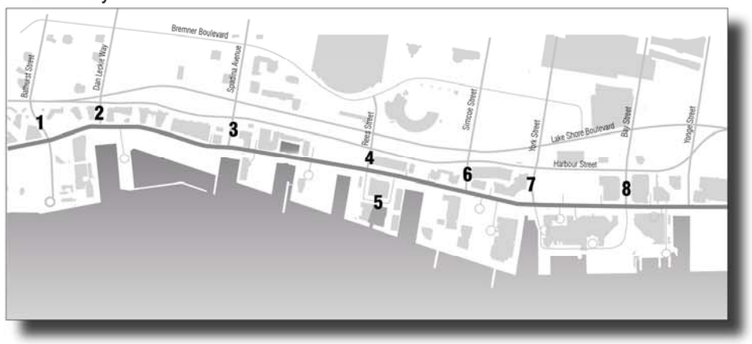
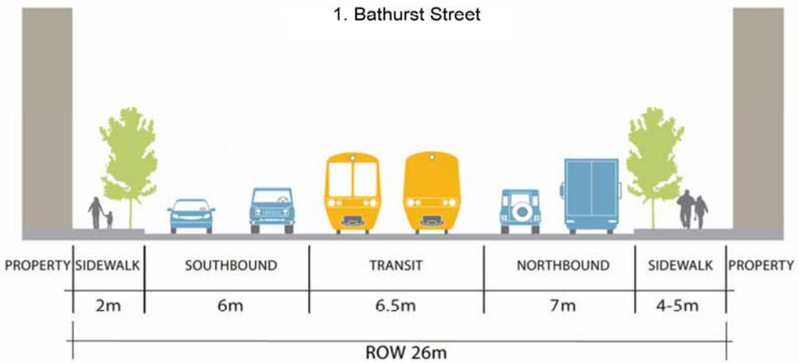


Figure 5-10: Existing Cross Sections – Study Area Roads

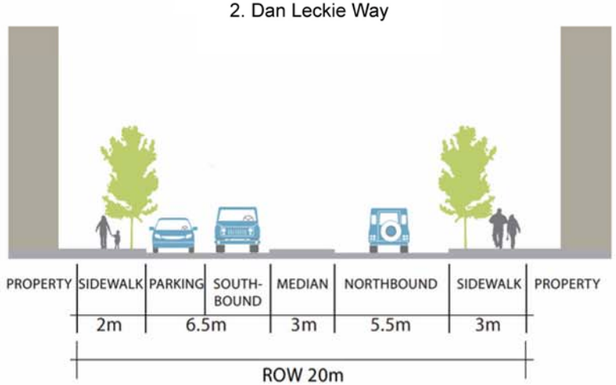
Section Key



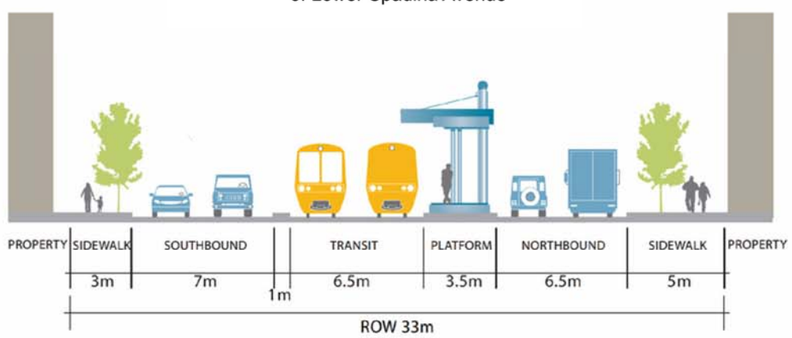
1. Bathurst Street



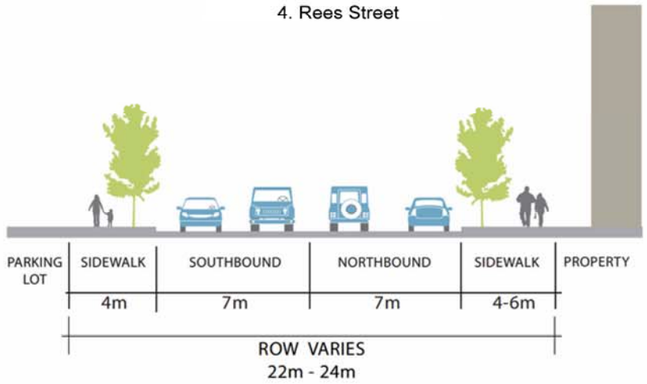
2. Dan Leckie Way



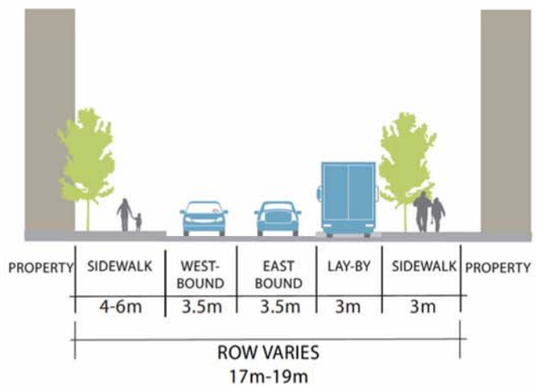
3. Lower Spadina Avenue



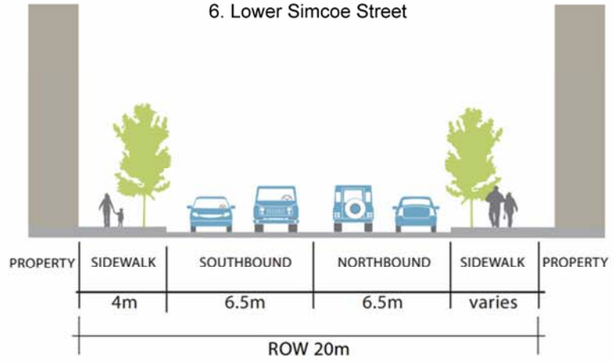
4. Rees Street



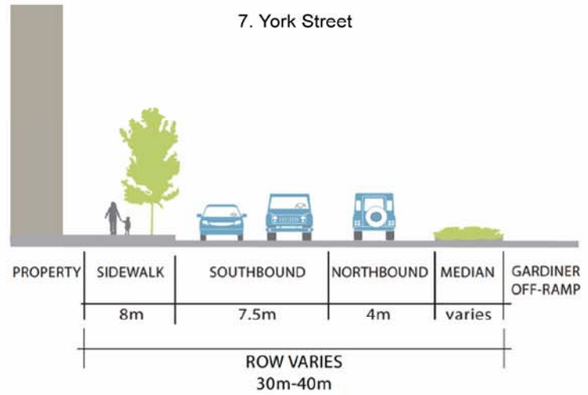
5. Robertson Crescent



6. Lower Simcoe Street



7. York Street



8. Bay Street

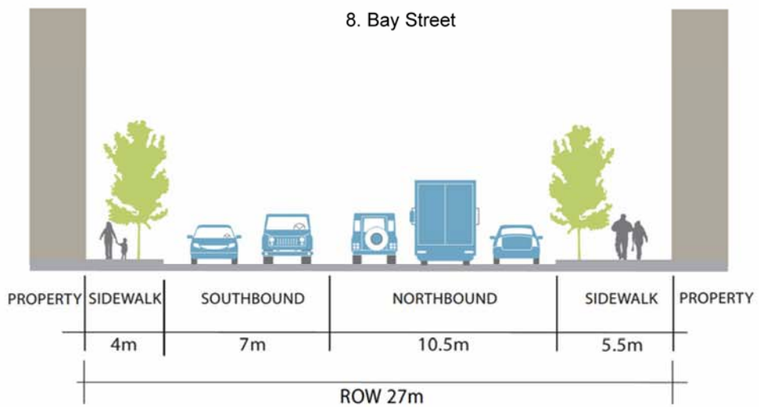
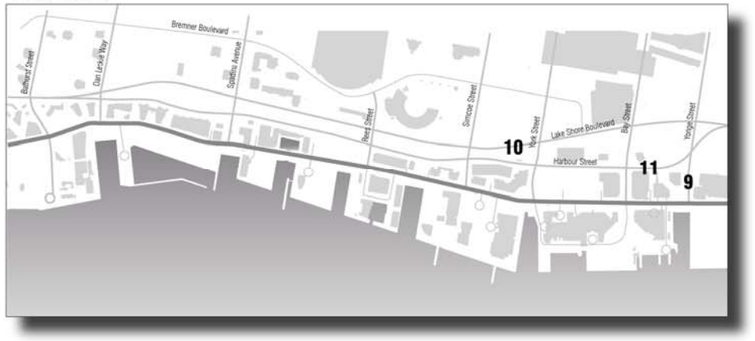
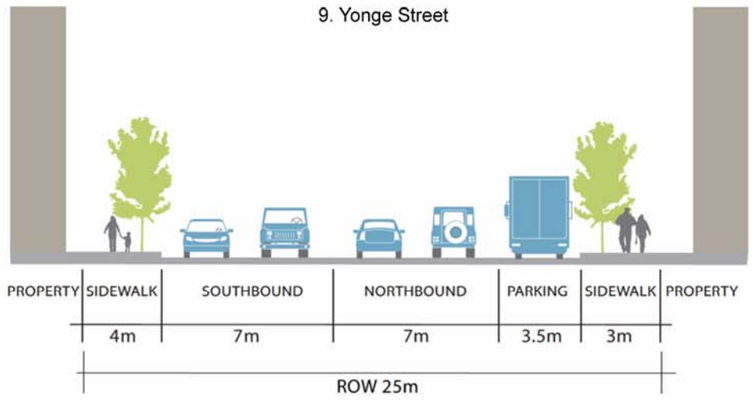
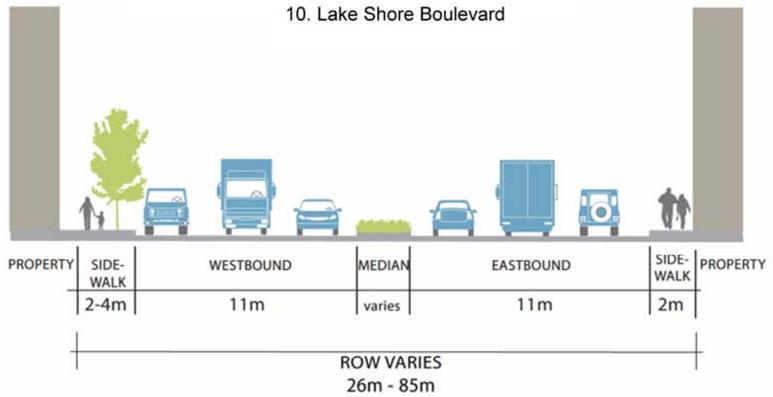


Figure 5-11: Existing Cross Sections – Study Area Roads - continued

Section Key







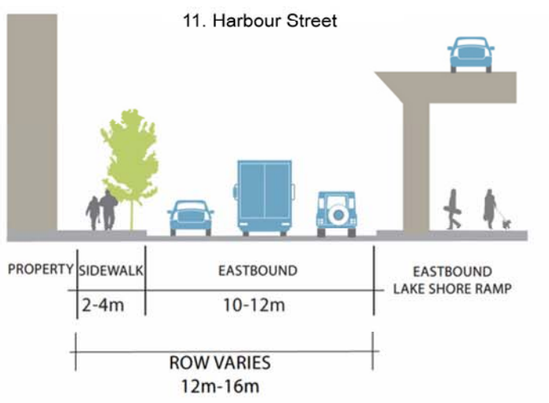


Figure 5-12 : Existing Intersection Traffic Control West

Figure 5-13: Existing Intersection Traffic Control East

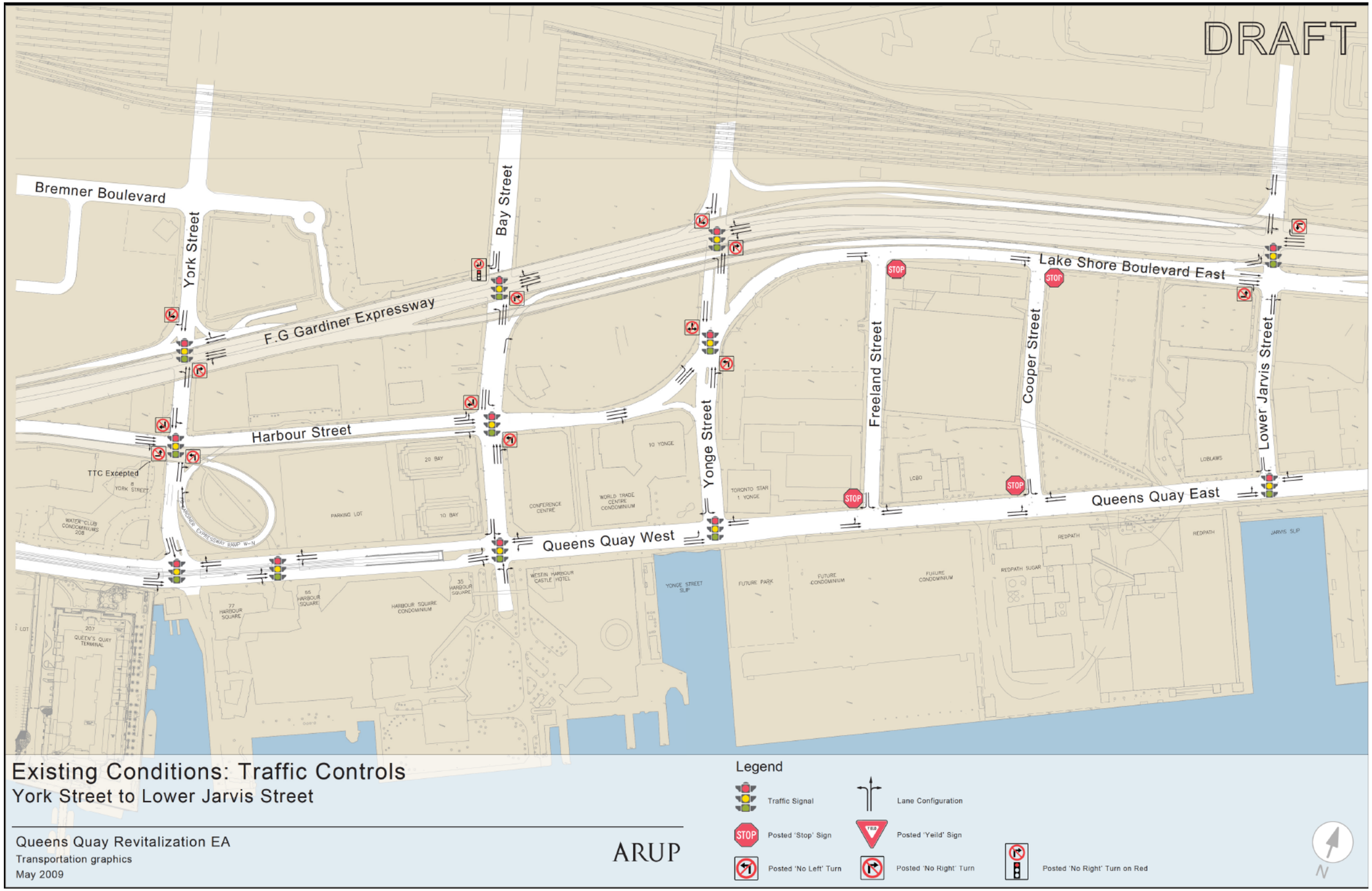
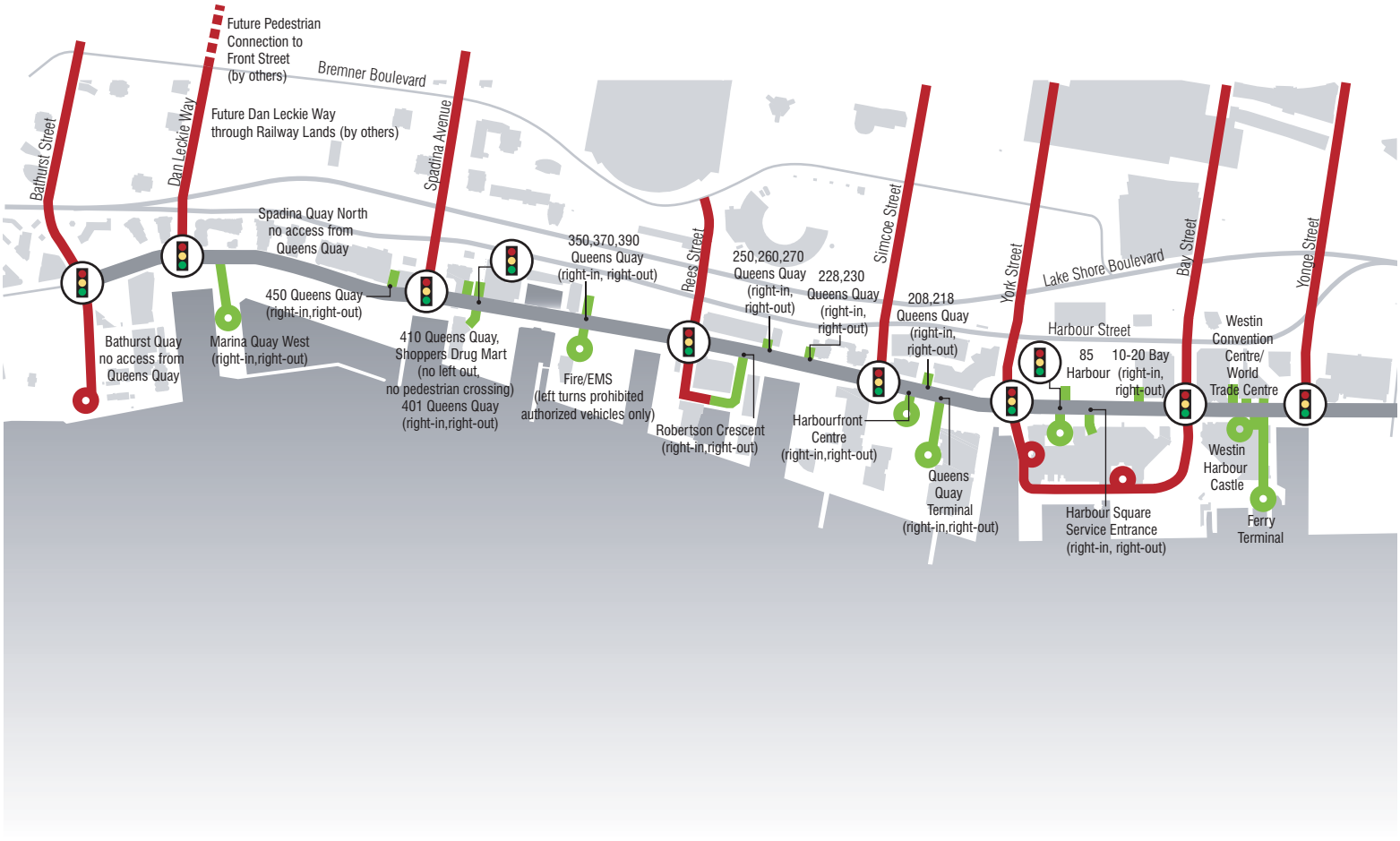


Figure 5-14: Existing Site Access

Existing Road Network

- 8 Direct Downtown Access
- 21 Queens Quay Access Only
- 10 Signalized Intersection



Not to Scale

5.3 Traffic Operations

A traffic operations analysis was carried out in support of the study team's inventory of existing conditions and the evaluation of the alternatives considered as a part of this Environmental Assessment (EA). Detailed documentation of the data collected and analysis is available in the Transit and Traffic Operations Report included in Appendix E. The following sections highlight the data collection, analysis process and results.

5.3.1 Data Sources

The traffic operations analysis was undertaken based on a detailed data collection exercise. To capture the full range of representative conditions during peak and off-peak seasons pedestrian, bicycle and auto volume data were collected during large and medium summer events, in addition to typical weekday conditions during August and October 2007.. Several types of data were collected at locations throughout the study area, including turning movement counts, automatic traffic recorder counts, RESCU counts, traffic signal timing Information, collision data, transit service data, aerial photography and time lapse photography. A description and summary of what data was collected and when the collection took place are provided in Appendix E (Transit and Traffic Operations Report). Section 5.3.2 is a discussion of the analysis of the data.

In consultation with the Waterfront BIA and area stakeholders, additional traffic volume counts were undertaken on May 14 2009. The counts completed during a well-attended Blue Jays game at the Rogers Centre to validate the original counts that serve as the basis of the EA traffic model volumes. The additional counts indicated that the 2007 volumes used in the traffic analysis completed for this EA are representative of existing conditions.

Table 5-8: Data Collection Inventory

Type	Description and Purpose	Date Collected/ Updated
Base Mapping	Digital maps in CAD format with property lines, curbs etc. for use in development functional plans	November 2007
Topographic Survey	Detailed legal survey of street including edge of pavement; sidewalks; street furniture; trees; utilities	November 2007
Intersection Control	Detailed cataloguing of lane configurations; turn restrictions etc. for input into modelling software	March 2009
Signals	Phasing/timing; corridor control strategy; transit signal priority (TSP); controller type for input into modelling software	March 2009
Curb Management	On-street parking and loading regulations	March 2009
Automatic Traffic Recorder (ATR) Counts	Link volumes recorded mid-block to understand daily and hourly traffic patterns. ATR counts were recorded at the following locations: • Lower Spadina Avenue and Rees Street –west of the Beer Store / EMS driveway; • Rees Street and Lower Simcoe Street – at the Rabba store; • Lower Simcoe Street and York Street – just west of Queens Quay Terminal driveway; • York Street and Bay Street – just west of the streetcar	August 2007, October 2007

Table 5-8: Data Collection Inventory

Type	Description and Purpose	Date Collected/ Updated
	portal; and • Bay Street and Yonge Street – at 10 Queens Quay.	
Turning Movement Counts (TMC)	Turning volumes at intersections classified by vehicle type; turning volumes at driveways during peak times to understand peak conditions and used as the baseline for future traffic forecasts. The count programme included all intersections on Queens Quay and Lake Shore Boulevard from and including Spadina Avenue to Yonge Street.	August 2007, October 2007
RESCU1 Counts	24-hour permanent counting stations on Lake Shore / Gardiner / DVP for understanding daily and hourly traffic patterns	November 2007
Collision History	Historical collision data to identify locations where traffic safety may be a concern used to identify possible mitigating measures	December 2007
Transit Data Existing Patronage (counts)	Existing and future boarding/alighting by stop location; vehicle operating parameters for input into future year transit models	April 2004, May 2005
License Plate Trace	Estimate of "cut through" – number of vehicles entering from one end of the study area and exiting out the other end with no origin or destination within the study area.	August 2006
Aerial Photography	Digital photography of Queens Quay and the waterfront promenade used for surface parking accumulation; observation; confirming geometry.	August 2007
Ground Level Photography	Digital photography to observe special operating conditions; points of interest; challenges	August 2006 to March 2009
Time Lapse Photography	Digital photography to observe special operating conditions; changes over time; long stay parking	August 2007

5.3.2 Data Analysis

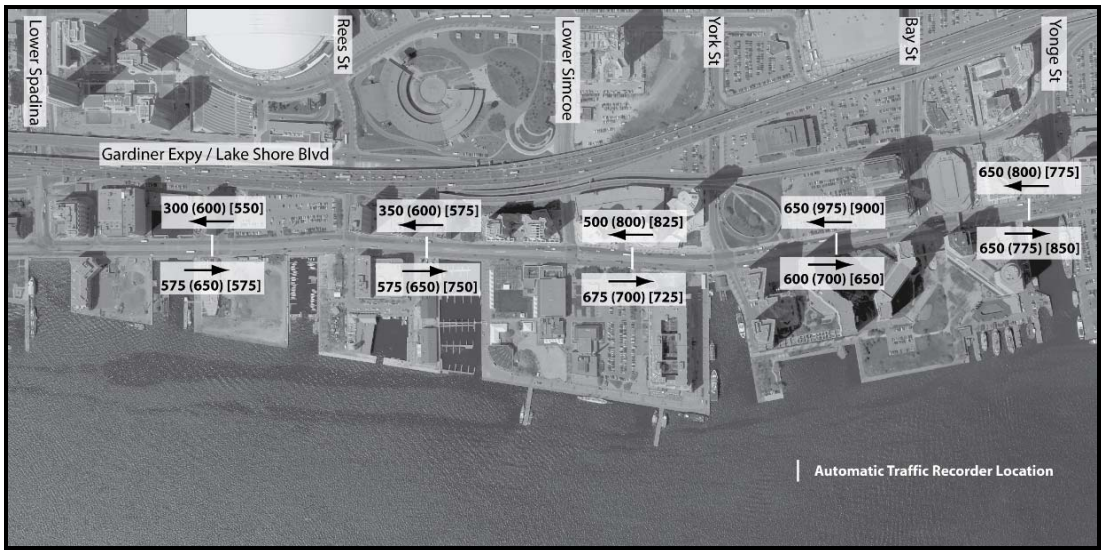
Analysis of Automatic Traffic Recorder (ATR) Counts

Data from the five mid-block ATR counting stations was summarized to show the average recorded volume along the corridor into the following time periods:

- Average summer weekday peak hours (August 10 – 27, 2007)
- Average summer weekend day peak hours (August 11, 12, 18, 19, 25, 26, 2007)
- Average autumn weekday peak hours (October 1 – 14, 2007)
- Average autumn weekend peak hours (October 3, 4, 10, 11, 2007)

A summary of average midblock volumes is shown in Figure 5-15 and Figure 5-16.

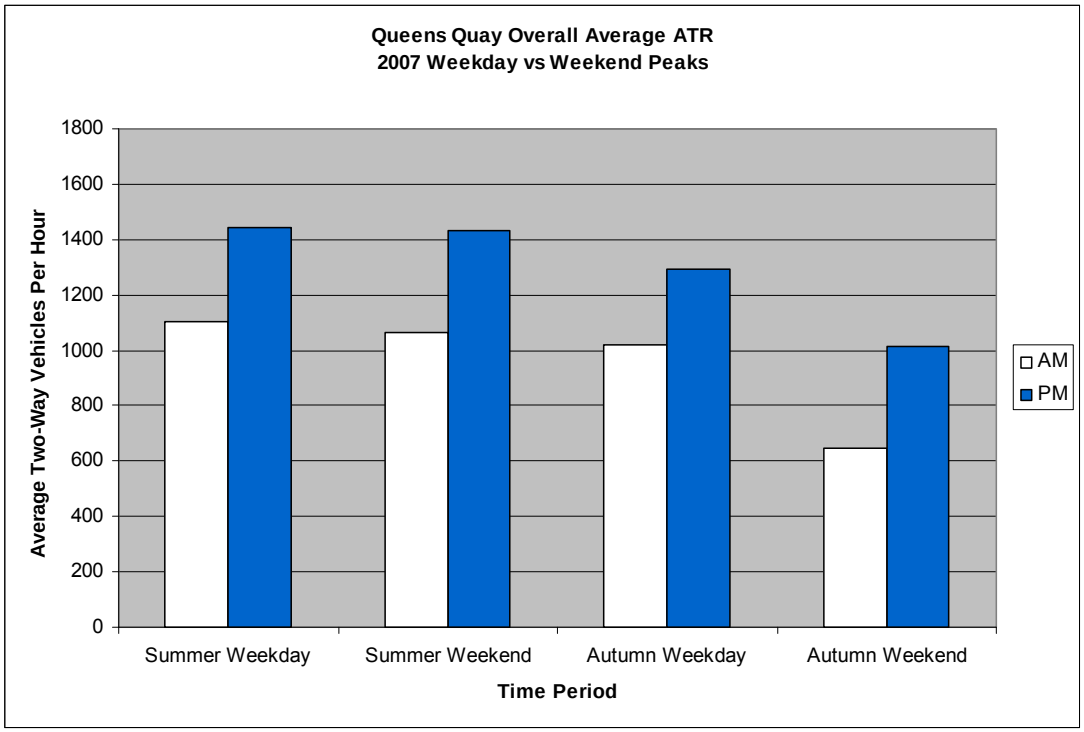
Figure 5-15: ATR Count Peak Hour Summary



Notes:

1. morning peak (afternoon peak) [weekend afternoon peak]

Figure 5-16: ATR Peak Hour Volume Comparison



Analysis Time Periods

Analysis of the ATR counts (discussed above) indicated that of the four time periods counted, summer weekday, summer weekend and autumn weekday had similar volumes. This exercise was useful in determining which time period to analyze as a representative vehicle peak for the area. The team elected to focus on the autumn weekday as a representative average condition and is only slightly less busy than the peaks which occur during the summer. It was noted that the summer peaks occur on weekends where traffic volumes on Lake Shore Boulevard are lighter than during commuter peak hours. While local volumes on Queens Quay are recognized to be higher during summer weekends, the

autumn weekday provides the overall busiest time for analysis of the network including Lake Shore Boulevard.

Turning Movement Counts (TMC)

The purpose of collecting turning movement count (TMS) data was to understand how traffic (classified by vehicle type), pedestrians and cyclists move through an intersection. Typically these counts are undertaken during a focused "peak period" of time of two to three hours in order to capture the "peak hour" of traffic volume through an intersection. The team commissioned turning movement counts at each intersection (including driveways) within the study area.

Queens Quay only was counted during the summer festivals. For the autumn weekday conditions, Queens Quay was counted October 11th and Lake Shore Boulevard was counted October 4th.

The count program included all intersections on Queens Quay and Lake Shore Boulevard from and including Spadina Avenue to Yonge Street.

RESCU Counts

The City of Toronto provided the study team with counts from its Road Emergency Services Communications Unit (RESCU). Data was gathered for the same time periods as the intersection turning movement counts to provide additional validation forthe TMC data collected. The counts were also useful in determining appropriate peak hour factors to use in analyzing intersection operations along Lake Shore Boulevard.

Table 5-9: Average Volumes by RESCU Station

Location	Summer Weekday		Autumn Weekday	
	Daily	Peak Hour	Daily	Peak Hour
LSB WB West of Rees	11,176	1,533	10,772	1,548
LSB EB West of Rees	27,303	2,609	26,068	2,690
LSB WB West of Bay	25,498	2,325	25,414	2,194
Harbour EB West of Bay	20,729	1,761	21,161	1,729

There were no significant discrepancies between the RESCU data and the TMC data. Review of the RESCU count data also indicates that summer weekday and autumn weekday daily totals and peak hour totals are very similar.

Signal Timing and Coordination

The City of Toronto recommends that signal timing information used in a study of this type be current to within the last six months. The team collected the latest signal timings throughout the study period as provided by the City in January 2009.

The current signal strategy on Queens Quay is semi-actuated uncoordinated. Signals along the corridor do not communicate with each other but operate in a "free" condition only responding to traffic and transit calls approaching the intersection. The signals generally cycle between main east-west and north-south phases with the exception of Rees Street which only serves north-south movements if a call is placed by a vehicle or pedestrian.

Along Queens Quay, transit runs on "phase insertion" which provides two opportunities per cycle (three at Spadina) for a dedicated transit phase to be served. During the transit phase, no other movement is permitted for either vehicles or pedestrians. This type of operation, however, does allow for permissive turns over the TTC tracks at intersections.

Traffic Modelling Software

The study team modelled the study area network using Synchro software and based on the data collection exercise. With this model, the team analyzed existing and future traffic conditions on Queens Quay and Lake Shore Boulevard.

The existing conditions analysis for Queens Quay considered the effects of frequent curb side loading and stopping that is prevalent on Queens Quay. The curbside activity was reflected in the Synchro model with a 10 percent base capacity reduction, per the guidelines provided in the City of Toronto Synchro Guidelines v5.0 to reflect busy "Central Business District" conditions. These conditions include frequent stops and parking manoeuvres.

Synchro does not explicitly represent transit vehicle agents, but can allocate signal time for transit vehicle crossings as specified by the existing signal timing plan. These are represented by "hold" phases where no automobile, bicycle or pedestrian movement are served.

Measures of Effectiveness (MOEs)

The MOEs used in the traffic operation analysis are industry standard intersection measures as follows:

- Level of Service (LOS), shown in Table 5-10 is based on the Highway Capacity Manual (HCM) developed by the Transportation Research Board. This measure categorizes levels of delay based on an A through F grade
- Delay (or control delay) is measured in seconds and is the sum of "stop delay" (time spent at a red signal) and "queue delay" (time spent decelerating/accelerating and advancing in a queue). Delay is summarized as an average by movement or for the intersection overall.
- Volume to capacity ratio (V/C) - measures the average amount of capacity available for a given approach. It is used to diagnose turning movements that are problematic. When the traffic volumes reach the capacity of a road, the v/c is equal to 1.0 indicating at-capacity conditions.

Table 5-10: Level of Service in relation to levels of delay (based on Highway Capacity Manual)

Level of Service (LOS) Letter Grade	Control Delay per Vehicle (seconds)
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

5.3.3 Queens Quay Existing and Future Demand

The collection of traffic data (discussed in Sections 5.3.1 and 5.3.2) was the basis for assessing current performance of the existing roadway. The “Future Do Nothing” condition was assessed to provide a glimpse into what may happen in the future assuming no changes to the network.

Existing Peak Demand

For the existing condition and in the future (taking into account the future development of the area), most intersections in the Queens Quay corridor are under-capacity and operate smoothly in both the morning and afternoon peak hours. The extra capacity on Queens Quay presents the opportunity to consider rebalancing the physical space allocation on the street, in favour of more sustainable modes. Relying more on transit and active transport (walking and cycling) is rooted in the Central Waterfront Secondary Plan’s (CWSPs) core principles. Table 5-11 summarizes the intersection LOS for all signalized intersections along the Queens Quay corridor within the study area.

Table 5-11: Existing Queens Quay Overall Intersection Operations Summary

Queens Quay @	Morning Peak Hour			Afternoon Peak Hour		
	V/C	Delay	LOS	V/C	Delay	LOS
Lower Spadina Avenue	0.58	36	D	.53	34	C
TTC Loop	0.49	8	A	0.37	12	B
Rees Street	0.41	18	B	0.43	20	B
Lower Simcoe Street	0.35	20	C	0.40	14	B
York Street	0.62	32	C	0.61	40	D
Harbour Square	0.49	20	C	0.42	19	B
Bay Street	0.52	17	B	0.52	20	C
Yonge Street	0.39	15	B	0.38	15	B

Future Demand Forecasts – “Do Nothing” Scenario

For the purposes of this analysis, the Future ”Do Nothing” scenario refers to the conditions that are predicted to occur before any changes are proposed to the Queens Quay right-of-way but considers full build-out of planned development in the Central Waterfront, including:

- East Bayfront development parcels (e.g., Corus, George Brown College);
- West Don Lands;
- Railway Lands development blocks (e.g., Pinnacle);
- Other future Queens Quay developments (e.g. York Quay Revitalization,m Square, Pier 27, Waterpark Place).

This study assumes that all of the additional residential, retail and commercial development currently being planned or constructed have been implemented and are fully occupied. The full build-out scenario may occur in the medium or long-term.

Overall, the intersections along Queens Quay operate under typical downtown rush hour conditions, with levels-of-service (LOS) ranging operating at LOS D or better and with some individual movements approaching capacity-constrained conditions (V/C > 0.8). Table 5-12

summarizes the intersection LOS for all signalized intersections along the Queens Quay corridor within the study area

Table 5-12: Future* Queens Quay Overall Intersection Operations Summary

Queens Quay @	Morning Peak Hour			Afternoon Peak Hour		
	V/C	Delay	LOS	V/C	Delay	LOS
Lower Spadina Avenue	0.66	46	D	0.82	91	F
TTC Loop	0.54	11	B	0.52	15	B
Rees Street	0.42	19	B	0.52	22	C
Lower Simcoe Street	0.41	22	C	0.57	17	B
York Street	0.69	40	D	0.78	98	F
Harbour Square	70	25	C	0.79	36	D
Bay Street	0.64	21	C	0.67	32	C
Yonge Street	0.88	29	C	0.81	21	C

* Without any changes to the existing road right-of-way

The York Street / Queens Quay intersection experiences higher delays than other intersections due to the heavier traffic volumes and shared westbound right turn lane.

The Lower Spadina Avenue / Queens Quay intersection experiences a higher level of delay than the other intersections along Queens Quay and this is due to transit turning movements and potentially long cycle length if all phases are called.

For detailed measures by movement and approach for all intersections, please refer to the Traffic and Transit Operations Report provided in Appendix E.

5.3.4 Lake Shore Boulevard Existing and Future Demand

Existing Peak Demand

Under existing conditions, Lake Shore Boulevard intersections operate under typical downtown rush hour conditions (LOS D or better) during the morning peak period with some intersections approaching capacity constrained conditions (V/C > 0.80). The afternoon peak hour is busier than the morning peak in overall volume, causing certain key intersection to approach capacity and experience higher delays.

Table 5-13 summarizes the intersection LOS for all signalized intersections along the Lake Shore Boulevard corridor within the study area.

Table 5-13: Existing Lake Shore Boulevard Overall Intersection Operations Summary

	Morning Peak Hour			Afternoon Peak Hour		
	V/C	**Delay**	**LOS**	**V/C**	**Delay**	**LOS**
Lake Shore Boulevard @						
Lower Spadina Avenue	0.74	24	C	0.75	27	C
Rees Street	0.69	26	C	0.95	101	F
Lower Simcoe Street	0.44	15	B	0.67	16	B
York Street (WB)	0.83	13	B	0.93	22	C
Bay Street (WB)	0.57	17	B	0.65	28	C
Yonge Street (WB)	0.84	25	C	0.77	28	C
Harbour Street @						
York Street (EB)	0.58	18	B	0.67	35	D
Bay Street (EB)	0.85	33	C	0.61	22	C
Yonge Street (EB)	0.49	22	C	0.45	13	B

Evident from table Table 5-13, intersection locations with a Gardiner Expressway ramp nearby (e.g., Rees Street and York Street) tend to operate nearer to capacity or with higher delays than other intersections along the corridor under existing conditions. This is due to additional volume, weaving and turning movements at these intersections.

Rees Street has an eastbound on-ramp immediately east of the intersection which attracts many lane-changes and turns upstream from the ramp. These conditions are reflected in the constrained intersection operations analysis.

York Street has a westbound on-ramp immediately west of the intersection attracts volume but the road and intersection configurations (raised median and one-way street intersections) mitigates some of the conflicts noticeable at Rees. The Bay Street / Harbour Street intersection has similar operating conditions.

Future Demand Forecasts – "Do Nothing" Scenario

Under the future "Do Nothing" scenario, traffic operations begin to deteriorate along Lake Shore Boulevard due to the high level of forecasted development throughout the Central Waterfront. It is important to note that while future growth will place higher demand on the waterfront road network, Queens Quay is not intended to be a relief "valve" for Lake Shore Boulevard. Capacity constraints on Lake Shore Boulevard will need to be addressed from a systems point of view considering all available modes of transportation. Table 5-14 summarizes the intersection LOS for all signalized intersections along the Lake Shore Boulevard corridor within the study area.

Table 5-14: Future* Lake Shore Boulevard Overall Intersection Operations Summary for "Do-Nothing" Scenario

Lake Shore Boulevard @	Morning Peak Hour			Afternoon Peak Hour		
	V/C	Delay	LOS	V/C	Delay	LOS
Lower Spadina Avenue	0.76	25	C	0.81	32	C
Rees Street	0.74	30	C	1.02	126	F
Lower Simcoe Street	0.52	17	B	0.83	34	C
York Street (Gardiner On-Ramp)	0.98	21	C	1.81	61	E
York Street	0.67	20	C	0.97	41	D
Bay Street (Harbour Street)	0.96	41	D	0.98	72	E
Bay Street	0.96	41	D	0.98	72	E
Yonge Street (Harbour Street)	0.61	26	C	0.71	13	B
Yonge Street	1.06	107	F	0.91	42	D

* Without any changes to the existing road right-of-way

The Rees Street/Lake Shore Boulevard intersection operates under capacity-constrained conditions due to the ramp located just downstream (eastbound) of the intersection, resulting in complex weaving movements. During the afternoon peak hour, the intersection is approaching capacity due to high demand in all directions competing for time in the cycle.

The York Street / Lake Shore Boulevard intersection also operates under capacity-constrained conditions during the afternoon peak hour. This is due to high volumes accessing the Gardiner Expressway westbound on-ramps immediately downstream of York Street.

A more detailed review of the intersections along Lake Shore Boulevard is provided in the Traffic and Transit Operations Analysis Report provided in Appendix E.

5.3.5 Neighbourhood Infiltration

A neighbourhood infiltration study was undertaken in order to estimate the volume of traffic currently using Queens Quay that is not either originating from or destined to the area. The methodology used for this study was a license plate trace. The survey included two stations, one at Spadina Avenue / Queens Quay and one at Yonge Street / Queens Quay. License plates of vehicles entering or exiting the network were recorded and then compared to determine the number of trips that were simply passing through the corridor.

The license plate survey estimated that around 10 to 20 percent of traffic on Queens Quay was entering from one end of the site area and exiting out the other end.

The results of the license plate trace survey are summarized in Table 5-15 and Table 5-16.

Table 5-15: Spadina to Yonge Eastbound

Time Period	Total Cars	Cars Matched	Percent Match
AM	762	160	21%
PM	891	175	20%
Total	1653	335	20%

Source: Ontario Traffic Inc.

Table 5-16: Yonge to Spadina Westbound

Time Period	Total Cars	Cars Matched	Percent Match
AM	541	45	8%
PM	941	99	11%
Total	1482	144	10%

Source: Ontario Traffic Inc.

Queens Quay provides access and is a primary service route to many land uses in the Central Waterfront. Within the Study Area, the street influences the operations and success of more than 250 businesses, the large residential community, and the numerous tourism and recreation attractions. These operations depend on Queens Quay their primary frontage, for access and for servicing. As such the area could be better served by reallocating the auto capacity being apportioned to “cut-through” traffic to local traffic and more efficient and sustainable modes such as walking, transit and cycling.

5.4 Curbside Activity: Bus, Servicing, Public Parking

The existing cross section of Queens Quay includes two eastbound lanes and two westbound lanes. It was observed on several site visits that private automobiles, delivery trucks and buses frequently stop or stand illegally in the curbside lanes, effectively reducing the capacity of Queens Quay to one lane in each direction (See Figure 5-17).

Currently, there is limited space on Queens Quay to accommodate loading and unloading activities for tour buses, service vehicles and autos. Dedicated (legal) areas for curb side activity on Queens Quay include taxi stands at the south curb in front of Queens Quay Terminal and at the south curb in front of Westin Harbour Castle. There are also limited bus loading areas west of York Street and in front of Westin Harbour Castle. The existing curbside activities are illustrated in Figure 5-18.

One of the top community issues raised throughout the EA process was how tour buses and school buses would be addressed as apart of the improvements to Queens Quay. The Study Team surveyed the various bus companies that operate along Queens Quay and their users to gain an understanding of the bus traffic that are typically expected during the peak summer months. Table 5-17 summarizes the findings.

Figure 5-17: Photo of Summer Weekend Curbside Activity on Queens Quay (Hot and Spicy Food Festival)

Table 5-17: Bus Inventory for Summer Peak

Compiled with Imput from Operators

25-Mar-2009

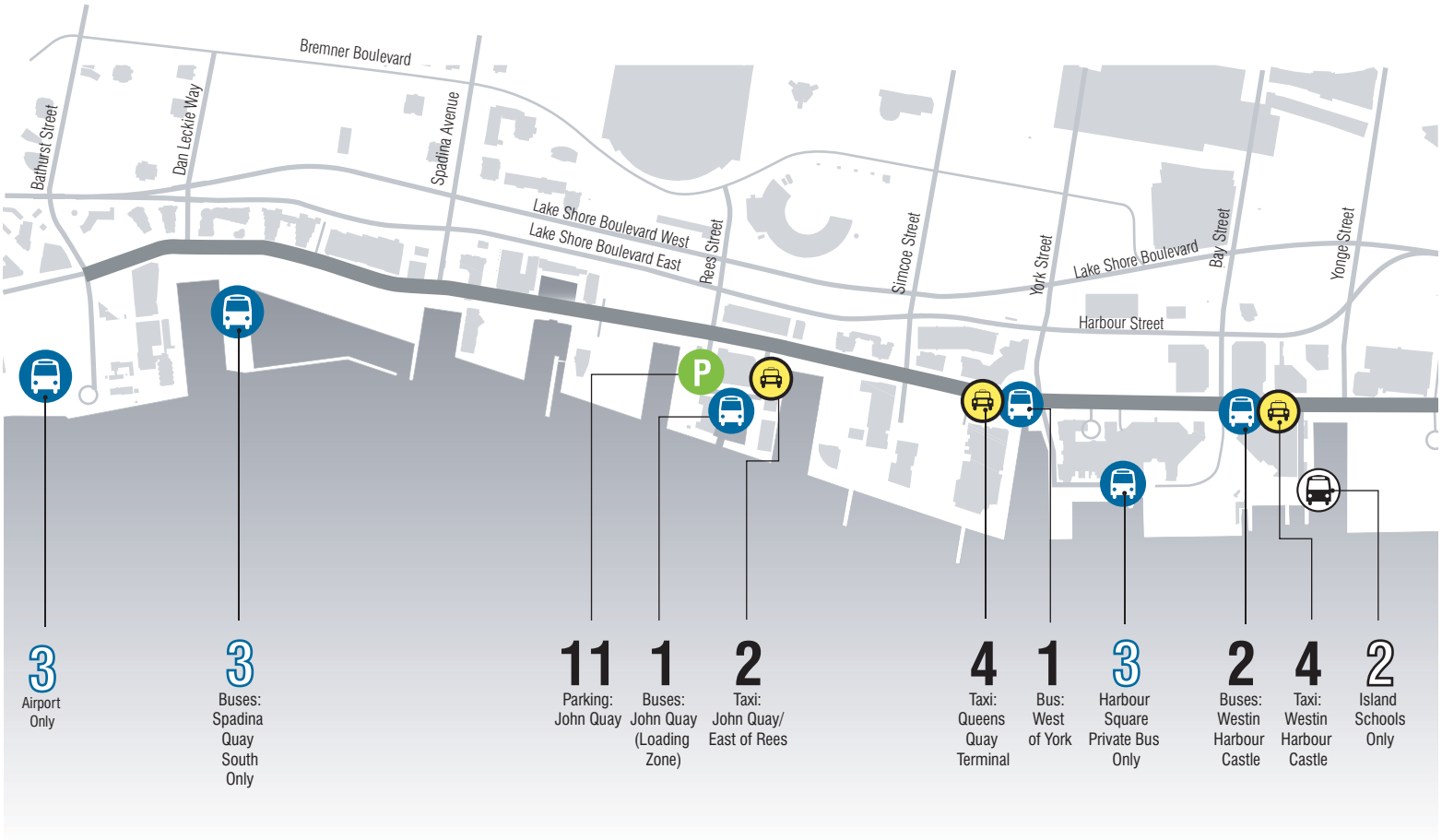
	AM/morning				PM/afternoon						PM/evening							Notes
	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
Empire Sandy	2-4 buses, 1-2 days/week																	May to June busiest period
Marina Quay West (seasonal)				2-4/buses 1-3x/week					2-4/buses 1-3x/week		3-4/buses 6x/week							May increase to 10x/year.; Miss Toronto pageant - 2 buses
Radisson	7-12/day																	Confirm if double counting
Bus and Boat Company	every 30 minutes, stopping at Robertson Crescent and York Quay																	4 buses in fleet; rotating route
Pier 4 Restaurant	15 buses per year																	
Mariposa		1		2	2	2	7		3									Average based on greatest volume of buses per month/4
HFC School Buses	10							10										From Harbourfront Centre
Queens Quay Terminal	5/6 per day in peak summer																	June: 146; July:126, August:125
Great Lakes Schooner	65/month during peak. 3-10 buses at any one given time. 60% day, 40% evening																	Need weekly operating schedule
Harbour Square	Do Not Load on QQ																	4 bus fleet; load off QQ
Westin Harbour Castle	Approx. 20/hour.Could be 5-8 at any given time. Stage on QQ northside, sometimes from Harbour. Load in Alley.																	Currently load on QQ between driveway and ferry service lane
Island School	Do Not Load on QQ																	Use Ferry Lane east of Westin Harbour Castle
Island Ferry Camps	8							8										
Corus/George Brown College	assume 0																	
Grey Line/Shop and Dine	1 each /30 minutes peak summer																	Stops at Rees/Robertson and York Quay
Toronto Tours	2x/day (No topping on Queens Quay)																	
Random Bus Tours - No Specific Destination	10/day in peak summer																	To be confirmed with OMCA
Trade Show Shuttle Buses	16-20/day. No stopping on Queens Quay. Pick up at HFC/Rees Parking Lot																	For example: Auto Show, Canada Blooms

Figure 5-18: Existing Curbside Management

Existing Curbside Management

4	Dedicated Bus Drop-Off/Pick-Up
10	Dedicated Taxi Spaces
0	Service Loading Zones
11	Parking On-Street
4780	Parking Off-Street

	Bus Drop-Off/Pickup & Hop-On/Hop-Off
	School Bus Drop-Off/Pickup
	Taxi Stands
P	On-Street Parking (John Quay Only)
#/#	On Queens Quay/Off Queens Quay



Toronto Inner Harbour

Not to Scale

Private auto parking is currently available at nine public car parks located in the study area between Bathurst Street and Yonge Street. These existing car parks have a combined capacity of approximately 4780 spaces. On-street parking is not currently available on Queens Quay. The following is a list of lots serving Queens Quay:

Table 5-18: Off-street Parking Inventory

Car Park	Location along Queens Quay	Type	Capacity (No. of Spaces)
Marina Quay Pier	Dan Leckie Way	Multi-level, Underground	225
Rees Street	Northwest quadrant of Rees St. intersection	Surface 305	
Radisson Hotel	Robertson Crescent	Multi-level underground	300
York Quay	Northeast quadrant of Simcoe St. intersection	Multi-level elevated structure	1200
Harbourfront Centre	Southeast quadrant of Simcoe St. intersection	Surface 210	
85 Harbour Street	Between York St. ramp and Bay Street	1 Surface and	510
10/20 Bay Street	Between York St. ramp and Bay Street	1 Multi-level underground	
33 Bay Street	Northeast quadrant of Bay St. and Harbour Street.	underground 300	
7 Queens Quay	Southeast quadrant of Yonge Street intersection (east of Captain John's Restaurant)	Surface 187	
Pier 27	Southeast quadrant of Yonge Street intersection	Surface 1350	

The properties along Queens Quay are generally well-served in terms of service and delivery loading. All sites have dedicated on-site (i.e., off-street) loading areas to accommodate deliveries and servicing. 270/260/250 Queens Quay is a residential condominium with retail and commercial units at street level. This complex is the one exception on Queens Quay where on-site loading is limited. While there are loading bays for 270 and 260 Queens Quay, the vertical clearances are not sufficient to accommodate larger delivery vehicles. 250 Queens Quay does not have any on-site loading facilities.

5.5 Safety and Emergency Response

Queens Quay is a waterfront service route for Fire, Emergency Medical Services (EMS) and Police.

Fire Station 334 (District 33) and EMS Station 36, located at Maple Leaf Quay East within HTO Park, provide first response Fire and EMS (i.e., ambulance) service to the waterfront communities.

The Marine Police Unit,located at John Quay on Robertson Crescent, is not considered a first response station. For anything other than marine-based incidents, first response responsibility for all land-based incidents falls to 14 Division (west of Spadina Avenue), 52 Division (Spadina Avenue to Yonge Street), and 51 Division (east of Yonge Street). None of these police stations are located on Queens Quay or along the waterfront.

Primary emergency vehicle access in both the eastbound and westbound directions is on the designated roadway. In the event of roadway congestion, secondary emergency vehicle access is provided by the transit right-of-way east of Spadina Avenue to the portal between York Street and Bay Street. West of Spadina Avenue, a raised planted median on both sides of the transit right-of-way and the overhead catenary power system with centre poles limits emergency vehicle access and use of the TTC facility. East of the portal, no transit facility currently exists.

5.6 Urban Design

This section discusses the existing urban design character of this increasing important street in terms of its coherence and identity; form and composition; street character, microclimate, and details; and programmatic flexibility.

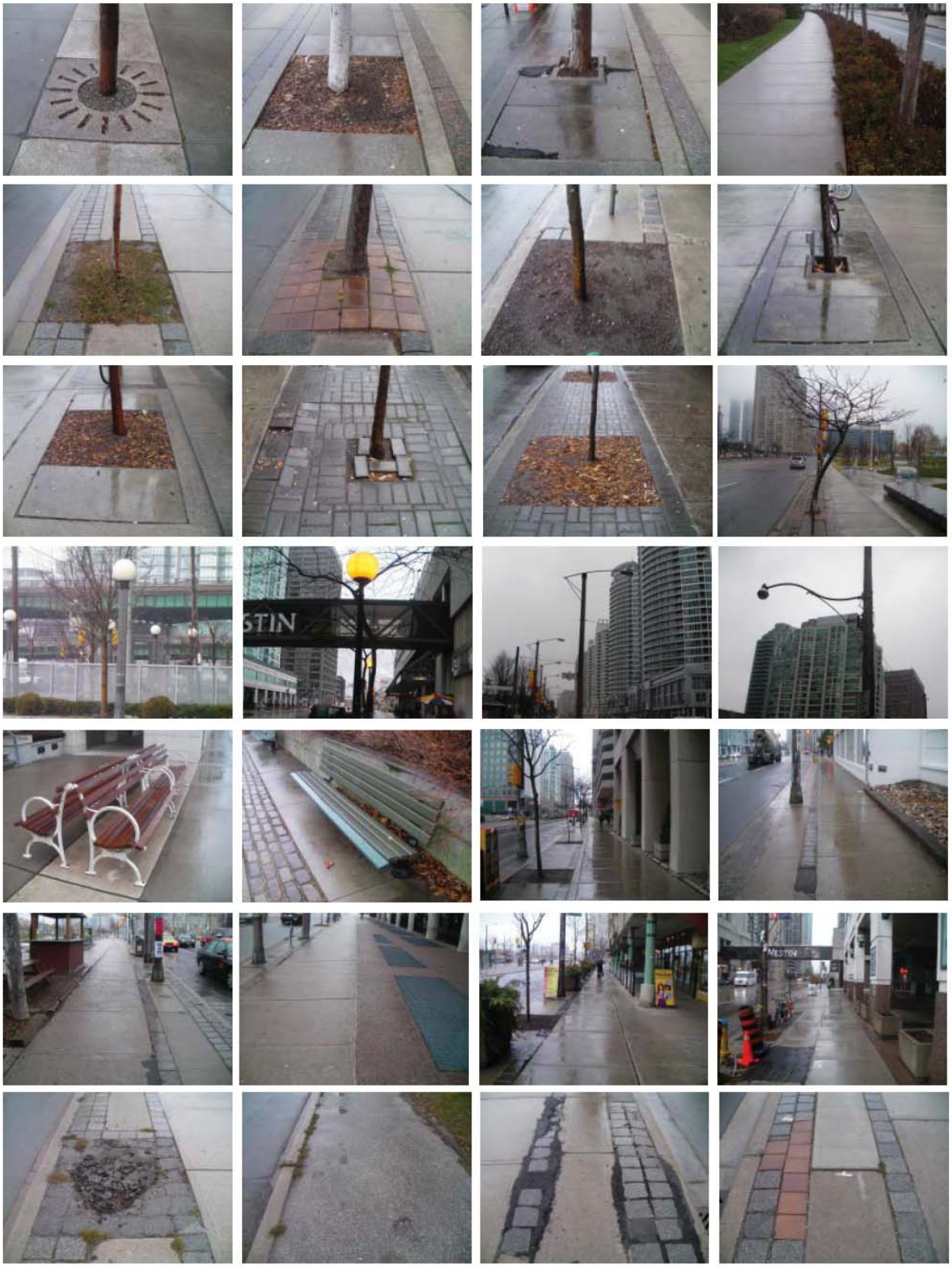
5.6.1 Coherence and Identity

A survey of existing materials, details and furnishings across the Central Waterfront reveals an ad-hoc accumulation of design 'difference'. Queens Quay is firmly embedded within this buildup of excessive difference (in design motifs, materials, details) and contributes to the resulting lack of visual continuity across the entire waterfront. The lack of coherence in the streetscape and waterfront as a whole is a product of its phasing and development in disparate parts. In the past, development occurred slowly and in discrete pieces over time, forming a constantly changing patchwork of styles along the length of the waterfront without relation to one another. Today, the resulting visual clutter amounts to a weak sense of place and lack of identity. The public realm and streetscape detailing change through five or six segments across the waterfront, each built at different times with differing widths, transit infrastructure, and streetscape elements. Sidewalks, for example, vary from two to five metres resulting in a lack of continuity in terms of pedestrian movement. Each segment introduces new details and designs for paving, tree surrounds, furnishings and light fixtures that are inconsistent from area to area (see Figure 5-19). Materials and finishes of elements in the public realm vary enormously, contributing to a sense of disorder without clear identity. Without design elements to stitch together the streetscape with the various parks, waterside activities, and cultural facilities present along the length of the waterfront, the street fails to unify the overall waterfront as a district. The new WaveDecks offer a cohesive design feature that bind the street to the water, however, there currently exists no unifying feature on Queens Quay to provide a connection between the wave decks. Similarly, HTO Park, Harbourfront Centre, the Music Garden and other attractions along the waterfront operate as destinations with no unifying features in between.

5.6.2 Form and Composition

The form of the streetscape, defined as the area between its built edges, allocates a disproportionately small amount of public sidewalk space in relation to the height of adjacent buildings, which can be as high as 130 metres for towers such as 1 York Quay or 118 metres for Waterclub East. Narrow sidewalks (sometimes as narrow as two metres) constrain movement patterns and result in the impression that pedestrians are not prioritized. There exist multiple pinch points where the presence of vertical and overhead architectural elements, such as arcades, creates an over-bearing enclosure where buildings dominate. The space allocated for cars (travel lanes, parking) is disproportionately large compared to the desire and demand for pedestrian movement in central waterfront locations. As such, the street fails to provide space for festivals, parades, open-air markets that would be expected in such a prominent and vital waterfront location. The space allocated for streetcars fails to contribute to the quality of the public realm, with its cast-in-place concrete trackbed allocating 24-30% of the street right of way (surveyed from typical existing profiles along Queens Quay between Spadina and York Street). Overall, nearly 100% of the streetscape is paved in either CIP concrete or asphalt, resulting in a public realm that is materialized predominantly for high-speed movement and lacks the warmth of materials associated with human-scaled, pedestrian priority areas in cities. The reconstruction of Bloor Street in Toronto, for example, has materialized an enlarged, tree-lined public realm using granite surfaces to create a level of quality that promotes walking and shopping while distinguishing this important civic axis.

Figure 5-19: Existing Streetscape Character- Yonge to Bathurst



5.6.3 Character, Microclimate and Details

Queens Quay lacks a context-specific street design that reflects the importance of its unique waterfront setting. Despite its ideal location adjacent to the water, the configuration of sidewalks and proportion of public realm does not emphasize or reinforce the public amenity of the lakeshore directly south which fronts the boulevard. Compared with other great waterfront streets around the world, it does not function as a human-scaled civic streetscape or gateway to the waterfront. Due to the infrequency of north-south crossings, whose spacing can be up to 450 metres apart in its current configuration, Queens Quay acts as a barrier rather than a public gateway to the waterfront. Queen Street West, by comparison, is a nearby downtown Toronto street with high pedestrian activity. It averages 85 metres between street intersections and 255 metres between signalized crossings. Yet, due to its scale and configuration (two lanes of mixed traffic with on-street parking) coupled with the ability to cross the street mid-block, it is more friendly and inviting to pedestrians.

Building frontages that form a street wall are inconsistent and disproportionate, creating a public realm that lacks human scale and is not conducive to social interaction or a vibrant street life. The street fails to employ tree planting or landscape to great effect; rather, the trees are stunted due to constrained growing conditions and the spacing and alignment is so irregular that it provides neither consistency nor spatial definition of the public realm. This lack of continuity fails to provide orientation to pedestrians, especially compared to memorable streets like the Champs-Élysées in Paris which is spatially defined by its consistent tree planting of a single tree type (London Planetree) along the full length of the streetscape. In terms of pedestrian comfort, the current inadequate planting conditions for growing mature trees fail to provide optimal microclimatic conditions. There is a lack of shade for pedestrians from a mature tree canopy in summer; in winter, the perception of a wind tunnel is enlarged as winds whisk along at street level with few obstacles. Mature trees are helpful in dissipating the flow of wind and creating a psychological perception of warmth for pedestrians in winter, however, they simply don't exist. In general the proportion of tree canopy cover is insufficient to promote or protect air quality and minimize the heat island effect.

The current street does not accommodate consistent street elements such as paving materials, furnishings or other physical elements such as signage or public art to create a sense of place or memorable character. Overall, the quality of the pedestrian realm is poor; the standard details lack a finer grain that captures the local culture and place, befitting the first point of contact with the lakefront when arriving from the city.

The last major streetscape improvement took place in the mid 1980s; over time, the streetscape has deteriorated and maintenance is poor. Sidewalk paving is broken and uneven in places and street lighting is directed to road traffic, not pedestrians. Repair of the streetscape has resulted in a variety of conditions: patched asphalt sections over granite or concrete paving units, increasingly dissolving continuity in the tree species planted along the streetscape as old trees are replaced by different mixed species.

5.6.4 Programmatic Flexibility

Hosting special events on Queens Quay is challenging due to the lack of sidewalk space. It is difficult to accommodate the array of temporary tents, structures, and vendors who would typically occupy a portion of the public realm during festivals or events and still allow for clear pedestrian and vehicular movement. When festivals do occur and spill out on to the street, lane closures and traffic rerouting are required.

5.7 Natural Environment

Queens Quay and the study area are located within a highly modified, built-up urban area. The original shoreline of Lake Ontario is found a kilometre to the north of the corridor. The land on which the street is situated consists mainly of lake fill taken place over more than a century. For the past 40 years, redevelopment has required the mitigation of any subsurface contaminants if present. There are no wetlands, Areas of Natural and Scientific Interest (ANSI's) or Environmentally Significant Areas (ESA's) in the study area.

5.7.1 Terrestrial

There are few significant terrestrial environmental features in the study area. The street trees exist within the existing public right-of-way with sub-standard growing conditions and varied levels of health. It is highly suspect whether or not they would ever reach their intended size. There is no evidence that extra soil volume was provided outside of the root area. Moreover, the native soils along Queens Quay are largely lake fill of miscellaneous origin, which is not ideal for growing conditions. The tree root zones are the street trees are limited by the adjacent roadway activity and heavy pedestrian volume in the peak seasons. This reduces the space around roots to facilitate proper gas exchange. No irrigation is currently provided to street trees.

A few notable specimens, however, do exist on the lands adjacent to Queens Quay. A row of relatively healthy and sizable Norway Maples – an invasive and non-native species – is present along the frontage of Redpath Sugar. In the York Street Ramp site are several large elms, crabapple and catalpa. On the lands in front of Queens Quay Terminal are a number of larger Honey Locusts in raised planters.

5.7.2 Aquatic

There is no surface water present and no open watercourses traverse the primary EA study area (i.e., there are not aquatic resources within the study area).

The Queens Quay Study Area is outside of but adjacent to the highly modified urban Lake Ontario shoreline. Storm water discharge is the only relationship between the study area and the nearby aquatic realm. Surface runoff is collected by the City of Toronto storm sewer system and discharged into the Lake some distance from shore. Aquatic habitat closely associated with the site is located within Lake Ontario. As a result of urbanization and shoreline alteration, aquatic habitat diversity is limited in the vicinity of Queens Quay. Figure 5-20 is an illustration of the Lake Ontario shoreline south of the study area.

Lake Ontario

The East Bay Front Class EA Master Plan Study (2006), undertaken adjacent to the Queens Quay Study Area, reports limited fish communities and aquatic habitat in Lake Ontario along the inner harbour shoreline. The Master Plan provides:

Fish community sampling was performed by the Toronto and Region Conservation Authority (TRCA) in the spring, summer and fall of 2002 and 2003 at three locations in the vicinity of the East Bayfront Precinct. These sampling locations include the Keating Channel, and two sheltered areas; the York Harbour Square and the Spadina Quay. Although these areas have been modified in a manner that has reduced habitat diversity, fish community sampling by the TRCA resulted in the capture of 17 species including sport fish and forage fish communities… (TRCA, 2004).

The sport fish community is primarily associated with the Spadina Quay and York Harbour Square as a result of the warmer water and sheltered conditions preferred by these species.

Peter Street Basin

Queens Quay crosses over the Lake Ontario Shore lane at Peter Slip with an overpass. With urbanization and highly modified dockwall aquatic habitat diversity is limited. The Peter Street Slip and Basin were completed in the early 1990's, and include a portion of the Water's Edge Promenade that extends around the Basin and under the Queens Quay bridge.

The public space in the basin has been underused and, combined with issues of poor water circulation in the basin, necessitate a closer look at the design of this area.

Spadina Quay Wetland

To the east of the Music Garden, and adjacent to the Spadina Marina, the Spadina Quay Wetland was completed in 1996.

This protected environment fosters the development of extensive aquatic plant communities and an emerging fish population. There have been numerous and verified accounts of mature northern pike frequenting this location in the spring.

The development of the Spadina Quay Wetland has transformed a former surface parking lot to the north of the Spadina Marina into a diverse and ecologically stable wetland in a highly urbanized section of Toronto's waterfront. The objectives for the project included the creation of an open water marsh wetland that provides a variety of terrestrial and aquatic plant communities, and the establishment of physical and vegetative conditions conducive to high quality northern pike spawning habitat.

A series of features provide a home for spawning fish, amphibians and marsh birds as well as a recreation area for local residents and visitors. The design involved the excavating of soil to differing levels to provide seasonally flooded sections as well as deep pools and shallow areas that are wet year-round. The site is planted with grasses, rushes and other water-tolerant species. Breaks in the existing dockwall establish physical and vegetative connections conducive to pike spawning.

The project was undertaken as a collaboration between the City of Toronto, the Toronto Region Conservation Authority, and Toronto Bay Initiatives. The park is approximately 0.28 Ha (0.7 acres) in size. (Source: http://www.toronto.ca/harbourfront/spadina_quay_wet.htm)

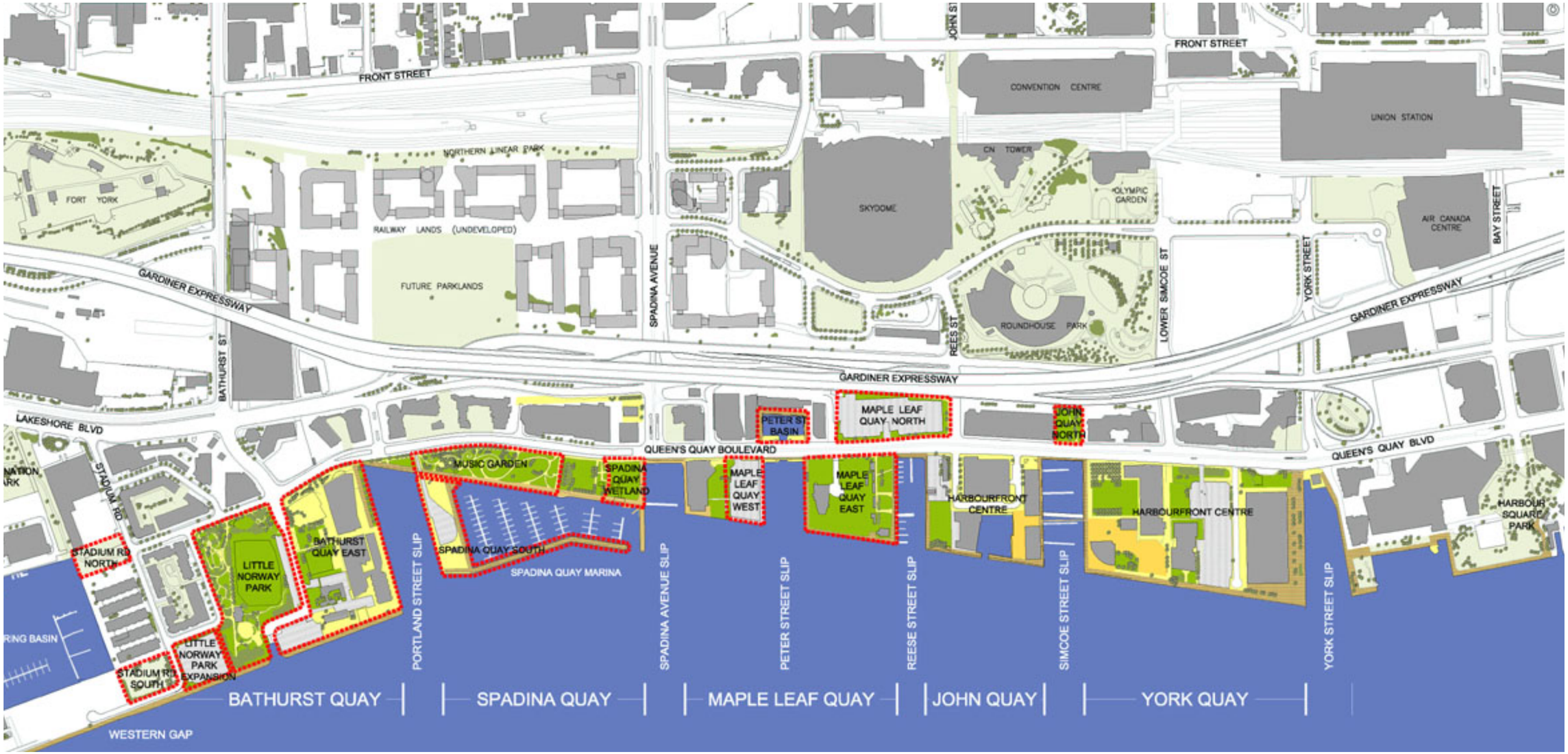
John and York Quays

The revitalization of the water's edge and promenade on John and York Quays was the first phase of a larger strategy to improve the public realm around Harbourfront Centre. Construction on York Quay began in the fall of 2003 and was completed in June 2005. The project included the construction of a new 4,000 square foot underwater fish habitat constructed out of approximately 2300 tonnes of concrete rubble, 200 tonnes of stone and 24 dead trees. This new fish habitat will help build and support Lake Ontario fish populations in the vicinity of Harbourfront Centre.

WaveDecks

As a part of the waterfront revitalization, WaveDecks were opened at Spadina, Rees and Simcoe slips between 2008 and 2009. The areas provided additional public and open space while providing new aquatic habitat. The aquatic habitat created at each WaveDeck is meant to invite fish and other aquatic life to inhabit the area. Conveniently the areas are situated in proximity to the Pike spawning area of the Spadina wetlands. The intent is for aquatic plants to root in amongst the habitat features providing both food and shelter.

Figure 5-20: Lake Ontario Shoreline Toronto Harbourfront



(Source: http://www.toronto.ca/harbourfront/site_profiles.htm#spadina)

5.7.3 Storm Water Management

The existing Queens Quay area from Bathurst Street to Bay Street are serviced primarily by a separate stormwater collection system consisting of short run sewers that discharge directly to the adjoining water body, Lake Ontario. All of the storm outlets serving this section of Queens Quay discharge via headwalls between Portland slip and Yonge Street Slip. There are also larger stormwater culverts serving the area and lands to the north of Queens Quay. There is no stormwater management facilities associated with the existing study area.

There are currently five outlet storm sewers located in this area of Queens Quay between Bathurst Street and Bay Street, as described as follows:

1. 900 mm dia. storm sewer outlet discharging directly into Portland Slip.
2. Two No. 750 mm dia. storm sewers connect into a 2400 mm x 1800 mm dia. storm water culvert (Serving lands to the north) in Spadina Avenue which discharges direct into Spadina Slip.
3. 600 mm dia. storm sewer outlet discharging directly into Rees Slip.
4. 450 mm x 675 mm storm water box outlet discharging directly into Simcoe Slip.
5. 825 mm dia. storm sewer connects into a 1950 mm x 2550 mm dia. storm water culvert in Yonge Street (Serving lands to the north) which discharges direct into Yonge Street Slip.

There are four additional storm outlets in this area which serve lands to the north of Queens Quay and starting from Bathurst Street are described as follows:

1. Two No. 1800mm x 2700 mm storm water culvert which discharges direct into Portland Slip.
2. 3810 mm dia. storm sewer outlet discharging directly into Portland Slip.
3. Two No. 2400 mm dia. storm sewer outlets discharging directly into Rees Slip.
4. 2850 mm x 1500 mm storm water culvert which discharges directly into Simcoe Slip.

5.7.4 Groundwater Conditions

The water table within the study area is close to the surface and is highly influenced by Lake Ontario. Groundwater resides within the fill materials that make up the entirety of the study area. Lateral flow occurs within the fill materials and is likely influenced by buried infrastructure such as deep sewers identified in the Stage 1 Archaeological . As a primarily hard surfaced urban area, few opportunities exist for passive storm water infiltration and groundwater recharge.

Based on existing conditions study undertaken for the West Don Lands Transit EA (2008), groundwater flowing through the fill materials generally does not contain contaminants at concentrations exceeding the applicable generic MOE criteria. The quality of the groundwater leaving the site was found to be similar to the quality of the water entering the site.

5.7.5 Air Quality

Based on established City planning guidelines, policies and physical constraints within the study area (such as available property), the alternatives that were studied in this EA did not include increases in roadway capacity. The influence that study recommendations would have on air quality alternatives would be marginal; therefore, no detailed data collection was undertaken to assess air quality in the study area.

The study team collected secondary source data available from the City of Toronto and Ministry of the Environment and consulted with area residents to gain an understanding of air quality within the study area.

Sources of airborne particulates influencing the study area would be from the Gardiner-Lake Shore corridor, passenger/freight rail corridors, recreational and commercial boating activities, the Island Ferries and the Island Airport. The only industrial pollution source within the study area is the Redpath Sugar refinery.

Locally, residents have expressed concern regarding the number of idling buses and motor coaches that stop and park along Queens Quay, largely servicing the tourism industry along the waterfront.

Air pollutants in the City of Toronto originate from a variety of source categories including industry, transportation, fuel combustion, and miscellaneous activities (primarily dry cleaning, wood stoves, painting, solvent use, and fuel marketing). The commonly recognized, standard primary air contaminants include volatile organic compounds (VOC), fine particulates matter (PM), carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3) and sulphur dioxide (SO2). (City of Toronto, 2000).

A recent study suggests that in Toronto, nitrogen dioxide and carbon monoxide are air pollutants that have adverse impact on human health (*Toronto's Air: Let's Make it Healthy*, City of Toronto Public Health, 2000). Nitrogen dioxide comes from transportation, industrial processes and smelters while carbon monoxide mainly comes from transportation.

Air quality in the City is influenced by a multitude of parameters, some of which are increasing in concentration while others are decreasing. For instance, while atmospheric concentrations of sulphur dioxide, lead and particulates have dropped significantly since 1970, the number of Air Quality Advisories has considerately varied since 1996.

Based on the Ministry of the Environment's Historical Air Quality Index (AQI) Data (http://www.airqualityontario.com/reports/historical.cfm), downtown Toronto experienced seven incidences of poor air quality in 2007, three in 2008 and none in 2009 (up to the end of November). All of those incidences happened between April and September. One air quality warnings was issued due to elevated concentrations of ground-level fine particulates matter, while the rest of the incidences of were due to elevated concentrations of ground-level ozone. Due to Toronto's dense population, large number of vehicles, industry, light winds, and optimal summer temperatures, the city provides ideal conditions for the formation of ground-level ozone.

5.8 Socio-Economic Environment

5.8.1 Population and Employment

The Central Waterfront is a diverse setting. There is a large residential population intermingled with tourism destinations and cultural attractions that host several large events each year, mainly during the summer.

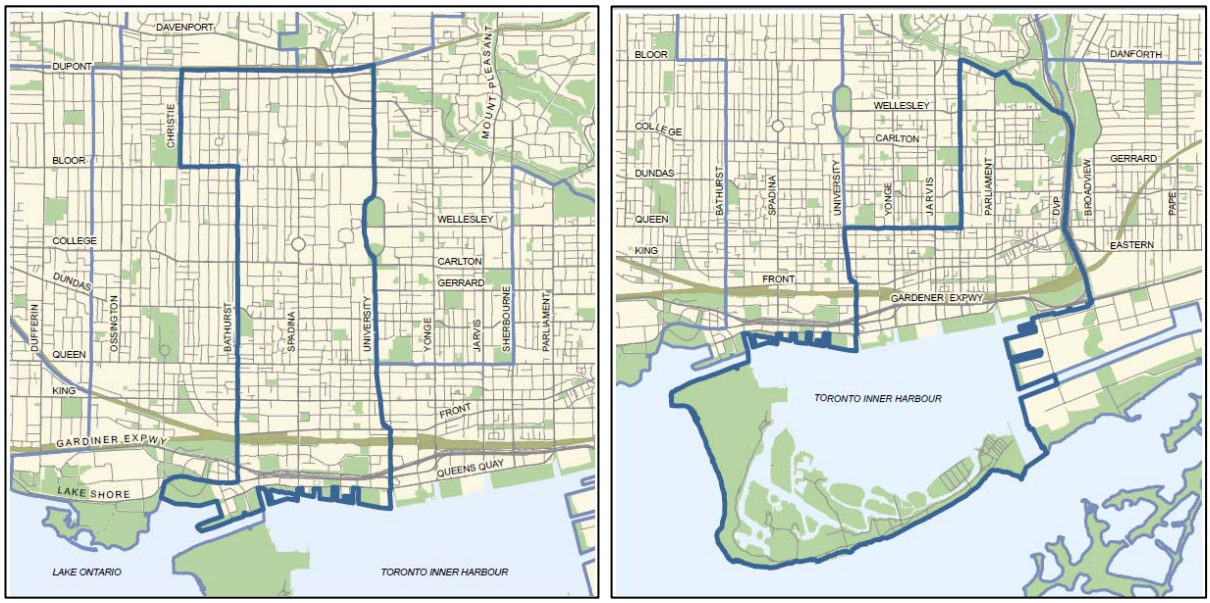
The study area represents the southern edge of two City of Toronto wards: 20 – Trinity/Spadina; and 28 – Toronto Centre/Rosedale. The boundaries of the wards are shown in Figure 5-21.

In the last census year (2006), Ward 20 was home to 59,545 people and consisted of 31,060 households. Ward 20 is 8 square kilometres in size. The population of Ward 20 grew by 16.3% between 2001 and 2006. 57% of occupied private dwellings were in high-rise apartments and 30% were in low-rise apartments. 38% of occupied private dwellings were owned while 62% were rented.

In the last census year (2006), Ward 28 was home to 58,920 people and consisted of 29,945 households. Ward 28 is 14 square kilometres in size. The population of Ward 28 fell by 0.4% between 2001 and 2006. 74% of occupied private dwellings were in high-rise apartments and 15% were in low-rise apartments. 29% of occupied private dwellings were owned while 71% were rented.

The local Business Improvement Area (BIA)—Waterfront BIA (formerly Queens Quay Harbourfront)—represents nearly 250 businesses between Bathurst Street to Yonge Street. Many of the businesses rely on Queens Quay as their primary frontage and some use the street for service access.

Figure 5-21: Ward 20 Trinity/Spadina and Ward 28Toronto Centre/Rosedale



(Source: City Planning, City of Toronto, 2008)

5.8.2 Tourism and Recreation

Harbourfront Centre: Harbourfront Centre is the primary tourist destination on the Central Waterfront. This 10 acre-site attracts over 12 million visits each year, and hosts 34,500 children through school visits and camps. Harbourfront Centre creates and produces over 4,000 events annually and is partner to more than 450 community and cultural groups. They also operate two marinas (Marina Four and Marina Quay West) and three parking lots.

Charter and Tour Boat Business: Approximately 17 companies own and operate 34 charter/tour boats in the Toronto Harbour with a total capacity for over 8,000 passengers. Charter boat operations are primarily located along the dock wall and marine slips of the Central Waterfront from Bathurst Quay in the west to the Parliament Street Slip in the east.

The industry builds on the attractiveness of the City's waterfront for tourism by providing a variety of services such as sightseeing, public cruises, private charters for hosting conferences, conventions, weddings and other special events, educational sail training as well as catering and event planning services. The charter companies operate from April through October, with offices that are active throughout the year. [2]

Cruise Boats: The passenger cruise line business in Toronto has grown from zero in 1994 to a total of 15 cruise line visits in 2005, with each visit introducing up to 700 people into the city. Increased cruise operations on the Great Lakes add to the potential of Toronto's waterfront as an attractive tourism destination. Cruise boats dock along York Quay within the York Street slip, along the harbour dockwall, at various piers and at the Spadina slip. An additional docking location farther east is at Portland Quay (Dan Leckie Way).

5.9 Cultural Environment

5.9.1 Built Heritage Resources

Built heritage features in the study area include both designated (under the Ontario Heritage Act) and non-designated structures (listed by the City but not designated under the Ontario Heritage Act).

Heritage structures listed by the City of Toronto (but not designated under the Ontario Heritage Act) include the Redpath Sugar Refinery and the Queens Quay Terminal Building. The former Toronto Island Ferry Waiting Room—now occupied by the Second Cup Coffee Shop at the foot of York Street—is the only structure designated under the Ontario Heritage Act. No structures within the study area have National designation.

Non-designated structures of significance include the collection of former industrial buildings at Harbourfront Centre,notably the Power Plant Gallery and York Quay Centre.

5.9.2 Archaeology

A Stage 1 Archaeological Resource Assessment (included in Appendix F) was conducted from approximately Spadina Avenue to Jarvis Street.

As stated previously, the study area is entirely comprised of artificial land formed in the early to mid-twentieth century. The fills and any retaining structures associated with these essentially modern land-making activities are not considered to be of any cultural heritage value or interest.

Nevertheless, six features or feature complexes of potential heritage interest were indentified within the study area. These were evaluated using the system prepared as part of Waterfront Toronto's Archaeological Conservation and Management Strategy. Two of the features are of limited potential significance—the remains of the heads of a series of

[2] TWRC Marine Strategy Resource Guide

wharves located in the vicinity of York Street, and the intake system for the late nineteenth-early twentieth-century Toronto water supply system, which traverses the study area between the Rees and Peter Street slips.

The balance of the study area is considered clear of any further archaeological concern.

The Canada Malting Silos are adjacent to the Study Area and are located on the southeast corner of Bathurst Quay. They are a significant visual landmark on Toronto's Central Waterfront, and a reminder of Toronto's industrial heritage.

A significant study is currently underway to explore the suitability of the Canada Malting Silo site to accommodate a major cultural institution on the waterfront in this location. Although the Canada Malting silos are not historically designated, they are listed in the City's inventory of historically significant structures and efforts are being undertaken to ensure their preservation.

5.9.3 First Nations

Following consultation with the appropriate First Nations representatives, there is no current use of the lands for traditional purposes. However, the Mississaugas of the New Credit First Nation do have an existing land claim.

Please refer to Section 3.3 and Appendix A: Public Consultation Summary Report for discussion on consultation undertaken with First Nations for this study.

5.10 Land Use

5.10.1 Objectives and Future Development

Toronto Official Plan

The Official Plan includes policies for development along the water's edge, calling for:

- increased public enjoyment and use of lands along the water's edge;
- private development and public works on lands along the water's edge or in its vicinity to improve public spaces in the waterfront;
- increased opportunities for public views of the water; and
- support a sense of belonging to the community.

The waterfront would be mixed use community, consisting of residential and economic development.

Central Waterfront Secondary Plan

The principles of this Plan act as a framework for the renewal activities in the Central Waterfront. Those influencing land uses adjacent and within the study area include:

Building a Network of Spectacular Waterfront Parks and Public Spaces

- a continuous and highly accessible public water's edge promenade will connect a series of parks, open spaces, squares and plazas;
- the foot of Yonge Street should be treated as a special place on the waterfront and be designed to include major public amenities of high quality containing distinctive cultural buildings, appropriate tourist facilities and a range of public uses;
- Harbourfront Centre will continue to be recognized as an area for the arts, education, recreation and entertainment. New public squares will be created between Queens Quay Terminal and York Quay Centre removing surface parking lots and replacing them with underground parking;

- The Canada Malting Silos, a landmark on the Central Waterfront, will be retained and improved.

Creating Dynamic and Diverse New Communities

- The Port Lands will be transformed into a number of new urban districts; a place for wealth creation, originality and creativity in all aspects of living, working and having fun;
- West Don Lands will be redeveloped into diverse mixed-use communities;
- East Bayfront will become a prominent waterfront address for working and living.

East Bayfront Precinct Plan

The future East Bayfront is a regeneration area adjacent to the study area extending from Jarvis Street to Parliament Street. The plan intends for one kilometre of water's edge to become a public destination, while maintaining a communal neighbourhood feel to the area. The vision for the East Bayfront precinct includes a new urban waterfront community, a place of design excellence, high levels of sustainability and strong relationships to the water's edge. It will become a *new downtown neighbourhood and a destination for city residents and visitors alike*, featuring:

- 6,000 homes (1,200 of which are affordable);
- New dedicated light rail transit;
- 230,000 m² of commercial and employment space;
- Employment for 8,000 people;
- Parks and public spaces totalizing up to 25% of East Bayfront;
- Two signature parks: Sherbourne Park (1.5 hectares) and Canada's Sugar Beach (0.85 hectares)
- One kilometre of continuous water's edge promenade and boardwalk;
- Ultra-broadband access throughout;
- Significant funding for neighborhood public art installations.

5.10.2 Existing Land Uses

Existing land uses are shown in Figure 5-22 and Figure 5-23.

Residential

The study area is located within the *Waterfront Communities-The Island* neighbourhood, according to the City of Toronto Neighbourhood Profiles. It encompasses several established residential areas, including Little Norway, Fort York, CityPlace Railway Lands West, Harbourfront, Toronto Islands and planned residential areas such as East Bayfront, Lower Don Lands and West Don Lands. Based on the 2006 Census, the neighbourhood has over 15,000 residential dwellings

The study area consists mainly of the **Harbourfront** neighbourhood. Residential land use within the study area is located within several towers-on-podium, most with condominium/strata ownership. The residential towers often include retail is at street level, which primarily serve the local neighbourhood.

Figure 5-22: Land Use Designations (from Central Waterfront Secondary Plan)

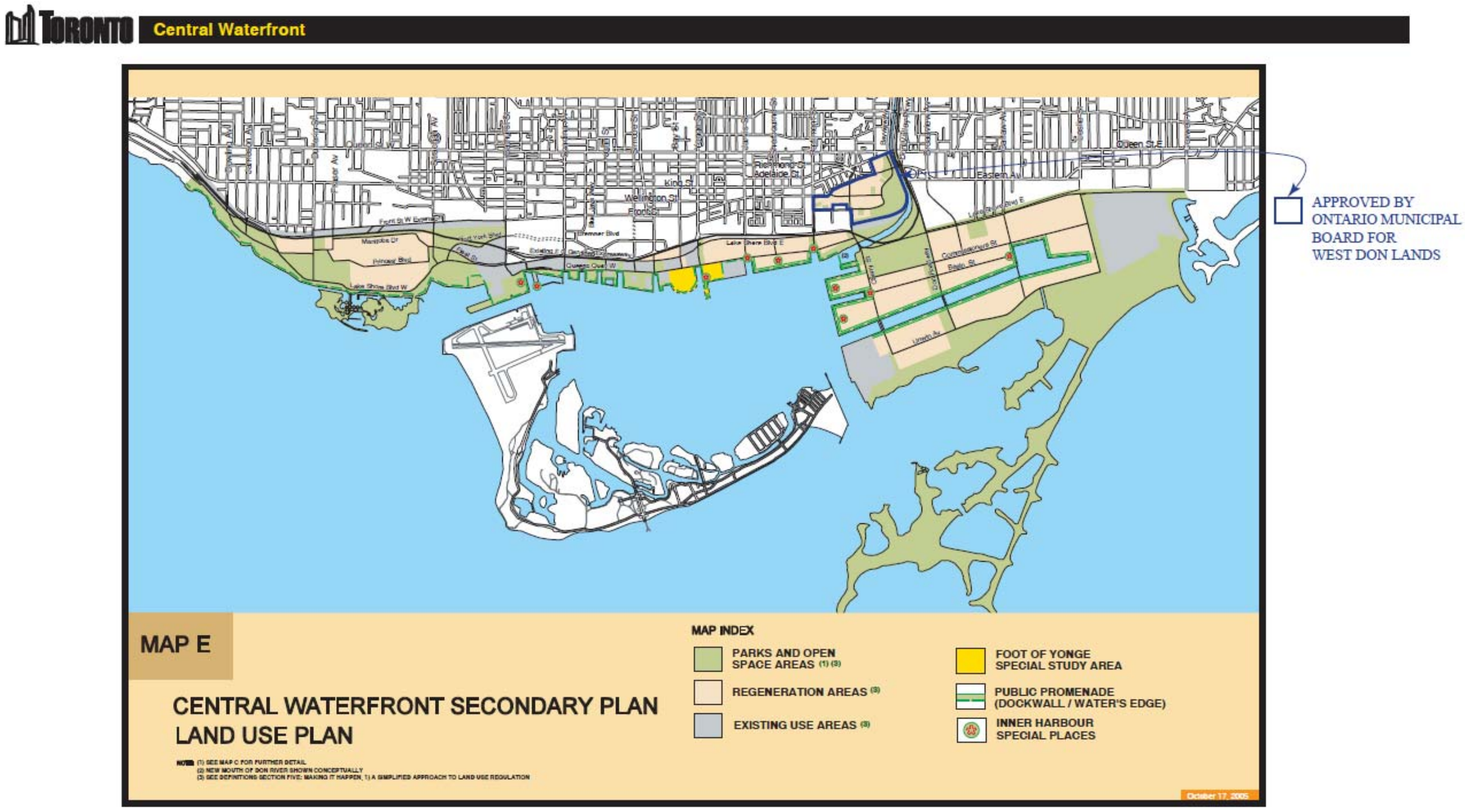


Figure 5-23: Specific Land Use Designations

Existing Land Use

- Residential/Residential Mixed-Use
- Commercial
- Office
- Residential/Office/Commercial
- Institutional
- Parkland/Public Land
- Parking/Vacant

Toronto Inner Harbour

Not to Scale

Adjacent Residential Areas

Little Norway is located within the study area, but only partially at the west limit (Bathurst Street). The neighbourhood extends from west of Stadium Road to Dan Leckie Way and from the lake to Lake Shore Boulevard. It is primarily a residential community made up of low to mid-rise condo and apartment complexes in addition to town houses.

Fort York is a developing neighbourhood, sited on former industrial lands, located west of the study area. It extends from Strachan Avenue to Bathurst to Strachan Avenue and from Lake Shore Boulevard to the CN/CP rail corridor. The residential land use consists mainly of mid to high rise condominiums that were recently constructed or are under construction.

CityPlace Railway Lands West is a large-scale condominium development consisting of mainly high-rise residential towers, situated on a former rail yard north of the study area. It extends from Bathurst Street to Spadina Avenue and from Gardiner Expressway to Front Street.

Toronto Islands are managed by the City of Toronto. The Toronto Islands have a residential community of approximately 700 residents. The islands are also a considerable waterfront destination, complete with features that include beaches, gardens, a small amusement park, marinas, and a historic lighthouse.

The **St. Lawrence Neighbourhood** is home to 25,000 residents, bounded by Yonge St. on the west, Queen St. on the north, Parliament St. on the east and the railway tracks on the south. St. Lawrence was the former downtown during the 18th and 19th centuries, with many heritage buildings alongside market rate and subsidized higher density housing.

Commercial

The largest concentration of office commercial land use is located within two towers at Bay Street. Two hotels are found along the corridor, Westin Harbour Castle between Bay and Yonge and the Radisson on John Quay. Queens Quay Terminal is a large mixed-use complex located on York Quay with residential, office and retail commercial uses. Several marine-related activities occur along the water's edge. A large marina operation exists at Marina Quay West. Two smaller marinas are found at Rees and Simcoe Slips. The Toronto Star newspaper building is located at the corner of Queens Quay and Yonge Street. The Liquor Control Board of Ontario has a large distribution warehouse and commercial store between Freeland Street and Cooper Street. A Loblaws grocery complex housing other retail uses is located at Jarvis Street.

To the south of the study area is the Toronto City Centre Airport. The facility accommodates general aviation and regional commercial flights. Commercial flight destinations include Boston, Chicago-Midway, Halifax, Montréal-Trudeau, Myrtle Beach Newark, Ottawa, Quebec City, St. John's, Thunder Bay and Mont-Tremblant. Between 2004 and 2008, the number of aircraft movements grew from approximately 68,000 to 93,000 movements (Statistics Canada). The operations continue to expand with the opening of a new 150,000 square feet (14,000 m^2) terminal to be completed in 2010.

Approximately 500 metres to the north of the study area is the City of Toronto Central Business District. To the northeast is found the St, Lawrence Neighbourhood, the Distillery District, and the planned West Don Lands community.

5.10.1 Institutional

Harbourfront Centre—the largest institutional facility in the Central Waterfront—is located on York Quay. The Harbourfront Community Centre and Waterfront Public School are located on Bathurst Quay. The Marine Police Unit station is on John Quay, while the Fire/EMS Station 334 is found at Maple Leaf Quay East.

Waterfront Toronto and Harbourfront Centre have secured funding for the overall design of the York Quay Revitalization Project (Phase 2), a mixed-use cultural village with two urban parks on a 1.4 hectare site at York Quay within Harbourfront Centre. The current construction budget includes funding for the development of one of the parks, currently envisioned as a waterfront plaza, and the construction of an underground parking garage on the site.

5.10.2 Industrial

Redpath Sugar between Freeland Street and Jarvis Street is the sole industrial land use in proximity to the study area.

5.10.3 Public Open Space

Public open space is provided by HTO Park (1.2 ha) at Maple Leaf Quay East and West, the Music Garden (1.3 ha) and Spadina Quay Wetlands (0.28 ha) on Spadina Quay South, Harbour Square Park (0.9 ha) at the foot of Bay Street, a small parkette (0.15 ha) on John Quay North between Rees and Simcoe and a parkette (0.28 ha) on the lands of the York Street/Gardiner ramp. Close but not in the study area are two parks located at Bathurst Quay: Ireland Park and Little Norway Park. Further west is the much larger Coronation Park. Although privately owned and maintained, a number of publicly accessible plazas--associated with other buildings--exist throughout the study area.

5.10.4 Ancillary Uses

There are several publicly accessible parking facilities—both surface lots and structured garages—located within the study area. The total current supply of publicly accessible off-street parking is close to 4800 spaces.

A full waterfront parking inventory is provided in section 5.4.

5.11 Conclusions

The following is a summary of conclusions, based on the inventory of existing conditions undertaken for this study:

- Queens Quay is Toronto's main waterfront street, but it's often described unfavourably in terms of its appearance and functionality. Despite its ideal location by the water, the road simply does not have the grand civic character that an international waterfront deserves. Treatments, street furniture and finishes are basic and common. There is no unifying character, with little linkage to the waterfront.
- Growing conditions are inadequate for street trees. Improved growing conditions would promote larger trees and additional tree coverage. This could improve wind and sun amelioration making the pedestrian realm more comfortable, provide air quality benefits, enhance the diversity of the natural environment within a highly built-up and urban area.
- The space allocated to each user group is disproportionate. Pedestrians, cyclists and transit constitute up to 75% of the intersection movement, all in less than 50% of the available cross section space.
- North-south pedestrian crossings are spaced far apart
- The spacing of LRT stops serves the study area well; yet, the LRT operations are inefficient. Lack of transit priority along Queens Quay does not support the City's overall objectives for sustainable growth and providing high-quality and attractive transportation alternatives. Current LRT service on Queens Quay does not achieve the speeds and headways required for a transit modal split that supports planned development along Queens Quay east of Bay Street and into the Port Lands. Current LRT stops do not meet current accessibility standards.
- There are no bicycle facilities on Queens Quay for much of the study area, even though Queens Quay serves as the connection between the east and west sections of the Martin Goodman Trail. Autos and cyclists share a lane with widths ranging between 3.25 and four metres. The Martin Goodman Trail attracts a range of visitors and cyclists, including leisure riders, families and children. While shared lanes may serve the needs of some commuter cyclists, they are less amenable to the mix of riders who travel and visit the waterfront.
- "Cut through" traffic using Queens Quay as a shortcut to non-waterfront destinations accounts for more than 10 to 20 percent of the volumes on Queens Quay. The capacity being afforded to cut-through could be allocated to local traffic and to more sustainable modes of travel. This would better serve the local residential and business communities.
- Private automobiles, delivery trucks and buses frequently stop or stand illegally in the curbside lanes, effectively reducing the capacity of Queens Quay to one lane in each direction. Currently, there is limited space on Queens Quay to accommodate loading and unloading activities for tour buses, service vehicles and autos.

- Current traffic operational issues are largely influenced by intersection performance, not lack of capacity. In the existing and future condition, most intersections in the Queens Quay corridor have excess capacity and operate smoothly in both the morning and afternoon peak hours. The extra capacity on Queens Quay presents the opportunity to rebalance the physical space allocation on the street, in favour of more sustainable modes.
- These conditions all influence the operations and success of more than 250 businesses in the study area, the large residential community, and the numerous tourism and recreation attractions within the Central Waterfront.

6 Phase 1: Problem and Opportunity Statement

6.1 Introduction

The first step in the EA process is to develop a problem statement that adequately addresses the critical issues to be studied. The purpose of the Queens Quay Revitalization EA is to assess alternative improvements that balance the needs of all users by successfully accommodating recreational, transit, bicycle, pedestrian and auto traffic, while enhancing landscape features and the public realm within the Queens Quay corridor. The alternatives need to address the Problem and Opportunity Statement developed during Phase 1 of the MCEA process.

The Problem and Opportunity Statement for the EA was developed over a five-month period. It was based on extensive studies and analysis—the Innovative Design Competition, Quay to the City pilot, as well as established City and Waterfront Toronto policies and guidelines.

Through an enhanced consultation program, it was refined through considerable input and collaboration with the public. Two Stakeholder Advisory Committee (SAC) meetings and one public forum were dedicated to the Problem and Opportunity Statement. Consensus on the statement was achieved among the co-proponents and the study team. The SAC made several suggestions to change the draft Problem and Opportunity Statement that were incorporated. Chapter 2 and the Public Consultation Summary Report (Appendix A) include additional discussion on the public input that was used to define the Problem and Opportunity Statement.

6.2 The Statement

The result was not only a clear statement of the transportation, urban design, public realm and civic deficiencies of Queens Quay; it was also a confirmation by Waterfront Toronto, the City of Toronto and the greater general public of the need and opportunity for considerable change:

- ***Queens Quay is Toronto's main waterfront street,*** yet in its current configuration acts as a barrier rather than a gateway to the waterfront.
- ***North-south connections to the water's edge are limited***, unwelcoming, and difficult for pedestrians to cross between the north and south sides of Queens Quay.
- ***East-west connections between individual destinations, including the Martin Goodman Trail, are constrained*** or absent, creating an unpleasant experience for commuter and recreational cyclists, in-line skaters, joggers, residents and visitors moving along the lake front.
- ***Aesthetically it fails to provide the kind of atmosphere conducive to economic vitality***, ground floor retail activity, and urban vibrancy.
- ***Operationally it suffers*** from sub-standard streetcar platforms, conflicting and illegal parking activities, and major points of conflict at intersections.
- ***Civically it fails to provide a grand and beautiful public realm*** befitting its role as the primary address for Toronto's waterfront.
- ***A revitalized Queens Quay presents the opportunity to implement long-standing City of Toronto policy objectives*** while more effectively balancing the needs of its residential, business, recreational and visitor users.
- ***Strategically there is an opportunity to coordinate*** Queens Quay revitalization with other planned waterfront projects and infrastructure renewal by the TTC.

7 Phase 2: Evaluation of Alternative Planning Solutions

7.1 Overall Process

This section provides a description of the Alternative Planning Solutions, the methodology for evaluating these alternatives, and the results of the evaluation, including the selection of a preferred alternative solution.

One of the mandatory steps within a Municipal Class 'C' EA is to develop and evaluate a series of Alternative Planning Solutions. Planning solutions are functionally different and feasible alternatives (including "Do Nothing") of addressing the problem or opportunity. They represent a broad estimation for the potential arrangement of elements and functions within the space available. Planning solutions do not include functional planning such as intersection design or signal operations, nor do they determine details regarding site access.

In this EA study, the planning solutions are represented as diagrammatic cross sections. The planning solutions included the full range of reasonable possibilities. They were evaluated by using criteria developed directly from the Problem and Opportunity Statement, accounting for public and review agency input. The evaluation resulted in a shortlisted combination of solutions to take forward to the next stage of the process.

The Alternative Planning Solutions Phase of this EA study involved several considerations of note:

- The Problem and Opportunity Statement identified the need to bring balance to Queens Quay and change that will transform it into the "scenic water view drive". The Central Waterfront Secondary Plan identifies it as a critical feature in the planning of the Central Waterfront.
- The evaluation of alternative solutions was presented for public review at two Stakeholders Advisory Committee (SAC) meetings and one Public Forum (Public Forum 1, January 10, 2008). Comments from the public and study stakeholders were considered and incorporated into the final evaluation of Alternative Planning Solutions.

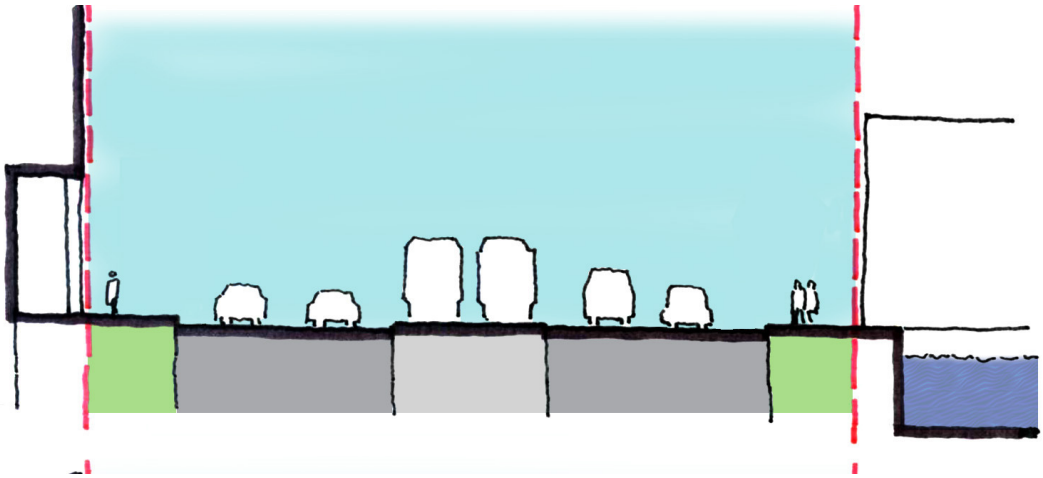
7.2 Description of Alternative Planning Solutions

Four Alternative Planning Solutions were presented for review at Public Forum 1 on January 10, 2008.

7.2.1 Alternative 1 – Do Nothing

As the name implies this solution makes no interventions in the study area. In accordance with EA requirements, this alternative was included in the evaluation process to highlight the potential of the other planning solutions to improve conditions within the study area. This alternative is illustrated in Figure 7-1.

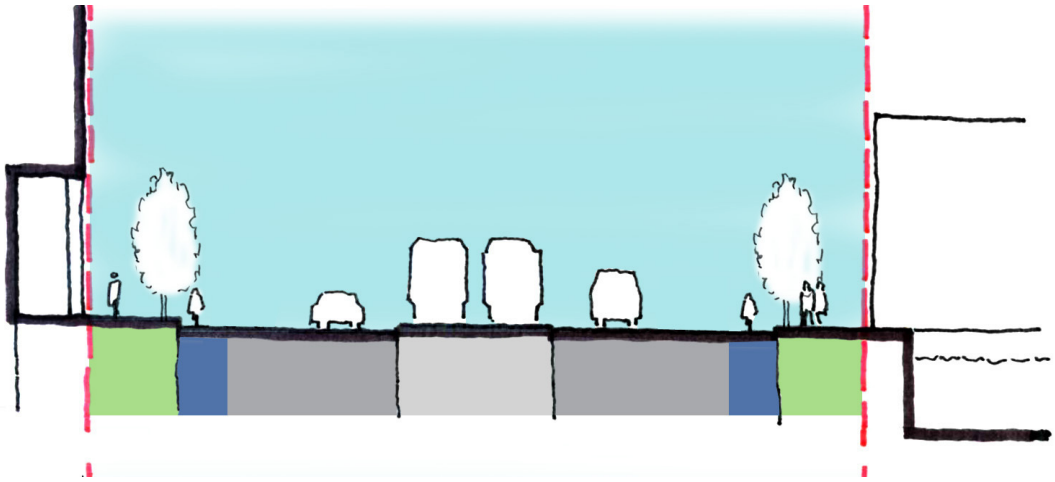
Figure 7-1: Alternative 1 Do Nothing, Maintain Existing Conditions and Operations



7.2.2 Alternative 2 – Modify Operations

Alternative 2 includes operational improvements to Queens Quay; no physical improvements would be provided under this alternative, with the physical infrastructure – transit right-of-way, curbs, lanes, intersections, sidewalks, etc. – remaining in their existing location. Examples of modified operational improvements on Queens Quay would include adjusting traffic signal operations and adding bicycle lanes in place of through lanes. Alternative 2 is illustrated in Figure 7-2.

Figure 7-2: Alternative 2 Modify Operations
Example: Existing Curbs, Remove Through Lanes, Add Bike Lanes, Signal Modifications

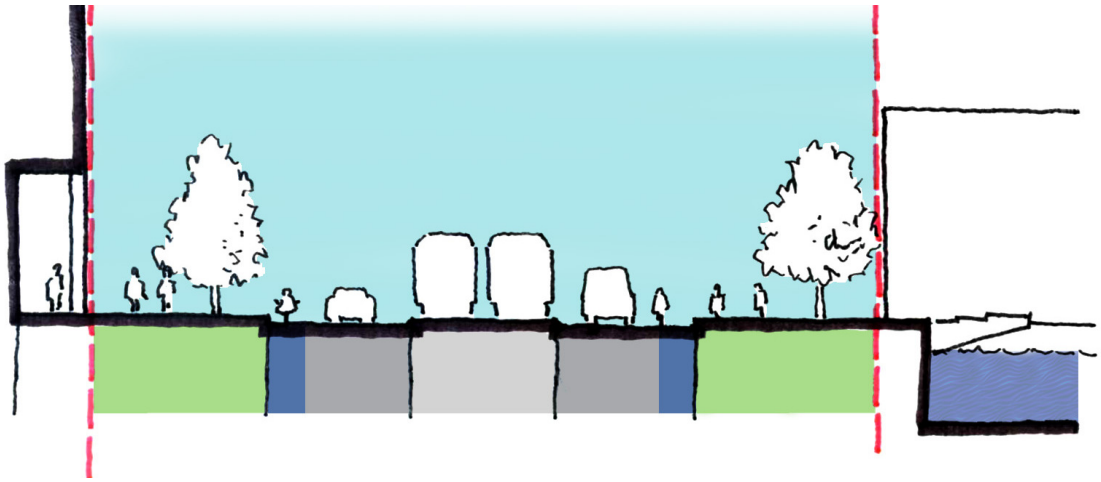


7.2.3 Alternative 3 – Physical Modifications within Existing Right-of-Way

Alternative 3 (illustrated in Figure 7-3) includes making physical modifications to the existing infrastructure within the right-of-way of Queens Quay. Examples of such improvements include:

- Reducing the number of traffic lanes north and south of the transit right-of-way to expand bicycle and pedestrian facilities; and
- Eliminating the traffic lanes on one side of the tracks to extend the Martin Goodman Trail and expand pedestrian realm.

Figure 7-3: Alternative 3 Physical Modifications within ROW
Example 1: Reduce Through Lanes, Expand Sidewalks both Sides, Add Bike Lanes



7.2.4 Alternative 4 – Physical Modifications within Expanded Right-of-Way

Alternative 4 involves making physical modifications within an expanded Queens Quay right-of-way and may include acquisitions property acquisition, to accommodate expanded bicycle and pedestrian facilities.

One example of the type of expansion is to make use of a park frontage for pedestrian and cycling improvements in a particularly constrained segment of roadway.

Alternative 4 is illustrated in Figure 7-4.

Figure 7-4: Alternative 4 Expand ROW
Example: Acquire Property on Southside

7.3 Evaluation Criteria

The Alternative planning solutions were evaluated using ten criteria based on the Problem and Opportunity Statement. The study team and Stakeholder Advisory Committee agreed that this approach to the evaluation was most appropriate – it would ensure that the preferred solution would best be able to directly address the problem at hand.

The evaluation criteria were also developed to address the following elements of the environment: policy and planning, transportation, urban design, socio-economic, cultural and natural. The policy and planning criteria were used to determine the conformance of the proposed solutions with existing policies and municipal government directives. The transportation criteria define the likely success of each proposed solution in accommodating the existing and future needs of all modes of travel on Queens Quay. Urban design criteria examined the potential to improve the public realm in terms of streetscaping, landscaping, available space, how well attractions and destinations can be unified, microclimate, potential for special events and how well an alternative can bring a signature identity to the area. Socio-economic environment criteria evaluated the effects on the surrounding neighbourhood during and after the implementation of any solution. The cultural criteria examined the effects of the proposed solutions on the historic fabric of the study area. Table 7-1: lists the evaluation criteria with the related elements of the study area environment.

The study area is located within a highly modified and built-up urban area. The study area is situated on land that consists mainly of lake fill taken place over more than a century. In terms of the Natural Environment, there are no wetlands, Areas of Natural and Scientific Interests (ANSIs) or Environmentally Significant Areas (ESAs) in the study area. The Alternative Planning Solutions would have similar impacts on these conventional elements of the Natural Environment. Therefore, there was no further comparison of the alternatives at this stage with regard to impacts to these conventional elements of the Natural Environment. Instead, the comparison focused primarily on how natural elements within the urban realm, such as urban forest, street trees and air quality, are affected under each alternative.

Based on the existing conditions of the study area and the Problem and Opportunity Statement, the alternative solutions were comparatively evaluated according to a descriptive or qualitative assessment. A qualitative assessment was chosen as this method is suited to identifying the differences between alternatives and enables the public, stakeholders and review agencies to better understand the reasons that support the recommendations. Based on the qualitative analysis, each of the alternatives were given one of the following ratings in for each criteria:

- Yes. Meets criteria
- Challenging. May be designed to meet criteria
- No. Cannot meet criteria: Critical fail

If an alternative received a “No. Cannot meet criteria” against any one of the criteria, the evaluation of the alternative was considered a “critical fail”. An alternative with a “critical fail” would not be carried forward for further study.

Table 7-1: Evaluation criteria and environmental elements

Evaluation Criteria	Related Elements of the Environment	Intent
Can the Planning Solution make Toronto's main waterfront street?	Natural Environment Socio-economic Urban Design	Assess how potential improvements to street and landscaping, and rebalancing space for transportation modes can introduce a unique, active and functional street.
Can it improve north south connections?	Transportation Urban Design	Assess pedestrian conditions, operations and conflicts between modes of transport, visual connections to the waterfront for the north-south crossing streets.
Can it improve east west connections, including the Martin Goodman Trail?	Transportation	Assess pedestrian conditions potential to provide cycling facilities in the east-west direction on Queens Quay.
Can it provide an aesthetically vital and vibrant atmosphere?	Urban Design Socio-economic Cultural	Assess potential of additional space for public realm improvements (functional and aesthetic) in creating an active street to support commercial activity, while being sensitive to cultural heritage features of the area.
Can it provide adequate or more efficient operations?	Transportation	Assess potential improvements to the operations of the various transport modes.
Can it provide a grand and beautiful boulevard?	Urban Design	Assess effectiveness of potential of functional and aesthetic improvements to beautify the area
Can it implement adopted City policies for the street and the waterfront?	Policy and Planning Natural Environment Socio-economic Cultural Heritage Transportation Urban Design	Assess how well the alternatives meet the objectives of City planning guidelines, specifically the CWSP.
Can it leverage other infrastructure renewal programs?	Policy and Planning	Assess compatibility with adjacent projects and other City projects and programs
Can it provide sufficient access to properties?	Socio-economic Transportation	Assess degree of access for residents, businesses, emergency services.
Can it fit within the space available without extraordinary land acquisition?	Socio-economic	Assess degree of potential property acquisition to achieve objectives.

7.4 Comparative Assessment of Alternative Planning Solutions

Table 7-2 and Table 7-3 illustrate the comparison of each alternative against the evaluation criteria and summarize which were preferred under each evaluation criteria and overall.

Table 7-2 – Summary of Evaluation of Alternative Planning Solutions

Evaluation Criteria / Problem Statement Objectives	1. Do Nothing	2. Operational Changes	3. Existing ROW	4. Expand ROW
Waterfront Main Street	✗	●	✓	✓
North-South Connections	✗	●	✓	✓
East-West.Connections	✗	✗	✓	✓
Aesthetically Vital	✗	●	✓	✓
Operations	✗	✓	✓	✓
Grand & Beautiful Blvd.	✗	●	✓	✓
Policies	✗	✗	✓	✓
Leverage Renewal	✗	●	✓	✓
Access	✓	●	●	●
Fit	✓	✓	✓	✗
			CARRIED FORWARD (with operational changes and possible localized widening)	

✓	Yes. Meets criteria
●	Challenging. May be designed to meet criteria
✗	No. Cannot meet criteria: Critical fail

Table 7-3 – Evaluation of Alternative Planning Solutions

Evaluation Criteria	1. Do Nothing	2. Operational Changes	3. Existing ROW	4. Expand ROW
Waterfront Main Street	**No.** Without functional and aesthetic improvements, existing conditions on Queens Quay cannot support a great street environment suitable for Toronto's waterfront. Insufficient space for proper street tree planting to meet City standards, rebalance transportation modes, etc.	**Challenging.** Small aesthetic improvements could improve the street (banners, trees, street lighting) but unlikely enough to elevate Queens Quay to Toronto's main waterfront street.	**Yes.** Rearranging space within right-of-way would allow for functional and aesthetic improvements that could elevate Queens Quay to Toronto's main waterfront street.	**Yes.** Rearranging space within expanded right-of-way would allow for functional and aesthetic improvements that could elevate Queens Quay to Toronto's main waterfront street.
North-South Connections	**No.** Existing pedestrian conditions are insufficient across Queens Quay. Numerous conflicts between pedestrians and vehicles. No improved visual connections to waterfront.	**Challenging.** Possible pedestrian crossing improvements with adjusted signals, but distance and potential conflicts with vehicles would remain the same. Improved visual connections to waterfront possible.	**Yes.** Can rebalance space and adjust operations within the corridor to improve north-south pedestrian movement. Reduced pedestrian crossing distance across vehicle lanes. Improved visual connections to waterfront.	**Yes.** Can rebalance space and adjust operations within an expanded corridor to improve north-south pedestrian movement. Improved visual connections to waterfront.
East-West Connections	**No.** Does not improve pedestrian experience nor accommodate the Martin Goodman Trail, which requires a combined 4m trail off-street within Queens Quay right-of-way.	**Challenging.** Does not improve pedestrian experience nor accommodate the Martin Goodman Trail, which requires a combined 4m trail off-street within Queens Quay right-of-way.	**Yes.** Can improve the pedestrian experience and accommodate Martin Goodman Trail within the existing right-of-way.	**Yes.** Can improve the pedestrian experience and accommodate Martin Goodman Trail within the expanded right-of-way.

Table 7-3 – Evaluation of Alternative Planning Solutions

Evaluation Criteria	1. Do Nothing	2. Operational Changes	3. Existing ROW	4. Expand ROW
Aesthetically Vital	**No.** Existing conditions do not contain the elements required for an aesthetically vital and vibrant public realm: trees, generous pedestrian areas, adequate bike facilities, etc. Benefits to retail opportunities are limited.	**Challenging.** Benefits to local retail commercial activities are limited. Although functional and aesthetic improvements could take place, it cannot accommodate Martin Goodman Trail, would require planting street trees within a constrained space, and would retain pedestrian boulevards at existing width.	**Yes.** Rearranging the space within the right-of-way would allow for significant functional and aesthetic improvements, improve pedestrian activity, and thus increase support for retail opportunities.	**Yes.** Rearranging the space within an expanded right-of-way would allow for significant functional and aesthetic improvements, improve pedestrian activity, and thus increase support for retail opportunities.
Operations	**No.** Signal timing for pedestrians, transit and vehicles is inefficient. Current arrangement and enforcement of on-street parking leads to several conflicts. No dedicated bike facilities.	**Yes.** Modifications to signal timing would improve pedestrian, transit and vehicle operations. Adjustments to parking would reduce potential conflicts.	**Yes.** Modifications to signal timing would improve pedestrian, transit and vehicle operations. Adjustments to parking would reduce potential conflicts.	**Yes.** Modifications to signal timing would improve pedestrian, transit and vehicle operations. Adjustments to parking would reduce potential conflicts.
Grand & Beautiful Boulevard	**No.** It is not a grand and beautiful boulevard in its existing form. Finishes and materials are ordinary and current arrangement is not inviting for pedestrians.	**Challenging.** High quality materials and decorative elements could improve the street but effectively rebalancing Queens Quay--including an improved pedestrian oriented environment--is not possible.	**Yes.** Rearranging the space within the existing right-of-way would allow for significant functional and aesthetic improvements to recast the street as a grand and beautiful boulevard.	**Yes.** Rearranging the space within an expanded right-of-way would allow for significant functional and aesthetic improvements to recast the street as a grand and beautiful boulevard.
Policies	**No.** Existing street does not address adopted City policies: not a scenic waterfront boulevard, no Martin Goodman Trail, does not encourage clean air alternatives, etc.	**No.** Existing street does not address adopted City policies: not a scenic waterfront boulevard, no Martin Goodman Trail, does not encourage clean air alternatives, etc.	**Yes.** Can rebalance the street to better serve pedestrians and cyclists, create a scenic waterfront drive, improve tree canopy coverage, etc.	**Yes.** Can rebalance the street to better serve pedestrians and cyclists, create a scenic waterfront drive, improve tree canopy coverage, etc.

Table 7-3 – Evaluation of Alternative Planning Solutions

Evaluation Criteria	1. Do Nothing	2. Operational Changes	3. Existing ROW	4. Expand ROW
Leverage Renewal	**No.** Does not coordinate planned improvements to TTC transit infrastructure and other waterfront revitalization projects.	**Challenging.** Can only coordinate some planned improvements to TTC transit infrastructure along with signal modifications.	**Yes.** Can coordinate planned improvements to TTC transit infrastructure to more effectively locate platforms along the corridor. Can also better incorporate transit improvements within overall public realm.	**Yes.** Can coordinate planned improvements to TTC transit infrastructure to more effectively locate platforms along the corridor. Can also better incorporate transit improvements within overall public realm.
Access	**Yes.** Maintains existing access for residents, tenants, service, emergency, fire and police.	**Challenging.** Would provide existing or modified access for residents, tenants, service, emergency, fire and police.	**Challenging.** Would provide existing or modified access for residents, tenants, service, emergency, fire and police.	**Challenging.** Would provide existing or modified access for residents, tenants, service, emergency, fire and police.
Fit	**Yes.** Does not require land acquisition.	**Yes.** Does not require land acquisition.	**Yes.** Does not require extraordinary land acquisition. May require local expansion of ROW where needed.	**No.** Expanding the right-of-way entire length of corridor would require extraordinary land acquisition.
			CARRIED FORWARD (with operational changes and possible localized widening)	

7.5 Public Consultation: Public Forum 1 - Alternative Planning Solutions

Stakeholders and the general public were given the opportunity to provide input on the Alternative Planning Solutions at two Stakeholder Advisory Committee (SAC) meetings (SAC Meeting 2 and 2b, held on November 15, 2007 and December 11, 2007) and at Public Forum 1.

At SAC meeting 2, SAC members provided comments and input to the evaluation of the Alternative Planning Solutions and the selection of the Preferred Planning Solution. There were several comments relating to traffic impacts associated with potential reductions in traffic lanes and provisions within the Preferred Planning Solution to address illegal curbside activity (e.g., bus and service vehicle loading/unloading, parking maneuvers). The study team noted that a detailed traffic and transit operations analysis would be undertaken as a part of the next stage of the EA (i.e. the Alternative Design Concepts stage) to assess specific traffic impacts along Queens Quay. Curbside activity would also be considered in the next stage through the traffic analysis and through functional planning and design and consultation with the public, stakeholders and land owners.

Additional input on the Alternative Planning Solutions was received from the SAC at SAC meeting 2B. This was a special additional meeting that was organized so that the SAC could undertake a final review before the evaluation and selection of the Preferred Planning Solution was presented to the general public. Additional comments received related to consideration being given to the winter conditions along Queens Quay and that maintaining access to all sites along the street will be challenging. The study team responded that these issues would be addressed in detail during the Alternative Design Concept stages of the study.

Public Forum 1 was held on January 10, 2008. An estimated 300 people participated in the event where they had an opportunity to comment and provide input to the Problem and Opportunity Statement, the evaluation of the Alternative Planning Solution and the selection of the Preferred Planning Solution. Based on comments received, the public found several benefits to the Preferred Planning Solution. The public identified opportunities to improve traffic congestion, noise and air pollution. They saw that the Preferred Planning Solution could be pedestrian friendly, beautify the waterfront, create a neighbourhood, provide space for cycling, increase economic activity, discourage car use, and increase recreational activities. The final recommendations would need to find a balance between the needs of residents, drivers, pedestrians, cyclists and business owners as well as address specific issues such as curbside management.

Additional discussion on public consultation activities undertaken for this EA study is provided in Appendix A.

7.6 Preferred Planning Solution

Alternative 3 – Physical Modifications within the ROW (with Operational Modifications and Possible Localized Widening) – was identified as the preferred Planning Solution taking into account Stakeholder input and based on the following benefits:

- Potential rearrangement of space allows for functional and aesthetic improvements which best support an active and beautiful street and commercial activities;
- Accommodates a rebalance of the right-of-way, allowing for improved north-south and east-west connections;
- Accommodates improved operations for all modes of travel: pedestrian, transit, cyclist, and auto movement;
- Greatest potential to functionally and aesthetically improve the pedestrian realm to create a grand and beautiful boulevard;
- Greatest potential to meet adopted City policies and guidelines;
- Compatible with other initiatives programmed for the Central Waterfront, leveraging planned infrastructure and transit system improvements;
- Provides access to/from Queens Quay for existing and proposed land uses;
- The Preferred Planning Solution does not require full right-of-way widening, but may require limited local expansions where needed.

8 Phase 3: Evaluation of Alternative Design Concepts

8.1 Overall Process

Phase 3 of the Municipal Class EA process involved examining alternative methods – "Design Concepts" – to implement the Preferred Planning Solution identified in Phase 2 (physical modifications within the right-of-way of Queens Quay) and address matters described in the Problem and Opportunity Statement.

The evaluation of the Alternative Design Concepts required a three-step process that took place over a 15-month period between January 2008 and March 2009. Within that time period, the Study Team undertook an enhanced consultation program to gain input and seek consensus on the evaluation process, with two Stakeholder Advisory Committee (SAC) meetings, two Public Forums and over 40 meetings with individual Stakeholders. The consultation effort far exceeded the standard statutory requirements of the Municipal Class Environmental Assessment. A review of the study consultation efforts is provided in Chapter 3 of this report.

The first step in the evaluation process was to develop a long list of alternatives (five) which were subsequently screened down to a short list of alternatives. As with the Planning Solutions, the Alternative Design Concepts were evaluated through a screening process using the same ten criteria that relate to the Problem and Opportunity Statement.

In the second step, each short listed Alternative Design Concept was further analyzed and evaluated to arrive at a Recommended Preferred Alternative, using eight main categories: Transportation, Safety and Emergency Response, Urban Design/Quality of Place, Socio-Economic Conditions, Natural Environment, Cultural Environment, Cost, and Official Plan and Policies. A total of over 90 specific measures within the categories were used to compare the alternatives. Sophisticated traffic and transit micro simulation modeling was carried out for each, and is discussed in more detail later in this section.

In the third step, based on public, stakeholder and agency consultation, the Recommended Preferred Alternative was refined to arrive at a final Preferred Alternative Design Concept for the Queens Quay Revitalization Environmental Assessment Study.

The evaluation of the long list and short list of Alternative Design Concepts, selection of the Recommended Preferred Alternative and Preferred Alternative Design Concept are discussed in the following sections.

8.2 Description of Alternative Design Concepts

Based on input received from stakeholders and the public leading up to and following Public Forum 1, five Alternative Design Concepts were developed as different alternatives of implementing the preferred Alternative Solution – Physical Modifications within the Existing Right-of-way – that was selected in Phase 2:

1. Do Nothing (not carried forward from Phase 2 but included for comparative purposes);

2. Centre Transit with On-Street Bike Lanes;

3. Centre Transit with Martin Goodman Trail;

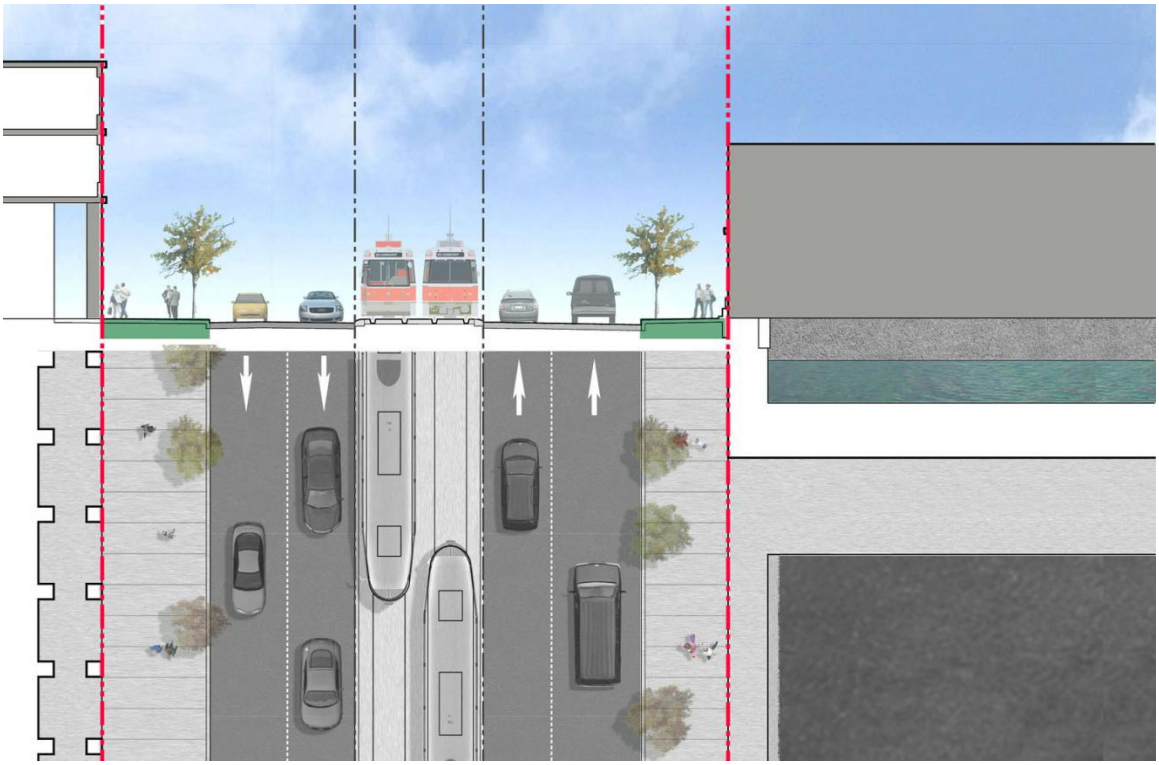
4. Southside Transit and One-way Traffic Operations; and

5. Southside Transit and Two-way Traffic Operations.

8.2.1 Alternative Design Concept 1 – Do Nothing

It was determined that the Do Nothing alternative (shown in Figure 8-1) could not address the study's Problems and Opportunity Statement during Phase 2 of the study and was not carried forward for further evaluation. It is included in the discussion of Alternative Design Concepts for comparative purposes only.

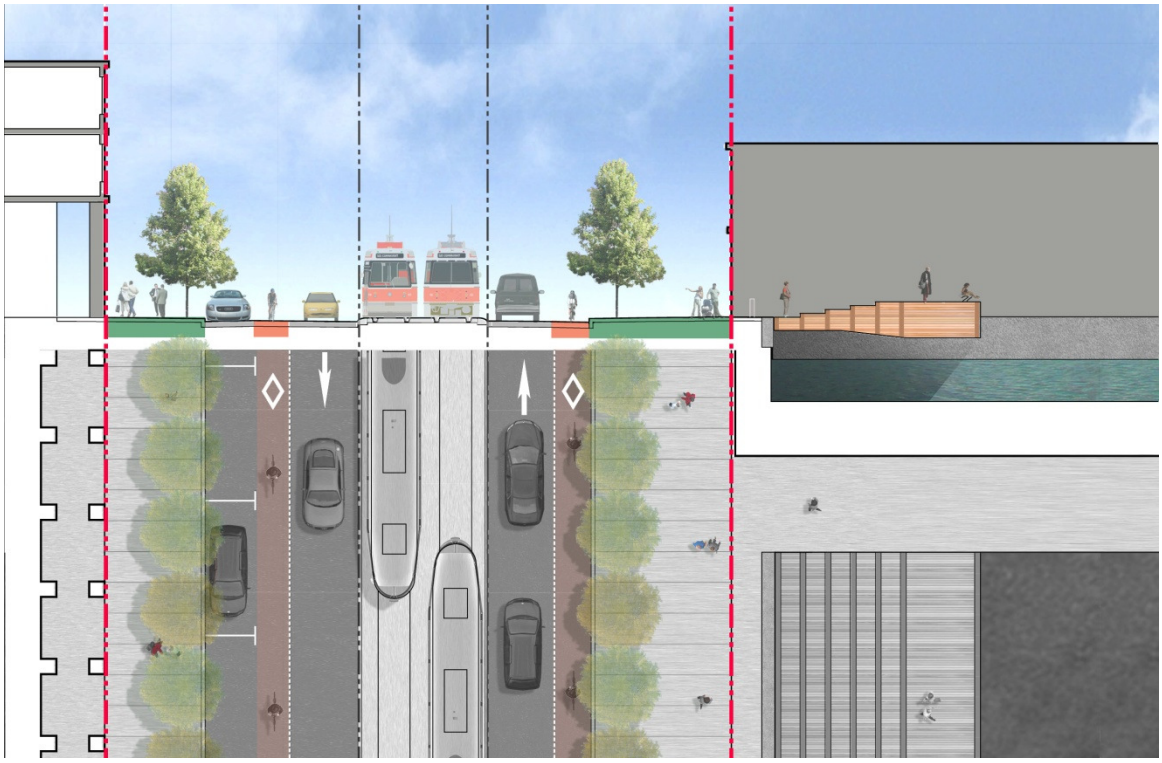
Figure 8-1: Alternative 1 Do Nothing
(not carried forward from Phase 2 but included for comparative purposes)



8.2.2 Alternative Design Concept 2 – Centre Transit with On-Street Bike Lanes

Alternative 2 (illustrated in Figure 8-2) entails reducing the total number of through lanes on Queens Quay from four lanes to two lanes. The lanes adjacent to the TTC right-of-way would remain as westbound and eastbound auto traffic lanes, while the curbside lanes would be converted to on-street bike lanes and on-street loading areas (e.g., bus and service loading, public parking) where possible. Pedestrian movements would continue to be accommodated on the existing sidewalks (which may be widened were possible).

Figure 8-2: Typical Section and Plan of Alternative 2 Centre Transit with On-Street Bike Lanes



8.2.3 Alternative Design Concept 3 – Centre Transit with Martin Goodman Trail

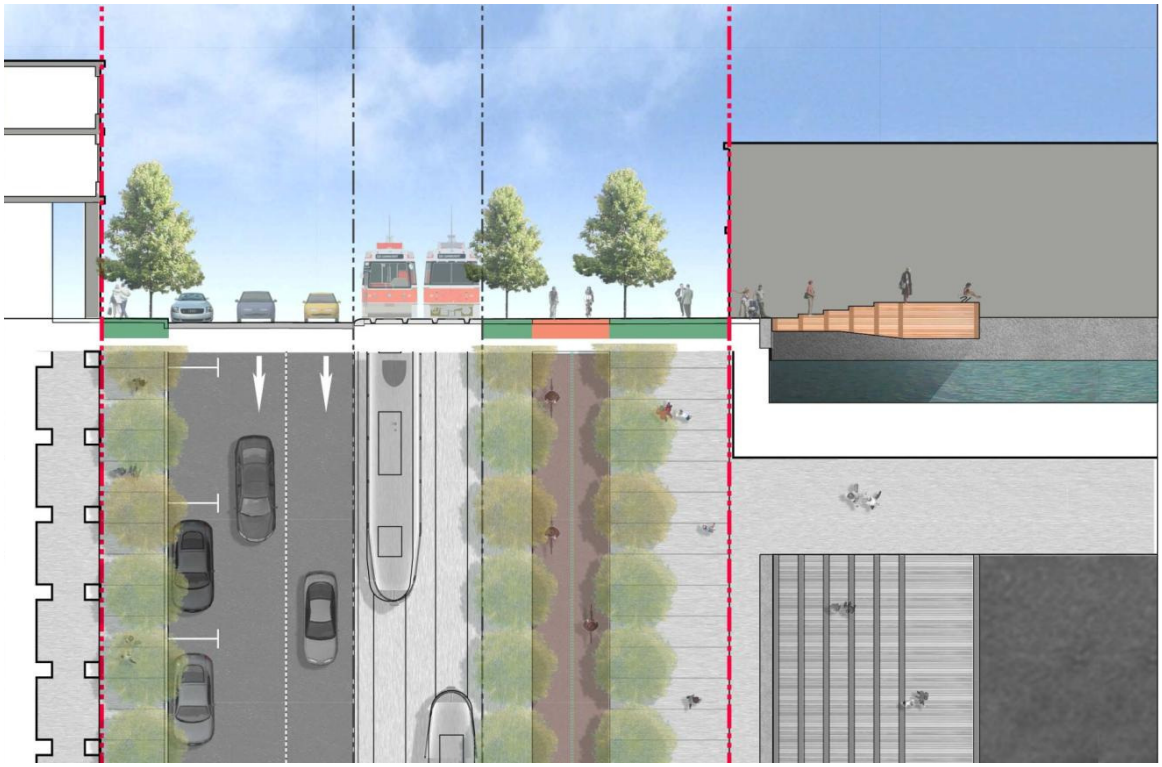
Similar to Alternative 2, Alternative 3 provides for one westbound and one eastbound auto traffic lanes on the north and south side of the existing TTC right-of-way. The expanded non-auto area of the public realm would extend into the existing curb lanes, as illustrated in Figure 8-3. An off-street Martin Goodman trail would be provided south of the eastbound lanes. On-street loading areas would be provided where possible.

Figure 8-3: Typical Section and Plan of Alternative 3 Centre Transit with Martin Goodman Trail

8.2.4 Alternative Design Concept 4 – Southside Transit with One-way Traffic Operations

Alternative 4 (illustrated in Figure 8-4) requires the conversion of the existing eastbound lanes (on the south side of the TTC right-of-way) to an expanded non-auto area of the public realm, which would include an off-street Martin Goodman Trail. The lanes on the north side of the TTC right-of-way would accommodate two lanes of one-way (westbound) traffic operations. The TTC right-of-way would generally remain in its existing location, with local adjustments to the alignment to improve geometry and to minimize impacts of the improvements. On-street loading areas (e.g., bus and service loading, public parking) would be provided in the north curb lane where possible.

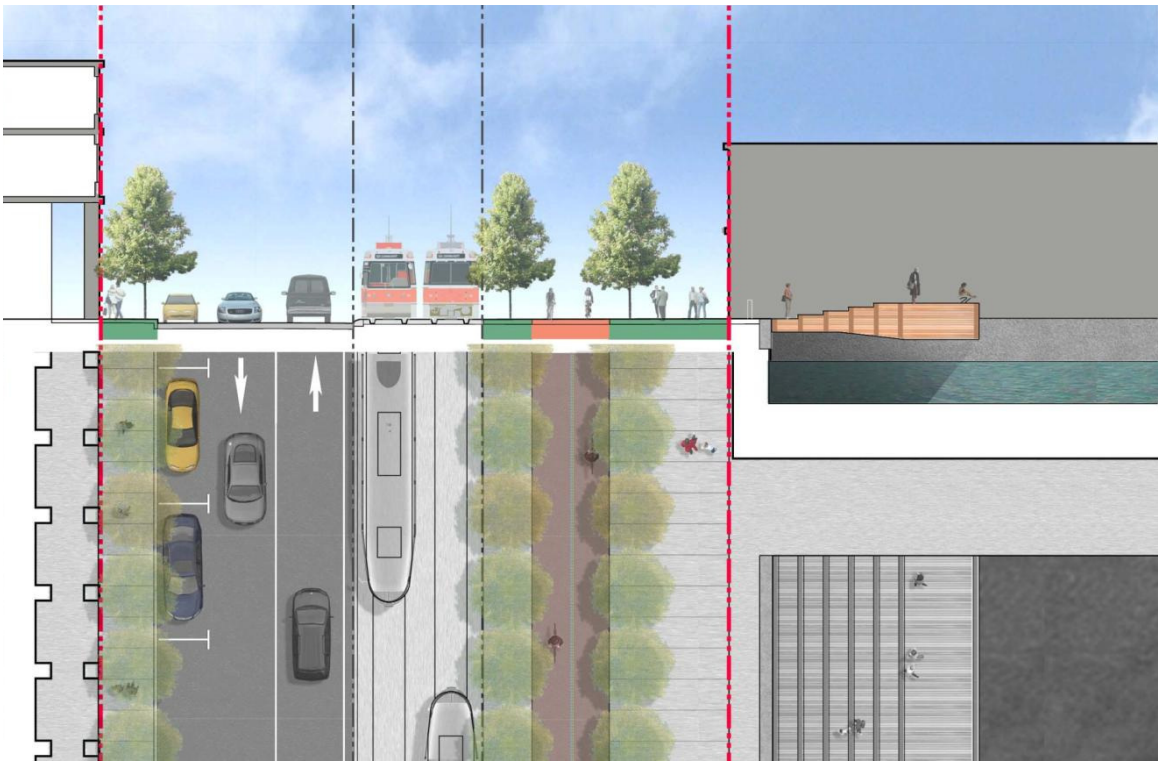
Figure 8-4: Typical Section and Plan of Alternative 4 Southside Transit with One-way Traffic Operations



8.2.5 Alternative Design Concept 5 – Southside Transit with Two-way Traffic Operations

Alternative 5 is similar to Alternative 4. It also involves the conversion of the existing eastbound lanes to an expanded non-auto area of the public realm that would include an off-street Martin Goodman Trail. Where the alternative differs from Alternative 4 is in the auto traffic operations. The lanes on the north side of the TTC right-of-way would accommodate two-way traffic operations with one through lane allocated per direction, as illustrated in Figure 8-5. The TTC right-of-way would generally remain in its existing location, with local adjustments to the alignment to improve geometry and to minimize impacts of the improvements. On-street loading areas (e.g., bus and service loading, public parking) would be provided in the north curb lane where space is available.

Figure 8-5: Alternative 5 Southside Transit with Two-way Traffic Operations



8.3 Screening Criteria

The five Alternative Design Concepts were initially evaluated through a screening process using the ten criteria that relate to the Problem and Opportunity Statement that were applied in the assessment of the Alternative Planning Solutions. These criteria are presented in Table 7-1 in Chapter 7.

Taking into account the existing environment, potential effects and benefits and stakeholder and agency input, the critical factors in the evaluation related to:

- traffic and transit operations (including parking and curbside activities);
- property access;
- pedestrian environment;
- active transportation facilities;
- urban design character.

To assess the impacts and benefits, each alternative illustrated the location of elements within the right-of-way, including:

- curbs;
- transit right-of-way;
- sidewalks;
- intersection design;
- loading/unloading areas for curbside activities;
- active transportation facilities.

Based on the qualitative analysis, each of the alternatives were given one of the following ratings in for each criteria:

- Yes. Meets criteria
- Challenging. May be designed to meet criteria
- No. Cannot meet criteria: Critical fail

If an alternative received a “No. Cannot meet criteria” against any one of the criteria, the evaluation of the alternative was considered a “critical fail”. An alternative assessed with a “critical fail” was considered unable to resolve the core issues of the study, as described in the Problem and Opportunity Statement (notwithstanding any other consideration of natural, socio-economic or cultural impacts). As such, an alternative with a “critical fail” would not be carried forward for further study.

8.4 Screening of Long List of Alternative Design Concepts

Based on the application of the screening criteria Alternatives 1 and 3 were eliminated from further assessment.

Alternative Design Concept 1 did not pass the screening criteria, based on the following critical failures:

- No improvement to pedestrian realm;
- Sub-standard transit operations and amenities;
- No dedicated cycling facilities;
- Illegal standing and parking activity will continue to dominate the curb lane and reduce the overall capacity of Queens Quay.

Alternative Design Concept 3 did not pass the screening criteria, based on the following critical failures:

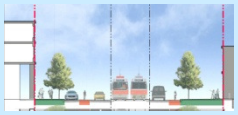
- Pedestrian space constrained at intersections
- Conflict between off-street trail and traffic lanes
- Does not fit within existing right-of-way
- Limited potential for land and streetscaping improvements.

Table 8-1 provides a summary of the results of the screening and Table 8-2 provides the rationale supporting the results. The tables include revisions made based on comments received from stakeholders and the public after Public Forum 2.

Three alternatives – Alternative Design Concepts 2, 4 and 5 – were shortlisted based on the initial screening process and carried forward for more detailed assessment. . (Alternative Design Concept 1, while it does not pass the screening criteria was carried forward as a baseline comparison). The shortlisted alternatives carried forward based on the following benefits:

- Improved pedestrian realm;
- Improved transit operations;
- Bicycle lanes or off-street trail;
- Capacity to serve future auto traffic volumes;
- Improved curbside operations;
- Access to all properties.
- Additional street trees and landscaping

Table 8-1: Summary of Screening of Long List of Alternative Design Concepts

Problem Statement Objectives/ Evaluation Criteria	1. Do Nothing 	2. Centre Transit On-Street Bike Lanes 	3. Centre Transit Martin Goodman Trail 	4. Southside Transit One-Way Operations 	5. Southside Transit Two-Way Operations 
Waterfront Main Street	✗	●	●	●	✓
North-South Connections	✗	●	●	✓	✓
East-West Connections	✗	●	●	✓	✓
Aesthetically Vital	✗	✓	●	✓	✓
Operations and Safety	✗	✓	●	✓	✓
Grand and Beautiful	✗	✓	●	✓	✓
Policies	✗	✓	✗	✓	✓
Leverage Renewal	✗	✓	✓	✓	✓
Access	✓	✓	✓	●	●
Fit	✓	✓	✗	✓	✓
		Carried		**Carried**	**Carried**

✓ Yes. Meets criteria

● Challenging. May be designed to meet criteria

✗ No. Cannot meet criteria: Critical fail

Table 8-2: Summary of Screening of Long List of Alternative Design Concepts

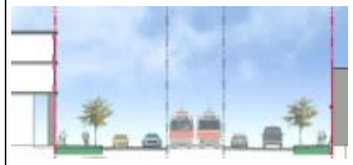
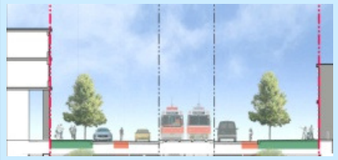
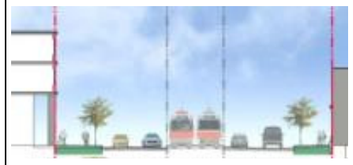
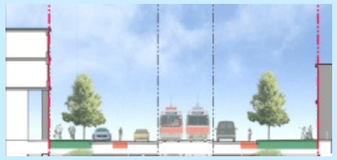
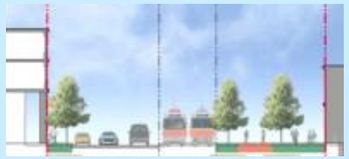
Problem Statement Objectives/ Evaluation Criteria	1. Do Nothing 	2. Centre Transit On-Street Bike Lanes 	3. Centre Transit Martin Goodman Trail 	4. Southside Transit One-Way Operations 	5. Southside Transit Two-Way Operations 
Waterfront Main Street	**No.** Without improvements, existing conditions on Queens Quay cannot support a great street environment suitable for Toronto's waterfront. Insufficient space for proper street tree planting to meet City standards, rebalance transportation modes, etc.	**Challenging.** Potential for modest aesthetic and functional improvements. Limited rebalancing of street space, with widened sidewalks, on-street bike lanes additional tree plantings on both sides of the street.	**Challenging.** Potential for modest aesthetic and functional improvements. Limited rebalancing of street space, with widened sidewalks midblock but reduced at intersections, off-street Martin Goodman Trail, limited tree plantings on both sides of the street.	**Challenging.** Allows for high degree of functional and aesthetic improvements. Rebalancing allows for improved pedestrian realm on both sides of the street, off-street Martin Goodman trail and tree canopy that meets City standards. Perception that one-way streets have higher speed traffic and do not increase foot traffic or commercial activity	**Yes.** Allows for high degree of functional and aesthetic improvements that could elevate Queens Quay to Toronto's main waterfront street. Rebalancing allows for improved pedestrian realm on both sides of the street, off-street Martin Goodman trail tree canopy that meets City standards.
North-South Connections	**No.** Existing pedestrian conditions are insufficient across Queens Quay. Numerous conflicts between pedestrians and vehicles. No improved visual connections to waterfront.	**Challenging.** Can rebalance space and adjust operations within the corridor to improve north-south pedestrian movement. Slightly reduced pedestrian crossing distance. Limited improvement visual connections to the waterfront	**Challenging.** Can rebalance space and adjust operations within the corridor to improve north-south pedestrian movement. Slightly reduced pedestrian crossing distance. Limited improvement of visual connections to the waterfront	**Yes.** Can rebalance space and adjust operations within the corridor to improve north-south pedestrian movement. Reduced pedestrian crossing distance across vehicle lanes. Improved visual connections to waterfront.	**Yes.** Can rebalance space and adjust operations within the corridor to improve north-south pedestrian movement. Reduced pedestrian crossing distance across vehicle lanes. Improved visual connections to waterfront.
East-West Connections	**No.** Does not improve pedestrian experience nor accommodate the Martin Goodman Trail, which requires a combined 4m trail off-street within Queens Quay right-of-way.	**Challenging.** Pedestrian experience improved with greatest increase in sidewalk space. Limited improvement to cycling environment with on-street bike lanes provided.	**Challenging.** Pedestrian experience slightly improved with widened sidewalks mid-block and reduced sidewalks at intersections. Off-street Martin Goodman Trail provided but directly adjacent to traffic lanes creating a “contra flow”.	**Yes.** Highest degree of improvement in pedestrian experience with greatest increase in sidewalk space and expanded non-auto area of the public realm on south side. Off-street Martin Goodman Trail provided with planted buffer area.	**Yes.** Highest degree of improvement in pedestrian experience with greatest increase in sidewalk space and expanded non-auto area of the public realm on south side. Off-street Martin Goodman Trail provided with planted buffer area.
Aesthetically Vital	**No.** Existing conditions do not contain the elements required for an aesthetically vital and vibrant public realm: trees, generous pedestrian areas, adequate bike facilities, etc. Benefits to retail opportunities limited.	**Yes.** Pedestrian improvements (shorter crossing distances, less conflict with other modes, greater sidewalk area) and additional space for landscaping promotes an active street and supports retail and commercial opportunities.	**Challenging.** Modest pedestrian improvements (shorter crossing distances, less conflict with other modes, slightly more sidewalk area) and only slight increase in landscaping may limit activity on street and support for retail and commercial opportunities.	**Yes.** Pedestrian improvements (shorter crossing distances, less conflict with other modes, greater sidewalk area) and additional space for landscaping promotes an active street and supports retail and commercial opportunities.	**Yes.** Pedestrian improvements (shorter crossing distances, less conflict with other modes, greater sidewalk area) and additional space for landscaping promotes an active street and supports retail and commercial opportunities.
Operations and Safety	**No.** Signal timing for pedestrians, transit and vehicles is insufficient. Current arrangement and enforcement of on-street parking leads to several conflicts. No dedicated bike facilities. Substandard transit operations and amenities.	**Yes.** Modifications to signal timing would improve pedestrian, transit and vehicle operations. Dedicated areas for curbside activity (drop-off, loading, parking) would reduce potential conflicts. Dedicated bike lanes provided.	**Challenging.** Modifications to signal timing would improve pedestrian, transit and vehicle operations. Limited dedicated areas for curbside activity (drop-off, loading, parking) to reduce potential conflicts. Off-street Martin Goodman trail provided, but in space-constrained conditions.	**Yes.** Modifications to signal timing would improve pedestrian, transit and vehicle operations. Dedicated areas for curbside activity (drop-off, loading, parking) would reduce potential conflicts. Off-street Martin Goodman trail provided.	**Yes.** Modifications to signal timing would improve pedestrian, transit and vehicle operations. Dedicated areas for curbside activity (drop-off, loading, parking) would reduce potential conflicts. Off-street Martin Goodman trail provided.

Table 8-2: Summary of Screening of Long List of Alternative Design Concepts

Problem Statement Objectives/ Evaluation Criteria	1. Do Nothing	2. Centre Transit On-Street Bike Lanes	3. Centre Transit Martin Goodman Trail	4. Southside Transit One-Way Operations	5. Southside Transit Two-Way Operations
					
Grand and Beautiful Boulevard	**No.** It is not a grand and beautiful boulevard in its existing form. Finishes and materials are common and inconsistent. Current arrangement is not inviting for pedestrians.	**Yes.** Rearranges the space allowing for functional and aesthetic improvements to recast the street as a grand and beautiful boulevard.	**Challenging.** Rearranges the space allowing for functional improvements. Functional improvements would limit space available for street and landscaping.	**Yes.** Rearranges the space allowing for functional and aesthetic improvements to recast the street as a grand and beautiful boulevard.	**Yes.** Rearranges the space allowing for functional and aesthetic improvements to recast the street as a grand and beautiful boulevard.
Policies (e.g., Toronto Official Plan, Central Waterfront Secondary Plan)	**No.** Existing street does not address adopted City policies: not a scenic waterfront boulevard, no Martin Goodman Trail, does not encourage clean air alternatives, etc.	**Yes.** Can rebalance the street to better serve pedestrians and cyclists, create a scenic waterfront drive, etc.	**No.** Implementing Martin Goodman Trail would leave little room to better serve pedestrians, which does not meet policy for all users.	**Yes.** Can rebalance the street to better serve pedestrians and cyclists, create a scenic waterfront drive, etc.	**Yes.** Can rebalance the street to better serve pedestrians and cyclists, create a scenic waterfront drive, etc.
Leverage Renewal	**No.** Does not coordinate planned improvements to TTC transit infrastructure and other waterfront revitalization projects.	**Yes.** Can coordinate planned improvements to TTC transit infrastructure to more effectively locate platforms along the corridor. Can also better incorporate transit improvements within overall public realm.	**Yes.** Can coordinate planned improvements to TTC transit infrastructure to more effectively locate platforms along the corridor. Can also better incorporate transit improvements within overall public realm.	**Yes.** Can coordinate planned improvements to TTC transit infrastructure to more effectively locate platforms along the corridor. Can also better incorporate transit improvements within overall public realm.	**Yes.** Can coordinate planned improvements to TTC transit infrastructure to more effectively locate platforms along the corridor. Can also better incorporate transit improvements within overall public realm.
Access	**Yes.** Maintains existing access for residents, tenants, service, emergency, fire and police.	**Yes.** Maintains existing access for residents, tenants, service, emergency, fire and police.	**Yes.** Maintains existing access for residents, tenants, service, emergency, fire and police.	**Challenging.** Maintains access for residents, tenants, service, emergency, fire and police. Some access points may require modification.	**Challenging.** Maintains but modifies access for residents, tenants, service, emergency, fire and police. Some access points may require modification.
Fit	**Yes.** Does not require land acquisition.	**Yes.** Does not require land acquisition.	**No.** Centre Transit with off-street Martin Goodman Trail arrangement cannot be implemented without extraordinary land acquisition.	**Yes.** Does not require extraordinary land acquisition. May require local expansion of ROW where needed.	**Yes.** Does not require extraordinary land acquisition. May require local expansion of ROW where needed.
		Carried forward.		**Carried forward.**	**Carried forward.**

8.5 Evaluation Criteria for Short List Alternative Design Concepts

The shortlisted Alternative Design Concepts were comparatively tested against 90 individual qualitative and quantitative measures developed from an understanding of the existing conditions of the study area, the Problem and Opportunity Statement, input received from stakeholders and the public through the consultation process. Stakeholders and general public were prompted for comments on these measures during the consultation activities leading up to and following Public Forms 2 and 3. The Public Consultation Summary is included in Appendix A.

Each measure was organized into one of eight broad categories:

1. Transportation
2. Safety/Emergency Response
3. Urban Design/Quality of Place
4. Socio-Economic Conditions
5. Natural Environment
6. Cultural Environment
7. Cost
8. Official Plan and Waterfront Policies

The criteria and measures, presented in Table 8-3, were chosen because of their ability to identify the potential environmental effects of each Shortlisted Alternative Design Concept and distinguish their strengths and weaknesses. The intent of the evaluation was to identify the net effects of each alternative on the environment so that the performance of each alternative could be compared. The strengths and weaknesses of each alternative were differentiated by identifying on a criterion basis a rating of:

- **Most Preferred** – Rates highest for a particular measure;
- **Moderately Preferred** – Addresses criteria at high degree;
- **Least Preferred** – Addresses criteria but there are major challenges;
- **Fail** – Does not address criteria.

The process was informed by stakeholder and public input received at Public Forums 2, 3 and during individual landowner meetings. The ratings were then summarized in an overall rating on a category basis.

The overall rating was not a simple mathematical “addition” or “averaging” of the individual ratings; rather, it was arrived at through a reasoned argument approach, whereby the differences in the performance of each alternative are compared (based on criteria). The alternative that best addressed the criteria, which in turn addressed the Problem and Opportunity Statement, and had the least impacts after mitigation, was identified as the Recommended Preferred Alternative.

For Municipal Class EAs, a decision can be made to specifically *weight* the criteria– that is, assign a level of importance to certain criteria – so that key issues and problems can be prioritized within the evaluation. In this way, the evaluation would be geared towards identifying those alternatives best suited to addressing the key issues as preferred.

For the Queen Quay Revitalization EA the selection of the Recommended Preferred Alternative included a comparative evaluation that did not include weighted criteria. Instead,

the selection of the Recommended Preferred Alternative for this EA study focused on the consideration of the Problem and Opportunity Statement. The Problem and Opportunity Statement was defined through a five-month public process, in which stakeholders and the general public were engaged to identify core issues on Queens Quay. The selection of the Recommended Preferred Alternative was guided by how well each alternative addressed the key priorities for the project and the degree of impacts after mitigation.

Table 8-3: Evaluation Criteria for Shortlisted Alternative Design Concepts

Category	Group	Criteria
A. Transportation	A.1. Pedestrians	A.1.1 Sidewalks
		A.1.2 Crossing Frequency
		A.1.3 Crossing Distance
	A.2. Transit	A.2.1. Transit Speed
		A.2.2. Stops Frequency
		A.2.3. Transit Accommodation
	A.3. Cycling	A.3.1. Bicycle Friendly
		A.3.2. Network Connections
		A.3.3. East-West connection
	A.4. Automobiles	A.4.1. Corridor Measures Queens Quay
		A.4.2. Intersection Measures Queens Quay
		A.4.3. Intersection Measures Lake Shore Blvd
		A.4.4. Site Access
		A.4.5 On-street Parking
	A.5. School bus and motor coach operations	A.5.1. Pick-up/drop-off facilities
	A.6. Movement of goods / servicing demands	A.6.1. Access to commercial shipping/loading entrances (delivery trucks)
		A.6.2. Access to residential servicing areas (garbage trucks, repair trucks, postal trucks)

Table 8-3: Evaluation Criteria for Shortlisted Alternative Design Concepts

Category	Group	Criteria
B. Safety and Emergency Response	B.1. Emergency response	B.1.1. Fire, EMS and Police services
	B.2. Safety	B.2.1. Vehicular conflict reduction
		B.2.2. Bicycle safety
		B.2.3. School bus safety
		B.2.4. Pedestrian safety
C. Urban Design / Quality of Place	C.1 Public realm	C.1.1 Signature identity
		C.1.2 Microclimate
		C.1.3 Visual Connectivity
	C.2 Usability	C.2.1 Accommodates special events
		C.2.2 Accommodates a variety of activities
D. Socio-Economic Conditions	D.1. Access	D.1.1 Site access
	D.2. Retail activity	D.2.1. Accessibility
		D.2.2. "Main Street" environment
		D.2.3. Retail Continuation
	D.3. Tourism impacts	D.3.1. Tourism competitiveness
		D.3.2. Tourism business continuation
	D.4. Employment competitiveness	D.4.1 Desirable place to work
		D.4.2 Employment continuation
	D.5. Residential impacts	D.5.1. Living environment
		D.5.2. On-street parking
		D.5.3. Residential continuation

Table 8-3: Evaluation Criteria for Shortlisted Alternative Design Concepts

Category	Group	Criteria
E. Natural Environment	E.1. Terrestrial habitat	E.1.1. Vegetation
		E.1.2. Habitat
	E.2. Air Quality	E.2.1. Impact on Air Quality
	E.3. Water Quality	E.3.1. Storm water management
	E.4. Soils	E.4.1. Hazardous materials
F. Cultural Environment	F.1. Built Heritage Features	F.1.2. Preservation/Celebration of built heritage features
	F.2. Cultural Landscapes	F.2.1. Cultural landscapes affected
		F.2.2. Opportunities to enhance cultural landscapes
	F.3. Archaeological Features	F.3.1. Archaeological features affected
	F.4. First Nations Peoples and Activities	F 4.1. Adverse effects to land and resources used for traditional purposes
G. Cost	G.1. Capital Costs	G 1.1. Minimizes construction costs
H. Official Plan and Waterfront Policies	H.1. Adheres to Waterfront Toronto Principles	H.1.1. Central Waterfront Secondary Plan
	H.2. Adheres to City Policies and Goals	H.2.1. Toronto Pedestrian Charter
		H.2.2. Toronto Bike Plan
		H.2.3. Our Common Ground
		H.2.4. Toronto Official Plan: Moving people instead of vehicles; City streets are public spaces

8.6 Public Consultation: Public Forum 2 - Screening of Long list and Evaluation Criteria

The Alternative Design Concepts, evaluation criteria and methodology were presented for review to the Stakeholder Advisory Committee (SAC) and to the general public at Public Forum 2. Comments from the SAC and general public included:

- **Parking and Access:** Tour bus and driveway access would need to be demonstrated in Alternative Design Concepts.
- **Quantitative Data:** More quantitative data would be required to assess in more detail the traffic and servicing impacts on landowners.
- **Additional Data:** At Public Forum 2 participants were asked what additional information would be needed to identify a Recommended Preferred Alternative. Participants suggested:
    - Up-to-date traffic statistics;
    - Parking information;
    - Locations of unloading areas for buses and taxis;
    - Entry points to condominiums and parking lots;
    - Demographics;
    - Construction schedules;
    - Noise pollution studies;
    - Air pollution studies.

Some members of the SAC expressed strong support for Alternatives 4 and 5 (South Side Transit One-Way Operations and South Side Transit Two-Way Operations) and recommended that the study team focus its efforts on these.

Most participants from the general public at Public Forum 2 preferred to abandon Alternative 2 (Centre Transit). Alternatives 4 and 5 were strong because they provided a “destination feel”, the bike lanes were incorporated in an off-street Martin Goodman Trail, landscaping potential was excellent, public transit would be easily accessible, safety was improved for cyclists and pedestrians and the design had a traffic calming effect. The team would need address traffic operations, curbside activity, site access and emergency access.

8.7 Assessment of Short List Alternative Design Concepts

Summary of Assessment Process

Following Public Forum 2, the study team worked with individual landowners and local organizations (e.g., Business Improvement Association) to gain input on the evaluation process. The consultation was considered in the study team’s detailed site specific studies undertaken to inform the evaluation.

A Traffic and Transit Operations Analysis (included in Appendix E of this report) was completed. Based on traffic volume counts taken at intersections and along Queens Quay and Lake Shore Boulevard during the Summer and Fall of 2007, as well as future growth forecasts for the Central Waterfront, the study team’s traffic specialists built micro-simulation models to emulate existing and future traffic and transit conditions on Queens Quay. This allowed the team to understand the existing and future Level-of-Service (i.e., delay) that each individual movement would experience at each intersection within the study area, in addition measure the performance of transit in each Alternative Design Concept.

In addition to operational criteria, the traffic modeling results were interpreted in the context of the parking, loading and specific circulation aspects of each site. The team met with

Queens Quay landowners and City departments to assess the overall parking supply within the overall context area, as well as on each individual site. A survey of bus activity on Queens Quay was undertaken with input from the study area landowners and businesses and Ontario bus companies to qualitatively assess the bus demands and operational issues on Queens Quay. Individual site operations were also considered in the Traffic and Transit Operations Analysis. The team met with individual landowners and obtained site plans and service, maintenance and delivery schedules to assess traffic operations and access requirements for the sites along Queens Quay.

The results of the Traffic and Transit Operations Analysis and the input received from individual landowners were used to assess the performance of each Alternative Design Concept under the evaluation criteria listed in Table 8-3, including Transportation and Socio-economic Environment.

Area demographics were obtained from interviews with landowners, special interest groups and Census data. Information received informed the evaluation, in particular the Transportation, Safety and Emergency Response and Socio-economic categories.

Each of the Alternative Design Concepts would have a similar degree of construction requirements. The LRT right-of-way would undergo major rehabilitation as a part of the TTC maintenance program in all alternatives. The roadway would require reconstruction in order to effect the changes included in each of the alternatives. While these construction impacts were not measured explicitly, construction costs, timing and complexity were included as considerations in the cost estimating exercise undertaken for this EA study. All alternatives were estimated to have similar construction values.

In terms of noise and air quality issues, each alternative does not include increases in traffic or transit capacity. As such, detailed air and noise impact studies were not undertaken.

The following sections provide a discussion of the transportation methodology, analysis and results, as well as the distinguishing issues and features between the Alternative Design Concepts (under each evaluation category) that are the basis. The summary and detailed evaluation matrices that compare the performance of each alternative under each evaluation criterion are provided in Table 8-6 and Table 8-7.

These tables were initially presented to the public during Public Forum 3, but reflect revisions made based on input received from the public and stakeholders.

8.7.1 Assessment – Transportation

Assessing the alternatives considered in this study demanded a thorough understanding of both existing conditions and the proposed operations on Queens Quay. A detailed Traffic and Transit Operations Analysis was undertaken by the study team to measure the changes in traffic operations associated with the shortlisted Alternative Design Concepts on Queens Quay, Lake Shore and at each signalized intersection along those streets. The following is a summary. A complete Traffic and Transit Operations Report is included in Appendix E.

8.7.2 Pedestrians

All alternatives reduce crossing distances for pedestrians because of the reduction in number of traffic lanes. Approximate average north-south pedestrian crossing distances for the alternatives are:

- 24.5 metres for Do Nothing;
- 23 metres for Centre Transit; and
- 18.5 metres for South Side Transit.

Do Nothing has the longest crossing distance because there are still four traffic lanes. Centre transit requires a longer north-south pedestrian crossing distance because the bike facilities are on-street instead of within the public realm. In the South Side alternative, because the Martin Goodman Trail is a "mixed use trail", pedestrians can cross the trail (i.e. bike facilities) without the need for formal traffic control therefore shortening to crossing distance. At intersections, sidewalk and Martin Good Trail traffic come together at what has been termed "mixing zones". In these areas, signage would be placed to ensure cyclist yield to pedestrians. This allows pedestrians to cross the street from north of the trail creating a shorter north-south crossing distance.

An additional impact on north-south pedestrian connectivity is signal cycle time. The South Side Transit alternative uses a 120 second cycle length while the Centre transit alternative uses a 100 second cycle length. These cycle lengths are required to provide enough time to east-west transit and traffic. As the cycle length increases, so does the amount of time that can be allocated to east-west movements (including transit, pedestrians, Martin Goodman Trail and traffic). As such, there may be some additional waiting time for pedestrians crossing north-south in the South Side alternative. Level of service (LOS) for pedestrians crossing north-south is typically assumed to be similar to delay to side street traffic. In this case, north-south crossing operate at:

- LOS C to E, with most operating at LOS C for Centre Transit; and,
- LOS C to E, with most operating at LOS D for South side Transit.

Detailed operations spreadsheets are available in Appendix E.

A new strategic pedestrian crossing would be installed in one of the busiest locations in the South Side option – between York Street and Lower Simcoe Street and the Queens Quay Terminal driveway. This area will become even more active as development plans for York Quay are realized and this new crossing would provide an additional north-south connection. The new crossing would also be necessary to facilitate pedestrian access to the consolidated transit platforms.

Sidewalk widths would also be expanded in the South Side option. The Martin Goodman Trail is not part of the sidewalk calculation but can be used by pedestrians as well as cyclists and inline skaters. Along Queens Quay, the southern sidewalk in the South Side option would be of greater width (typical 6 metres) compared to existing and the Centre Transit alternative (typically 2 and 4 metres respectively).

Both alternatives provide for a signalized pedestrian crossing between Spadina Avenue and Rees Street at the Fire/EMS/HTO Park entrance. Not only does this improve access to the park, it provides a signalized crossing within the longest segment (450 m+) along Queens Quay where there currently is no signalized pedestrian crossing.

8.7.3 Transit

System Performance

Transit service speed and service reliability are key components of a successful transportation system on the waterfront. All alternatives were developed to provide the best possible transit service speed and reliability to support planned development in the area and along the network. The Centre Transit, South Side Two-Way and South Side One-Way alternatives would each provide an improvement in transit service over existing conditions. The South Side and Centre Transit alternatives are capable of supporting future demand.

The Centre Transit alternative requires fewer signals and would provide a faster and more reliable transit service. Centre transit would provide the fastest service with average travel speeds of 17.2 to 20.9 km/h. South Side Transit travel speeds are slower than Centre with average travel speeds of 16.0 to 21.1 km/h. Centre Transit provides better headway adherence over South Side. Centre Transit headway adherence ranges from LOS A to B, while South Side ranges from LOS A to C. The Centre Transit alternative is a more typical arrangement in the City of Toronto and would allow the deployment of the same transit signal priority scheme that is found throughout the city. The South Side transit alternative would require a unique signal priority system in order to operate as modelled throughout the EA.

VISSIM micro-simulation software was used to develop transit models to analyze and optimize transit performance under South Side and Centre Transit arrangements. Detailed documentation of the analysis and simulation results is included in Appendix E.

Transit and Traffic (Autos) Interaction

For all Alternative Design Concepts, automobiles are required to cross the transit right-of-way in order to access the properties on Queens Quay. Section 8.7.7 (Assessment – Safety and Emergency Response) compares the how the alternatives address the interaction of transit and automobiles.

Passenger Experience

Centre Transit and South Side alternatives would both provide improved transit service compared to the existing condition. Part of the overall experience often overlooked in transit planning is passenger comfort and experience. In both alternatives, the transit platforms are improved over the existing condition with a minimum width of 2.4 metres compared to the existing 1.5 metres. An opportunity exists with the South Side transit alternative to integrate the eastbound platform with the planting median between the TTC right-of-way and the Martin Goodman Trail. Transit in the centre median is more common, but forces patrons to wait in the middle of the road and has fewer opportunities to develop a unique urban design character.

The consolidation of the York Street and Lower Simcoe Street transit stops at Queens Quay Terminal will have an effect on walking distances. Transit forecasts used to model transit for the EA considered 384 total patrons at the Simcoe stop and 497 total patrons at York stop. The consolidated stop at Queens Quay Terminal would therefore have a total of 881 transit patrons (646 boarding; 236 alighting). Origin destination surveys of transit patrons were not part of the Queens Quay Revitalization EA. As such, there is no way to know what proportion of patrons would be originating from or destined to which buildings/sites. However, it is possible to provide a qualitative analysis of the impacts to area transit riders.

- Patrons to/from the Riviera condominium and Harbourfront Centre would have to walk an additional 100m east or use the Rees Street stop;
- Patrons to/from the Waterclub condominium, Queens Quay Terminal and future York Quay/Canada Square would have a shorter walking distance because the consolidated stop is centred on those properties; and
- Patrons to/from Harbour Square would walk an additional 115 metres west, use the Bay Street station or use the private shuttle provided at the condominium.

All land uses on Queens Quay will still fall within less than 300 metres of a transit stop which is considered "well served by transit" by the TTC.

8.7.4 Cycling

The Centre and South Side alternatives both provide improvements to current cycling facilities. The bike lanes in the Centre Transit alternative would complete the bike route system along Queens Quay, and indicate to motorists that they are to share the road.

In the South Side Transit alternatives, the Martin Goodman Trail (MGT) would be a continuous off-street, multi-purpose facility from Spadina Avenue to Parliament Street where it would connect with a previously constructed segment of the Trans Canada/Lake Ontario Waterfront/Martin Goodman Trail system. The eastern segment of Queens Quay between Stadium Road and Spadina Avenue would retain the on-street bike lane facility, likely until future improvements to the transit right-of-way are necessary. In total, the additional length of off-street cycling trail would be 2.7 km, completing the east-west cycling network for the entirety of the Central Waterfront.

An off-street trail can accommodate both commuters and recreationalists. (MGT west is a good example). Bike lanes are more suitable for commuters; those cyclists who wish to use the road can still do so and are legally entitled to do so under the Highway Traffic Act. In the South Side option, faster commuter cyclists have the road as an alternative if the trail is busy. In the Centre option, leisure and recreational cyclists will not have an alternative to the bike lanes. Moreover, peak commuter cycling times would be during the morning and afternoon peak hours. Peak recreational cycling would be on weekends and primarily in the warmer seasons with some after work/school activity during the afternoon peak. Therefore, the MGT would provide different functions for different users at different times with little overlap. Both groups together are better served by the off-street Martin Goodman Trail – a key feature in the South Side alternatives. The 120 signal cycle length would also provide additional east-west green time for commuter and recreational cyclists alike.

At intersections, cyclists will be required to yield to pedestrians within the “mixing zones”. This operation was discussed with the City of Toronto, TTC and stakeholders. A key benefit of this operation is a reduction in north-south clearance interval required which in turn allows more time to be allocated to east-west transit for the best possible travel speeds through the central waterfront.

8.7.5 Traffic (Autos)

Intersection Operations

Auto traffic measures were evaluated using Synchro 7 software. Signal timings were consistent between the Synchro (traffic) and VISSIM (transit) models. The signal control strategy and assumptions were agreed to in principle by City of Toronto Urban Traffic Control and the Canadian National Institute for the Blind (CNIB) (for the atypical south side transit). Detailed assumptions and methodology are included in the Traffic and Transit Operations Report (Appendix E).

The results of the Synchro analysis are summarized in Table 8-4 and Table 8-5. Overall intersection levels-of-service ranges from B to F for Do Nothing, A to D for Centre Transit, A to C for South Side Transit Two-Way and A to D for South Side Transit One-Way. It is evident that even with a reduction in travel lanes from four to two, it is possible to improve traffic operations through measures such as improved signal timings and the addition of dedicated turn lanes..

Table 8-4 Summary of Synchro Analysis Results – Queens Quay Overall Intersection Operations

Queens Quay @	Do Nothing	Centre Transit	South Side One-Way	South Side Two-Way
Lower Spadina Avenue	D / F	D / D	B / D	C / C
TTC Loop	B / B	A / A	B / B	C / B
EMS / Beer Store	Unsignalized	A / C	A / A	A / B
Rees Street	B / C	C / D	B / C	B / C
Robertson Crescent East	Unsignalized	Unsignalized	Unsignalized	A / A
Lower Simcoe Street	C / B	D / D	B / B	B / C
Queens Quay Terminal	Unsignalized	Unsignalized	A / A	B / B
York Street	D / F	C / C	C / D	B / B
Harbour Square	C / D	C / D	Removed	Removed
Bay Street	C / C	D / D	C / C	B / C
Yonge Street	C / C	C / C	B / C	C / C

Notes:

1. morning peak hour / afternoon peak hour

The unique location of Queens Quay in the city results in unique operating conditions. Because Queens Quay is the southernmost street in downtown, much of the traffic using Queens Quay is oriented to the north. This results in significant traffic volume making eastbound left turns towards downtown. In the centre transit arrangement, eastbound left turns must operate on a protected phase that limits their effective capacity, and conflicts with east-west transit and westbound traffic. With south side transit, the eastbound left turns can operate on a permissive phase and not conflict with transit. There is also a benefit to westbound through traffic because the eastbound turns can operate permissive (i.e. turn through gaps in westbound traffic).

The atypical arrangement of South Side Transit requires that all movements in and out of properties on the south side of Queens Quay would need a signal controlled intersection and dedicated lanes to safely cross the LRT tracks. For the south side transit, fully protected eastbound right or westbound left turns across the streetcar tracks will experience delays in the LOS D to E range (see Appendix E), but there is sufficient capacity to accommodate demand. Eastbound right turn phases can overlap with westbound and eastbound through as well. Intersections only have one dedicated turn lane and phases over the tracks because the phases cannot run at the same time. This allows more east-west green time for transit, MGT and south sidewalk.

The Centre transit alternative would maintain existing access conditions along Queens Quay – left turn movements in and out of properties are made at signalized intersections or with a u-turn movement at the nearest signalized intersection if the access point is not signal controlled.

Table 8-5: Summary of Synchro Traffic Model results – Lake Shore Boulevard Overall Intersection Operations

Lake Shore Boulevard @	Do Nothing	Centre Transit	South Side One-Way	South Side Two-Way
Lower Spadina Avenue	C / C	C / C	D / E	C / C
Rees Street	C / F	C / F	E / F	C / F
Lower Simcoe Street	B / C	B / C	B / D	B / C
York Street (WB)	C / E	C / E	B / E	C / E
Bay Street (WB)	F / D	F / C	F / C	F / C
Yonge Street (WB)	F / D	F / D	F / D	F / D
Harbour Street @				
York Street (EB)	C / D	B / D	C / E	B / D
Bay Street (EB)	D / E	C / C	C / D	C / C
Yonge Street (EB)	C / B	B / B	B / B	B / B

Notes:

1. morning peak hour / afternoon peak hour

Under all scenarios, Lake Shore boulevard will be reaching or at capacity under future conditions. It is possible to gain some efficiency through modifications to signal timings; however, there will still be intersections operating at LOS F during peak times.

The South Side One-way alternative increases localized impacts on Lake Shore Boulevard due to the added eastbound traffic between Lower Spadina Avenue and York Street. However, the overall network impacts are within the same order-of-magnitude as the other alternatives. The impacts to Lake Shore Boulevard are similar for all future scenarios.

Curbside Activity

Today, the four-lane section of Queens Quay effectively operates as a two-lane road with illegal stopping and standing occupying the curb lanes. With dedicated areas for curbside activity and improvements to traffic signal operations, overall intersection performance under each alternative in the future will compare more favourably than the “do-nothing” scenario.

All shortlisted Alternative Design Concepts improve existing on-street conflicts. Each provides a similar amount of dedicated curbside areas for loading and unloading activities (by buses, taxis, delivery vehicles and private auto parking). This reduces conflict between curbside vehicles, pedestrians, cyclists and automobiles.

8.7.6 Overall Rating – Transportation

On balance, the South Side Transit alternatives provide the best solution for transportation considering all modes that must share the corridor.

- For South Side, the longer signal cycle length may mean longer wait times to cross Queens Quay, but the shorter north-south crossing distances, increased public realm and new signalized crossing at Queens Quay Terminal will improve the overall pedestrian experience.
- Centre transit provides the best solution for transit measures. It is the fastest and most reliable, does not require any relocation of stops, and is a typical arrangement for light rail transit in Toronto.
- South Side is the best overall solution for cyclists because it provides an off-street dedicated facility for use by both commuter and recreational cyclists.
- South Side transit responds best to traffic patterns in the area and provides the best overall traffic operations at intersections in terms of vehicle delay as indicated by the levels-of-service. This is again due to the orientation to the city north of Queens Quay and the ability to provide permissive left turns. Lake Shore Boulevard will be busy and reaching or exceeding capacity under future conditions, which is true for all future scenarios.

Of the primary modes of travel that use the Queens Quay corridor, South Side transit scores best on three out of four.

8.7.7 Assessment - Safety and Emergency Response

Emergency Response

The Centre and South Side alternatives provide primary routes to access the properties along Queens Quay. Queens Quay would serve as the primary route in the Centre and South Side Two-way alternatives. The transit right-of-way could serve as secondary routes for these options. In the South Side One-way traffic alternative, traffic would flow one-way in the westbound direction from Bathurst Street to York Street. Fire, Police and Emergency Medical Services would be required to use the TTC right-of-way as the primary route to access sites on Queens Quay in the eastbound direction. The transit right-of-way would need to be cleared of snow and maintained to the same standard as other primary emergency access routes in the One-way option.

All alternatives (except for Do Nothing) include the addition of dedicated areas for curbside activity in the form of lay-bys and would include standard lane widths to provide sufficient opportunity for emergency vehicles to bypass other traffic.[1]

All alternatives (except for Do Nothing) introduce traffic signals at the Fire/EMS station entrance located between Spadina and Rees Streets by at the station entrance. The Centre and South Side alternatives would provide dedicated westbound left turn phases and lanes for the station. The South Side Two-way alternative requires a permissive crossing of the tracks for eastbound right turn movements; however, this movement would be infrequent and could be controlled from the emergency vehicle.

[1] An independent safety audit will be undertaken for the Preferred Alternative Design Concept to ensure the safety of all users, including emergency access requirements.

Safety

All alternatives (except for Do Nothing) include dedicated curbside areas for loading and unloading activities (by buses, taxis, delivery vehicles and private auto parking). This reduces conflict between curbside vehicles, pedestrians, cyclists and automobiles. The reduction of through lanes from four to two would also have the effect of calming traffic.

There is an added safety benefit in the South Side alternatives. Cyclists would have the choice of using the roadway or the off street Martin Goodman Trail located south of the transit right-of-way. Potential conflicts with roadway traffic would be reduced.

Transit and Traffic Interaction

South Side Transit is an atypical arrangement in Toronto. Existing dedicated transit routes such as Spadina, St. Clair and Queens Quay operate much like the Centre Transit alternative. This arrangement allows for uncontrolled right turns at mid-block driveways and intersection, which means that fewer signals are generally required. Left turns over the tracks are only permitted at signalized intersections during a dedicated phase. Right turns on red would also be permitted at intersections.

Turns over the tracks in the South Side alternative are controlled in a similar manner, but require dedicated turn lanes and phases for right turns over the tracks. Fully protected right turns are less common; however, they do exist and are governed by the same rules as dedicated left turns. The South Side transit alternative would require a prohibition of eastbound and northbound right turns on red due to the streetcar tracks, but southbound and westbound right turns on red would still be permitted.

The South Side Transit alternative requires uncontrolled crossings of the TTC tracks at York Quay and entrance to the EMS station. These crossings would be infrequent and controlled by emergency vehicles at EMS, and a dedicated flag person at the York Quay vendor access.

The South Side transit arrangement also creates a “contra-flow” condition, whereby eastbound traffic would be travelling between westbound traffic and westbound transit. Adequate lane widths would be provided and the additional physical separation between eastbound traffic and westbound transit could be studied during detailed design.

South Side transit is an innovative approach. While there are hybrid versions built in other places around the world, it is an atypical configuration for Toronto. A series of mitigating measures to ensure safety would be required, specifically for the unique set of traffic and transit interactions inherent in the South Side Transit alternative.

Overall Rating – Safety and Emergency

Overall, the Centre and South Side Transit Two-way Operations alternatives (Alternatives 2 and 5) achieve the greatest safety benefits, while accommodating police, fire and emergency access. All short-listed alternatives include traffic calming and dedicated curbside loading areas, improved safety for all users. The key advantage that both the Centre and South Side Two-way alternatives have over the South Side One-way alternative is that they include Queens Quay as the primary emergency access route and the transit right-of-way as a secondary route. While the Side Side Two-way alternative is an atypical configuration, mitigating measures can be applied to ensure safety for all users.

8.7.8 Assessment - Urban Design / Quality of Place

Signature Identity

With traffic on both sides of the LRT right-of-way in the Centre Transit alternative, there is limited expansion of the non-auto area of the public realm. This places spatial constraints on apportioning the street space to all users in a more balanced way, creating an accessible street side experience, and creating a public realm on Queens Quay that unifies the Central Waterfront and accommodating special events. In the South Side alternatives, the traffic lanes are consolidated to the north side of the transit right-of-way, which requires less area than a Centre transit arrangement. A more balanced cross section can be achieved for all users over the Centre Transit alternative, with improved overall traffic and transit operations

The arrangement with the LRT right-of-way to the north of the non-auto area of the public realm is the design feature that sets apart the South Side alternatives from all other Alternative Design Concepts. Transit will operate in a visually expanded non-auto area. Passengers will ride along the edge of a waterfront linear park. The transit platforms are less isolated than with the Centre transit. Riders would wait for LRT vehicles to the south of the roadway and the eastbound platforms would be removed entirely from auto traffic.

The South Side arrangements include the continuation of the Martin Goodman Trail—a multi-use off-road facility that runs for 22 kilometres along Lake Ontario and is part of the 900-kilometre Waterfront Trail—to the south of the TTC right-of-way. Framing the Martin Goodman Trail will be a row of trees on both sides. One row will separate the TTC right-of-way from the Trail; the other will define the edge between the Trail and the pedestrian boulevard. This creates a more substantial and comfortable public realm than the Centre Transit alternative and promotes an accessible, unique street side experience. Off-street improvements in the Centre Transit alternative are limited to larger sidewalks and improvements on the existing landscaping.

The Centre and South Side Alternatives have potential to achieve a high consistency of street elements with more and regularly spaced street trees, dedicated cycling facilities and paving opportunities.

Microclimate

The Centre Transit alternative can provide for a 100 percent improvement in the number street trees on Queens Quay and the South Side alternatives provide for a 200 percent improvement. The additional canopy in the South Side alternatives provides the highest degree of wind amelioration and summer shade.

Special Events

With the reduction in through lanes from four to two in the Centre and South Side alternatives, additional space is gained so that events can be accommodated within the widened pedestrian Boulevards. The South Side alternatives provide the most space in the non-auto areas of the public realm, and therefore more opportunities for larger events such as runs and parades.

Variety of Activities

The Centre transit alternative includes additional sidewalk space to accommodate pedestrians activities (including jogging and walking) and bike lanes for all cyclists. The South Side alternatives include an off-street Martin Goodman Trail (MGT) – a multi-use recreational trail – that provides additional choice for cyclists and active transport modes. Cyclists can choose either the roadway or the MGT. In-line skaters and joggers will have room to bypass slower leisure walkers.

Overall Rating – Urban Design/Quality of Place

The South Side alternatives (Alternatives 4 and 5) provide the greatest overall urban design benefits. The Centre and South Side alternatives provide additional non-auto space; however, the most space is gained in South Side alternatives. As such there is greater opportunity in the South Side alternatives to achieve balance between all transport modes; to implement land and streetscape elements in a consistent way to unify area attractions; to add more street trees and a broader tree canopy to influence the microclimate; to better accommodate large special events with less disruption to Queens Quay; and to extend the off-street Martin Goodman trail to attract a more varied mix of users and visitors to the area.

8.7.9 Assessment - Socio-economic Environment

Site Access

The Centre and South Side Two-way alternatives provide a higher degree of accessibility to the waterfront for visitors, residents and for workers as they include two-way traffic operations on Queens Quay.

The Centre Transit and South Side alternatives do not displace any of the existing land uses and provide access to all existing properties along Queens Quay. Maintaining access to and from individual sites on Queens Quay, was indentified as a critical issue for both landowners and the study team. In consultation with landowners, the study team analyzed site access operations for several individual sites, which included the use of modeling software, undertaking additional traffic counting, and analyzing delivery and service logs. This allowed the team to make modifications to the layout and operational aspects of each alternative to ensure that each individual site is provided with good site circulation and traffic operations under each alternative.

All of the shortlisted alternatives provide access to all properties. The Centre Transit alternative maintains the existing access movements. Both South Side alternatives would require some traffic to reroute to Lake Shore Boulevard as not all existing movements in and out of the properties will be available from Queens Quay due to geometric constraints. Due to a limited street right-of-way either a left turn or right turn is provided for access to the properties, not both. Where consolidation is required, direct access from a major north-south arterial – Rees Street, Lower Simcoe Street, and York Street – is provided. Access to properties on the north side of Queens Quay would either be by signalized turn movements or permissive turn movements (for those properties located away from signalized intersections). U-turn movements into the north side properties would no longer be required. The rerouting and consolidation of movements are necessary optimize transit service, to achieve an expanded pedestrian area and an off-street Martin Goodman Trail, with minimal impacts to property.

The South Side Two-way alternative provides additional outbound movements from south side properties to Queens Quay. For example, the Harbourfront Centre and Queen's Quay Terminal accesses are presently located mid-block. Due the transit right-of-way, these entrances are limited to northbound right-turn movements. In the South Side Two-way alternative, new traffic signal controls at this access would allow for an additional northbound left turn. No additional outbound movements are provided in the Centre Transit alternative.

The South Side Two-way also provides for additional inbound movements to north side properties. With the eastbound lanes moved to the north side of the tracks, north side properties located mid-block may be accessed by eastbound vehicles. In the existing condition and in the Centre option, north side properties located mid-block are only accessible from the westbound lanes. The transit right-of-way prevents access from the eastbound lanes.

Employment

A waterfront address is considered a desirable location for employment regardless of both the configuration on Queens Quay. The Centre and South Side Two-way alternatives may be more attractive in that commuting by employees maybe simplified with the greater flexibility in access provided in a two-way traffic operation on Queens Quay. The two-way traffic operations on Queens Quay in the Centre and South Side One Way options would also benefit retail activity as access would be simplified for shoppers.

Retail Activity

The greater increase in non-auto space in the South Side alternatives accommodates higher volumes of foot traffic; has highest potential in terms creating on-street merchandising and marketing opportunities (i.e. a window shopping-friendly atmosphere) as there is more space to do so; and provides more area for outdoor dining.

The Centre and South Side Two-way alternatives provide a higher degree of accessibility to the waterfront for shoppers as they include two-way traffic operations on Queens Quay.

All alternatives do not directly impact retail properties.

Tourism

In the South Side alternatives, visitors would enjoy an enhanced public realm featuring a linear park with healthy street trees to provide shading and screening of the elements. The larger non-auto area of the public realm provides additional space for well-defined access points to the waterfront.

Residential

Nuisance effects (e.g., noise and vibration) for the Centre and South Side alternatives are similar to the future Do Nothing scenario. For all alternatives, noise and vibration mitigation would be improved with the installation of the latest track technologies that include noise insulating features. The reduction of lanes in the South Side and Centre Transit alternatives would also have a traffic calming effect.

All alternatives do not directly impact residential properties.

Overall Rating – Socio-economic Environment

From the perspective of socio-economic environment, the South Side Two-way Transit Alternative (Alternative 5) provides the greatest overall benefits with the least impacts.

The South Side Two-way alternative requires changes to the permitted movements into south side properties; however, access to all properties is provided. This combined with additional inbound movements to north side properties and additional outbound movements from south side properties provides greater benefit than the site access provided in the Centre alternative which mostly maintains the existing access conditions.

The larger non-auto area in the South Side Two-way alternative provides greater employment, retail and tourism opportunities over the Centre Transit alternative. The South Side One-way alternative has similar benefits, but opportunities may be limited accessibility issues inherent in a one-way operation.

8.7.10 Assessment - Natural Environment

Terrestrial habitat is improved in both the Centre and South Side options. There are approximately 90 existing trees which would be increased to 200 in the Centre alternative and to 300 in the South Side alternative. Both would meet the City of Toronto guideline for cubic metres of soil per tree; however, the South Side alternative would have a continuous root zone beneath the Martin Goodman Trail between the two rows of trees. This additional volume of soil would also provide the maximum soil volume for natural water treatment. The greater number of trees in the South Side alternative would provide approximately 35 percent tree canopy coverage, while the Centre transit alternative would only provide 25 percent.

8.7.11 Assessment - Cultural Environment

There are several archaeological features that traverse the study area, which may have archaeological significance. (The Stage 1 Archaeological Resource Assessment Report is included in Appendix F). If these features are impacted, some archaeological mitigation measures may be necessary.

The heritage structures (the former Toronto Island Ferry Waiting Room and Queens Quay Terminal Building) and archaeological features, including the remains of the heads of a series of wharves and a previous intake for the Toronto water supply system, are all located along the south side of Queens Quay or at significant depth below the street right-of-way. The South Side alternatives with the expanded non-auto area of the public realm have the greatest potential to incorporate features of the former port infrastructure into the design without impact.

8.7.12 Assessment- Cost

Each of the short listed alternatives would require the inclusion of similar elements (transit facility, roadway improvements, sidewalks, trees, furnishings). Any additional cost for the South Side alternative would be due to additional trees and higher-quality finishes within the expanded public realm.

The capital costs to implement the South Side alternatives yield similar results to the other alternatives.

8.7.13 Assessment - Plans and Policies

Central Waterfront Secondary Plan (CWSP): Improved connections

A primary objective of the Central Waterfront Secondary Plan (CWSP) is to improve connections within the Central Waterfront. Improvements to east-west connections and mobility can be achieved through design and traffic operations improvements in the all of the shortlisted alternatives. In the Centre Transit alternative, pedestrians would be required to cross a longer distance north-south, but would have shorter wait times. The Centre transit alternative would have the perception of crossing over two roadway sections and one transit right-of-way. In the South Side alternatives, there are more north-south crossings and crossing distances are shorter but with longer wait times. Pedestrians would cross one roadway section and the LRT right-of-way.

CWSP: Scenic Waterfront Street; Network of parks and open spaces

One of the defining features of the South Side alternatives is the linear park consisting of the Martin Goodman Trail framed by the double of row of trees. This is a feature that is vital in achieving a scenic street envisioned in the CWSP which cannot be fully achieved in the Centre Transit alternative.

The success of the open spaces at the heads of slip will not only be dependent on the new wave decks that are being constructed at the time of this report, but also on the public realm space available on the street side of Queens Quay. The South Side alternatives, with the expanded non-auto area of the public realm into the existing eastbound lanes will greatly enhance open spaces adjacent to the slip heads and park space (e.g., HTO park) along Queens Quay.

CWSP: Martin Goodman Trail

Toronto Bike Plan: Safe and friendly bike environment

Through the Toronto Bike Plan, the City is developing and implementing a bike network. This network is comprised of facilities that are specifically designed to encourage cycling and enhance the safety of cyclists. Both the CWSP and Toronto Bike Plan call for the extension of the Martin Goodman Trail along Queens Quay.

While bike lanes are provided in the Centre Transit alternative, it would not the function as the multi-use off-street trail that the facility serves as west of the study area. On-street bike lanes are not as well suited for families and recreational users – which form a large contingent of the mix of riders expected on the waterfront – as off-street multi-use trails are. The Toronto Cycling Survey (Decima Research Inc, 1999), which informed the development of the Toronto Bike Plan, reported that more than nine in ten Toronto cyclists (93%) are comfortable cycling on bike trails or paths, while only five in ten (53%) on major roads with bike lanes.

Completing the central segment of the Martin Goodman Trail as a recreational and commuter bikeway along Queens Quay is key to providing access to the waterfront to all cyclists. The on-street bike lanes in the Centre Transit alternative are more appropriate for commuter cyclists. The South Side alternatives provide a plan that is more context sensitive to a mix of cyclists as it continues the Martin Goodman Trail as a multiuse off-street path.

CWSP: Transit First

The transit first principle refers to building transit before developing land. Ensuring transit is in place before developing land would help to ensure that travel patterns evolve with transit as a primary mode because it has always been available and part of the street. Transit is already a feature of Queens Quay within the study area so the alternatives score equally on this measure.

Pedestrian Charter: Comfortable and convenient walkability

Through the Toronto Pedestrian Charter, the City of Toronto values walking as the most sustainable of all forms of travel, and that it has enormous social, environmental and economic benefits for the city. The CWSP and Toronto Official Plan also contain policies that support implementing strategies that reduce car dependence. Both the South Side and Centre transit alternatives propose to increase space dedicated to the pedestrian realm; however, the South Side alternative provides a unique space for pedestrians sure to encourage walking along the waterfront.

Our Common Ground: Tree canopy coverage of 30 to 40%

The single row of trees on each side of Queens Quay afforded by the Centre Transit alternative will limit the street tree canopy to approximately 25 percent. The row of trees on the north side of Queens Quay with the double row of trees south of the LRT right-of-way in the South Side alternatives provides a street canopy of around 35 percent. This falls within the City of Toronto Department of Forestry's guideline of 30 to 40 percent coverage. Further, the public realm featured in the South Side arrangement will accommodate more soil volume and more favourable growing conditions than the Centre alternatives.

Toronto Official Plan: Moving people instead of vehicles; City streets are public spaces

The Toronto Official Plan contains policies with the aim of increasing the proportion of trips made by transit. The Toronto Official Plan also contains policies that call for a more balanced approach in apportioning the public right-of-way – Streets will be designated to perform their diverse roles, balancing the spatial needs of existing and future users within the right-of-way. This includes pedestrians, people with mobility aids, transit, bicycles, automobiles, utilities and landscaping.

Several policies within the official plan regard City streets as public spaces that should not only function as efficient transportation corridors for all modes, but should be interesting and attractive spaces providing for tree landscaping, quality street furnishings and decorative paving. Streets should be scaled to the common denominator for all modes, that being pedestrians.

All of the shortlisted Alternative Design Concepts support these policies by providing improved access to transit and high quality transit service to Queens Quay that is capable of serving the future demands of the Central Waterfront. Both the Centre and South Side alternatives propose a reduction in auto traffic lanes, the introduction of bike facilities and an enhanced public realm. The South Side transit alignment is a unique arrangement which provides a defining character on the waterfront which cannot be achieved with a centre aligned transit right of way.

Overall Rating – Plans and Policies

Both The South Side transit alternatives best address City of Toronto policies:

- South side transit best addresses the public realm goals of the Central Waterfront Secondary Plan, especially the need to connect the Martin Goodman Trail through the area.
- Both alternatives satisfy the goals of the Pedestrian Charter. The non-auto area of the public realm is expanded in both; however, South Side provides the greatest overall increase.
- While the tree canopy would be increased significantly under any alternative, the South Side alternative can provide around 35 percent coverage while Centre can provide around 25 percent coverage.
- The Toronto Official Plan policies are met by both alternatives in that they both encourage no-auto travel modes and both improve upon the public realm. Centre transit is an improvement over existing, but does not provide the unique character or non-auto space afforded by South Side.

Both alternatives address City of Toronto policies well, but the South Side alternatives allow for the completion of the Martin Goodman Trail, better tree coverage and a creates greater opportunity to create a unique civic space.

8.7.14 Summary: Results of Short-List of Alternative Design Concepts Assessment

The South Side Transit alternatives satisfy the widest range of objectives, largely responding to the Problem and Opportunity Statement and City Policies. The alternatives also provide good transit and traffic operations allowing Queens Quay to fulfill a significant role within the larger street network. They offer opportunities for a character that can reduce the scale of the roadway to greatly improve the public realm. They rebalance the street, promoting a wider range of uses while accommodating all modes of travel and providing the greatest environmental benefit.

Based on the application of the criteria, the Recommended Preferred Alternatives were determined to be South Side Transit – Alternative Design Concepts 4 and 5 (South Side One-way Operations and South Side Two-way operations). The following are key summary points for each evaluation category:

- **Transportation:** Three of the four primary transportation modes are best served with the South Side transit alternatives. Pedestrians have more space and shorter north-south crossings distances, both commuter and recreational cyclists are provided with an off-street facility, and the traffic orientation to the north makes putting transit to the south result in less vehicle delay. Transit operates best in the Centre alternative; however, the South Side alternatives would also provide improved transit service which can accommodate demand.
- **Safety and Emergency Response:** All short-listed alternatives include traffic calming and dedicated curbside loading areas, improved safety for all users. An advantage that both the Centre and South Side Two-way alternatives have over the South Side One-way alternative is that they include Queens Quay as the primary emergency access route and the transit right-of-way as a secondary route.
- **Urban Design/Quality of Place:** With the most non-auto space gained in the South Side alternatives, there is greater opportunity in the South Side alternatives to achieve balance between all transport modes; to implement land and streetscape elements in a consistent way to unify area attractions; to add more street trees and a broader tree canopy; to better accommodate large special events with less disruption to Queens Quay; and to extend the off-street Martin Goodman trail to attract a more varied mix of users and visitors to the area.
- **Socio-Economic Conditions:** The larger non-auto area in the South Side Two-way alternative provides greater employment, retail and tourism opportunities over the Centre Transit alternative. The South Side One-way alternative has similar benefits, but opportunities may be limited accessibility issues inherent in a one-way operation. All alternatives maintain access to all properties along Queens Quay.
- **Natural Environment:** The South Side transit alternatives provide the best solution for the natural environment due to the opportunity for a larger root zone resulting in the highest achievable tree coverage and ancillary benefits.
- **Cultural Environment:** The South Side alternatives with the expanded non-auto area of the public realm have the greatest potential to incorporate features of the historical port infrastructure into the design without impact.
- **Plans and Policies:** Both Centre and South Side arrangements address City of Toronto policies well, but the South Side alternatives allow for the completion of the Martin Goodman Trail, better tree coverage and a creates greater opportunity to create a unique civic space.

On balance, the South Side alternatives achieve similar or greater improvements in terms of the transportation measures. In addition the South Side alternatives will bring greater improvement in terms of the natural, socio-economic and natural environments, urban design and will better address the Problem and Opportunity Statement and established City policies. As such**, the Centre Transit Alternative was not carried forward for further consideration.**

Table 8-6: Summary of Evaluation of Shortlisted Alternative Design Concepts

● Best ● Good ● Poor X Fail Group	1. Do Nothing	2. Centre Transit	4. Southside Transit One-Way Operations	5. Southside Transit Two-Way Operations
Transportation	●	✓	★	★
Safety/ Emergency Response	✓	★	✓	★
Urban Design/ Quality of Place	●	✓	★	★
Socio-Economic Conditions	X	✓	✓	★
Natural Environment	●	✓	★	★
Cultural Environment	●	✓	★	★
Cost	n/a	✓	✓	✓
Official Plan and Waterfront Policies	X	✓	★	★
Summary	X	✓	★	★
			Carried	Carried

8.1 Public Consultation: Public Forum 3

During Public Forum 3 the Recommended Preferred Alternatives were presented. The SAC provided input to the major elements of the Recommended Preferred Alternatives, which consisted of two south side transit arrangements – one with one-way traffic operations and the other with two-way traffic. These included a bus plan, servicing plan, parking plan, transit plan, site access plan, and site specific drawings for several properties. SAC members sought clarifications on many of these elements, with many comments focused on concerns about access to properties along the south side of Queens Quay, potential impacts on vehicle traffic, and issues regarding buses, taxis and cyclists. SAC members raised a number of suggestions on how these concerns could be addressed in the proposed plans.

Participants from the general public at Public Forum 3 were generally pleased with the proposed plan for Queens Quay, the landscaping designs, the pedestrian and cycling realms, and public transit. There was overall support for the South Side alternatives (Alternative Design Concepts 4 and 5). Although both South Side alternatives were technically viable, more participants supporting the two-way traffic option (Alternative Design Concept 5).

Participants felt that the proposed plan should further consider seasonal changes; that it may negatively impact access to south side users; and it may cause traffic delays and congestion.

Participants felt that the project team should start construction as soon as possible, be more creative in their design of the Queens Quay, consider access for emergency vehicles, create plans for seasonal programming including closing Queens Quay for street festival and marathons, and ensure maintenance of bike paths and the water's edge.

An extended drop-in centre was held at Harbourfront Centre on Saturday, March 28, 2009 following the Public Forum 3. It provided participants with the opportunity to meet informally and one-on-one with project team members to discuss specific questions about the evaluation process and the Recommended Preferred Alternative. At the time, there was greater support for two-way traffic operations, as it provided additional flexibility for traffic movements in and out of properties along Queens Quay.

Figure 8.7: EVALUATION MATRIX OF ALTERNATIVE DESIGN CONCEPTS DRAFT ESR

Legend

★ = Most Preferred ✓ = Moderately Preferred ● = Least Preferred x = Fail

Category	Group	Criteria	Measures	Option 1 Do Nothing	Option 2 Centre Transit	Option 4 Southside Transit: One-Way Operations	Option 5 Southside Transit: Two-Way Operations
A. Transportation	A.1. Pedestrians	A.1.1 Sidewalks	A.1.1.1 Increase in dedicated pedestrian space (percent of cross section)	● No change	★ 45%	★ 45%	★ 45%
			A.1.1.2 Sidewalk width - typical southside	● 2m	★ 4m	★ 6m	★ 6m
		A.1.2 Crossing Frequency	A.1.2.1 Number of north / south crossings (signalized/2-stage with refuge)	● 11/0	✓ 15/0	★ 17/4	★ 17/4
		A.1.3 Crossing Distance	A.1.3.1. Min , Max , Average north-south crossing distance (m)	● 21, 28.5, **24.5**	✓ 19, 24, **23**	★ 10, 22.5, **18.5**	★ 10, 22.5, **18.5**
			A.1.3.2. Number of traffic lanes to cross	● 4 - 5 plus TTC	✓ 3-4 (inc on-street bike lanes) plus TTC	★ 2 - 3 plus TTC	★ 2 - 3 plus TTC
	A.2. Transit	A.2.1. Transit Speed	A.2.1.1. Travel speed between Spadina Avenue and Bay Street (km/h)	● WB: 12 to 14 EB: 12 to 14	★ WB: 20.6 to 21.0 EB: 17.2 to 21.3	★ WB: 16.0 to 21.0 EB: 14.3 to 21.3	★ WB: 16.0 to 21.0 EB: 14.3 to 21.3
		A.2.2. Stops Frequency	A.2.2.1. Number of and distance between transit stops (min/max/avg) Spadina Avenue to Bay Street	★ 5 (215m/450m/325m)	★ 5 (215m/450m/325m)	★ 5 (215m/450m/325m)	✓ 4 (420m/450m/430m)
		A.2.3. Transit Accomodation	A.2.3.1. Accommodates existing and future planned transit service	● No	★ Yes	★ Yes	★ Yes
			A.2.3.2. Accomodates current accessible platform requirements: Minimum Platform Widths	● No 1.5m	★ Yes 2.4m	★ Yes 2.4m	★ Yes 2.4m
	A.3. Cycling	A.3.1. Bicycle Friendly	A.3.1.1. Dedicated bike route?	● No	✓ On-street Bikelanes	★ Trail	★ Trail
			A.3.1.2. Bicycle lane widths	● None	✓ 2 x 1.8m	★ 4m	★ 4m
		A.3.2. Network Connections	A.3.2.1. Links to adjacent routes?	● No	★ Yes	★ Yes	★ Yes
		A.3.3. East-West connection	A.3.3.1. Completes Martin Goodman Trail?	x No	● No (Removes 1km existing trail)	★ Yes	★ Yes
	A.4. Automobiles	A.4.1. Corridor Measures Queens Quay	A.4.1.1. Throughput Level of Service (based on speed)	✓ E	✓ D to E	✓ D	✓ D
			A. 4.1.2. Avg. travel time Spadina to Yonge AM/PM (minutes)	✓ 4.7 to 8.4	✓ 6.0 to 6.9	✓ 5.0 to 5.5	✓ 5.1 to 5.9
		A.4.2. Intersection Measures Queens Quay	A.4.2.1. Queuing - Intersections with approaches where queue lengths exceed demands for storage capacity (Spadina to Yonge)	✓ 8	✓ 8	★ 2	✓ 8
			Lower Spadina Avenue	● EBL,WBT,WBR,SBL	✓ WBT	✓ WBT, SBR	● EBL, WBT, WBR
			TTC Loop	✓ EBL, WBT	● EBL, WBR, SBL	★	✓ EBT
			EMS Access Road	/ Not signalized	✓ EBT	★	★
			Rees Street	✓ EBL, WBT	✓ EBL, EBT	★	✓ EBT
			Robertson Crescent	/ Not signalized	/ Not signalized	/ Intersection removed	/ Intersection removed
			Lower Simcoe Street	✓ WBT	✓ WBT, SBL	★	✓ WBL
			Queens Quay Terminal Access	/ Not signalized	/ Not signalized	★	✓ EBT
			York Street	✓ WBT, SBL	✓ EBT, WBT	✓ SBL	✓ EBT
			Harbour Square Access	✓ EBT	✓ EBT, WBT	/ Not signalized	/ Not signalized
			Bay Street	✓ EBL	● EBL,EBT,WBT	★	✓ EBL, SBL
			Yonge Street	✓ EBL	★	★	● EBL, EBT, WBT
			A.4.2.2. Summary Intersection Level of Service AM/PM	★-● B to F Range	★-✓ A to D Range	★-✓ A to D Range	★-✓ A to D Range
			Lower Spadina Avenue	✓/● D / F	✓/✓ D / D	✓/✓ B / D	✓/✓ C / C
			TTC Loop	★/★ B / B	★/★ A / A	★/★ B / B	✓/★ C / B
			EMS Access Drive	Not signalized	★/✓ A / C	★/★ A / A	★/★ A / B
			Rees Street	✓/✓ B / C	✓/✓ C / D	★/✓ B / C	✓/✓ C / C
			Robertson Crescent	Not signalized	Not signalized	Intersection Removed	Intersection Removed
			Lower Simcoe Street	✓/✓ C / B	✓/✓ D / D	★/★ B / B	★/✓ B / C
			Queens Quay Terminal Access Drive	Not signalized	Not signalized	★/★ A /A	★/★ B / B
			York Street	✓/● D / F	✓/✓ C / C	✓/✓ C / D	★/★ B / B
			Harbour Square Access Drive	✓/✓ C / D	✓/✓ C / D	Intersection Removed	Intersection Removed
			Bay Street	✓/✓ C / C	✓/✓ D / D	✓/✓ C / C	★/✓ B / C
			Yonge Street	✓/✓ C / C	✓/✓ C / C	★/✓ B / C	✓/✓ C / C

Figure 8.7: EVALUATION MATRIX OF ALTERNATIVE DESIGN CONCEPTS DRAFT ESR

Legend

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Category	Group	Criteria	Measures	Option 1 Do Nothing	Option 2 Centre Transit	Option 4 Southside Transit: One-Way Operations	Option 5 Southside Transit: Two-Way Operations
		A.4.3. Intersection Measures Lake Shore Blvd	A.4.3.1. Summary Intersection Level of Service AM/PM	★-● B to F Range	★-● B to F Range	★-● B to F Range	★-● B to F Range
			Lower Spadina	✓/✓ C / C	✓/✓ C / C	✓/● D / E	✓/✓ C / C
			Rees	✓/● C / F	✓/● C / F	●/● E / F	✓/● C / F
			Lower Simcoe	★/✓ B / C	★/✓ B / C	★/✓ B / D	★/✓ B / C
			York Street, Gardiner OnRamp (WB)	✓/● C / E	✓/● C / E	★/● B / E	✓/● C / E
			Bay Street (WB)	●/✓ F / D	●/✓ F / C	●/✓ F / C	●/✓ F / C
			Yonge Street (WB)	●/✓ F / D	●/✓ F / D	●/✓ F / D	●/✓ F / D
			York Street (EB)	✓/✓ C / D	★/✓ B / D	✓/● C / E	★/✓ B / D
			Bay Street (EB)	✓/● D / E	✓/✓ C / C	✓/✓ C / D	✓/✓ C / C
			Yonge Street (EB)	✓/★ C / B	★/★ B / B	★/★ B / B	★/★ B / B
	A.4. School bus and motor coach operations	A.4.1. Pick-up/drop-off facilities	A.4.1.1. Number of dedicated bus pick-up/drop-off spaces on Queens Quay	● 1 (at 1 location)	★ laybys provided to accommodate buses and other curbside activities: allocation determined in detailed design	★ laybys provided to accommodate buses and other curbside activities: allocation determined in detailed design	★ laybys provided to accommodate buses and other curbside activities: allocation determined in detailed design
	A.5. Movement of goods / servicing demands	A.5.1. Access to commerical shipping/loading entrances (delivery trucks)	A.5.1. 1. Off-street loading / unloading	✓ No change	✓ No change	✓ Access provided via Queens Quay or north-south street. Eastbound movement relies on Lake Shore Boulevard.	✓ Access provided via Queens Quay or north-south street
		A.5.2. Access to residential servicing areas (garbage trucks, repair trucks, postal trucks)	A.5.2.1. Off-street servicing	✓ No change	✓ No change	✓ Access provided via Queens Quay or north-south street. Eastbound movement relies on Lake Shore Boulevard.	✓ Access provided via Queens Quay or north-south street
OVERALL RATING - Transportation				●	✓	★	★

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Category	Group	Criteria	Measures	Option 1 Do Nothing	Option 2 Centre Transit	Option 4 Southside Transit: One-Way Operations	Option 5 Southside Transit: Two-Way Operations
B. Safety and Emergency Response	B.1. Emergency response	B.1.1. Fire, EMS and Police services	B.1.1.1. Available travel space for Fire/EMS/Police operations	★ Two way traffic operations (two lanes in each direction on both sides of transit right-of-way) sufficient width to permit emergency vehicles to bypass other traffic. Transit right-of-way accessible in emergency situations.	✓ Two way traffic operations (one lane in each direction) with on-street bike lanes on both sides of transit right-of-way. Sufficient width to permit emergency vehicles to bypass other traffic. Transit right-of-way accessible in emergency situations.	✓ One way traffic operations (two lanes westbound) requires eastbound emergency vehicles to either use Lake Shore or transit right-of-way as primary route in emergency situations. Would require transit right of way to be cleared of snow to same standard as adjacent roadway.	★ Two way traffic operations north of transit right-of-way (one lane each direction). Sufficient width to permit emergency vehicles to bypass other traffic. Transit right-of-way accessible in emergency situations.
	B.2. Safety	B.2.1. Vehicular conflict reduction	B.2.1.1. Number of transit-automobile conflict points - signalized 4-leg intersection	✓ 6 (WBL, EBL, SBL, SBT, NBL, NBT)	✓ 6 (WBL, EBL, SBL, SBT, NBL, NBT)	★ 4 (EBL, SBT, NBL, NBT)	✓ 6 (WBR, EBL, SBT, NBL, NBT, NBR)
			B.2.1.2. Number of transit-automobile conflict points - midblock access on south side	★ 2 (WBL*, NBL*) * requires u-turn	★ 2 (WBL*, NBL*) * requires u-turn	★ 2 (EBL, NBL)	✓ 4 (WBL, EBR, NBL, NBR)
			B.2.1.3. Number of transit-automobile conflict points - midblock access on north side	✓ 2 (EBL*, SBL*) * requires u-turn	✓ 2 (EBL*, SBL*) * requires u-turn	★ 0	★ 0
			B.2.1.4. Measures to reduce auto-auto conflicts	● No change	★ Reduced lanes and alignment serves as traffic calming. Controlled curbside activity reduces conflicts Reduced number of conflict points at intersections.	★ Reduced lanes and alignment serves as traffic calming. Controlled curbside activity reduces conflicts Reduced number of conflict points at intersections.	★ Reduced lanes and alignment serves as traffic calming. Controlled curbside activity reduces conflicts Reduced number of conflict points at intersections.
		B.2.2. Bicycle safety	B.2.2.1. Measures to improve separation from autos	● No dedicated bicycle facilities available.	✓ Meets bicycle standards for on-street bike lanes	★ Meets bicycle standards for off-road bike trail. Off-road trail minimizes conflict with other modes.	★ Meets bicycle standards for off-road bike trail. Off-road trail minimizes conflict with other modes.
			B.2.2.2. Measures to improve separation from pedestrians	● None	✓ Grade separation: roadway, curb, sidewalk	✓ Combination of row of trees, surface treatments, bollards	✓ Combination of row of trees, surface treatments, bollards
		B.2.3. School bus safety	B.2.3.1. Measures to improve loading/unloading	★ No change (dedicated bus loading area provided)	★ No change (dedicated bus loading area provided)	★ No change (dedicated bus loading area provided)	★ No change (dedicated bus loading area provided)
			B.2.3.2. Measures to provide off-street loading/unloading	★ Harbourfront Centre will accommodate buses destined to their facilites on-site	★ Harbourfront Centre will accommodate buses destined to their facilites on-site	★ Harbourfront Centre will accommodate buses destined to their facilites on-site	★ Harbourfront Centre will accommodate buses destined to their facilites on-site
		B.2.4. Pedestrian safety	B.2.4.1. Measures to minimize pedestrian conflicts	● No change	✓ see A.1.1	★ see A.1.1	★ see A.1.1
OVERALL RATING - Safety and Emergency Response				✓	★	✓	★

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Category	Group	Criteria	Measures	Option 1 Do Nothing	Option 2 Centre Transit	Option 4 Southside Transit: One-Way Operations	Option 5 Southside Transit: Two-Way Operations
C. Urban Design / Quality of Place	C.1 Public Realm Character	C.1.1 Signature Identity	C.1.1.1. Accomodates consistent street elements	● Limited consistency in existing street elements	★ Consistent: - Single row of trees both sides of street - on-street bike lanes - paving opportunities - tramway material opportunities	★ Consistent: - Double row of trees south/Single row north - off-street bike lanes - paving opportunities - limited tramway material opportunities	★ Consistent: - Double row of trees south/Single row north - off-street bike lanes - paving opportunities - limited tramway material opportunities
			C.1.1.2. Accomodates unique civic experience	x No. Existing street does not stand out as the City's waterfront street.	● No. Configuration's non-auto space limits opportunity.	★ Yes. Additional non-auto space provides greatest opportunity.	★ Yes. Additional non-auto space provides greatest opportunity.
			C.1.1.3. Accomodates accessible and interesting street side experience	● No. Configuration's non-auto space limits opportunity.	✓ No. Configuration's non-auto space limits opportunity.	★ Yes. Additional non-auto space provides greatest opportunity.	★ Yes. Additional non-auto space provides greatest opportunity.
			C.1.1.4. Accomodates a grand yet comfortably scaled public realm	● No. Existing non-auto space is disproportionate to pedestrian volumes	● No. Non-auto space is disproportionate to pedestrian volumes	★ Yes. Public realm is rebalanced to better serve all users	★ Yes. Public realm is rebalanced to better serve all users
			C.1.1.5. Accomodates context specific street design	● No. Existing street design is not specific to the waterfront.	✓ Yes. Available non-auto space limits opportunities.	★ Yes. Additional non-auto space provides greatest opportunity.	★ Yes. Additional non-auto space provides greatest opportunity.
		C.1.2 Microclimate	C.1.2.1. Measures to improve wind amelioration	● No measures available.	✓ Increased tree canopy	★ Greatest increase in tree canopy	★ Greatest increase in tree canopy
			C.1.2.2. Measures to improve summer shade	● No measures available.	✓ Increased tree canopy	★ Greatest increase in tree canopy	★ Greatest increase in tree canopy
		C.1.3 Visual Connectivity	C.1.3.1. Connectivity along waterfront and between attractions	● Low. Connections limited by available non-auto space.	✓ Medium - increased non-auto space.	★ High. Additional non-auto space provides greatest opportunity for landscaping (visual connections) and to connect the waterfront for all modes.	★ High. Additional non-auto space provides greatest opportunity for landscaping (visual connections) and to connect the waterfront for all modes.
	C.2. Useability	C.2.1. Accomodates special events	C.2.1.1. Capacity to accomodate special events/mimimizes impact of traffic operations	● Low. No space available for tents and kiosks without affecting roadway operations. Other special events such as parades and runs--cannot be accommodated without affecting roadway operations.	✓ Medium - increased space for tents and kiosks due to widened southside pedestrian boulevard. Other special events such as parades and runs--cannot be accommodated without affecting roadway operations.	★ High. Most space available for tents and kiosks without affecting roadway operations. Other special events such as parades and runs can be accomodated without closing all lanes of travel if Martin Goodman Trail is sufficient.	★ High. Most space available for tents and kiosks without affecting roadway operations. Other special events such as parades and runs can be accomodated without closing all lanes of travel if Martin Goodman Trail is sufficient.
		C.2.2. Accomodates variety of activities (passive/active)		● Insufficient space to accommodate wide range of recreation activities.	✓ Strolling, jogging (on sidewalk), biking (on-street)	★ Strolling, jogging and biking off-street, separated from pedestrian boulevard	★ Strolling, jogging and biking off-street, separated from pedestrian boulevard
OVERALL RATING - Urban Design / Quality of Place				●	✓	★	★

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Category	Group	Criteria	Measures	Option 1 Do Nothing	Option 2 Centre Transit	Option 4 Southside Transit: One-Way Operations	Option 5 Southside Transit: Two-Way Operations
D. Socio-Economic Conditions	D.1 Access	D.1.1. Site Access	A.4.4.1. Total number of movements to/from sites from Queens Quay (through north-south, left turns, right turns) IN / OUT	★ 33 / 34	★ 33 / 34	● 27 / 30	✓ 31 / 40
			A.4.4.2. Number of access points with net reduction in inbound movements (through north-south, left turns, right turns)	★ 0	★ 0	● -5 (390 Queens Quay - Shoppers, Robertson Crescent West, Robertson Crescent East, York Street - 77/99 Harbour Square, 55 Harbour Square)	● -4 (Robertson Crescent West, Robertson Crescent East, York Street - 77/99 Harbour Square, 55 Harbour Square)
			A.4.4.3. Number of access points with net reduction in outbound movements (through north-south, left turns, right turns)	★ 0	★ 0	● -3 (EMS/Fire, Robertson Crescent West, 55 Harbour Square)	✓ -1 (55 Harbour Square)
			A.4.4.4. Number of access points with net increase in inbound movements (through north-south, left turns, right turns)	✓ +1 (Harbourfront Centre)	✓ +1 (Harbourfront Centre)	✓ +1 (Harbourfront Centre)	★ +4 (350 Queens Quay - Beer Store/Maple Leaf Quay, 250/260/270 Queens Quay, Harbourfront Centre, 208/218 Queens Quay - Waterclub)
			A.4.4.5. Number of access points with net increase in outbound movements (through north-south, left turns, right turns)	✓ +1 (Harbourfront Centre)	✓ +1 (Harbourfront Centre)	✓ +1 (Harbourfront Centre)	★ +8 (401 Queens Quay - Harbour Terrace, 390 Queens Quay - Shoppers, 350 Queens Quay - Beer Store/Maple Leaf Quay, 250/260/270 Queens Quay, 228/230 Queens Quay - Riviera, Harbourfront Centre, 208/218 Queens Quay - Waterclub, 207-211 Queens Quay - Queens Quay Terminal)
	D.2. Retail activity	D.2.1. Accessibility	D.2.1.1. Accessibility of sites by patrons and workers coming by automobile	✓ All properties accessible from east or west via Queens Quay. All properties within 450 m of a north-south street connecting to Lake Shore Blvd. or beyond.	✓ All properties accessible from east or west via Queens Quay. All properties within 380 m of a north-south street connecting to Lake Shore Blvd. or beyond.	● Eastbound access to properties between Bathurst and York not available on Queens Quay; relies on Lake Shore Blvd. All properties within 380 m of a north-south street connecting to Lake Shore Blvd. or beyond.	✓ All properties accessible from east or west via Queens Quay. All properties within 380 m of a north-south street connecting to Lake Shore Blvd. or beyond.
			D.2.1.2. Accessibility of sites by patrons and workers coming by transit	x No service improvements to existing lines. No service expansion to East Bayfront.	★ Service improvement to existing lines. Service expansion to East Bayfront	★ Service improvement to existing lines. Service expansion to East Bayfront	★ Service improvement to existing lines. Service expansion to East Bayfront
			D.2.1.3. Accomodates high volume foot traffic	x Sidewalk area not consistent with pedestrian volumes	✓ Provides increase in sidewalk area.	★ Provides largest increase in sidewalk area.	★ Provides largest increase in sidewalk area.
		D.2.2. "Main Street" environment	D.2.2.1. Window shopping-friendly (Yes/No)	● No. No change to retail environment	✓ Yes. Non-auto space limits opportunities.	★ Additional non-auto space provides greatest opportunity.	★ Yes. Additional non-auto space provides greatest opportunity.
			D.2.2.2. Outdoor dining opportunities	● Existing configuration is limited in non-auto space	✓ Yes. Configuration is limited in non-auto space	★ Additional non-auto space provides greatest opportunity.	★ Additional non-auto space provides greatest opportunity.
		D.2.3. Retail business continuation	D.2.3.1. Number of retail businesses displaced	★ 0	★ 0	★ 0	★ 0
	D.3. Tourism impacts	D.3.1. Tourism competitiveness	D.3.1.1. Sightseeing potential	● Water view only. No improvements.	✓ Water view and improved public realm	★ Water view with improved public realm, making destination street	★ Water view with improved public realm, making destination street
			D.3.1.2. Accessibility for visitors	● East Bayfront not accessible by LRT	★ Accessible by all modes	✓ Accessible by all modes. Auto access relies on Lake Shore Boulevard for East bound movements	★ Accessible by all modes
		D.3.2. Tourism business continuation	D.3.2.1. Number of tourism-related businesses displaced	★ 0	★ 0	★ 0	★ 0
	D.4. Employment competitiveness	D.4.1 Desirable place to work	D.4.1.1. Convenient to commute to	See D.1.1	See D.1.1	See D.1.1	See D.1.1
			D.4.1.2. Recognized location	● Limited opportunity to improve recognition with no change to public realm.	★ Additional non-auto space provides opportunity to improve recognition.	★ Additional non-auto space provides greatest opportunity to improve recognition.	★ Additional non-auto space provides greatest opportunity to improve recognition.
		D.4.2. Employment continuation	D.4.2.1. Number of employment based land uses displaced	★ 0	★ 0	★ 0	★ 0
	D.5. Residential impacts	D.5.1. Living environment	D.5.1.1. Improves use and enjoyment	● Limited with no change to public realm.	★ Additional non-auto space provides opportunity to improve recognition.	★ Additional non-auto space provides greatest opportunity.	★ Additional non-auto space provides greatest opportunity.
			D.5.1.2. Noise levels	★ Lowest overall levels, with no improvements to the East Bayfront	✓ Options 2, 4 and 5 yield similar results.	✓ Options 2, 4 and 5 yield similar results.	✓ Options 2, 4 and 5 yield similar results.
			D.5.1.3. Vibration levels	★ Lowest overall levels, with no improvements to the East Bayfront	✓ Options 2, 4 and 5 yield similar results.	✓ Options 2, 4 and 5 yield similar results.	✓ Options 2, 4 and 5 yield similar results.
		D.5.2 On-street Parking	D.5.2.1. Number of on-street parking spaces	● 0	✓ laybys provided to potentially accommodate parking: allocation determined in detailed design	✓ laybys provided to potentially accommodate parking: allocation determined in detailed design	✓ laybys provided to potentially accommodate parking: allocation determined in detailed design
		D.5.3. Residential continuation	D.5.3.1. Number of residential units displaced	★ 0	★ 0	★ 0	★ 0
OVERALL RATING - Socio-Economic Environment				**x**	✓	★	★

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E. Natural Environment	E.1. Terrestrial habitat	E.1.1. Vegetation	E.1.1.1. Number of Trees (approximately)	● 90, but in highly stressed conditions/various levels of health. Not likely to reach maturity.	✓ 200	★ 300	★ 300
			E.1.1.2. Growing conditions / soil volume	● Does not meet City guidelines of 30 cubic metres per tree (existing approx. 1 to 4 cubic metres).	✓ Improved growing environment meeting City guidelines of min. 30 cubic metres per tree. Restricted to one row of trees on south side.	★ Improved growing environment meeting City guidelines of min. 30 cubic metres per tree. Continuous root zone between two rows of trees on south side.	★ Improved growing environment meeting City guidelines of min. 30 cubic metres per tree. Continuous root zone between two rows of trees on south side.
		E.1.2. Habitat	E.1.2.1. Density of Tree Canopy	● 10 percent coverage	✓ 25 percent coverage	★ 35 percent coverage	★ 35 percent coverage
	E.2. Air Quality	E.2.1. Impact on Air Quality	E.2.1.1. Promote Alternative modes of travel	● No change	✓ Improves pedestrian facilities, transit service and cycling facilities	★ Greatest improvements to pedestrian facilities, transit service and cycling facilities	★ Greatest improvements to pedestrian facilities, transit service and cycling facilities
			E.2.1.2. Increase in CO2 and Particulates	● No change	✓ Good opportunity to increase non-auto trips and improve tree canopy will reduce CO2 and particulates	★ Greatest opportunity to increase non-auto trips and improve tree canopy will best reduce CO2 and particulates	★ Greatest opportunity to increase non-auto trips and improve tree canopy will best reduce CO2 and particulates
	E.3. Water Quality	E.3.1. Stormwater management	E.3.1.1. Collection and treatment	● none	✓ minimum soil volume for treatment	★ maximum soil volume for treatment	★ maximum soil volume for treatment
	E.4. Soils	E.4.1. Hazardous materials	E.4.1.1. Contaminant exposure	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results
OVERALL RATING - Natural Environment				●	✓	★	★
F. Cultural Environment	F.1. Built Heritage Features	F 1.2. Preservation of/celebration of built heritage features	F 1.2.1. Number of Built Heritage Features directly impacted	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results
			F 1.2.2. Opportunities to enhance Heritage features	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results
	F.2. Cultural Landscapes	F 2.1. Cultural landscapes affected	F 2.1.1. Preservation of cultural landscapes within the study area	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results
		F 2.2. Opportunities to enhance cultural landscapes	F 2.2.1. Opportunities to enhance cultural landscape	● No change	✓ Good but not unique cultural landscape	★ Unique cultural landscape	★ Unique cultural landscape
	F.3. Archaeological Features	F 3.1. Archaeological features affected	F 3.1.1. Effect on potential archaeological features	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results
	F.4. First Nations Peoples and Activities	F 4.1. Adverse effects to land and resources used for traditional purposes	F 4.1.1. Hectares of land used for traditional purposes affected	0	0	0	0
OVERALL RATING - Cultural Environment				●	✓	★	★
G. Cost	G.1. Capital Costs	G 1.1. Minimizes construction costs	G.1.1.1.Cost	★ Typical life-cycle cost replacement costs	✓ Alternatives yield similar results	✓ Alternatives yield similar results	✓ Alternatives yield similar results
OVERALL RATING - Cost				★	✓	✓	✓

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Category	Group	Criteria	Measures	Option 1 Do Nothing	Option 2 Centre Transit	Option 4 Southside Transit: One-Way Operations	Option 5 Southside Transit: Two-Way Operations
H. Land Use Plans and Policies	H.1. Adheres to City Policies and By-Laws	H.1.1. Waterfront Secondary Plan	H.1.1.1. Improved connections	● Existing condition poorly satisfies Policy	✓ North south/east west conditions improved. Satsifies Policy.	★ Greater improvement of north sout/east west connections. Best satisfies Policy.	★ Greater improvement of north sout/east west connections. Best satisfies Policy.
			H.1.1.2. Scenic waterfront drive	x No opportunity to satisfy Policy	✓ Improved street design will satisfy Policy	★ Unique street design will provide best opportunity to satsify Policy	★ Unique street design will provide best opportunity to satsify Policy
			H.1.1.3. Martin Goodman Trail	x No opportunity to satisfy Policy	x No opportunity to satisfy Policy	★ Provides best opportunity to satisfy Policy.	★ Provides best opportunity to satisfy Policy.
			H.1.1.4 .Network of parks and open spaces	x No opportunity to satisfy Policy	Improved pedestrian environment will help connect parks and other public space improvements. Satsifies Policy.	★ Linear park street design will connect parks and public spaces improvements along corridor. Best satsifies Policy.	★ Linear park street design will connect parks and public spaces improvements along corridor. Best satsifies Policy.
			H.1.1.5. Transit First	● Existing condition poorly satisfies Policy	★ Improved transit will satisfy Policy	★ Improved transit will satisfy Policy	★ Improved transit will satisfy Policy
		H.1.3 Toronto Pedestrian Charter	**H.1.3.1. Comfortable and convenient walkability**	x No opportunity to satisfy Policy	✓ Improved pedestrian environment satsifies Policy	★ **Much larger and greater improvement to pedestrian** environment best satsifies Policy	★ **Much larger and greater improvement to pedestrian** environment best satsifies Policy
		H.1.4. Toronto Bike Plan	H.1.4.1. Safe and friendly bike environment	x No opportunity to satisfy Policy	✓ On-Street Bike Lanes satisfies Policy	★ Martin Goodman Trail best satisfies Policy	★ Martin Goodman Trail best satisfies Policy
		H.1.5. Our Common Grounds	H.1.5.1. Tree canopy coverage of 35%	x No opportunity to satisfy Policy	x No opportunity to satisfy Policy	★ Additional row of trees provides opportunity to satsify Policy	★ Additional row of trees provides opportunity to satsify Policy
			H.1.5.2. Street-tree longevity	x No opportunity to satisfy Policy	✓ Improved growning environment increases opportunity to satisify Policy	★ Improved growning environment vastly increases opportunity to satisify Policy	★ Improved growning environment vastly increases opportunity to satisify Policy
		H.1.6. City of Toronto Official Plan	H.1.6.1. Zoning conformance	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results
			H.1.6.2. Land Use	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results
			H.1.6.3. Density	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results	Alternatives yield similar results
			H.1.6.4. Moving People Instead of Vehicles	● No change in pedestrian space. No bicycle facilities.	★ More pedestrian space. Improved transit. New bike facilities.	★ More pedestrian space. Improved transit. New bike facilities.	★ More pedestrian space. Improved transit. New bike facilities.
			H.1.6.5. City Streets are Public Spaces	● No expanded non-auto area.	✓ Widened sidewalks.	★ Linear park street design and enhanced pedestrian realm.	★ Linear park street design and enhanced pedestrian realm.
OVERALL RATING - Land Use Plans and Policies				x	✓	★	★

8.2 Preferred Alternative Design Concept

Based on input received since Public Forum 3 from stakeholders and the public, the study team further assessed Alternative Design Concepts 4 and 5 to identify the Preferred Alternative Design Concept. Stakeholder and public comments received on the Recommended Preferred Alternatives are documented in the Public Consultation Summary Report included in Appendix A of this Environmental Study Report.

The final evaluation involved comparing the Recommended Preferred Alternatives, which consisted of two south side transit arrangements – one with one-way traffic operations and the other with two-way traffic operations. The objective was to identify a final Preferred Alternative Design to be carried forward to the assessment of Environmental Impacts and Mitigation.

The one-way and two-way scenarios have similar benefits in terms of Natural Environment, landscaping and streetscape opportunities. Both also have similar costs, benefits to the Cultural Environment and meet the overall Official Plan and Central Waterfront Secondary Plan objectives for the area. Where the alternatives differ are in the way stakeholders perceive one-way operations in terms of socio-economic impacts and in network flexibility.

While unique urban design, street and landscaping can serve as mitigation, residents, businesses and users of the waterfront provided input that one-way operations could create the perception of a traffic route rather than a complete neighbourhood main street. This may serve to deter visitors and traffic from the area.

While all Alternative Design Concepts reduce the total number of lanes from the existing four lanes to two, the Traffic and Transit Operations Analysis determined that both options provide for improved overall level-of-service (in terms of traffic delays) on Queens Quay compared to the Centre Transit alternative and existing conditions. Today, the four-lane section effectively operates as a two-lane road, with illegal stopping and standing taking up the curb lanes. Both the One-way and Two-way options have dedicated areas for curbside activity and improvements to traffic signal operations, that allow for improved and better overall intersection performance compared to the Centre Transit alternative and existing conditions.

The two-way alternative offers greater network flexibility than the one-way. Most one-way streets are located within a dense urban grid with many alternate routes; an incident on one adjacent route should not have a significant impact on properties with access from the one-way street. Queens Quay is the most southerly street adjacent to the Inner Harbour. Disruption caused by an incident on an adjacent route would make those properties along Queens Quay more susceptible to access disruptions.

The two-way alternative offers greater network continuity than the one-way. The one-way operations are proposed for the segment between either Bathurst Street or Lower Spadina Avenue and York Street, resulting in a break in the network continuity for eastbound motorists. Of concern are the potential for more circuitous travel patterns and an increased risk of wrong-way travel.

From the perspective of emergency response, the two-way alternative provides a higher degree of access to the properties along Queens Quay. Toronto Fire Services considers the auto travel lanes in the public street, as the primary response route to all emergencies. With the one-way option fire vehicles would be unable to travel east to emergency incidents along Queens Quay (the primary response route). Toronto Fire Services cannot consider the dedicated transit right-of-way as a primary access route but rather a secondary route that may or may not be free of all barriers (ie. Snow & ice build up or street cars). The two-way option is preferred from an emergency access perspective, as it permits access to all properties along Queens Quay from both the east and west.

In conclusion, the South Side transit with two-way operations is the Preferred Alternative Design Concept. In the two-way alternative, the benefits of improving the public realm can be achieved with an innovative urban design character, improved transit and traffic operations and with access to all properties. The technical evaluation of the three short listed alternatives—in concert with information gained through the public consultation process—indicate a strong preference for this alternative.

9 Description of Preferred Design

The purpose of this chapter is to elaborate on the preferred design.

The evaluations of four Alternative Planning Solutions and five Alternative Design Concepts concluded with the selection of South Side Transit with Expanded Public Realm and Two-way Operations as the Preferred Design. The result was arrived at through rigorous analysis, with open and continuous engagement with stakeholders, agencies and the public.

The design supports the principles and policies for the Central Waterfront described in the Toronto Official Plan and Central Waterfront Secondary Plan. Most importantly, its users will be better served – the plan accommodates recreational, transit, bicycle, pedestrian and auto traffic, both locally on Queens Quay and system wide, while enhancing landscape features and the public realm within the Queens Quay corridor between Bathurst Street and Parliament Street.

9.1 General Arrangement

Figure 9-1 – Rendering of Preferred Design

The Preferred Design, illustrated in Figure 9-1, Figure 9-2 and Figure 9-3, reconfigures the street by locating all traffic lanes north of the Light Rail Transit (LRT) right-of-way. Pedestrian and bicycle facilities would be provided on the southern side of Queens Quay where the existing eastbound lanes are located. Sidewalks would be provided on both sides of the street.

The south side transit arrangement will be implemented from just west of Spadina Avenue to Parliament Street. The segment of Queens Quay from Bathurst Street to Spadina Avenue will remain in the existing arrangement in the Preferred Design. Today, the street in this section includes centre-running transit with one westbound and one eastbound lane on the north and south sides of the LRT right-of-way.

The transition from centre to south side transit will occur between Yo-Yo Ma Lane and Spadina Avenue. The eastbound lane will cross over the LRT right-of-way just west of Spadina Avenue and connect adjacent to the westbound lane. This will require a traffic signal to control the eastbound auto movements over the tracks. The traffic control would affect eastbound traffic, which would only need to stop when there is an LRT vehicle

crossing. Westbound traffic does not cross the tracks and would not be affected by the traffic signal. The transition is illustrated in the plans provided at the end of this chapter.

As a part of the TTC track maintenance program, there is a long-term commitment to rehabilitate the LRT track work and right-of-way from Bathurst Street to Spadina Avenue, beyond Yo-Yo Ma Lane. At that time, Waterfront Toronto, the City and TTC can study the potential to extend a south side transit configuration in this segment.

Design Considerations

The South Side configuration is an atypical design in Toronto. The design requires mixing zones through intersections where cyclists and pedestrians must interact, protected right-turns for autos over the TTC right-of-way and a contra flow condition where eastbound autos will face opposing westbound auto and street car traffic on either side of the lane. During the design stage, the project team will work closely with the City, TTC, Fire and Emergency Services and stakeholders to devise a design that addresses these issues.

Moreover, to ensure that all possibilities for design improvements are explored, commitment has been made to retain an independent firm to conduct a detailed safety audit of the recommended design. The safety audit will assess potential cumulative effects of the physical design and operating strategies for TTC streetcars, Fire Services vehicles and general traffic.

The following sections provide a description of the features of the Preferred Design.

Figure 9-2: Typical Section and Plan of Preferred Design

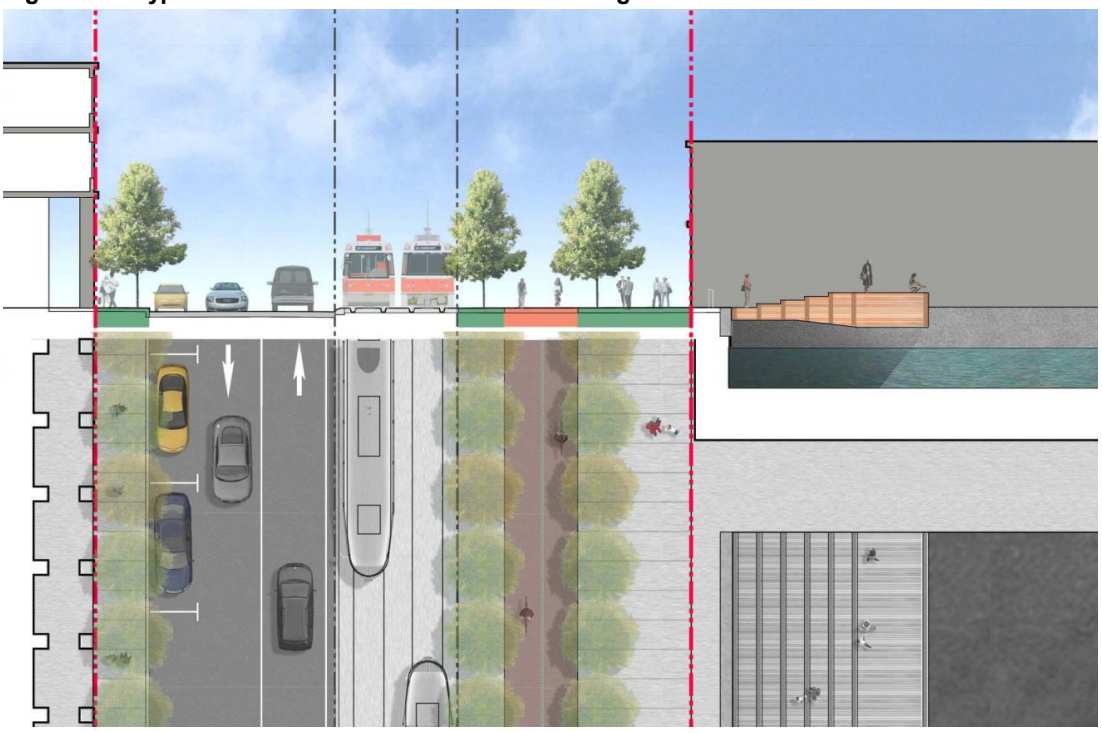
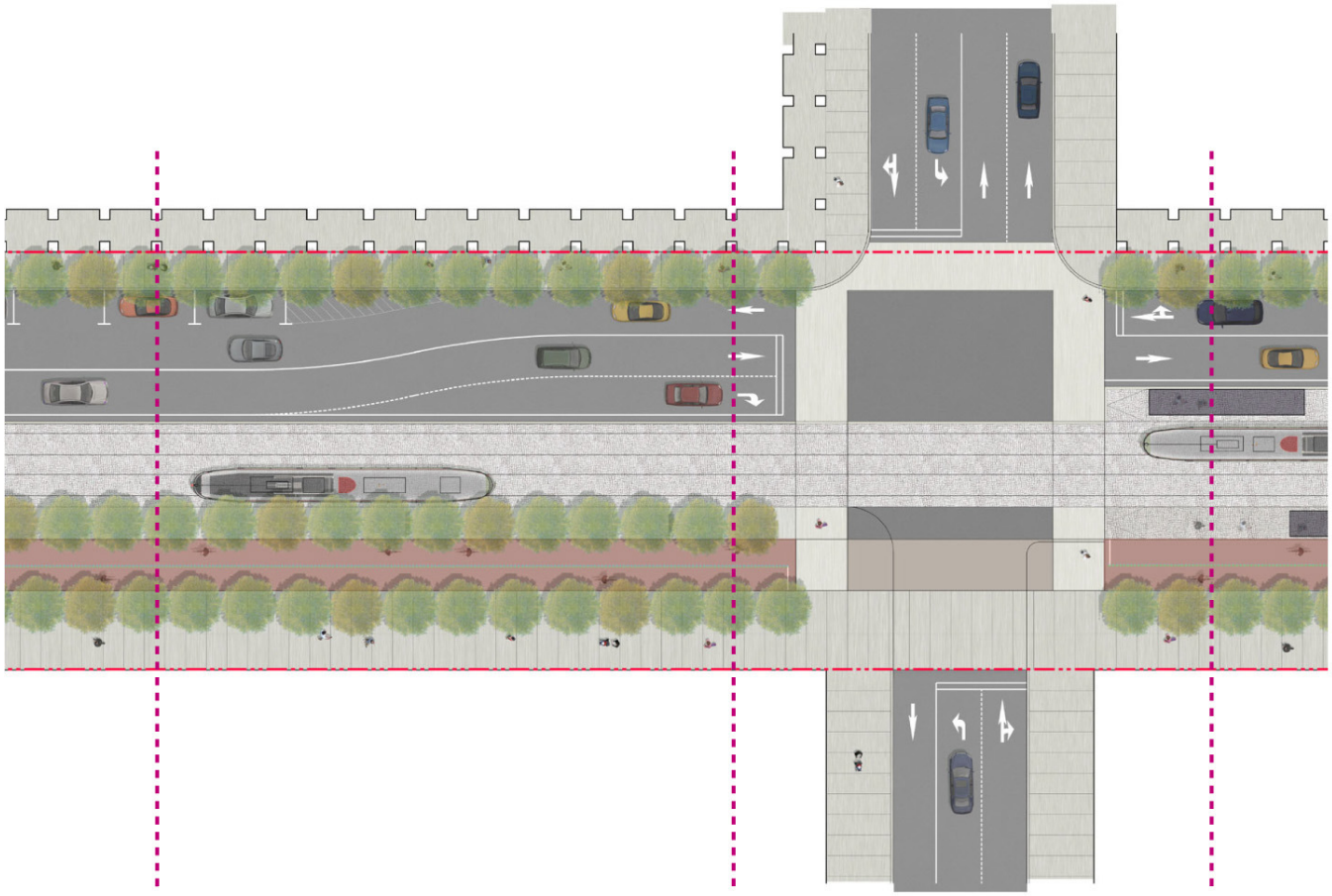


Figure 9-3: Typical Intersection Plan of Preferred Design



Midblock
10m roadway curb to curb
2.1m parking lane
7.9m clear driving lane
1.0m separation between roadway and TTC
7.0m TTC Right-of-Way
2.4 to 3.0m Landscape Zone
4.0m Martin Goodman Trail
Sidewalks vary both sides

Intersection
10m roadway curb to curb
3m EB right turning lane, 3.5 m thru-lane
1.0m separation between roadway and TTC
7.0m TTC Right-of-Way
2.4 to 3.0m Landscape Zone
4.0m Martin Goodman Trail
Sidewalks vary both sides

Intersection w/ Platform
7.6m maximum roadway curb-to-cur
2.4m minimum TTC platform, 30m l
7.0m TTC Right-of-Way
2.4 to 3.0m Landscape Zone
4.0m Martin Goodman Trail
Sidewalks vary both sides

9.2 Pedestrian Realm

9.2.1 System Changes

The Preferred Design introduces additional signalized intersections along Queens Quay, providing increased crossing frequencies and improved access to the water's edge. With the addition of new traffic signal controlled crossings at the Fire/EMS/HtO entrance (located between Rees Street and Lower Spadina Avenue) and the new Queen's Quay Terminal crossing, the average crossing spacing is reduced from 360 metres to 205 metres. Figure 9-4 illustrates the overall pedestrian network that is made possible with the Preferred Design.

9.2.2 Design Features

One feature of the Preferred Design – reducing the number of auto through lanes to two and relocating them to the north side of the LRT right-of-way – has a positive impact for north-south pedestrian crossings and the overall walkability of the area. The average pedestrian crossing of Queens Quay is reduced by approximately 40 percent from 24 metres to 17 metres. The shorter north-south crossing distance provides additional east-west green time for movements (including pedestrian) along Queens Quay.

East-west movement is also improved with a wide and generously landscaped pedestrian boulevard on the south side of the LRT right-of-way. The Preferred Design considers pedestrian-accessible spaces along the streets in weather-protected colonnades and arcades as part of the boulevard. This is a similar strategy used in Toronto and many European cities to expand the walkable portions of the street.

The pedestrian realm is further expanded with the landscape zone separating the Martin Goodman Trail and the sidewalk. The zone is intended for trees and plantings, but it will integrate with the sidewalk providing additional space to pedestrians. While expanded, the south pedestrian boulevard will remain in the same general location, still providing access to adjacent land uses, including storefronts, residential entrances, connections to the waterfront and the new public heads of slips (now under construction). The north curb (and thus the pedestrian boulevard) will remain in its existing location with local adjustments where required.

The sidewalk does not include the Martin Goodman Trail, but it should also be noted that the Martin Goodman Trail is a mixed use trail for cyclists, inline skaters, pedestrians and other forms of active transportation.

The fully dedicated pedestrian boulevards on both sides of the street will vary in width, simply due to inconsistencies in the right-of-way dimension. In the existing built-up segment, Queens Quay varies from 21 to 30.5 metres. In the more constrained portions of the street, the minimum sidewalk width would be similar to existing conditions, between two to three metres. However, in the less constrained segments of the street, the typical south side pedestrian boulevard will become a generous six metres. Combined with the allowance for the Martin Goodman Trail and the dedicated landscape zone between the TTC right-of-way and the Trail, the distance pedestrians are from moving vehicles is considerable. Figure 9-3 and Figure 9-6 illustrate the general sidewalk configuration.

Figure 9-4: Pedestrian System Plan

Existing Pedestrian Facilities

9 north-south signalized crossings

Maximum distance between: 450m

Average distance between: 280m

Proposed Pedestrian Facilities

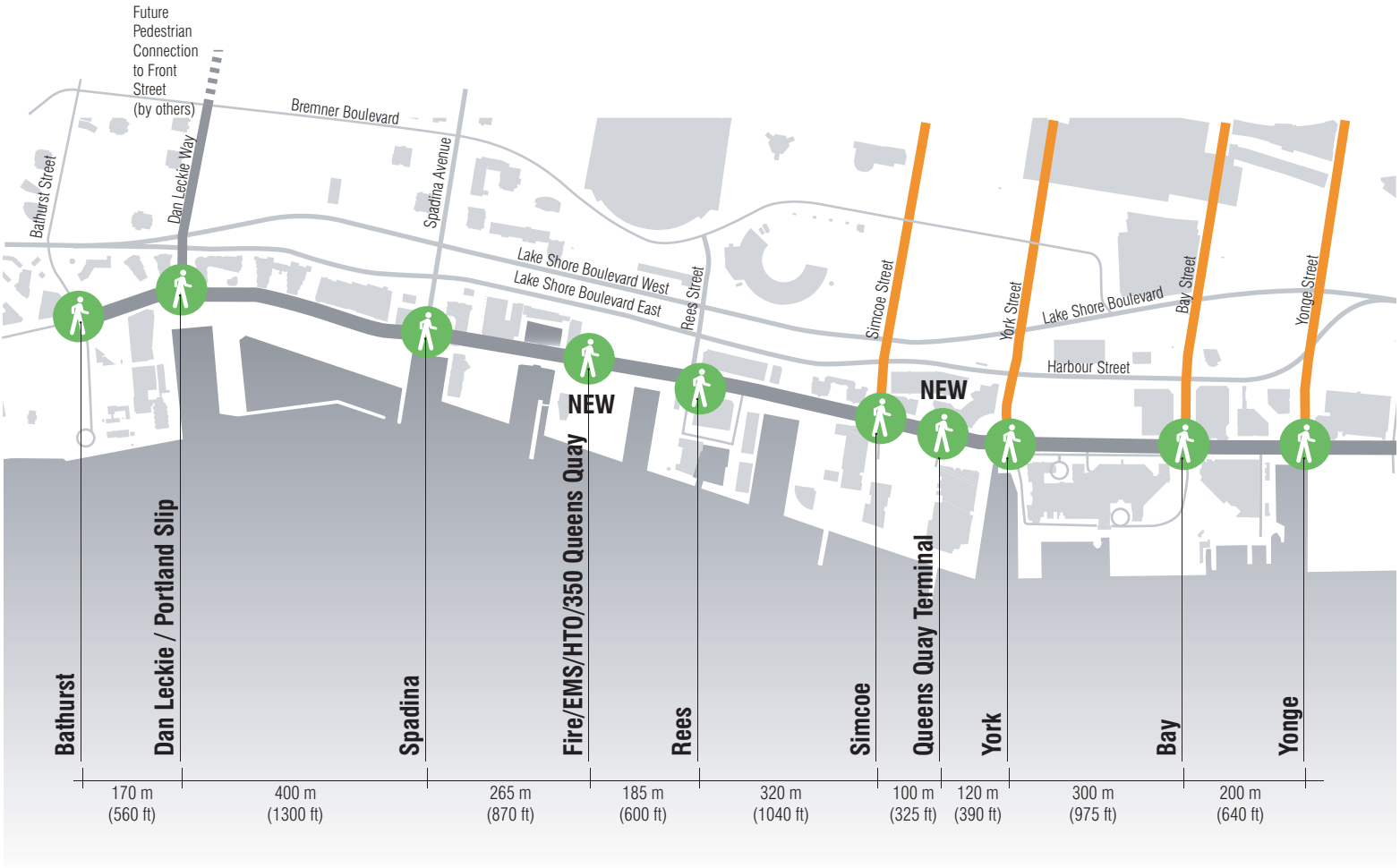
10 north-south signalized crossings

Maximum distance between: 400m

Average distance between: 225m

Signalized Crossing

Pedestrian Promenades (by others)



Toronto Inner Harbour

Not to Scale

9.2.3 Issues for Detailed Design

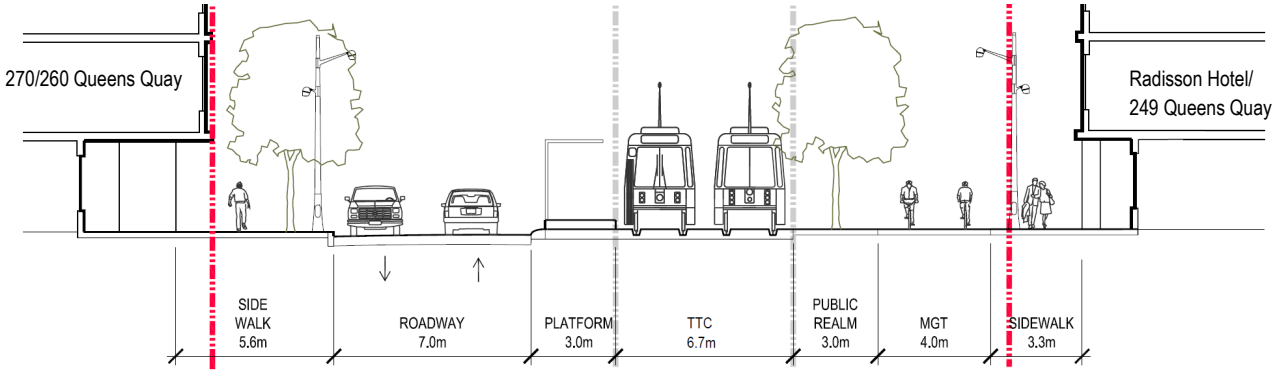
Balancing Sidewalk Dimensions

The functional plans for this EA were prepared at a planning level of detail. Cross section elements (e.g., lane widths, LRT right-of-way widths, Martin Goodman Trail widths, two rows of trees on the south side) were generally kept to standard and constant dimensions. A result of using standard elements is sidewalk widths are understated while other elements may be overstated in the functional plans. Through Detailed Design, the cross sections will be adjusted where necessary. There is flexibility to make adjustments – such as reducing the number of trees from two rows to one on the south side, balancing sidewalk dimensions between the north side and south side and making local reductions and shifts in the LRT right-of-way and lane widths – to further improve sidewalk dimensions. The project team will continue to improve the sidewalk design at the following locations:

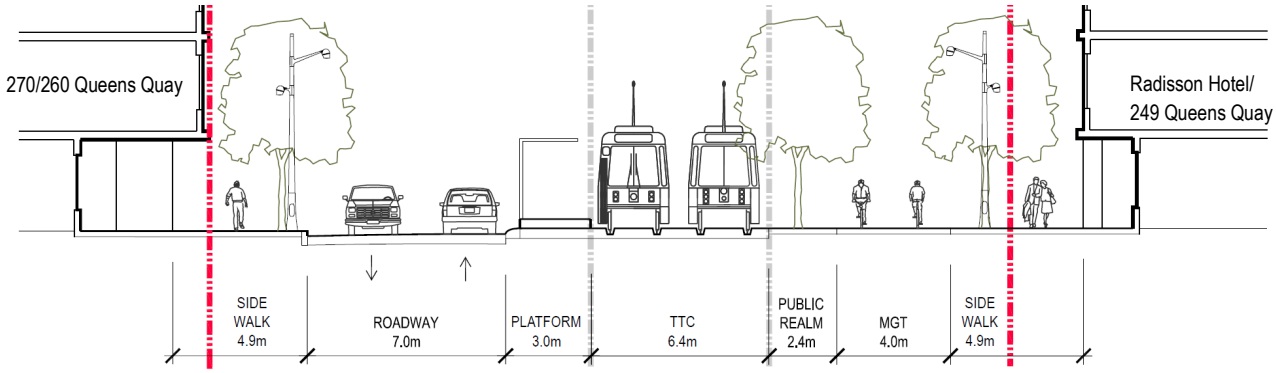
- 410/401 Queen Quay
- 390/370/350 Queens Quay
- 270/260/249 Queens Quay (Radisson Hotel)
- 230/228 Queens Quay
- 208 Queens Quay
- 33 Harbour Square

Figure 9-5 illustrates how the cross section in front of the Radisson Hotel elements can be modified.

Figure 9-5: Example - Functional Plan vs. Potential Detailed Design Refinements

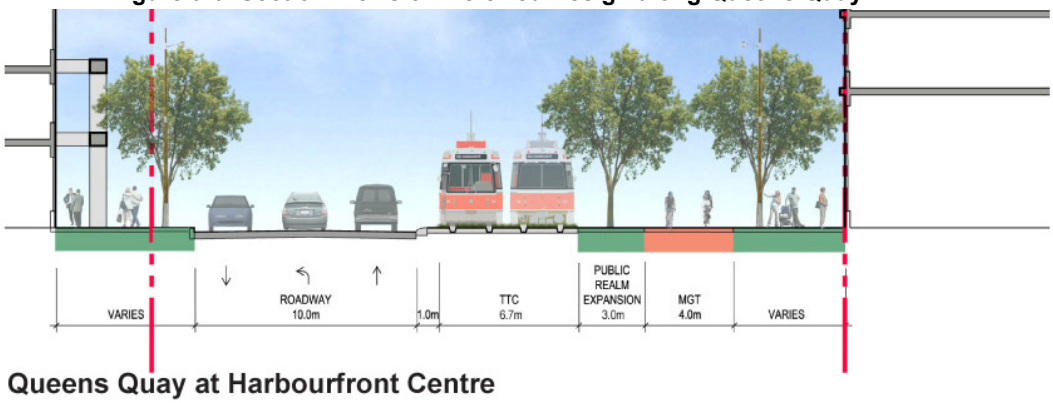


260 Queens Quay / Radisson - Current Proposal

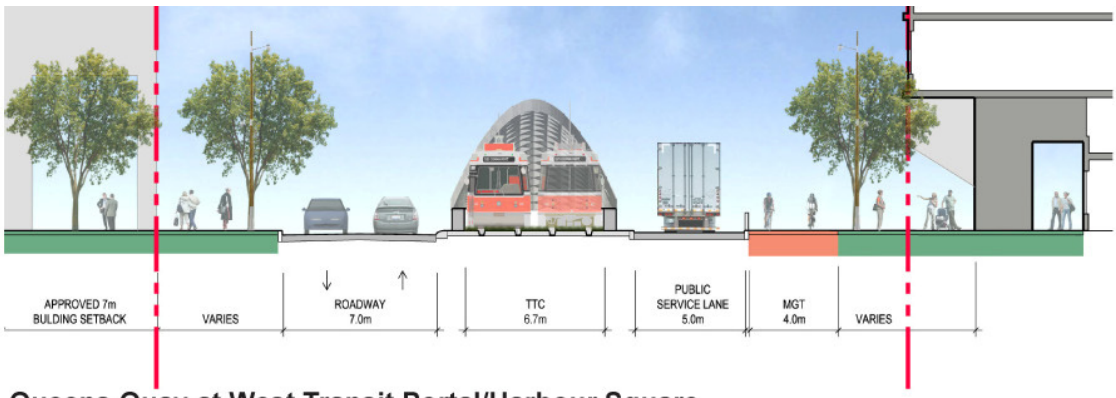


260 Queens Quay / Radisson - Adjusted for Detailed Design

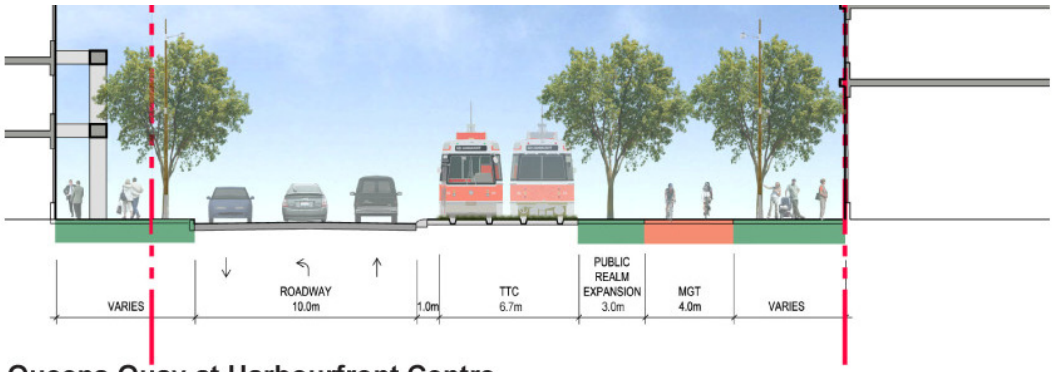
Figure 9-6: Section Views of Preferred Design along Queens Quay



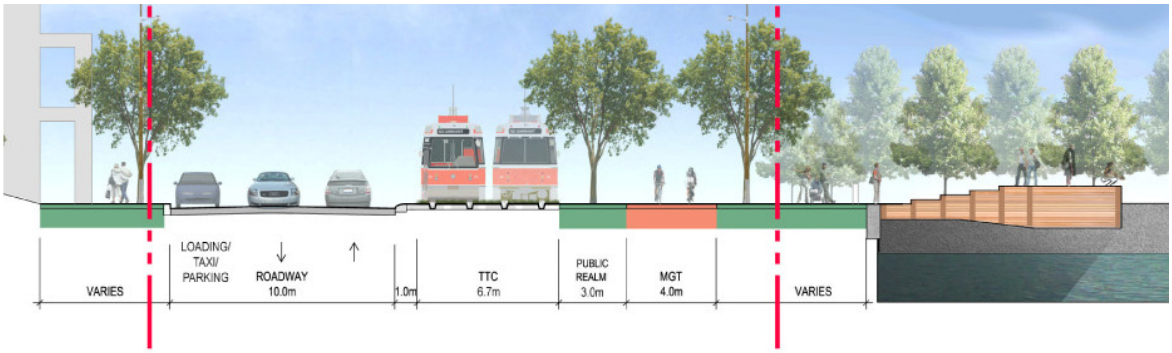
Queens Quay at Harbourfront Centre



Queens Quay at West Transit Portal/Harbour Square



Queens Quay at Harbourfront Centre



Queens Quay at Simcoe Slip

Traffic Signal Cycle Length

The South Side configuration requires increasing the traffic signal cycle lengths to 120 seconds to promote transit priority. This would generally translate into additional delay for pedestrians crossing north/south. Toronto Transportation Services is moving towards 120 second cycle lengths in other parts of the City. The cycle length was discussed and agreed to by City of Toronto Transportation Services.

The 120 second cycle lengths could be reduced during higher pedestrian volumes during times such as weekends and special events where transit ridership is more discretionary based and less commuter based. It would be possible to reduce the east-west cycle length at all times; however, this should be considered on balance as it would reduce the level of service for all east-west movements.

An optimal signal program will be devised in detailed design.

Mixing Zones

At intersections, sidewalk and Martin Good Trail traffic come together at what has been termed “mixing zones”. (Refer to Figure 9-3). For these areas, a signage plan would need to be devised to ensure cyclist yield to pedestrians. The mixing areas allow pedestrians to cross the street from north of the trail creating a shorter north-south crossing distance, in addition to calming bicycle traffic through the intersection.

Wayfinding

The project team will work with the City to identify the appropriate control markings and posted signs to safely guide and inform the study area. The transit right-of-way will be visually integrated with the landscape, Martin Goodman trail and pedestrian areas. The careful selection of signage, finishes and materials to distinguish the transit right-of-way, together with a safety audit (to be undertaken in detailed design), will be essential to a safe and user-friendly pedestrian experience.

9.3 TTC Light Rail Transit (LRT) Right-of-way (ROW)

Southside transit is an innovative approach and while there are hybrid versions of the one proposed built in other places around the world it is an atypical configuration for Toronto. A series of mitigating measures to ensure safety have been considered and will be studied in greater detail during design specifically for the unique set of traffic and transit interactions inherent in the south side transit alternative.

9.3.1 System Changes

The Preferred Design requires a unique signal priority system, which includes extending traffic signal cycles to 120 seconds, to operate as modelled throughout the EA and to meet future transit demand. It entails LRT vehicles running within the same east-west traffic signal phases as east-west auto traffic. This phasing strategy reduces the total number of phases required at intersections and promotes transit priority with more green time given to transit.

Other changes include the removal of the signalized intersection at Harbour Square. There is a benefit to LRT speeds and reliability with increased green time allotted to east-west movements and less signalized intersections to stop at.

In the preferred design, the stops at Lower Simcoe Street and York Street/Harbour Square are consolidated to a single location at the Queen’s Quay Terminal entrance. This provides additional space to accommodate sidewalks, landscaping and a continuous Martin Goodman Trail through the York Quay area, all without substantial property requirements. In addition, the consolidation of stops accommodates a turn lane connecting to the new Simcoe Street underpass of the rail berm into downtown. The consolidation results in stop

Figure 9-7: Transit System Plan

Existing Transit

2 LRT routes, 7 stops

Average stop spacing: 310m

Platforms: 1.5m by 30m

Proposed Transit

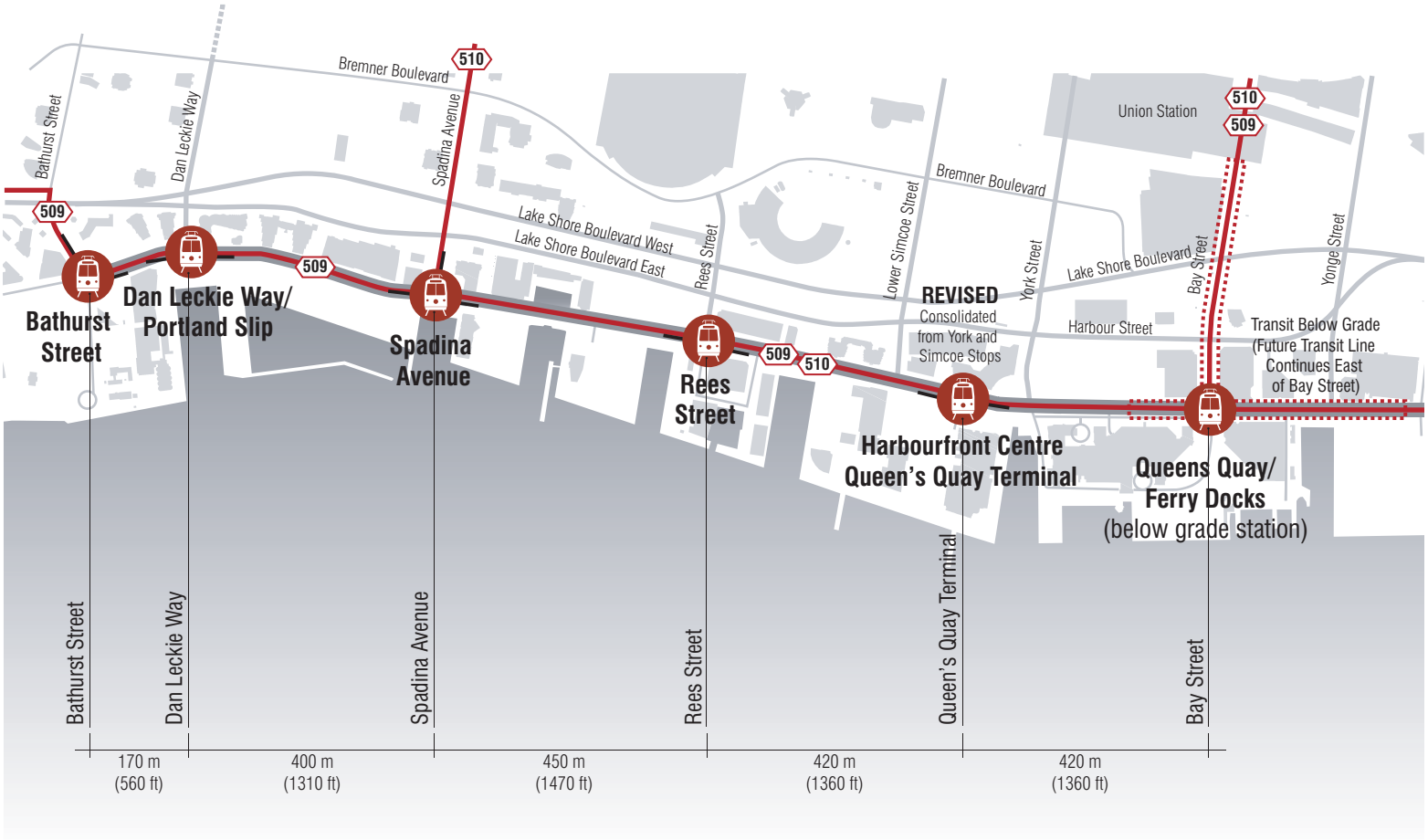
2 LRT routes, 6 stops

Average stop spacing: 370m

Platforms: 3m by 30m

Transit Stops

555 TTC Route Numbers



Toronto Inner Harbour

Not to Scale

spacing between 170 and 450 metres. Walking distance to area attractions from the stop would still be well-served with walking distances less than 300 metres. Passengers would board and alight at a new stop, located at the less than 100 metres to the east of Lower Simcoe Street. Figure 9-7 illustrates the overall transit improvements proposed for Queens Quay within the study area.

A traffic signal would be required at the Queen's Quay terminal access to provide pedestrian access to the stop from the north and to provide a controlled crossing of transit right-of-way for autos. The traffic signal spacing—approximately 100 metres—from Simcoe Street to York Street, would limit transit speeds and reliability through this section of Queens Quay.

A new LRT line on Queens Quay that is included as a part of the Preferred Design for the TTC-TWRC East Bayfront Transit EA will compliment this existing LRT service. The new line will provide service between Union Station and the future Lower Don Lands communities via East Bayfront. It will be below grade within the existing Bay Street tunnel and surface on Queens Quay through a portal just east of Yonge Street.

9.3.2 Design Features

In the Preferred Design, the TTC LRT right-of-way would generally remain in its current location, but the auto traffic lanes will be relocated so that the LRT right-of-way will be positioned on the south side of the road.

The required rehabilitation of the right-of-way will be coordinated with the overall construction of the Preferred Design, allowing for local shifts in the LRT tracks where necessary to minimize property impacts and accommodate the various public realm improvements of the plan.

The TTC right-of-way will be approximately 6.3 metres wide at midblock. TTC Transit City guidelines recommend right-of-way widths of about 6.6 metres, but this includes curbs on both sides of the right-of-way. The right-of-way proposed in the Preferred Design is directly adjacent to 2.4 to three metre landscape zone, which serves as a buffer between the LRT vehicles and bicycle trail. This zone would incorporate the 0.3 metre curbs.

The TTC platforms would accommodate the proposed larger low-floor LRT vehicles, providing improved accessibility for all users and more efficient operations. The existing narrow platforms will be replaced with platforms that are approximately 2.4 metres wide. This will promote accessibility, while providing the necessary space for street furniture, including shelter, railing and off-vehicle proof of payment system to improve passenger loading. A rendering illustrating the proposed platform is shown in Figure 9-8.

Figure 9-8: Concept for Improved TTC Transit Platform

The key benefit of the south side arrangement is the perception that transit is located off-street and within the public realm. The TTC right-of-way itself affords an opportunity to further improve the quality and character of the public realm. Currently the track bed is poured in place concrete. Alternative materials may be considered in detailed design, including unit pavers or reinforced turf to accommodate vehicle access.

The existing tracks on Queens Quay will be replaced with the current standard of track technology, which included:

- Continuously welded rail eliminates the use of rail joints, providing a smooth operation;
- Rubber sleeve isolates rail from concrete and helps reduce noise and vibration.

This new technology also increases life of rails to over 25 years and reduces the need for regular track maintenance.

9.3.3 Issues for Detailed Design

Signal Spacing

The additional traffic signal between Lower Simcoe and York Streets creates a traffic signal spacing of approximately 100 metres between the signals. During detailed design, further study will be necessary to optimize transit performance through these intersections.

Portal Opening

An opportunity exists to improve the design of the portal openings for both the existing and future transit lines. During the final round of public consultation, an initial concept (shown in the figure below) was presented to add a lattice-like wooden canopy over the portal openings. This canopy would relate to other structures already constructed and proposed as part of the larger waterfront revitalization efforts. Beyond its aesthetic appeal, the portal canopy would provide a better light level transition for transit vehicles as they pass between street level and the tunnel below grade. During the detailed design phase, the project team will continue to assess concepts that might go into the design of the new eastern transit portal (as proposed in the East Bayfront Transit EA) and maybe retrofitted into the existing western transit portal between Bay Street and York Street.

Figure 9-9: Concept for Portal Canopy (showing the new eastern portal)

Special Track Work

One area that would require the relocation of tracks on Queens Quay is at the Spadina Avenue and the Spadina Loop. The tracks may be relocated to the south in order to accommodate the three-lane road cross section and sidewalks. At Spadina Avenue and the Spadina Loop, there is special track work to allow the 510 streetcar to turn between Queens Quay and Spadina Avenue. The special track work would need replacing in the event that the main Queens Quay tracks are relocated in this area.

9.4 Martin Goodman Trail

9.4.1 System Changes

The Martin Goodman Trail will provide connections to proposed or established bicycle facilities at Dan Leckie Way, Lower Spadina Avenue, Rees Street, Lower Simcoe Street, Bay Street, Yonge Street and Bremner Boulevard. The proposed bicycle network for the area is provided in Figure 9-11.

Figure 9-10: Rendering of Martin Goodman Trail

9.4.2 Design Features

Arrangement from Bathurst Street to Spadina Avenue

West of the Study Area, the Martin Goodman Trail takes the form of on-street bike lanes on Queens Quay beginning from Stadium Road. At Yo-Yo Ma Lane, the on-street lanes transition to an off-street trail. The eastbound bike lane will exit onto an off-street trail south of the LRT tracks, where the eastbound auto traffic lane crosses the LRT right-of-way, just east of Yo-Yo Ma Lane. Westbound cyclists will access on-street bike lanes from the off-street trail, via the signalized intersection at Spadina Avenue.

The long-term TTC maintenance program includes rehabilitation of the LRT right-of-way and tracks on Queens Quay between Bathurst and Spadina. At that time, Waterfront Toronto, TTC and the City of Toronto will consider converting the on-street bike lanes to an off-street trail on the south side of the LRT right-of-way.

Figure 9-11: Bicycle System Plan

Existing Bicycle Facilities

No Bike Facility between Spadina to Yonge

On Street Bike Lanes: Stadium to Spadina

Proposed Bicycle Facilities

Complete Queens Quay Bike Facility

On-Street: Stadium to Spadina

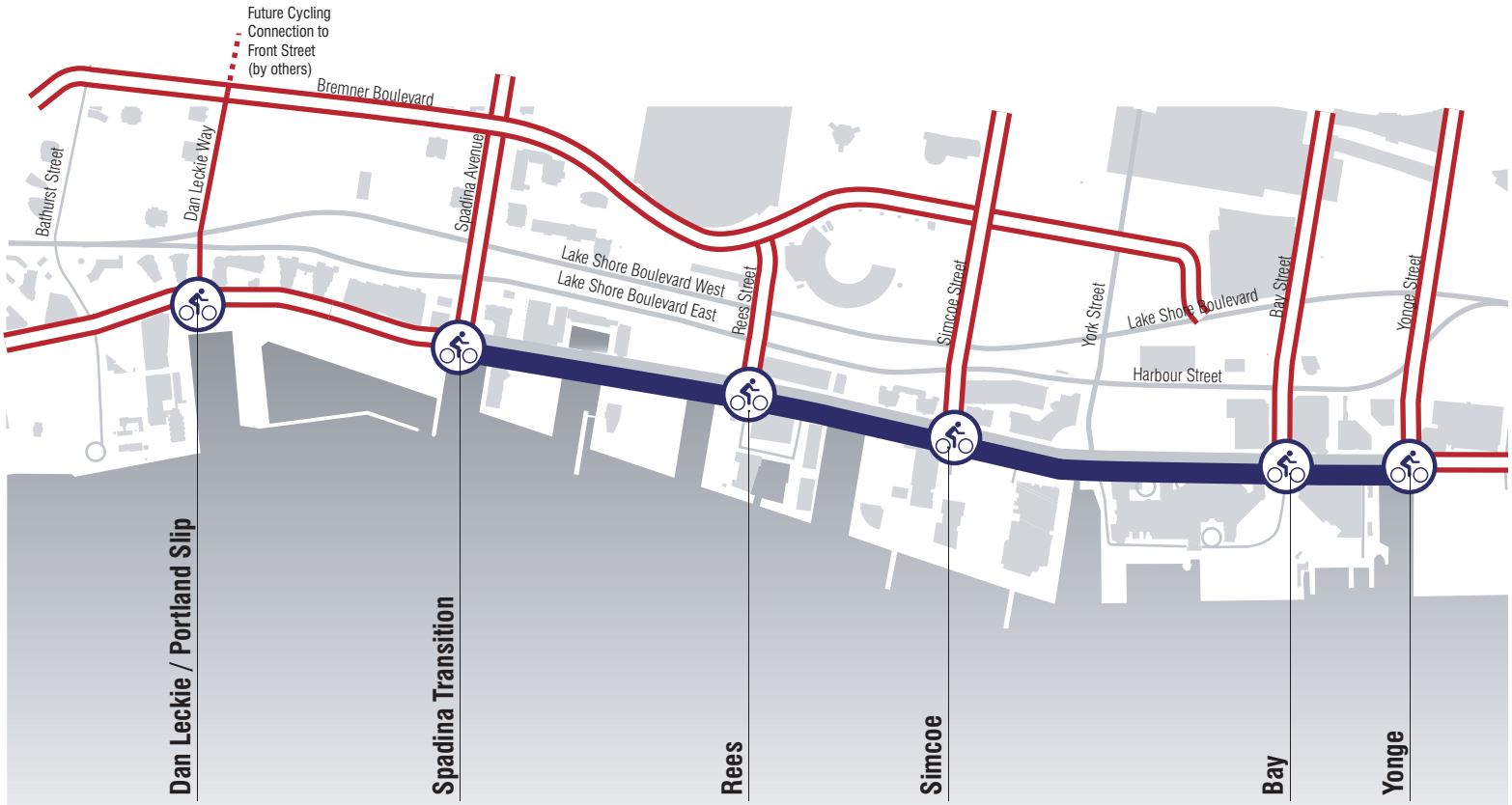
Off-Street: Spadina to Yonge

Major Cycling Connection

Martin Goodman Trail (off-street)

On-Street Bike Lane (by others)

Cycling Route (by others)



Toronto Inner Harbour

Not to Scale

Cross Section

Framing the Martin Goodman Trail will be a row of trees on both sides. As shown in Figure 9-10, one row will separate the TTC right-of-way from the trail; the other will define the edge between the trail and the pedestrian boulevard. Although pedestrians are permitted to use the Martin Goodman Trail, it will be primarily for non-pedestrian movement and activities. The trail will be between 3.6 and four metres wide, the approximate width of two standard bike lanes.

9.4.3 Issues for Detailed Design

Cross Section Width

There are locations along Queens Quay where it will be difficult to accommodate the Martin Goodman Trail at an optimum 4-metre width. Design techniques for demarcating the separation of the Martin Goodman Trail and the adjacent TTC right-of-way and pedestrian areas will also need to vary.

Cyclists who prefer to use the roadway can continue to do so, as they are legally entitled. As such, the travel lanes on the roadway will need to be designed to standard widths to accommodate mixed traffic operations.

Coordination with North-South Bike Routes

Several north-south City of Toronto bike routes intersect with Queens Quay. These routes further connect the downtown and city-at large with the waterfront. One tasks for the next phase is to design these intersections to safely accommodate the expected increase in cyclist activity.

Mixing Zones – Control Strategy / Interaction with Other Modes

As discussed in the pedestrian section of this chapter, at intersections, sidewalk and Martin Good Trail traffic come together at what has been termed “mixing zones”.

Consistent with other multiuse trails in the City, cyclists would be required to yield to pedestrians and slower moving users (e.g., children on bikes, inline skaters) on the Martin Goodman Trail. The movements on the trail will also need to be coordinated with the traffic signals along Queens Quay to allow trail users to safely cross intersections and entrances. Features such as separate cycling controls at intersections may be considerations during the design and implementation stage of the project, as will a comprehensive way-finding and signage program. Bollards and “cattle gates” to calm traffic on the trail are other features that may be considered as a part of the traffic control strategy to be undertaken during detailed design.

9.5 Road Network

9.5.1 System Changes

The auto traffic lanes, westbound and eastbound will be located on the north side of the LRT right-of-way. This is a critical feature in the Preferred Design as it opens up space on the street to accommodate all users. There will be an expanded pedestrian realm, improved and more accessible transit amenities and a continuous off-street trail.

Today the four-lane section of Queens Quay effectively operates as a two-lane road, with illegal stopping and standing taking up the curb lanes. The Preferred Design reduces the number of through lanes on Queens Quay from four to two. With dedicated areas for curbside activity and improvements to traffic signal operations, overall intersection performance in the future will compare more favourably than the “do-nothing” scenario.

The Preferred Design was also refined in consultation with Stakeholders to ensure that site-specific issues such as access were addressed. The Preferred Design provides access to all properties on Queens Quay.

Access

While the Preferred Design includes consolidation of access points for sites on the south side of Queens Quay, any affected property presently has multiple entrances on Queens Quay. Currently Queens Quay properties are served by a total of 29 access points, consisting of eight direct north-south connections to downtown (Bathurst, Dan Leckie, Rees, Lower Simcoe, York and Bay) and 21 Queens Quay only (mid-block) access/egress points. As shown in Figure 9-12, the Preferred Design provides a total of 28 access points, consisting of eight direct north-south connections to downtown and 17 Queens Quay only access/egress points.

The south side arrangement also requires consolidation or a change in turning movements at several entrances to properties located on the south side of Queens Quay; that is, due to a limited street right-of-way either a left turn or right turn is provided for access to the properties, not both. Where consolidation is required, direct access from a major north-south arterial – Rees Street, Lower Simcoe Street, and York Street – is provided. The South Side configuration changes access for the south side properties/areas, as turning movements into these sites require dedicated traffic signal phases and lanes with the transit right-of-way located south of the road travel lanes. Changes are discussed in detail in Section 9.7 and in the functional design plates included at the end of this chapter.

North side properties are provided enhanced access in the Preferred Design. Currently, there are turn restrictions to some properties on the north side due to the LRT right-of-way. With all auto traffic lanes located north of tracks in the Preferred Design, both right and left turn movements would be available at all north side entrances.

Further, additional connections to the wider downtown street network are being **proposed in processes separate from this EA study** at Dan Leckie Way, and new north-south street connections opposite the EMS/HTO Park entrance and just west of the Gardiner Expressway/York Street ramp. The sites along Queens Quay will have access to these new connections, providing a higher degree of mobility for all properties. An access plan is provided in Figure 9-12 and additional discussion on individual site access is provided in Section 8.7. **It is important to note that clearance to proceed with the implementation of these additional connections is <u>not</u> being sought as a part of the Queens Quay Revitalization EA.**

9.5.2 Design Features

Midblock Arrangement

At midblock, the curb-to-curb width of the roadway pavement structure would be approximately ten metres. This will allow for one through lane per direction and one lane for turning movements near intersection approaches or for curbside activity (e.g. parking, loading). As illustrated in Figure 9-3, the through lanes would measure 3.5 metres wide and the curbside activity or turn lanes would measure three metres.

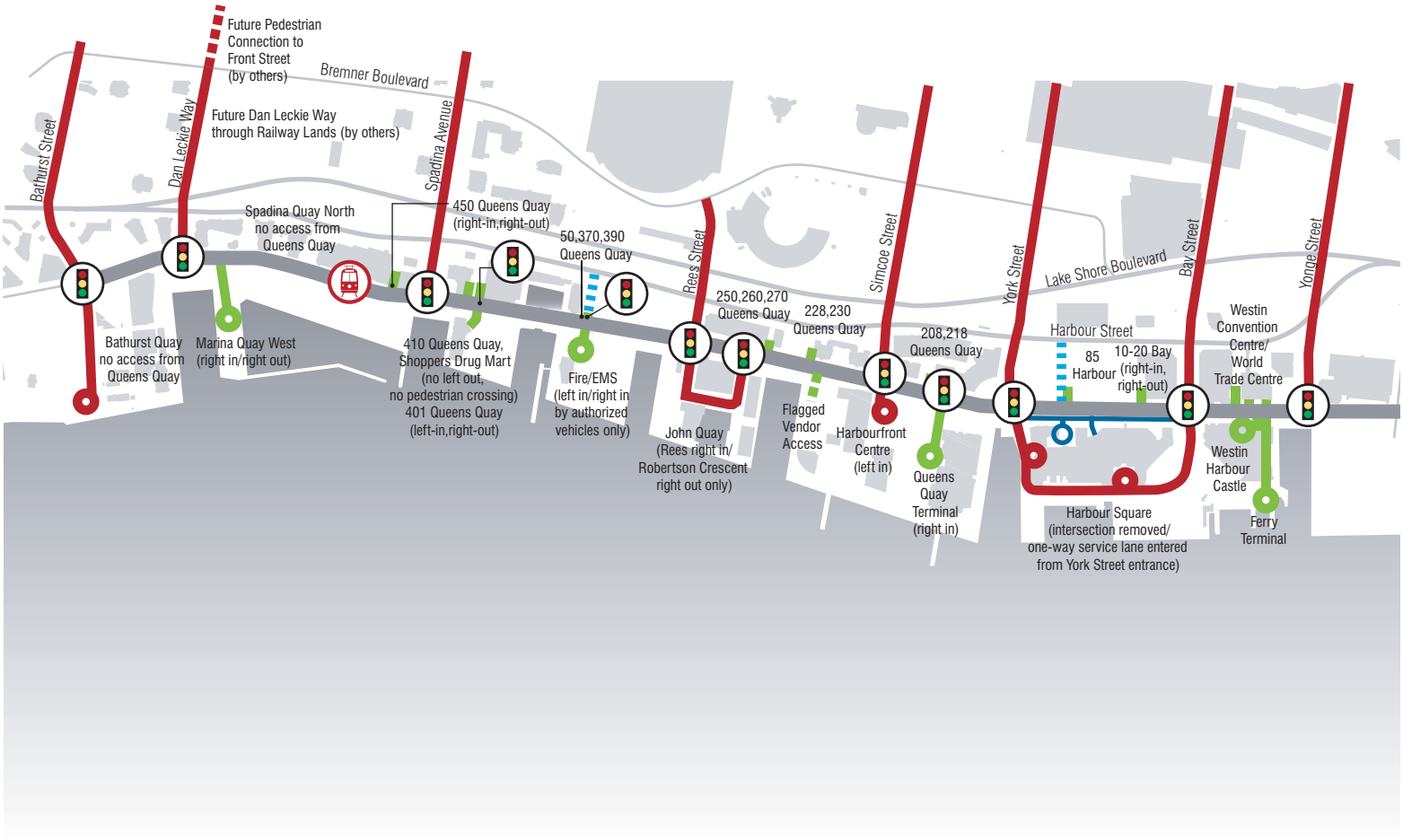
Figure 9-12: Access System Plan

Existing Road Network

- 8 Direct Downtown Access
- 21 Queens Quay Access Only
- 10 Signalized Intersection

Proposed Road Network

- 8 Direct Downtown Access
- 17 Queens Quay Access Only
- 1 Flagged Access from Queens Quay
- 1 Public Lane (Harbour Square Only)
- 2 Potential North-South Connection
  (Subject to further study. Location conceptual only)
- 11 Signalized Intersection
- 1 Transit Priority Signal



Not to Scale

Entrances and Intersection Arrangement

To provide more efficient transit operations along Queens Quay, the LRT vehicles will run on the same traffic signal phases as east and westbound auto traffic. Further enhancing transit operations, signalized intersections will be programmed and coordinated to optimize the east-west transit operations. To minimize conflicts between auto and LRT traffic, separate lanes and traffic signal control are required for all turn movements across the tracks into the properties to the south. While these modifications will change the operations at all entrances and intersections, all sites will retain access.

Due to geometric and property constraints and in keeping with promoting transit priority, each intersection will be limited to one dedicated turn only to south side properties, by either a westbound left or eastbound right. Westbound lefts are proposed for intersections where there would be no LRT stops (Bay, York, Lower Simcoe, EMS/HtO Park, 401 Queens Quay/Shoppers). If a stop is present (Rees, Queen's Quay Terminal Driveway), eastbound rights in the shadow of the platform are proposed. These modifications would require some traffic to reroute to Lake Shore Boulevard.

Access to properties on the north side of Queens Quay would either be by signalized turn movements or permissive turn movements (for those properties located away from signalized intersections). U-turn movements into the north side properties would no longer be required.

Most sites have direct access from north south streets that extend beyond the Lake Shore corridor (Rees, Lower Simcoe, York, Bay), relieving the demand on Queens Quay to handle all movements. The relocation and consolidation of the TTC stops from Lower Simcoe and York Street to Queen's Quay Terminal provides for turning movements to and from downtown at Lower Simcoe.

The functional plans included at the end of this chapter (Plates 9-1 to 9-7) indicate the turning movements available at each intersection along Queens Quay.

Intersection Traffic Signal Control

The traffic signal phasing strategy would be modified to accommodate certain unique features of the Preferred Design. One modification would permit LRT movements to run during the same phases as east-west traffic. This optimizes the east-west phases for all modes, providing for more efficient east-west operations.

In addition, all movements over the LRT tracks will need to be controlled by a traffic signal, to minimize conflicts between auto traffic and LRT vehicles. For this purpose, additional traffic signals would be required at the Fire/EMS station driveway, and Queen's Quay Terminal driveway. The traffic signal at the mid-block intersection of Harbour Square would be removed with the access being consolidated with other access points of the site. The unsignalized entrance at the Robertson Crescent entrance would also be modified. All inbound movements would need to take place at Rees Street and the Robertson Crescent access would be converted to outbound (northbound right-turn) only.

Additional discussion on individual site access is provided in Section 9.7. Additional discussion on traffic signal control is provided in the Traffic and Transit Operations Report (Appendix E).

9.5.3 Issues for Detailed Design

Traffic Signal Control

The project team will work with the City and TTC to further refine and coordinate the necessary traffic signal controls and transit priority along the corridor. The signals will be input to the larger citywide traffic control system.

The spacing of the traffic signals between Lower Simcoe and York Streets is approximately 100 metres. At posted speeds greater than 50 km/h, there is a safety concern that with close spacings, drivers can interpret a traffic signal further downstream as the one immediately ahead. During detailed design, methods such as the installation of optically focused traffic signal heads (so that downstream traffic signals are not visible to drivers) and reducing the current posted speed of 50 km/h may be considered, subject to the recommendations of a safety audit.

Road Geometry

The road geometry will be further developed, including appropriate curb radii, storage lengths for turning lanes and loading bays, and investigate if any opportunities exist to refine lane dimensions.

With a reduction in through lanes from four to two, the curbside areas dedicated to on-street bus and service loading, together with the curbside management plan (being studied by the City outside of this EA process) will be essential in reducing illegal stopping and standing, and maintaining traffic flow on Queens Quay.

Wayfinding

The project team will work with the City to identify the appropriate traffic control markings and posted signs to safely guide and control vehicular movement through the study area. A Waterfront scale vehicular wayfinding system should be developed, with trailblazers along the Gardiner Expressway and Lake Shore Boulevard and district-level signs within the waterfront to help direct visitors to their intended destination. Pedestrian scale directional and information signs could support the vehicular–oriented system as part of the larger wayfinding program.

Turning Movements Over Transit Right-of-Way

Fully protected right turns over the TTC right-of-way will be required in the South Side configuration. Protected right turns do exist and are governed by the same rules as dedicated left turns, but are not typical of Toronto intersections. The project team will consult with the City, TTC and other stakeholders to ensure the road geometry, signals and wayfinding devised for these movements are effective in controlling the turns.

Auto-Transit Contra-Flow

The south side transit arrangement creates a “contra-flow” condition, whereby eastbound traffic would be travelling between westbound traffic and westbound transit. Adequate lane widths will be provided and the additional physical separation between eastbound traffic and westbound transit will be studied during detailed design as required by City Council and subject to the recommendations of a safety audit.

9.6 Curbside Management Plan

A feature of the Preferred Design arrangement is that it provides additional dedicated space, typically in the form of lay-bys to accommodate curbside activity such as short term bus loading, auto parking and service loading, as shown in Figure 9-13. The spaces will be provided outside of the travel way. Dedicated lay-bys can be provided in the vicinity of Spadina Avenue, Rees Street, York Street, Bay Street and Yonge Street.

A Preliminary Curb Management Plan was devised as part of this EA, focusing on curbside opportunities for short-term bus drop-off and pick-up on Queens Quay and the north-south street approaches. In addition, the plan proposes several locations for bus lay-by facilities and taxi stands.

Figure 9-13: Curbside Management System Plan

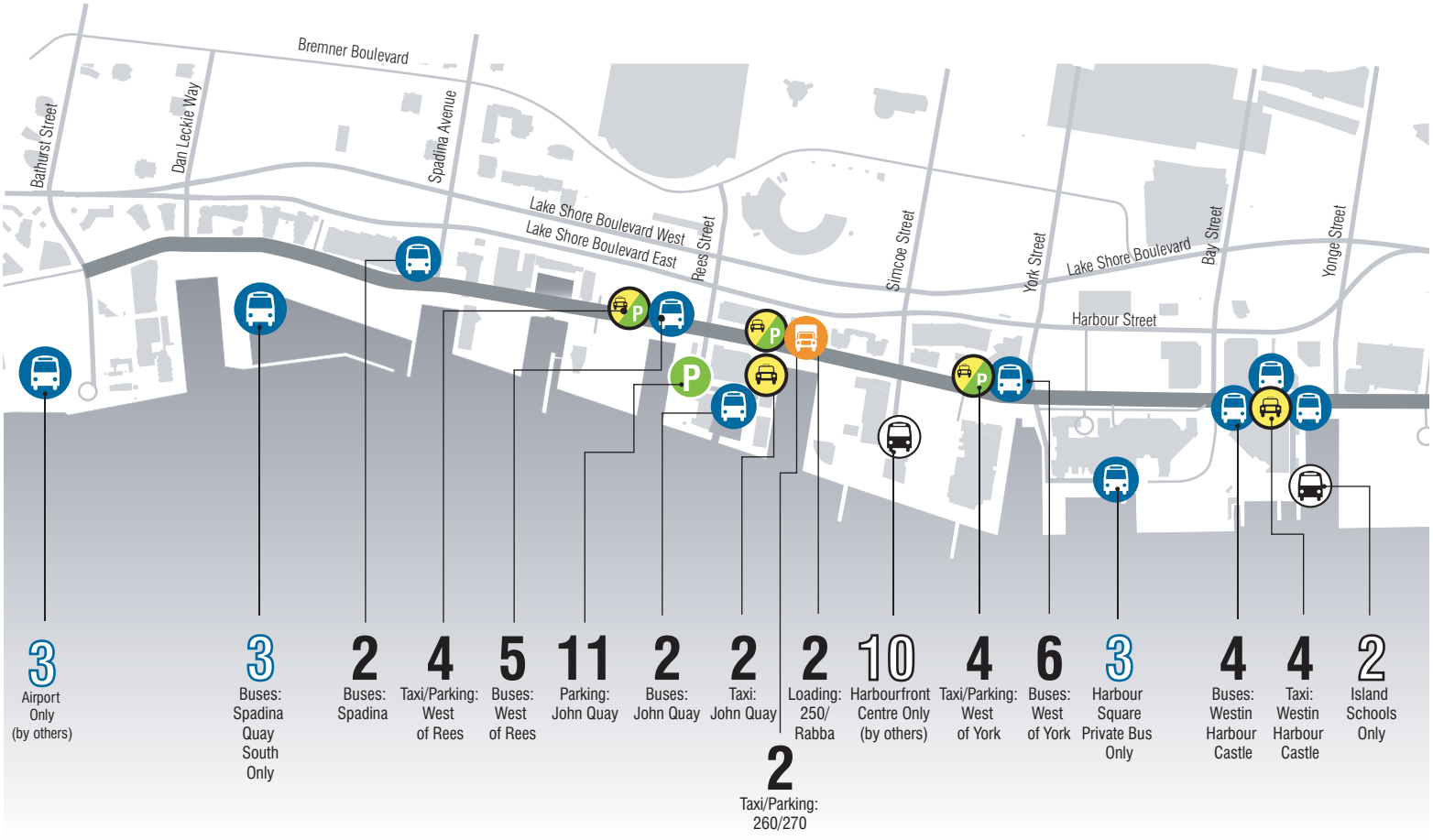
Existing Curbside Management

4	Dedicated Bus Drop-Off/Pick-Up
10	Dedicated Taxi Spaces
0	Service Loading Zones
11	Parking On-Street
4780	Parking Off-Street

Potential Curbside Management

19	Dedicated Bus Drop-Off/Pick-Up
8	Dedicated Taxi Spaces
11	Parking On-Street
10	Taxi/On-Street Parking
2	Service Loading Zones (available for drop off/pick up)

- Bus Drop-Off/Pickup & Hop-On/Hop-Off
- School Bus Drop-Off/Pickup
- Taxi Stands
- On-Street Parking (John Quay only)
- Taxi/On-Street Parking (to be determined)
- Service Loading Zones
- #/# On Queens Quay/Off Queens Quay



Toronto Inner Harbour

Not to Scale

9.7 Individual Site Access and Features

As discussed in Section 0 both the westbound and eastbound lanes will be relocated to the north side of the TTC right-of-way, changing the operations of several entrances to properties on Queens Quay. All properties on the north side will be provided with signalized or permissive access from Queens Quay without requiring turning movements (including u-turns) over the TTC right-of-way. All entrances to south side properties between Spadina Avenue and Yonge Street would require modification and traffic signal control so that all movements made across the tracks into the south side properties are made during protected phases. This is necessary to separate LRT operations from turning movements across the tracks and to minimize conflicts. All properties will retain access to and from Queens Quay.

The following is a description of the modifications made to access at specific properties along Queens Quay.

9.7.1 401 Queens Quay

401 Queens Quay (also known as Harbour Terrace) is a condominium residence located on the east side of the Spadina Slip. Access to the pick-up/drop-off area in front of the lobby entrance and access to the building's underground parking structure is provided by one driveway in the existing condition.

Access to and from 401 Queens Quay is limited to right-in, right out access from/to the eastbound lanes.

Changes to Access and Egress

The number of movements in and out of the site is maintained in the Preferred Design. The property would be accessed from the westbound lanes of Queens Quay (i.e., with a westbound left). Egress to Queens Quay from the site would be unchanged – traffic would make a northbound right to exit the site.

The change in inbound access would require eastbound traffic to access the site from Rees Street via Lake Shore Boulevard or Bremner Boulevard. Westbound traffic would access the site directly from Queens Quay. Potential access routes from Lake Shore Boulevard and Gardiner Expressway are illustrated in Figure 9-14.

Changing the inbound movement to the site from eastbound right to westbound left creates sufficient space to provide for an expanded and more walkable public realm and to allow for an off an off-street Martin Goodman trail to be extended through the area.

9.7.2 Fire/Emergency Medical Services (EMS) Station Entrance

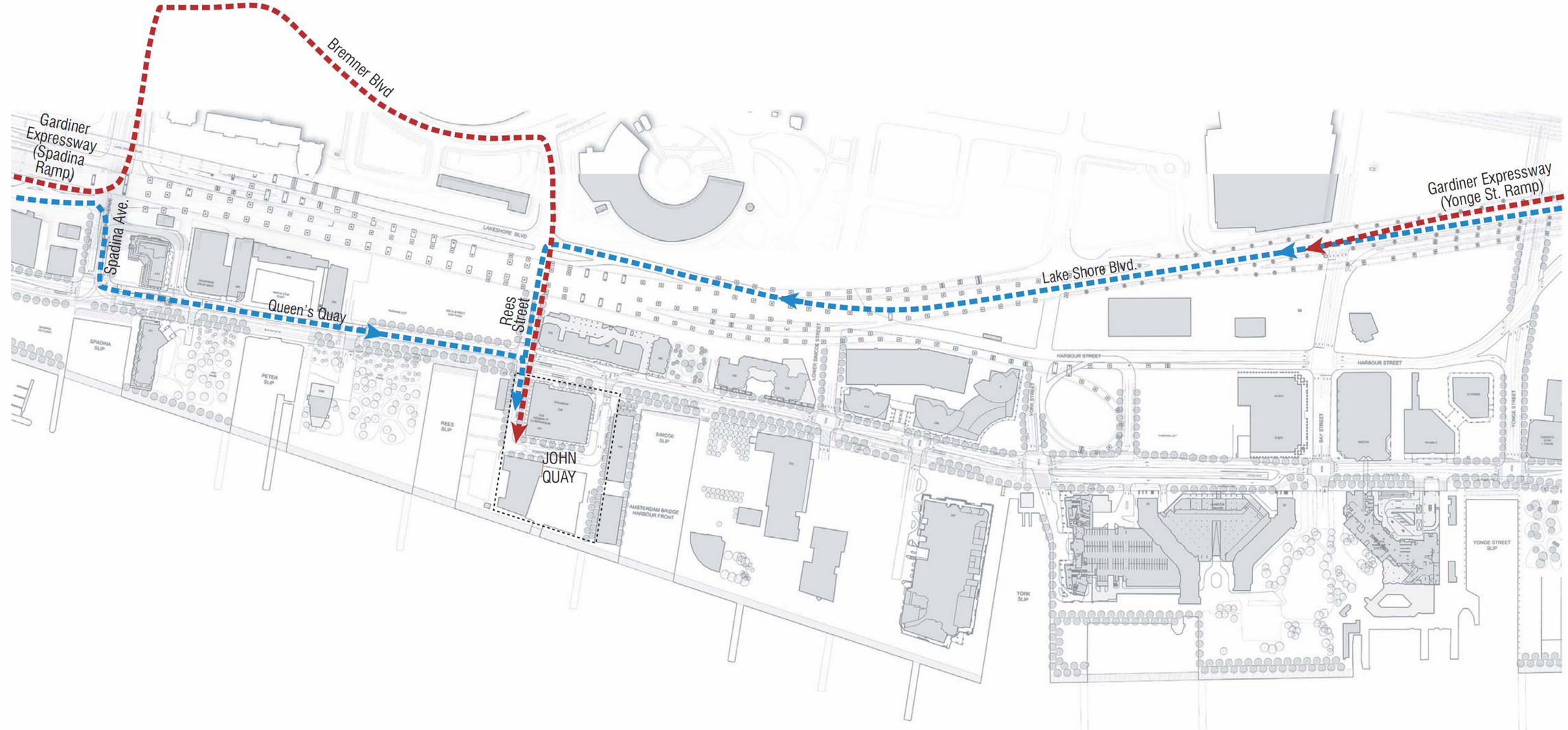
The entrance to the Fire EMS station is presently an unsignalized intersection with no dedicated turn lanes.

Changes to Access and Egress

In the Preferred Design, the entrance will be reconfigured with dedicated left turn lanes and traffic signals. EMS vehicles would use the westbound left turn lane to enter the site. Procedures and protocols for entering from the eastbound lane will need to be studied in detailed design. Access to both directions on Queens Quay from the entrance will be maintained.

Figure 9-14: Potential Access to 401 Queens Quay from Lake Shore Boulevard or Gardiner Expressway

Figure 9-15: Potential Access to John Quay from Lake Shore Boulevard or Gardiner Expressway



9.7.3 John Quay

The John Quay area of Queens Quay is accessed via Rees Street and Robertson Crescent. Sites within John Quay include Radisson Hotel, Police Marine Unit, Pawsway and Pier 4 restaurant.

In the existing condition, access into Robertson Crescent is provided directly from Rees Street or via eastbound rights at both Rees Street and Robertson Crescent entrances on Queens Quay. Left turn movements from westbound Queens Quay into the site are not currently permitted. Vehicles can exit the site via both entrances on Queens Quay. At the Rees entrance, vehicles can continue north onto Rees Street or access Queens Quay westbound or eastbound via a signalized intersection. The Robertson Crescent entrance is a right-in/right-out access point, which limits access to eastbound Queens Quay for vehicles leaving the site.

Changes to Access and Egress

In the Preferred Design access and egress from the Robertson Crescent properties will be consolidated; the Robertson Crescent entrance would be signalized, but limited to a right-turn egress only. Limiting the number of movements at Robertson Crescent to one (no pedestrian crossings will be included) was a part of an overall strategy to provide optimize transit service along Queens Quay.

Access from Queens Quay into the site would be limited to the Rees Street signalized entrance. The site would be accessed via eastbound right from Queens Quay. The westbound left movement into John Quay can be made at Lake Shore Boulevard and Rees Street. Westbound left turn access from Queens Quay is not provided. Providing this left turn movement would result in compromised roadway geometrics and property impacts.

Traffic from eastbound Gardiner Expressway could exit at Spadina Avenue and access Robertson Crescent via Bremner Boulevard and Rees Street. Westbound Gardiner Expressway traffic could exit at Yonge Street and access Robertson Crescent via Lake Shore Boulevard and Rees Street. Potential access routes from Lake Shore Boulevard and Gardiner Expressway are illustrated in Figure 9-15.

Vehicles would exit the site via Rees Street or Robertson Crescent. Vehicles can continue north onto Rees Street or access Queens Quay westbound or eastbound via the Rees Street intersection. Vehicles will be limited to going eastbound on Queens Quay at the Robertson Crescent intersection.

Geometric Changes

As a part of the Preferred Design, there will be physical changes in the area to improve the operations of Robertson Crescent. The existing width of Robertson Crescent makes circulation difficult for the different types of vehicles (e.g., buses, autos, taxis, delivery trucks) using the street. The Preferred Design proposes standard lane widths, which will provide a more generous roadway for greater navigability. As well, site circulation will be improved with expanded dedicated bays for curbside activity (e.g., on-street parking, loading and unloading), which will reduce conflicts between stopped and moving vehicles. Loading and unloading facilities are further enhanced for the area with the addition of lay-bys on Queens Quay west of Rees Street.

9.7.4 Harbourfront Centre and Future York Quay Revitalization

Harbourfront Centre is the largest institutional facility in the Central Waterfront. The facility will grow with the proposed York Quay Revitalization to be developed within the Harbourfront Centre property. It is to become a mixed-use, cultural destination and public square atop a below-grade parking structure. Together, Harbourfront Centre and the York Quay Revitalization project will be the highest traffic destination/generator on the south side of Queens Quay at build-out.

Currently, inbound and outbound movements to Harbourfront Centre are provided by an access point located midway between Lower Simcoe Street and the Queen's Quay Terminal driveway. This access is limited to right-in/right-out access from/to the eastbound Queens Quay lanes; however, westbound vehicles can make a u-turn at Lower Simcoe Street to access the site.

Changes to Access and Egress

In the Preferred Design, the Harbourfront Centre driveway would be relocated to Lower Simcoe Street, providing for direct access from both Queens Quay and Lower Simcoe Street. Lower Simcoe Street or a westbound left from Queens Quay would provide access to the site. Due to geometric and property constraints, the eastbound right turn into the site from Queens Quay would not be available, but this movement could be made via Lake Shore Boulevard and Lower Simcoe Street.

There would be an eastbound left turn from Queens Quay to Lower Simcoe Street and into the downtown. A new underpass of the rail corridor north of the study area was opened in 2008 to connect Simcoe Street with Lower Simcoe Street. Potential access routes from Lake Shore Boulevard and Gardiner Expressway are illustrated in Figure 9-16.

All vehicles would exit the site at Lower Simcoe Street through a signalized intersection. While the existing condition limits egress movements to eastbound Queens Quay only, the Preferred Design provides egress movements to all directions. Vehicles can continue north onto Lower Simcoe Street and into downtown or access Queens Quay westbound or eastbound.

The Preferred Design of the intersection also includes removal of the existing Lower Simcoe LRT stop. Passengers would board and alight at a new stop, located at the Queen's Quay Terminal entrance. The relocation of the LRT stop and proposed lane arrangement at the Lower Simcoe Street intersection allow for an expanded pedestrian realm and the continuation of an off-street Martin Goodman Trail.

Figure 9-16: Potential Access to Harbourfront Centre from Lake Shore Boulevard or Gardiner Expressway

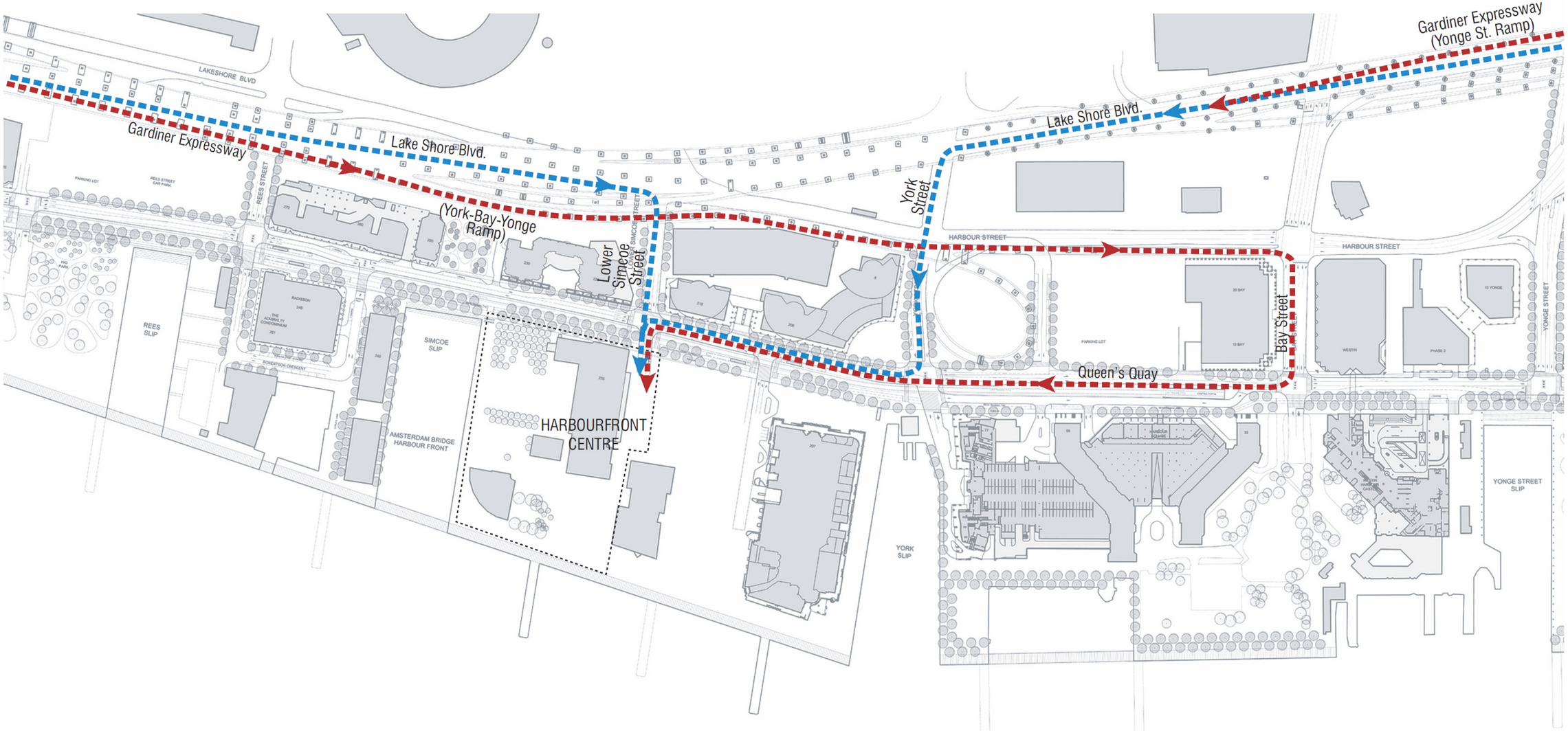
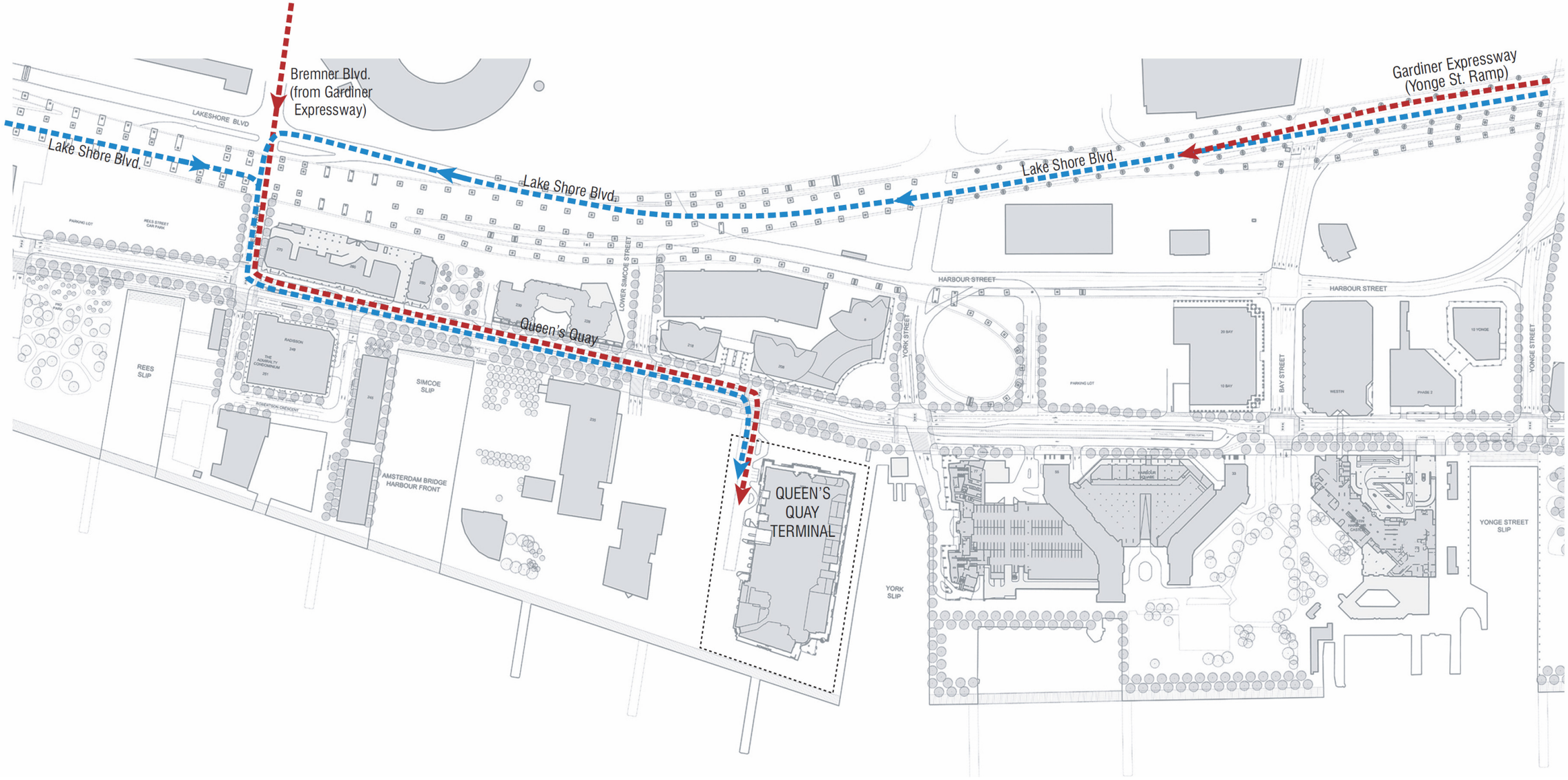


Figure 9-17: Potential Access to Queen's Quay Terminal from Lake Shore Boulevard or Gardiner Expressway



9.7.5 Queen's Quay Terminal

Queen's Quay Terminal is a large mixed-use complex located on York Quay with residential, office and retail commercial uses.

Queen's Quay Terminal currently has a mid-block driveway access on Queens Quay between Lower Simcoe and York Streets. The driveway is accessed via right-in/right-out movements from and to Queens Quay. The driveway is not signalized and left turn movements are not permitted directly into and out of the driveway. Left turn movements can be made via u-turn movements at Lower Simcoe Street and York Street.

Changes to Access and Egress

In the Preferred Design, the Queen's Quay Terminal entrance would remain in its existing location. The entrance would need to be signalized to allow for turn movements over the TTC right-of-way. Inbound movements would remain similar to the existing condition, being limited to eastbound rights. Outbound movements would include the existing northbound right, in addition to a new northbound left. Potential access routes from Lake Shore Boulevard and Gardiner Expressway are illustrated in Figure 9-17.

The modified intersection will accommodate a new LRT stop, which will serve the boarding and alighting activity that take place at Lower Simcoe Street and York Street today. The relocation of the LRT stop and proposed lane arrangement at the Queens Quay intersection opens up space for an expanded pedestrian realm and the continuation of an off-street Martin Goodman Trail.

9.7.6 Harbour Square

The Harbour Square condominium complex is primarily comprised of four residential towers – 95, 77, 55 and 33 Harbour Square. There are commercial and retail units at the ground floor level fronting Queens Quay.

Currently, the complex has four entrances on Queens Quay – York Street, Bay Street and two mid-block entrances in between. The York Street entrance provides access to the main (shared) entrance to the 77 and 95 Harbour Square towers, in addition to the western car park structure and a loading/unloading area on the lake side. The Bay Street entrance provides access to the main entrance to 33 and 55 Harbour Square and to the eastern car park structure on the lake side. The western mid-block entrance on Queens Quay located between 77 and 55 Harbour Square provides access to a service area and a Queens Quay entrance to the western car park structure. The eastern mid-block entrance located between 55 and 33 Harbour Square is a service entrance for large vehicles. Large moving and service trucks as well as the condominiums' private buses use this entrance to access the high-clearance level of the eastern car park. Site and internal circulation constraints prevent the high-clearance area to be accessed from any of the other entrances.

Changes to Access and Egress

In the Preferred Design at York Street, all inbound and outbound movements are retained with the exception of the eastbound right-turn into the site. In place of this right-turn lane, on-street loading areas are provided on Queens Quay and an expanded public realm consisting of a landscaping zone, off-street Martin Goodman Trail and sidewalk is achieved through the York Quay area. All vehicles at the Harbour Street/York Street intersection can make the eastbound right turn movement. Private automobiles can also make this right turn movement at the Bay Street/Queens Quay intersection, where all existing movements are retained. (A lower clearance structure on Harbour Square drive limits truck access from Bay Street).

The removal of the traffic signal at the western mid-block entrance is required. The close proximity York Street limits the degree of transit priority. By removing the traffic signal, the transit speed and service reliability necessary to support future development in the Central Waterfront can be achieved.

Even with the removal of the traffic signal, the Preferred Design retains access to all four of the entrances. A one-way (eastbound) service road would be provided on the south side of the LRT right-of-way, with the primary purpose of maintaining access between from Harbour Square, Queens Quay and York Street. The lane would be accessed from Queens Quay via York Street and connects with Queens Quay between the existing transit portal and Bay Street. The western midblock entrance remains open but is converted to a right-in, right-out access with the one-way lane.

The eastern midblock entrance will also function as a right-in, right-out access as it does in the existing condition.

Potential access routes from Lake Shore Boulevard and Gardiner Expressway are illustrated in Figure 9-18.

9.8 Materials, Finishes and Techniques

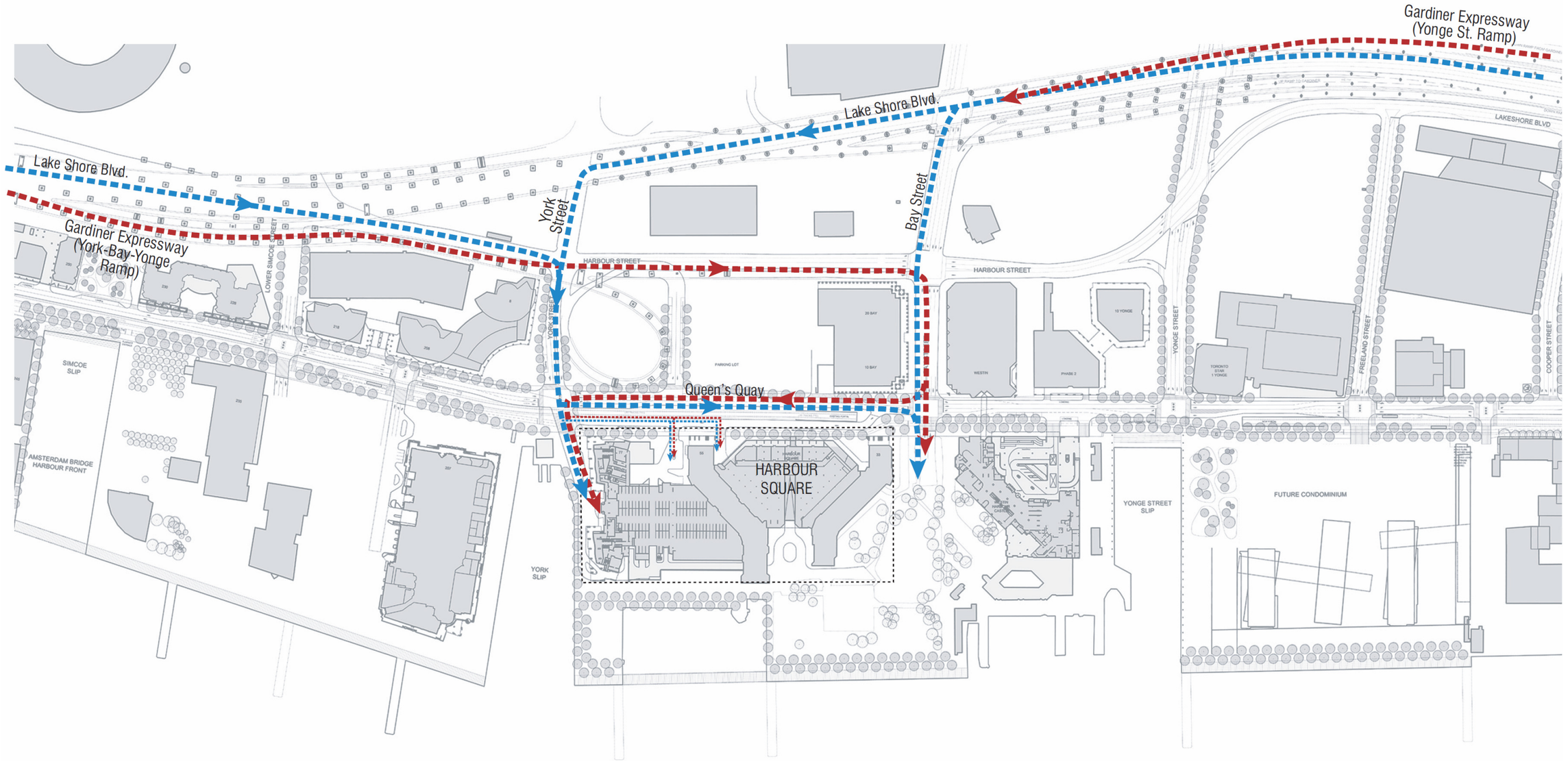
Details of materials, finishes and techniques are outside the scope of this EA.

During detailed design the project team will consider materials and finishes for Queens Quay that are improved over the existing. One preliminary consideration will be the level of finish of the sidewalks. Rather than the typical City sidewalk detailing of cast-in-place concrete with granite paver band, the south side pedestrian and tree planting areas may include high quality granite cobble. There may be opportunities for the planting areas that define the boundaries of the Martin Goodman Trail from the TTC right-of-way and the primary pedestrian boulevard to be rougher in texture to indicate a change in use, although they will remain available for walking. There may be also opportunities to improve the finishes of the north side sidewalks. They may be of a different material and design compared to the existing condition, while still relating in character to the south side design. The Martin Goodman Trail may have an asphalt surface, with a painted centre line to define the opposing directions of travel and use. The roadway may be a standard City of Toronto asphalt detail, with granite curbs as considerations. Intersections and driveways to the south of the roadway may potentially be paved in a surface other than the roadway.

Furnishings may include lighting and transit shelters, with the potential to include other pieces from the City of Toronto street furniture program. Street lighting along both sides of Queens Quay may be improved, with custom wooden posts and lamp and lighting elements directed towards both vehicles and pedestrians. Transit shelters will be part of the expanded and accessible passenger platforms, possibly with custom aspects to relate the furnishings with the rest of the waterfront design elements.

All elements and materials will be further explored and refined as part of detailed design.

Figure 9-18: Proposed Access to Harbour Square from Lake Shore Boulevard or Gardiner Expressway



9.9 Storm Water Management

The storm water systems serving the study area were not assessed for their capacity to address current and future conditions on Queens Quay. It is expected that due to the proposed changes to the street – including a reduction in travel lanes, introduction of additional street tress/landscaping and no increases in road capacity or change in land use – the quantity of runoff would likely be reduced with no degradation in quality. As such, the preferred design includes tying into and relying on the existing storm water facilities, with no changes proposed to the system's major functions or capacity.

9.10 Property Acquisition

The improvements to Queens Quay would be constructed within the existing City of Toronto road right-of-way. Temporary easements may be required for construction purposes and will be addressed by the Construction Management Plan to be prepared in detailed design in consultation with affected property owners.

9.11 Construction Phase

Construction of the improvements on Queens Quay will be staged and coordinated with the objective of keeping at least one lane of traffic open per direction on Queens Quay at all times. Road traffic operations will be maintained throughout the construction period on Queens Quay. The travel lanes—although in a reduced capacity—will be open to either the north or south of the TTC right of way. The proposed asymmetrical street arrangement allows construction to occur on one side and retain east-west traffic on the other. Traffic flows will be restored to the new street as soon as the new facilities are available.

Temporary lane closures on Yo-Yo Ma Lane, Lower Spadina Avenue, Rees Street, Lower Simcoe Street, York Street, Bay Street and Yonge Street may be required to accommodate construction. The objective would be to limit such closures to off-peak hours. Construction staging will be studied in greater detail during later design stages, in consultation with affected stakeholders and landowners.

Transit service will be temporarily provided by surface bus routes until the new track system is in place and available.

A traffic management plan will be prepared by Waterfront Toronto and the City to address the need for any closures and detours.

9.12 Operations Phase (including maintenance)

The City of Toronto will be responsible for street and sidewalk cleaning, snow removal, maintaining services such as sanitary sewers, water mains, storm water management, traffic signals as well as maintenance of landscaping and other street fixtures. The operations and maintenance of all elements within the LRT right-of-way and the right-of-way itself will be the responsibility of the Toronto Transit Commission (TTC)

9.13 Landscape and Streetscape

System Changes

Envisioned as a 3.5- kilometre 'linear park', vastly improved plantings will visually connect the waterfront from end to end, and reinforce Queens Quay's place as the main waterfront street for Toronto. A double row of trees will frame the Martin Goodman Trail with a single row on the north side of the street. Each row will be planted within improved growing conditions than a typical street tree; the goal will be to achieve a minimum of 30 cubic metres of soil volume for each tree to meet the City Department of Forestry's aggressive new target. The intent is to provide the best opportunity possible for the trees to live a long life, reach a mature height and develop a broad canopy. Overall, the Preferred Design may potentially deliver up to three times the number of trees—with a far greater opportunity to grow big and healthy—than what exists today.

Potential Design Features

A potential landscape feature which can be explored in detailed design is the finishing of the TTC right-of-way with a reinforced turf. Precedents exist throughout Europe and North America for planting in between rails in similar settings, with potential to reduce noise and vibration, improve microclimate, and to provide visual relief.

Issues for Detailed Design

Technical details of the TTC right-of-way finishing were not developed and are beyond the scope of this EA. The intent during detailed design will be to explore opportunities and alternatives to standard finishes to help Queens Quay become as green as possible.

Other issues for detailed design include identifying tree species and other appropriate plant material, design more fully the soil structure detail and irrigation system, and consider the placement and relocation of below grade utilities within the public right-of-way to minimize conflict with tree root zones.

All elements and materials will be further explored and refined as a part of detailed design.

9.14 Preliminary Construction Cost Estimate

A preliminary construction cost estimate was prepared based on current available unit pricing for material and labour and on plans and specifications produced for the Queens Quay improvements at a planning level-of-detail. Included in the estimate are allowances for Design and Engineering Services (25%) and Construction Administration (10%). The cost is preliminary, subject to revision and are limited to the physical improvements being sought as a part of this EA, between Bathurst Street and west of Yonge Street (i.e. the Study limits and scope of this EA).

The revitalization of Queens Quay is budgeted for $192 million that includes all new services and public realm improvements, but excludes already scheduled rebuild of the streetcar line.

9.15 Preferred Design Functional Plans

Please refer to the Preferred Design Functional Plates on the following pages.

Plate 9-1: The Preferred Design

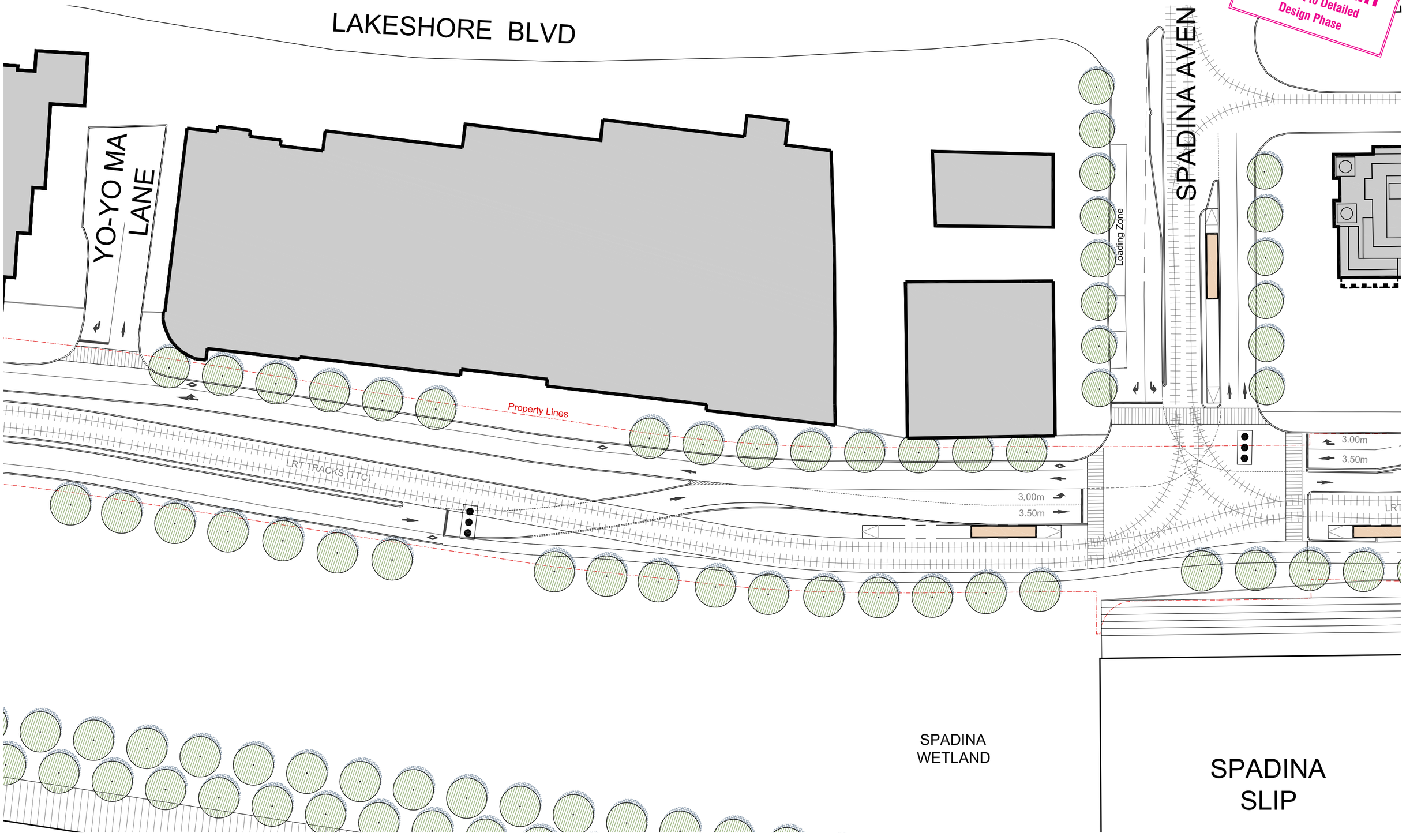


Plate 9-2: The Preferred Design

PRELIMINARY
Subject to Detailed Design Phase

410
SHOPPERS DRUG MART
390
370
MAPLE LEAF QUAY
350
3.50m
3.00m
3.00m
3.50m
3.50m
3.00m
RT TRACKS (TTC)
LRT TRACKS (TTC)
Martin Goodman Trail
Martin Goodman Trail
Sidewalk
401
HtO PARK
PETER SLIP
EMS

Plate 9-3: The Preferred Design

PRELIMINARY
Subject to Detailed Design Phase

REES STREET
CAR PARK

REES ST

270

260

LOADING

3.50m

3.00m

3.50m

LOADING

LOADING

LRT TRACKS (TTC)

4.0m Martin Goodman Trail

Sidewalk

Martin Goodman Trail

Sidewalk

EGRESS ONLY

RADISSON

249

LOADING

THE ADMIRALTY CONDOMINIUM

251

PARKING

PARKING

245

LOADING

REES SLIP

LOADING ZONE / PARKING

ROBERTSON CRESCENT

Plate 9-4: The Preferred Design

PRELIMINARY
Subject to Detailed Design Phase

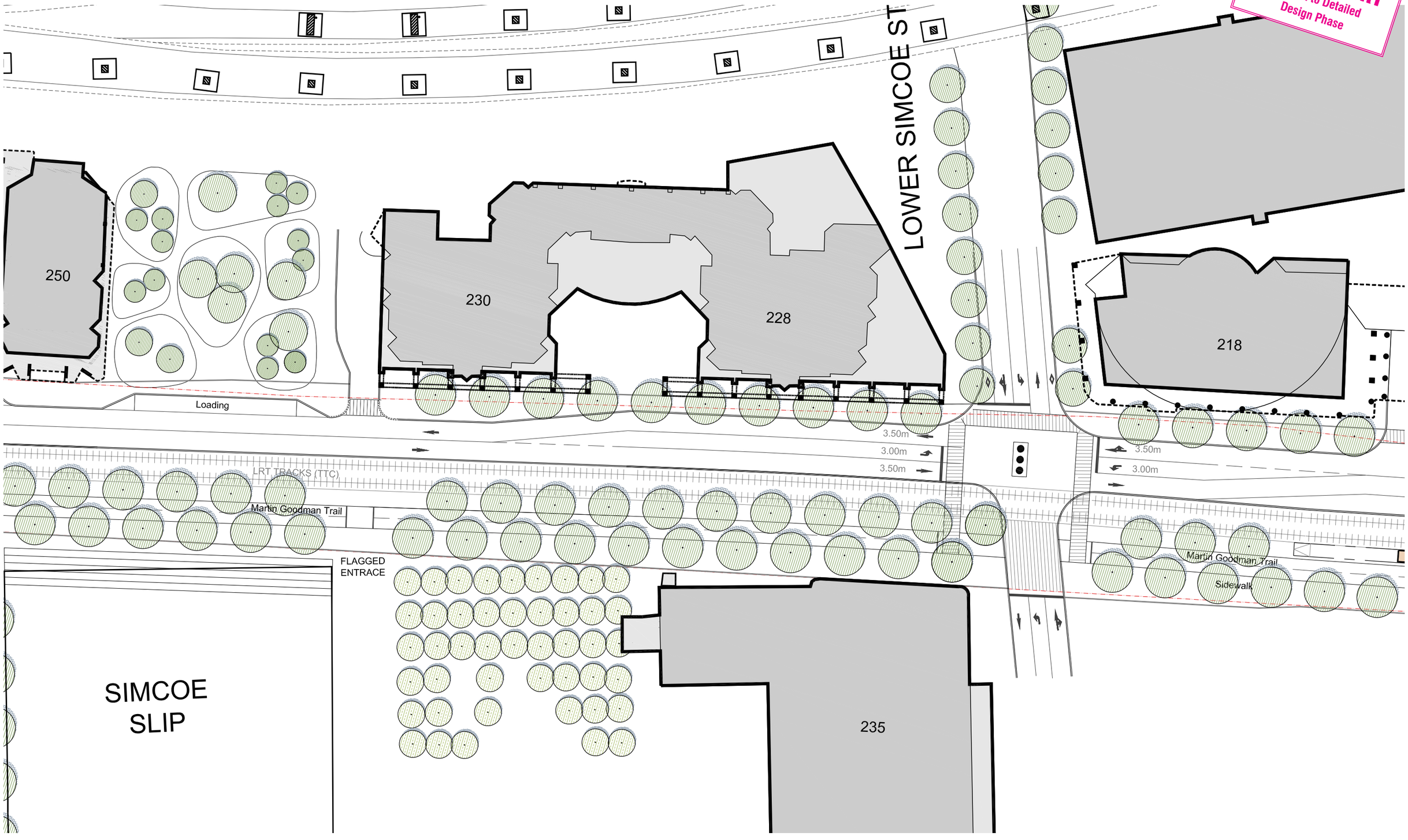


Plate 9-5: The Preferred Design

PRELIMINARY
Subject to Detailed Design Phase

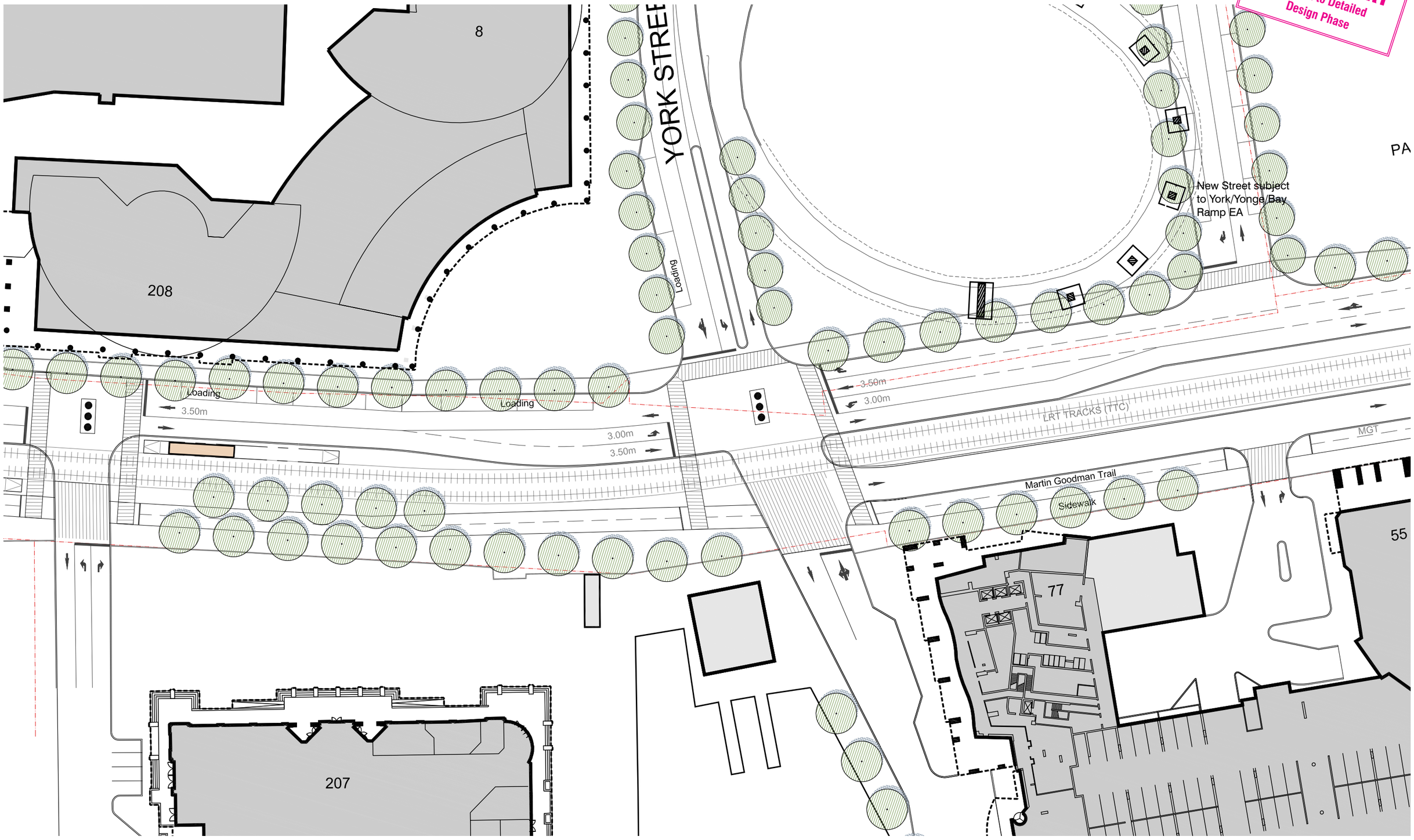


Plate 9-6: The Preferred Design

PRELIMINARY
Subject to Detailed Design Phase

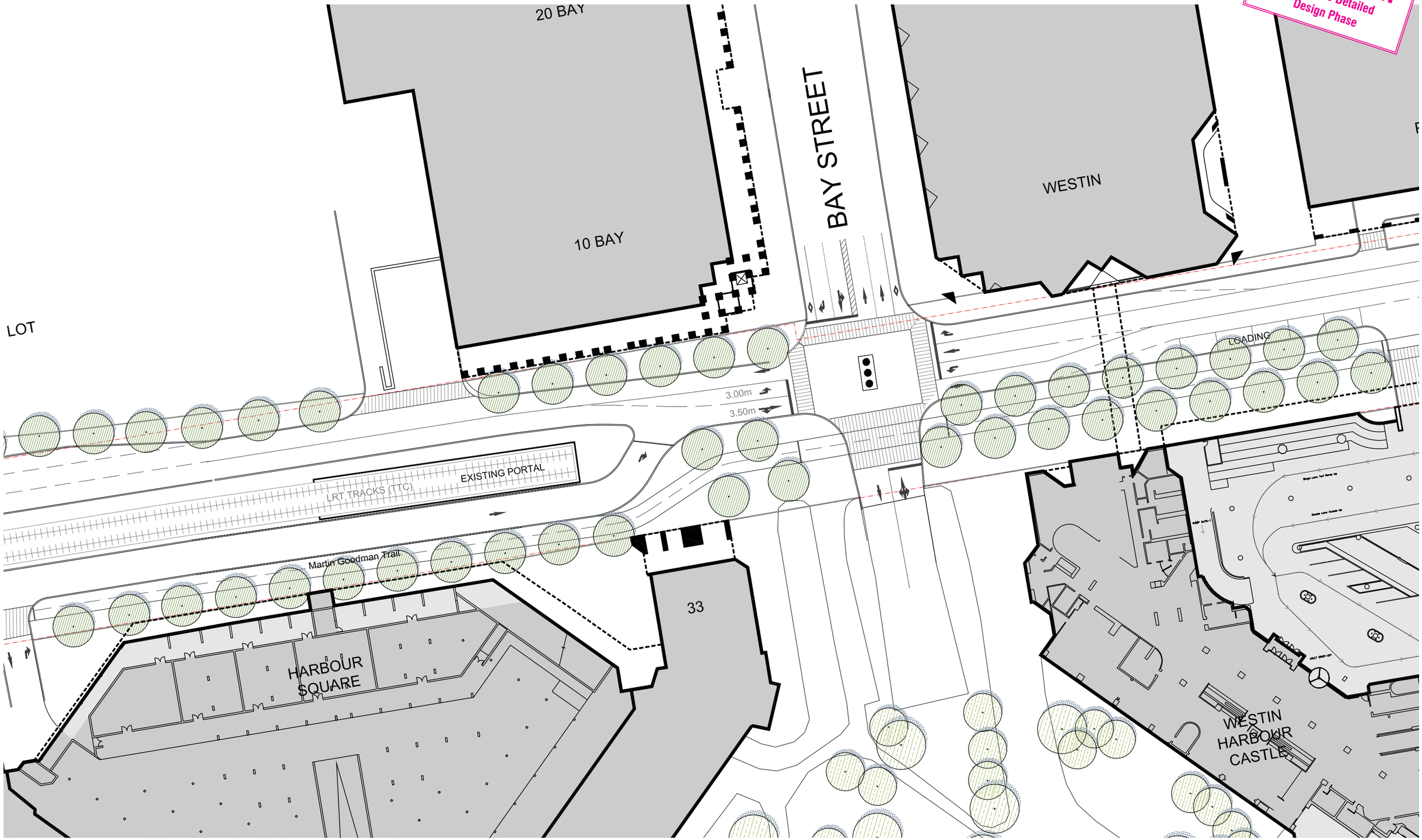


Plate 9-7: The Preferred Design

PRELIMINARY
Subject to Detailed Design Phase

10 YONGE

YONGE STREET

TORONTO STAR
1 YONGE

FREELAND STREE

Loading

Martin Goodman Trail

NEW PORTAL

FUTURE CONDOMINIUM

10 Environmental Effects, Mitigation and Future Commitments

The preferred plan will improve many aspects of Queens Quay. As with any undertaking of this magnitude, there are possible environmental interactions and impacts that may require mitigation. This chapter discusses the potential impacts of the road reconfiguration and recommends measures to eliminate or reduce those effects.

10.1 Evaluation of Project Environmental Impacts

Several criteria were used to evaluate the impacts of the proposed Queens Quay reconstruction, assessing the project activities related to the development of the recommended plan and their potential interactions with the environment. This evaluation identified the positive and negative effects of each project activity against each of the criteria, as shown in Table 10-1.

10.2 Potential Effects and Proposed Mitigation Measures

Table 10-2 provides an additional discussion on the potential environmental impacts and demonstrates the potential management practices used to mitigate these impacts. If the measures are executed, no adverse residual effects will remain as a result of the project. The co-proponents will be required to implement these measures as the project moves forward.

Following is a discussion of the proposed mitigating measures for the impacts noted in Table 10-2, highlighting in more detail the environmental characteristics of the study area. The focus of the discussion is on the natural, cultural and socio-economic environments.

10.2.1 Terrestrial Environment

The road, transit and public realm improvements to Queens Quay will likely require the removal of all existing street trees within the right-of-way and several trees on City of Toronto lands fronting the right-of-way (100 in total) from Bathurst Street to Yonge Street. The trees currently grow within sub-standard growing conditions and with varied levels of health. The widening of the pedestrian boulevards, relocation of curbs and improvements to roadway structural elements will compromise the root zone of existing trees. These factors will further minimize their chances of reaching a suitable size to positively contribute to the urban forest.

The double row of trees that will line the expanded public realm on the south side will each row will be planted within a far improved growing condition than a typical street tree, a target minimum of 30 cubic metres of soil volume to meet the City Department of Forestry's aggressive new target. For the north side the Preferred Design recommends the planting of trees within a continuous root zone trench, ideally with structural soil and irrigation. The intent is to provide the best opportunity possible for all street trees to live a long life, reach a mature height and develop a broad canopy.

The Preferred Design will replace displaced trees at a ratio of 3:1 (i.e., approximately three trees will be planted for every tree removed). This exceeds the standards promoted by the City's Urban Forestry and will provide a better opportunity for vigorous and successful growth. The number of trees proposed as a part of the Preferred Design will also meet the City's target for 35 percent tree canopy coverage.

A detailed replacement or relocation plan will be developed as part of the public realm design. The final mitigation plan will be developed during detail design in accordance with the City's tree protection by-laws.

Table 10-1: Evaluation of Project Environmental Impacts

Environmental Category and Criteria	Natural Environment					Socio-Economic Environment					Cultural Environment		Built Environment	
Project Activity	Terrestrial Species and Habitat	Aquatic Species and Habitat	Surface Water Resources	Soils and Groundwater	Air Quality	Noise and Vibration	Private Property	Recreation	Business, Employment	First Nations	Built Heritage/Cultural Resources	Archaeological Resources	Land use-Existing and Planned	Transportation
Removal of existing trees/other vegetation	-			- - -	- - -							- -		
Removal of existing roadway/TTC right-of-way/pedestrian boulevards				- - -	- - -							- -		-
Excavation/preparation for construction		-		- - -	- - -							- -		-
Paving-pedestrian realm			+		-	-	+	+	+ +	+				+
Paving- roadway					-	-	+	+	+		+		+	+
Temporary road/lane closures/rerouting							-	-	-				-	-
Servicing and utility improvements/ modifications							+		+			-	+	
Disruption of pedestrian traffic							-	-	-				-	-
Furnishings: lights, traffic lights, transit shelters							+	+	+		+		+	+
Street tree and other planting	+ +			+ +	+ + +	+					+		+	+
Road operations: vehicular traffic, maintenance (i.e., salting, plowing)	-	-		-		-	+		+		+		+	+

Legend

+ Positive impacts

- Negative impacts

If blank, no impact

Table 10-2: Potential Effects and Proposed Mitigation Measures

Potential effects by Environmental Sub-Category	Proposed Mitigation Measures/Future Commitments
Terrestrial Species and Habitat	
101. No critical or significant habitat will be affected by this project	No mitigation required.
102. Removal of street trees	Street trees will be replaced at a ratio of 3:1. Each tree will benefit from a far greater soil volume with reduced compaction than the existing trees. New street trees will be irrigated to ensure adequate watering levels
103. Positive effects as a result of the project	No mitigation required.
Aquatic Species and Habitat	
201. Potential runoff and erosion of exposed soil due to construction activities	Enact Waterfront Toronto Environmental Management Plan (EMP) Employ best practices for source control and pollution protection Adopt storm water management practices as part of EMP and Construction Management Plan in accordance to municipal and provincial guidelines Define construction setbacks, secondary drainage measures, and refueling precautions Ensure all equipment in good working order Construction activities adjacent to aquatic resources will be controlled to prevent runoff into the Lake Require plans for spill control and containment with efficient reporting Cover stockpiled excavated and construction material to reduce potential for runoff Avoid adverse soil conditions Monitor for leaks in equipment and any above and below grade servicing
Soils and Groundwater	
301. Potential to contaminate groundwater during construction	Conduct detailed groundwater and geotechnical analysis to confirm whether a Permit to Take Water is required.
302. Potential to uncover contaminated soils during construction	Conduct Phase 1 Environmental Site Assessment to determine level of possible soil contamination. If any soils are contaminated, notify MOE and develop a contingency plan for how and where soils will be disposed. A comprehensive Waterfront Soils Management Strategy will include the identification, treatment and where possible reuse of impacted soil will involve all lands in the Designated Waterfront Area. A specific soils assessment and management program will be further detailed during the detailed design phase of the Queens Quay project.
303. Management of recyclable	Prepare Recyclable Material/Waste Management Plan.

Table 10-2: Potential Effects and Proposed Mitigation Measures

Potential effects by Environmental Sub-Category	Proposed Mitigation Measures/Future Commitments
Air Quality	
401. Reduced air quality due to airborne dust and migration during construction	Monitor dust emissions during construction Use dust control and suppression measures Ensure all equipment in good working order Minimize vehicle traffic on exposed soils Avoid excavation and other construction activities that may generate dust during periods of high winds Follow City by-laws regarding vehicle idling
402. Positive effects as a result of the project	No mitigation required
Noise and Vibration	
501. Nuisance effects from noise and vibration during construction from vehicles and equipment	Follow City by-laws and practices regarding hours of construction Avoid unnecessary idling of construction equipment Ensure all equipment in good working order Assign construction trucking routes
Private Property	
601. Conversion of Queens Quay from a four lane to a two lane traffic operations	Access provided to all properties Retain access to all properties during construction
602. Nuisance effects during construction	Minimize dust, noise and vibration resulting from construction activities
603. No property takings are required to implement the EA	No mitigation required.
604. Some site-specific property widening or easements may be necessary.	The extent of property widening or easements will be further determined during detailed design in consultation with impacted property owners. Where necessary, undertake property acquisition and compensation in accordance with Ontario Expropriations Act.
605. Aesthetics of construction site	Install and maintain fencing and screening at construction sites. Employ good housekeeping practices.
606. Building settlement and potential for dewatering during construction	During Detailed Design, conduct in-depth geotechnical and foundation investigations and provide detailed recommendations related to temporary shoring and dewatering methods

Table 10-2: Potential Effects and Proposed Mitigation Measures

Potential effects by Environmental Sub-Category	Proposed Mitigation Measures/Future Commitments
607. Modifications to existing structures during and following construction (utilities, entrances, etc.)	During latter stages of the project, finalize the details of these connections through consultation with the owners of the affected properties.
608. Positive effects as a result of the project	No mitigation required.
Recreation	
701. Potential for rerouting of cyclists, modified access to marinas and other water's edge facilities	Provide temporary rerouting and alternative access to all water's edge facilities.
Business, Employment	
801. New employment from construction activities	No mitigation required.
802. Positive effects and new employment as a result of redevelopment along corridor	No mitigation required.
803. Disruption to businesses due to construction activities	Hold ongoing discussions with property owners and tenants during design development. Mail notices to businesses to inform them of the timing of construction, coordination/communications throughout the construction period. Implement Traffic Management Plan including signage and temporary parking (if required). Use on-site community liaison staff to communicate with the local businesses during construction.
Built Heritage/Cultural Resources	
901. No interactions or impacts expected	No mitigation required.
First Nations	
1001. No interactions or impacts expected	No mitigation required.
Archaeological Resources	
1101. Sub-surface archaeological resources may be discovered during excavation and construction	Contact the Heritage Operations Unit of the Ministry of Culture immediately if any potential archaeological artifacts are uncovered.

Table 10-2: Potential Effects and Proposed Mitigation Measures

Potential effects by Environmental Sub-Category	Proposed Mitigation Measures/Future Commitments
Land Use-Existing and Proposed	
1201. Road reconstruction and public realm improvements are consistent with many Official plans and policies	No mitigation required
1202. Positive effects as a result of the project	No mitigation required.
Transportation System	
1301. Potential disruption to Emergency Services response during construction	Continue to engage Toronto Emergency Services through to completion of construction to identify and address emergency access and operations issues related to design and construction
1302. Traffic disruption (road and lane closures) due to construction	Prior to construction, prepare a Traffic Management Plan (including emergency provisions) in consultation with stakeholders to address delays and alternative routes associated with closures. Provide advance notification of closures and delays. Schedule construction to minimize disruption in proximity to adjacent uses
1303. Disruption of pedestrian traffic during construction	Maintain continuity of sidewalks and walkways to extent possible. Where necessary, provide temporary walkways and delineate or fence off areas that may conflict with vehicular traffic
1304. Disruption to transit service during construction	Maintain LRT service for as long as practical; Provide temporary bus service to cover existing LRT service while tracks are being replaced.
1305. Positive effects as a result of the project's road reconfiguration	Traffic signals optimized for transit priority, also benefiting the primary east-west through traffic movements Proposed sidewalk widening throughout the study area with enhanced pedestrian amenities. Shorter pedestrian crossings across vehicular roadway Off-street Martin Goodman Trail provided throughout the study area, removing the need for cyclists to share the roadway with motorists. Dedicated lanes and separate signal phase for each turning movement, removing need for turning and through traffic to share lanes Median separation between TTC right-of-way and eastbound vehicular traffic Separation between TTC right-of-way and Martin Goodman Trail Separation between Martin Goodman Trail and primary pedestrian clear path Improved transit platforms, creating greater separation of passengers from vehicular traffic
1306. Negative effects as a result of the project's road configuration	Where north sidewalk is narrowed, investigate opportunities to further increase publicly accessible sidewalk widths at building frontages, particularly at 410/401 Queen Quay, 390/370/350 Queens Quay, 270/260/249 Queens Quay (Radisson Hotel), 230/228 Queens Quay, 208 Queens Quay, 33 Harbour Square

Table 10-2: Potential Effects and Proposed Mitigation Measures

Potential effects by Environmental Sub-Category	Proposed Mitigation Measures/Future Commitments
1307. Curbside Management Plan	The co-proponents will continue to develop and refine a curbside management plan for the street, including service loading activity and a waterfront-specific bus parking strategy. The bus strategy will focus specifically on the tourism related activity that takes place along and in close proximity to Queens Quay.
1308. Safety Audit	A traffic safety and operations consultant will be retained to provide expert advice during the design process and to ensure the safety of all right-of-way users.

10.2.2 Aquatic Environment

The length of Queens Quay parallels the highly modified urban Lake Ontario shoreline. No open watercourses traverse the primary EA study area (i.e., there are not aquatic resources within the study area). Stormwater discharge is the only relationship between the study area and the nearby aquatic environment. Stormwater discharge outlets will be included as a part of the construction-monitoring program.

As Queens Quay will be reconstructed there may be an opportunity to implement stormwater management practices to mitigate impacts to the hydrologic cycle/surface water as per the "City of Toronto Wet Weather Flow Program, List of CSO/Stormwater Control Alternatives", July 2003 and the "Draft Guideline of Stormwater Management Options for Roadway Reconstruction Projects", June 2005.

10.2.3 Soil and Groundwater Conditions

A study of groundwater and geotechnical conditions was not undertaken within the study area. Available information from adjacent studies – East Bay Front Class Environmental Assessment Master Plan and West Don Lands Transit Environmental Assessment – indicate that the water table immediately to the east of the study area is close to the surface and is highly influenced by Lake Ontario. Lateral flow occurs within the fill materials in the East Bayfront. As such, there is high potential for groundwater residing within the fill materials that make up the entirety of the Queens Quay Revitalization study area.

More geotechnical and groundwater quality information must be obtained before risks associated with potential contaminants transported by the groundwater can be assessed. A Phase 1 Environmental Site Assessment to determine likelihood of soil contamination will need to be conducted during detailed design.

A comprehensive Waterfront Soils Management Strategy would include the identification, treatment and where possible reuse of impacted soil involving all lands in the Designated Waterfront Area. A specific soils assessment and management program will be further developed during the detailed design phase of the Queens Quay project.

In the implementation of the preferred design, dewatering works is anticipated, as excavation below 1.5 - 2.0 metres will require dewatering. A Permit to Take Water and Certificate of Authorization is anticipated. A full geotechnical investigation undertaken as a part of detailed design will confirm this.

10.2.4 Air Quality

A full air quality assessment was not undertaken within the study area. However, the preferred plan promotes improvements to air quality. It recommends a decrease in roadway capacity and limits standing curbside activity on Queens Quay.

Local increases in diesel emissions and particulate matter (i.e., construction dust) are expected during construction due to construction equipment and activity. As well, diversion of traffic due to temporary closures and detours may result in local increases in vehicle emissions on other streets.

Mitigation measures would include: monitoring dust emissions during construction; use of dust control and suppression measures such as water application where warranted; avoiding unnecessary idling of construction equipment; employing the City's by-laws and practices regarding hours of construction; preparing a Traffic Management Plan to address the redistribution of rerouted traffic.

10.2.5 Cultural Environment

The functional planning undertaken as a part of this EA Study did not identify any direct impacts to the heritage structures in the study area. As previously mentioned, the study area is entirely comprised of artificial land formed in the early to mid-twentieth century; the fills and any retaining structures associated with these land making activities are not considered to be of any cultural heritage value or interest as they are essentially modern.

Nevertheless, the research undertaken for this study resulted in the identification of six features or feature complexes of potential heritage interest within the study area. These have been evaluated using the system prepared as part of Waterfront Toronto's Archaeological Conservation and Management Strategy, with the resulting conclusion that two of the features present within the study area, the remains of the heads of a series of wharves located in the vicinity of York Street, and the intake system for the late nineteenth-early twentieth-century Toronto water supply system, which traverses the study area between the Rees and Peter Street slips, are of limited potential significance. In light of these considerations it is recommended that any construction activities that are likely to result into impacts upon these deeply buried features should be subject to archaeological monitoring.

The balance of the study area may be considered clear of any further archaeological concern. However, the appropriate authorities will be notified should deeply buried archaeological or human remains be encountered during any future work within the study area.

Please refer to the Phase 1 Archaeological Assessment for full details (Appendix F).

10.2.6 Socio-Economic Environment

The majority of the lands within the study area are within the City of Toronto public-right-of-way for Queens Quay. Other lands required for the project are largely under public ownership or managed by the City or Waterfront Toronto and adjacent to the primary study area.

No property takings are required to implement the EA nor will a widening of the entire public right-of way throughout the corridor be required. However, it has been determined that some site-specific property widening may be necessary. This local widening will not constitute an amendment to this Environmental Assessment.

Situations where local widening may take place include: to improve sidewalk materials to the face of buildings where possible (in some cases beyond the property line), and to enhance the sidewalk adjacent to parks and current surface parking lots. Such locations include the Harbourfront Centre parking lot, Rees Street parking lot, HtO Park, and for properties in the vicinity of Spadina Avenue, Rees Street, Robertson Crescent, Simcoe Street, York Street and the Fire/EMS intersection.

These widenings could take place through the development approval process for redeveloping sites or through easements on currently developed property. The extent will be further determined during detailed design in consultation with impacted property owners.

The reconstruction of the street will require a temporary short nuisance to residents and businesses. The effect of this effort will be minimized to the extent possible.

Road traffic operations will be maintained throughout the construction period on Queens Quay. The travel lanes—although in a reduced capacity—will be open to either the north or south of the TTC right-of-way. The proposed asymmetrical street arrangement allows construction to occur on one side and retain east-west traffic on the other. Traffic flows will be restored to the new street as soon as the new facilities are available. Transit service will be temporarily provided by surface bus routes until the new track system is in place and available.

There may be occasional obstruction to property entrances during construction, but access to properties on the both side of Queens Quay will be retained.

The overall intent of the Queens Quay revitalization project is to improve the physical environment and foster a more dynamic waterfront community. Although the implementation phase will likely cause a disruption to existing activities—and the change to access to several south side properties will require choosing a different vehicular route— it is fully believed that the final result will greatly improve the socio-economic environment by welcoming a far greater number of visitors (and potential clients) in a more comfortable and hospitable setting. The recreational opportunities across the waterfront will also greatly benefit with the addition of the off-street Martin Goodman Trail.

The proposed revitalization of Queens Quay is consistent with numerous official policies and plans, including the City's Official Plan, the Central Waterfront Master Plan, City of Toronto Pedestrian Charter, City of Toronto Urban Forestry Standards, and Waterfront Toronto's Sustainability Framework.

10.2.7 Noise and Vibration

Net noise and vibration impacts would be negligible, for there are no recommended increases in road capacity for this project. Increases in LRT volumes will be addressed with replacement of antiquated track technology with the current standard which includes, continuously welded rail that eliminates the use of rail joints, providing a smooth operation and rubber sleeves which isolates the rails from the topping pavement (if present) to reduce noise and ground-borne vibration. A further reduction may be possible if a landscape—rather than hard surface—detail is deemed appropriate for the transit right-of-way during the detailed design stage.

Noise and vibration impacts are expected during construction. Construction staging, placing limits on the hours of construction—consistent with City by-laws—and assigning truck routes are designed to reduce impacts on the local community and are specified within the City's construction contracts.

10.2.8 Permits and Approvals

Waterfront Toronto will secure necessary permits and approvals, based on the concept developed for Queens Quay as part of this EA, for the implementation of the Queens Quay Revitalization, including but not limited to those listed below.

Table 10-3: Permits and Approvals

Permit or Approval Required	Rationale	Administering Agency
Permit to Take Water	If dewatering exceeds 50,000 litres per day, a permit will be required for major excavations, such as those required for the utility construction.	MOE Regional Office
Certificate of Approval (Drinking Water System)	May be required for new and/or relocated watermains.	MOE EA and Approvals Branch
Certificate of Approval (Sewage Works)	New and/or relocated sanitary and storm sewers may be required.	MOE EA and Approvals Branch
Sewer discharge	New and/or relocated sanitary and storm sewers may be required.	City of Toronto
Stormwater management	New and/or relocated storm sewers and plant may be required.	City of Toronto, TRCA and MOE
Certificate of Approval (Waste Disposal Site)	Subject to additional investigation during detailed design, disposal of contaminated material may be required.	MOE EA and Approvals Branch
Tree-cutting Permit	Will be required during construction activities.	City of Toronto
Site Plan Approval and other Planning approvals	For above-grade structures and facilities.	City of Toronto
Temporary Road Closures	For temporary works required for construction activities	City of Toronto
Temporary ROW Alteration	For temporary works required for construction activities	City of Toronto

10.3 Commitments to Future Work

10.3.1 On-going Discussions with TTC, Fire and Emergency Medical Services

The operation of transit at the side of the road significantly improves the volume and quality of the public realm across Queens Quay. It is a novel approach to right-of-way design that has no precedent in Toronto. As a result, it does introduce some safety and operational efficiency challenges for the TTC and Fire Services that must be addressed in detailed design. The EA team has worked hard to address these challenges through the EA process. Recommendations contained in this report are intended to protect against a deterioration of transit service in the area and to ensure the continued viability of the transportation and emergency response system on Queens Quay.

Safety Audit

Consistent with the direction in this Report and to ensure the safety of all right-of-way users, the co-proponents are committed to working closely with TTC and Fire Services through detailed design to address their concerns.

Furthermore, to ensure that all possibilities for design improvements are explored, commitment has been made to retain an independent firm to conduct a detailed safety audit of the recommended design. The safety audit will assess potential cumulative effects of the physical design and operating strategies for TTC streetcars, Fire Services vehicles and general traffic. The audit will be to the satisfaction of the Deputy City Manager responsible for Transportation Services and Waterfront Revitalization and the Chief General Manager of the Toronto Transit Commission.

Assurance of Fire and Emergency Service Access and Response

The co-proponents will continue dialogue with Toronto Fire and Emergency Medical Services (EMS) thorough detailed design. In summary:

- The street must maintain for all buildings (per original design and construction) fire fighting capabilities as prescribed by the Ontario Building Code. Toronto Fire will expect a detailed audit of existing properties to confirm compliance.
- The signalized intersection at Station 334 should allow for full turning movements during emergency situations, and with a transit right-of-way accessible to emergency vehicles.
- Toronto Fire and EMS will continue their involvement and input on the design of the transit right-of-way, for this facility impacts emergency response along Queens Quay. Details such as pole locations, curb and barrier design, platform design, and right-of-way maintenance require further refinement.
- Street width from curb-to-curb is major concern for Toronto Fire. Any reference to roadway widths is subject to change during the detailed design phase. Toronto Fire must ensure sufficient space to deliver services as mandated.

10.3.2 Detailed Design Stage

Street and Public Realm Elements

The project team will refine the preferred plan during detailed design. The current dimensions shown in the functional plans (Chapter 7) for the various cross section elements are consistent throughout the study area at a planning level of detail. With a varied right-of-way along Queens Quay, some of the dimensions will also vary. The final location of curbs and utilities will be determined in this stage.

Specific attention will be paid during detailed design to provide the best possible pedestrian boulevards on both sides of the street. The functional plans included at the end of this chapter were prepared at a planning level of detail. As such, cross section elements (e.g., lane widths, LRT right-of-way widths, Martin Goodman Trail widths, two rows of trees on the south side) were generally kept to standard and constant dimensions. The result of this is that sidewalk widths are understated in the functional plans. Through Detailed Design, the cross section can be adjusted. There is flexibility to make adjustments – such as reducing the size of the tree planting zone on the south side, balancing sidewalk dimensions between the north side and south side and making local reductions and shifts in the LRT right-of-way and lane widths – to further improve sidewalk dimensions. The project team will continue to improve the sidewalk widths at the following locations:

- 410/401 Queen Quay
- 390/370/350 Queens Quay
- 270/260/249 Queens Quay (Radisson Hotel)
- 230/228 Queens Quay
- 208 Queens Quay
- 33 Harbour Square

The project team will also explore opportunities to provide the best possible emergency vehicle movement through the corridor. The roadway for Queens Quay is a primary emergency access route while the transit right-of-way is a secondary emergency access route. Each shall be designed appropriately and allow safe transition between the two. The two-way road width should be on sufficient width to accommodate types of activities and demand.

In addition, the project team will investigate opportunities to design a buffer between eastbound roadway travel lanes and westbound transit vehicles, and address any other outstanding design issues raised in the EA planning process.

Utilities

The heavy congestion of existing utilities within the project area presents a challenge for coordinating all the relocations and temporary supporting that could be required in order to construct the improvements.

Preliminary discussions were held with the major utilities as part of this EA. To determine the scope of relocation/support efforts will require further discussion during detailed design. Each potentially impacted utility will be provided with a Notice of Completion and advised of our intent to consult with them during this next phase.

All work relocations/supports would need to be completed based on the City's and various Utilities standards for each specific utility and in consultation with the utility companies.

The utilities potentially impacted include:

- Toronto Sewers
- Toronto Water Mains
- Toronto Hydro Structures
- Street Lighting and Traffic Signals
- Enbridge Gas
- Bell Telephone
- Ontario Hydro
- Enwave
- Rogers
- Telus
- Group Telecom
- Allstream (Formerly AT&T)

10.3.3 Traffic Management Plan

The project team will prepare a Traffic Management Plan as a part of the detailed design phase, based on input and consultation with stakeholders, agencies and City departments. The objective of the plan will be to minimize disruption to traffic flow and access to properties. As a minimum, the following on Queens Quay will be maintained and open to the public during construction in peak hours:

- One lane of auto traffic in each direction;
- Transit Service;
- Sidewalks;
- Property Access.

Lane closures will be scheduled during off-peak hours with detours provided. Notification of these closures will be provided in advance.

Provisions with the Traffic Management Plan will include strategies for:

- Detours and lane management (including temporary modifications to traffic signal phasing, turn restrictions)
- Curbside management plan (Bus, service vehicle, taxi loading/unloading areas, parking)
- Signage plan
- Transit plan (e.g., changes in service, temporary stops)
- Access plan (e.g., temporary modifications to driveways)
- Sidewalk plan (including temporary walkways)

10.3.4 Construction Management Plan

The project team as a part of the detailed design phase will prepare a Construction Management Plan. The objective of the plan would be to maintain services and minimize construction related impacts to the sites along Queens Quay. The plan will be reviewed and adjusted where necessary on an ongoing basis by the project team, in consultation with stakeholders, agencies and City departments to assess the effectiveness of the plan and to identify and address any concerns arising during construction. Provisions within the plan will include strategies for:

- Notification program (e.g. notice of detours temporary road closures)
- Consultation program, community liaison, site contacts
- Construction setbacks
- Disruption to site access
- Disruptions to utilities service
- Storm water management, spill control and run-off
- Below-grade work
- Contaminated Soils
- Excavation and emergency procedures
- Emergency access during construction
- Equipment maintenance and idling
- Routes for construction vehicles
- Construction site housekeeping
- Noise and vibration control
- Dust and emissions monitoring and controls
- Schedule and hours of construction
- Temporary property requirements
- Temporary parking/loading areas
- Encountering archaeological features
- Recycling and waste management strategy

10.3.5 Environmental Management Plan

Waterfront Toronto have established an Environmental Management Plan (EMP) that describes processes and procedures to mitigate environmental effects that may result from project-related activities in the Waterfront Toronto Development Area, which includes Queens Quay. This EMP provides the framework for establishing environmental priorities, identifying potential risks, complying with industry and regulatory standards and defining responsibilities of the various parties in Waterfront Toronto project-related activities.

This EMP supports Waterfront Toronto's Sustainability Framework (2005) by establishing measures to prevent pollution and environmental impairment, preserve cultural and natural resources, protect wildlife habitat and ensure compliance with applicable legislation, regulations, policies and guidelines.

A key component of this EMP is a series of Environmental Protection Plans (EPPs). These EPPs are tailored to projects likely to be carried out in the Waterfront Toronto Development Area and are generalized for these various applications. In sensitive areas with specific or unique conditions, site-specific EPPs may be required.

Contingency and Emergency Response Plans are also included in this EMP. These plans are necessary to address and ameliorate any consequences of unintended occurrences such as operational upsets and malfunctions. Such contingencies are crucial to effective environmental management and are to be put into place by the identified responsible parties before proceeding with WT projects.

Please refer to Appendix H: Environmental Management Plan for further detail.

10.4 Approvals of Future Associated Work not included in the scope of this EA

During the Queens Quay Revitalization Environmental Assessment (EA), the study team identified opportunities that require future study, including a Curbside Management Plan and future north-south connections between Queens Quay and Lake Shore Boulevard. The approvals of these works are not included in the scope of this EA, nor are such approvals prerequisites to proceeding with the implementation of the recommendations of this EA. Through the October 1, 2009 Council Decision (Appendix B), the City is committed to studying a Curbside Management Plan and future north-south connections in processes separate from the Queens Quay Revitalization EA and the implementation of the Queens Quay Revitalization EA recommendations.

10.4.1 Curbside Management Plan

The co-proponents will continue to develop and refine a curbside management plan for the street, including a waterfront-specific bus parking strategy. The bus strategy will focus specifically on the tourism related activity that takes place along and in close proximity to Queens Quay. The plan will identify locations for short-duration drop-off/pickup zones for buses, short-term parking, and long-term parking. For example, the strategy would consider the area south of Lake Shore Boulevard, immediately east and west of Rees Street (the former Martin Goodman Trail), as an opportunity for these alternative uses.

The plan will also identify a management system to better direct how bus related traffic occurs on the waterfront. Further to the issue of curbside management, the recommended preferred plan will include a number of dedicated parking/loading zones where possible. This will minimize conflicts between illegal stopping and parking activities with through traffic.

10.4.2 Future North-South Connections

The co-proponents will undertake a future study for a potential north-south roadway between Queens Quay and the new Fire/EMS/350 Queens Quay signalized intersection. This potential connection may provide benefit to the waterfront roadway network and an opportunity to further mitigate issues related to circulation, access, and parking. In conjunction with this study would be the re-examination of the current parks designation of the car park located in the northwest quadrant of Queens Quay and Rees Street, to determine the viability of broadening the land-use permissions to include mixed-use permission and respond to waterfront parking needs.

Another potential north-south roadway located between York and Bay Streets will be considered as part of the Gardiner Ramps Environmental Assessment, currently being conducted by the City of Toronto.

10.5 City Council Decision

On October 1, 2009, City Council voted 33 to 1 in favour of adopting the recommendations of this EA and granted authority to Waterfront Toronto to issue a Notice of Completion of the Environmental Study Report. The decision also included provisions and motions (summarized below) that will need to be carried out subsequent to this EA. The complete Council Decision is provided in Appendix B.

- **Robertson Crescent:** A traffic signal control will be provided at the intersection of Queens Quay and Robertson Crescent (east access), which will permit egress only (northbound right-turn) movements from Robertson Crescent to Queens Quay. The signal will operate independently, under complete transit pre-emptive control and north-south pedestrian crossings will not be provided.
- **Physical separation of Queens Quay and transit right-of-way:** A physical separation is provided the auto traffic lanes on Queens Quay and the adjacent transit right-of-way.
- **Safety Audit:** To ensure the safety of all users of Queens Quay, a traffic safety and operations consultant will be retained to provide expert advice during the design process.
- **North-south connection at Fire/EMS entrance:** In consultation with the relevant City divisions, the opportunity and feasibility of providing a new north-south road connection—linking Queens Quay to Lake Shore Boulevard opposite the Fire/EMS driveway—will be studied. In conjunction with this study would be the re-examination of the current parks designation of the car park located on the northwest quadrant of Rees Street and Queens Quay, to determine the viability of broadening the land-use permissions for this property to include mixed-use permission and respond to waterfront parking needs.
- **Curbside Management Plan:** In consultation with the City, local Councillors and impacted stakeholders, Preliminary Curbside Management Plan will be refined, including the development of a waterfront bus management strategy, consistent with the timing of detailed design and the reconstruction of Queens Quay.
- **Detailed Design Issues:** A traffic consultant will be jointly hired by the City and Toronto Transit Commission, to address the various detailed design issues.

10.6 Monitoring

Waterfront Toronto and the City of Toronto will ensure that the Contractor is implementing standard construction practices and monitor the construction of the proposed improvements on site. This will include erosion and sedimentation control, dust and noise control, protection of existing vegetation, assurance of traffic safety and maintenance of traffic flow without causing unnecessary delays, etc. The overall performance and effectiveness of the environmental mitigating measures specified will be monitored and assessed during and subsequent to the construction of the project. As the environmental effects outlined in this section are the normal impacts associated with the construction of roads and services in an urban environment, and are based on the established standard construction practices, the mitigating measures will be incorporated in the contract documents. The Contract Administrator will ensure that these mitigating measures are undertaken during construction. Should unforeseen environmental concerns and/or issues arise during the construction period, the appropriate Ministry and Agencies will be contacted and appropriate measures will be taken to mitigate the environmental concerns/issues.

11 Environmental Study Report Filing, Review and Amendment Process

This chapter outlines the filing, public review and amendment process that the Queens Quay Revitalization Environmental Study Report will follow. It is consistent with the review process that is detailed in the *Municipal Class Environmental Assessment* document (Municipal Engineers Association, amended in 2007), summarized below.

11.1 Overview

Phase 4 of the Municipal Class Environmental Assessment (EA) Planning and Design Process (refer to Chapter 3 and Figure 3-1) involves the documentation of Phases 1 to 3 in an Environmental Study Report (ESR). Once the documentation is complete, it must be placed on the public record for a period of at least 30 calendar days to allow review agencies and the public an opportunity to review it.

During this review period, concerned individuals have the opportunity to raise issues with the proponent and if they are not resolved, they can request the Minister of the Environment to issue a Part II Order under the EA Act. If a Part II Order is granted in the case of a Schedule C EA, it will require the proponent to prepare an Individual EA. The decision on whether the project should be subject to a Part II Order rests with the Minister of the Environment.

Once the public review period expires and there are no outstanding Part II Order requests or if the Minister denies any Part II Order requests, the proponent may proceed to the final phase of the planning and design process.

11.2 Filing and Public Review

The completed ESR is placed on the public record once it is filed with the City of Toronto Clerk's Office. The filing marks the start of a 30 calendar day review period by the public and review agencies. The public and review agencies will be notified of the time of filing (and start of the review period) through a mandatory **Notice of Completion** of the ESR.

The Notice of Completion will provide the locations where the ESR will be available for public review. At the time that this ESR was completed, the following were selected as review locations (a final list will be provided in the Notice of Completion):

Ontario Ministry of the Environment, Central Region
5775 Yonge St. Fl 8,
Toronto ON M2M 4J1

City Clerks Office
Secretariat
12th floor West.,
100 Queen St. W.
Toronto Ontario M5H 2N2

Waterfront Toronto
20 Bay Street, Suite 1310
Toronto ON M5J 2N8

www.waterfrontoronto.ca

TTC Head Office
General Secretary's Office
1900 Yonge Street, 7th Floor
Toronto ON M4S 3B2

If at the end of the 30-day review period, no Part II order requests have been received, the proponent can proceed with design and construction in accordance with this ESR.

11.3 Part II Order

The Notice of Completion will also describe a provision that allows the public and review agencies to request a Part II Order to the Minister of the Environment. For Schedule C projects, such as the Queens Quay Revitalization, if the Minister directs the proponent to comply with a Part II Order, the proponent would need to elevate the study from a Schedule C to an Individual EA or abandon the project. A "Part II Order" is a decision by the Minister of the Environment that the environmental significance of a project is of such importance that the procedures for environmental assessment under the Class EA process are not sufficient and that an individual EA is required.

The public and review agencies can engage the proponent with their concerns at any point between Phase 2 and Phase 4 of the planning process, but not later than end of the 30-day review period for the ESR. Requests made after the 30-day review period will not be considered. If the concern is not resolved through discussions with the proponent, the person or party raising the objection may request the proponent to voluntarily elevate the EA to an Individual EA (in the case of a Schedule C EA). If the proponent declines, the person or party may write to the Minister of the Environment to request a Part II Order. Such requests shall be forwarded to:

The Honourable John Gerretsen
Minister of the Environment
77 Wellesley Street West
11th Floor, Ferguson Block
Toronto ON M7A 2T5

Copies of the request must be forwarded to the proponent at the same time that it is submitted to the Minister. Please forward copies of requests to the following proponent contacts:

Pina Mallozzi,
Project Manager
Waterfront Toronto
20 Bay Street, Suite 1310
Toronto ON M5J 2N8

Jayne Naiman,
Project Manager
Waterfront Secretariat
City of Toronto
12th fl. E., 100 Queen St. W.
Toronto ON M5H 2N2

The proponent may conclude to carry out an Individual EA or make a submission to the Environmental Assessment and Approvals (EAA) Branch of the Ministry to address the issues raised in the Part II Order request. The EAA would then have 45 calendar days after the 30-day public review period to review the submission and prepare a report for the Minister to consider in his decision. The EAA may request additional information from the proponent within the 45 days. At this point, the remainder of 45-day period no longer applies. Within 21 calendar days of the receipt of the additional information, the EAA Branch will make a recommendation to the Minister.

The Minister will have 21 days upon receipt of the EAA Branch's report to review and make a decision. The Minister will recommend one of the following:

1. Deny the request – In this case the Minister can clear the project to proceed or clear the project to proceed with conditions that the proponent must fulfil in implementing the project.
2. Refer the matter to mediation.
3. Part II Order – The proponent will be required to undertake an individual EA.

11.4 Future Amendments to the Queens Quay EA

This section describes the process in addressing changes to the undertaking following approval by the Ministry of the Environment. The process for amending the undertaking is contingent upon the scale of the change and the anticipated impacts associated with the change.

Time Conditions

Commencement of construction must not begin more than 10 years following the filing of the Notice of Completion in the public record or the Ministry of the Environment's denial of a Part II Order request. If this period of time is greater than 10 years, Waterfront Toronto, the City of Toronto, or other relevant proponent agency, will be required to review the planning, design and environmental impacts to ensure EA components are applicable. A Notice of Filing of Addendum will be given to public and review agencies and a 30-day review and response period will open.

Process for Minor Amendments

Minor amendments include any changes where there are minimal anticipated net impacts to the environment or the project. Such changes would include, for example, minor modifications to vehicle lane or median widths, or site access redesign or relocation in cases where there are no appreciable net impacts to the environment relative to impacts set out in this ESR.

Confirmation that the proposed changes are anticipated to have minimal impacts will be undertaken through an evaluation consistent with the criteria set out within this EA.

If any proposed minor amendment is anticipated to impact property owners or stakeholders, consultation with affected key parties—including the City and TTC—will be undertaken to confirm that no significant net impacts are anticipated as a result of proposed changes.

Process for Major Amendments to the Undertaking

Major amendments include changes where there are significant modifications to the project or in the environment. Such changes might include, for example, a significant change in the width of the right-of-way or number of vehicles lanes.

In the event of a major amendment to the undertaking, an EA addendum will be prepared. The addendum will describe the reasons precipitating the change, the environmental impacts associated with the change, as well as any mitigation measures. Notice will be given to potentially affected stakeholders, review agencies and members of the public regarding the filing of the addendum for a 30-day public review period.

If no requests for a Part II order are received by the MOE within the 30-day period, the proponent can proceed with implementation.