PORT LANDS + SOUTH OF EASTERN

TRANSPORTATION + SERVICING

MASTER PLAN

ENVIRONMENTAL ASSESSMENT

TORONTO

DILLON CONSULTING

PUBLIC WORK

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"Like a piece of architecture, the city is a construction in space, but one of a vast scale, a thing perceived only in the course of long spans of time… At every instant, there is more than the eye can see, more than the ear can hear, a setting or a view waiting to be explored"

– **Kevin Lynch**
(The Image of the City)

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Acronyms and Abbreviations

AAQC	Ambient Air Quality Criteria
ABTP	Ashbridge's Bay Sewage Treatment Plant
ACMS	Archaeological Conservation and Management Strategy
ASI	Archaeological Services Incorporated
BFF	Ballasted Flocculation Facility
BHR	Built Heritage Report
CHL	Cultural Heritage Landscapes
CHRA	Cultural Heritage Resource Assessment
CNR	Canadian National Rail
CO	Carbon Monoxide
CVC	Credit Valley Conservation
CWSP	Central Waterfront Secondary Plan
dB	Decibel
dBA	Decibel A Weighting
DC	Development Charges
DMNP EA	Don Mouth Naturalization and Port Lands Flood Protection Environmental Assessment
DRL	Downtown Relief Line
DVP	Don Valley Parkway
Enbridge	Enbridge Gas Distribution
ESA	Environmentally Sensitive Area
FPL	Flood Protection Landform
GTA	Greater Toronto Area
HGL	Hydraulic Grade Line
Hydro One	Hydro One Networks
IBA	Important Bird Area
IHT	Inner Harbour Tunnel
km	kilometer

kPa	Kilopascal
LAeq	Equivalent Continuous Noise Level
l/s	litres per second
LDLMP EA	Lower Don Lands Master Plan EA
LID	Low Impact Development
LLI	Low Level Interceptor
LOS	Level of Service
LUAC	Land Owner and User Advisory Committee
m	metre
MCR	Municipal Comprehensive Review
MGT	Martin Goodman Trail
mm	millimeter
MMA	Ministry of Municipal Affairs (formerly the Municipal Affairs and Housing)
MOECC	Ministry of Environment and Climate Change
MTCS	Ministry of Tourism, Culture and Sport
MTI	Mid Toronto Interceptor
NACTO	National Association of City Transportation Officials
NAPS	National Air Pollution Surveillance
NAAQO	National Ambient Air Quality Objectives
NO	Nitric Oxide
NO2	Nitrogen Dioxide
NOx	Nitrogen Oxides
OASD	Ontario Archaeological Sites Database
OBC	Ontario Building Code
OHSF	Outer Harbour Sailing Federation
OPG	Ontario Power Generation
PEC	Port Lands Energy Centre
PLAI	Port Lands Acceleration Initiative
PM	Particulate Matter

$PM^{2.5}$	Particulate Matter less than 10 microns in diameter
PM^{10}	Particulate Matter less than 2.5 microns in diameter
PPS	Provincial Policy Statement
psi	Pounds per square inch
PWQO	Provincial Water Quality Objectives
RER	Regional Express Rail
SAC	Stakeholder Advisory Committee
SO2	Sulfur Dioxide
SPM	Suspended Particulate Matter (<44 micron diameter)
SWQFT	Stormwater Quality Treatment Facility
TAC	Transportation Association of Canada
TBP	Toronto Bike Plan
TGS	Toronto Green Standard
the City	City of Toronto
TPLC	Toronto Port Lands Company
TRCA	Toronto and Region Conservation Authority
TSS	Total Suspended Solids
TSMP EA	Port Lands and South of Eastern Transportation and Servicing Master Plan
TTC	Toronto Transit Commission
UV	Ultraviolet
VOC	Volatile Organic Compound
VWF	Valley Wall Feature
WSSMP EA Update	Waterfront Sanitary Servicing Master Plan Class EA and Update
WWFMP	Wet Weather Flow Master Plan

EXECUTIVE SUMMARY

The Port Lands and South of Eastern Transportation and Servicing Master Plan Environmental Assessment (TSMP EA or the Project) supports the evolution of Toronto's only active port and continued employment growth in the South of Eastern area over the next 30 to 50 years. This TSMP EA has been undertaken as a coordinated infrastructure planning project that meets the requirements of both the Municipal Class Environmental Assessment, 2000 (amended 2007, 2011, 2015) (Class EA) process and the Planning Act, R.S.O. 1990 (Planning Act). Coordinated infrastructure master planning provides the opportunity to comprehensively address infrastructure needs to support regeneration and renewal in the Port Lands and continued employment growth in the South of Eastern area. It also ensures the appropriate protection of cultural and natural heritage resources in the Study Area. The TSMP EA identifies the preferred solutions for streets, including transit in dedicated rights-of-way, pedestrians and cycling, and water, wastewater and stormwater infrastructure for the Study Area (**Figure 1**). The proponent of the TSMP EA is the City, in collaboration with Waterfront Toronto and Toronto and Region Conservation Authority (TRCA).

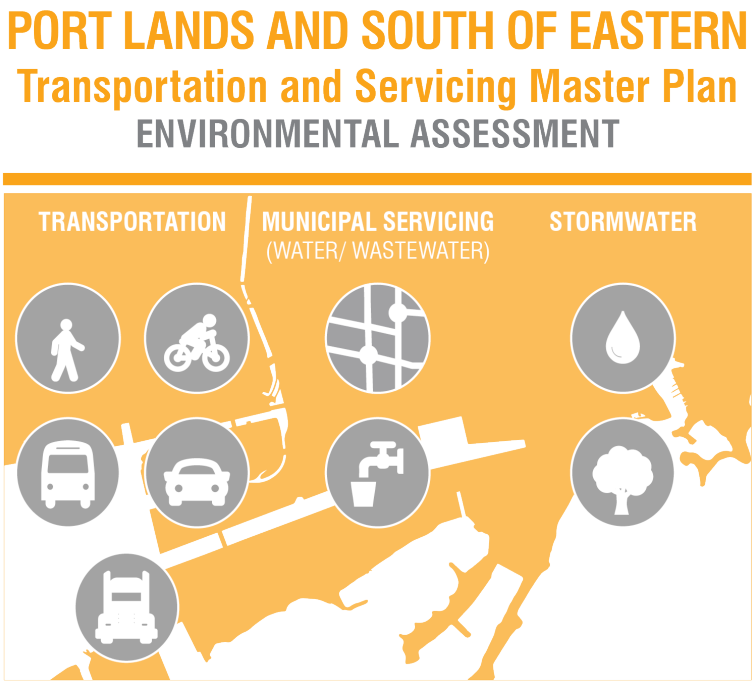


Figure 1: The TSMP EA addresses transportation, municipal servicing and stormwater.

Study Area and Context Area

The Study Area for the TSMP is approximately 350 hectares in size. In the Port Lands, the Study Area includes the lands north of the Ship Channel and east of the Don Roadway to Leslie Street, and all lands south of the Ship Channel north of and including Unwin Avenue. The Study Area also includes the South of Eastern area which is bounded by the Don River in the west, Eastern Avenue to the north, Coxwell Avenue to the east and Lake Shore Boulevard East to the south (**Figure 2**). A larger Context Area was also established to better understand how the Port Lands and South of Eastern area would be affected by surrounding initiatives and affect surrounding areas. The Context Area extends to Jameson Avenue in the west, Coxwell Avenue in the east and Queen Street to the north. The Context Area also included the natural and park areas south of Unwin Avenue.

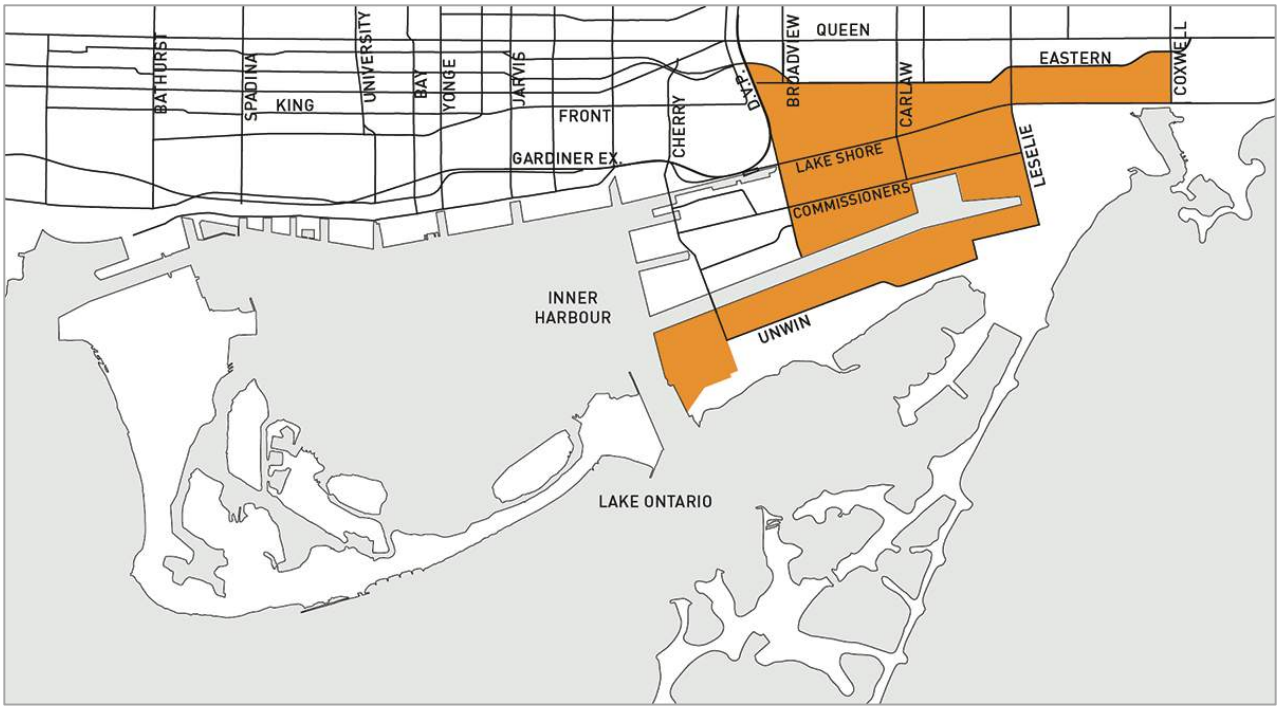


Figure 2 – Study Area Lands Included as part of the TSMP EA

Guiding Policies and Parallel Studies

The TSMP EA is one part of a coordinated planning process for Toronto's waterfront being led by the City and Waterfront Toronto, with the TRCA.

The TSMP EA has been completed as an integrated process with the Port Lands Planning Framework and the ongoing South of Eastern Strategic Direction. City Council directed City staff, with Waterfront Toronto, to develop a high-level planning framework for the Port Lands at the conclusion of the first phase of the Port Lands Acceleration Initiative (PLAI). In 2012, City Council also directed City staff to undertake a planning study for the South of Eastern area. In developing the work program for the two studies, it was determined that coordinated infrastructure planning for the two areas was needed, which led to the development of this TSMP EA (City of Toronto, 2013).

The Port Lands Planning Framework is a comprehensive, long-term plan that will guide the Port Lands transformation over the next 30 to 50 years. It provides recommendations for more robust policy direction from what is currently provided for in the Central Waterfront Secondary Plan (CWSP). The Port Lands Planning Framework also integrates the approved DMNP EA and completed addendum and Environmental Study Report (ESR) for the Lower Don Lands.

The South of Eastern Strategic Direction is a planning strategy for the South of Eastern Employment District. This study is focused on economic development, urban design and transportation for the area bounded the Don River, Eastern Avenue, Coxwell Street and Lake Shore Boulevard East. This TSMP EA informs the transportation aspects of the study.

The TSMP EA was also closely coordinated with several other plans including the Villiers Island Precinct Plan, the as well as the Don Mouth Naturalization and Port Lands Flood Protection Environmental Assessment (DMNP EA) and the Lower Don Lands Master Plan EA (LDLMP EA).

The DMNP EA aims to transform the existing mouth of the Don River including the Keating Channel, into a healthier, more naturalized river outlet to Lake Ontario, while also removing the risk of flooding to 240 hectares of land to the east and south of the existing river. This includes providing flood protection for flood prone lands in the Port Lands and the majority of the South of Eastern area and lands north of Eastern Avenue. Approximately 7 hectares of land (the area north of the rail embankment between the Don River and Eastern Avenue underpass) remain at risk of flooding. The remaining 43 hectares of flood prone lands consist of lands needed to accommodate the river valley and other associated flood protection features.

The LDLMP EA addressed water, wastewater, stormwater and transportation (including transit) infrastructure to support the regeneration envisioned for the Lower Don Lands. An Addendum to the 2010 LDLMP EA and ESR was completed for the Lower Don Lands in 2014 that reflected the final design carried forward in the DMNP EA.

The TSMP has also been coordinated with the ongoing Gardiner Expressway and Lake Shore Boulevard East Reconfiguration EA and Urban Design Study (Gardiner East EA), the Waterfront Sanitary Servicing Master Plan update and the Don River and Central Waterfront project. The Gardiner East EA determined the future of the Gardiner Expressway and Lake Shore Boulevard East, from approximately Jarvis Street to approximately Leslie Street. The City has also been advancing city-wide transit network planning. A new SmartTrack/RER station is now proposed in the Unilever precinct and a Relief Line Subway Station is proposed in the vicinity of Broadview Avenue and Eastern Avenue.

Municipal Class EA Process

The TSMP EA has been prepared in accordance with Phase One and Phase Two of the Class EA. Consistent with the Class EA process, an existing conditions assessment documented the current environmental conditions of the Study Area in terms of the physical, natural, and socio-economic environment. During Phase Two of the Class EA, a wide range of Alternative Solutions for transportation, municipal servicing (water, wastewater) and stormwater were developed, evaluated, and preferred alternatives were selected and presented to the public and stakeholders for feedback (**Figure 3**).

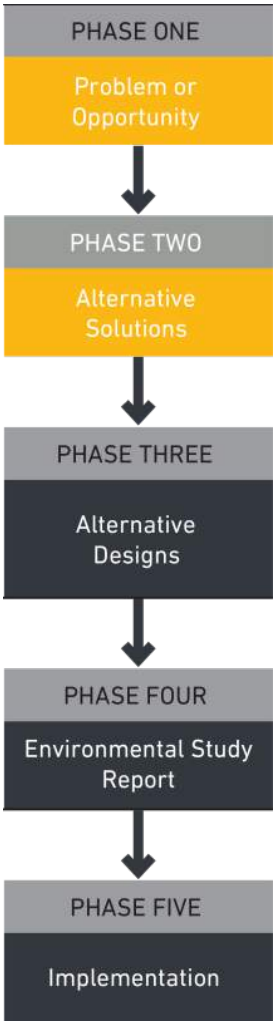


Figure 3: Municipal Class EA Phases.

Existing Conditions

The Study Area contains a mix of industrial, employment and commercial uses, as well as vacant lands and a small area of residential development located south of Eastern Avenue (north of Lake Shore Boulevard East). Buildings are primarily one to two-storeys in height, with various taller structures such as the silos located in the Port Lands, the Commissioners Waste Transfer Station's and the Hearn's chimneystacks. The lot fabric is varied with some smaller lots east of the Don Roadway to Carlaw Avenue, north of Commissioners Street. There are several private enterprises that operate in the area that range from outdoor/indoor warehousing, production studios to heavy equipment rental companies and fitness clubs.

To support the anticipated redevelopment and diversity of places in both the Port Lands and the South of Eastern area, a resilient urban structure is needed to better connect the Study Area to the city, coupled with the necessary infrastructure to support the desired regeneration and renewal in the two areas. An urban structure that supports a mix of transportation infrastructure with a greater emphasis on transit, cycling and walking, as well as increased water, wastewater and stormwater capacity is needed in order to facilitate a change from an industrial waterfront to one that accommodates the full range of land uses anticipated in both areas.

Transportation

The Study Area lacks a fine-grained street network, transit to support future development, and pedestrian and cycling facilities due to its original design meant to accommodate industrial and commercial activity along the City's waterfront. The road network is vehicle oriented and cycling and pedestrian conditions are poor. Transit service in the area is also currently limited to bus service that provides service to a portion of the Study Area. The limited transportation system makes the area vulnerable to increased auto dependency and congestion. Goods movement is an important consideration in the area.

Water/Wastewater Infrastructure

Water and wastewater infrastructure in the Study Area is generally insufficient (and non-existent in some areas) and cannot support redevelopment efforts.

Stormwater (including Stormwater Disinfection)

There are currently limited (or absent) stormwater management measures in place in the Study Area to meet regulatory guidelines. Surface runoff in the Study Area generally drains directly into the Ship Channel and Lake Ontario without treatment. Other issues include aging and limited stormwater infrastructure north of the Ship Channel resulting in a lack of capacity to convey and manage additional stormwater flows from future development, a lack of storm sewers in the area causing stormwater runoff to drain overland south of the Ship Channel resulting in ponding and localized flooding, and a lack of water quality treatment for stormwater runoff.

Development and Evaluation of Alternative Solutions

Following the documentation and assessment of existing conditions in the Study Area and the identification of problems and opportunities to be addressed in the TSMP EA, Alternative Solutions were developed and evaluated. To guide this process, six objectives were created to guide the planning process:

- Creating an interesting and dynamic urban mix;
- Connecting the Port Lands to the city;
- Leveraging assets;
- Developing a high quality public realm;
- Contributing to the sustainable future of the city; and,
- Providing flexibility and certainty in implementation.

Based on these Objectives, a total of 28 Evaluation Criteria and 53 measures were developed and used for the evaluation, as applicable (**Figure 4**). The evaluation criteria and measures reflected review and input from stakeholders. The alternatives were evaluated against these criteria on both a qualitative and quantitative basis to determine their advantages and disadvantages and to identify the Preferred Solutions and an overall recommended Master Plan.

A total of thirty-three transportation (in six sub-areas), seven municipal servicing (water/wastewater) and nine stormwater Alternative Solutions were evaluated (**Figure 5**).

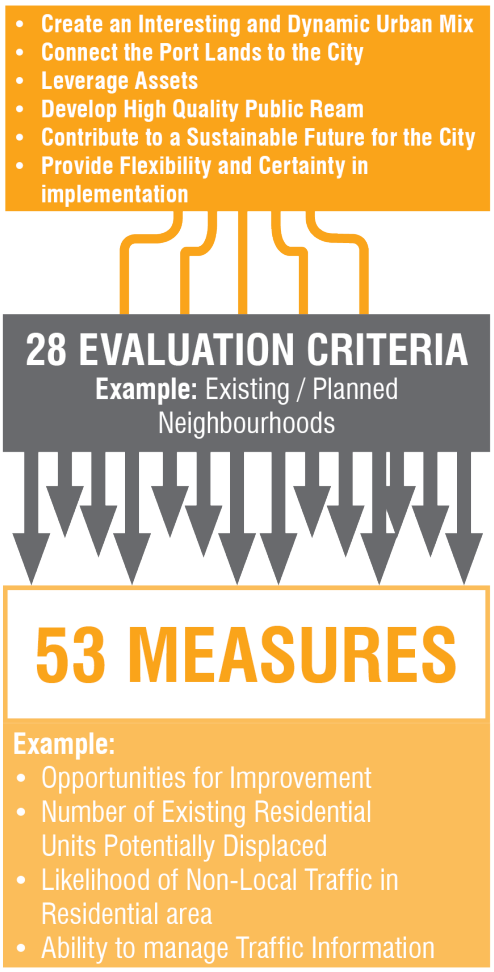


Figure 4: Evaluation Criteria and Measures.

Recommended Master Plan (Preferred Solutions)

Through the evaluation of Alternative Solutions, Preferred Solutions were identified and are recommended in the TSMP. The recommended TSMP best meets the Project Vision/Objectives and will provide infrastructure needs to support future growth and redevelopment in the Study Area over the next 30 to 50 years. The TSMP balances the needs of the various uses that would be served by the infrastructure network, while taking into account urban design, active transportation and the Study Area's unique cultural heritage attributes and solutions are integrated with ongoing planning studies.

Transportation – Street, Transit, Pedestrian and Cycling Networks

The recommended transportation system is illustrated in **Figures 6** to **8** and was developed to balance the needs of the various uses that would be served by the transportation network, while recognizing urban design and environmental priorities.

Street Network – The preferred street network consists of a series of complete streets that provides enhanced connections and capacity; supports transit; completes and expands the cycling network; enables achieving a fine-grained block pattern; supports innovative stormwater solutions; provides access to key destinations; avoids sensitive environmental features and minimizes impacts to heritage resources. It includes the following Preferred Solutions:

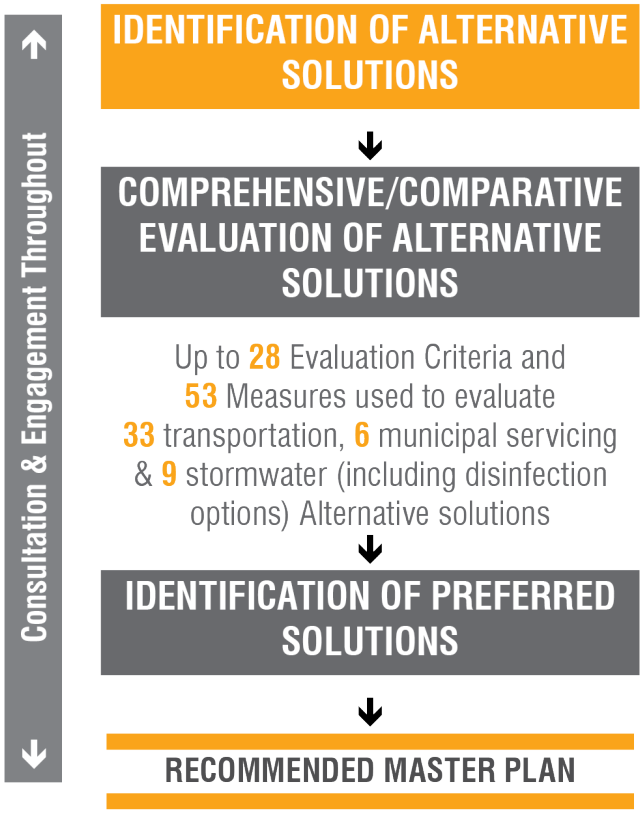


Figure 5: Evaluation Process

- Alternative 1-B.2 Realigned Saulter (Under) and New North-South Street – Broadview Extension using a realigned Saulter Avenue alignment (one-lane each direction with streetcar in dedicated right-of-way) – and a New North-South Street referred to as the Bouchette extension;
- Alternative 2-B Caroline – Caroline Avenue Extension (two way, Complete Street design);
- Alternative 3-C Broadview – Includes an extension of Broadview Avenue across the Ship Channel;
- Alternative 4-A.3 Urbanize Eastern (consistent Complete Street design);
- Alternative 4-B.2– New East-West Connection in the Unilever Precinct from the Don Roadway to Booth Avenue;
- Alternative 5-D – Multiple Connections including:
    - Urbanize Commissioners Street (one lane in each direction with streetcar in dedicated right-of-way);
    - Realigned and Extended Basin Street from the Don Roadway to Carlaw Avenue, south of Pinewood Toronto Studio's existing secure perimeter; and
    - New East-West Street North of Commissioners Street between Don Roadway and Bouchette Street;
- Alternative 6-C – Realign and Urbanize Unwin Avenue; and
- Extended Woodfield Road.

Transit Network – The recommended transit network includes the existing, approved and proposed transit projects. The TSMP EA transit network includes streetcar service in a dedicated right-of-way on Commissioners Street connecting to streetcar service proposed in the Lower Don Lands, as well as streetcar in a dedicated right-of-way in the preferred Broadview extension which will connect with streetcar service north of the Study Area. Bus service is also accommodated and able to be expanded.

This transit system will provide a high level of service and a high degree of access within, and to, the Study Area.

The transit network includes exclusive dedicated transit right-of-ways to provide optimum service for the anticipated mix of uses in the Study Area. It has been aligned to capture maximum ridership and to support planned growth, while minimizing potential impacts. Transit hubs are also identified where multiple transit routes converge. Two hubs are proposed at the intersection of the Broadview Avenue extension and GO rail line and the Commissioners Street and Broadview Avenue extension. These hubs would also be focal points for multi-modal interactions.

Pedestrian and Cycling Networks – The series of complete streets proposed in the TSMP EA forms the basis of the TSMP EA pedestrian network. The mobility needs of pedestrians are met not only with high quality pedestrian amenities proposed (such as appropriately sized sidewalks for the function and character of each street) but also with a high degree of access to transit. All streets in the transportation network will have wide sidewalks on both sides of the streets and include space to accommodate other pedestrian amenity, such as trees and landscaping.

The TSMP proposes an extensive cycling network with a combination of existing and proposed (or improved/realigned) multi-use trails and cycle tracks. The combination of multi-use trails and cycle tracks will serve to meet the needs of both commuter and recreational cyclists. All the major streets have been conceived to enable high-quality cycling facilities and as an integral part of the public realm. Routes for priority raised, separated cycle tracks or multi-use trails have been identified for the key north-south and east-west high streets, but also streets that will carry high volumes of traffic or accommodate goods movement. Raised cycle tracks are desirable for the balance of the major streets and on some local streets. Some local streets are also imagined to accommodate safe cycling facilities to create a robust and redundant cycling network. The cycling network has been designed to appeal to all cycling abilities and age groups, encouraging cycling to be seen as a safe, primary commuting and leisure travel option.

The series of interconnected multi-use trails on Commissioners Street, Cherry Street, Unwin Avenue, Leslie Street and Carlaw Avenue south of Lake Shore Boulevard, will also link to the broader network of multi-use trails and proposed water's edge promenades in the area.

Figure 6 – TSMP Street Network

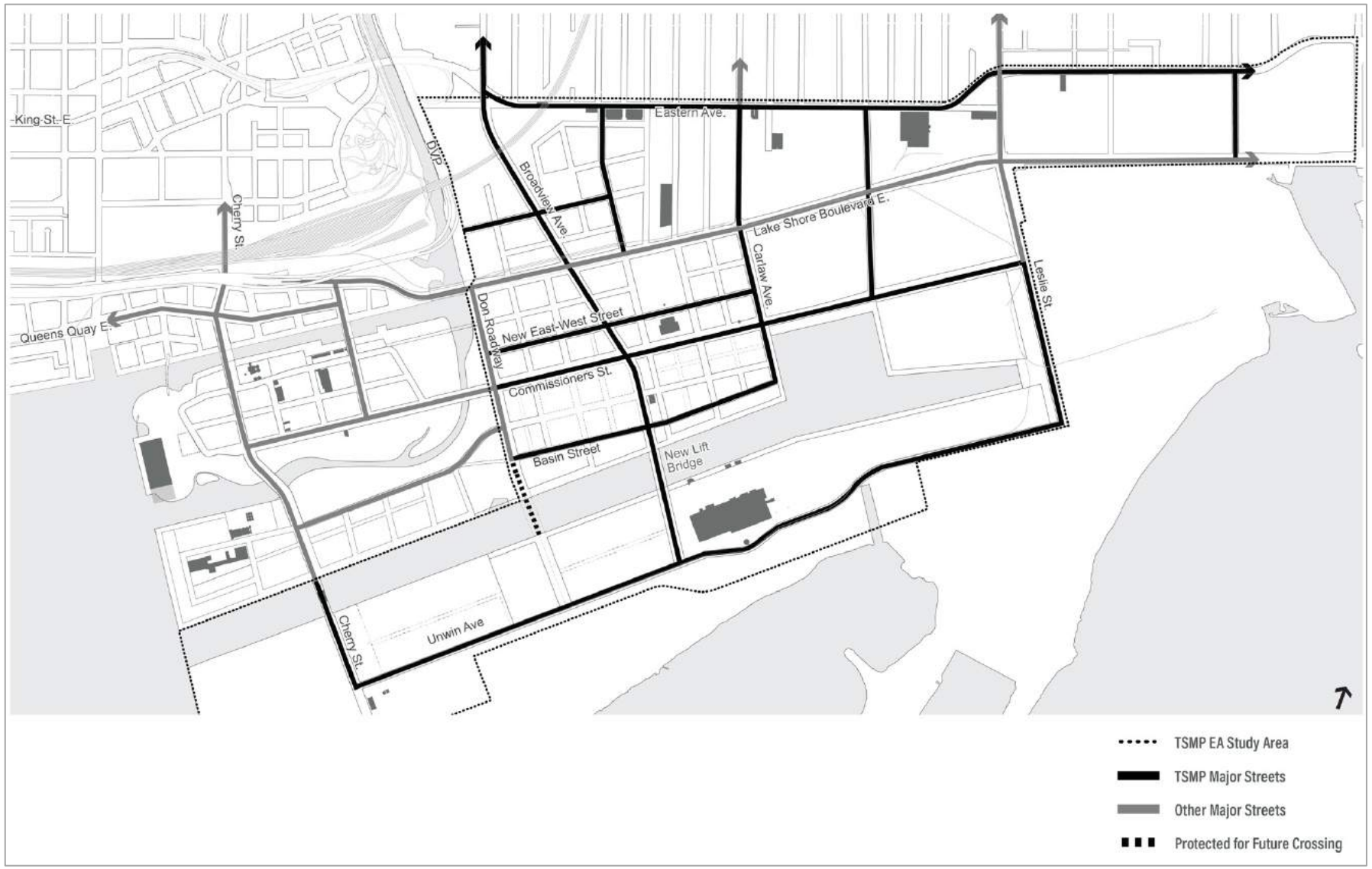


Figure 7 – TSMP Transit Network

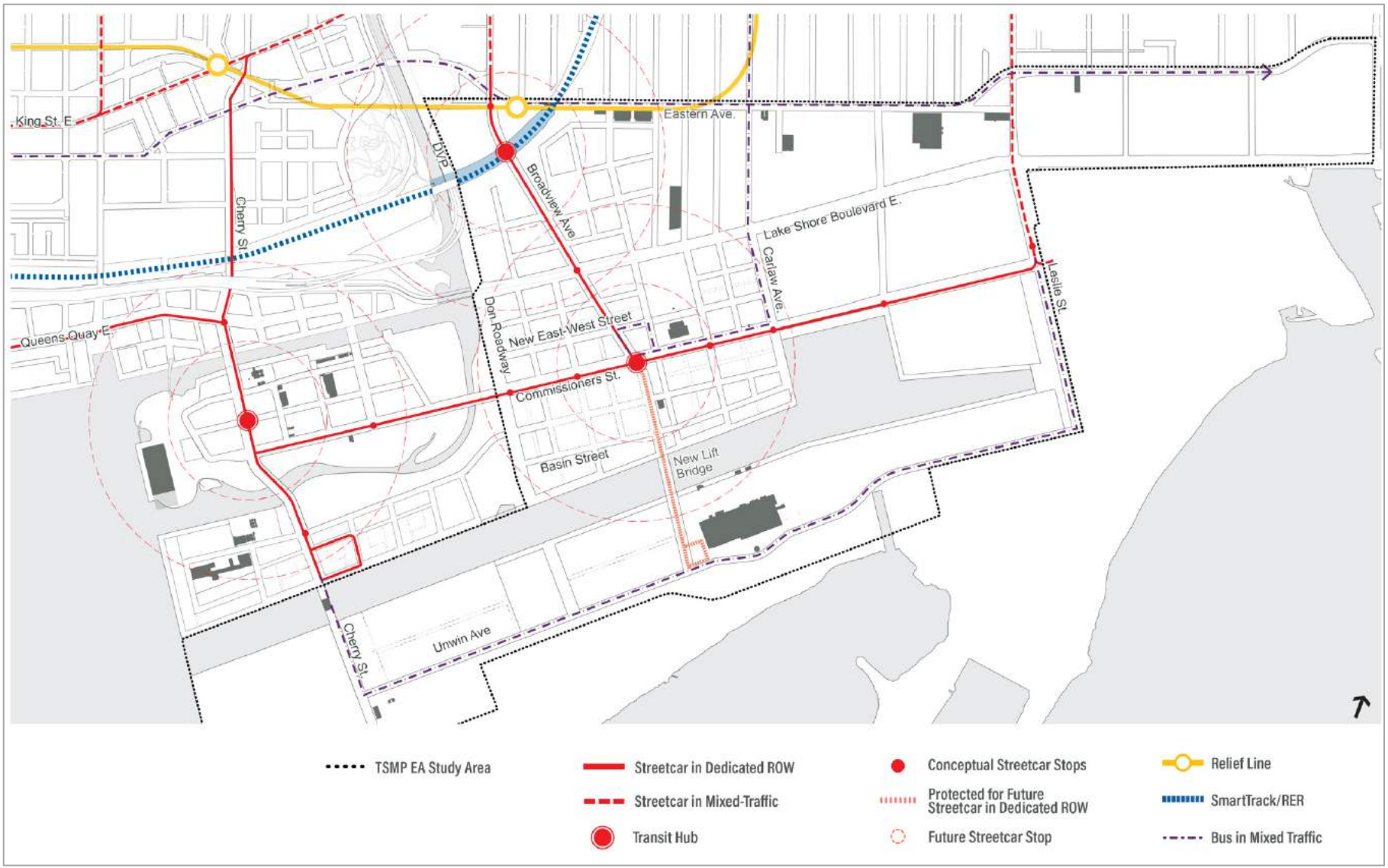
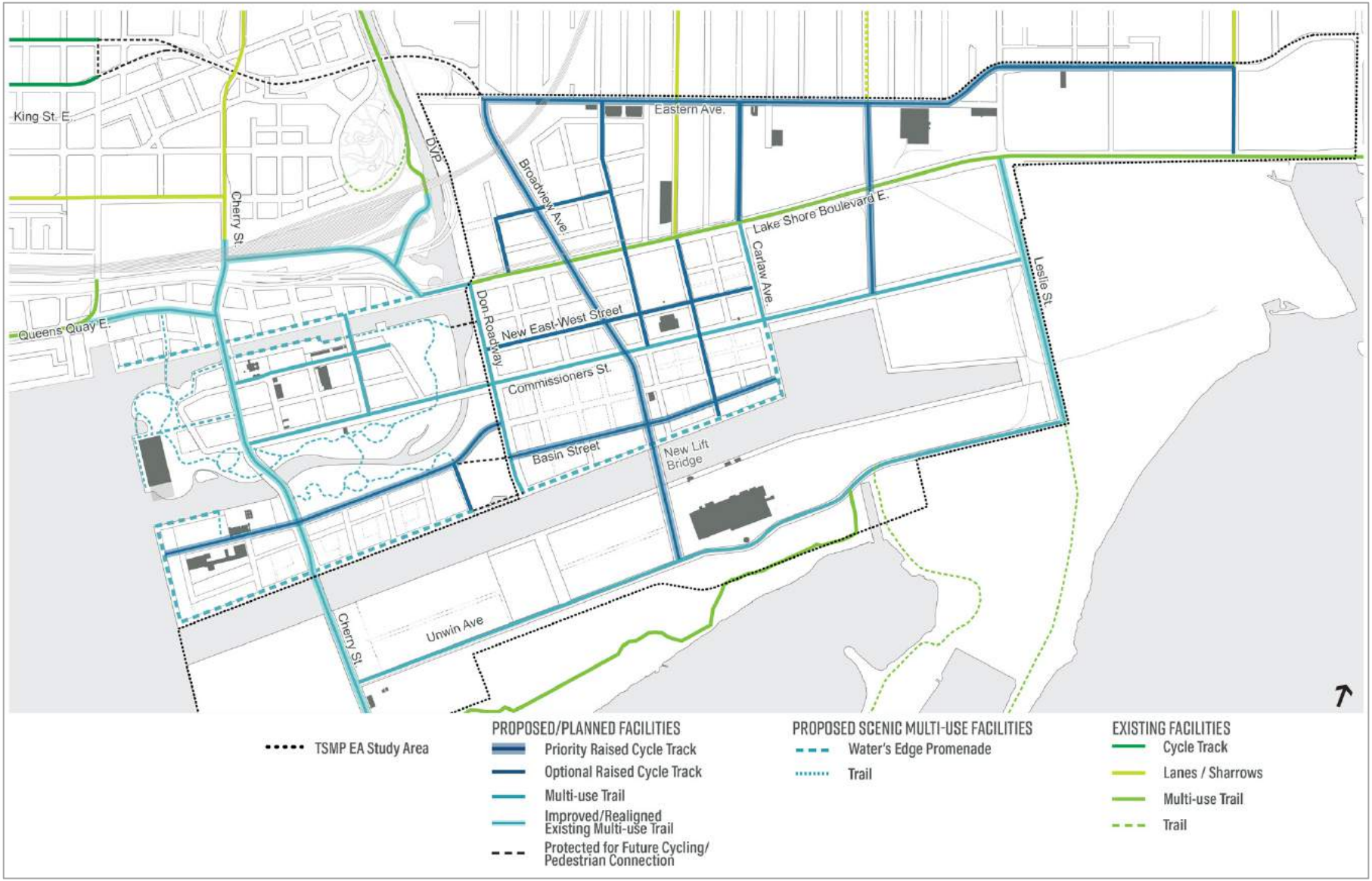


Figure 8 – TSMP Pedestrian and Cycling Network



Water

The recommended system for water supply identified through the TSMP EA is to reduce water usage by users and enlarge/extend the network to serve new employment and populations, realign the network to new streets and to provide for looping and redundancy of supply to improve fireflows and maintain water quality (**Figure 9**). Many of the existing watermains that are of a suitable diameter to accommodate future demands are anticipated to be replaced and/or relocated within the rights-of-ways.

Wastewater

The recommended system for wastewater servicing identified through the TSMP EA is to reduce wastewater flows and enlarge/extend collection – convey flow from the Port Lands via Carlaw Avenue inter-connecting sewer at Eastern Avenue to the ABTP. The plan includes disconnection of the Port Lands from the LLI and new and upsized sewers to service new employment and population growth and to realign the sewer network to new roads. Smaller diameter pipes and branches of the existing network may be able to be reused, where feasible (**Figure 10**).

Stormwater Management System

The recommended system for managing stormwater is the "Water as a Resource" concept which utilizes a treatment train approach and low impact development techniques, or green infrastructure, for managing stormwater. A series of open channels and bioswales are proposed as part of the conveyance and treatment system in combination with a network of new and upgraded sewers. **Figure 11** highlights the different types of open channels and swales proposed and precedent imagery.

Designing with water as a resource embeds the movement and treatment of stormwater into the everyday experience of streets and open spaces. The approach daylights stormwater management through the open, vegetated channels and swales that are integrated into the public realm – contributing to placemaking in the Study Area and enhancing the resiliency and identity of both the Port Lands and South of Eastern areas (**Figure 12**).

Stormwater elements take on new meaning – offering communal places for shade and gathering and bringing the narrative of water to life. This approach contributes to the sustainable future of the City, while creating a high quality public realm.

Stormwater Disinfection

For the area north of the Ship Channel, future stormwater will be treated in two possible locations: the Turning Basin Blue Square; and a Satellite Facility associated with Don River and Central Waterfront project at the Ashbridge's Bay Treatment Plant ABTP.

For the area south of the Ship Channel, future stormwater will be treated at a new stormwater quality treatment facility, sensitively located and designed in the Don Greenway South open space (**Figure 12**).

Opportunities to pilot passive treatment approaches in both the Turning Basin Blue Square and Don Greenway South open space will also be further explored during detailed design.

Figure 9 – TSMP Water

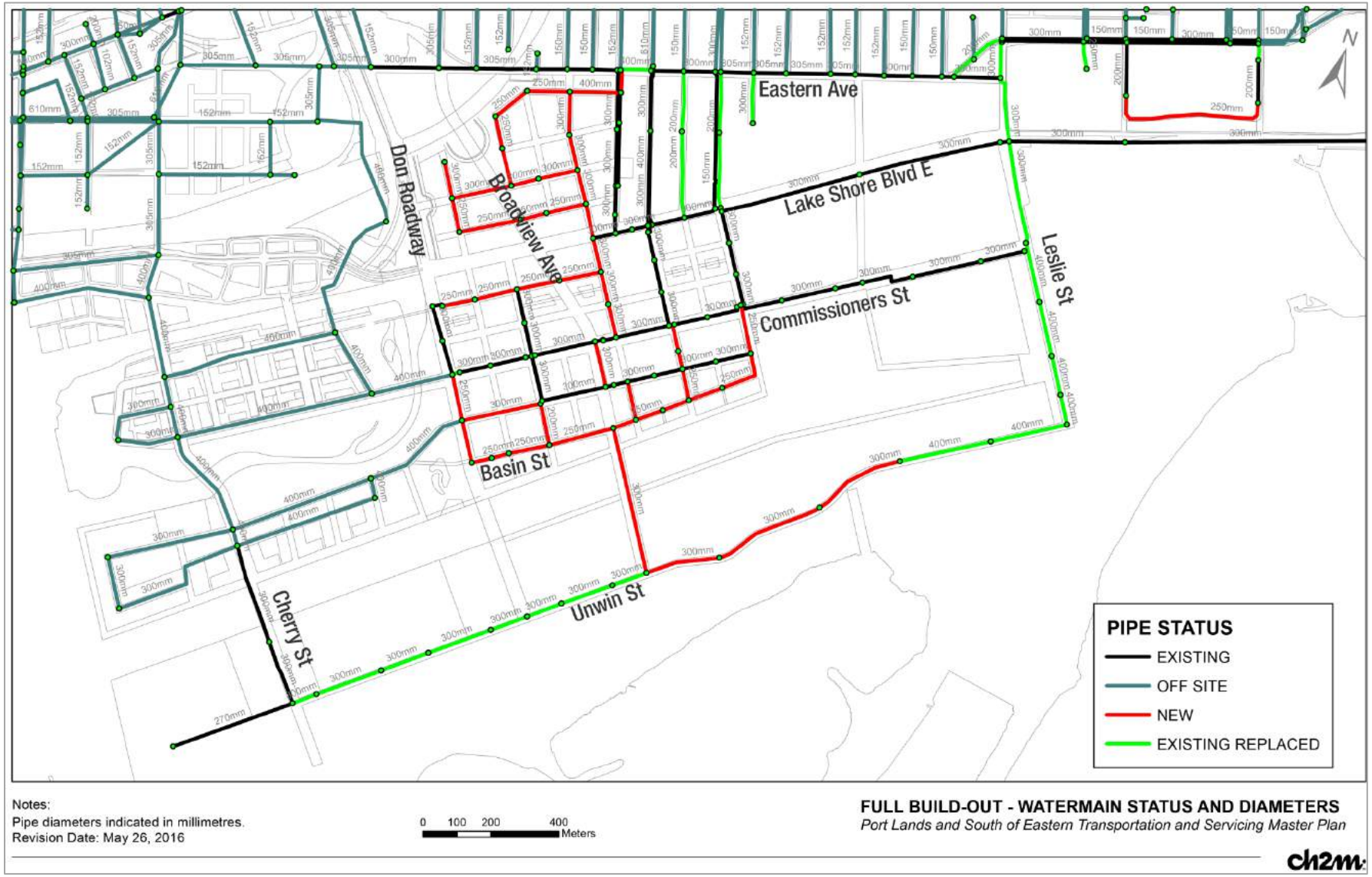


Figure 10 – TSMP Wastewater

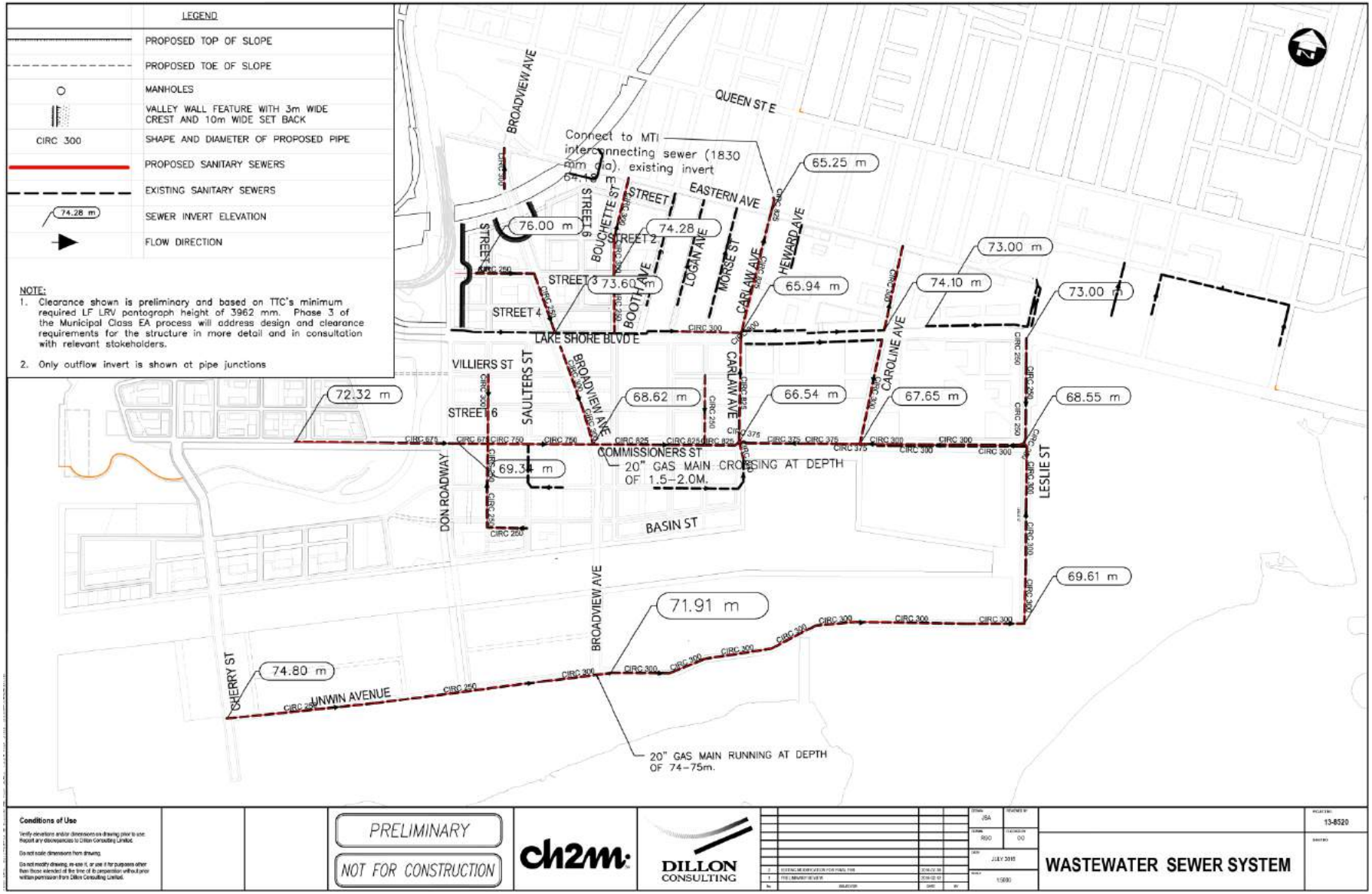


Figure 11 – Open Channels and Bioswales Concepts and Precedent Imagery

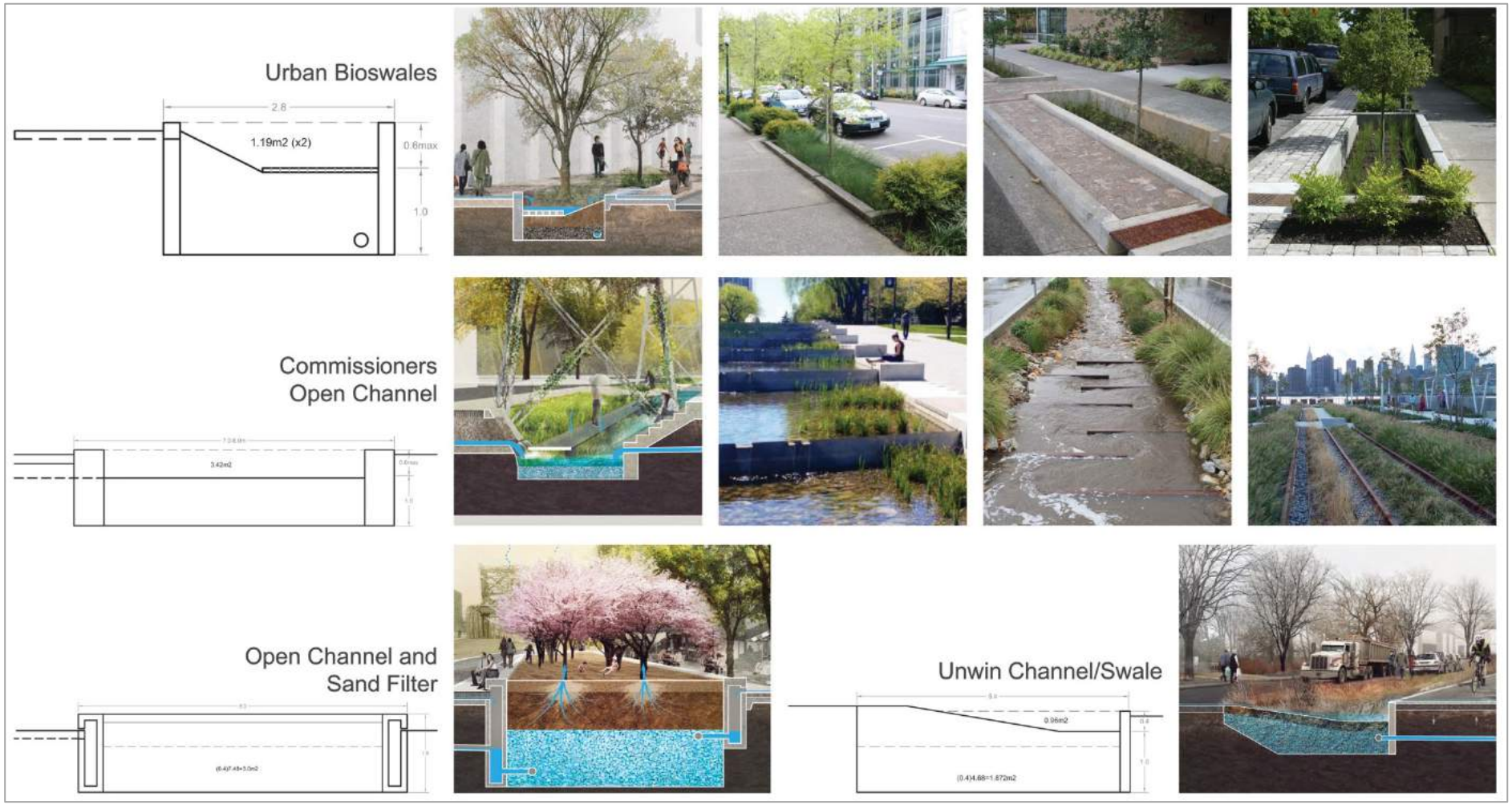
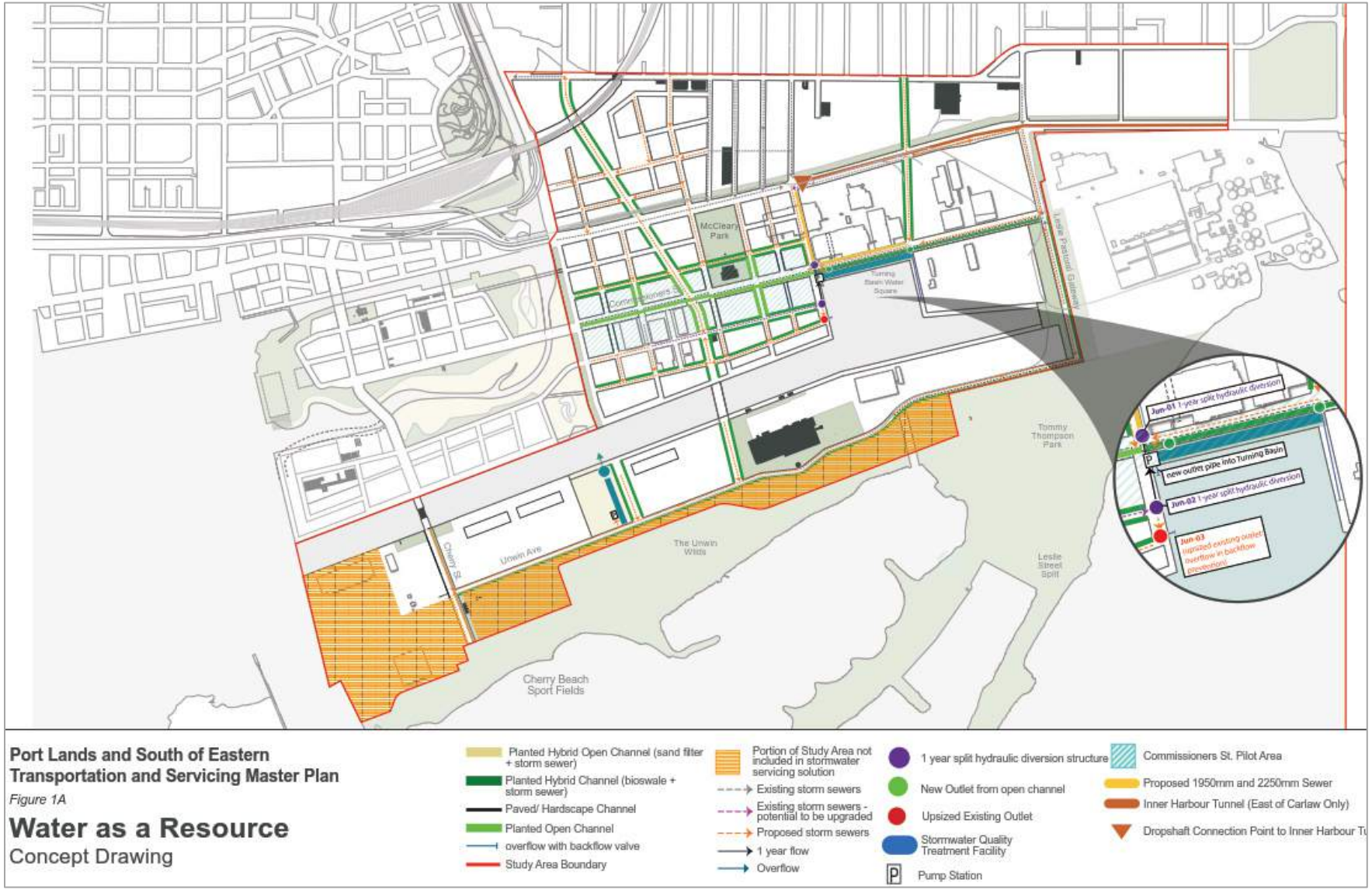


Figure 12 – TSMP Stormwater System



Consultation

Public engagement was an important component of the development of the TSMP EA. The Class EA process requires that public, agency and First Nation and Aboriginal consultation take place as part of the Project. The TSMP EA consultation process utilized the robust consultation process established in the first phase of the PLAI, and was coordinated with consultation activities undertaken for the Port Lands Planning Framework and South of Eastern Strategic Direction. The entire process spanned a three-year period, with multiple consultation activities throughout this period. The process was robust, including online, social media and one-on-one consultation with various working groups, agencies and other stakeholders. A total of over 60 meetings were held **(Figure 13)**.

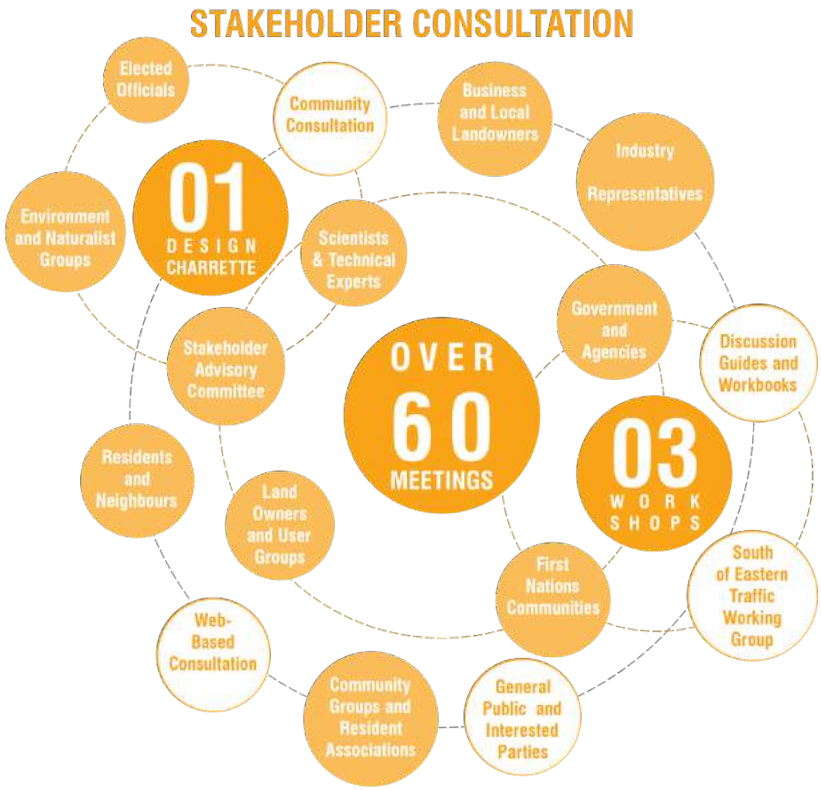


Figure 13: Multiple meetings, workshops and other public events were held to consult on the TMSP EA.

Highlights of consultation activities during the development of the TSMP EA include: extensive public meetings/workshops with stakeholders, a two-day design charette, transportation workshops, consultation with First Nation and Aboriginal communities, consultation with a Stakeholder Advisory Committee (SAC) and a Land Owners and User Advisory Committee (LUAC) and detailed consultation with the Film Sector as well as other important landowners/employers. A significant amount of input was leveraged to make the TSMP EA have meaning well into the future.

Implementation

The TSMP includes recommendations for required future studies, phasing and timing, costing and monitoring. Class EA schedules are identified for each prospective transportation, servicing and stormwater project. Future EA studies are required to complete projects identified as Schedule C. The Schedule C projects largely consist of new public streets and stormwater quality treatment facilities. The balance of infrastructure are Schedule A+ projects.

PART 1:

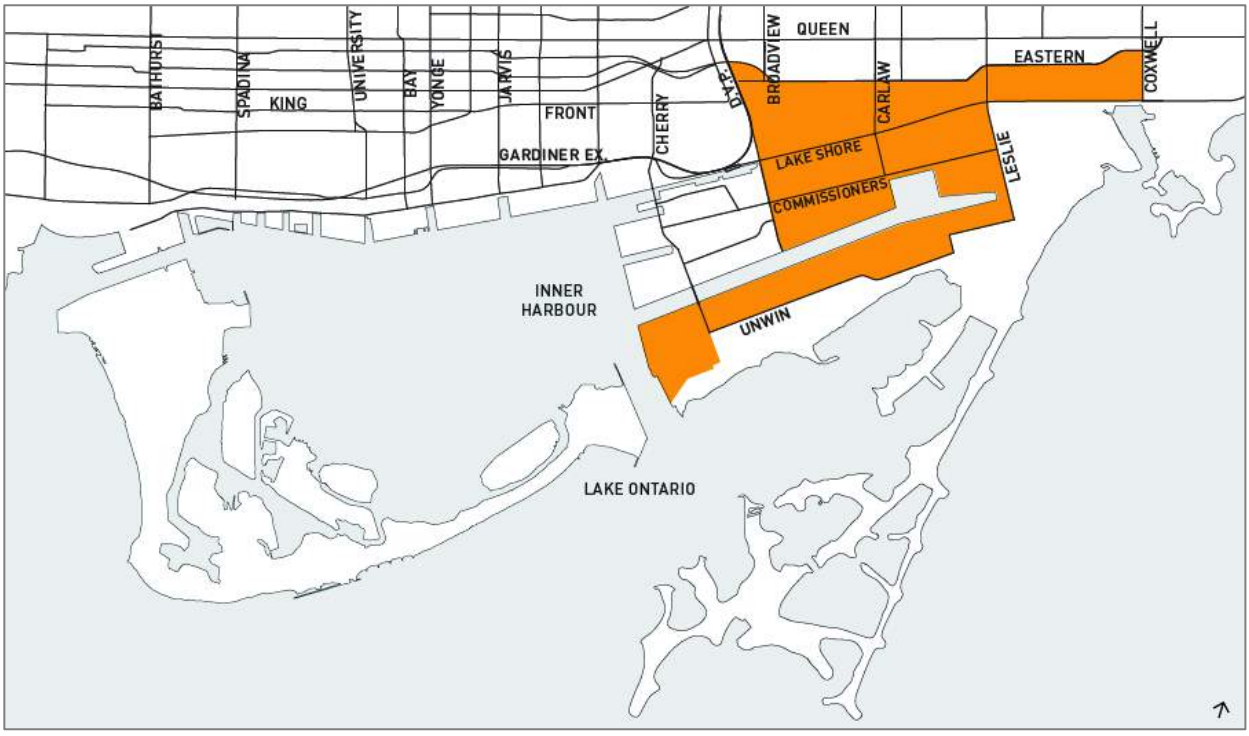
The Study Context and Consultation

1.0 INTRODUCTION

The Port Lands and South of Eastern Transportation and Servicing Master Plan Environmental Assessment (TSMP EA or the Project) supports the evolution of Toronto's only active port and continued employment growth in the South of Eastern area over the next 30 to 50 years. This TSMP EA has been undertaken as a coordinated infrastructure planning project that meets the requirements of both the *Municipal Class Environmental Assessment, 2000 (amended 2007, 2011, 2015)* (Class EA) process and the *Planning Act, R.S.O. 1990* (*Planning Act*). Coordinated infrastructure master planning provides the opportunity to comprehensively address infrastructure needs to support regeneration and renewal in the Port Lands and continued employment growth in the South of Eastern area, while also ensuring the appropriate protection and conservation of the unique heritage and natural heritage resources in the Study Area (**Figure 1-1**).

The TSMP EA identifies the preferred solutions for streets, transit and municipal servicing to support regeneration and renewal in the Port Lands and continued employment growth in the South of Eastern area. The proponent of the TSMP EA is the City, in collaboration with Waterfront Toronto and Toronto and Region Conservation Authority (TRCA).

FIGURE 1-1 LANDS INCLUDED AS PART OF THE TSMP EA



Source: City of Toronto, 2016

1.1 Background

The TSMP EA is one part of a coordinated planning process being led by the City and Waterfront Toronto. The TSMP EA considered the invaluable input provided by a wide variety of agencies, First Nations and Aboriginal communities, members of the public and other stakeholders. The TSMP EA has been completed as an integrated process with the Port Lands Planning Framework and the South of Eastern Strategic Direction. City Council directed City staff, with Waterfront Toronto, to develop a high-level planning framework for the Port Lands at the conclusion of the first phase of the Port Lands Acceleration Initiative (PLAI). In 2012, City Council also directed City staff to undertake a planning study for the South of Eastern area. In developing the work program for the two studies, it was determined that coordinated infrastructure planning for the Port Lands and South of Eastern area was needed, which led to the development of this TSMP EA (City of Toronto, 2013).

In 2010, Toronto City Council adopted and/or endorsed a number of studies for the Lower Don Lands area. These included the Lower Don Lands Framework Plan, the Don Mouth Naturalization and Port Lands Flood Protection Project EA (DMNP EA), the Keating Channel Precinct Plan and accompanying zoning by-law for the lands west of and including Cherry Street and the Lower Don Lands Infrastructure Master Plan (LDLMP EA). In 2011, the City, with Waterfront Toronto and TRCA, initiated the first phase of the PLAI. The purpose of the PLAI was to re-examine the DMNP EA and develop a business and implementation plan for the Port Lands. The first phase of the PLAI concluded in 2012 with City Council directing City staff, Waterfront Toronto and TRCA to amend and finalize the DMNP EA, amend and update the LDLMP EA, and undertake the development of a Port Lands wide planning framework. City Council also directed staff to report on the physical works necessary to introduce transit on Commissioners Street. The Port Lands Planning Framework is a comprehensive, long-term plan that will guide the Port Lands transformation over the next 30 to 50 years. It provides recommendations for more robust policy direction from what is currently provided for in the Central Waterfront Secondary Plan (CWSP). The Port Lands Planning Framework also integrates the approved DMNP EA and completed addendum and Environmental Study Report (ESR) for the Lower Don Lands.

The South of Eastern Strategic Direction is a planning strategy for the South of Eastern Employment District. This study is focused on economic development, urban design and transportation for the area bounded the Don River, Eastern Avenue, Coxwell Street and Lake Shore Boulevard East. This TSMP EA is informing the transportation aspects of the study.

The TSMP EA was closely coordinated with several other plans including the Villiers Island Precinct Plan as well as the DMNP EA and the LDLMP EA. The DMNP EA aims to transform the existing mouth of the Don River including the Keating Channel, into a healthier, more naturalized river outlet to Lake Ontario, while also removing the risk of flooding to 240 hectares of urban land to the east and south of the existing river. This includes providing flood protection for the Port Lands, South of Eastern area and lands north of Eastern Avenue subject to the risk of flooding. Approximately 7 to 8 hectares of land (the area north of the rail embankment between the Don River and Eastern Avenue underpass) remain at risk of flooding.

The LDLMP EA addresses water, wastewater, stormwater and transportation (including transit) infrastructure to support the regeneration envisioned for the Lower Don Lands. An Addendum to the 2010 LDLMP EA and ESR was completed for the Lower Don Lands in 2014 that reflected the final design carried forward in the DMNP EA.

Similarly, the work has also been coordinated with the ongoing Gardiner Expressway and Lake Shore Boulevard East Reconfiguration EA and Urban Design Study (Gardiner East EA), as well as several other initiatives which are further described in **Sections 3.3** and **Section 6**.

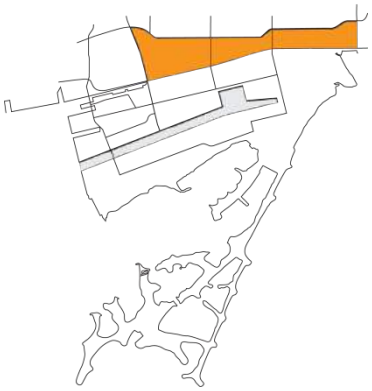
1.2 Purpose

The purpose of the TSMP EA is to inform the Port Lands Planning Framework and South of Eastern Strategic Direction while meeting the requirements of the first two phases of the Class EA. Fundamental to the TSMP EA is the integrated infrastructure planning approach that addresses the requirements of both the *EA Act, 1990* (*EA Act*) and the *Planning Act.* A comprehensive Master Plan process conducted under the Class EA process enables consideration of a group of related projects, overall systems and/or a number of integrated systems, such as the provision of municipal servicing within a street network, within the context of anticipated future growth and in consideration of a wide range factors. The TSMP EA will support the evolution of the Port Lands and South of Eastern area through the identification of the preferred transportation and municipal servicing solutions needed to support the vision for the Port Lands and to support continued employment growth in the South of Eastern area. The TSMP is consistent with, and has considered, several completed and ongoing transportation, servicing and planning studies.

Port Lands Planning Framework

Port Lands + South of Eastern EA

South of Eastern Study Area



The purpose of this TSMP EA is to:

- provide a decision-making framework to help select preferred infrastructure solutions;
- identify the foundational infrastructure needed to support future development in the area in an environmentally responsible manner;
- tie together planning for the South of Eastern area and the Port Lands;
- identify the servicing infrastructure to supplement previous EAs and support development; and,
- identify phasing considerations given long-term build-out of portions of the Port Lands.

Overall, the TSMP EA is an important component of understanding the future impacts and preferred infrastructure associated with the evolution of the urban fabric of the Port Lands and the South of Eastern area including the streets (sidewalks, planting areas, cycling facilities, surface transit and vehicular travel lanes), water, wastewater and stormwater infrastructure. The TSMP EA supports and articulates a long-term vision and physical plan while meeting the objectives of the Class EA process, and other regulatory requirements.

2.0 PLANNING CONTEXT AND OPPORTUNITY STATEMENT

This section describes the Study Area for the TSMP, broader Context Area used to inform the TSMP, the Problems/Opportunities being addressed and the overall Vision and Objectives developed to inform the Project.

2.1 Study and Context Areas

The TSMP EA considered existing and planned conditions both within the Study Area and larger Context Area (**Figure 2-1**).

The Study Area for the TSMP is approximately 350 hectares in area. In the Port Lands, the Study Area includes the lands north of the Ship Channel and east of the Don Roadway, and all lands south of Ship Channel north of, and including, Unwin Avenue. The Study Area also includes the South of Eastern area which is bounded by the Don River in the west, Eastern Avenue to the north, Coxwell Avenue to the east and Lake Shore Boulevard East to the south.

The Context Area established for the TSMP is generally bounded by Queen Street to the north, Parliament Street to the west, Lake Ontario to the south and Coxwell Avenue to the east. This is the area that has been addressed in the transportation modelling. From a municipal servicing perspective, additional lands to the north of the Context Area were also addressed to a certain extent as these areas discharge stormwater to the Turning Basin.

The larger Context Area was established to better understand how the Study Area would be affected by, or affect, surrounding initiatives and existing/planned conditions. External traffic conditions, proposed transit projects, such as the Relief Line and Smart Track/Regional Express Rail (RER), existing municipal services and planned capital upgrades, in the Context Area were key inputs into the TSMP.

Land uses in the Study Area consists of a mix of industrial, production studios, office, commercial and other employment uses, with a small pocket of residential uses in the South of Eastern area between Booth and Carlaw Avenues. There are also a number of existing parks and open spaces, such as the existing McCleary Park and the Main Sewage Treatment Playground.

Within the broader Context Area, there are a number of existing, planned and new neighbourhoods (e.g. Keating, the Distillery District, the West Don Lands and South Riverdale), as well as major parks and open spaces (e.g. Tommy Thompson Park, Clarke/Cherry Beach and Corktown Common).

Major transportation infrastructure exists, or is being concurrently planned, in both the Study and Context Areas. Existing conditions for the Study and Context Areas are documented in more detail in **Section 5**. A major initiative in the Context Area and portions of the Study Area is the re-naturalization of

the mouth of the Don River and implementation of required flood protection measures that will "unlock" development potential in the Port Lands, the South of Eastern area and the South Riverdale area. The Gardiner East EA, Relief Line Assessment and SmartTrack/RER initiative have also advanced concurrent with the TSMP.

FIGURE 2-1 STUDY AREA AND CONTEXT AREA

2.2 Problems and Opportunities

Problems and Opportunities are the key items to be explored and resolved through the Class EA process. It provides context for the range of information on existing and future conditions that are relevant to the assessment and frames the range of alternatives to be considered.

The Problems and Opportunities identified were based on the need to transform a largely industrial area into a series of vibrant, new transit supportive, mixed-use communities and employment districts offering places for people to live, work and play. The Problems and Opportunities also focused on connecting the South of Eastern area with the Port Lands and the rest of the city and identified the lack of infrastructure (transit, roads, servicing) and connections in the Study Area resulting in a challenge of accommodating future growth. The evolution of the area should support and appropriately conserve the unique heritage resources in the area.

The TSMP EA presents an opportunity to guide development of the large areas of underutilized land, located in close proximity to downtown Toronto, into a collection of diverse mixed-use and employment precincts. The TSMP EA will play a critical role in this future transformation.

Problems:

- insufficient and/or non-existent water/wastewater servicing;
- major infrastructure like the Gardiner Expressway, Lake Shore Boulevard East and rail corridors are impediments for better connections;
- limited street networks;
- lack of a defined streetscapes and pedestrian/cycling amenities;
- lack of higher-order transit;
- existing connections across the Ship Channel are insufficient or are in disrepair;
- new streets and servicing requires resolving soil contamination issues. Moreover, the area is hydrogeologically and geotechnically challenged; and,
- long-term revitalization of the lands necessitates developing strategies to ensure compatibility between existing industrial traffic and revitalized city environments.

Opportunities:

- introduce and extend higher-order transit routes;
- improve existing streets and establish new streets;
- provide Complete Streets;
- capitalize on the Ship Channel and Turning Basin for water-based transportation opportunities;
- manage transportation impacts of growth on established, stable residential neighbourhoods;
- provide innovative, state-of-the-art stormwater facilities; and,
- provide the needed capacity for other municipal servicing.

2.3 Vision and Objectives

Six guiding Objectives were developed in the initial stages of the Project to guide the TSMP EA and the Port Lands Planning Framework. The Objectives were presented to the public for feedback and input in November 2013, and have been used as the underlying basis for the development and evaluation of alternative solutions. The Objectives, as they apply to the TSMP EA, are outlined and described in more detail below:

- Creating an interesting and dynamic urban mix;
- Connecting the Port Lands to the city;
- Leveraging assets;
- Developing a high quality public realm;
- Contributing to the sustainable future of the city; and,
- Providing flexibility and certainty in implementation.

Creating an interesting and dynamic urban mix:

The Port Lands will have a number of new inclusive, sustainable, urban-scaled, compact, mixed-use communities and employment areas. Each new urban area will have a unique local identity and character, with a number of new destinations and special places. The South of Eastern area will continue to be an important employment district. Infrastructure will support realization of the full potential of the two areas that promotes walking, cycling and taking transit, provide opportunities for social interaction and contribute to an interesting urban mix.

Connecting the Port Lands to the city:

Enhanced physical, social and visual connections will better connect the Port Lands to the city. These connections will include a network of fine-grained public streets with animated streetscapes, higher-order transit, new bridges, and enhanced pedestrian and cycling connections. New public street connections will provide permeability into, out of, and within the Port Lands. The public streets will promote synergies between the South of Eastern area and the Port Lands by stitching these two areas together.

Leveraging assets:

The Port Lands and South of Eastern area include a number of significant assets including heritage and natural heritage resources. These assets will be leveraged to contribute to placemaking and celebrate the heritage of the Port Lands and South of Eastern area.

The Port Lands' unparalleled views, including those of the city's skyline, are protected, framed by development and celebrated. New views to the water's edge, river valley and iconic structures will be created.

Water permeates and influences all facets of the revitalized Port Lands given its waterfront location, new river valley and continued port activity.

Developing a high quality public realm:

High-quality streetscapes, outstanding parks, new natural linkages and design excellence for public facilities will be advanced to ensure places in the Port Lands and South of Eastern area are great places to live, work and visit.

Contributing to the sustainable future of the city:

The dynamic mix of uses developed in a walkable, urban form, the creation of new jobs and opportunities and continued port activity are the cornerstones of the Port Lands, South of Eastern area and the city's sustainable future. Equally important is ensuring that all aspects of redevelopment contribute to a healthy, resilient and sustainable environment. Reducing resource consumption, providing low-carbon solutions, minimizing dependency on the private automobile, fostering new technologies, future proofing and allowing for sustainable infrastructure such as district energy are just some of the aspects that will be advanced to optimize the sustainability of the area.

Providing flexibility and certainty in implementation:

The Study Area will incrementally redevelop over an extended period of time. A high degree of flexibility is needed to accommodate changes, while at the same time also being specific enough to ensure that public and private investments contribute to the long-term vision for the areas and have lasting value.

2.3.1 Evaluation Criteria

Detailed Evaluation Criteria (**Table 2-1**) were developed for the evaluation of Alternative Solutions and were based on the six Objectives described in **Section 2.3**. The Evaluation Criteria were developed during the Class EA process and included review and input from Project stakeholders through a variety of meetings including three Community Consultation Meetings (CCM). The alternatives were evaluated against these criteria on both a qualitative and quantitative basis to determine their advantages and disadvantages and to identify the Preferred Solutions and recommended Master Plan (**Sections 8** and **9**).

The full list of Evaluation Criteria does not apply across the entire geography and/or across the different types of infrastructure being addressed. For instance, criteria related to achieving an appropriate hierarchy of public streets and enhanced direct connections to destinations do not apply to municipal servicing. **Table 2-2** identifies the criteria that are applicable across the different types of infrastructure assessed in this TSMP. The criteria, as applicable to the sub-area and/or type of infrastructure, were all considered to have equal levels of importance in achieving the overall Objectives, and as such, there was no higher weighting of any of the criteria.

TABLE 2-1 EVALUATION CRITERIA AND MEASURES

Objective	Criteria	Measure
Creating An Interesting And Dynamic Urban Mix	• Creation of new, vibrant mixed use communities and employment areas.	• Vibrant new neighbourhoods/employment growth. • Viable development blocks.
	• Necessary vehicular capacity to support the anticipated mix of uses in the Port Lands and the South of Eastern area while minimizing rights-of-way widths.	• Necessary capacity is provided while minimizing right-of-way widths and providing pedestrian and cycling amenities. • Percentage of right-of-way dedicated to active transportation.
	• Existing/planned neighbourhoods.	• Opportunities for improvement. • Number of existing residential units potentially displaced. • Likelihood of non-local traffic in residential area and ability to manage traffic infiltration.
	• Existing businesses and industry and opportunities for new businesses and industry.	• Displacement of businesses and industry. • Access to infrastructure. • Facilitates dedicated truck routes to/from Lake Shore Boulevard and the DVP.
Connect The Port Lands To The City	• Better connect the Port Lands with the South of Eastern area and the rest of the city.	• Connectivity. • Facilitates achieving an appropriate hierarchy and rhythm of public streets. • Enhanced direct connections to destinations.
	• Redundancy in the network.	• Redundancy in network.
	• Existing physical barriers.	• Nature and extent of physical barriers.
	• Opportunities for linking natural habitat and open spaces and improving biodiversity.	• Opportunities to provide direct linkages between areas of natural habitat and/or open spaces. • Urban biodiversity.
Leverage Assets	• Cultural heritage resources.	• Nature and extent of potential impacts.
	• Cultural heritage resources.	• Ability to mitigate impacts. • Potential opportunities.

Objective	Criteria	Measure
	• Archaeological resources and traditional uses of Aboriginal people.	• Nature and extent of potential impacts. • Ability to mitigate.
	• Existing/planned parks and open spaces.	• Opportunities to enhance. • Nature and extent of potential impacts.
	• Compatibility with the natural environment.	• Opportunities for net environmental gains. • Nature and extent of potential impacts. • Minimizes the potential for an adverse effect on water quality and aquatic species. • Impacts or improvements to groundwater.
	• Visual connections.	• Nature of any visual connections.
Develop A High Quality Public Realm	• Complete street principles and street character.	• Ability to achieve the complete street principles and desired street character.
	• Cycling routes.	• Linear km of new, physically separated, continuous, high-quality cycle track. • Completes or provides linkages to existing/future cycling network.
	• Place-making opportunities.	• Place-making opportunities. • Water as a feature.
	• Health and safety.	• Improves existing unsafe conditions and maintains minimum design standards and criteria.
Contribute To The Sustainable Future Of The City	• Opportunities for innovation.	• Ability to provide innovative features in the design of the alternative.
	• Transit accommodation.	• Ability to, and implications of, connecting with adjacent transit network. • Is transit service optimally located?
	• Flood risk potential.	• Flood risk potential created and ability to mitigate flood risk.
	• Noise and air quality.	• Improved noise and air quality conditions.

Objective	Criteria	Measure
	• Resiliency and climate change.	• Promotes reduction of greenhouse gas (e.g. through LID, minimizing pumping stations or potential to reduce congestion points).
Implementation	• Compatibility with City, provincial planning policies and Waterfront Toronto Framework standards.	• Supports the growth intention of the Official Plan, Central Waterfront Secondary Plan and precinct plans. • Supports addressing Waterfront Toronto objectives/frameworks. • Supports achieving provincial planning policies and guidelines.
	• Consistency with approved area Environmental Assessments.	• Extent and nature of impacts on planned infrastructure with approved Environmental Assessments.
	• Engineering feasibility and construction cost.	• Key technical challenges. • Initial construction costs, excluding property, decontamination, and utilities. • Ability to phase implementation and adapt to changes in phasing and timing of development. • Adaptability to future land use changes and intensification.
	• Existing municipal infrastructure and utilities.	• Extent and nature of utility impacts. • Nature and extent of potential impacts.
	• Property acquisition costs.	• Approximate number of hectares of privately owned lands required to be acquired with existing development anticipated to remain.
	• Maintenance and operations.	• Level of maintenance required.

TABLE 2-2 APPLICABILITY OF EVALUATION CRITERIA AND MEASURES TO EACH INFRASTRUCTURE BEING ASSESSED

Objective	Criteria	Measure	Transport-ation	Water	Waste-water	Storm-water Manage-ment	Stormwa-ter Treatment
Creating An Interesting And Dynamic Urban Mix	Creation of new, vibrant mixed use communities and employment areas.	Vibrant new neighbourhoods/employment growth.	✓	✓	✓	✓	✓
		Viable development blocks.	✓	✓	✓	✓	
	Necessary vehicular capacity to support the anticipated mix of uses in the Port Lands and the South of Eastern area while minimizing rights-of-way widths.	Necessary capacity is provided while minimizing right-of-way widths and providing pedestrian and cycling amenities.	✓	✓	✓	✓	✓
		Percentage of right-of-way dedicated to active transportation.	✓				
	Existing/ planned neighbourhoods	Opportunities for improvement.	✓	✓	✓	✓	✓
		Number of existing residential units potentially displaced.	✓	✓	✓	✓	
		Likelihood of non-local traffic in residential area and ability to manage traffic infiltration.	✓				
	Existing businesses and industry and opportunities for new	Displacement of businesses and industry.	✓	✓	✓	✓	✓
		Access to infrastructure.	✓	✓	✓	✓	

Objective	Criteria	Measure	Transport-ation	Water	Waste-water	Storm-water Manage-ment	Stormwa-ter Treatment
	businesses and industry.	Facilitates dedicated truck routes to/from Lake Shore Boulevard and the DVP.	✓				
Connect The Port Lands To The City	Better connect the Port Lands with the South of Eastern area and the rest of the city.	Connectivity.	✓	✓	✓	✓	✓
		Facilitates achieving an appropriate hierarchy and rhythm of public streets.	✓				
		Enhanced direct connections to destinations.	✓				
	Redundancy in the network.	Redundancy in network.	✓	✓	✓		
	Existing physical barriers.	Nature and extent of physical barriers.	✓	✓	✓	✓	✓
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	Opportunities to provide direct linkages between areas of natural habitat and/or open spaces.	✓			✓	
		Urban biodiversity.	✓			✓	
Leverage Assets	Cultural heritage resources.	Nature and extent of potential impacts.	✓	✓	✓	✓	✓
		Ability to mitigate impacts.	✓	✓	✓	✓	✓
		Potential opportunities.	✓			✓	

Objective	Criteria	Measure	Transport-ation	Water	Waste-water	Storm-water Manage-ment	Stormwa-ter Treatment
	Archaeological resources and traditional uses of Aboriginal people.	Nature and extent of potential impacts.	✓	✓	✓	✓	✓
		Ability to mitigate.	✓	✓	✓	✓	✓
	Existing/planned parks and open spaces.	Opportunities to enhance.	✓	✓	✓	✓	
		Nature and extent of potential impacts.	✓	✓	✓	✓	✓
	Compatibility with the natural environment.	Opportunities for net environmental gains.	✓			✓	
		Nature and extent of potential impacts.	✓	✓	✓	✓	✓
		Minimizes the potential for an adverse effect on water quality and aquatic species.	✓	✓	✓	✓	✓
		Impacts or improvements to groundwater.	✓	✓	✓	✓	✓
	Visual connections.	Nature of any visual connections.	✓				
Develop A High Quality Public Realm	Complete street principles and street character.	Ability to achieve the complete street principles and desired street character.	✓	✓	✓	✓	
	Cycling routes.	Linear km of new, physically separated, continuous, high-quality cycle track.	✓				
		Completes or provides linkages to existing/future cycling network.	✓				
	Place-making opportunities.	Place-making opportunities.	✓			✓	✓

Objective	Criteria	Measure	Transport-ation	Water	Waste-water	Storm-water Manage-ment	Stormwa-ter Treatment
		Water as a feature.	✓				
	Health and safety.	Improves existing unsafe conditions and maintains minimum design standards and criteria.	✓	✓	✓	✓	✓
Contribute To The Sustainable Future Of The City	Opportunities for innovation.	Ability to provide innovative features in the design of the alternative.	✓	✓	✓	✓	
	Transit accommodation.	Ability to, and implications of, connecting with adjacent transit network.	✓				
		Is transit service optimally located?	✓	✓	✓	✓	
	Flood risk potential.	Flood risk potential created and ability to mitigate flood risk.	✓	✓	✓	✓	
	Noise and air quality.	Improved noise and air quality conditions.	✓	✓	✓	✓	✓
	Resiliency and climate change.	Promotes reduction of greenhouse gas (e.g. through LID, minimizing pumping stations or potential to reduce congestion points).	✓	✓	✓	✓	✓

Objective	Criteria	Measure	Transport-ation	Water	Waste-water	Storm-water Manage-ment	Stormwa-ter Treatment
Implementation	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA Framework standards.	Supports the growth intention of the Official Plan, Central Waterfront Secondary Plan and precinct plans.	✓	✓	✓	✓	
		Supports addressing Waterfront Toronto/TRCA objectives/frame works.	✓	✓	✓	✓	
		Supports achieving provincial planning policies and guidelines.	✓	✓	✓	✓	
	Consistency with approved area Environmental Assessments.	Extent and nature of impacts on planned infrastructure with approved Environmental Assessments.	✓	✓	✓	✓	✓
	Engineering feasibility and construction cost.	Key technical challenges.	✓	✓	✓	✓	✓
		Initial construction costs, excluding property, decontamination, and utilities.	✓	✓	✓	✓	✓
		Ability to phase implementation and adapt to changes in phasing and timing of development.	✓	✓	✓	✓	

Objective	Criteria	Measure	Transport-ation	Water	Waste-water	Storm-water Manage-ment	Stormwa-ter Treatment
		Adaptability to future land use changes and intensification.	✓	✓	✓	✓	✓
	Existing municipal infrastructure and utilities.	Extent and nature of utility impacts.	✓	✓	✓	✓	✓
		Nature and extent of potential impacts.	✓	✓	✓	✓	✓
	Property acquisition costs.	Approximate number of hectares of privately owned lands required to be acquired with existing development anticipated to remain.	✓	✓	✓	✓	✓
	Maintenance and operations.	Level of maintenance required.	✓	✓	✓	✓	✓

3.0 ENVIRONMENTAL ASSESSMENT FRAMEWORK

EA is a planning and decision-making process used to promote environmentally responsible decision-making. In Ontario, this process is defined and finds its authority under the *EA Act*. The purpose of the *EA Act* is to provide for the protection, conservation and wise management of Ontario's environment. To achieve this purpose, the *EA Act* promotes responsible environmental decision-making and ensures that interested persons have an opportunity to comment on undertakings that may affect them. In the *EA Act*, the environment is broadly defined and includes the physical, natural, and socio-economic environments. This section describes the overall EA framework that was followed to complete the TSMP EA.

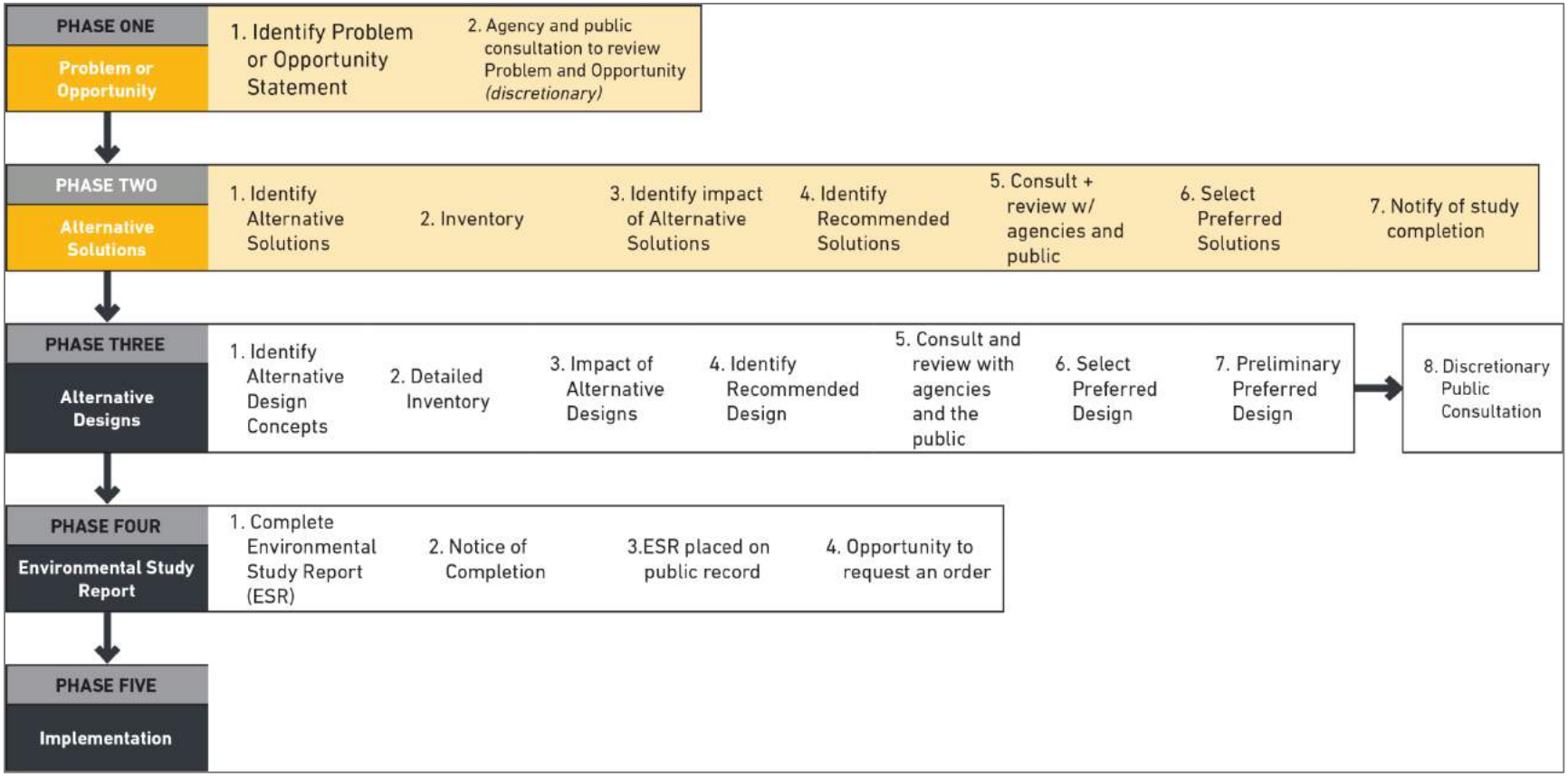
Municipal Class EA Process

The TSMP EA adheres to the planning and design process of the Class EA and incorporates principles of successful environmental planning from the *EA Act*. Class EAs are prepared for any municipal infrastructure project that has the potential to affect the environment. Municipalities undertake multiple projects per year and the Class EA process provides a decision-making framework to assess whether projects can meet the requirements of protecting, conserving and managing the surrounding environment for the betterment of the public good.

3.1 Municipal Class EA, 2000 (Amended 2007, 2011, 2015)

The *EA Act* identifies two main types of EA processes: the Individual EA and the Class EA. The Class EA is a defined process provided within the EA Act for municipal infrastructure projects. Once completed, the Class EA establishes a process whereby the municipal project as defined in the Class EA, and any subsequent modifications, can be planned, designed, constructed, operated, maintained, rehabilitated and retired without having to obtain project specific approvals under the *EA Act*, provided the approved Class EA process has been followed. The Class EA process has five distinct phases as described below and illustrated in **Figure 3-1.**

FIGURE 3-1 STANDARD MUNICIPAL CLASS EA PROCESS



Source: City of Toronto, 2015

The phases include:

- **Phase 1** – Identifying the problem and/or opportunities;
- **Phase 2** – Identifying Alternative Solutions to address the problem or opportunity by considering the existing environment and establishing the Preferred Solution;
- **Phase 3** – Examining alternative methods of implementing the Preferred Solution;
- **Phase 4** – Completion of an ESR that documents the rationale, planning, design and consultation process for the project; and,
- **Phase 5** – Contract drawings and document completion followed by the construction and operation.

Class EA Schedules

Projects are classified into three schedules according to their environmental significance including Schedule A/A+, B or C. The overall significance and level of potential impact of a project determines its schedule. Projects undertaken in the Study Area will vary as they are anticipated to have various potential environmental effects.

Schedule A/A+ projects are limited in scale, have minimal adverse effects and include the majority of municipal road maintenance and operational activities. Other projects may be included in this category such as traffic control devices depending on their anticipated construction cost as specified in the Class EA. These projects are generally pre-approved and may proceed directly to Phase 5 for implementation with the exception of A+ projects which require the public to be advised prior to implementation. Phases 1 and 2 were however fulfilled for these projects under the Master Plan process.

Schedule B projects generally include improvements and minor expansions to existing facilities. These projects have some potential for adverse environmental impacts, and consultation with those who may be affected is required. Examples of Schedule B projects include the installation of traffic control devices, smaller road-related works or the extension of certain types of municipal water/wastewater infrastructure. These kinds of projects typically require completion of a screening exercise under the Class EA process including consultation with those who may be affected (City of Toronto, 2010).

Schedule C projects generally include the construction of new facilities and major expansions of existing facilities and require the completion of Phases 1-4 of the Class EA process (City of Toronto, 2010).

This TSMP EA fulfills the requirements of Phases 1 and 2 of the Class EA. The final Preferred Solutions identified in this TSMP and associated schedules are identified in **Section 9**. Identified Schedule C projects are required to fulfill phase 3 and 4 of the Class EA process.

Master Plan Approval

Master Plans are subject to approval by the municipality and do not require approval under the *EA Act*, unless conducted as an Individual EA (which this TSMP EA is not). All specific projects identified within a Master Plan must fulfill the appropriate Class EA requirements (or, Individual EA requirements, where applicable) in order to proceed. Requests for an order to comply with Part II of the *EA Act* would be possible only for those projects identified in the Master Plan (e.g., Schedule B and C projects) but not for the Master Plan itself (e.g., this TSMP).

3.1.1 Municipal Class EA Master Plan Process

Master Plan Class EAs are long-range plans that integrate infrastructure requirements for existing and future land use within an EA framework. Master Plan EAs are prepared when a coordinated approach is required to review a number of integrated infrastructure systems such as the case for the TSMP EA. This allows for the City to coordinate both the requirements under the *EA Act* as well as the *Planning Act* through the development of a long-range multi-disciplinary strategic plan. Given the size and complexity of the Study Area, the Master Plan approach facilitates identification of the optimum network of streets, transit, stormwater and servicing as a whole and addresses the synergies and connections among these systems.

3.2 Relationship to CEAA, 2012

When a project has the potential to cause environmental effects that are within federal jurisdiction, a federal EA may be required. The Canadian Environmental Assessment Agency (CEAA) created a list, referred to as the Regulations Designating Physical Activities List, which identifies the types of projects that may require a federal EA. As the proposed infrastructure elements in the TSMP EA are not identified in the list of Designating Physical Activities, an EA under CEAA is not required.

As the Class EA process is completed for individual projects identified in this TSMP, if required, a further review should be undertaken to determine the applicability of the CEAA using standards in effect at that time.

3.3 Coordination with Other Studies

The TSMP EA was coordinated with other planning initiatives including the following:

- Port Lands Planning Framework;
- South of Eastern Strategic Direction;
- Gardiner East EA;
- the City, Toronto Transit Commission (TTC) and Metrolinx are working closely together on coordinated transit planning in the city including, but not limited to, the Smart Track and Relief Line Assessment;
- Preliminary design and construction that is underway for the Don River and Central Waterfront EA;
- City of Toronto Long-Term Waste Management Strategy;
- Film Studio Precinct Plan (currently on hold);
- Various projects being undertaken by the City to expand Toronto's Network of Cycle Tracks, bicycle lanes, and off-road trails in what is called the Ten Year Cycling Network Plan;
- Waterfront Sanitary Servicing Master Plan Class EA and Update (WSSMP EA Update);
- Basement Flooding Protection Program which is a multi-year program that is helping to reduce the risk of future flooding by making improvements to the city's sewer system and overland drainage routes and includes various EA studies;

- DMNP EA;
- Villiers Island Precinct Plan;
- Complete Streets Guidelines;
- Vehicle Travel Lane Width Guidelines;
- East Bayfront Transit EA; and,
- LDLMP EA and Addendum and ESR.

An overview of the more significant studies mentioned above is provided in **Section 6** of this TSMP EA.

4.0 CONSULTATION

The public consultation process was an important component of the development of the TSMP EA. The Class EA process requires that public and agency consultation take place as part of the Project. The TSMP EA consultation process utilized the robust consultation process established in the first phase of the PLAI, and was coordinated with consultation activities undertake for the Port Lands Planning Framework, South of Eastern Strategic Direction and Villiers Island Precinct Plan. The entire process spanned a three-year period, with multiple consultation activities throughout this period. The process was robust, including online, social media and one-on-one consultation with various working groups, agencies and stakeholders.

Highlights of consultation activities that have taken place during the development of the TSMP EA include: extensive meetings and workshops with various stakeholders, a two-day design charette, transportation workshops, consultation with First Nation and Aboriginal communities, consultation with a Stakeholder Advisory Committee (SAC) and a Land Owners and User Advisory Committee (LUAC) and detailed consultation with the Film Sector in the city as well as other important landowners/employers. **Sections 8** and **9** provide an overview of how comments were incorporated into the Project. A significant amount of input was leveraged to make the TSMP EA have meaning well into the future. A summary of how the TSMP EA meets consultation Class EA requirements is provided in **Table 4-1**. A summary of key consultation activities undertaken for the TSMP EA are provided below in **Table 4-2**. Additional detail on the consultation program is provided in **Appendix A**.

TABLE 4-1 CONSULTATION ACTIVITIES AND THE CLASS EA PROCESS

		Identify Problem or Opportunity	Identify and Evaluate Alternative Solutions	Identify Preferred Solutions
Public and Agency Meetings and Events	Stakeholder Advisory Committee Meetings	✓	✓	✓
	Land Owner and User Advisory Committee Meetings	✓	✓	
	Additional Land Owner and User Meetings		✓	✓
	Community Workshop	✓	✓	
	Community Consultation Meetings (CCM) #1 and #2	✓	✓	
	Transportation Issues Workshop for the South of Eastern Area	✓	✓	✓
	Port Lands Charette	✓	✓	
	Transportation Working Group for the South of Eastern Area		✓	✓
	Community Consultation Meeting CCM #3 and Public Workshop on Transportation and Servicing		✓	✓
	First Nations and Aboriginal Consultation	✓	✓	✓
	Web-based Consultation	✓	✓	✓
Notification	SAC Meeting email invitations, associated presentations and materials	✓	✓	✓
	LUAC Meeting email invitations, associated presentations and materials	✓	✓	✓
	CCM Notices and E-Blasts	✓	✓	✓
	CCM presentations, display panels, and materials	✓	✓	✓

		Identify Problem or Opportunity	Identify and Evaluate Alternative Solutions	Identify Preferred Solutions
	Website materials and updates	✓	✓	✓
Documents	SAC and LUAC Meeting Minutes	✓	✓	✓
	Workshop Summaries	✓	✓	✓
	Community Consultation Meeting (CCM #1) Documentation, Photos, and Summaries	✓		
	Community Consultation Meeting (CCM #2) Documentation, Photos, and Summaries		✓	
	Community Consultation Meeting (CCM #3) Documentation, Photos, and Summaries			✓
	Other Meeting Minutes and Summaries	✓	✓	✓
	Project Consultation Report	✓	✓	✓

TABLE 4-2 SUMMARY OF CONSULTATION ACTIVITIES

Component	Approach
Notice of Commencement	The Notice of Commencement was distributed in November of 2013, announcing the start-up of the project and providing details on the Study Area, intended focus, and objectives.
Technical Advisory Meetings	Two Technical Advisory Committee (TAC) meetings were held early in the process. Following this, individual meetings with technical stakeholders were held on an ongoing basis as identified in **Table 4-3**.
Land Owners and Users Advisory Committee Meeting # 1	The first Land Owners and Users Advisory Committee (LUAC) meeting was held on November 21, 2013. The purpose of the first round of consultation was to introduce the current planning initiatives that the City, Waterfront Toronto and TRCA were working on in, and near, the Study Area.
Stakeholder Advisory Committee Meeting # 1	This first Stakeholder Advisory Committee (SAC) meeting was held November 21, 2013. The purpose of the first round of consultation was to introduce the current planning initiatives that the City, Waterfront Toronto and TRCA were working on, in and near, the Study Area.
Community Consultation Meeting #1	The first CCM was held on November 28, 2013, and introduced the community to the Project, guided attendees through a facilitated discussion on opportunities and constraints, and collected feedback on future consultation event formats.
Land Owners and Users Advisory Committee Meeting # 2	The second LUAC meeting was held on February 3, 2014. The purpose of the meeting was to present land use options and parks and open space opportunities for the Port Lands, and the transportation and servicing alternatives.
Stakeholder Advisory Committee Meeting # 2	The second SAC meeting was held on February 3, 2014. The purpose of the meeting was to present land use options and parks and open space opportunities for the Port Lands, and the transportation and servicing alternatives.
Community Consultation Meeting #2	The second CCM was held on February 13, 2014, with a focus on collecting feedback related to land use options, transportation and municipal servicing alternatives.

Component	Approach
Community Workshop	The workshop was hosted on March 5, 2014, and provided a more focused format to gather intensive feedback on land use, transportation, and servicing options.
Stakeholder Advisory Committee Meeting # 3	A third SAC meeting was held on March 31, 2015. The purpose of the meeting was to present and obtain feedback on the preliminary preferred transportation solutions and emerging urban structure.
South of Eastern Transportation Issues	In June 2014, a transportation issues analysis session was held for the Study Area regarding transportation planning issues in the South of Eastern area. The purpose of the meeting was to provide an overview of the planning studies and development applications in and around the area including the South of Eastern Strategic Direction, the TSMP EA, as well as the StudioCentres development proposal.
Port Lands Charette	A two-day charette was held on July 23 and 24, 2014, with a focus on developing design options for the Ship Channel and lands south of the Ship Channel. The event included a boat tour of the active port area.
Land Owners and Users Advisory Committee Meeting # 3	A third LUAC meeting was held on November 4, 2015. The purpose of the meeting was to present the emerging vision for the Port Lands, including land use direction, preferred street network and urban structure, as well as the direction for other key elements like built form, biodiversity and sustainability.
Stakeholder Advisory Committee Meeting # 4	A fourth SAC meeting was held on November 4, 2015. The purpose of the meeting was to present the emerging vision for the Port Lands, including land use direction, preferred street network and urban structure, as well as the direction for other key elements like built form, biodiversity and sustainability.
Open House, and Information Sessions Community Consultation Meeting #3	The City, Waterfront Toronto, and TRCA held a full day two-part Open House and Information Sessions on November 14, 2015. The purpose of the open house was to present emerging plans and included the Alternative Solutions and evaluations of the TSMP EA.

Component	Approach
Port Lands Workshops - Transportation and Servicing Workshops	A focused workshop was held on November 17, 2015 on the vision and urban structure and character and place for the Port Lands, as well as Villiers Island. A second workshop was held for the TSMP EA on November 18, 2015.
Targeted Stakeholder Consultation	Focused meetings with specific organizations or groups (e.g., property owners and users, land developers, industry representatives, Metrolinx, Divisions/Agencies) were held as needed throughout the Project.
Web-Based Consultation	A Project website was utilized as a repository for all key consultation materials and project reports, as well as a space for feedback and comment. The City and Waterfront Toronto Twitter accounts were also utilized to promote project-related activities and events. Presentations from November 15, 2015 Open House and Information Sessions were recorded and posted on the web receiving approximately 2,400 views in total across the four videos.
First Nations and Aboriginal Consultation	First Nations and Aboriginal engagement and consultation was an integral component of the City's consultation program and at each Phase of the Class EA process. The following communities were identified as having an interest in the Project: • Haudenuasaunee Confederacy Chiefs Council; • Mississauga of New Credit First Nations; • Mississauga of Scugog Island First Nations; and, • Miziwe Biik Aboriginal Employment and Training. See **Section 5.3.3** for further information.
Traffic Working Group for the South of Eastern Area	A local Traffic Working Group was developed to address community concerns regarding future traffic congestion and neighbourhood infiltration, and in particular associated with the connections to Eastern Avenue.
Feedback Management, Input, and Reporting	**Appendix A** provides more information on feedback received and input from stakeholders.

4.1 Stakeholder Advisory Committee Meetings

Four meetings with the SAC were held during the course of the TSMP EA. The meetings provided a means for continuous feedback at critical touch points throughout the process.

SAC members included a variety of interest groups that provided feedback and advice to the Project team. Committee members, included, among others, Citizens for a Safe Environment, Don Watershed Regeneration Council, Walk Toronto, Ward 30 Bikes, Code Blue and the West Don Lands Committee. **Appendix A** includes a complete list of SAC members. The SAC met on the following occasions to provide input on the presentation materials and to act as a sounding board in advance of broader community consultation meetings, as well as provide their feedback on the directions being presented.

4.1.1 SAC Meeting #1 – November 21, 2013

The inaugural meeting was held on November 21, 2013. The meeting was facilitated by Lura Consulting, with Project staff from TRCA, Waterfront Toronto, and the City in attendance. The main objective of the meeting was to introduce Committee members to the various initiatives being undertaken by the project partners in the Study Area, present the Problems/Opportunities, as well as the strategic approach to the TSMP EA, with a focus on the communications and consultation aspects. A facilitated discussion was held following the briefing, and the feedback received was key to enhancing the effectiveness of the communications approach. Some of the key feedback received included:

- simplifying terminology and use of plain language;
- reformat the presentation to clarify the initiatives;
- provide a discussion guide for the broader community meeting;
- ensure that each area has a distinguishing character identity;
- prioritize transit infrastructure; and,
- identify what heritage resources and buildings are in the Port Lands as well as any views that should be protected.

4.1.2 SAC Meeting #2 – February 3, 2014

A second SAC meeting was held on February 3, 2014. The meeting presented land use options for the Port Lands Planning Framework, and evaluation criteria and transportation and municipal servicing alternatives for the TSMP. Feedback from the SAC included, among others:

- recommendations to improve the clarity of the presentations;
- clarify how connectivity between the Port Lands and South of Eastern area will be improved;
- include Complete Streets in the transportation options;
- recognize First Nation and Aboriginal heritage;
- recognize other forms of heritage (e.g., built, cultural) in options; and,
- protect employment lands in Port Lands for employment uses.

4.1.3 SAC Meeting #3 – March 31, 2015

A third SAC meeting was held on March 31, 2015. The purpose of the meeting was to present and obtain feedback on the preliminary preferred transportation solutions and emerging urban structure. Feedback received included:

- questions on whether all streets be "complete" and concerns about the width of some of the streets;
- compatibility of proposed network for commercial vehicle/truck movement;
- use bioswales as a way to commemorate lost rivers and streams;
- ensure that designs and names of the First Nations communities be included in the street network; and,
- the need to better illustrate connections with the city.

4.1.4 SAC Meeting #4 – November 4, 2015

A fourth SAC meeting was held on November 4, 2015. The meeting provided an opportunity for the Project team to present the emerging vision for the Port Lands, including land use direction, preferred street network and urban structure, as well as the direction for other key elements including built form, biodiversity and sustainability. The meeting was also used to obtain feedback from the SAC ahead of the upcoming public consultation meetings scheduled for mid-November 2015. Feedback related to the TSMP included, among others:

- the Broadview Avenue extension alignment with a view corridor to the Hearn was a nice reveal;
- the focus on water and daylighting hydrologic processes (e.g., bioswales, etc.);
- consideration of truck routes and goods movement within the plan;
- ensure the framework prioritizes public transit throughout the Port Lands, particularly on Unwin Avenue and Lake Shore Boulevard East;
- ensure there are transit routes to major destinations within the Port Lands (e.g., the Hearn);
- consider using the railway spurs between the Hearn and Union Station for future streetcar use;
- align the mode of transit with density in the surrounding area to ensure a mix of transit options throughout the Port Lands (e.g., bus routes in lower density areas); and,
- consider further integrating the Ship Channel with north-south corridors.

4.2 Land Owner and User Advisory Committee Meetings

The LUAC met three times during the course of the Project, with a number of focused meetings held with individual landowners and users as well. These meetings were held as a parallel process to those with the SAC. Similar to the SAC, the LUAC met prior to community consultation events to provide feedback to the team on materials developed.

LUAC members included a variety of private property owners and users in the Study Area including Canadian Salt, Cimco Refrigeration, ESSROC, and Redpath. **Appendix A** provides a complete list.

4.2.1 LUAC Meeting #1 – November 21, 2013

The first LUAC meeting was held on November 21, 2013. The meeting included a facilitated discussion following an introduction of initiatives to the Committee. The perspectives offered by Committee members were of importance to ensuring that key issues were addressed as part of the Project, including aspects related to land uses, transportation routes, and implementation of infrastructure projects in the Study Area. Key Feedback related to the TSMP included:

- clarify various aspects of the presentation and initiatives being undertaking; and,
- ensure the preservation of and/or improve truck routes.

4.2.2 LUAC Meeting #2 – February 3, 2014

A second LUAC meeting was held on February 3, 2014. The meeting provided for a more focused look at the particular options being considered for the Study Area, and LUAC members provided key recommendations related to highlighting the key characteristics of important assets in the Study Area in greater detail. Key feedback related to the TSMP EA included:

- provide more information about the evaluation criteria that will be used in the study;
- explain the role, function and potential of the Port Lands Ship Channel in more detail;
- maintain the private right-of-way and access routes of existing industries and businesses in the Port Lands; and,
- explain that the transportation options are still highly conceptual that this time.

4.2.3 LUAC Meeting #3 – November 4, 2015

A third LUAC meeting was held on November 4, 2015. The purpose of the meeting was to present the emerging vision for the Port Lands, including land use direction, preferred street network and urban structure, as well as the direction for other key elements like built form, biodiversity and sustainability. The meeting was also used to seek feedback from the LUAC ahead of the upcoming public consultation meetings in mid-November. Key Feedback related to the TSMP included:

- address concerns about truck routes and access throughout the Port Lands, particularly on Unwin Avenue;
- consider the impact of the proposed Broadview Avenue extension alignment on adjacent properties and potential transit stops; and,
- reconsider the alignment of the east-west road proposed south of Commissioners Street.

4.3 Focused Land Owner + User Meetings

There are a number of active industries in the Port Lands. To illicit feedback from these industries, separate meetings were held at key stages. Meetings held included:

- May 11, 2015 – meeting with industry representatives to present the preliminary preferred transportation solutions and emerging urban structure and initial thinking on developing an overall truck management framework, including the potential for dedicated truck routes.
- June 9, 2015 – a specific meeting was held with Ontario Power Generation, the Port Lands Energy Centre (PEC), Hydro One Networks (Hydro One) and Studios of America on the preliminary preferred transportation solution and key issues in the vicinity of the Hearn and PEC.
- November 4, 2015 – meeting with industry representatives to present the initial findings from the Noise and Air Quality study and transportation analysis completed for initial understanding of the potential for dedicated truck routes.

4.4 Community Consultation Meetings

CCMs were held during each phase of the study process to obtain public feedback and comments on the research results, visioning and land use alternatives and recommendations as they were developed throughout the study. A variety of meeting formats (e.g., open house, presentations, and facilitated discussions) were utilized at each CCM to encourage public participation and dialogue.

4.4.1 CCM #1 – November 28, 2013

The first CCM was held on November 28, 2013 at Riverdale Collegiate. Approximately 100 people attended. The focus of the meeting was to introduce and provide background information on the five initiatives underway in the area and seek feedback on:

- likes and dislikes about existing conditions in the Study Area;
- vision for areas/sites within the Port Lands;
- draft objectives developed to inform and guide the development of the Port Lands Planning framework and precinct planning;
- important considerations for the South of Eastern Strategic Direction; and,
- problems/opportunities in the Study Area specifically related to transportation (e.g., streets and transit) and servicing (e.g., water, sanitary sewers and stormwater management).

Forty display boards were set up as part of the Open House portion of the meeting, with space provided for participants to comment directly on the boards. A presentation and question/answer period were also held, with Project team members available to respond to issues/concerns brought forward.

4.4.2 CCM #2 – February 13, 2014

The second CCM was held on February 13, 2014 at the Toronto Fire Academy. The meeting attracted approximately 130 attendees. The purpose of the meeting was to present and seek feedback on land use options for the Port Lands Planning Framework, and evaluation criteria and transportation and municipal servicing alternatives for the TSMP. The format of the meeting was similar to the first meeting, consisting of an Open House followed by a presentation and question/answer period. This CCM also included facilitated roundtable discussions with participants. Discussion guides were used during the discussions and included key questions the Project team was seeking feedback on such as

alternatives participants preferred and why and whether there were any alternatives that we should not be considering. The Open House component featured 18 display boards, with additional large map printouts of the Study Area provided for the roundtable discussions, which were facilitated by City Planning and Waterfront Toronto staff. A discussion guide was provided to anchor the session and allow participants the opportunity to provide focused feedback.

4.4.3 CCM #3– November 14, 2015

The City, Waterfront Toronto, and TRCA held a full day two-part Open House and Information Session on November 14, 2015. The purpose of the open house was to present emerging plans, including the evaluation of alternatives and recommended Preferred Solutions for streets, transit and municipal servicing. The Open House and Information Sessions had a morning and afternoon session. At each session, an overview presentation took place to orient participants and provide high-level information about the plans. Following the overview presentation, information sessions were held on different topic areas with presentations repeating eight times throughout the day for each session. There was an information session specific to the TSMP. Each information session was also videotaped and posted to the Project website. All information sessions were videotaped and posted to the Project website.

4.5 Additional Meetings and Workshops

4.5.1 Community Workshop – March 5, 2015

The City and Waterfront Toronto hosted a community workshop on March 5, 2014 at the Ralph Thornton Centre. The event attracted approximately 60 community members. The workshop was designed to fulfill two key objectives:

- provide an opportunity for further review and comment on the different options for land use, transportation and municipal services for the Port Lands that were presented at the CCM held on February 13, 2014; and,
- obtain additional feedback on: thoughts and ideas for land use in the Port Lands and, alternatives for streets (including transit) and municipal servicing (water, wastewater and stormwater).

The workshop format consisted of a presentation followed by a question/answer period. The attendees then broke out into small group discussions facilitated by the Project team. The discussion sessions revolved around land use options and transportation and servicing alternatives, and provided a forum for more in-depth conversations around the key issues, opportunities, and constraints in the Study Area. The discussion workbook and feedback forms were also posted on the Project website for those who could not attend the session in-person. A total of 31 completed hardcopy and online feedback forms were received through this process, with a great deal of insightful and valuable feedback received from participants.

4.5.2 Port Lands Charette – July 23 and 24, 2014

A two-day charette was held in July from the 23rd to the 24th, hosted by the City, Waterfront Toronto, and TRCA. The charette had two main areas of focus within the Study Area including the Ship Channel and lands south of the Ship Channel. Charette participants included members of the SAC, LUAC, and the Project team. The creative and dynamic nature of the charette setting provided an ideal platform to generate realistic but also innovative solutions in fulfilling the objectives of the event, which were to:

- elevate the Ship Channel and build a common vision; and,
- identify and define opportunities for improving public access south of the Ship Channel (excluding the Lake Ontario Park Master Plan).

The first day of the charette focused on the Ship Channel in the Study Area, and consisted of a boat and walking tour followed by an intensive small group design session. The second day of the charette shifted focus to the lands south of the Ship Channel, and featured a virtual tour of the lands followed by a visioning session to develop ideas for improving public access. The response received from participants was highly positive, and the outcomes of the session were invaluable towards developing the approach for the focus areas.

4.5.3 Transportation Issues and Consultation for the South of Eastern Area

On July 14, 2014, a meeting was held at the Ralph Thornton Centre, regarding transportation planning issues in the South of Eastern area. Over 5,500 notices were mailed out to local residents, business and property owners.

The purpose of the meeting was to provide an overview of the planning studies and development applications in and around the area including the South of Eastern Strategic Direction, the TSMP EA, as well as the StudioCentres development proposal for 629, 633 and 675 Eastern Avenue.

Approximately 60 members of the public attended the meeting and in small groups they were asked to identify issues, specific area concerns with the existing transportation network and then asked to discuss how and where connections or improvements could be made.

Key ideas generated at this meeting included identifying an extension of Pape Avenue as an alternative for a new north-south connection between Carlaw Avenue and Leslie Street, utilizing a pair of one-way connections as an alternative for the new north-south connection and some members raised providing a connection east of Leslie Street as a potential alternative to access Lake Shore Boulevard East.

4.5.4 Port Lands Workshop (Placemaking in the Port Lands) – November 17, 2015

A public workshop (Place-making in the Port Lands) was held at the Morse Junior Public School (180 Carlaw Avenue) from 6:30 pm to 9:00 pm on November 17, 2015. The workshop focused specifically on

the Port Lands and sought feedback on the emerging vision, aspects that will contribute to placemaking and the character of the area. There was also a focus on the Villiers Island Precinct Plan. The workshop was intended to be a follow-up to the key findings, emerging directions and preferred solutions that were presented at the November 14, 2015 open house.

4.5.5 Transportation and Servicing Workshop – November 18, 2015

A public workshop (Connecting the Port Lands and South of Eastern Area) was held at the Fire Academy (895 Eastern Avenue) on November 18, 2015 from 6:30 pm to 9:00 pm. The workshop focused on transportation and servicing for the Port Lands and South of Eastern area, as well as the overall TSMP. The workshop included breakout sessions on transportation issues south of Eastern Avenue, the proposed character and network of streets/transit in the Port Lands, as well as a session on municipal servicing.

4.6 Other Consultation

4.6.1 Traffic Working Group for the South of Eastern Area

As a result of the rezoning application at 629, 633, 675 Eastern Avenue, a local Traffic Working Group was developed to address community concerns regarding future traffic congestion and neighbourhood infiltration, and in particular associated with the connections to Eastern Avenue. The Traffic Working Group consisted of area residents, stakeholders, including Toronto District School Board and Ward 30 Bikes, the applicant/applicant's transportation engineer and City staff.

The Traffic Working Group was established to address community concerns regarding potential traffic congestion and neighbourhood infiltration. The group specifically wanted to reduce the potential for infiltration by external traffic destined for the 629, 633, 675 Eastern Avenue site and proposed north-south street. The group met two times – once in August and once in September 2015.

At the first meeting, the group was provided with an overview presentation of the development review process and key aspects from a transportation perspective that are addressed, an overview of the Class EA process and key aspects being addressed in the TSMP EA as well as the preliminary preferred solutions, and potential ideas from the applicants for the rezoning application for addressing traffic infiltration. Ideas and suggestions for traffic infiltration were discussed.

At the second meeting, an overview of the final report respecting the 629, 633 and 675 Eastern Avenue rezoning was provided. A discussion was also held respecting the transportation strategy that had been developed, including ideas on bike lane locations and traffic calming measures. The timeframe for TSMP build-out was also addressed.

4.7 Ongoing Consultation and Other Meetings

The City and Waterfront Toronto and/or Project team met throughout the process with a number of stakeholders in addition to the CCM, SAC, and LUAC meetings. Meetings are provided in **Table 4-3**.

TABLE 4-3 ONGOING CONSULTATION AND OTHER MEETINGS

Date	Stakeholder	Meeting Topic
September 18, 2013	Ports Toronto	General overview of port requirements and discussion of potential trends.
March 7, 2013	Film Studio District Land Owners and Users	Meeting to introduce the proposed studies and scope.
November 27, 2013	Hydro One	Combined discussion on the DMNP EA, LDLMP EA and planning initiatives in the Port Lands.
December 12, 2013	Windsor Salt	On-site meeting to understand operations.
January 13, 2014	Hydro One	Initial discussion regarding Hydro One undertaking a feasibility study for undergrounding overhead transmission wires and modifications to existing infrastructure for the DMNP EA and TSMP EA.
March 11, 2014	Metrolinx	Overview of the current studies, land use options developed and presented to the public and transportation alternatives.
March 21, 2014	PortsToronto (formerly Toronto Port Authority)	Meeting on land use options and infrastructure options.
March 26, 2014	Ministry of Municipal Affairs (MMA) (formerly Ministry of Municipal Affairs and Housing), Ministry of Natural Resources and Forestry (MNRF), and Ministry of Environment and Climate Change (MOECC)	Overview of current planning studies and initial discussion on Special Policy Area.
April 24, 2014	Hydro One	Scoping of hydro feasibility study.
May 1, 2014	LaFarge	Meeting to discuss various aspects associated the current initiatives, including truck and dockwall access.

Date	Stakeholder	Meeting Topic
March 27, 2015	Smart Centres	Present the preliminary preferred transportation network. Smart Centres requested that Larchmount Avenue and Caroline Avenue be reviewed in more detail. Smart Centres provided a 10 percent design concept for a Larchmount connection following this meeting for consideration by the team.
April 9, 2015	First Gulf	Presented the preliminary preferred transportation network and initial discussion on the Broadview Avenue extension and flood mitigation.
April 9, 2015	Toronto Port Lands Company and Facilities and Real Estate	Presented the preliminary preferred transportation network.
April 14, 2015	Castlepoint/TCK	Presented the preliminary preferred transportation network. Key feedback related to diagonal east-west street, scale of the Commissioners Street right-of-way, depth of blocks south of Commissioners Street.
May 2015	Rosecorp	Presented the preliminary preferred street network and preliminary alignment of the Broadview Avenue extension and impacts to the site plan application submitted to the City.
May 26, 2014	Metrolinx	Follow-up discussion on current studies.
October 29, 2014	MMA and MNRF	The focus of this meeting was a continuation of discussions related specifically to the Special Policy Area. City staff provided a recap of the current planning initiatives underway, including the TSMP EA.
July 30, 2015	PEC	Site and building tour of the PEC.
August 4, 2015	First Gulf	Broadview Avenue extension and grading plan for the Unilever precinct and Valley Wall Features.
July 2015	Rosecorp	Presented the updated alignment that addressed TAC, OMC and Toronto Transit Commission (TTC) requirements and provided a conceptual footprint for the proposed building.
August 29, 2015	Castlepoint/Pinewood	Presented in detail the Broadview Avenue extension and preliminary street network. Pinewood presented initial thinking related to studio expansion.

Date	Stakeholder	Meeting Topic
September 29, 2015	Hydro One	Official kick-off meeting for the Hydro One Feasibility Study which was undertaken by Hydro One on behalf of the City, TRCA and Waterfront Toronto to explore modifications to existing hydro infrastructure for the DMNP EA and Port Lands Planning Framework/TSMP EA.
October 26, 2015	Castlepoint	Conference call with City staff and Pinewood representatives on the Broadview Avenue extension and studio expansion ambitions.
November 6, 2015	Castlepoint/Pinewood	Follow-up meeting with Castlepoint/Pinewood on the Broadview Avenue extension.
November 13, 2015	First Gulf	Follow-up meeting on the Broadview Avenue extension. Key issues and discussion related to the flood mitigation solution and evaluation, providing flexibility in the TSMP EA in the event a flood protection solution was advanced north of the rail embankment, signal spacing between Broadview Avenue and Bouchette Street and potential options, assumptions for the grade-separated structure and flexibility with the structure itself.
January 28, 2016	Film Ontario	City and Waterfront Toronto staff presented the emerging directions for the Port Lands Planning Framework, including the urban structure and transportation network.
February 17, 2016	Metrolinx	Broadview Avenue extension and update on the TSMP EA.
March 18, 2016	First Gulf	Follow-up meeting on the Broadview Avenue extension alignment and additional due diligence work the City and First Gulf were advancing. Discussed a potential alternate alignment for 1-D with First Gulf to provide a concept for the City and Waterfront Toronto's consideration and further consideration to be undertaken by First Gulf of the current preferred alignment.
April 11, 2016	Talisker	Meeting to discuss the TSMP EA and preferred solutions.
April 15, 2016	Castlepoint/Pinewood	Follow-up meeting on the Broadview Avenue extension at Pinewood Toronto Studios to better understand operations at stages 10, 11 and 12.
April 21, 2016	TCK	Discuss process and next steps in the TSMP EA as well as key concerns with the preferred solution.
April 27, 2016	First Gulf	To discuss the assumptions in the TSMP EA related to employment assessed.

Date	Stakeholder	Meeting Topic
April 29, 2016	Castlepoint/Pinewood	Follow-up meeting on the Broadview Avenue extension at Pinewood Toronto Studios to continue the discussion on the extension in relation to operations, security and other concerns.
May 10, 2016	First Gulf	Discuss potential options for flood protecting the lands to the north of the rail embankment.
May 11, 2016	Talisker	Provide an overview of the TSMP EA and Broadview Avenue extension.
May 17, 2016	Lafarge	Discuss transportation analysis, work undertaken to support a truck management framework and more detailed analysis required to establish dedicated truck routes.
June 10, 2016	Toronto Film, Television and Digital Media Board	Presented preferred plans, including the preferred street network and Broadview Avenue extension.
July 15, 2016	Toronto Industry Network	Presented preferred plans including the preferred street network and potential for dedicated truck routes.
July 15, 2016	First Gulf	Further discussion on the Broadview Avenue extension.
October 13, 2016	Talisker	Follow-up discussion on the preferred transportation network and Broadview Avenue extension.

4.8 Web-Based Consultation and Social Media

The City and Waterfront Toronto utilized the website established for the first phase of the PLAI (www.portlandsconsultation.ca) to post information for the various planning initiatives, including the TSMP EA. The website included a comprehensive overview of the Project, relevant documents and resources, information about consultation events and opportunities to provide feedback. The Project website also included links to City and Waterfront Toronto webpages containing additional background information about the planning studies and history of planning efforts in the Port Lands.

To harness the power of social media, Waterfront Toronto and the City Twitter accounts - @WaterfrontTO, @TorontoCivicEng, and @CityPlanTO were used as promotional tactics to increase awareness about the community consultation meetings and to encourage broad participation. The Project hashtag #PortLandsTO was also used on all tweets to promote and track discussion.

Parallel to the face-to-face consultation activities, online options were also available to facilitate broad participation. An overview of the tools used to encourage online participation is provided below:

- ***Online Discussion Guides*** – Online versions of the discussion guides were posted to the website following each CCM, allowing the public and other stakeholders to submit their feedback electronically.
- ***Online Participant Workbook*** – The Project website included an online version of the Participant Workbook allowing stakeholders to review the information and discussion questions and provide feedback on their own time.
- ***Social Media*** – Twitter was used to provide real time updates of the proceedings at the CCMs. The Project hashtag #PortLandsTO was used on all tweets to promote discussion.
- ***Email*** – Stakeholders were also invited to submit feedback through email, either through info@waterfrontoronto.ca or portlands@toronto.ca.

PART 2:
Taking Stock

5.0 EXISTING CONDITIONS

This section of the TSMP EA presents the existing and planned base conditions used to appropriately quantify any impacts of the proposed infrastructure within the Study Area. This section addresses:

- Socio-economic conditions and land use
- Parks and community spaces
- Cultural environment
- Natural environment
- Noise and air quality
- Soils
- Transportation
- Municipal services
- Utilities

The purpose of establishing existing baseline conditions was to obtain an understanding of the area that potentially could be affected by the Project. Baseline conditions were documented for the socio-economic, natural and physical environments based on available data and information obtained through a review of secondary information sources such as published data, electronic databases, aerial photographs, published literature and journals, and map interpretation. Data obtained through primary sources such as field reconnaissance and surveys, as well as comments received as part of the consultation process, were also incorporated to develop a comprehensive description of baseline conditions.

5.1 Socio-Economic Conditions and Land Use

This section contains a summary of the socio-economic conditions in the Study Area. Existing land uses in the Study Area primarily consist of employment and recreational uses. Many of the existing employment uses are land intensive uses. There is also a considerable amount of vacant and/or underutilized land, particularly in the Port Lands. There is a small pocket of existing residential uses in the South of Eastern area between Booth Avenue and Carlaw Avenue. The Inner Harbour is located to the west of the Study Area. The Ship Channel connects to the Inner Harbour. The Eastern Gap, situated between the southwest corner of the Port Lands and the eastern extent of Ward's Island of the Toronto Islands, separates the Toronto Inner and Outer Harbour.

The Study Area is primarily located in Ward 30 Toronto-Danforth; however, lands east of Leslie Street are located in Ward 32 Beaches-East York.

The Port Lands is the only active port in the city. Other heavy industrial "city-building" uses are located in the Port Lands as well including waste management, concrete batching, manufacturing, asphalt plants, distribution/logistics facilities and salt storage. The preferred land use direction for the Port Lands proposes to maintain lands for port purposes. There are a number of power utilities, film and

television production uses, and natural features. There are also unique built heritage and cultural heritage landscapes in the Study Area.

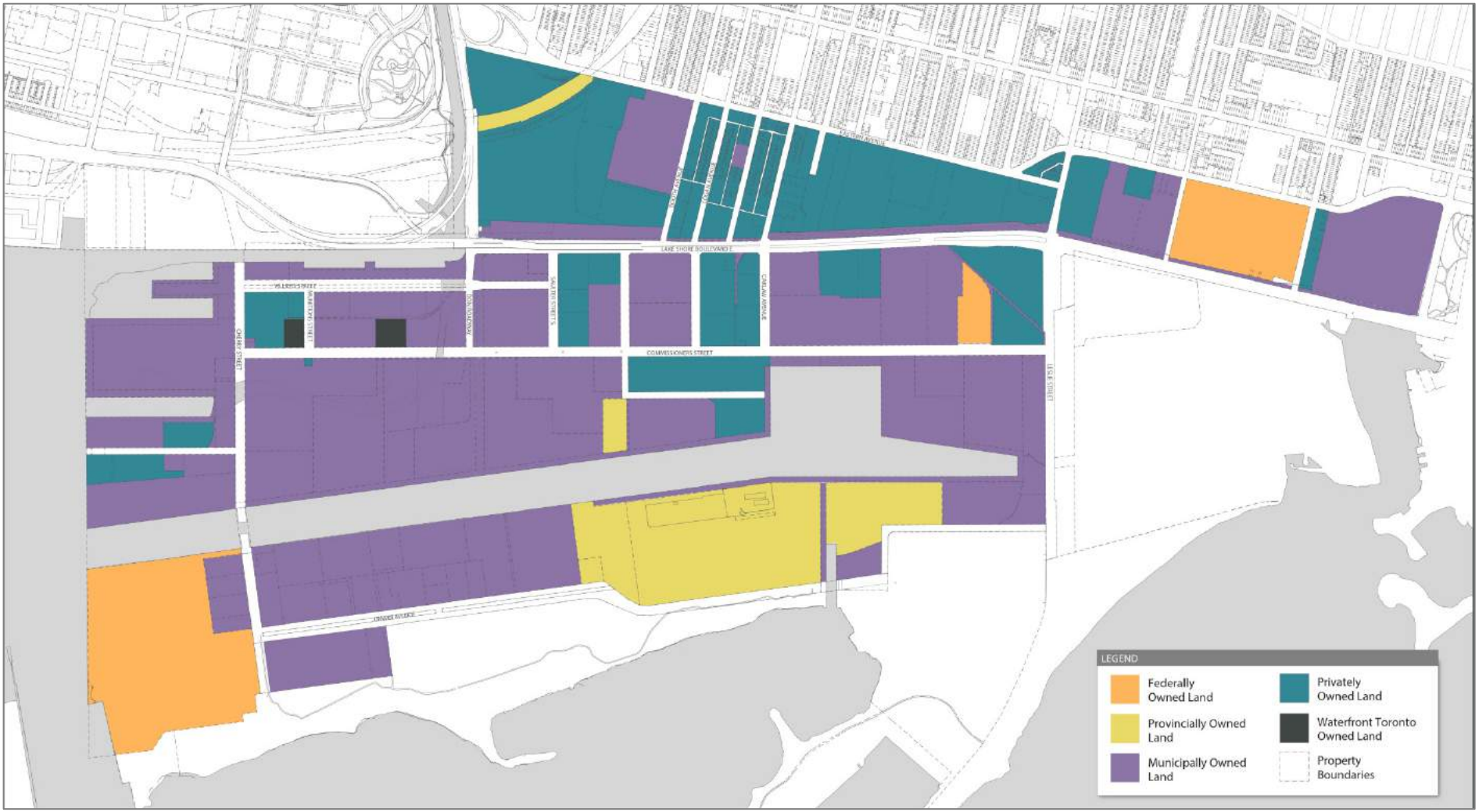
5.1.1 Land Ownership

Figure 5-1 shows land ownership in the Study Area. The majority of land in the Port Lands is publicly owned and is currently under a combination of short and long-term leases. The most prominent landowner in the Port Lands portion of the Study Area is the Toronto Port Lands Company (TPLC) followed by the Government of Ontario and the Government of Canada. Privately held parcels are scattered throughout while Waterfront Toronto owns two parcels in the Villiers Island Precinct.

Excluding streets in the Port Lands, the City, through TPLC, owns approximately 236 hectares, including parkland. The Government of Canada owns approximately 25 hectares, which includes the lands of PortsToronto (Ports Toronto, 2016). PortsToronto is a public enterprise that owns and operates the Billy Bishop Airport, the Port of Toronto (Terminals 51 and 52), and the Outer Harbour Marina. TPLC in contrast, is a self-financing municipal corporation; wholly-owned by the City. TPLC is responsible for leasing, development, brownfield reclamation and land management activities of municipally-owned land in the Port Lands. TPLC works closely with the City to accelerate economic growth and job creation working with a wide range of public and private sector partners. The Government of Ontario (through Ontario Power Generation) owns 25 hectares, and Waterfront Toronto owns 1.5 hectares. The remaining 28 hectares of land are held by private interests. There are a number of long-term leases (up to 100 years) on City-owned land, as well as a lease of the provincially owned Hearn building to Studios of America (City of Toronto, 2013a).

The South of Eastern area (north of Lake Shore Boulevard East) is approximately 60 hectares in size with the majority being privately owned. The area east of Leslie Street is either municipally or federally owned with some interspersed privately owned land. There are also three parcels in the west end of the Study Area south of Eastern Avenue that are municipally owned. The largest privately owned site, 21 Don Roadway, belongs to First Gulf, who also recently purchased the CineSpace Film Studios lands at 30 Booth Avenue. First Gulf is the commercial arm of the builders “Great Gulf” who are the corporate entity that takes ownership of the lands.

FIGURE 5-1 OWNERSHIP

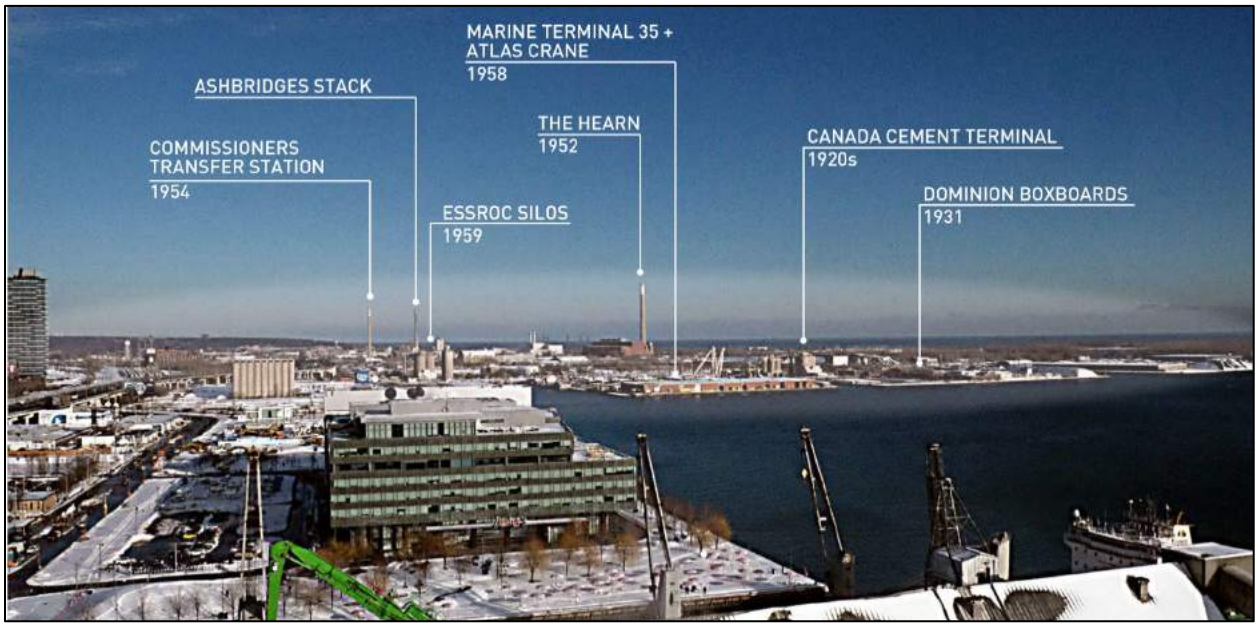


Source: City of Toronto, 2016

5.1.2 Existing Land Uses and Built Form

The Study Area contains a broad mix of industrial, employment and commercial uses, as well as vacant lands and a small area of residential development located in the South of Eastern area (north of Lake Shore Boulevard East). Buildings are primarily one to two-storeys in height, with various taller structures such as the Essroc silos, the chimneystack of the Commissioners Waste Transfer Station and the chimney stack of the Hearn (**Figure 5-2**). The lot fabric is varied with some smaller lots east of the Don Roadway to Carlaw Avenue, north of Commissioners Street. There are several private enterprises that operate in the area that range from outdoor/indoor warehousing to heavy equipment rental companies (CAT) and fitness clubs.

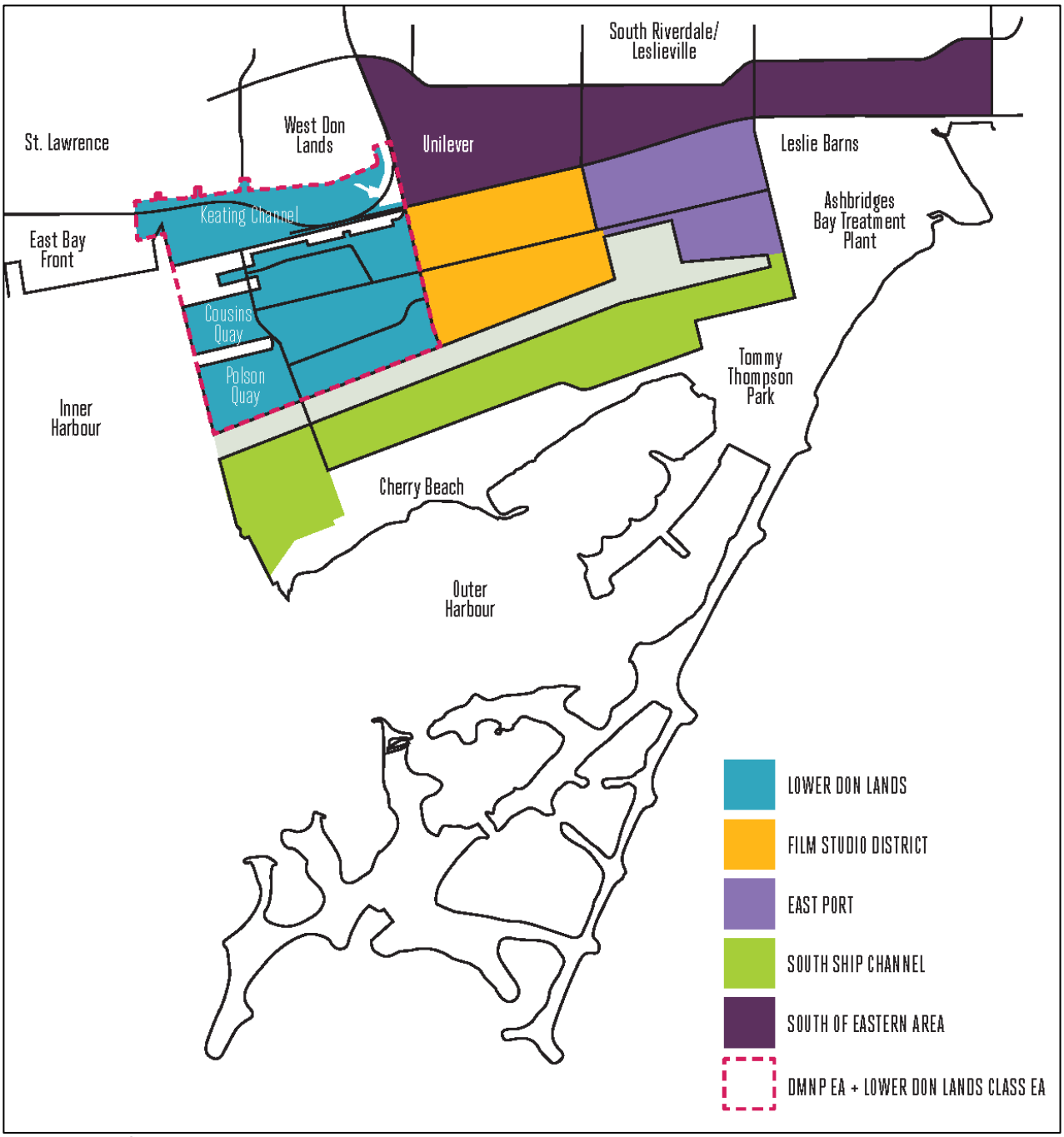
FIGURE 5-2 BIRD'S EYE VIEW OF BUILT FORM WITHIN THE STUDY AREA



Source: City of Toronto, 2016

The Port Lands is typically broken down into four different districts – the Lower Don Lands, the Film Studio District, the East Port and South Ship Channel (**Figure 5-3**). The Study Area for the TSMP EA addresses the latter three districts. The Lower Don Lands were the subject of previous EAs. More information on each of the areas is provided below.

FIGURE 5-3 PORT LAND DISTRICTS



Source: City of Toronto, 2015a

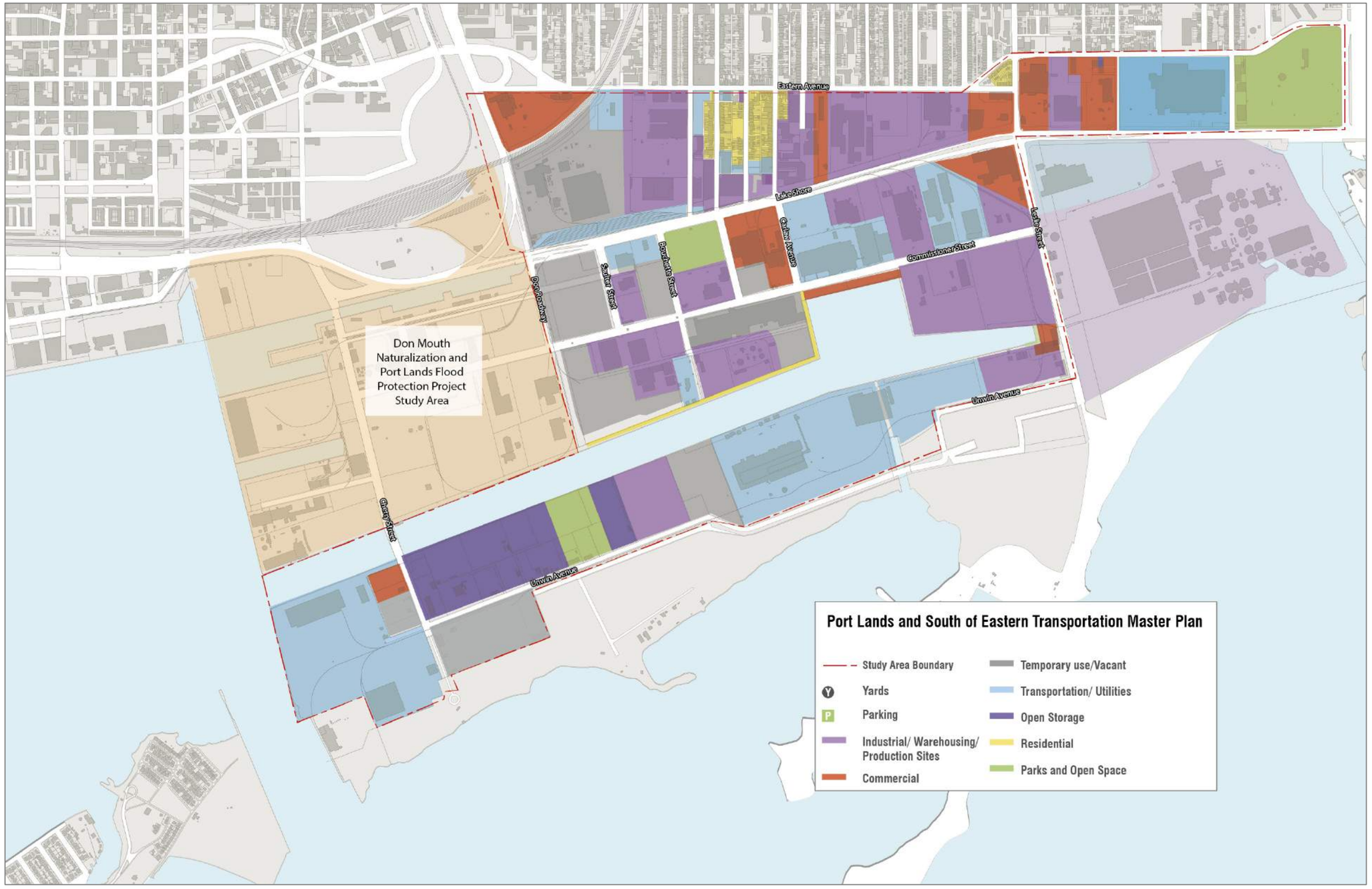
Film Studio District – Houses the Pinewood Film Studios, including office spaces, special effects stages, and multiple purpose-built sound stages and supporting facilities capable of accommodating several productions at once. Access to the studio lands is restricted. The district consists of a mix of privately and publicly-owned lands, with long-term lease options on public lands and includes some additional commercial, industrial and private recreation facilities, as well as vacant lands.

East Port – Consists of government-related facilities and industrial land uses. North of Commissioners Street uses include a TTC garage, Toronto Hydro building and Canada Post. Additional uses include a large retail complex (Canadian Tire, Shoppers Drug Mart, Boston Pizza) and the Showline film studio. LaFarge, St. Marys Cement, Essroc and other companies currently operate concrete batching and recycling facilities in the area south of Commissioners Street.

South Ship Channel – Includes lands used by PortsToronto, the Royal Canadian Yacht Club, the PEC, Strada Aggregates, bulk storage operations and a soil recycling facility. The decommissioned Hearn Generating Plant is currently vacant but is used for location filming and special events. PortsToronto has legislated responsibility over all shipping activities, including, navigation, transportation of passengers and goods, and the handling and storage of cargo. The PortsToronto site consists of dockwall adjacent to the Inner Harbour and Ship Channel, warehouse facilities, and the International Marine Terminal Facility, which is used for passenger cruises.

South of Eastern Area – The area is characterized by industrial and commercial uses, including studio spaces, the City's Booth Yard, Toronto Fire Academy – EMS Training Centre, Enbridge facility, Canada Post facilities, Toronto District School Board office, BMW dealership, and large retail grocery chains. There are a number of surface parking lots and few streets that connect Eastern Avenue to Lake Shore Boulevard East. The MetroLinx rail corridor travels through the north-west corner of the area. Small pockets of single-dwelling and semi-detached residential units are also present in the area. Existing vacant sites include the large Unilever site at the northeast corner of Don Roadway and Lake Shore Boulevard East. There are also multiple creative sector uses including sound studios, interior design studios, production companies, costume design and warehouse located in brick and beam buildings, as well as Urbacon's head office, cafes, warehouses and distribution centres. Existing land use is provided in **Figures 5-4.**

FIGURE 5-4 EXISTING LAND USES IN THE STUDY AREA



5.1.3 Municipal Yards

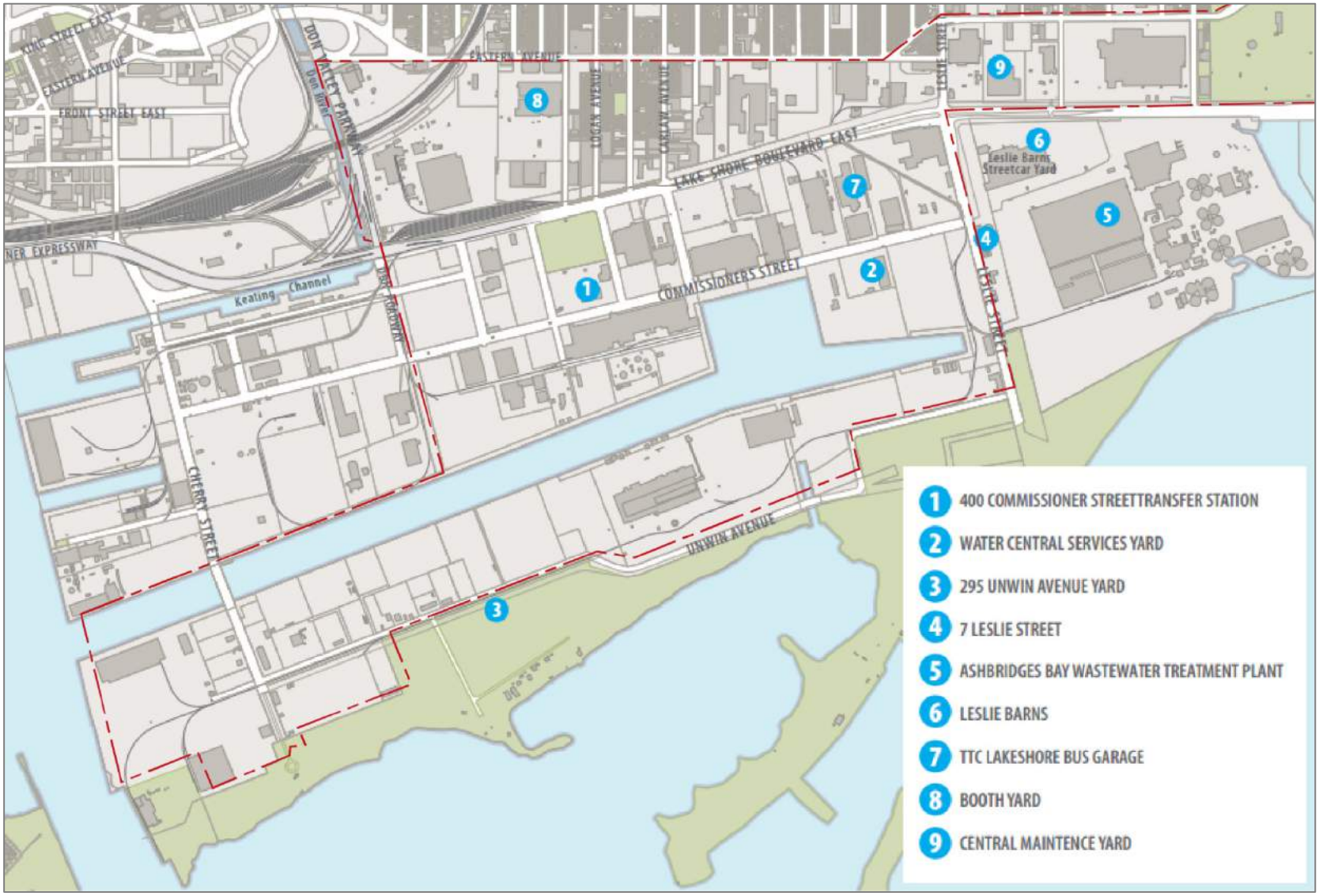
A number of municipal yards are located in, or near, the Study Area and provide necessary services for residents and businesses. These yards contain some heavier industrial operations and therefore represent constraints to development in the area, particularly (where permitted) residential/sensitive uses. Certain yards are being assessed for potential relocation and/or consolidation in the future. The following municipal yards were identified (**Figure 5-5**):

- ***400 Commissioners Street Transfer Station*:** This site was constructed in 1953 and covers 2.4 hectares of land. Currently, the transfer station receives residential waste and electronic goods, and functions as a yard compost facility and a household hazardous waste depot. The main building has offices and a small tipping floor, used to store and compact waste before it is transferred to trucks destined for landfills. Its office and administrative floors are underutilized. The other building onsite, with a large garage and office component, is vacant.
- ***545 Commissioners Street, Water Central Services Yard*:** The Water Central Services Yard is located on a 1.8 hectare site and consists of a two-storey administrative building used exclusively by Toronto Water, a fueling depot, storage yard and surface parking. The 2,800 m^2 Toronto Water building was constructed in 1985 and houses laboratories and office space.
- ***295 Unwin Avenue Yard*:** The City's Urban Forestry Division utilizes this 7.2 hectare site as a tree nursery and wood storage compound. The nursery was relocated from the Garrison Nursery Yard.
- ***7 Leslie Street*:** This 2.8 hectare site is an expressway operations yard and winter maintenance depot for the City's Transportation Services Division.
- ***Ashbridges Bay Wastewater Treatment Plant*:** The Ashbridges Bay Treatment Plant (ABTP) is the largest of the City's four wastewater treatment plants. The facility is located on a 40.5 hectare site south of Lake Shore Boulevard East and east of Leslie Street. Original construction of the facility was in 1910, with continued expansion through the years.
- ***Leslie Barns*:** The Leslie Barns is the TTC's fleet maintenance and storage facility for the new, accessible streetcars. The 7.3 hectare site is located at the southeast corner of Leslie Street and Lake Shore Boulevard East. Streetcar tracks from Queen Street East down Leslie Street to Commissioners Street were also constructed.
- ***580 Commissioners Street, TTC Lake Shore Bus Garage*:** The TTC acquired this building in the 1980s from Grey Coach Lines. In 1988, the Lake Shore Garage was converted from a conventional bus maintenance facility to one that could service and maintain the TTC's Wheel-Trans buses. The facility is located on the north side of Commissioners Street, just west of Leslie Street.

- ***433 Eastern Avenue, Booth Yard*:** The Booth Yard is located on a 5.7 hectare site north of Lake Shore Boulevard East, east of the Don Roadway/DVP. The site has three buildings, including two heritage structures and is utilized by Transportation Services and Parks, Forestry and Recreation.
- ***843 Eastern Avenue, Central Maintenance Yard*:** This 2.4 hectare maintenance yard east of Leslie Street and north of Lake Shore Boulevard East consists of two buildings that are utilized by the City's Fleet and Municipal Licensing and Standards Division for taxi inspections.

PortsToronto operates a yard adjacent to the Keating Channel in the Lower Don Lands, primarily for sediment and debris management in the Keating Channel and Inner Harbour. The DMNP EA proposes to relocate sediment and debris management operations to the west bank of the Don River, immediately north of Lake Shore Boulevard East. Dewatering operations for the sediment management may occur on either the west bank of the Don River, the Keating Channel or at the mouth of the Don Green wetland on the north side of the Ship Channel. Secondary dredging and debris management will also occur periodically in the Keating Channel and potentially Ship Channel on an infrequent basis. Stream flow monitoring equipment and operational weirs will also be installed in the sediment management area. The remaining operations for PortsToronto in the Keating Channel need to be accommodated elsewhere in the Port Lands.

FIGURE 5-5 CITY OF TORONTO MUNICIPAL YARDS



Source: City of Toronto, 2013a

5.1.4 Existing Study Area Population and Employment

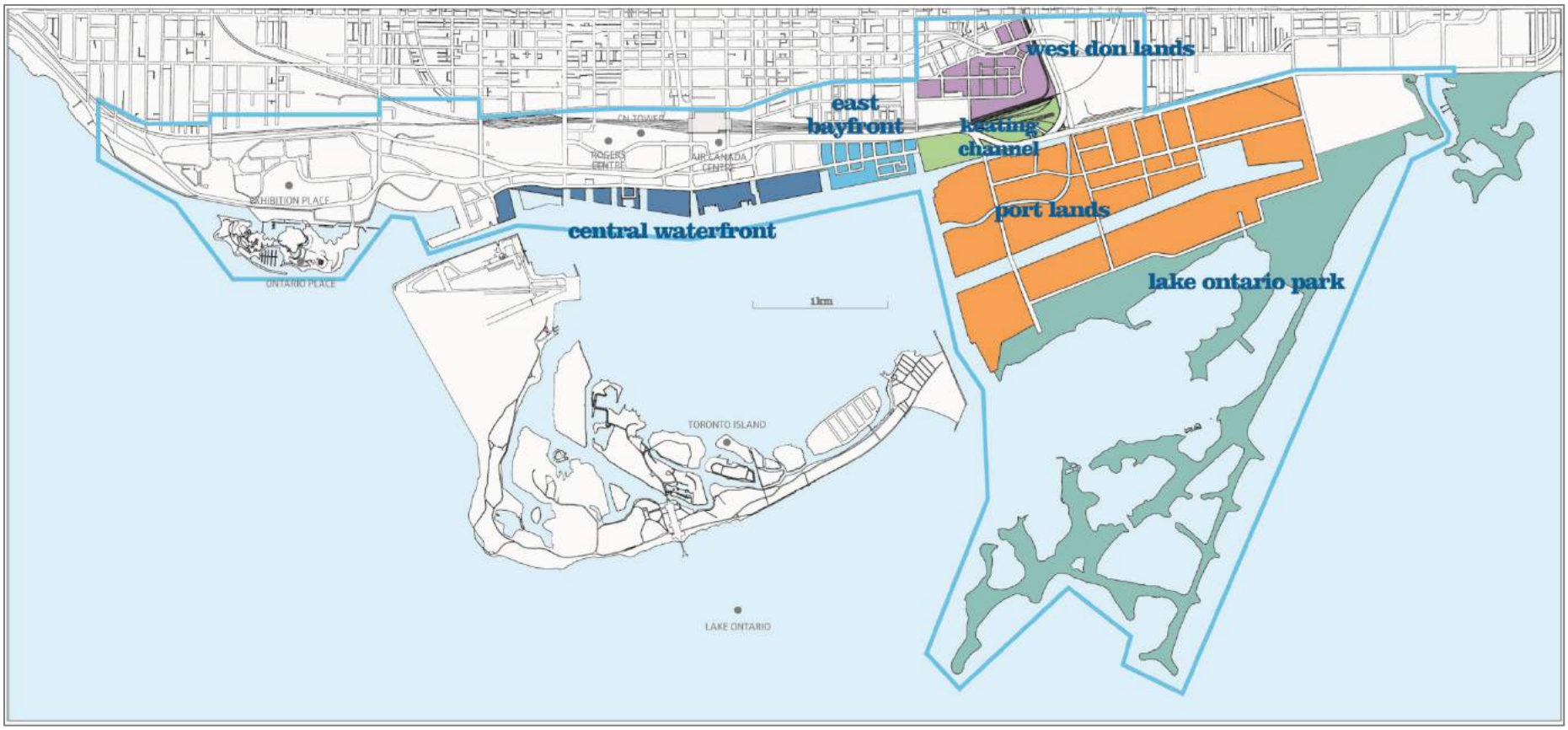
There are no existing residential uses in the Port Lands. Based on the City's Employment Survey for 2012, there were 84 employment uses employing a total of 6,600 people in the Port Lands based on the City's Employment Survey for 2015. East of the Don Roadway contains a growing film production and media sector. There are also a significant number of existing service and commodity uses including bulk storage facilities, industrial and material processing and shipping facilities as well as the yards noted above (City of Toronto, 2013a).

Based on the City's Employment Survey for 2015, approximately 5,330 people were employed in the South of Eastern area, an increase of 1,140 jobs from 2014 and 680 jobs since 2010. The Office category is now the largest employment category in the South of Eastern area, accounting for 48.3 percent of jobs. Manufacturing, while declining, is the second largest category at 30.7 percent of employment. There is a small cluster low-rise detached and semi-detached dwellings between Booth Avenue and Carlaw Avenue.

5.1.5 Existing and Planned Residential Areas

Figure 5-6 provides an overview of the waterfront planning areas and new communities that are either being proposed or are under construction in the Context Area. The overall increase in population and employment in these areas will drive the demand for new infrastructure in the Study Area.

FIGURE 5-6 WATERFRONT PLANNING AREAS

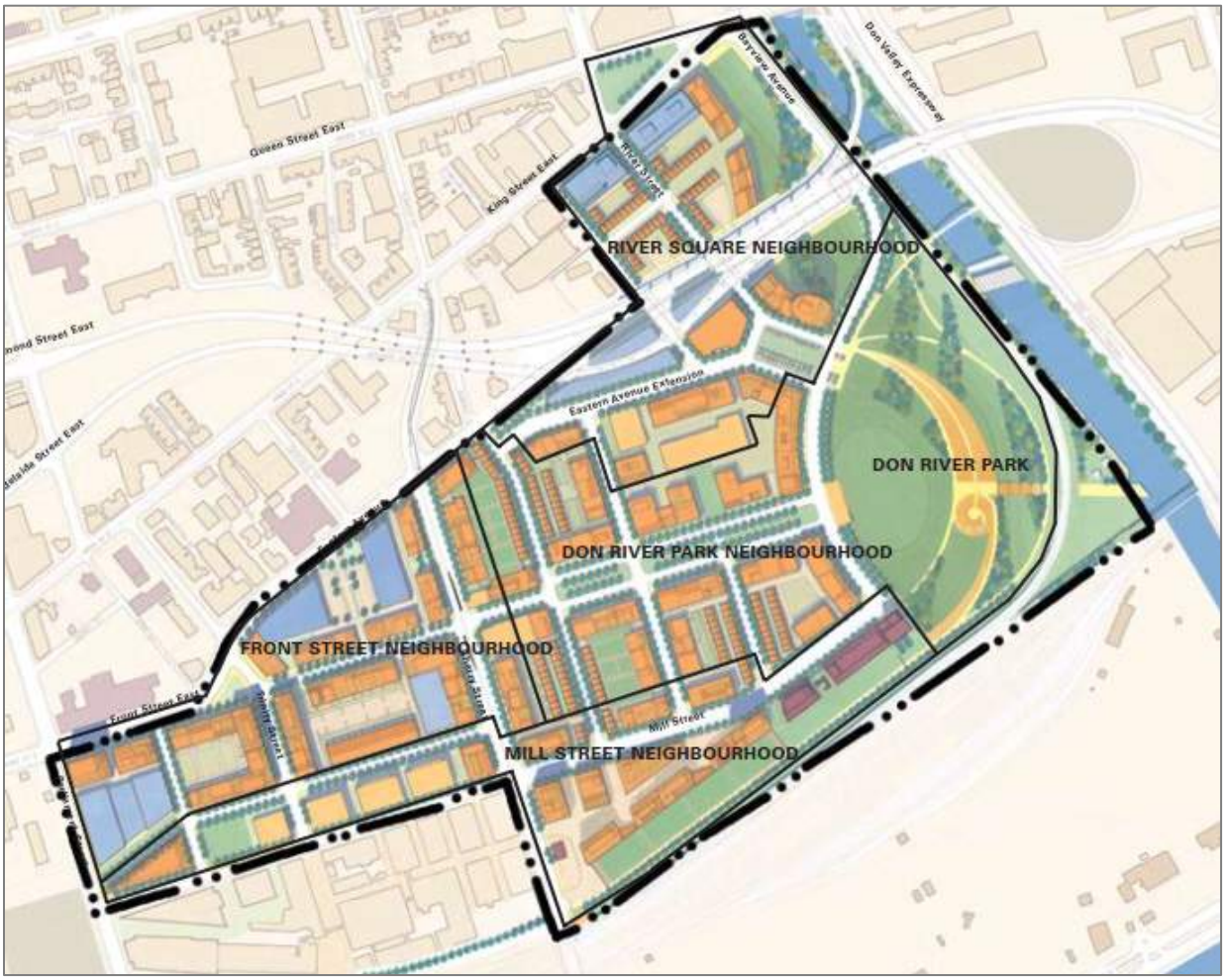


Source: Waterfront Toronto, 2012

West Don Lands

The West Don Lands is a new community located to the immediate northwest of the Study Area currently being developed as part of Toronto's waterfront revitalization (**Figures 5-7** and **5-8**). The 32 hectare area of former industrial lands is being transformed into a sustainable, mixed-use, pedestrian-friendly, riverside community. It will feature 6,000 new residential units, ample space for employment and commercial uses, public transit within a five minute walk of homes and businesses, and two child-care centres when complete (IO, 2010).

FIGURE 5-7 WEST DON LANDS - OVERVIEW



Source: TWRC, 2005

FIGURE 5-8 WEST DON LANDS – CONCEPT

Source: Waterfront Toronto, 2016a

East Bayfront

East Bayfront is another new community currently being built approximately 1 km west of the Study Area (**Figures 5-9** and **5-10**). East Bayfront includes an area approximately 23 hectares in size and extends from Lower Jarvis Street east to Parliament Street and from Lake Shore Boulevard East south to the water's edge. East Bayfront will feature 6,000 residential units, including 1,200 affordable residences, and employment space able to accommodate 8,000 jobs. The area will also be a hub for retail, entertainment and cultural amenities and will be easily accessible by public transportation (Waterfront Toronto, 2016).

FIGURE 5-9 EAST BAYFRONT – OVERVIEW

Source: Waterfront Toronto, 2016

FIGURE 5-10 EAST BAYFRONT – CONCEPT

Source: Waterfront Toronto, 2016

Lower Don Lands

The Lower Don Lands is a 125 hectare area that runs from East Bayfront (the Parliament Street Slip) east to the Don Roadway and from the rail corridor south to the Ship Channel. The naturalization of the mouth of the Don River is the centerpiece of the plans for the Lower Don Lands (Waterfront Toronto, 2016). A precinct plan for the Keating Channel Precinct (north of the Keating Channel) was completed in 2010 for a new mixed-use community. The precinct plan east of Cherry Street will be revisited. A new mixed-use community is being currently planned for Villiers Island. South of the future river valley, a mixed-use area is envisioned. However, residential permissions are to be determined pending further detailed study.

Keating Channel Precinct

The Keating Channel neighbourhood will be located in the northern quadrant of the Lower Don Lands. The neighbourhood will run from East Bayfront to the Don River and from the West Don Lands to Villiers Street (Waterfront Toronto, 2016) (**Figures 5-11** and **5-12)**.

The Keating Channel will be dramatically transformed into an upbeat, unique canal destination. It will be lined with public space and traversed by a series of four new bridges for vehicles, transit, cyclists, and pedestrians (Waterfront Toronto, 2016).

The precinct plan for the area consists of establishing a fine-grained street and block structure that will feature a variety of built forms and architecture that support a diversity of experience and uses. Under the plan the Keating Channel neighbourhood will contain approximately 4,000 residential units (Waterfront Toronto, 2016).

FIGURE 5-11 KEATING CHANNEL COMMUNITY – OVERVIEW

Source: Waterfront Toronto, 2016

FIGURE 5-12 KEATING CHANNEL COMMUNITY – CONCEPT

Source: Waterfront Toronto, 2016

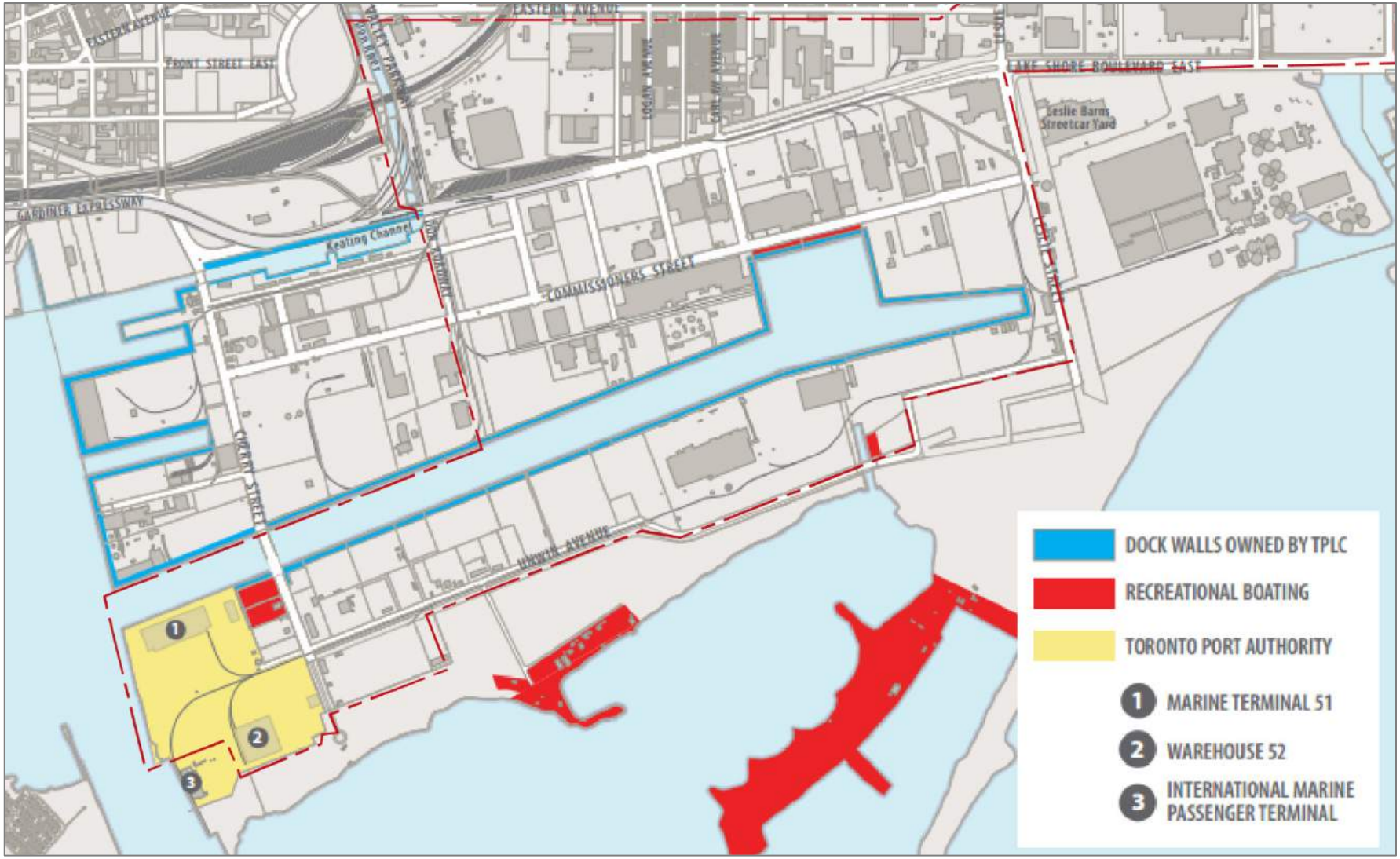
5.1.6 Tourism and Recreation

The main tourist and recreational activities in the Study Area relate to the port and boating/maritime uses. PortsToronto utilizes the International Marine Terminal Facility for cruise vessels and there are a number of recreational boating facilities located in the Study Area or vicinity.

PortsToronto was established for the purpose of operating the port and has legislated responsibility for all port activities related to shipping, navigation, transportation of passengers and goods, and the handling and storage of cargo (City of Toronto, 2013a).

Figure 5-13 identifies the dockwall owned by TPLC, recreational boating and activities on the PortsToronto site.

FIGURE 5-13 PORT ACTIVITY, DOCKWALLS AND BOATING



Source: City of Toronto, 2013a

Dockwall Facilities

There are approximately 8,670 m of dockwalls in the Port Lands, excluding dockwalls owned by PortsToronto. These are located along the Keating Channel, Cousins and Polson Quays, the Ship Channel, Turning Basin and the Leslie Street Slip. The dockwalls are owned and maintained by TPLC. Some dockwalls are leased to private interests. Not all of the dockwalls are currently utilized for mooring of ships. The implementation of the DMNP EA will result in the loss of 2,140 m of dockwalls. Once the DMNP is completed, a total of 6,529 m of dockwall would remain (City of Toronto, 2013a).

Recreational Boating

Recreational boating activities along the waterfront area includes yachting, power boating, sailing, jet skiing, canoeing/kayaking, rowing, dragon boating and windsurfing. The larger area is home to over 50 boat clubs and marinas with over 5,258 boat moorings and approximately 15,000 members and users (City of Toronto, 2013a). Some of the organized recreational boating clubs that operate within the Context Area include the Moordale Sailing Club, Westwood Sailing Club, Sailing Fanatics, Toronto Yacht Sales, Bayside Rowing Club, Great White North Dragon Boat Club and the Royal Canadian Yacht Club which has a new facility on Cherry Street. The Great White North Dragon Boat Club utilizes the Hearn's discharge channel to launch boats.

Within the last 30 years, a number of sailing clubs have established themselves in the Outer Harbour. The Outer Harbour Sailing Federation consists of eight member clubs located on the north shore of Lake Ontario, south of Unwin Avenue at Regatta Road. The Outer Harbour Marina located on the Leslie Street Spit and operated by PortsToronto, offers berthing for over 636 slips.

Other

The larger Context Area (primarily the Central Waterfront) is also used by cruise boats (domestic and international), commercial tours boats (clustered along dockwalls and marine slips between Bathurst Quay and Parliaments Street) and the Toronto Ferry (which provides regular ferry services to the Toronto Islands from the Toronto Ferry Terminal at Bay Street and Queens Quay).

Some of the other marine uses in the larger Context Area include industrial shipping, general emergency service, water taxis, tugboats, as well as sport fishing and radio controlled boating. There are also ongoing maintenance activities by the PortsToronto within the Inner Harbour. Dockwalls are also generally used for undertaking repairs to larger ships (City of Toronto, 2013a).

In recent years, temporary and entertainment events have located in the Port Lands to take advantage of the space, amenities and proximity to downtown Toronto. Examples include Luminato at the Hearn (2016), NXNE live music (2016), Cirque du Soleil, transportation hub for the Pan Am and Parapan Games (2015).

5.2 Parks and Community Spaces

5.2.1 Parks

There are two municipal parks and a variety of other open spaces in the Study Area or in close proximity. **Figure 5-14** identifies parks and open spaces as currently identified in the CWSP including water's edge promenades, Don Greenway and the DMNP EA (River and Don Greenway).

Planned parks and open spaces are those parks and open spaces that are not necessarily built today, but exist and are described in current City planning documents (e.g., Lake Ontario Master Plan). More information on parks and open spaces it provided below.

McCleary Park

McCleary Park is a 2.8 hectare park on Lake Shore Boulevard East to the north of the City's waste transfer station at 400 Commissioners Street. The park features two lighted ball diamonds and a cricket pitch.

Morse Street Playground

Morse Street Playground is a 0.28 ha Neighbourhood Park located at 76 Morse Street. It contains a few informal recreation amenities including a playground and a wading pool. It also has a drinking fountain, field house and washrooms. There is also a community group that has taken on the responsibility of planting the trees and plants in Morse Street Playground.

Leslie Street Greening

The Leslie Street Greening project created a green corridor from Lake Shore Boulevard East to Tommy Thompson Park. The purpose of the project was to connect the neighbourhoods north of Lake Shore Boulevard East to the Port Lands and its emerging park system.

Jennifer Kateryna Koval's'kyj Park

This small park is located at the terminus of Polson Street and overlooks Lake Ontario.

FIGURE 5-14 EXISTING AND PLANNED PARKS AND OPEN SPACES

Source: City of Toronto, 2013a

Tommy Thompson Park

Beginning in the late 1950s, millions of cubic meters of dredged sand, earth fill and concrete were deposited into the lake to create the Leslie Street Spit and Tommy Thompson Park. The peninsula now extends 5 km into Lake Ontario and is approximately 500 hectares in size.

The site represents some of the largest existing natural habitat on the Toronto waterfront, comprising a mosaic of habitats including cottonwood forests, coastal wetlands, wildflower meadows, cobble beaches and sand dunes. These habitats have fostered the development of significant fish and wildlife communities and make it one of the best nature watching locations in the Greater Toronto Area (GTA). Other popular recreational activities at the park include hiking, leisure cycling and fishing.

TRCA currently owns and manages the land and water bodies included in Tommy Thompson Park. PortsToronto leases the remainder of the Leslie Street Spit from the Government of Ontario for lake filling operations. Once lake filling is complete, the government intends to transfer ownership of the remaining lands to the TRCA. The park is currently open to the public on weekends and holidays.

Clarke/Cherry Beach Park

Clarke Beach Park, or Cherry Beach as it is more commonly referred to, is located on the north shore of the outer harbor at the foot of Cherry Street. The west side of the beach is popular with kite boarders and there is also an off-leash dog area.

Cherry Beach Sports Fields and Playground

The Cherry Beach Sports Fields, opened in 2008, consists of two regulation-sized elite soccer and lacrosse fields. These fields were developed to assist in meeting the high demand for playing fields in Toronto. The state-of-the-art regulation-sized fields can accommodate numerous recreational activities such field hockey and ultimate Frisbee in addition to soccer and lacrosse. Adjacent to the fields is an adventure playground and in 2012 a permanent washroom facility was opened.

Other Parks and Open Spaces

There are a number of other parks and open spaces located in, or near, the Study Area including the Corktown Common and Underpass Park in the West Don Lands and the Main Sewage Treatment Playground and Ashbridges Bay Skate Park.

Recreational Trails

There are three main multi-use trails in the Study Area including the Lake Shore North Trail, the Martin Goodman Trail and the Lake Shore East Trail. See **Section 5.7.1** for additional information on these trails. Generally, the Lake Shore North Trail runs along Lake Shore Boulevard East and connects into the Port Lands to the Martin Goodman Trail at two points – Cherry Street and Leslie Street – and back north to the city via the Lake Shore East Trail. The Martin Goodman Trail connects to the Lake Shore East Trail north of the Keating Channel.

5.2.2 Schools and Community Facilities

Given the primarily industrial uses of the Study Area, there are no schools or other community services (e.g., libraries, recreation centres, etc.) in the Study Area. North of Eastern Avenue, there is the Morse Street Junior Public School (180 Carlaw Avenue), the Bruce Junior Public School (51 Larchmount Avenue) and the Jones Library (118 Jones Avenue), as well at the Gerrard/Ashdale Library farther north (1432 Gerrard Street East).

A Community Services and Facilities Strategy that updates previous studies is being undertaken as part of the development of the Port Lands Planning Framework. The previous studies include a 2001 strategy developed as part of the development of the CWSP and a 2010 study for the Lower Don Lands. The updated strategy will ensure that appropriate facilities are provided for the new communities in the Port Lands based on forecasted development, including optimizing where certain types of facilities should be located and ensuring their timely provision.

5.3 Cultural Environment

This section provides a summary of the cultural environment within the Study Area including archaeology, built heritage and cultural heritage landscapes. The industrial heritage inherent within the Study Area was considered a key component of achieving the overall Project Objectives of the TSMP EA.

5.3.1 Archaeology

A Stage 1 Archaeological Assessment (Stage 1) was completed for the Study Area in accordance with the Ministry of Tourism, Culture and Sport's (MTCS) Standards and Guidelines for Consultant Archaeologists, 2011 (**Appendix B**). The purpose of the Stage 1 was to provide information about the geography, history, previous archaeological fieldwork and current land condition of the Study Area; determine the archaeological potential of the Study Area; and, to determine the need to complete a Stage 2 Archaeological Assessment. Both desktop data collection and a property inspection were undertaken to support the Stage 1.

Historical Context

The area which is now the Port Lands is historically documented to have been the deltaic freshwater lagoon of the Don River. The Holocene geologic history of Lake Ontario permits the earliest dating of the lagoon formation to ca. 5,000 BP following the Nipissing Phase resurgence of lake levels. While the former Ashbridge's Marsh was likely utilized by Aboriginal peoples for fishing, hunting (ASI, 2014) or possibly for the harvesting of wild rice (ASI, 2014), the strand-nature of any solid ground precludes any permanent or long-term occupation of the locale.

The background research and historic mapping demonstrates that the Study Area is largely situated on made land constructed at the close of the nineteenth century and further modified in the early twentieth century. Though parts of the Study Area coincide with the natural beach strands of the Ashbridge's Marsh, these areas were most likely disturbed in the late nineteenth century and early

twentieth century by harbour installations constructed to form the Port Lands. Parts of the Study Area that contain lands in the South of Eastern area are shown to be natural land and may retain potential Euro-Canadian archaeological resources depending on the degree of disturbance they have undergone.

Registered Archaeological Sites and Previous Research

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTCS. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 km east to west, and approximately 18.5 km north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area is located in Borden block AjGu.

According to the OASD, registered archaeological sites located within 1 km of the Study Area are identified in **Table 5-1**. According to the background research, seven archaeological assessments have been conducted within 50 m of the Study Area (see **Appendix B** for a complete overview).

TABLE 5-1 LIST OF PREVIOUSLY REGISTERED SITES WITHIN 1 KM OF THE STUDY AREA

Borden #	Site Name	Cultural Affiliation	Site Type	Researcher
AjGt-1	Ashbridge	Archaic; Woodland; Historic Euro-Canadian	Undetermined; residence	Doroszenko [OHF] 1997; 1998; 2000; 2001; Latta [OHF] 1998; TBE 1987
AjGt-2	Leslieville Public School	Euro-Canadian	Habitation; market garden; schoolyard	Hamalainen [ARC] 1985
AjGu-16	Thornton Blackburn	Late Woodland; Iroquoian; Euro-Canadian; Afro-American	Campsite; residence; schoolyard	Smardz [TBE] 1985
AjGu-35		Euro-Canadian	Residence	Williamson *et al.* [ASI] 1996
AjGu-41	Parliament	Euro-Canadian	Government Building	Williamson [ASI] 2000
AjGu-46		Euro-Canadian	Windmill	Dieterman [ASI] 2003
AjGu-61	Toronto Lime Kiln Works	Euro-Canadian; 1830s-1850s	Residence; lime kiln	Slocki 2008
AjGu-65	Bright-Barber	Euro-Canadian; 1850s	Residence	McGuire [ASI] 2010
AjGu-66	Smith-Barber	Euro-Canadian; 1840s-1860s	Soap and Candle factory	McGuire [ASI] 2010

ARC- Archaeological Resource Centre
ASI – Archaeological Services Inc.
OHF - Ontario Heritage Foundation
TBE – Toronto Board of Education

Source: ASI, 2014

Other archaeological studies completed in areas that overlap with, or adjacent to, the Study Area include:

- Stage 1 Archaeological Assessment completed in 2007 for the DMNP EA. Identified 12 archaeological resource features of which only four (LDP-1; LDP-2; LDP-3; LDP-4) were

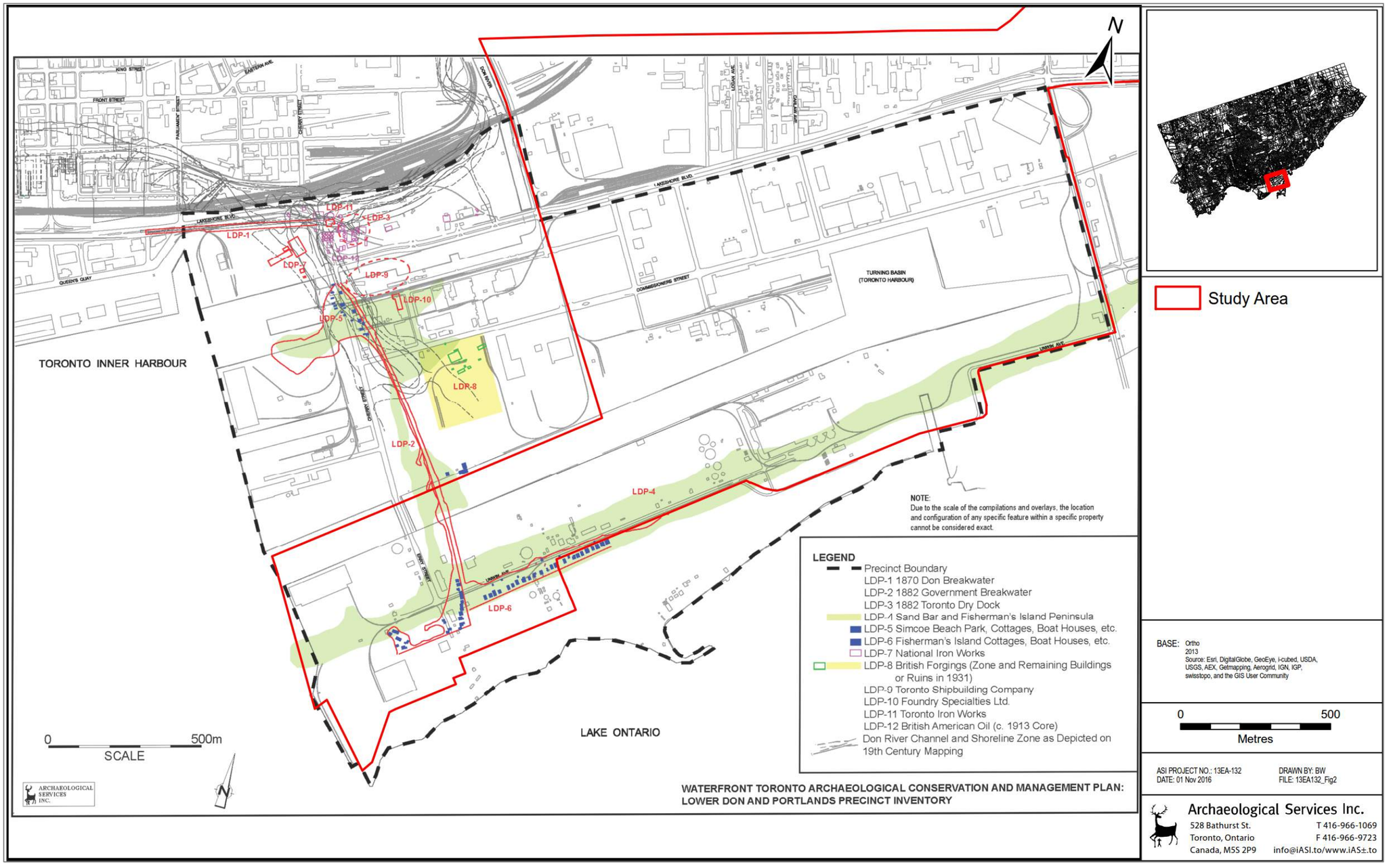
recommended to be subject to archaeological monitoring. The remainder of the study area was reported to not retain archaeological potential due to deep and extensive land disturbance.

- Stage 1 Archaeological Assessment completed in 2010 for the Coordinated Provincial Individual/Federal EA and Integrated Urban Design Study of the Gardiner East EA in the city. This assessment recommended that the study area be subject to further archaeological assessment once preliminary or detailed design had been completed.
- Stage 1 Archaeological Assessment completed in 2010 for the Hearn Switching Station Expansion project in the city. The Stage 1 determined that the Study Area did not retain archaeological potential on account of previous ground disturbances.
- Stage 1 Archaeological Assessment completed in 2010 for the Light Rail Vehicle Fleet Maintenance and Storage Facility project in the city. The Stage 1 determined that the study area did not retain archaeological potential on account of deep and extensive land alterations.
- Stage 1 Archaeological Assessment completed in 2012 for the Eastern Beaches Basement Flooding Class EA in the city. This assessment did not identify areas of archaeological potential within the study area.
- Stage 1 Archaeological Assessment completed in 2013 for the ABTP Class EA in the city. The Stage 1 determined that parts of the study area possess archaeological potential and require archaeological monitoring during construction to document any archaeological resources that may be present. The remainder of the study area was determined to not retain archaeological potential.
- Stage 1 Archaeological Assessment completed in 2013 of 629, 633 and 675 Eastern Avenue in the city. The Stage 1 determined that the study area does not retain archaeological potential on account of deep and extensive land disturbances and recommended that it be considered free of further archaeological concern.

The Waterfront Toronto Archaeological Conservation and Management Strategy (ACMS) was prepared by ASI for Waterfront Toronto in order to better inform the planning and development review process. Pertinent to the present assessment, this document inventoried three archaeological resource features (LDP-2; LDP-4; LDP-6). Only two of these features (LDP-2; LDP-4) were recommended to be subject to archaeological monitoring during construction. LDP-6 was recommended to not require further archaeological action however it should be subject to commemorative or interpretive initiatives as part of new development[1]. **Figure 5-15** provides an overview of the above-mentioned resources in the Study Area.

[1] Note: all archaeological features are subject to commemoration and interpretation.

FIGURE 5-15 ARCHAEOLOGICAL RESOURCES TO BE MONITORED IN THE STUDY AREA



Property Inspection

An observation-based property inspection was conducted on November 28, 2013 to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area. Field observations are provided in **Figures 12** to **15** in **Appendix B**. Based on the results of the property inspection, it was determined that the Study Area does not require Stage 2 Archaeological Assessment due to documented deep and extensive land disturbance negating archaeological potential.

Summary

Based on the results of the property inspection and prior research in the Study Area, it was determined that the Study Area does not require Stage 2 Archaeological Assessment. This is due to documented deep and extensive land disturbance negating archaeological potential. Previous assessments, however, have recommended that specific sections of the Study Area require archaeological monitoring during construction to document any archaeological resources which may exist and recommends the following:

- the majority of the Study Area and the entire South of Eastern area do not require further archaeological assessment on account of deep and extensive land disturbance negating archaeological potential (**Figures 12** to **15** in **Appendix B**); and,
- the ACMS which was prepared for Waterfront Toronto by ASI in 2008 recommended that LDP-2 and LDP 4, which are included in the Study Area require archaeological monitoring. A licensed archaeologist must be present to monitor the removal of topsoil for all areas indicated to document any archaeological resources which may be present. The ACMS also recommended that while LDP-6 included in the Study Area does not require further archaeological work it should be subject to interpretation and commemoration as part of development (**Figure 5-15**).

5.3.2 Cultural Heritage Landscapes and Built Heritage Resources

A Cultural Heritage Resource Assessment (CHRA) was completed for the Study Area (**Appendix C**) (ASI, 2013, updated 2016). The purpose of the CHRA was to identify cultural heritage landscapes and/or built heritage resources within the Study Area. Both desktop data collection and fieldwork were undertaken. This CHRA considered cultural heritage resources in the context of improvements to specified areas, pursuant to the *EA Act*. The assessment addressed above ground cultural heritage resources over 40 years old.

PHOTO: VIEWS OF FREIGHTERS AND COAL STORAGE ALONG THE SHIP CHANNEL (ASI, 2013 UPDATED 2016).

Cultural Heritage Resources

The South of Eastern area is characterized by industrial, commercial, and residential buildings and streetscapes spanning the late nineteenth and twentieth centuries. Many of the industrial landscapes and residential streetscapes from the early twentieth century survive intact, and are still utilized, demonstrating a persistent connection between the area and its industrial heritage.

PHOTO: EAST VIEW ALONG EASTERN AVENUE TOWARDS REVIVAL FILM STUDIOS (ASI, 2013 UPDATED 2016).

PHOTO: EAST VIEW ACROSS THE TURNING BASIN OF THE SHIP CHANNEL (ASI, 2013 UPDATED 2016).

The Port Lands area is strongly characterized by industrial land uses and building complexes that date to the first half of the twentieth century and that are historically, architecturally, and contextually associated with the Harbour Commission Plan of 1912 for the Port Lands District. Although there has been some new development within this area, it is largely an intact, early twentieth century industrial area that retains numerous buildings, building complexes, bridges, and landscape elements that trace development of Toronto's Inner and Outer harbour and over hundred years of intense port development.

Due to the drastic landscape changes that occurred as part of the Harbour Commission Plan of 1912, little remains above-ground that relates to the earliest periods of Euro-Canadian survey and settlement, nor that is associated with the nineteenth-century maritime and industrial development of the Study Area. The Railway Era is represented in the form of rail corridors and bridges. The era of land reclamation and early twentieth century industrial development, which is directly associated with the Harbour Commission Plan of 1912, is well represented within the Study Area. Resources from this time period generally consist of large, two-storey brick industrial buildings as well as Victorian and vernacular row-housing built for the growing population of industrial workers inhabiting the area. Other resources from this time period include infrastructure such as the Ship Channel and railways. The post-war period is generally represented by civic infrastructure building, and the commemoration of past infrastructure, as well as further industrial development.

Summary

The CHRA revealed that the Study Area encompasses two main developmental zones within the city including the original land mass of the Toronto waterfront to the east of the original Town of York, and the offshore areas that were progressively filled as the waterfront was extended into the harbour in the early twentieth century. **Table 5-2** provides a summary of built heritage resources (BHR) and cultural heritage landscapes (CHL) identified in the Study Area. These features are identified on **Figures 5-16** to **5-20**.

The results of the desktop data collection and field review determined that there are a total of 26 cultural heritage resources within the Study Area of which none are designated under Part V or IV of the *Ontario Heritage Act*, and include the following:

- twelve built heritage resources and fourteen cultural heritage landscapes were identified in the Study Area: five were listed as heritage resources by the City (BHR 7, 9, 10 and CHL 6, 10, 9), six identified in previous EAs (BHR 2 and BHR 11 and CHL 1, 4, 14), one is a Provincial Heritage Property (CHL 9), and fifteen identified during field review (BHR 1, 3, 4, 5, 6, 8, 12, and CHL 2, 3, 5, 7, 8, 11, 12, 13); and,
- of the 26 identified cultural heritage resources nine are buildings (BHR 1-7, 9 and 11), three are bridges (BHR 8, 10, 12), four are streetscapes (CHL 1, 3, 4, 5); three are railways or rail yards (CHL 7, 8, 14); (CHL 6); one a memorial (CHL 2), four are industrial complexes (CHL 6, 9, 10,
- 13), one is a hydroelectric transmission corridor (CHL 11), and one is a waterway (CHL 12).

Identified cultural heritage resources are historically, architecturally, and contextually associated with early twentieth century land use patterns, industrial processes, and historic industry and settlement in the Study Area.

Appendix C contains additional information with respect to built heritage and cultural heritage landscapes in the Study Area.

TABLE 5-2 SUMMARY OF BUILT HERITAGE RESOURCES AND CULTURAL HERITAGE LANDSCAPES IN THE STUDY AREA

Resource	Location	Type	Recognition
BHR 1	849 Eastern Avenue	Industrial Building	Identified during field review
BHR 2	20 Mosley Street	Industrial Building	Previously identified (ASI 2010)
BHR 3	721 Eastern Avenue	Industrial Building	Identified during field review
BHR 4	549 Eastern Avenue (Wolf Electric and Lighting Ltd.)	Industrial Building	Identified during field review
BHR 5	69 Heward Avenue	Industrial Building	Identified during field review
BHR 6	19-29 Logan Avenue	Industrial Building	Identified during field review
BHR 7	415 Eastern Avenue	Industrial Building	Listed by the City of Toronto
BHR 8	Crossing eastern Avenue east of Sunlight Park Road	Bridge	Identified during field review
BHR 9	29 Basin Street (Sun Oil Company Building)	Industrial Building	Listed by the City of Toronoto
BHR 10	Cherry Street Bridge	Bridge	Listed by the City of Toronto
BHR 11	450 Commissioners Street	Industrial Building	Previously identified (ASI 2012)
BHR 12	Crossing Don Valley Parkway and Don River	Bridge	Identified during field review
CHL 1	West side of Leslie Street between Mosley Street and Eastern Avenue	Streetscape	Previously identified (ASI 2010)
CHL 2	Remnant piers of the Gardiner Expressway onramp along the north side of Lakeshore Boulevard East	Memorial	Identified during field review
CHL 3	South side of Eastern Avenue between Carlaw Avenue and Morse Street	Streetscape	Identified during field review
CHL 4	Carlaw Avenue, Lakeshore Boulevard East to Queen Street East	Streetscape	Previously identified (ASI 2012)
CHL 5	Morse Street between Eastern Avenue and Lakeshore Boulevard	Streetscape	Identified during field review
CHL 6	50-94 Booth Ave (433 Eastern Avenue)	Industrial Complex	Listed by the City of Toronto
CHL 7	Rail corridor running diagonally through the northwest corner of the study area, from the Don Roadway to Eastern Avenue	Railscape	Idenitified during field review
CHL 8	Rail yard located directly north of Lakeshore Boulevard East	Railscape	Identified during field review
CHL 9	440 Unwin Avenue (Hearn Generating Station)	Industrial Complex	Listed by the City of Toronto and identified as a Provincial Heritag Property
CHL 10	400 Commissioners Street (City of Toronto Incinerator, 1953)	Industrial Complex	Listed by the City of Toronto
CHL 11	Hydro Corridor along Commissioners Street between the Don Roadway and Bouchette Street	Hydro Corridor	Identified during research and field review
CHL 12	Ship Channel	Waterscape	Identified during research and field reveiw
CHL 13	55 Unwin Avenue	Industrial Complex	Identified during field review
CHL 14	Throughout Port Lands area	Railscape	Previously identified (ASI 2012)

Source: ASI, 2013 Updated 2016

FIGURE 5-16 CULTURAL HERITAGE AND BUILT HERITAGE RESOURCES – MAP 1

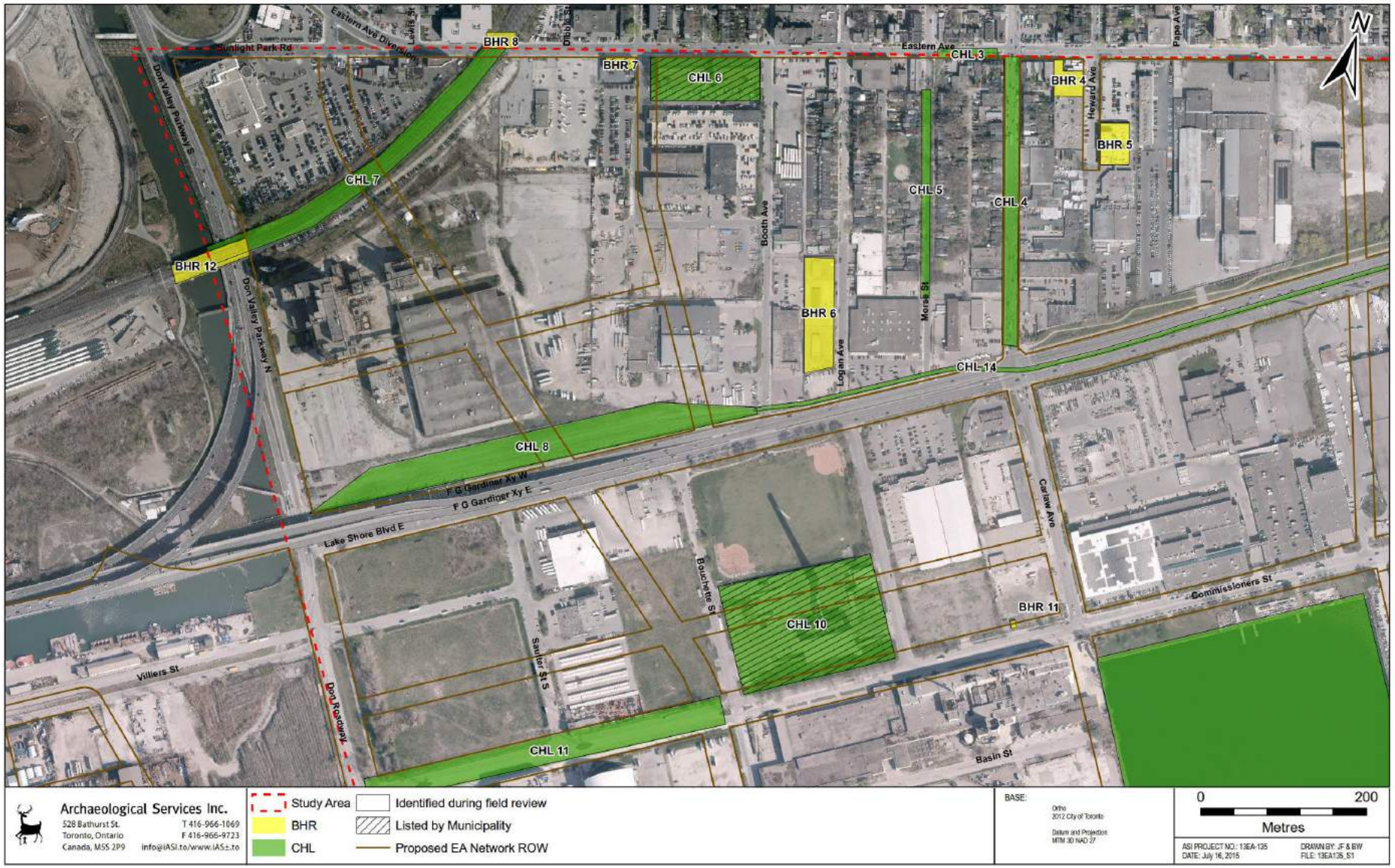


FIGURE 5-17 CULTURAL HERITAGE AND BUILT HERITAGE RESOURCES – MAP 2

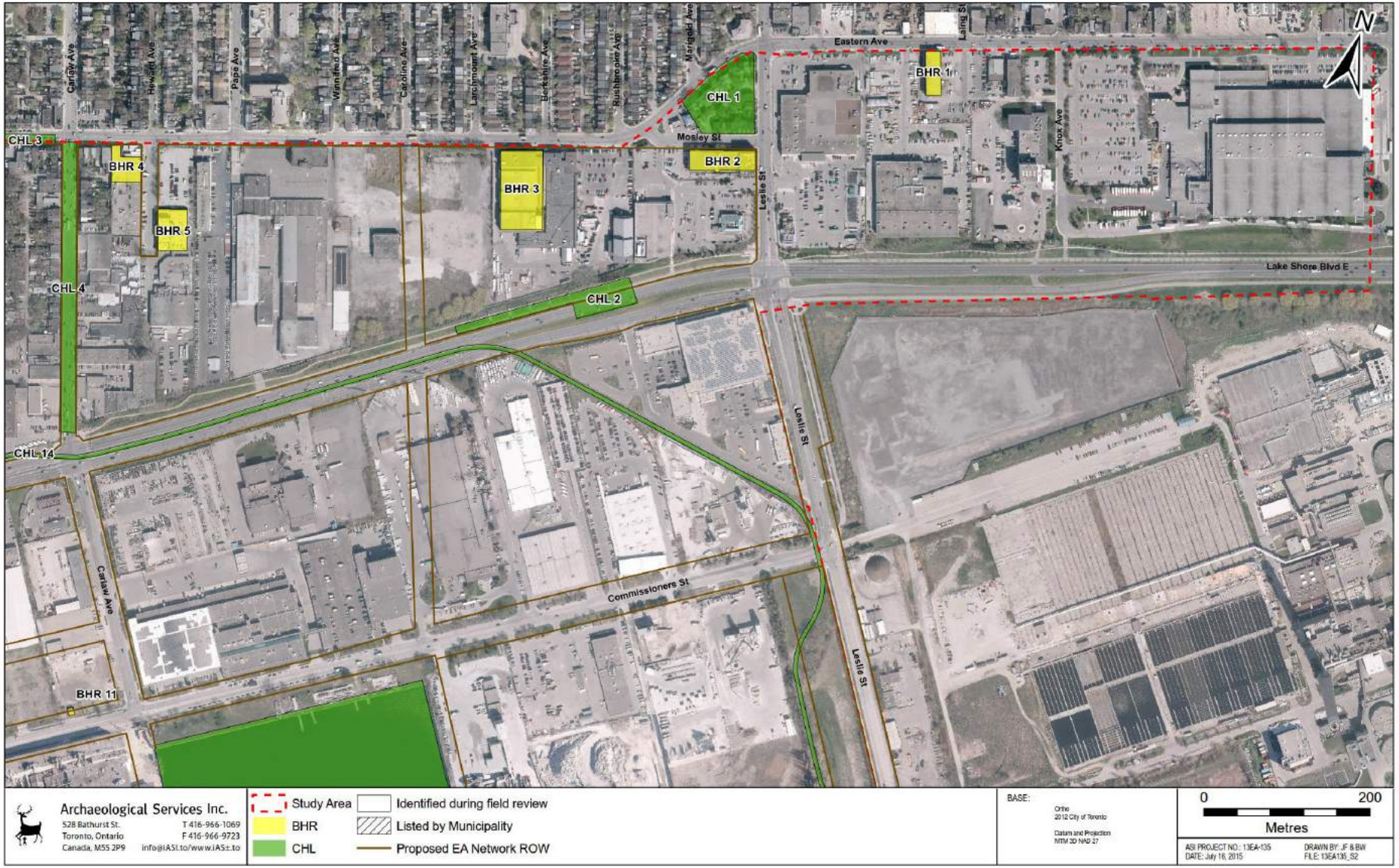


FIGURE 5-18 CULTURAL HERITAGE AND BUILT HERITAGE RESOURCES – MAP 3

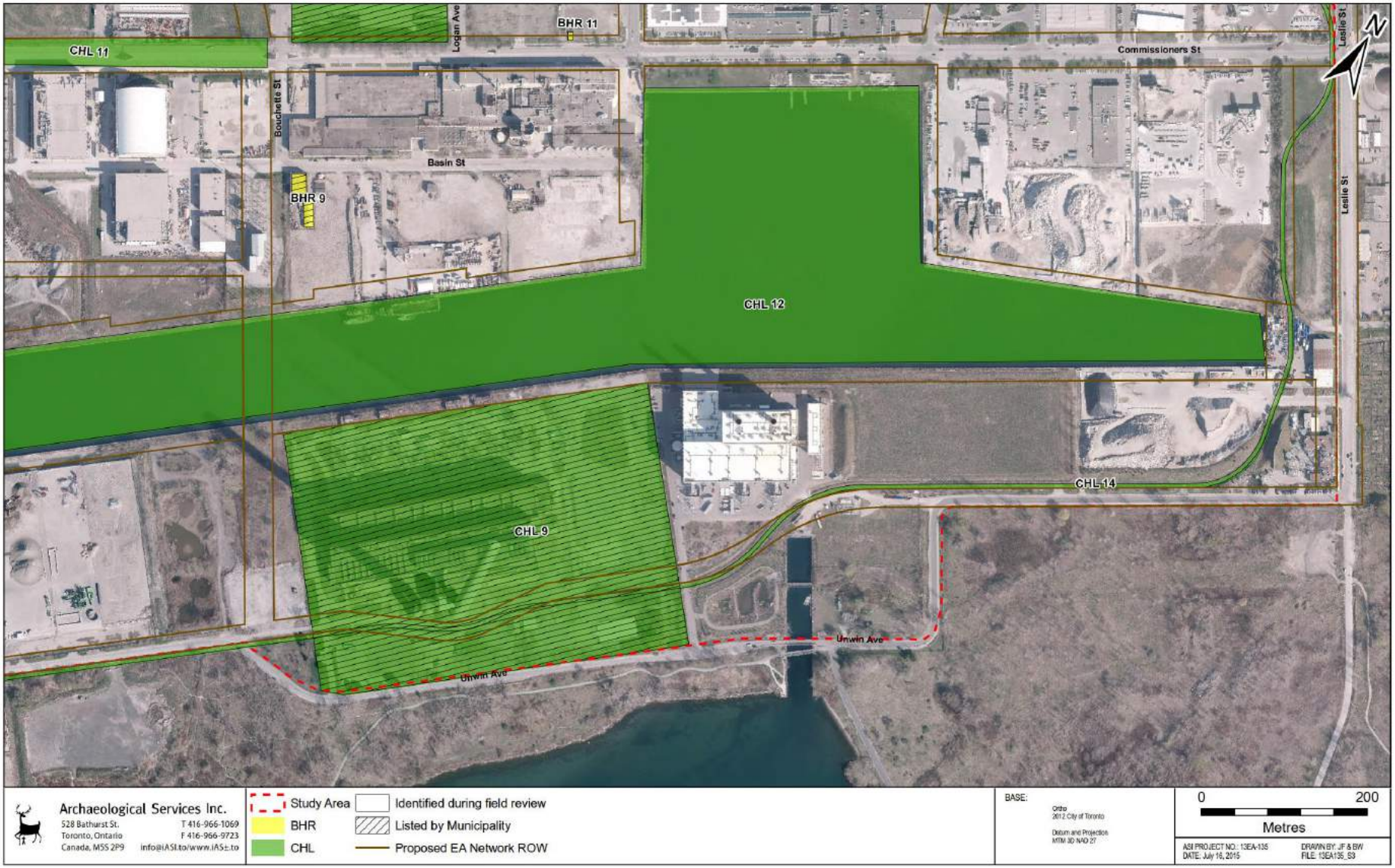


FIGURE 5-19 CULTURAL HERITAGE AND BUILT HERITAGE RESOURCES – MAP 4

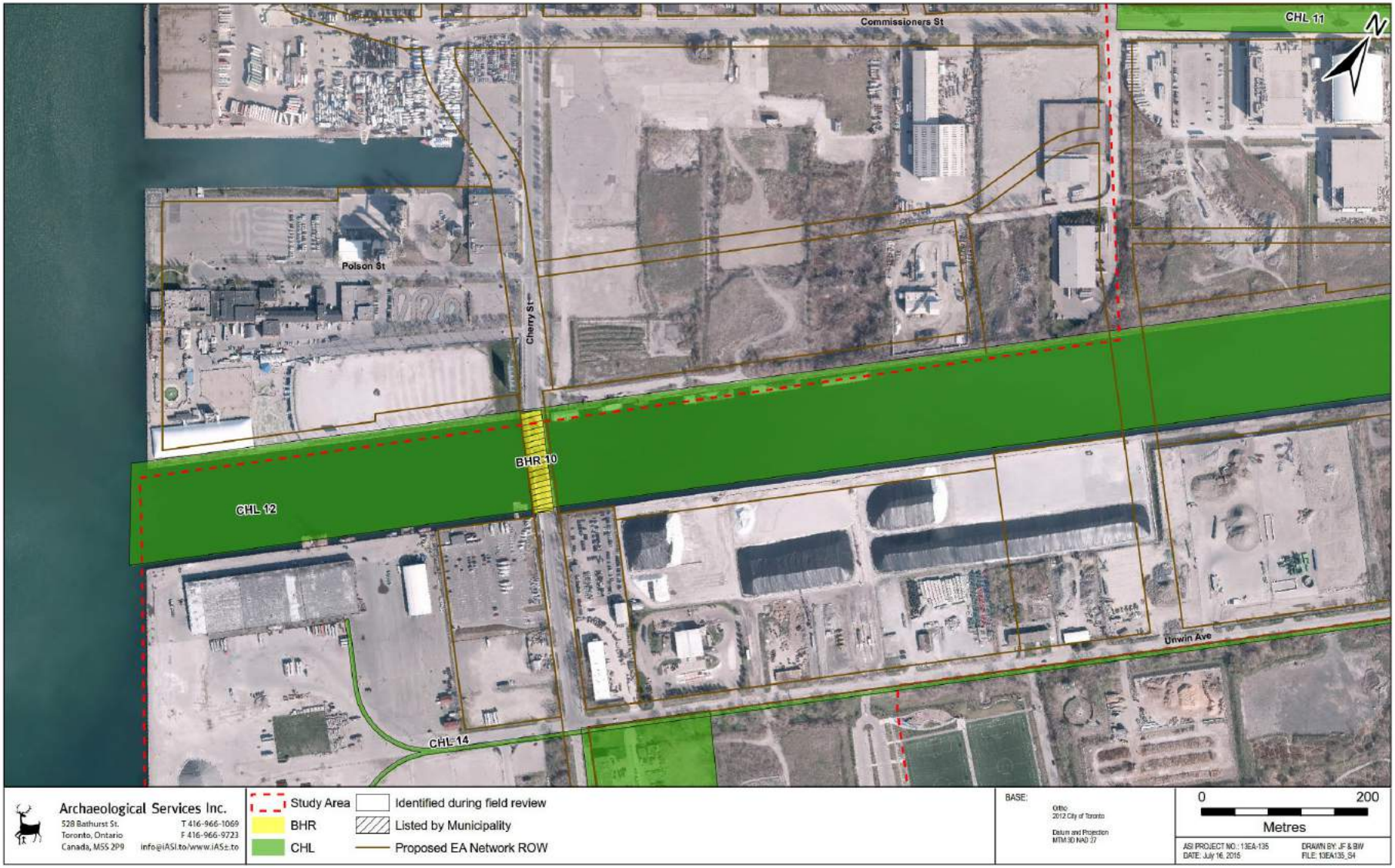


FIGURE 5-20 CULTURAL HERITAGE AND BUILT HERITAGE RESOURCES – MAP 5

5.3.3 First Nations and Aboriginal Interests

The Study Area does not contain any First Nation reserves. However, archaeological evidence gathered in this area shows that people were likely living and hunting in the area as early as 10,000 years ago, making this one of the longest inhabited areas within the city.

Despite the overall significance of the mouth of the Don River in terms of pre-contact and early contact period Aboriginal subsistence, settlement and communication systems, the vast majority of the Study Area is made land constructed at the close of the nineteenth century and subsequently modified in the early twentieth century (ASI, 2014). Any lands that are natural have been disturbed by intensive modern development.

Port Lands

The area which is now the Port Lands is historically documented to have been the deltaic freshwater lagoon of the Don River. The Holocene geologic history of Lake Ontario permits the earliest dating of the lagoon formation to ca. 5,000 BP following the Nipissing Phase resurgence of lake levels (ASI, 2014). While the former Ashbridge's Marsh was likely utilized by Aboriginal peoples for fishing, hunting or possibly for the harvesting of wild rice, the strand-nature of any solid ground precludes any permanent or long-term occupation of the locale (ASI, 2014).

South of Eastern Area

Southern Ontario has been occupied by human populations, if only seasonally, since the retreat of the Laurentide glacier during what is known as the Paleo-Indian period, approximately 11,000 BP. Populations at this time would have been highly mobile, inhabiting a boreal- parkland more similar to the modern sub-arctic. By the end of the 11th millennium BP the environment had progressively warmed and populations now occupied less extensive territories (ASI, 2014).

From the 10th to the first half of the 6th millennia BP the Great Lakes' basins experienced low-water levels and so it is likely that many sites which would have been located on those former shorelines are now submerged beneath Lake Ontario. This period produced the earliest evidence of heavy wood working tools and is indicative of greater investment of labour in felling trees for fuel, to build shelter, or to produce crafts and is ultimately indicative of prolonged seasonal residency at sites (ASI, 2014).

By the 8th Millennium BP, evidence exists for polished stone implements and worked native copper. The latter's source from the north shore of Lake Superior is evidence of extensive exchange networks (ASI, 2014).

By the middle of the 5th millennium BP, during the Late Archaic (4500 BP-3000 BP) period the earliest evidence exists of fish weirs and cemeteries, indicative of increased social organization and investment of labour into social infrastructure, increased procurement of food, and establishing territories (ASI, 2014).

The settlement and subsistence systems of the Early Woodland (1000 BC-400 BC) period are not entirely clear. Populations continued a semi-permanent existence and exploited seasonally available resources, and the harvesting of spawning fish continued to be an important part of their subsistence (ASI, 2014).

By the second millennium BP in the Middle Woodland (400 BC-AD 1000) period evidence exists for macro-band camps, focusing on the seasonal exploitation of resources such as spawning fish and wild rice. Bands likely retreated to interior camps during the winter. The advent of Iroquoian culture occurs during the Late Woodland (AD 1000-AD 1649) period though full expression of Iroquoian culture is not recognized archaeologically until the fourteenth century AD (ASI, 2014).

During the Early Iroquoian (AD 1000-AD 1300) phase, the communal site is replaced by the village focused on horticulture. An Aboriginal village site is identified within 1 km of the Study Area. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practiced (ASI, 2014).

By the second quarter of the first millennium BP, during the Middle Iroquoian (AD 1300-AD 1450) phase, this episodic community disintegration was no longer practiced and populations now communally occupied sites throughout the year (ASI, 2014).

In the Late Iroquoian (AD 1450-AD 1649) phase this process continued with the coalescence of these small villages into larger communities. Through this process, the socio-political organization of the First Nations as described historically by the French and English explorers who first visited southern Ontario was developed (ASI, 2014).

The Study Area is located on the edge of the Don River drainage. A Late Woodland settlement sequence has been posited for the Don River watershed based on the identification of the Moatfield and Jackes sites (much of the Jackes site has been lost to urban development) in the Lower Don. The greater Don River settlement sequence has documented occupation from the early fourteenth century to the late fifteenth century. This sequence is particularly difficult to identify due to widespread destruction of sites during twentieth century urban development. It is believed that the Don River population amalgamated with the populations occupying the Middle Humber River. This joint population finally abandoned the Toronto area in the early seventeenth century and migrated northward to historic Huronia, near modern day Penetanguishene (ASI, 2014).

In the mid sixteenth century the Huron-Wendat, Petun, and Neutral inhabited southern Ontario. The various groups that later formed the Huron-Wendat confederacy were scattered in many individual villages and village clusters along the north shore of Lake Ontario, in the Trent Valley, and throughout Simcoe County. It is estimated that the Huron-Wendat population numbered about 25,000 people at this time. The Huron-Wendat were eventually dispersed by the Five Nations Iroquois at which point the Seneca mainly took over control of the north shore region of Lake Ontario (ASI, 2014).

Beginning in the mid-late seventeenth century, the Mississaugas began to replace the Seneca as the controlling Aboriginal group along the north shore of Lake Ontario since the Iroquois confederacy had overstretched their territory between the 1650s and 1670s. The Iroquois could not hold the region and agreed to form an alliance with the Mississauga peoples and share hunting territories with them. In the

late 1690s, the Mississaugas established their settlement of Teiaiagon on the Humber River, which sat astride the most important route of the Toronto Passage. This route connected Lake Ontario with waterways and trails to Georgian Bay and the north and gave the Mississaugas a strategic trading position (ASI, 2014).

Following the American Revolutionary War in 1783 and the creation of the Canadian-American border, the British Crown renewed its interest in the Toronto Passage as a means to replace its stake in the fur-trade lost with the American territory. While the Toronto Passage would prove to have limited potential for growth in the fur trade on account of traders' preference for the Ottawa River passage, Toronto became a focal interest in establishing a settlement. On September 23, 1787 the Crown purchased Toronto from the Mississaugas for a sum of £1,700 in cash and goods. The boundaries of this purchased however were not clearly understood and had to be established by a subsequent treaty in 1805 (ASI, 2014).

First Nations and Aboriginal Engagement/Interest

First Nations and Aboriginal engagement and consultation was an integral component of the City's consultation program and at each Phase of the Class EA process. The following communities were identified as having an interest in the Project and requested to receive notice related to the planning underway:

- Haudenuasaunee Confederacy Chiefs Council;
- Mississauga of New Credit First Nations;
- Mississauga of Scugog Island First Nations; and,
- Miziwe Biik Aboriginal Employment and Training.

Notices were sent to each of the above communities prior to and/or following each round of public consultation that extended an invitation for City, Waterfront Toronto and TRCA staff to arrange a meeting to discuss the various projects, including the TSMP EA.

In conjunction with the DMNP EA and LDLMP EA project teams, the City, Waterfront Toronto and TRCA staff met with the Mississaugas of Scugog Island First Nations on August 28, 2013 where the next phases of planning in the Port Lands was introduced, including the intention to undertake a Class EA.

Representatives from the Mississauga of New Credit First Nation attended the November 28, 2013 Introductory CCM, the February 13, 2014 CCM, and the March 5, 2014 workshop. Comments and feedback provided included:

- There were traditional sites in the area. How will they be addressed and looked at? As a First Nations person, we don't see ourselves in any of these plans;
- Recognize and include First Nations histories in the designs; and,
- First Nations recognition in parks and trails through symbolism (art, greening, etc.). You could incorporate the "moccasin" identifier and other way finding ideas.

City, Waterfront Toronto and TRCA staff met with the Mississauga of New Credit First Nation on March 13, 2014 following the CCM held on February 13, 2014 and March 5, 2014 Community Workshop. Representatives discussed the history of the Mississauga's in the area, traditional use of lands such as harvesting rice, hunting and fishing, and exemplar projects and ideas for capturing the presence and history of the Mississauga of New Credit First Nation. An exemplar project raised was a landscape project that integrated the cultural landscape of the Mississaugas and the Moccassin Identifier project. Materials on the history of the Mississauga of New Credit First Nation were also provided.

The SAC established for the Project also included representation from the Mississaugas of New Credit First Nation and Miziwe Biik Aboriginal Employment and Training. Email notices of SAC meetings were sent to representatives. The Mississaugas of New Credit First Nation attended and participated at many of the SAC meetings. Key feedback received included:

- recognize First Nations heritage in the Port Lands redevelopment (art work, greenspace);
- protect the water in developing and thinking about alternatives;
- recognize the significance and importance of "water." Water was the "highway." Bring people to the water through cantilevered walkways or trails and paths;
- increase public awareness of the history and current activity of First Nations groups such as through integrating the Mississauga's of New Credit First Nations "Moccasin Identifier" project in landscape or trail projects, naming new streets/public spaces using traditional names or incorporating "bended trees" which were markers that could be used as wayfinding along trails; and,
- consider the traditional use of the lands for hunting and gathering and include consideration for native plantings or practices such as rice gardens.

5.4 Natural Environment

This section of the report describes the existing natural environment in the Study Area. A background review of existing conditions was conducted to summarize the existing natural environment within the Study Area. Previous projects pertaining to the Central Waterfront, Port Lands, Don River and future Lake Ontario Waterfront Park provided extensive data and information that is relevant to the TSMP EA. The background review was supplemented with a reconnaissance site visit in November 2013 and confirmatory field investigations in the fall of 2015 and spring of 2016.

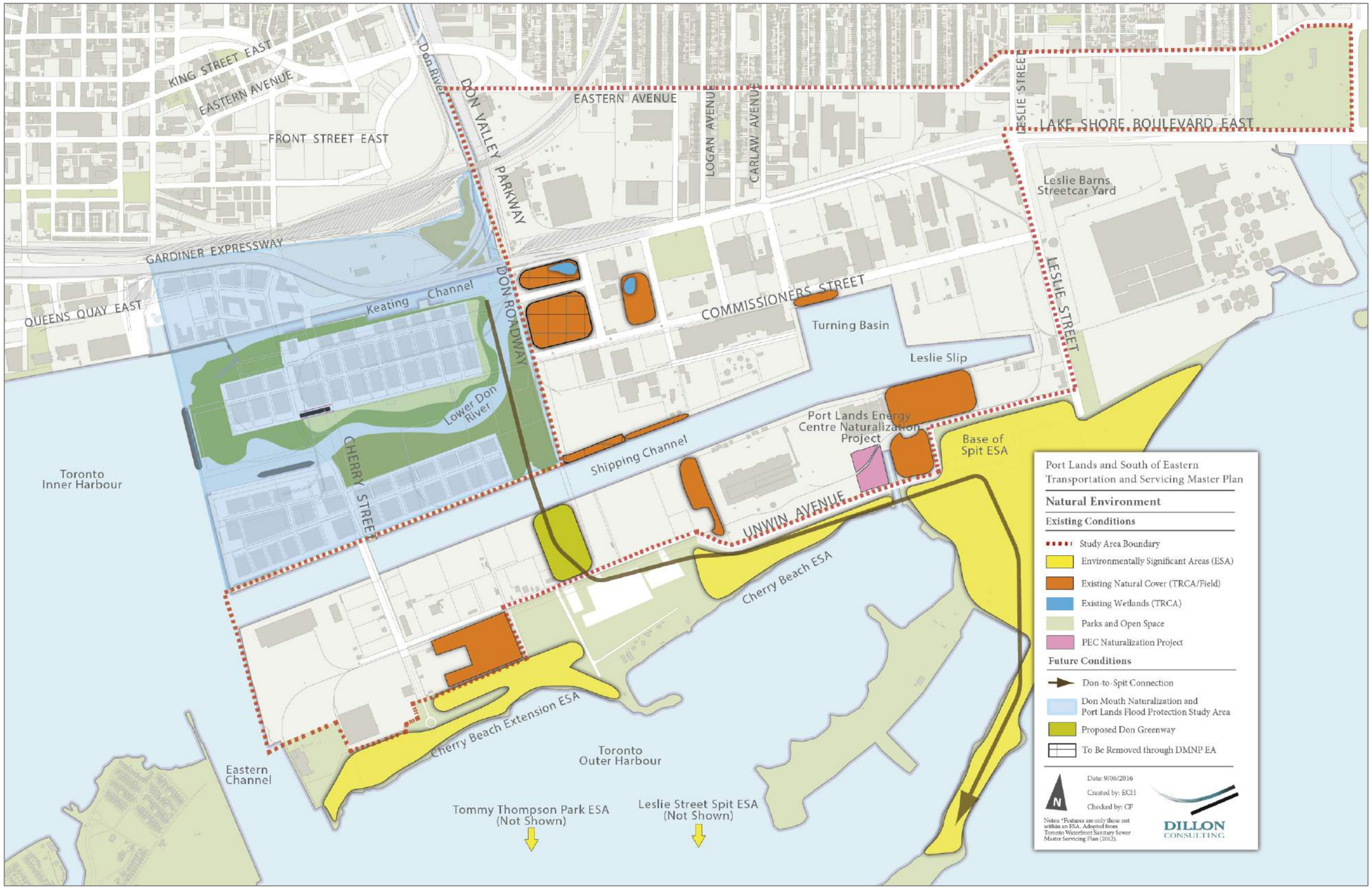
Figure 5-21 provides an overview of the natural environment features within the Study Area. The DMNP EA Study Area is shaded in blue and is a future condition that will impact existing vacant lands located along the western extent of the Study Area. The concept to re-naturalize the mouth of the Don River through the Lower Don Lands is proposed in the DMNP EA. In addition, there is an approved valley wall feature (VWF) associated with the DMNP EA that will extend eastwards to Saulter Street. The VWF is further explained in **Section 5.4.5**.

Features that are adjacent to the Study Area include existing Environmentally Sensitive Areas (ESAs) such as the Cherry Beach ESA, Tommy Thompson ESA, Cherry Beach Extension ESA, Base of Spit ESA, and the Leslie Street Spit ESA.

Other natural features identified on **Figure 5-21** include existing natural cover and existing wetlands that have been identified through background information and confirmed through field investigations.

Within the Study Area there is a segment of re-naturalized vegetation located to the south of the PEC. These lands are identified in **Figure 5-21** as the PEC Naturalization Project. This area south of the PEC has been extensively naturalized including the introduction of a wide range of native species, active bee-hives, wetland areas and paths.

FIGURE 5-21 EXISTING NATURAL FEATURES



5.4.1 Fisheries and Aquatic Resources

Aquatic resources and fisheries in the Study Area are located in the Port Lands portion of the Study Area, specifically within the Ship Channel which includes the Turning Basin and the Leslie Slip as shown on **Figure 5-21**. Also identified in **Figure 5-21** are aquatic resources surrounding the Study area, including the Keating Channel and Toronto Inner Harbour to the west, the Eastern Gap to the southwest and the Toronto Outer Harbour to the south. The Ship Channel is a long (west-east) and narrow waterway used for ship docking.

The Ship Channel is generally characterized by a hardened shoreline of concrete and sheet pile walls with uniform depth and little to sparse instream vegetation. The deep waters adjacent to the shoreline walls of the Ship Channel do not provide suitable habitat for the establishment of aquatic macrophytes (Stantec, 2003). No macrophytes were observed in the Ship Channel during a fisheries survey for the PEC in 2002. Substrate in the Ship Channel is a sandy silt to sandy mud (Stantec, 2003). Poor water quality (e.g., turbid, high nutrient and metal concentrations) in the Ship Channel can be attributed to sediment inputs from the nearby Don River and municipal sewer discharges and/or surface runoff from adjacent industrial operations (Poulton and Griffiths, 1986; Stantec, 2003).

Macroinvertebrate samples collected from the Ship Channel dockwall during the 2002 PEC survey indicated that the exotic Quagga Mussel (*Dreissena rostriformis bugensis*) and Zebra Mussel (*Dreissena polymorpha*) made up approximately 58 percent of the benthic community, with tubificid oligochaetes (Sludgeworms) and the amphipod *Echinogammarus*, an invasive species associated with the Quagga and Zebra Mussels, comprising about 20 percent and 15 percent of the community, respectively. Offshore of the Ship Channel (e.g., at a sampling location within the Ship Channel west of the Turning Basin, approximately halfway between its north and south shorelines) and within the Outer Harbour, tubificid oligochaetes were dominant, comprising about 76 percent and 81 percent of the community, respectively. In the near shore Outer Harbour, the benthic macroinvertebrate community was more diverse, with snails, Midgefly larvae and Water Mites common.

Based on previous studies, the following fish species have been recorded in the Ship Channel: Alewife (*Alosa pseudoharengus*), Gizzard Shad (*Dorosoma cepedianum*), Carp (*Cyprinus carpio*), Emerald Shiner (*Notropis atherinoides*), Spottail Shiner (*Notropis hudsonius*), White Sucker (*Catostomus commersonii*), Brown Bullhead (*Ameiurus nebulosus*), Northern Pike (*Esox lucius*), Rainbow Smelt (*Osmerus mordax*), Threespine Stickleback (*Gasterosteus aculeatus*), White Perch (*Morone americana*), White Bass (*Morone chrysops*), Pumpkinseed (*Lepomis gibbosus*), Smallmouth Bass (*Micropterus dolomieu*), Largemouth Bass (*Micropterus salmoides*) and Yellow Perch (*Perca flavescens*) (Stantec, 2003).

Due to the lack of aquatic vegetative cover, shoreline morphology and other factors, fisheries resources in the Study Area are limited. Most fish species in the Ship Channel are transient, using the limited habitat available for foraging. This habitat is not expected to support other critical life stages (e.g., nursery, spawning, rearing) required to support a high diversity of fish or benthic invertebrates. It should be noted that upon completion of the DMNP Project, a new coastal wetland will be constructed on the

north side of the Ship Channel and west of the Don Roadway. This will provide a refuge for fish, herpetofauna, birds and other wildlife connected to Lake Ontario water levels through the Ship Channel.

Existing conditions within the Keating Channel and Lower Don River, which are to the west of the Study Area, are similar to the Ship Channel in that the mouth of the Don River currently exists as a hardened, artificial channel with limited aquatic resources. The Keating Channel exhibits limited in stream and riparian cover, simplified channel morphology, and is a sand dominant system with some silts (Waterfront Toronto, 2011). In addition, the channel is regularly dredged to manage sediments from the Don River that flow into the Inner Harbour, which reduces the risk of flooding and maintains navigation.

Comprehensive fish sampling conducted by TRCA in the Keating Channel between 1989 and 2005 documented a total of 17 species utilizing the channel between May and November, with the total not exceeding 10 for any particular year (Waterfront Toronto, 2011). Cool and cold-water lake species such as Alewife and Emerald Shiner were found, as well as some higher order piscivores such as Northern Pike and Chinook Salmon (*Oncorhynchus tshawytscha*).

Following implementation of the DMNP EA, it is anticipated that the new naturalized river channel and associated wetlands for the Don River, combined with anticipated improvements in water quality and habitat structure in the Keating Channel will greatly increase fish habitat conditions and species recruitment to the mouth of the Don River.

Comprehensive fish sampling conducted by TRCA between 1991 and 2005 revealed a total of 24 fish species within the Lower Don between May and November (Waterfront Toronto, 2011a). Fish captured were typically warm water and cool water species. Two cold-water species, Chinook salmon and Alewife, were also found. The most common species captured, accounting for 88 percent of the fish community in the spring, summer and fall, were White Sucker, Emerald Shiner and Spottail Shiner. Two cool water piscivores, Northern Pike and Walleye (*Sander vitreum*), were also captured, but in low numbers. TRCA found some evidence of Walleye attempting to spawn in the Lower Don. Changes in the Lower Don fish community structure (e.g., no loss of species richness) over the 14 year period indicates that positive trends are occurring, despite continued water quality and sedimentation issues.

The Inner Harbour consists primarily of open coast and sheltered embayment aquatic habitats. Similar to the Keating and Ship Channels, fisheries and aquatic resources are relatively limited in the Inner Harbour due to human disturbance and relatively sparse cover, simplified morphology and fine (primarily silt) substrates. However, the interface between the Keating Channel and the Inner Harbour, while highly degraded, functions as an estuary habitat and provides a physical connection between Lake Ontario and the Don River Watershed for species that need both open water and riverine habitats. The Inner Harbour also likely serves as a movement corridor for fish moving between the Harbour shoreline southward to the Toronto Islands and/or eastward to the Outer Harbour where more favorable fish habitats exist. Recent Inner Harbour shoreline management projects have incorporated aquatic habitat enhancements, including the Spadina Slip, Rees and Simcoe Slips, and the East Bayfront.

In providing context to the fish community within the Inner Harbour as a whole, past electrofishing studies in the Western Channel of the Inner Harbour have reported very low fish species abundance

throughout the growing season (Dillon Consulting, 2013; TRCA, 2008). The most common fish species surveyed in the Spadina Quay within the Inner Harbour from 2005 to 2009 were Alewife, Northern Pike, Emerald Shiner, Spottail Shiner, Pumpkinseed and Common Carp. The Lakefill within Marine Exclusion Zone (2013) report indicated that twenty-five fish species and four mussel species had the potential to occur in that project location, which was situated in the west-central portion of the Inner Harbour (Dillon Consulting, 2013).

Higher quality aquatic resources and fish habitat exist in the Outer Harbour of Lake Ontario, where 45 fish species have been recorded. The embayment's and extensive sheltered littoral areas of the Outer Harbour provide cover and habitat to support greater abundance and diversity of fish, invertebrates and macrophytes. The diversity of substrates (e.g., sand, cobble and boulder) in the shallow near shore zones of the Outer Harbour, particularly at Cherry Beach, provides enhanced cover and spawning habitat. Many of these higher quality habitat features are located within Cherry Beach ESA, Base of Spit ESA Leslie Street Spit ESA, and Tommy Thompson Park ESA. Waterfront Toronto and the TRCA have ongoing fish habitat enhancement projects (e.g., construction of in stream cover structures and fish spawning shoals) at Tommy Thompson Park.

5.4.2 Vegetation and Flora

Significant existing and planned natural heritage features are shown on Map 9 - Natural Heritage - of the City's Official Plan (**Figure 5-22**). Official Plan Amendment 262 further approved ESAs that had formerly been proposed in the Study Area. These natural features are areas where protecting, restoring and enhancing the natural features and functions have high priority. The system in the Study Area consists of recognition of a future naturalized river and Don Greenway.

Existing vegetation and flora in the Port Lands is largely remnant vegetation consisting of cultural (anthropogenic) vegetation communities have established on vacant and underutilized sites. Limited successional or naturalized areas are located in the central portion of the Study Area, east of the Don Roadway. These areas were identified as Existing Natural Cover by the TRCA in the WSSMP EA report (LGL, 2012). Existing natural cover in the Port Lands exists in decommissioned industrial sites that have regenerated as cultural meadow communities with scattered trees and shrubs and hedgerows. These areas have limited ecological form and function because they are semi-annually maintained (e.g., mowed).

Noted tree species in these areas include Eastern Cottonwood and non-native, invasive tree species such as Manitoba Maple (*Acer negundo*); Black Locust (*Robina pseudo-acacia*); and Norway Maple (*Acer plantoides*) (LGL Limited, 2012). Along Lake Shore Boulevard East and Leslie Street, a mix of native and non-native species have been planted, including: Horse Chestnut (*Aesculus hippocastanum*), Silver Maple (*Acer saccharinum*), Norway Spruce (*Picea abies*), White Spruce (*Picea glauca*), Colorado Spruce (*Picea pungens*).

FIGURE 5-22 NATURAL HERITAGE

Source: City of Toronto, 2006

PEC Naturalization Study and Project

The PEC site is located within the Study Area and the 2003 PEC Naturalization Study found that the majority (approximately 66 percent) of the vascular plant species found in that Study Area were non-native species (Stantec, 2003).

Two locally rare plants, Bushy Cinquefoil (*Potentilla paradoxa*) and Baltic Rush (*Juncus balticus*), were observed during a vegetation survey for the 2003 PEC EA project. Bushy Cinquefoil (Species of Regional and Provincial Concern, L3 and S3 respectively) was found at the easternmost portion of the PEC site, across from the Base of Spit ESA. Baltic Rush (rare within the city) was found adjacent to the Ship Channel.

The PEC Naturalization Project identified on **Figure 5-21** is located immediately south of the PEC and north of Unwin Avenue. This area south of the PEC has been extensively naturalized including the introduction of a wide range of native species, active bee-hives, wetland areas and paths. It was also noted that opportunistic vegetation (plant communities that have developed without the aid of humans) was present on that site, but natural plant communities occur only as fragments. As an example, small pockets of Common Reed (*Phragmites australis*) marsh occur in the depressions on the western portion of the PEC site.

To the west of the Study Area where the Don Mouth naturalization and flood protection is proposed, the following vegetation communities were mapped (Waterfront Toronto, 2011):

- fourteen forest and woodland/savannah communities,
- thirteen successional and thicket communities,
- ten wetland and aquatic communities, and,
- five meadow and open communities.

Approximately 19 percent of the land in the Don Mouth Naturalization area was documented as young, early successional wooded areas and documented invasive plant species, 1 percent was successional thicket, 0.7 percent is wetland, 11 percent is meadow, and the remaining 68 percent is manicured or developed, with very little natural habitat in the area (Waterfront Toronto, 2011).

Three plant species of regional concern (L3 ranking in the TRCA jurisdiction) were documented in the DMNP EA Study Area west of the TSMP EA Study Area:

- Black Willow (*Salix nigra*);
- Sycamore (*Platanus occidentalis*); and,
- Switch Grass (*Panicum virgatum*).

An additional ten species of concern in an urban context (L4 ranking in the TRCA jurisdiction) were found:

- Bur Oak (*Quercus marcrocarpa*);
- Hedge Bindweed (*Calystegia sepium*);
- White Cedar (*Thuja occidentalis*);

- Peach-leaved Willow (*Salix amaygdaloides*);
- Silver Maple (*Acer sacharinum*);
- Black Ash (*Fraxinus nigra*);
- Red Maple (*Acer rubrum*);
- Smooth Wild Rose (*Rosa blanda*);
- Grey Dogwood (*Cornus foemina*);
- Soft-stemmed Bulrush (*Schoenoplectus validus*); and,
- Three-square Rush (*Schoenoplectus americanus*).

As part of the WSSMP EA, a Species at Risk record search was conducted using the MNRF's Biodiversity Explorer program (LGL Limited, 2012). All Species at Risk records for flora were found to be 30 years old or greater. The most recent record was for Saltmarsh Sandspurry (Spergularia salina) in 1978. Therefore, no endangered plant species protected under the *Endangered Species Act*, *2007* have been documented recently in the Study Area.

Environmentally Significant Areas (ESA)

Several natural features with higher floral diversity and abundance are located adjacent to the Study Area, including the Cherry Beach ESA, Cherry Beach Extension ESA, Base of Spit ESA, Leslie Street Spit ESA Tommy Thompson Park ESA, and riparian areas associated with the Don River. On May 20, 2016, the MMA (formerly the Ministry of Municipal Affairs and Housing) approved OPA 262, which amends the City Official Plan policies and mapping with respect to environmentally significant areas. OPA 262 is now in full force and effect. While none of the new designations are within the Study Area, the extension of the Cherry Beach ESA and designation of the Leslie Street Spit and Base of Spit sites are immediately adjacent to the area south of the Ship Channel. The boundaries of Tommy Thompson Park are proposed to remain the same. With the exception of the Don River, the ESAs are discussed below in **Table 5-3.**

TABLE 5-3 ESA'S IN THE STUDY AREA (NORTH-SOUTH ENVIRONMENTAL, 2012)

Environmentally Significant Area	Details
Cherry Beach ESA (#16)	The Cherry Beach ESA is situated directly south of the Study Area. The Cherry Beach ESA is an 8.4 hectare site that lies along the north shore of the Toronto Outer Harbour. The site encompasses an area of fill in varying stages of succession, including native and non-native communities. The most significant communities are a Red Osier Dogwood shrub beach along the shoreline on a cobble and boulder beach substrate and an open Cottonwood coastal deciduous forest and cultural woodland. The eastern portion of the site supports more open communities, including marsh and sand bar. The ESA is linear and its vegetation patchy; however, the abundance and density of vegetation communities provide good ecological value for wildlife. Breeding birds use the area due to its close proximity of the lake and the diversity of habitat. Breeding birds with specific habitat requirements (e.g. thicket and open woodland) that are known to occupy the area include: Yellow Warbler (*Dendroica petechia*), Gray Catbird (*Dumetella carolinensis*), Blue-gray Gnatcatcher (*Polioptila caerulea*), Warbling Vireo (*Vireo gilvus*), and Common Yellowthroat (*Geothlypis trichas*). No reptiles have been noted and mammals are typical of successional areas in the region, such as the Eastern Cottontail (*Sylvilagus floridanus*).
Leslie Street Spit ESA (#81)	This large 63 hectare ESA, located to the southwest of the Study Area but not directly adjoining it, is a constructed peninsula running south and west from the base of Leslie Street. The site forms the eastern part of the spit and the Tommy Thompson Park ESA (discussed below) forms the western extent. Fill and large rubble from building sites underlie the area, on which successional herbaceous species and shrubs and trees have established. Cottonwood and Red-Osier Dogwood are the dominant tree and shrub species, respectively. A variety of wetland communities exist, interspersed with successional riparian habitats. The diverse habitats are used by breeding and migratory birds and other wildlife. The open water offshore of the Spit is a wintering area for waterfowl, and migrating waterfowl congregate in the area in the spring and fall. An abundant population of breeding Leopard Frogs (*Lithobates pipiens*) and American Toads (*Bufo americanus*) has been noted in the embayments within the site. Eastern Garter Snake (*Thamnophis sirtalis sirtalis*), and Milksnake (*Lampropeltis triangulum*) (listed as Special Concern under the *Endangered Species Act* and *Species at Risk Act*), and Dekay's Brownsnake (*Storeria dekayi*) have been found at the site. Eastern Garter Snakes are expected to use the deposited rubble as hibernacula.

Environmentally Significant Area	Details
Base of the Spit ESA (#2)	The Base of Spit is a 42.7 hectare site that directly connects to the Study Area and lies at the base of the Leslie Street Spit. It is bounded to the north by Unwin Avenue. This area's significance stems primarily from its diversity of habitat as well as its location next to Lake Ontario and linkage to other significant natural areas like the Leslie Street Spit ESA, Tommy Thompson Park ESA, and Cherry Beach. It supports a notable abundance and diversity of migrating songbirds and a high diversity of breeding birds through the breeding season. The ESA contains early successional communities, including woodland and thicket, consisting primarily of Cottonwood, Willow and Poplar trees. There are also large expanses of cultural meadow. Low, wet areas which are inundated in the early spring contain wetland communities of treed swamp, swamp thicket dominated by Red-Osier Dogwood, meadow marsh, and shallow marsh. Water in wet areas, however, does not remain for sufficient time to support amphibian breeding, but later in the growing season these areas support wetland sedges and a cover of moss. Open areas provide habitat for small rodents and foraging habitat for raptors as well as stopover habitat for migrating birds. The cultural meadow areas provide habitat for Monarch butterflies (*Danau plexippus*) due to the high abundance of Common Milkweed (*Asclepias syriaca*). Eleven (11) significant flora species and 6 significant vegetation communities occur within the ESA.
Cherry Beach Extension ESA (#16a)	The Cherry Beach Extension is an 11.3 hectare site to the west of the Cherry Beach ESA, also on the north shore of the Toronto Outer Harbour. Situated on fill, the area is dominated by Cottonwood forest and successional areas. Occasional swamp-thicket and thicket communities are dominated by Red-Osier Dogwood. Woodland communities are open with a dense shrub layer with portions of the understory periodically mowed along trails. As with the Cherry Beach ESA, the area is linear and open. A high diversity of bird species that use small patches of wetland forest and successional habitat have been observed, including: Yellow Warbler, Great Crested Flycatcher (*Myiarchus crinitus*), Red-eyed Vireo (*Vireo olivaceus*), Warbling Vireo and Eastern Kingbird (*Tyrannus tyrannus*).
Tommy Thompson Park ESA (#81)	This constructed 191.3 hectare site, which forms the western part of the Leslie Street Spit, consists of ecological communities in varying stages of early to mid-succession. Constructed "fingers" are interspersed with open embayments. The base of the fingers are largely wooded with Cottonwood trees interspersed with sand openings with many plant species similar to those found on the Toronto

Environmentally Significant Area	Details
	Islands, including some prairie indicators. Sandy shorelines and wetland depressions support abundant shrub Willows, Red-Osier Dogwood, rushes and sedges. The ESA is a notable stopover area for migrant songbirds. A high diversity of sensitive species breed at Tommy Thompson Park, particularly those that nest near water such as ground-nesting colonial species [e.g. Ring-billed Gulls (*Larus delawarensis*), Herring Gulls (*Larus argentatus*), Common Terns (*Sterna hirundo*), Caspian Terns (*Sterna caspia*)]. Tree nesting colonial species found in the ESA include Great Blue Heron (*Ardea Herodias*), Black-crowned Night-heron (*Nycticorax nycticorax*) (30 percent of the Canadian population of this species breeds here), Great Egret (*Casmerodius albus*), and Double-crested Cormorant (*Phalacrocorax auritus*). American Woodcock (*Scolopax minor*), Bank Swallow (*Riparia riparia*) and Tree Swallow (*Tachycineta bicolor*) also breed on the site. Significant amphibian breeding, foraging and overwintering habitat exists for American Toad and Northern Leopard Frog. The ESA supports three species of amphibians, four species of turtles, and four species of snakes. The deposited rubble likely functions as hibernacula for snake populations.

5.4.3 Habitat and Terrestrial Resources

The Study Area is within the eastern extension of the Carolinian floristic region (Ecoregion 7E), which is concentrated in southwestern Ontario and extends along the north shore of Lake Ontario. The Carolinian zone consists of a high proportion of Canada's endangered habitats and most of Ontario's rare or endangered species. The Carolinian floristic region reaches its northeasterly limit around Toronto, where it transitions to the Great Lakes – St. Lawrence Mixed Forest Zone (Ecoregion 6E), which extends north and east through Ontario and Quebec. Areas of transition between two ecoregions can support high biological diversity due to a broader range of environmental conditions (e.g. precipitation, soils) or ecological niches.

5.4.4 Wildlife Resources and Linkages

Within the Study Area, potential wildlife habitat is restricted to successional features located within the small, isolated meadows and treed areas on decommissioned industrial sites as previously described. Based on the characteristics, maintenance and surrounding land uses of these areas they provide limited function as wildlife habitat and less function as linkage areas/corridors. The cultural meadows may provide habitat for small rodents and foraging habitat for raptors or other birds of prey. Constructed features such as culverts, abandoned buildings, and concrete or fill piles may in some cases provide wildlife habitat (e.g., cover, nesting) for species that are well-adapted to urban environments. Of note

are two unevaluated drainage/wetland features situated on two sites designated as Existing Natural Cover by TRCA and confirmed through field investigations. These features may provide minor function as habitat for waterfowl and/or amphibians, if sufficient water remains throughout the amphibian breeding season (spring and early summer).

As part of the DMNP EA, TRCA conducted a wildlife survey in 2003 in the Leslie Street Spit and Port Lands District (TRCA, 2004), the study area of which overlaps with the TSMP EA Study Area. The survey documented 7 mammals, 12 herpetofauna, and 37 breeding birds in the Broader Regional Study Area (Impact Study Area). Four breeding birds were observed within the specific Project Study Area for the DMNP EA: Northern Rough-winged Swallow, Spotted Sandpiper, Eastern Kingbird and Grey Catbird. All species had a local ranking (within the TRCA's jurisdiction) of L4 or L5 (common and secure), with the exception of the Beaver (Castor canadensis), which was ranked as L3 and of regional concern. TRCA noted the presence of the following species within the Broader Regional Study Area (Impact Study Area) and not in the DMNP EA Study Area: Chimney Swift (*Chaetura pelagica*) (listed as Threatened under the provincial *Endangered Species Act* and federal *Species at Risk Act*), Milksnake (*Lampropeltis triangulum*) (listed as Special Concern).

Flowering plants found in cultural meadows within the Study Area are an important food source for the butterfly populations of the Port Lands area, as 27 butterfly species have been recorded in the area (Natural Heritage Work Group, 1990). Monarch butterflies are known to congregate in large numbers in suitable habitat within the Port Lands area in September prior to migration (Stantec, 2003).

Due to proximity to the Leslie Street Spit and Cherry Beach, areas identified as Existing Natural Cover in the Study Area can serve as secondary (e.g., if higher quality habitat is not found first) stopover areas for migratory birds. There is a high potential for migratory birds to utilize hedgerows associated with road right-of-ways during the breeding season (City of Toronto, 2012). The Toronto Ornithological Club conducts routine warbler surveys in the vicinity of Unwin Avenue and has documented their use of habitat along hedgerows in the area (Toronto Ornithological Club, 2007). In addition, the report Migratory Birds in the City of Toronto (Dougan and Associates, 2009) mapped historical occurrences for three warbler species at risk immediately south of the Study Area: Canada Warbler (*Wilsonia canadensis*) (listed as Threatened under the *Species at Risk Act* and Special Concern under the *Endangered Species Act*), Cerulean Warbler (*Dendroica cerulean*) (listed as Endangered under the *Species at Risk Act* and Threatened under the *Endangered Species Act*), and Yellow-breasted Chat (*Icteria virens*) (listed as Special Concern under the *Species at Risk Act* and Endangered under the *Endangered Species Act*).

The Lower Don River West Remedial Flood Protection Project (2006) and the Lake Ontario Park Master Plan (2008) identified the Lower Don River, as well as the Keating Channel, as important links between the Tommy Thompson Park Important Bird Area (IBA) to the south and the continuous Don Valley Corridor to the north.

Beyond the Study Area, areas of wildlife resources exist primarily in the Lower Don River corridor and in the five adjacent ESAs.

5.4.5 Surface Water

Surface water as it relates to the natural environment is addressed in **Section 5.4.1**. This section describes surface water from the perspective of flooding and water quality.

5.4.5.1 FLOODING

The DMNP EA, as well as the LDLMP EA study areas, are adjacent to the TSMP EA Study Area. The TSMP EA is being carried out subsequent to these projects, and as such, the final approvals now received for the DMNP EA and the LDLMP EA impact the works of this EA. The DMNP EA investigated the naturalization of the mouth of the Don River and the removal of flood risk. Approximately 290 hectares of land are at risk due to flooding. Once implemented, flood risk to approximately 240 hectares of land will be eliminated, with the remaining areas being located in the constructed valley system including the Keating Channel and portions of the Don Valley Parkway.

DMNP EA is very similar to the LDLMP EA with primary difference that the DMNP EA extended flood protection works further into the Unilever Precinct (First Gulf site), to the Eastern Avenue crossing of the railway embankment, and a VWF to Saulter Street south of Lake Shore Boulevard East. While the Don Narrows was included as part of the Study Area in the DMNP EA, it was ultimately set as a stand-alone appendix that explored habitat enhancement "opportunities", rather than incorporating the establishment of a "Preferred Alternative" tied to the evaluation process for the DMNP EA. The purpose of the DMNP EA is to make an ecologically functional river mouth, remove flood risk and provide opportunities to revitalize the Port Lands area of Toronto's waterfront.

The LDLMP EA establishes the servicing infrastructure necessary to support revitalization and refines it to coincide with the optimized river valley (City of Toronto, 2016).

The conceptual design for the DMNP EA is comprised of a number of flood protection features, which include (Waterfront Toronto, 2011):

- new river valley formation, including the Don Greenway to the Ship Channel, Keating Channel spillway and low flow channel;
- sediment and debris management area;
- modifications to Lake Shore Boulevard East and Keating Rail bridges;
- east bank flood protection landform (FPL) north of Lake Shore Boulevard East;
- east bank VWF south of Lake Shore Boulevard East;
- modifications to grades surrounding Eastern Avenue as it passes under the Canadian National Rail (CNR) Kingston Subdivision grade separation (near the BMW site);
- Keating Channel and Lake Shore Bridge weirs; and,
- grading and setbacks of adjacent development areas.

The FPL is defined as an earthen structure which has been designed with geotechnically suitable material and has dimensions which minimize the three primary risks associated with typical earthen dyke structures to negligible levels. The design specifications outlined in the DMNP EA are the minimum requirements that provide permanent flood risk removal. Consequently, to ensure the long term

viability of the FPL to provide permanent flood risk removal, several restrictive operational constraints are required that have been outlined in the DMNP EA. These restrictions are administered by TRCA and include, but may not be limited to, plantings, urban related servicing and land use (Waterfront Toronto, 2011) (**Figure 5-23**).

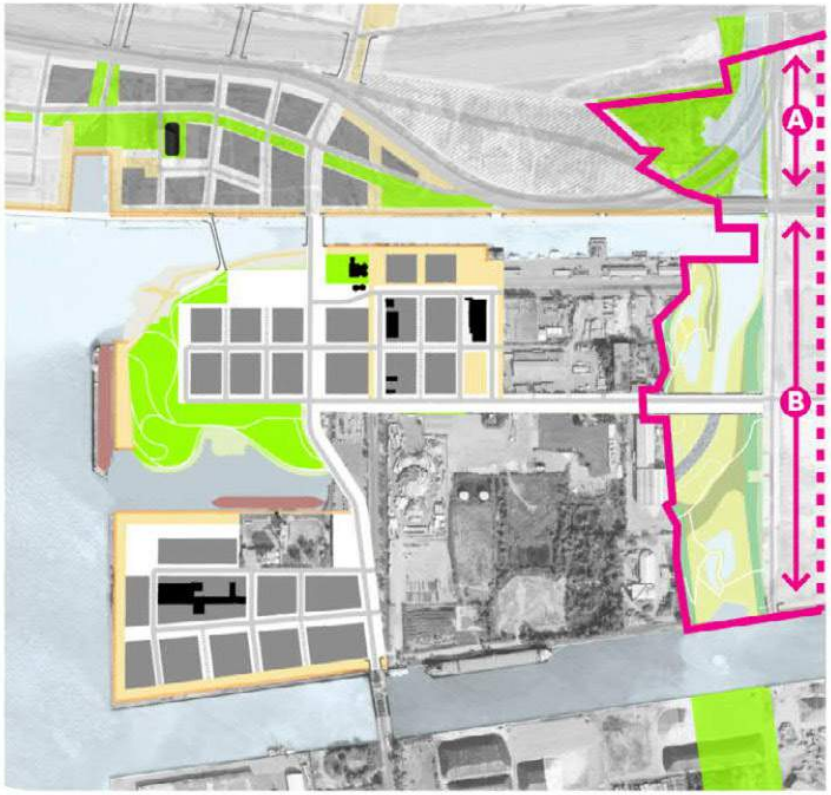
The VWF is a modification of the FPL that extends the dry side slopes and width of the crest to create fill dimensions well beyond that which exist within a typical FPL. By doing this, the risk of failure is minimized to as near zero as is feasible, thereby allowing the TRCA to relax a number of the restrictions that exist within the FPL feature, specifically related to urban servicing and land use (Waterfront Toronto, 2011) (**Figure 5-23**).

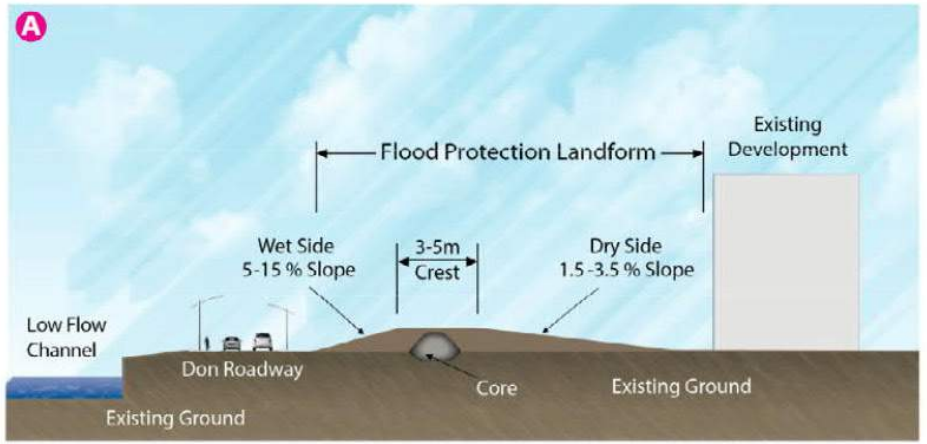
Flood protection for the lower Don River is a key component of Toronto's waterfront revitalization. Flows in the Don River have changed significantly since pre-settlement times. The watershed is now over 80 percent urbanized, and approximately 70 percent of this area was developed before stormwater management controls were a requirement of development. Discharge in the Don River increases rapidly due to precipitation resulting in turbid, sediment-laden water, erosion of the stream banks, scouring and deposition, and smothering in-stream habitat features.

As the city developed, the lower portions of the Don River have undergone straightening, extension and redirection culminating with the development of the Port Lands and the Keating Channel. Under normal flow conditions, the influence of water levels from Lake Ontario extends up the river to beyond Gerrard Street. As a consequence, the hydrology of the river is complex and affected by the Lake throughout the Study Area. Flooding within the area of the Lower Don River has a written history dating back to the mid-1870s, beginning first with ice jams and late fall flooding. However with rapid development of the headwaters over the last few decades and the corresponding increase in stormwater responsiveness, floods can occur at any time during the year.

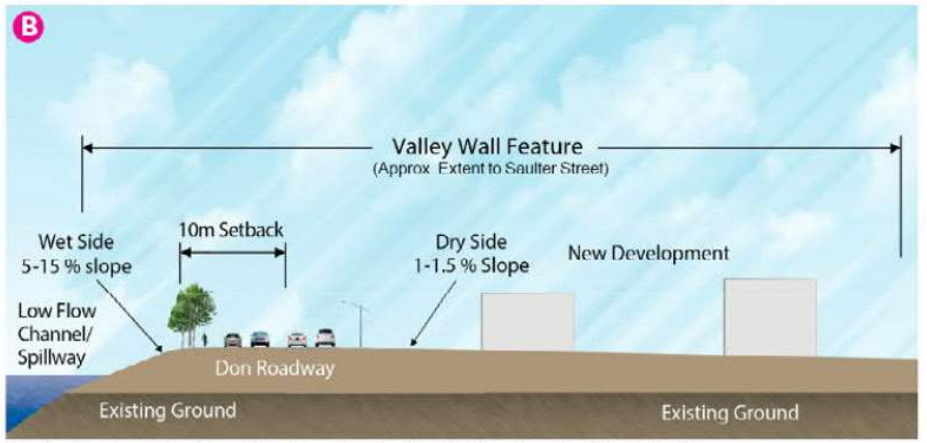
The Keating Channel EA Study (1983) identified three different Spill Zones for the Lower Don River (**Figure 5-24**). The Keating Channel EA assessed the need for, and consequences, of dredging the Keating Channel. The study concluded that to avoid an additional increase in flood risk to the surrounding areas of the Lower Don River, annual maintenance dredging and disposal activities were necessary to offset sediment infilling of the Channel. This would also serve to reduce the volume of contaminated sediment in the Channel. The Keating Channel EA continues to govern dredging activities in the Channel and disposal of the dredged material. However, some areas are still at risk of flooding despite dredging of the Keating Channel on a regular basis. These zones are: Spill Zone 1 – the Port Lands, Spill Zone 2 – east of the Don River and north of Lake Shore Boulevard East, and Spill Zone 3 – the lands west of the Don River. A portion of the Study Area falls within Spill Zones 1 and 2. The Lower Don River West Remedial Flood Protection Project Class EA (LDRW Class EA) which was fully implemented with the completion of the FPL in the West Don Lands (2015) and with the extension of the railway bridge over the Don River (2007) addresses Spill Zone 3. The DMNP EA addresses the alleviation of flood risk for Spill Zones 1 and 2 (Waterfront Toronto, 2011).

FIGURE 5-23 FLOOD PROTECTION LANDFORM AND VALLEY WALL FEATURE OVERVIEW AND CROSS-SECTION





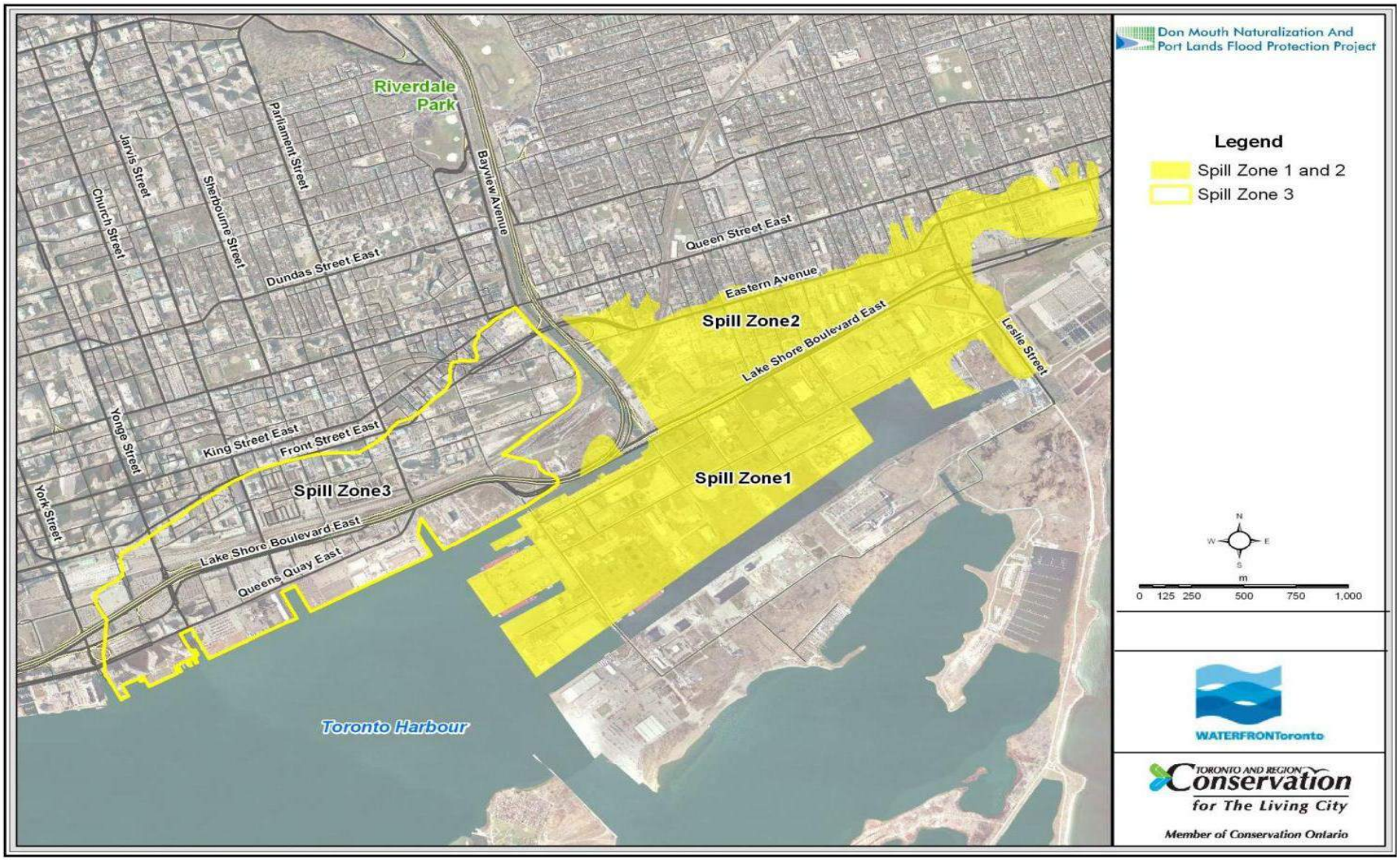
Illustrative Cross Section of Don Roadway Flood Protection Landform North of Lake Shore



Illustrative Cross Section of Don Roadway Valley Wall Feature South of Lake Shore

Source: City of Toronto, 2016

FIGURE 5-24 REGULATORY FLOOD SPILL ZONES FOR THE LOWER DON RIVER



Source: Waterfront Toronto, 2011

In the DMNP EA study area, a valley feature exists upstream of Queen Street that is narrow but is sufficiently deep to be able to contain the majority of the high discharge rates produced during the Regulatory Flood. South of Queen Street within the DMNP EA study area, there is no valley. It is characterized as a broad, wide, low-lying area comprised of lake-fill, providing no containment of the Regulatory Flood. Previously, the elevated embankment of CNR's Kingston Subdivision intensified flooding in this area such that it forces floodwaters further west and restricts flows under the embankment through the existing north-south road underpasses (e.g., Spill Zone 3). In a Regulatory Flood event, water would spill west into the downtown core of the city, and south and eastward through the Study Area. Since the implementation of the Lower Don River West Remedial Flood Protection Project Class EA and the extension of the railway bridge over the Don River by 21 m to the west, led by TRCA and Waterfront Toronto in 2007, combined with the near completion of the Flood Protection Landform in the West Don Lands, led by Waterfront Toronto, Infrastructure Ontario and TRCA, has eliminated flooding from the Don River to the west (Spill Zone 3). Flooding still remains through Spill Zones 1 and 2. This will be addressed as part of the DMNP EA.

The DMNP EA documents that south of the Kingston Subdivision, floodwaters under the Regulatory Flood continue to exceed channel capacity, spilling south of the Keating Channel and east of the Don River. These waters combine with flows originating through the Eastern Avenue underpass of the Kingston Subdivision, and merge to form Spill Zones 1 and 2. The Port Lands, which is situated mostly in Spill Zone 1, is mainly comprised of industrial and vacant lands whereas the South of Eastern area, Spill Zone 2, is comprised of residential and commercial land uses.

5.4.5.2 WATER QUALITY

The water quality of the Lower Don River has been characterized in studies such as the Don River Watershed Wet Weather Flow Management Master Plan (WWFMP, 2003) and the Toronto Area Watershed Management Study, 1986. The Don River often exceeds the Provincial Water Quality Objectives (PWQO) for many substances, especially during wet weather. Contaminants routinely found in wet weather samples include E. coli bacteria, heavy metals (e.g., zinc, copper), suspended sediment, nutrients, and seasonally, chlorides and pesticides. The major sources of these pollutants are runoff from roads and residential, industrial and commercial land uses through the storm sewers, the effluent of the North Toronto Sewage Treatment Plant and combined sewer overflows (CSOs) along Taylor/Massey Creek and the Lower Don, and spills from industrial and commercial lands (Dillon, 2006).

Improvements in water quality are planned. Specifically, the EA for the Don River and Central Waterfront Project was approved in 2012 and that Toronto Water is currently undergoing detailed design with an anticipated start date for the initial implementation works along the Don River to commence in 2017. This project is anticipated to greatly reduce E. coli bacteria in the Don River and Toronto Inner Harbour.

Suspended sediment may be derived from watershed sources carried to the river, such as from construction sites, from winter deicing and from in-stream erosion. When the sediment carried in suspension arrives at the Lower Don, the velocity changes result in it being dropped out of suspension and deposited on the bed of the river or in the Keating Channel. Bottom sediments have been sampled in Toronto Harbour since the 1970s. It was identified early on that highly contaminated sediments existed in the Keating Channel and in the nearby combined sewer outlets. Since the 1970s, significant reductions in the concentration of metals in at the bottom of the channel have been accomplished by the implementation of pollution prevention programs, and sewer by-laws. These measures have led to cleaner sediments being deposited compared to the historic build-up (TRCA, 2007). Water quality for the lakefront is similar to the discharges from the Don River.

5.5 Noise and Air Quality

The existing conditions of the noise and air quality conditions in the Study Area are typical of a highly urbanized environment, and also reflect existing port and industrial operations in the Port Lands. This section provides an overview of existing noise and air quality conditions in the Study Area using publically available data and site specific monitoring data, as available. Information was also obtained from a Noise and Air Quality Feasibility Study prepared for the Port Lands Planning Framework completed by Golder Associates Limited (Golder) on behalf of the City. The primary purpose of the Feasibility Study was to assess the suitability of the introduction of sensitive residential and non-residential uses as contemplated in the Port Lands Planning Framework: Land Use Direction (adopted by Council in July 2014) and to inform potential height limitations. The Feasibility Study provides a comprehensive overview of existing noise and air quality conditions in the Port Lands and immediate vicinity.

5.5.1 Noise

The City Noise By-law outlines various prohibitions and limitations on sound levels for some noise sources and procedures for obtaining an exemption. The City's Noise By-law also restricts the time of day during which construction can occur. Most existing noise in the Study Area is generated from traffic and industry operating in the Port Lands and immediate vicinity. The City's Noise By-law references the use of the MOECC's Publication NPC-205 sound Level limits for Stationary Sources in Class 1 and 2 Areas (Urban), which has since been superseded by Noise Pollution Control Guideline (NPC-300) released in August 2013.

The NPC-300 provides advice, sound level limits and guidance for land use planning purposes and identifies three different urban classifications. The NPC-300 is intended to support urban intensification while protecting the viability of existing industries in urban settings. The most notable difference between NPC-300 and previous guidelines is that it introduces a Class 4 Area, which can be applied, at the discretion of the planning authority, such as a municipality, to an area that contains sensitive land uses that could be adversely impacted by lawfully existing industrial uses. Portions of the Port Lands are candidate areas for a Class 4 designation. Class 1 areas, as defined by the MOECC, are areas with an

acoustical environment typical of a major population centre, where the background noise is dominated by the urban hum. The urban hum is the result of the "many unidentifiable noise sources due to the activities of people and primarily composed of road traffic related sound sources" (NPC 300, 2013). Lands adjacent to the Study Area, such as the South Riverdale community north of Eastern Avenue would be considered Class 1 areas.

The Noise and Air Quality Feasibility Study completed by Golder utilized the NPC-300 as the basis for the analysis. Golder developed an acoustical model and assessed the impact of the existing noise environment in the Port Lands and immediate vicinity. They assessed stationary, impulsive and transportation noise sources. They undertook a long-term continuous noise monitoring program and series of spot check noise measurements. In addition, they utilized previous acoustic assessments prepared for a number of industrial operations within or in the vicinity of the Port lands, including the Billy Bishop Airport, inputted traffic counts provided by the City of Toronto Traffic Safety Unit into the acoustical model, and completed a detailed noise assessment of the Lafarge Cement Terminal on Polson Quay.

The long-term continuous noise monitoring program assisted in understanding noise levels during both the day time and night time periods, with data logged for approximately one week, but was also used to calibrate the acoustic model. The attended spot check measurements were carried out at various locations around the existing industries within the Port Lands and were likewise used to calibrate the model. The traffic counts assisted in determining existing road traffic noise sources.

Stationary and Impulsive Noise Sources

Stationary sources of noise refer to a sound that normally operates within a particular property. They include, among others, noise associated with industrial facilities, works yards and warehousing and truck terminal facilities. Impulsive sources of noise, other than Quasi Steady Impulsive Sound, likewise can occur within a particular property with sound level limits applying to the number of impulses that occur in a one-hour period. The existing port and industrial operations in the Port Lands contribute to the area having a high ambient noise environment. Further, all existing industries in the Port Lands have the potential to operate at full capacity during night-time hours (23:00 to 0700 hours).

Transportation Noise Sources

Transportation sources of noise include road, rail and aircraft traffic sources. The Noise and Air Quality Feasibility Study found that vehicles (cars and trucks) that use major transportation routes such as the Gardiner Expressway and DVP are more significant transportation noise sources in the Study Area during the day time and night time periods. Existing noise levels within the vicinity of the Gardiner/Lake Shore and DVP corridors west of the Don River exceed the NPC-300's night-time sound level limits for receptors in the Keating Channel Precinct, Villiers Island and to a lesser extent in the Film Studio District. Lake Shore Boulevard east of river, Cherry Street, Leslie Street and Commissioners Street also contribute to existing background noise in the Study Area, but to a lesser degree and depending on the elevation.

5.5.2 Air Quality

Air quality in the Study Area is generally influenced by local sources from the city as well as long range transport of contaminants from other regions. Potential air emission sources in the Study Area include industrial/commercial operations, as well as vehicular/boating traffic. Receptors that may potentially be affected by the Project are existing commercial, industrial and limited residential land uses north of Lake Shore Boulevard East.

The Noise and Air Quality Feasibility Study also assessed air quality within, and in the immediate vicinity of the Port Lands. Three different approaches were taken:

- review of background monitoring data from the MOECC and National Air Pollution Surveillance (NAPS) network monitoring stations to quantify background air quality;
- utilization of the City's airshed model, which incorporates 30 different contaminants from a variety of sources, to predict ambient air quality concentrations. The contaminants included particulate matter (SPM, PM^{10} and $PM^{2.5}$) Results were then compared to Ontario Ambient Air quality Criteria; and, NOx and NO2 concentrations, Volatile Organic Compounds (VOCs) and metal concentrations; and,
- development of an industry specific compliance model utilizing publicly available information related to compliance with relevant air quality regulations for assessing potential impacts with the introduction of sensitive uses.

The Feasibility Study found that air quality in the area is generally consistent with air quality in other areas of the city. Overall, the largest source of emissions to background air quality is the major transportation links, in particular the Gardiner Expressway and Don Valley Parkway. Some existing industrial operations were found to exceed the Ontario Ambient Air Quality Criteria with the introduction of sensitive uses in the area, and the presence of elevated plumes.

5.5.3 Climate

Climate characteristics and the potential for climate change is an important base condition for environmental assessment for infrastructure. Key elements of climate that can affect infrastructure include temperature, precipitation, wind, lake water levels, freezing and thawing. Where possible, it is important to be aware of climate modeling that has identified potential future changes in climate that can affect the sustainability and resiliency of infrastructure including transportation, water, wastewater and stormwater. The following provides an overview of existing and predicted climate conditions.

In addition to climate characteristics, man-made green-house gases (GHG) can have a profound effect on long term atmospheric conditions and can lead to climate change. Current air quality conditions are described in the Air Quality section above. The principal transportation related GHG is carbon dioxide (CO2). Other important GHGs include methane (CH4) and nitrous oxide (N2O).

Climate averages are commonly used to describe the average climatic conditions of a particular location in Canada (Environment Canada, 2012). At the end of each decade, Environment Canada updates its climate averages for several locations across Canada and for as many climatic characteristics as possible.

The climate averages and extremes are obtained from Canadian climate stations with at least 15 years of data between 1971 and 2000 (Environment Canada, 2012). **Table 5-4** provides data on the Toronto area for temperature, precipitation and wind. Due to the moderating influences of the Great Lakes, the climate of the area is characterized by cold winters and warm summers.

TABLE 5-4 CLIMATE AVERAGES FOR THE GREATER TORONTO AREA

Temperature (Daily Average, Celsius)												
Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Year
-4.2	-3.2	1.3	7.6	14.2	19.2	22.2	21.3	17	10.6	4.8	-0.9	9.2
Precipitation – Rainfall (mm)												
29.1	26.2	42	63.2	73.3	71.5	67.5	79.6	83.4	64.7	67.3	41.9	709.8
Precipitation – Snowfall (cm)												
38.2	26.6	22	6	0	0	0	0	0	0.1	8.1	32.2	133.1
Wind (km/h)												
64	69	129	64	80	43	48	37	42	55	64	72	N/A

Source: EC, 2012

Climate can affect lake water levels (through precipitation, evaporation, ice and wind) and rainfall characteristics (duration or intensity) which may result in increased flooding and potentially erosion (flooding is addressed in Section 5.4.5). Lake levels are of interest for this study to ensure that the grading and piped outlets to the lake are adapted to predicted changes. The lake levels used in the stormwater analysis included the 2-year lake water level of 75.2 m, and the 100-year lake level of 75.7 m which takes into account the potential effects of climate change. These values were established in collaboration with the City and the TR CA and were based on historical lake levels and climate predictions.

During the winter months, the influence of the lake causes constant freezing and thawing periods, resulting in winter storms which cause extensive shoreline damage between the months of November and April. Freeze/thaw periods can also create challenging conditions for snow clearing during the winter months and additional road maintenance work in the spring/summer as successive freeze/thaw cycles can eventually lead to the expansion and cracking of concrete/ asphalt. Snow and ice storms can impact the shoreline in terms of loss of stabilizing vegetation, and increased runoff causing flooding and erosion during this period.

Toronto's Future Weather and Climate Driver Study (2012)

In an attempt to more effectively plan municipal infrastructure investment and provision of services, the City undertook the "Toronto's Future Weather and Climate Driver Study" in 2012. The study provides insight into what projections on future climate mean for the city and is based on the belief that by improving the level of certainty about climate related weather changes, the City will be

better guided in making investment and budgetary decisions regarding infrastructure and service provision responsibilities.

The study is unique as it goes beyond the standard modeling means of rainfall and temperature and assesses extremes of temperature and precipitation. It determined that on average in 2040-2049, warmer annual average temperatures of 4.4 degrees Celsius are expected. For seasonal averages, winter temperatures are projected to increase by 5.7 degrees Celsius and summer temperatures by 3.8 degrees Celsius. Extreme daily maximum temperatures are projected to increase by 7.6 degrees Celsius, but extreme daily minimum temperatures are projected to also rise by 13 degrees Celsius (e.g., becomes less cold). Less snow and more rain in the winters (26 fewer snow days per year) and fewer rainstorm events per year are anticipated. However, the model predicts more extreme rainstorms and marked rainfall increases in July (80 percent+) and in August (50 percent +) (Senes, 2012).

Other Climate Change and Resiliency Initiatives

The Project was completed within the larger context of the Port Lands Planning Framework which represents a locally appropriate and innovative approach to planning for a changing climate by reducing greenhouse gas emissions through compact community design, mobility and access choices, and renewable energy solutions. The Planning Framework takes a proactive approach to climate change mitigation and resiliency through investment in green infrastructure, flood mitigation, biodiversity structural layers and the creation of efficient, compact complete communities.

The City was also undertaking several other initiatives aimed at addressing climate change at the time of preparing this TSMP. One such example is the Port Lands Energy Plan, which at a high level, explores potential opportunities and approaches that will reduce energy usage and generate renewable energy within the area. The goal is to eventually achieve net zero energy imported into the Port Lands with a low carbon (CO_2) footprint.

The Project, through the Objectives, assessed various alternatives based on their ability to facilitate the development of mixed-use communities, provide for transit and non-vehicular modes of transport (pedestrians, cycling), with a focus on Complete Streets and transit accommodation, and specifically the promotion of a reduction of GHGs through LIDs, minimizing pumping stations and potential to reduce congestion points.

Long-term impacts from the proposed infrastructure improvements identified in this TSMP to air quality/climate change in the Study Area are expected to be relatively minor because of:

- the shift in land use in some areas from historic industrial land uses to residential/commercial;
- the introduction of increased non-automobile choices through enhanced pedestrian and cycling facilities, as well as public transit in the area; and,
- the construction of new areas of open space.

5.6 Soils

Since early settlement of the city, the Lake Ontario shoreline has been altered as a result of lake filling. The shoreline was generally filled with dredged sediment from the Inner Harbour, construction debris, excavated soil, sewage sludge, incinerator refuse, and municipal garbage brought from other parts of the city. The majority of land south of Front Street in the downtown area is the result of lake filling activity. The lands within the Study Area were created for historical shipping and industrial uses in the nineteenth and twentieth centuries (City of Toronto, 2010).

The majority of the lands that make up the Study Area were reclaimed during the 1800s and early 1900s by filling Ashbridges Bay between the Don Mouth on the mainland and Fisherman's Island to the south. Reclamation reportedly proceeded with the use of hydraulically and mechanically moved harbour floor dredge spoils. A variety of fill sources were used including dredge spoils, excavated native soils from borrow pits and construction sites, construction debris, residual stockpiled materials and so forth were used in the reclamation Study Area lands (City of Toronto, 2010).

The composition of the fill overburden within the Study Area may vary considerably over short distances. The use of excavated materials from construction sites and reported instances of municipal solid and other waste dumping in some sectors of the Port Lands indicates that non-soil inclusions including metal fragments, fireplace ash, clinker, coal, timber, brick, asphalt and concrete rubble and glass, as well as soil affected by environmental contaminants from off-site sources, may be present (City of Toronto, 2010).

The overburden consists of layers of sand and silt and extensive areas of peat from the late-and post-glacial deposition of deltaic sediments on the underlying bedrock surface, which underwent differential weathering and erosion during pre-glacial time (City of Toronto, 2010).

Various studies have been undertaken over the years documenting soil contamination in the Port Lands, either on a site-by-site basis or more comprehensively. Initiatives include the Area Wide Initiative (AWI) and the Preliminary Environmental Liability Assessment for the Toronto Port Area (City of Toronto, 2013a).

In 1997, TPLC implemented the AWI. The purpose of the AWI was to generate a framework for soil and groundwater monitoring across the Port Lands to support regeneration and redevelopment opportunities. Monitoring is undertaken on an annual basis over a current network of 40 monitoring wells located within the Port Lands. The AWI includes three components: ground water monitoring, ecological monitoring to assess baseline conditions, and free product recovery (City of Toronto, 2013a).

5.6.1 Geology

The Georgian Bay Formation underlies the Study Area. The formation consists of blue-grey shale with minor siltstone, sandstone and limestone interbeds. Upward in section, pale grey to cream, fossiliferous limestone and dolostone interbeds become more common. The Georgian Bay Formation is interpreted to represent a shallowing upward, storm-dominated shelf succession (City of Toronto, 2010).

Outcrops of the Georgian Bay Formation are common along watercourses west of the Study Area such as the Humber River, Mimico Creek, Etobicoke Creek and the Credit River. Construction excavations in downtown Toronto commonly intersect and expose this formation. The Georgian Bay Formation is part of a Palaeozoic sequence of Late Ordovician age. The Georgian Bay Formation is underlain by the Blue Mountain Formation. This entire sequence dips (slopes) gently to the south at 5 m per km (City of Toronto, 2010).

5.6.2 Hydrogeology

The groundwater level in the Study Area is generally at the same level as the Lake Ontario water levels and possibly under the influence of the fluctuations in the lake water levels. The depth to the water table generally varies between 1 to 3 m below ground surface, and is primarily in the fill material. The Lake Ontario water elevations may vary over any given year by approximately 0.5 to 1 m, subsequently resulting in groundwater level fluctuations within the Study Area (City of Toronto, 2010).

The regional groundwater discharges west and southwesterly towards the Inner Harbour and Ship Channel. Locally, groundwater flow may vary due to presence of subsurface utilities, anthropogenic influences and lake level fluctuations. The horizontal hydraulic groundwater gradient ranges locally from approximately 0.008 to 0.01 m (City of Toronto, 2010).

5.6.3 Geotechnical Properties of Soils

Given the proximity of the Study Area to the lake, its historical industrial use and land composition, the general geotechnical properties of the soils include the potential for shallow groundwater conditions, subsidence-consolidation of fill waste and unconsolidated materials resulting in differing settlements, and the potential for methane gas generation from peat and/or waste/sewage inclusions in fill deposits (City of Toronto, 2010). Geotechnical studies should be completed as part of future EA work.

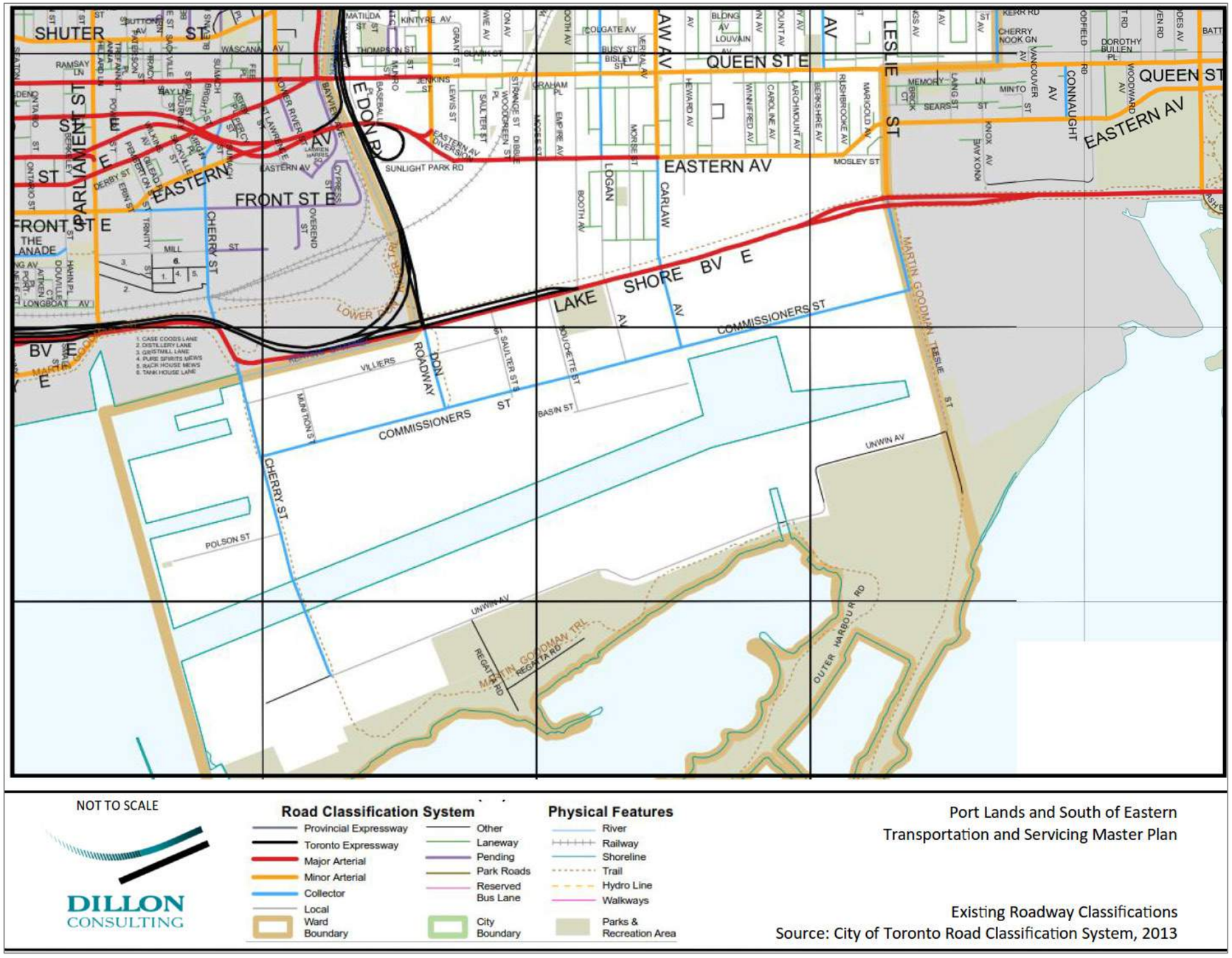
5.7 Transportation

5.7.1 Transportation System

The following sections describe the existing transportation network in the Study Area, including existing streets, transit service, active transportation facilities and goods movement. Overall the Study Area lacks a fine-grained street network, transit to support future development, and pedestrian and cycling facilities. The limited transportation system makes the area vulnerable to increased auto dependency and congestion in the future.

Figure 5-25 shows the existing street network in the Study Area. Further details are provided in **Appendix D**.

FIGURE 5-25 EXISTING STREET NETWORK



Source: City of Toronto, 2016

5.7.1.1 STREETS

The major streets within the Study Area include the DVP, Gardiner Expressway, Eastern Avenue, Leslie Street, Lake Shore Boulevard East, Commissioners Street, Cherry Street, Don Roadway and Carlaw Avenue. In addition to the major streets, there are some local streets and private street segments. The following subsections describe the hierarchy of streets that exist in the Study Area.

PHOTO: F.G. GARDINER EXPRESSWAY AND LAKE SHORE BOULEVARD EAST LOOKING WESTWARD AT SAULTER AVENUE

Expressways

Gardiner Expressway

The Gardiner Expressway extends east from the Queen Elizabeth Way/Highway 427 interchange through the downtown area just east of the DVP at Bouchette Street. The Expressway is elevated for a 6 km section between Dufferin Street and the DVP, with numerous on and off-ramps. The elevated Gardiner Expressway ends within the Study Area, with ramps descending to the centre of Lake Shore Boulevard East approximately 100 m west of Booth Avenue (or at Bouchette Street). The Expressway has a six-lane basic cross-section for the majority of its length, except for short sections west of the Yonge Street/BayStreet/York Street off-ramps in both directions (two lanes per direction), and the section between the DVP and Jarvis Street/Sherbourne Street ramps (four lanes per direction). It has a posted speed limit of 90 km/h.

Don Valley Parkway

The DVP extends northerly from the Gardiner Expressway to the Highway 401/Highway 404 interchange. It has a posted speed limit of 90 km/h. Within the Study Area, the main downtown interchange for the DVP is at Eastern Avenue (Richmond Street/Adelaide Street). This is a partial interchange allowing southbound DVP motorists to exit the DVP and go west onto Richmond Street and eastbound motorists travelling on Adelaide Street or Eastern Avenue to access the northbound DVP. North of the Eastern Avenue interchange, the Parkway has a six-lane cross-section. The Eastern Avenue interchange diverts a high proportion of downtown-oriented traffic via the Richmond Street/Adelaide Street one-way ramps, and south of this interchange the Parkway cross-section narrows to four lanes. There are elevated two-lane ramps providing a direct connection to and from the Gardiner Expressway to the west at a moderately high speed (posted at 60 km/h), and therefore while the two expressways are separate facilities they are commonly perceived as serving a continuous through function. At the southern terminus of the DVP, there are entry/exit ramps from an intersection with Lake Shore Boulevard East and the Don Roadway. This is the primary means of facilitating travel to and from the DVP into the Study Area. Motorists travelling along Lake Shore Boulevard East can access the DVP via the north/south

connection along the Don Roadway. There are additional northbound on-ramps from Queen Street East and Dundas Street East.

Arterial Streets

Lake Shore Boulevard East

Lake Shore Boulevard East is a major arterial street that bisects the Study Area typically consisting of three lanes per direction. It has a speed limit ranging from 50 to 60 km/h. Between the Humber River and downtown Toronto, Lake Shore Boulevard East runs parallel to the Gardiner Expressway and serves as a commuter alternative to the Expressway during periods of congestion as well as waterfront destinations across the city. Within the Study Area, Lake Shore Boulevard East is a six-lane major arterial that provides access to the Port Lands, the South of Eastern area and neighbourhoods to the north, Ashbridges Bay and the beach community before terminating at Woodbine Avenue.

Within the Study Area, traffic signals are widely spaced (approximately 900 m apart), located at the Don Roadway, Carlaw Avenue, and Leslie Street. Parking is not permitted at any time along Lake Shore Boulevard East. In 2008, the Average Annual Daily Traffic within the Study Area ranged from 18,000 vehicles to 47,200 vehicles. The Martin Goodman Trail runs along Lake Shore Boulevard East and connects south into the Port Lands at two points – Cherry Street and Leslie Street. There is also a small rail yard (Keating Yard) to the north of Lake Shore Boulevard East that extends just east of the Don Roadway to Booth Avenue. This rail yard presents physical and technical challenges for providing connections from the Port Lands to north of Lake Shore Boulevard East. This yard is the main rail access into the Port Lands. The yard is owned by TPLC and maintained on their behalf by Toronto Terminals Railway. It is primarily utilized by Toronto Water. PortsToronto has legal access to utilize the rail corridor and yard. A spur line from this yard crosses in to the Lake Shore Boulevard East median through the intersection of Carlaw Avenue, proceeds approximately 500 m in the median before crossing Lake Shore Boulevard East to the south side and into the Port Lands just west of Leslie Street. **Figure 5-26** and **5-27** provide the existing street right-of-way.

FIGURE 5-26 CROSS-SECTION – EXISTING LAKE SHORE BOULEVARD EAST

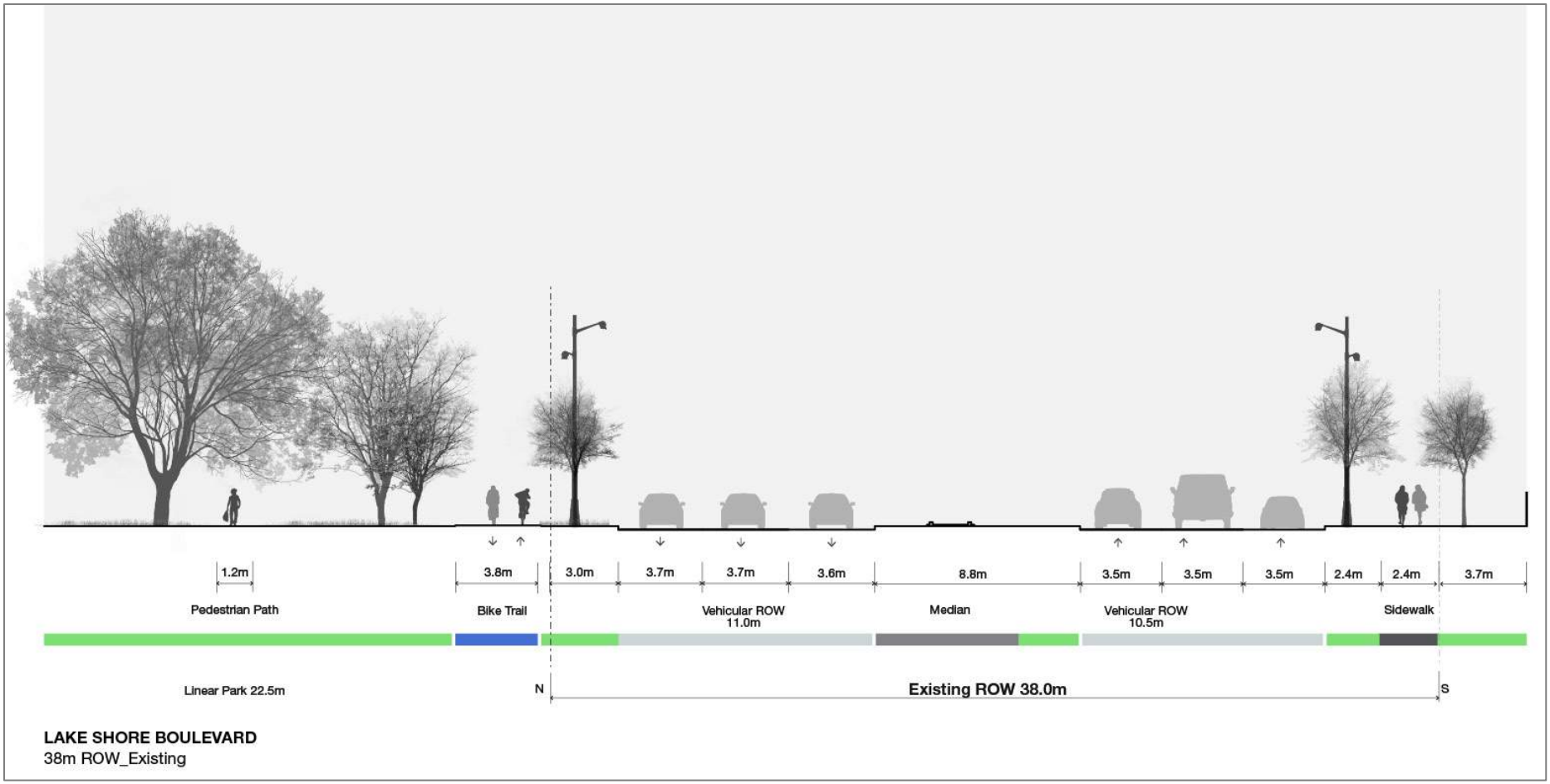
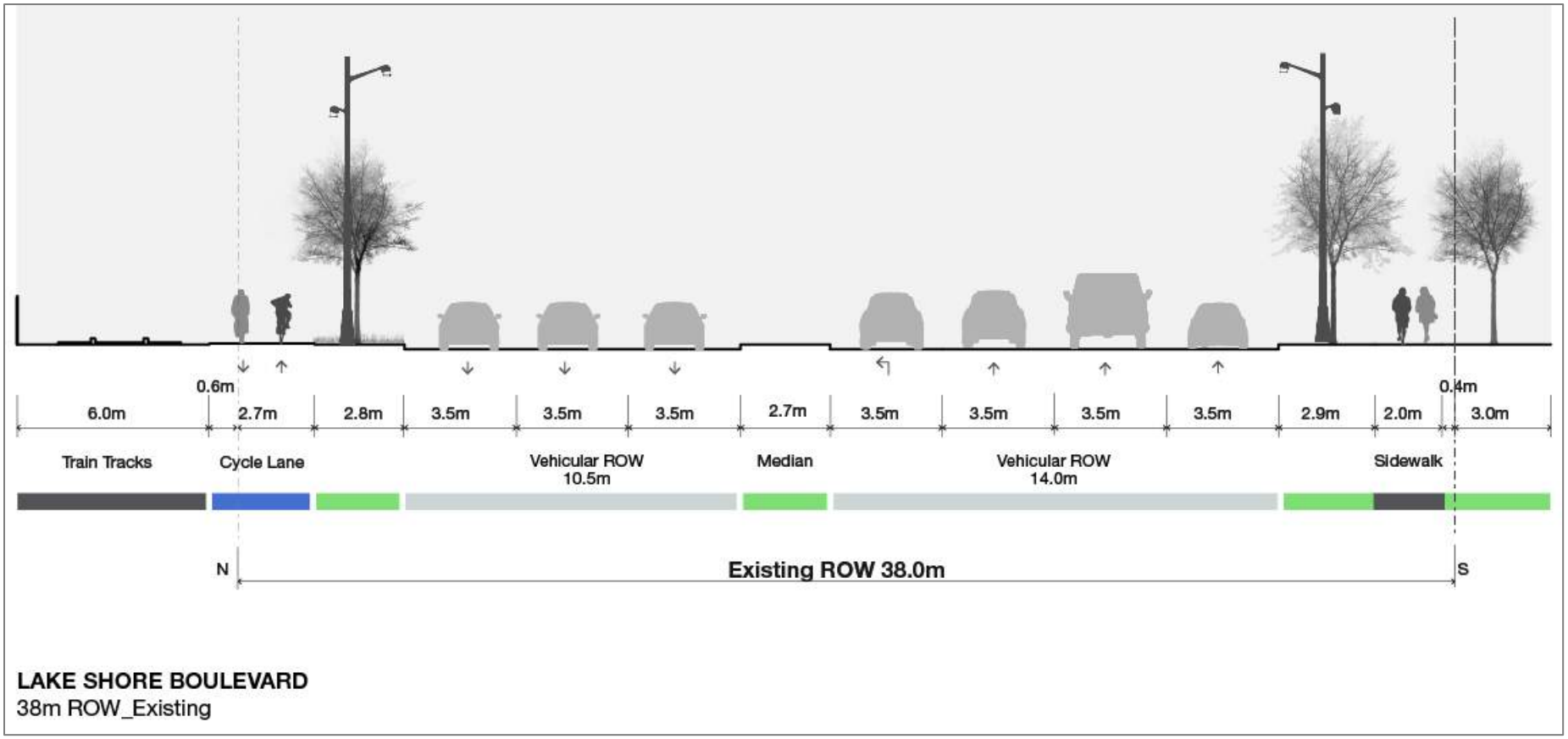


FIGURE 5-27 CROSS-SECTION – EXISTING LAKE SHORE BOULEVARD WEST

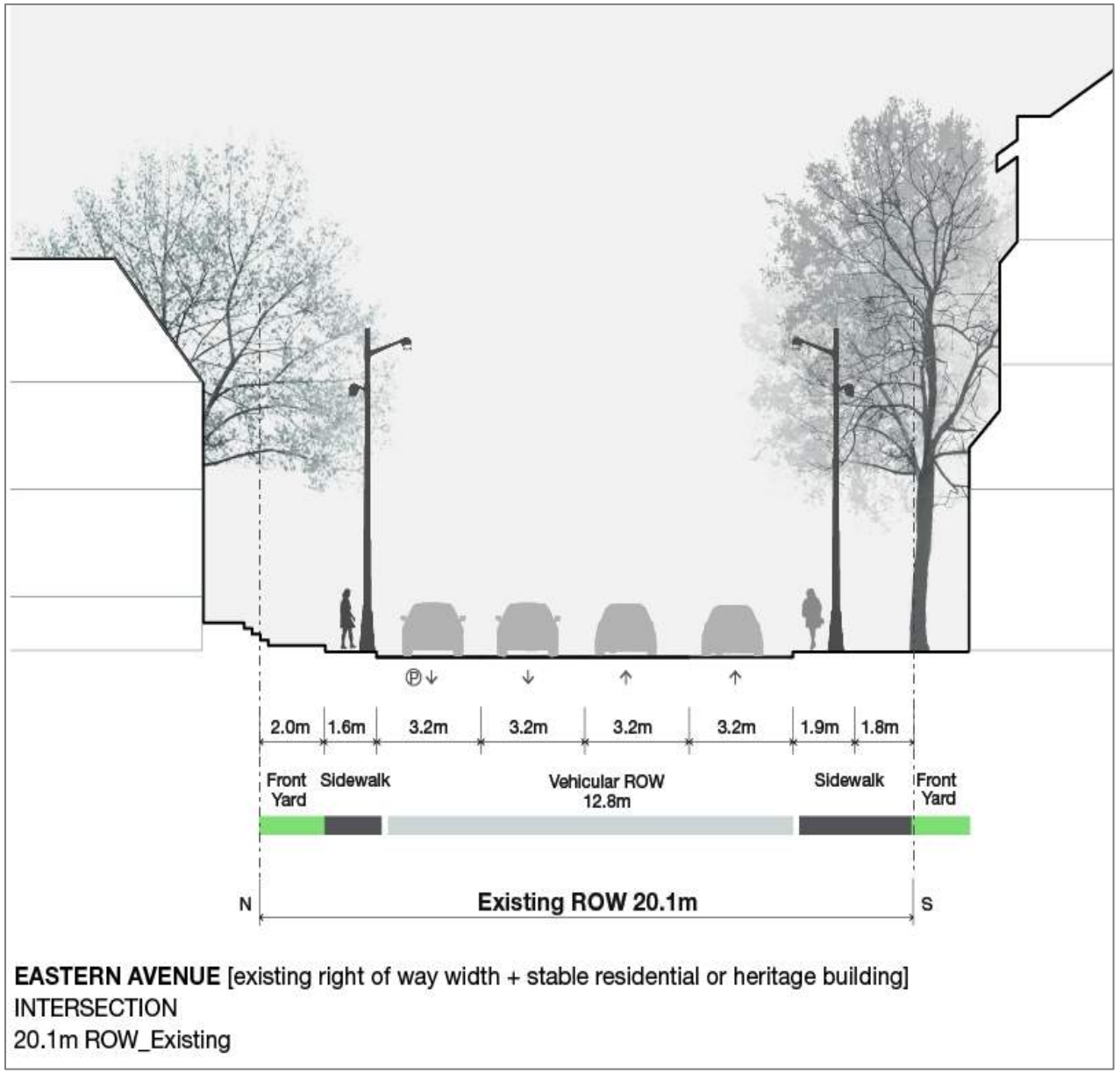


Eastern Avenue

Eastern Avenue extends along the northern boundary of the Study Area. To the west of Logan Avenue, Eastern Avenue is a four-lane minor arterial street. Between Logan Avenue and Leslie, Eastern Avenue is two lanes, with on-street bicycle lanes. To the east of Leslie Street, Eastern Avenue generally returns to a four lane arterial street, except adjacent to TTC Russell Yard where the street is two lanes. On-street parking is provided east and west of Logan Avenue. There is currently no cycling connection across the DVP. The speed limit on this street is 50 km/hr. In 2013 the Average Annual Daily Traffic within the Study Area was in the order of 17,500 vehicles. The nature of the land use north of Eastern Avenue is primarily residential, while on the south side of Eastern Avenue there is a mix of commercial, industrial, film studio and some residential uses west of Carlaw Avenue.

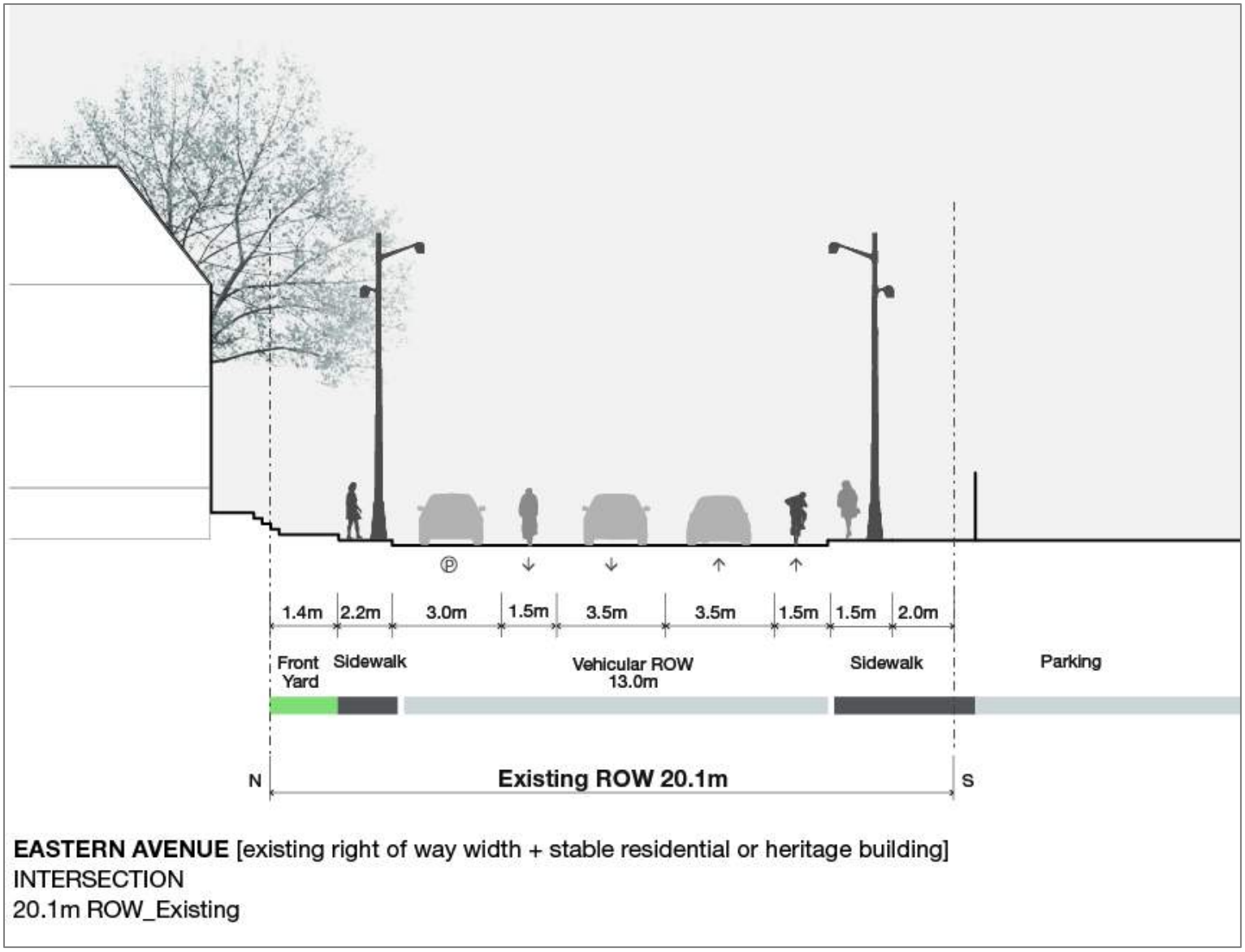
Eastern Avenue includes a bridge crossing the DVP and Don River, connecting to Richmond Street/Adelaide Street. Richmond Street East is a one way street travelling westbound into the downtown core, while Adelaide Street East is a one way street travelling eastbound away from the downtown core. **Figures 5-28** to **5-31** provide the existing street right-of-way along the different segments of the street.

FIGURE 5-28 CROSS-SECTION – EXISTING EASTERN AVENUE, WEST OF LOGAN AVENUE



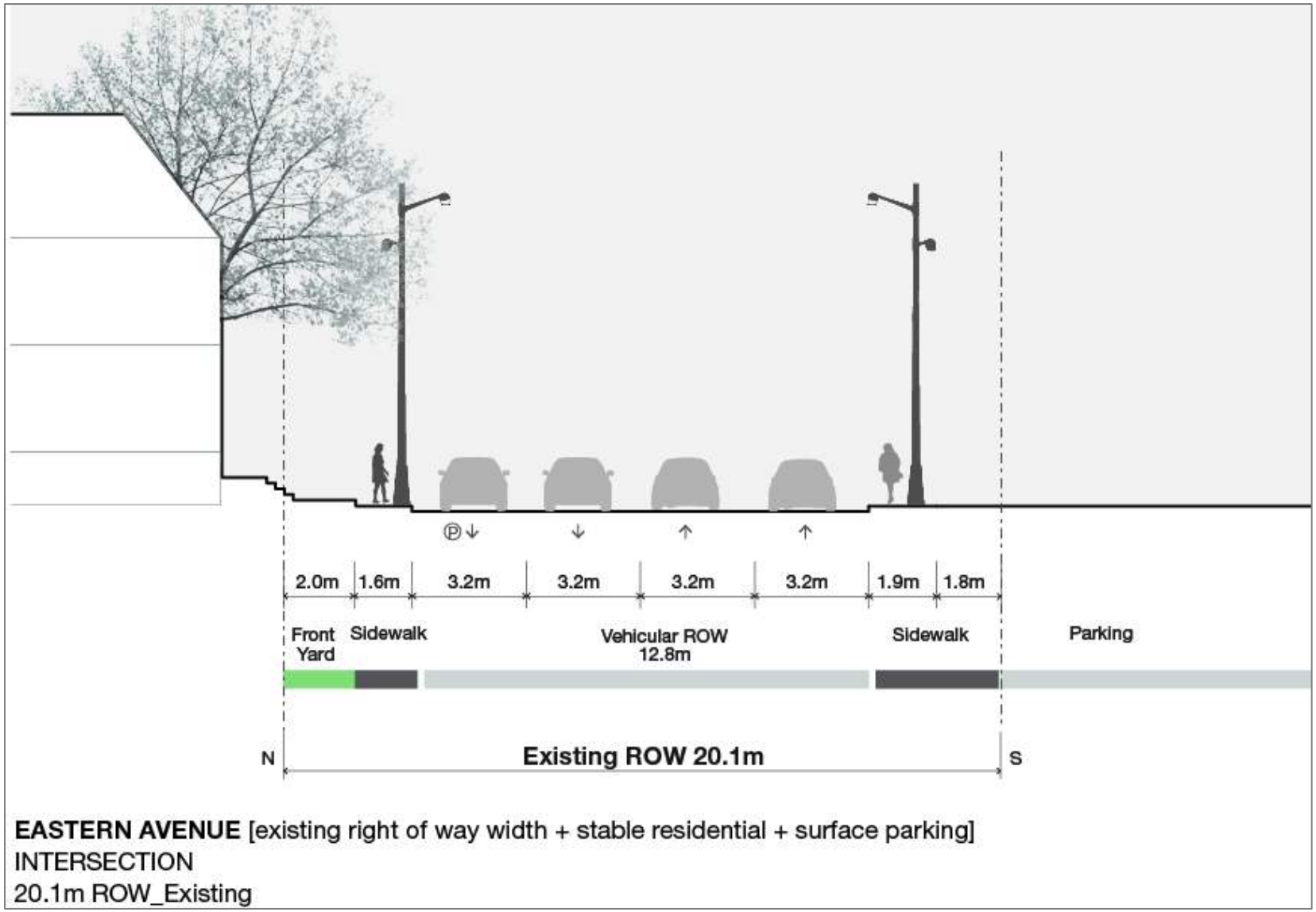
EASTERN AVENUE [existing right of way width + stable residential or heritage building]
INTERSECTION
20.1m ROW_Existing

FIGURE 5-29 CROSS-SECTION – EXISTING EASTERN AVENUE, EAST OF LOGAN AVENUE



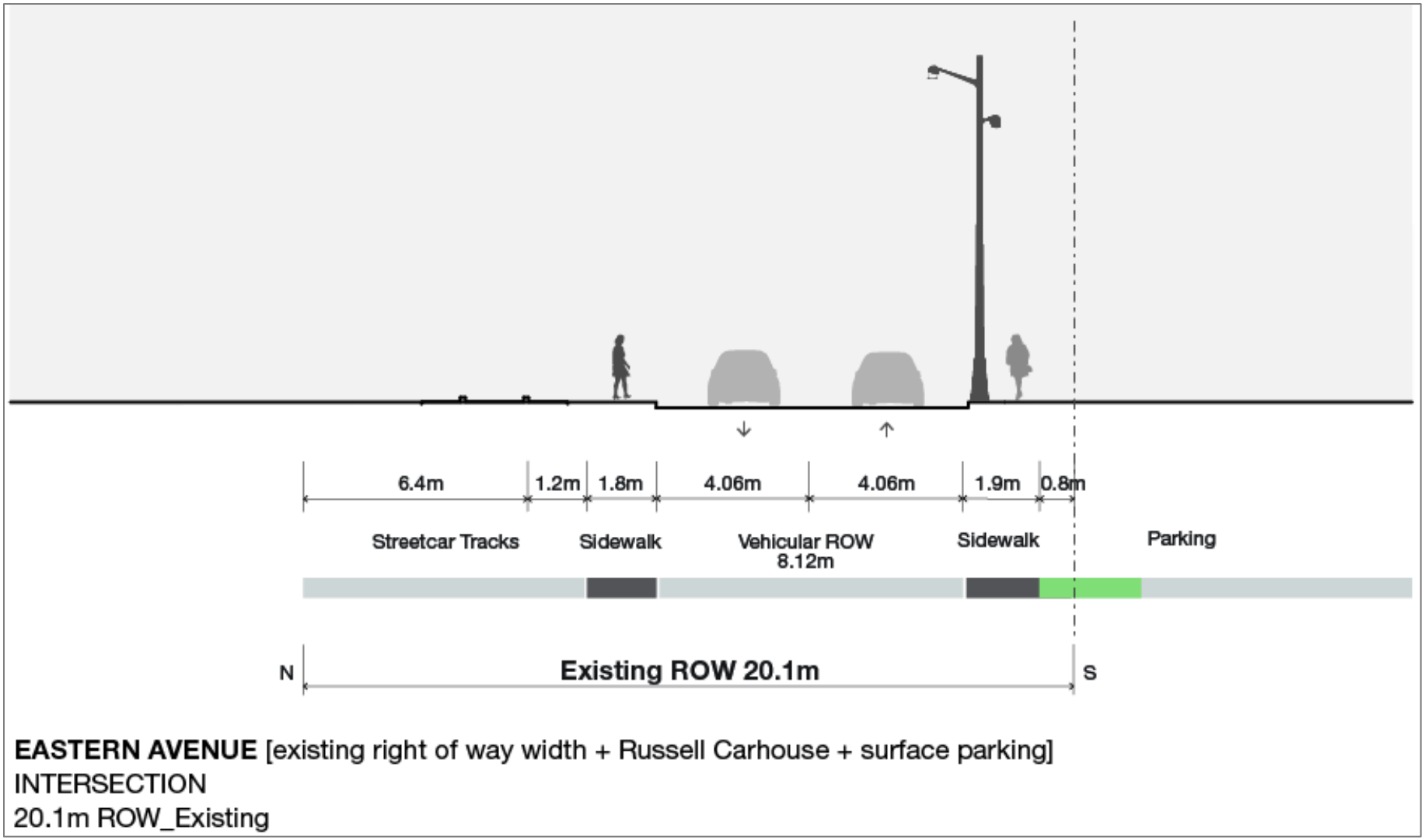
EASTERN AVENUE [existing right of way width + stable residential or heritage building]
INTERSECTION
20.1m ROW_Existing

FIGURE 5-30 CROSS-SECTION – EXISTING EASTERN AVENUE, EAST OF LESLIE STREET



EASTERN AVENUE [existing right of way width + stable residential + surface parking]
INTERSECTION
20.1m ROW_Existing

FIGURE 5-31 CROSS-SECTION – EXISTING EASTERN AVENUE, EAST OF LESLIE STREET (RUSSELL CARHOUSE)



EASTERN AVENUE [existing right of way width + Russell Carhouse + surface parking]
INTERSECTION
20.1m ROW_Existing

Collector Streets

Don Roadway

The Don Roadway is a four-lane collector street that extends from Lake Shore Boulevard East south to Commissioners Street. On the north side of the Lake Shore Boulevard East/Don Roadway intersection, access to/from the DVP is provided. Eastbound and westbound left turns are prohibited at this intersection. In 2009, the Average Annual Daily Traffic within the Study Area ranged from 4,000 to 5,800 vehicles. Stopping and parking are currently prohibited along the length of Don Roadway (**Figure 5-32**).

Commissioners Street

One of the earliest streets established in the Port Lands, Commissioners Street, is an east-west collector street with a four-lane cross-section. Commissioners Street has a 30.5 m right-of-way width extending from Cherry Street to Leslie Street and is the main east-west street within the Port Lands. Block lengths are long (approximately 225 to 250 m), and there are signalized intersections at Cherry Street, Don Roadway, Carlaw Avenue and Leslie Street. Through the Study Area, the speed limit on Commissioners Street is 50 km/hr. In 2013, the Average Annual Daily Traffic within the study Area ranged from 6,450 to 10,850 vehicles. Towards the western portion of Commissioners Street, there is a median with three steel hydroelectric transmission towers carrying overhead wires running down the centre of the street between the Don Roadway and Bouchette Street. Sidewalks are discontinuous and in some locations there are mature trees. Parking is not specifically prohibited or provided along the majority of Commissioners Street with exceptions that allow for exclusive 24-hour bus parking to the west of Don Roadway. Near many of the businesses, bus stops, and intersections in the corridor, specific "No Standing" or "No Parking" signs are provided for short segments.

PHOTO: COMMISSIONERS STREET AT SAULTER STREET SOUTH LOOKING WESTWARD

Figures 5-33 to **5-37** provide the existing street right-of-ways.

FIGURE 5-32 CROSS-SECTION – EXISTING DON ROADWAY, SOUTH OF LAKE SHORE BOULEVARD EAST TO SHIP CHANNEL

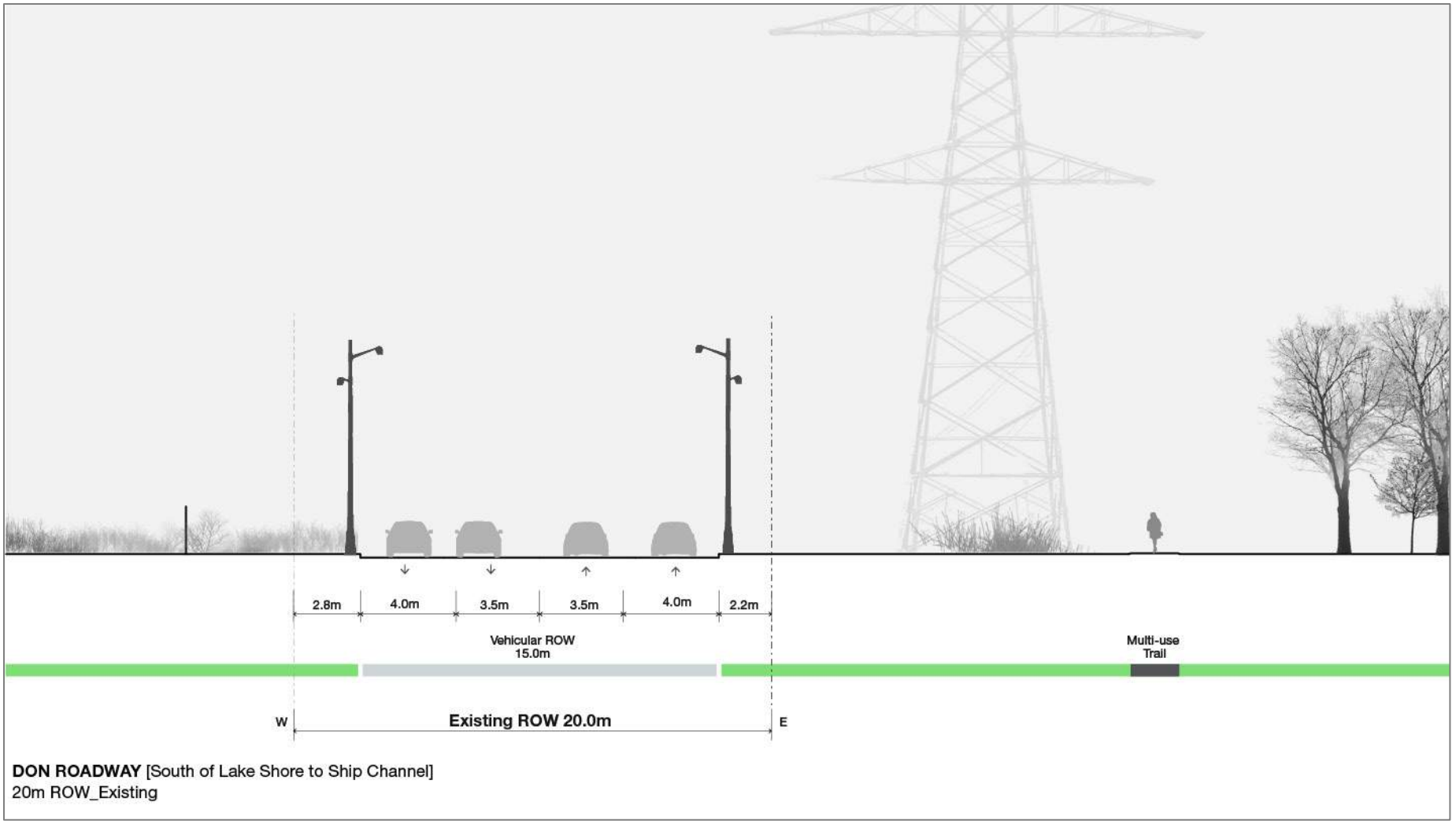


FIGURE 5-33 CROSS-SECTION – EXISTING COMMISSIONERS STREET, DON ROADWAY TO BROADVIEW AVENUE

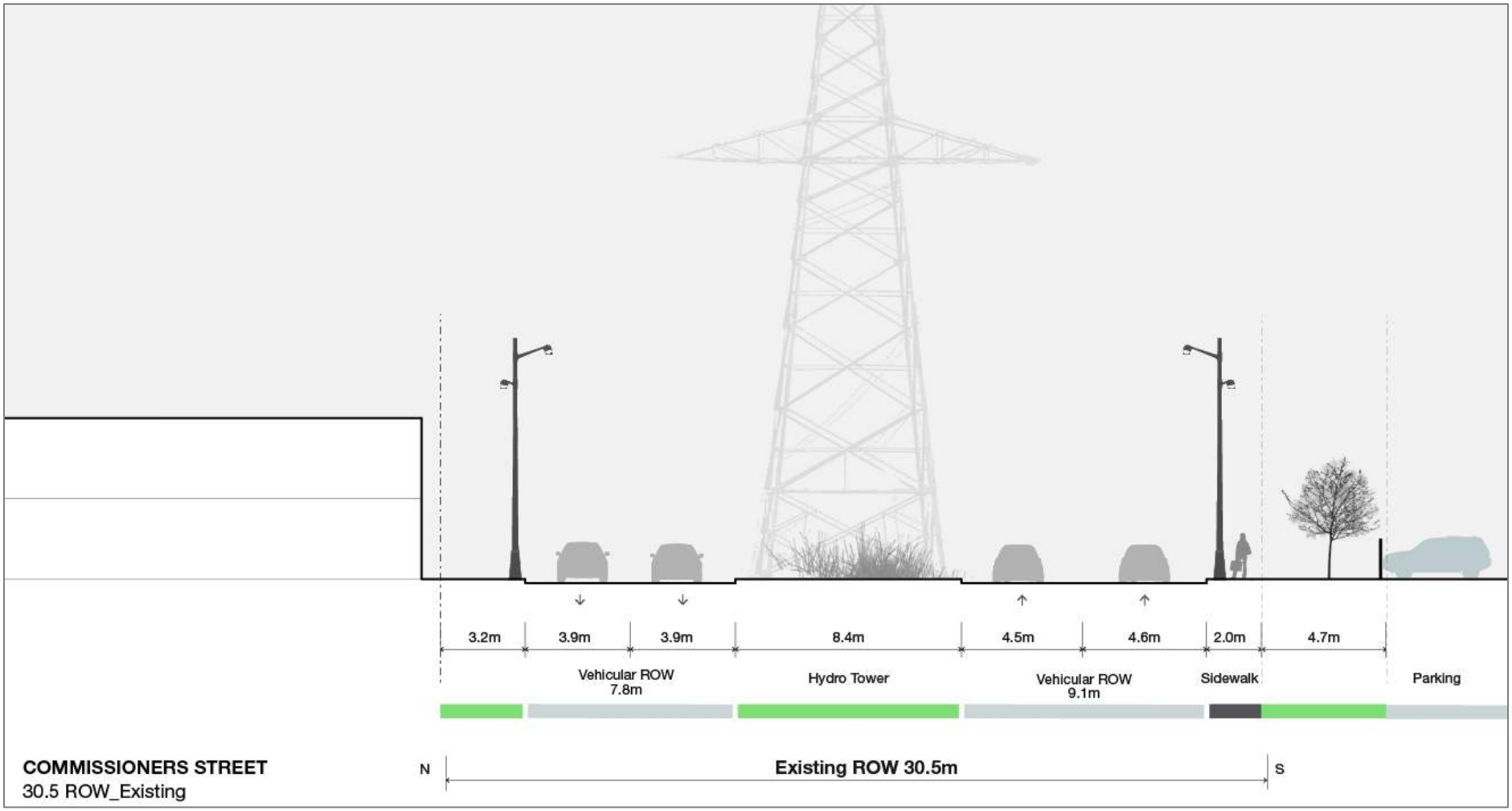


FIGURE 5-34 CROSS-SECTION – EXISTING COMMISSIONERS STREET, BOUCHETTE STREET TO CARLAW AVENUE

FIGURE 5-35 CROSS-SECTION – EXISTING COMMISSIONERS STREET, ADJACENT TO THE TURNING BASIN

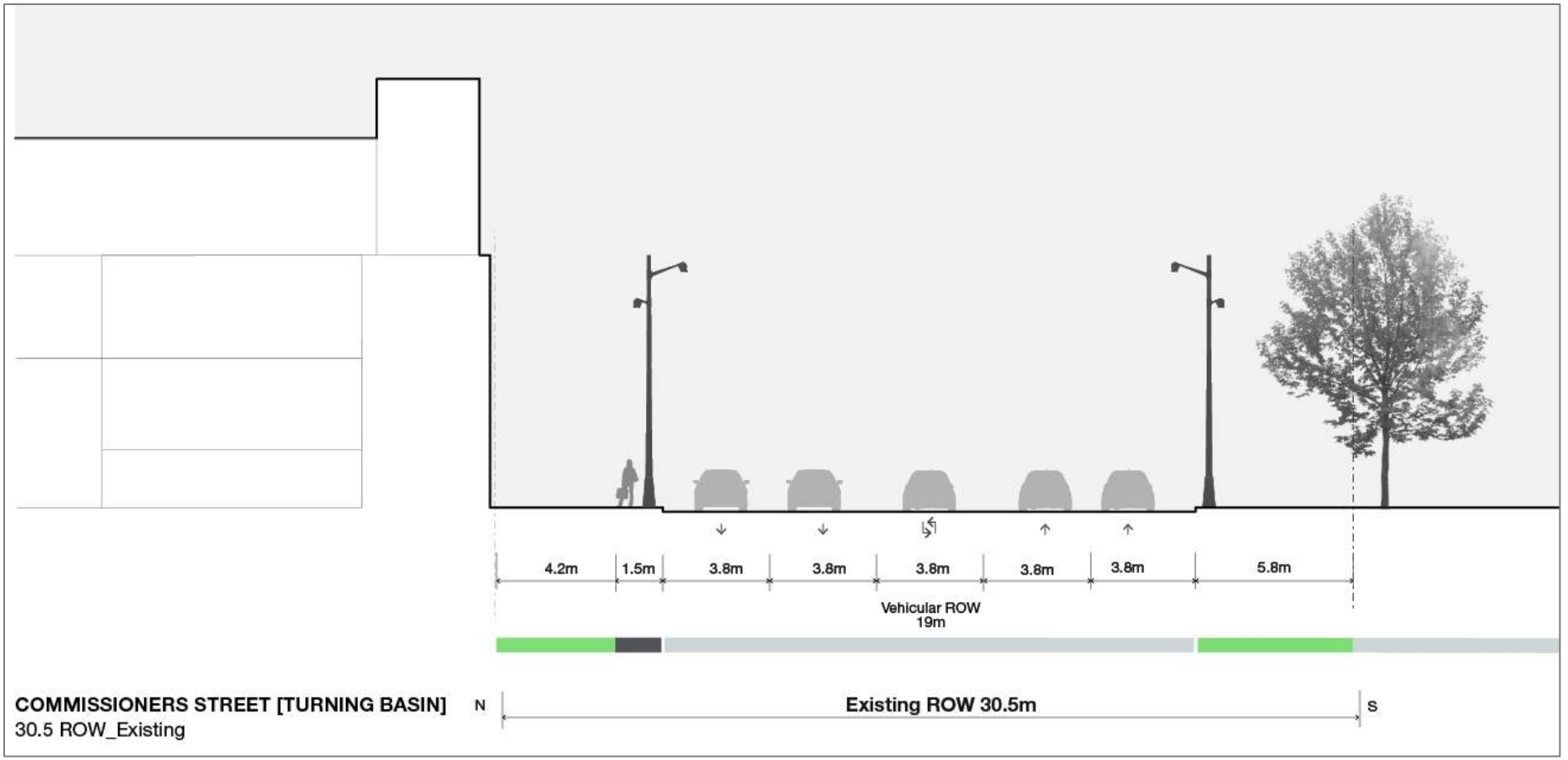


FIGURE 5-36 CROSS-SECTION – EXISTING COMMISSIONERS STREET, TURNING BASIN TO LESLIE STREET

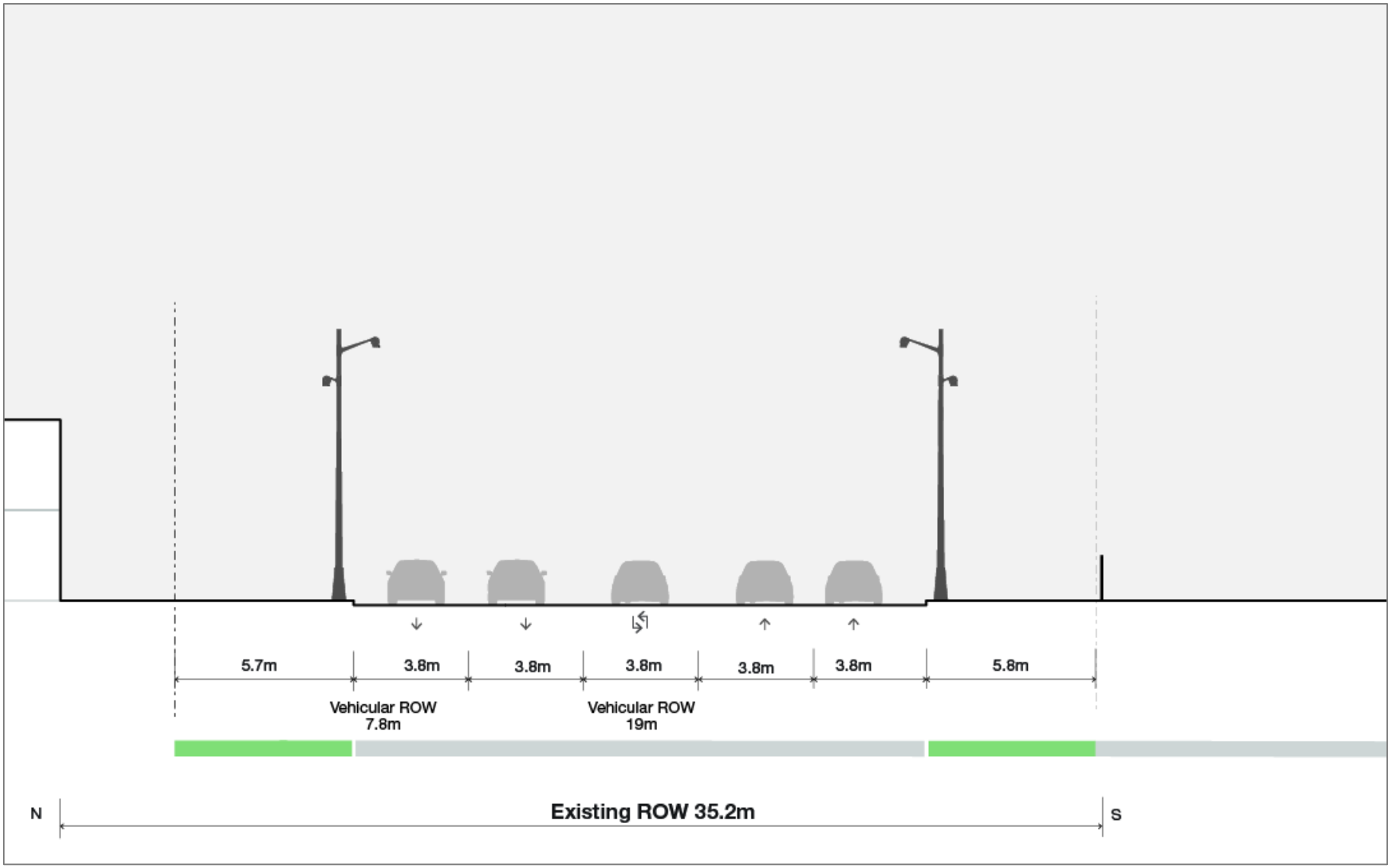
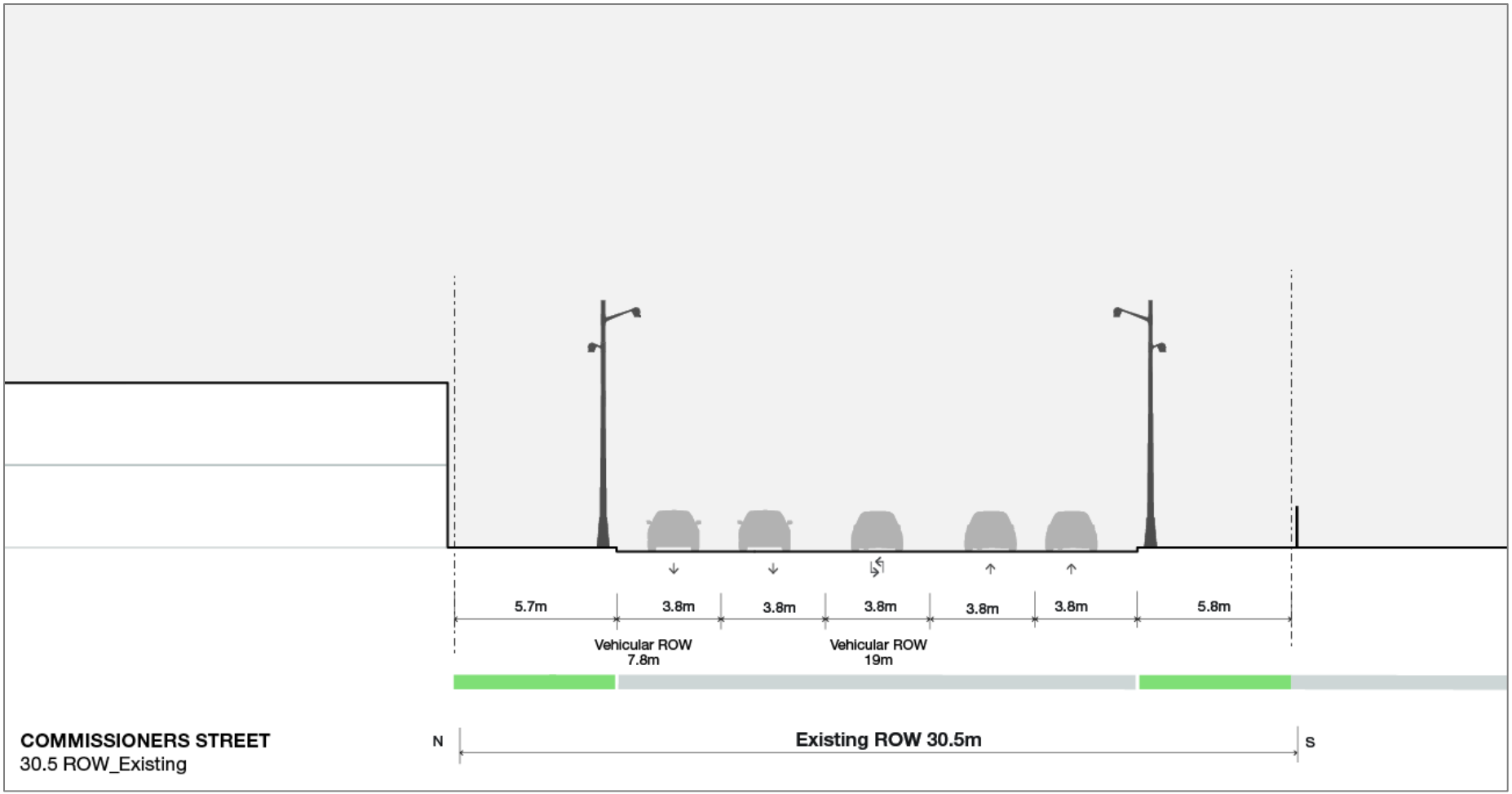


FIGURE 5-37 CROSS-SECTION – EXISTING COMMISSIONERS STREET, AT CANADA POST FRONTAGE



Cherry Street

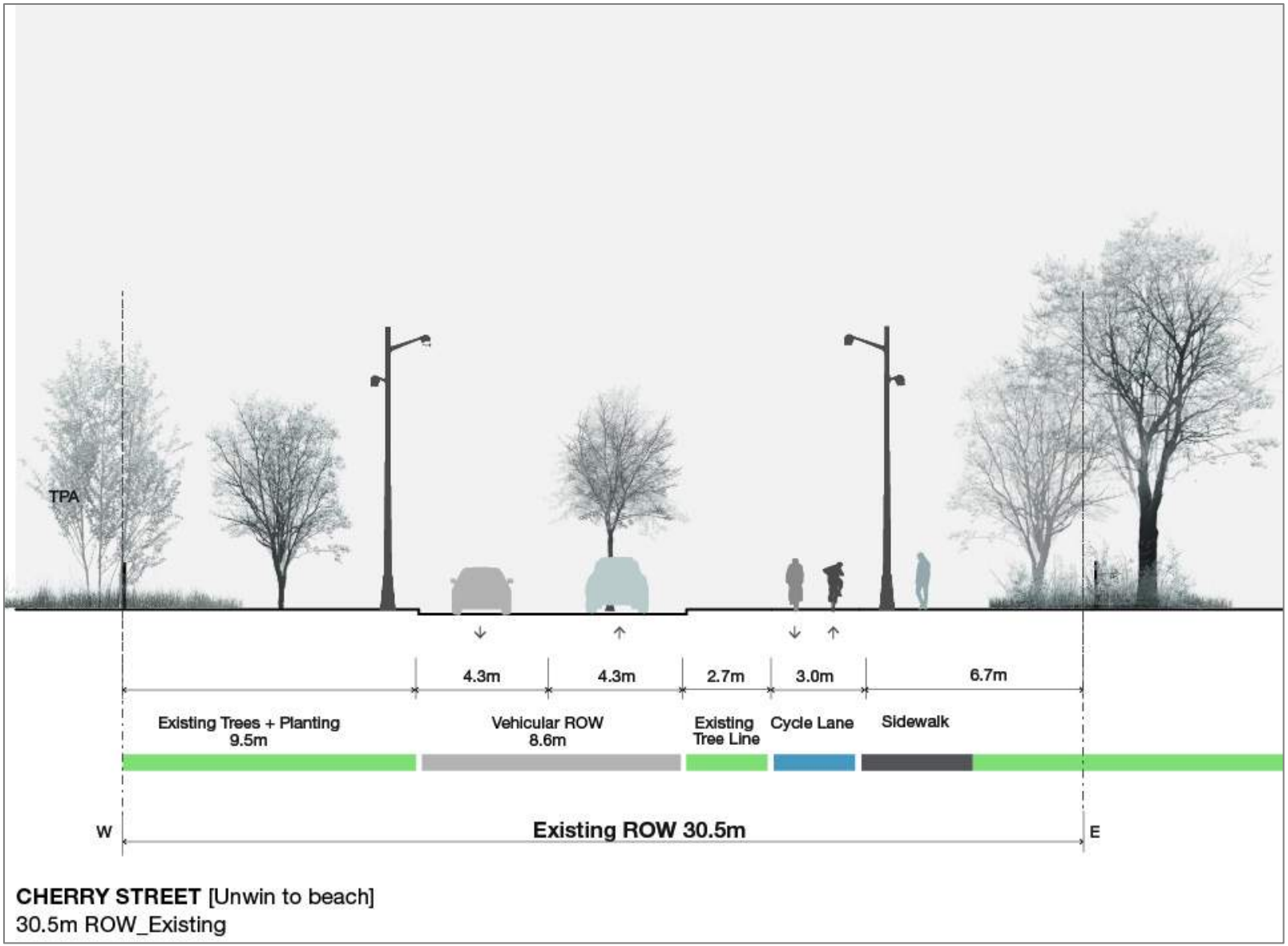
PHOTO: CHERRY STREET LOOKING NORTH AT COMMISSIONERS STREET

Cherry Street is a two-lane north-south collector street that extends south from King Street to Cherry Beach. The majority of the street is outside of the Study Area, except for a small portion that is south of the Ship Channel. The width of Cherry Street is approximately 30 m south of the Keating Channel. The speed limit on this street is 50 km/hr. In 2011, the Average Annual Daily Traffic within the Study Area was 9,300 vehicles. Cherry Street provides access to the Port Lands via two water crossings between Lake Shore Boulevard East and Unwin Avenue. To the north, there is the Keating Channel lift bridge that crosses the Keating Channel which connects the Keating Channel Precinct with the Lower Don Lands Precinct. At the southern end of the Port Lands (within the Study Area), the Ship Channel lift bridge (owned and operated by PortsToronto) provides a north-south crossing across the Ship Channel. This lift bridge is listed as a heritage resource and currently has only one lane of travel. Some on-street parking is provided north of Unwin Avenue. In 2007, the Average Annual Daily Traffic along the Bascule Bridge was 8,500 vehicles. **Figure 5-38** and **5-39** provides the existing street right-of-way.

FIGURE 5-38 CROSS-SECTION – EXISTING CHERRY STREET, SOUTH OF SHIP CHANNEL TO UNWIN AVENUE

CHERRY STREET [south of ship channel to Unwin]
30.5m ROW_Existing

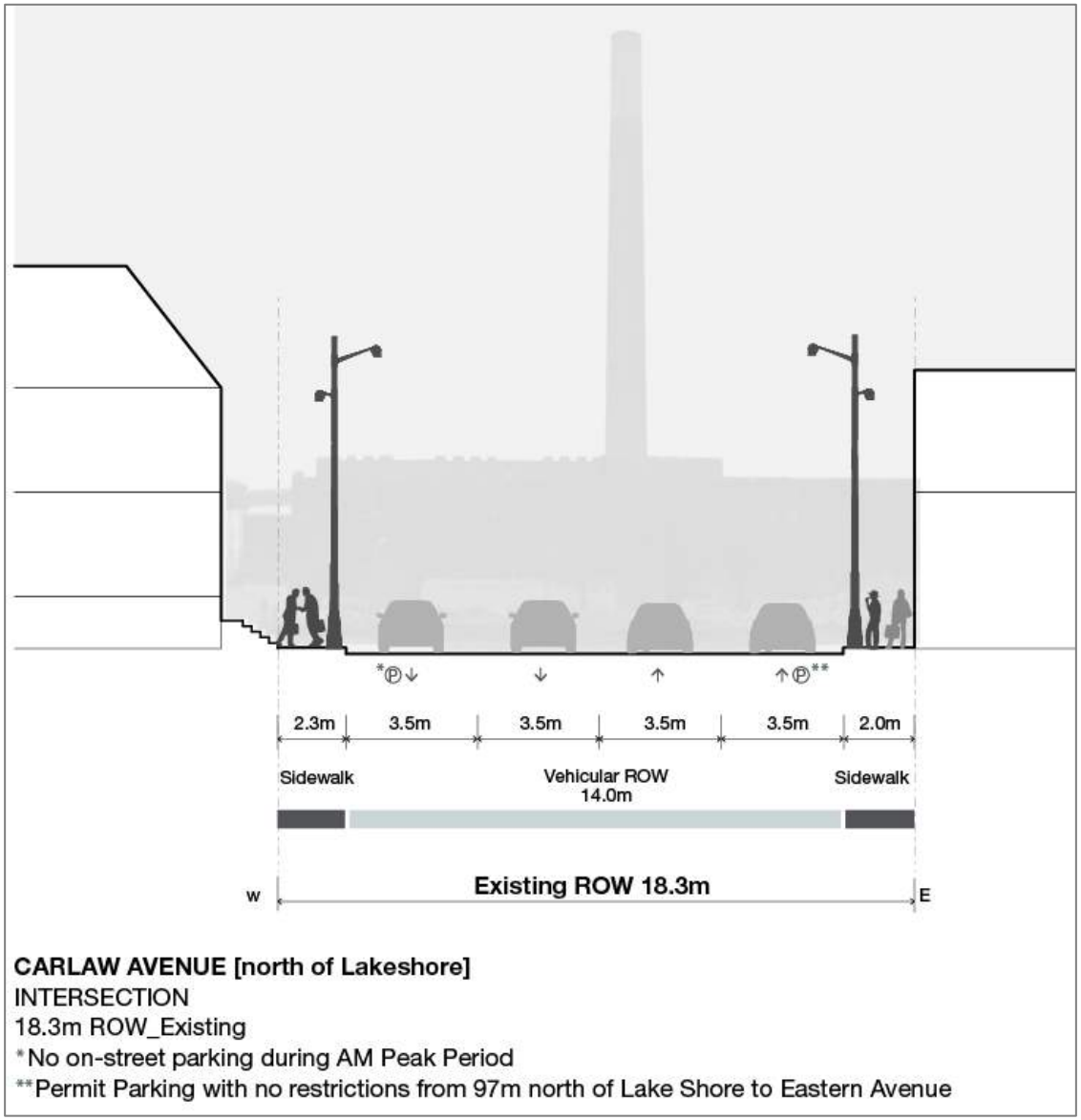
FIGURE 5-39 CROSS-SECTION – EXISTING CHERRY STREET, UNWIN AVENUE TO BEACH



Carlaw Avenue

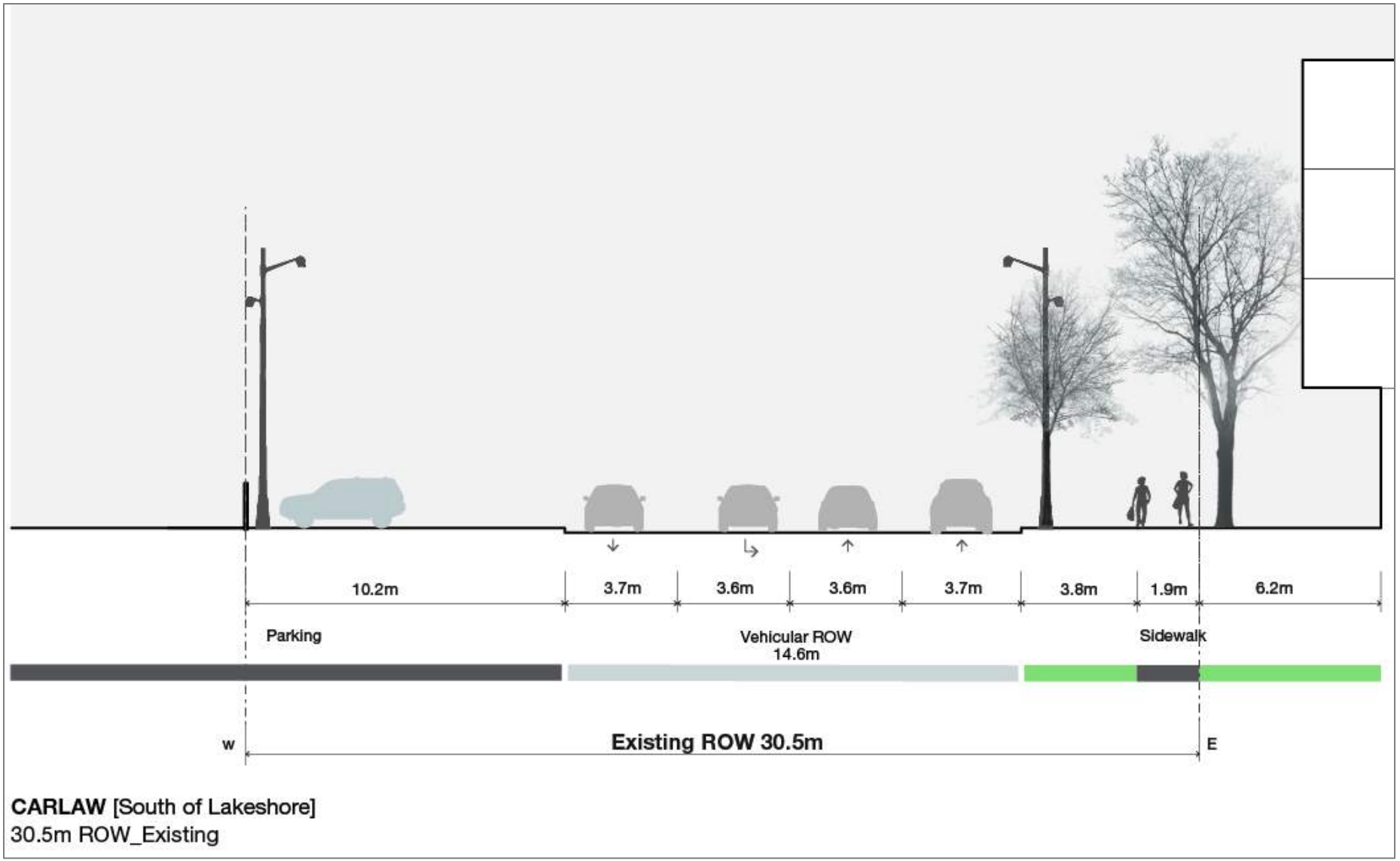
Carlaw Avenue is a north-south collector street that runs from Danforth Avenue to Commissioners Street. Carlaw Avenue becomes a minor arterial north of Eastern Avenue and becomes a one-way southbound street north of Riverdale Avenue. South of Lake Shore Boulevard East, the street has a four-lane cross-section with a landscaped boulevard with a continuous sidewalk on the east side of the street. Sidewalks are discontinuous on the west side of the street. There is a signalized intersection at Lake Shore Boulevard East permitting full moves to/from Lake Shore Boulevard East. North of Lake Shore Boulevard East, the street has a four-lane cross-section with continuous sidewalks and on-street parking on both sides of the street, with a right-of-way width of 18.3 m. In 2013, the Average Annual Daily Traffic within the Study Area ranged from 7,700 vehicles (south of Lake Shore Boulevard East) to 13,750 vehicles (north of Lake Shore). South of Lake Shore Boulevard East, the land use on either side of the street is industrial in nature. The right-of-way width is 30.5 m. Between Lake Shore Boulevard East and Eastern Avenue, the land use transitions into more mixed use, with commercial/light industrial properties primarily on the east side of the street and commercial and residential properties with driveway frontages on the west side of the street. **Figures 5-40** and **5-41** provide the existing street right-of-way.

FIGURE 5-40 CROSS-SECTION – EXISTING CARLAW AVENUE, NORTH OF LAKE SHORE BOULEVARD EAST



CARLAW AVENUE [north of Lakeshore]
INTERSECTION
18.3m ROW_Existing
*No on-street parking during AM Peak Period
**Permit Parking with no restrictions from 97m north of Lake Shore to Eastern Avenue

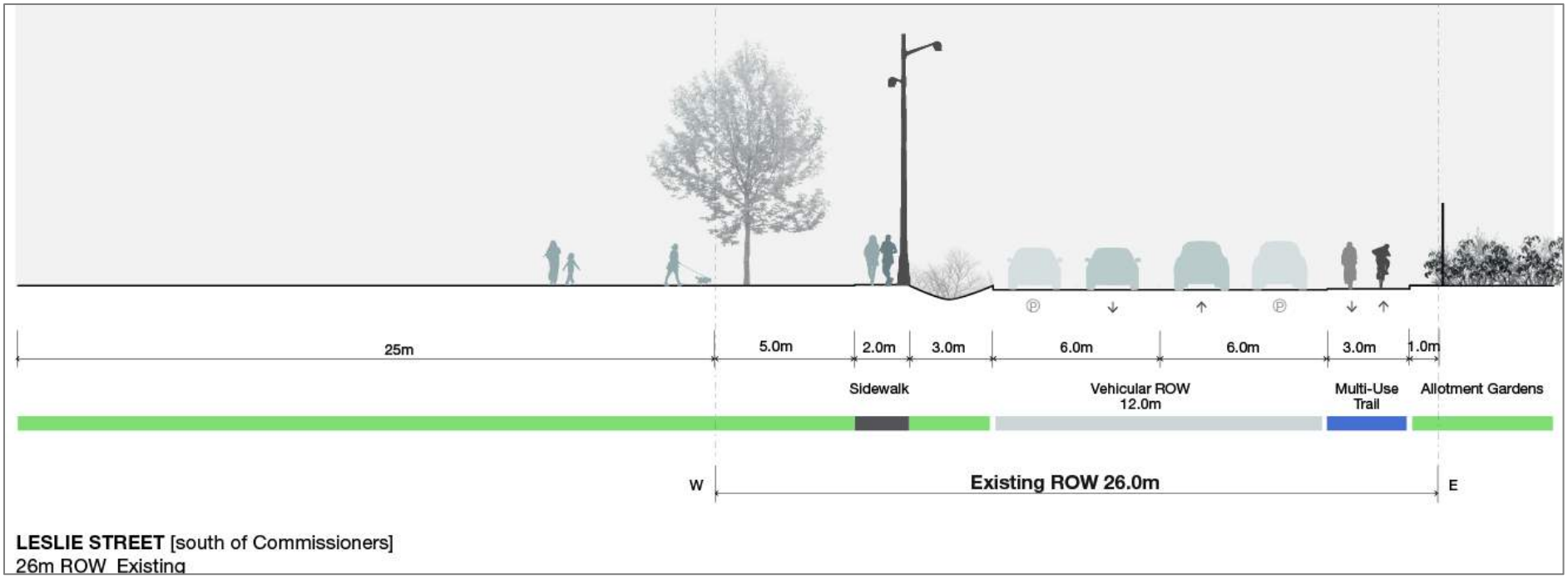
FIGURE 5-41 CROSS-SECTION – EXISTING CARLAW AVENUE, SOUTH OF LAKE SHORE BOULEVARD EAST



Leslie Street

Leslie Street is a four-lane, north-south minor arterial street north of Lake Shore Boulevard East. The speed limit is 50 km/hr. In 2013, the Average Annual Daily Traffic within the Study Area ranged from 8,600 to 10,650 vehicles. There are continuous sidewalks on both sides of the street between Lake Shore Boulevard East and Eastern Avenue. South of Lake Shore Boulevard East, Leslie Street becomes a four-lane collector street until Commissioners Street, where it carries with two lanes of traffic in each direction and has a continuous sidewalk on the west side of the street and two multi-use lanes (one in each direction) on the east side of the street (the Martin Goodman Trail). South of Commissioners Street, Leslie Street is classified as a local street (**Figure 5-42**). The pavement width remains the same, but consists of only one wide lane in each direction. Leslie Street between Queen Street and Commissioners Street was recently reconstructed to accommodate new streetcar tracks to the Leslie Barns Streetcar and Maintenance and Storage Facility located on the east side of Leslie Street, south of Lake Shore Boulevard East. The TSMP EA is primarily addressing the portion of the street between Commissioners Street and Unwin Avenue. The implementation of streetcar tracks along the corridor will effectively remove all parking along Leslie Street north of Lake Shore Boulevard East.

FIGURE 5-42 CROSS-SECTION – EXISTING LESLIE STREET, SOUTH OF COMMISSIONERS STREET



Local Streets

Villiers Street

Villiers Street is an east-west street with a typical right-of-way width of 36 m west of the Don Roadway and 24 m east of the Don Roadway. The speed limit on this street is 50 km/hr. West of the Don Roadway, Villiers Street consists of two roadways with a single lane of travel in each direction separated by a non-active railway right-of-way. Sidewalks are located on both sides of the street and on-street parking is permitted. East of the Don Roadway, Villiers Street consists of two lanes with no sidewalks. On-street parking is permitted on both sides of the street.

Basin Street

Basin Street is an east-west local street with a two-lane cross section and a 20 m right-of-way width. Basin Street terminates east of Bouchette Street at the Turning Basin. The speed limit on this street is 50 km/hr. The portion of the road west of Bouchette Street was officially closed through the Pinewood Toronto Studios site plan application. As such the Studio has access control of Basin Street between Bouchette Street and Saulter Street South.

Saulter Street South

Saulter Street South is a two-lane north-south local street between Lake Shore Boulevard East and Commissioners Street with on-street parking located on either side of the street. The speed limit on this street is 50 km/hr. The right-of-way width is approximately 30 m and there are no sidewalks. Saulter Street intersects with Lake Shore Boulevard East at a T-intersection, providing right-in/right-out access to/from the south. At this location, the Gardiner Expressway is fully elevated and the Keating Yard is located on the north side of Lake Shore Boulevard East.

Bouchette Street

Bouchette Street is a north-south street with a 26 m right-of-way width between Lake Shore Boulevard East and Basin Street. The speed limit on this street is 50 km/hr. There is on-street parking on both sides of the street; however, there are no sidewalks. There is right-in/right-out access to/from Lake Shore Boulevard East. Bouchette Street aligns with the lower portion of the elevated Gardiner Expressway ramp where it ascends to the west and also aligns with the rail marshaling area yard (Keating Yard) on the north of Lake Shore Boulevard East.

Logan Avenue

Logan Avenue is a north-south street with a 26 m right-of-way width between Lake Shore Boulevard East and Commissioners Street. The speed limit on this street is 50 km/hr. In 2013 the Average Annual Daily Traffic within the Study Area ranged from 1,090 vehicles to 5,212 vehicles. On-street parking is provided on both sides of the street; however there are no sidewalks. There is right-in/right-out access to/from Lake Shore Boulevard East. North of Lake Shore Boulevard East, Logan Avenue is a two-lane street with sidewalks on both sides of the street. On-street parking is provided on the west side of the street. Logan Avenue turns into a one-way street approximately 225 m north of Lake Shore Boulevard East, permitting southbound traffic from Eastern Avenue.

Booth Avenue

Booth Avenue is a north-south street with a 20 m right-of-way width between Eastern Avenue and Lake Shore Boulevard East. The speed limit on this street is 50 km/hr. On-street parking is permitted on the west side and a sidewalk is present on the east side of the street. There is right-in/right-out access to/from Lake Shore Boulevard East.

Morse Street

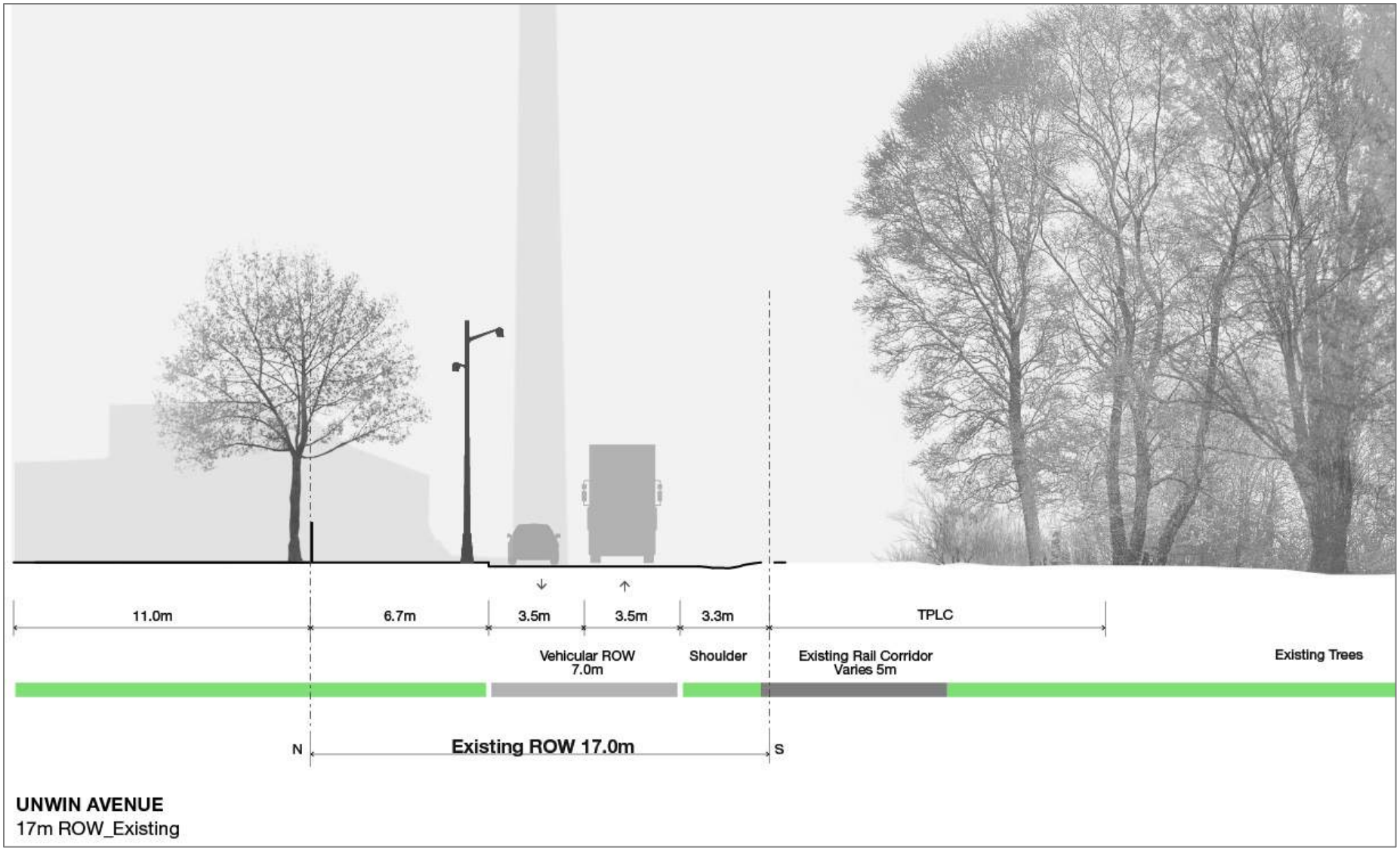
Morse Street is a north-south street with a 17 m right-of-way width between Eastern Avenue and Lake Shore Boulevard East. The speed limit on this street is 50 km/hr. Morse Street turns into a one-way street travelling north after the commercial plaza at the corner of Lake Shore Boulevard East and Morse Street. There are sidewalks on both sides of the street and on-street parking is permitted on one side of the street.

Unwin Avenue

Unwin Avenue is a two-lane east-west street with a 17 m right-of-way width located south of the Ship Channel, providing a connection between Leslie Street and Cherry Street. It has a speed limit of 50 km/hr. In 2011, the Average Annual Daily Traffic within the Study Area ranged from 2,400 vehicles to 4,500 vehicles. Unwin Avenue was established after 1930 when the Ship Channel lift bridge was constructed to provide access to the south portion of the Port Lands Industrial District. The section of Unwin Avenue east of the Hearn Generation Station is a private street owned by the City through TPLC. A one-lane bailey bridge provides access across the Hearn's discharge channel. East of the bridge, Unwin Avenue takes a 90 degree turn. West of the Hearn, there are railway tracks, utilized by the PortsToronto, that run south of the street west of the Hearn and north of the street, east of the Hearn to Leslie Street. The tracks cross Unwin Avenue immediately west of the Hearn Generation Station. The street is located approximately 50 m south of the Hearn smoke stack. **Figure 5-43** provides the existing street right-of-way.

PHOTO: UNWIN AVENUE LOOKING EASTWARD

FIGURE 5-43 CROSS-SECTION – EXISTING UNWIN AVENUE, 17 M RIGHT-OF-WAY

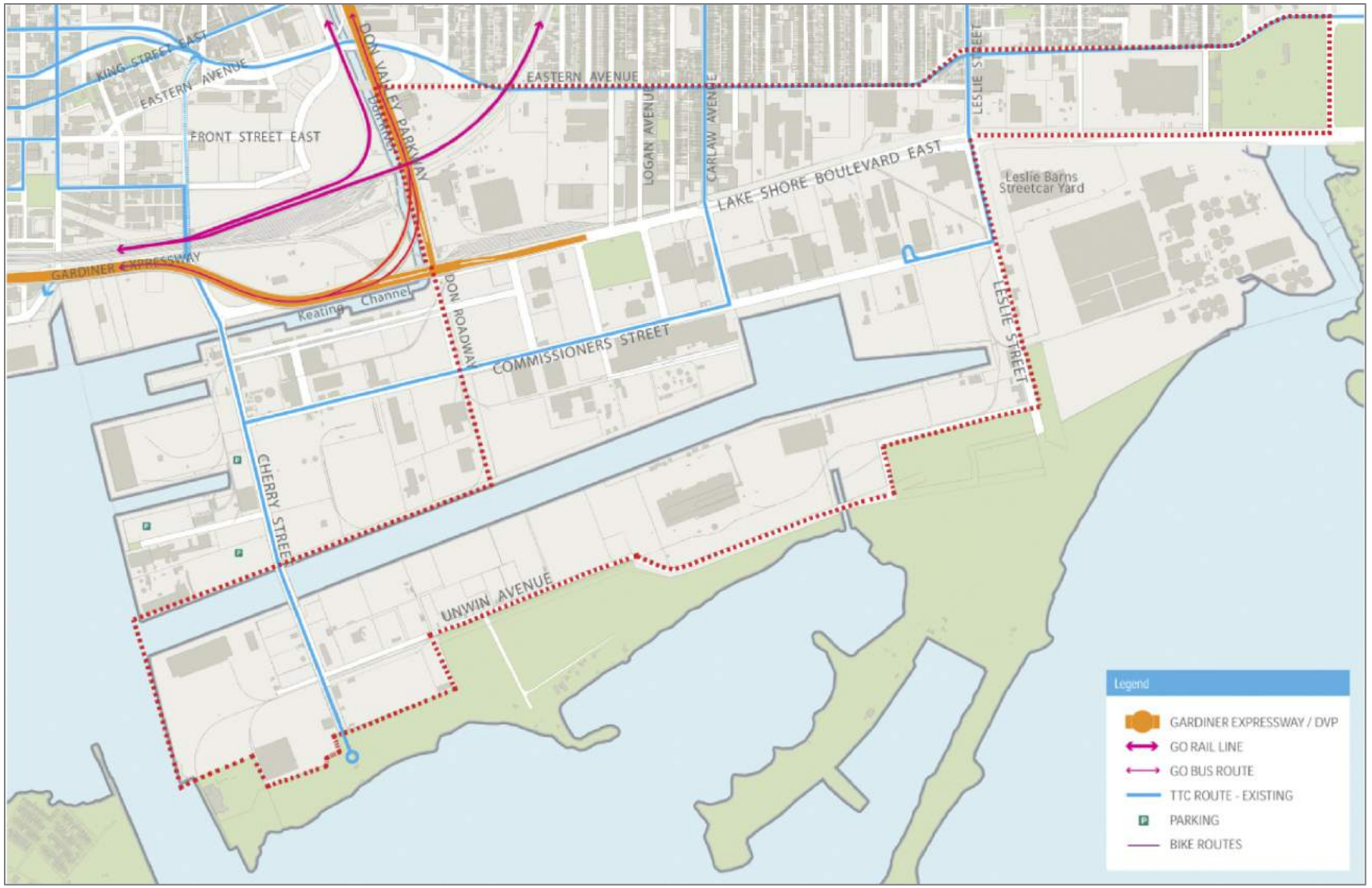


5.7.1.2 TRANSIT

Transit service in the Study Area is provided by the TTC, which provides all-day every day service via two local bus routes and one express route (note, the express route does not stop or provide any service in the Study Area) (**Table 5-5**). Streetcar service is also provided in the general area along Queen Street just north of Eastern Avenue. There is a GO Rail line that travels through the Study Area and continues westward to Union Station via the Lake Shore East line which runs north of Lake Shore Boulevard East and Eastern Avenue; however, the stations are located outside of the Study Area. GO bus service operates along the DVP/Gardiner. The new Leslie Street connecting track does not provide service on Leslie Street. It is only used for streetcars headed to the Leslie Barns.

Figure 5-44 displays the existing transit service in the Study Area. Given that the only full service bus routes in the Study Area are the 72 Pape routes, there is limited transit infrastructure to support redevelopment in the Study Area. Improved transit service is proposed for the Lower Don Lands. This is discussed in **Section 6.9.2**.

FIGURE 5-44 EXISTING TRANSIT NETWORK



Source: City of Toronto, 2016

TABLE 5-5 SUMMARY OF EXISTING TRANSIT SERVICE

Route	Route Type	Service Type	Peak Frequency (minutes)	Peak Hour Capacity (passengers/ hour)	Hours of Service
72A Pape Stn - Eastern	Local	Bus	18	307	Weekday: 6:20 AM – 1:29 AM Saturday: 5:17 AM – 1:28 AM Sunday: 6:01 AM – 1:28 AM
72B Pape Stn – Union Stn	Local	Bus	18	307	Weekday: 5:03 AM – 1:45 AM Saturday: 6:30 AM – 1:20 AM Sunday: 7:49 AM – 1:20 AM
83 Jones	Local	Bus	12	460	Weekday: 5:57 AM – 1:20 AM Saturday: 6:15 AM – 1:15 AM Sunday: 8:45 AM – 1:00 AM
143 Downtown/Beach Express	Express	Bus	15	368	Weekday: 7:00AM – 9:00AM; 4:10 PM – 6:40 PM
31/31B	Local	Bus	8	690	Weekdays: 5:25AM – 1:40AM Saturday: 5:55AM – 1:30AM Sunday: 7:30AM – 1:33AM
501 Queen	Local	Streetcar	5	1,860	Weekday: 4:57 AM – 12:58 AM Saturday: 4:57 AM – 1:00 AM Sunday: 4:57 AM – 12:52 AM
502	Local	Streetcar	12	775	Weekdays: 6:13AM – 6:43PM
503	Local	Streetcar	12	775	Weekdays: 7:08AM – 9:22AM; 4:07PM – 6:19PM
504	Local	Streetcar	5	1,860	Weekdays: 4:57AM – 2:03AM Saturday: 4:55AM – 2:10AM Sunday: 5:20AM – 2:06AM
505	Local	Streetcar	5	1,860	Weekdays: 5:20AM – 1:44AM Saturday: 5:36AM – 1:37AM Sunday: 5:30AM – 1:25AM

Bus Routes

Route 72 Pape provides north-south all day every day bus service between Pape Station on Line 2 Bloor-Danforth and Union Station on Line 1 Yonge-University. Service is provided to the Pape Avenue/Carlaw Avenue area, the Port Lands and Queens Quay. The service uses a fully accessible low-floor bus with bike racks. The route operates seven days a week with a frequency ranging from 10 minutes to 30 minutes. Route 121 Fort York-Esplanade provides east-west bus service between Union Station on Line 1 Yonge-University and the Esplanade, the Distillery District, and, during the summer months, Cherry

Beach. Route 83 Jones provides north-south bus service from Don Lands Station on Line 2 Bloor-Danforth to a turnaround at Leslie Street and Commissioners Street. The service uses a fully accessible low-floor bus with bike racks. Service is operated seven days a week with a frequency ranging from 10 minutes to 30 minutes.

Route 143 Downtown/Beach Express provides an east-west express bus service along Eastern Avenue (through the Study Area), between Neville Park Loop and the Downtown Toronto area. No stops are made within the Study Area.

Route 31/31B Greenwood operates limited service along Eastern Avenue east of Leslie Street. Route 31 operates between Line 2 Bloor-Danfroth (Greenwood station) and the intersection of Greenwood Avenue and Queen Street East. The 31B route is an extended loop that operates during the late evening until 7:40 am from Monday to Saturday, seven days a week. The bus operates on a one-way loop travelling westbound along Queen Street East to southbound on Leslie Street, then eastbound along Eastern Avenue to northbound along Woodward Avenue and finally westbound along Queen Street East to return back to Greenwood Avenue. Route 31 operates with a frequency ranging from eight to 12 minutes Monday through Friday and between 20 and 25 minutes on the weekend. Route 31B makes four trips during the afternoon peak period on weekdays (every 24 minutes) and operates with a frequency of 25 minutes during the early morning and late evening on Saturdays.

Streetcar Routes

There are three streetcar routes that operate along Queen Street, approximately 300 m north of Eastern Avenue. This is within walking distance of those travelling to, and from, the vicinity of Eastern Avenue. The 501 Queen streetcar route operates between Neville Park Loop, Humber Loop and Long Branch Loop, generally in an east-west direction. It serves the Queen and Osgoode Stations on Line 1 Yonge-University. Two services are operated. The 501 (Neville Park-Long Branch) is the main branch, and operates at all times, seven days a week. The 501 (Neville Park-Humber Loop) short-turn branch also operates at all times, seven days a week. The frequency ranges from five to ten minutes.

The 503 Kingston Road streetcar operates along Queen Street during the weekday peak period only and the 502 Downtowner streetcar operates during the weekday peak period and midday peak. The closest stops to the Study Area are stops located at the intersections of Queen Street and Leslie Street, Jones Avenue, Caroline Avenue, Pape Avenue, Carlaw Avenue, Logan Avenue, Empire Avenue, Boulton Avenue, Broadview Avenue and Carroll Street.

Streetcar service is also provided on Broadview Avenue via the 504 King Street route and the 505 Dundas route. There is a stop at Queen Street and Broadview Avenue on both routes which is within walking distance of those travelling to and from the vicinity of Eastern Avenue.

The 504 King streetcar route operates along King Street West between the Line 2 Bloor-Danforth (Dundas West station) and the Broadview station. It travels north-south along Broadview Avenue between Queen Street East and Danforth Avenue. The 504 King route operates at all times, seven days a week.

The 505 Dundas streetcar route operates along Dundas Street West between Line 2 Bloor-Danforth (Dundas West station) and Broadview station. It travels north-south along Broadview Avenue between Queen Street East and Danforth Avenue. The 505 Dundas route operates at all times, seven days a week.

5.7.1.3 TRANSIT AMENITIES

Bus shelter amenities are limited throughout the Study Area. There are some newly constructed bus shelters providing shelter, a seat, a system map and waste receptacles. Some of the stops along Commissioners Street are simple concrete pads with a sign, while others have been reconstructed with shelters.

5.7.1.4 PEDESTRIANS

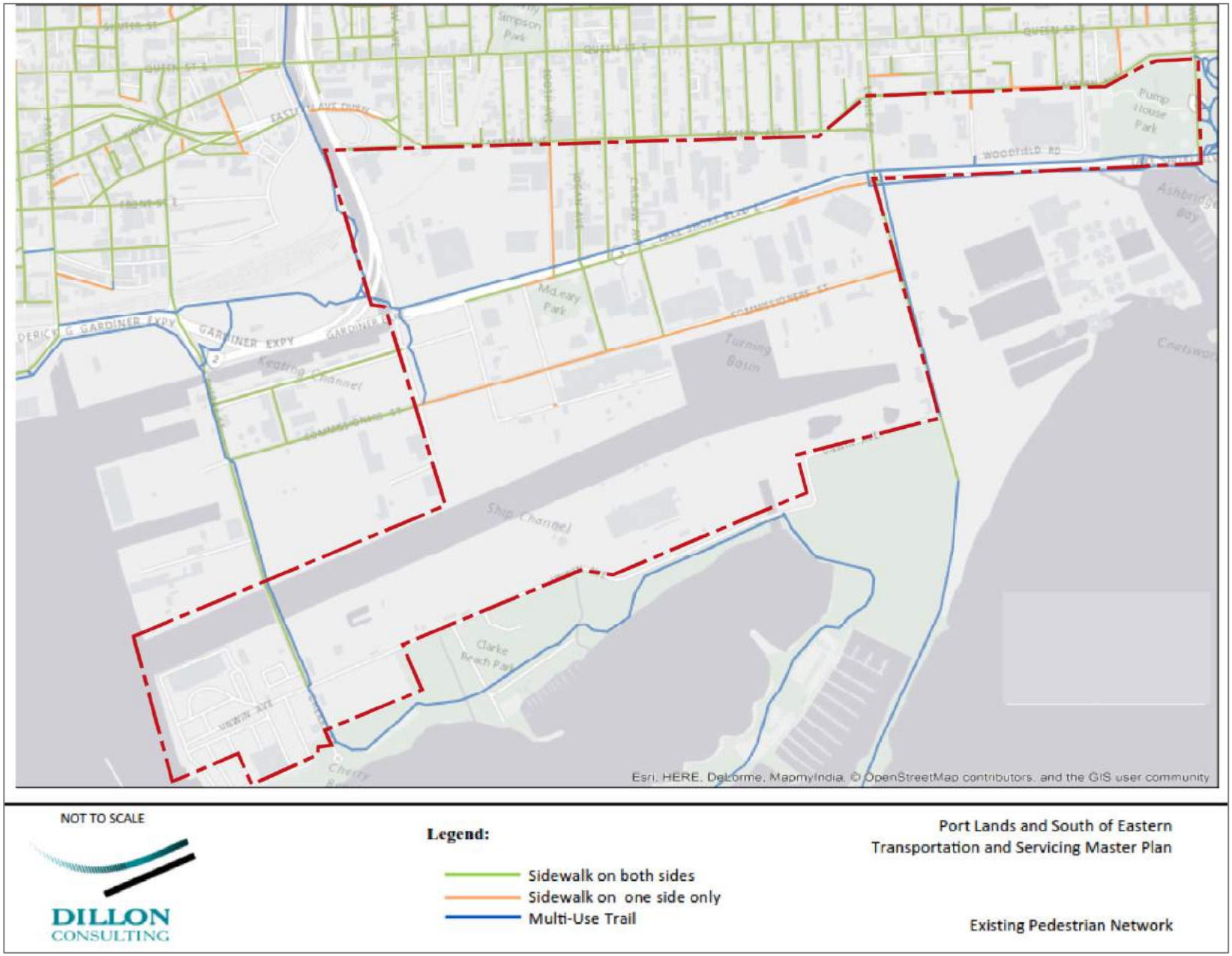
The existing street and pathway network in the Port Lands section of the Study Area is generally not conducive to pedestrian travel, and pedestrian activity in most of this area is generally minimal due to the nature of the industrial land uses and the discontinuous nature of the sidewalks (**Figure 5-45**). The existing network was planned to serve industrial uses, and as such not all streets include sidewalks or they are only located on one side of the street. Recreational pedestrian activity however can be significant along the Martin Goodman Trail and Cherry Street.

The sidewalk network in the Port Lands is incomplete. The block pattern is coarse, with limited walking route alternatives available. Protected crossings of Lake Shore Boulevard East and Eastern Avenue are widely spaced at approximately 900 m and 625 m respectively, and therefore those streets act as barriers to north-south pedestrian activity (Logan Avenue and Carlaw Avenue are two exceptions where protected crossings provide north-south pedestrian routes that are continuous across those streets).

Eastern Avenue is not conducive to east-west pedestrian travel due to the limited crossing of the Don River and DVP on the south side of the Eastern Avenue diversion. Pedestrians must cross the free-flow on-ramp to the northbound DVP to access the downtown. East of the DVP free-flow ramp, Eastern Avenue has sidewalks on both sides of the street; however, the width of the sidewalk and the inclusion of utility infrastructure limit the walking environment.

The sidewalk on Commissioners Street is also discontinuous and often there is no sidewalk on either side - Bouchette Street to Carlaw Avenue and east of the Turning Basin with the exception of the St. Mary's Cement frontage.

FIGURE 5-45 EXISTING PEDESTRIAN NETWORK



5.7.1.5 CYCLING

The Study Area contains designated bicycle and multi-use trails, as well as bicycle lanes and routes. The three main multi-use trails used for cycling in the Study Area include the Lake Shore North Trail, the Martin Goodman Trail and the Lake Shore East Trail (**Figure 5-46**).

The Lake Shore North Trail runs along Lake Shore Boulevard East and connects into the Port Lands to the Martin Goodman Trail at two points – Cherry Street and Leslie Street – and back north to the city via the Lake Shore East Trail. The Cherry Street portion of the trail is located on the west side of Cherry Street north of Commissioners Street and then switches to the east side of the street south of Commissioners Street. The Cherry Street trail is the Waterfront Trail and generally substandard in width. The Leslie Street portion of the trail located on the east side of Leslie Street (also the Waterfront Trail) is integrated into the Leslie Street "greening" north of Commissioners Street. The trail connects between Cherry Street and Leslie Street through a predominantly off-street connection south of Unwin Avenue. There is a portion of the trail that is on-street between the channel outlet and Leslie Street, with no dedicated facilities, which can be problematic. This is a private street however the trail facility on the south side is being planned as part of the Baselands Trail Study with anticipated construction for late 2016/early 2017.

The Martin Goodman Trail connects to the Lake Shore East Trail north of the Keating Channel. There are bicycle signals installed for east-west bicycle movements across the north leg of the Lake Shore Boulevard East/Don Roadway intersection and north-south and east-west movements across the Lake Shore Boulevard East and Leslie Street intersection.

There are also existing 1.5 m wide painted bicycle lanes that extend east along Eastern Avenue from just west of Logan Street to Leslie Street; dedicated bike lanes are not provided along Eastern Avenue.

Logan Avenue is a designated signed bicycle route (Bike Route 49), north from Lake Shore Boulevard East through to Riverdale Avenue. This includes a one-block contraflow lane between Lake Shore Boulevard East and Eastern Avenue (dedicated cycling), permitting cyclists to travel northbound along a one-way southbound section.

An off-street path along the east side of the Don Roadway provides a connection to the Lake Shore Boulevard East and Don River multi-use trails.

FIGURE 5-46 EXISTING CYCLING NETWORK

Source: City of Toronto, 2016

5.7.1.6 GOODS MOVEMENT

The Port Lands is a significant hub of industrial activity and goods movement as the port is still active. Lafarge Cement Incorporated, Essroc Italcementi Group and a number of aggregate and salt operations located in the East Port and South Ship Channel lands transport cargo by vessel and store cargo in the Port Lands. Redpath has historically stored its sugar over the winter months in ships moored in the port, although in 2012, they stored their sugar in Marine Terminal 51. Windsor Salt advised the Project team that typically in any given year they transport 300 to 400 tonnes of salt between the end of March and early December to their Port Lands site on the south side of the Ship Channel, storing this salt for use by, and delivery to, area municipalities during the winter season. PortsToronto also utilizes the International Marine Terminal Facility for cruise vessels.

The primary focus for freight entering and leaving the Study Area is the port. Goods arrive to the Port by ship via the St. Lawrence Seaway and Lake Ontario, and from there are typically shipped out by truck. In addition, trucks heading to and from concrete batching plants in the area are also contributors to vehicular traffic in the area.

According to PortsToronto, total port tonnage in 2015 was 1,650,993 tonnes. A majority of this tonnage is dry bulk (1,537,262 tonnes), with the remainder being containerized or project cargo. The top three domestic cargoes were salt, cement and aggregate.

Ship access is provided through the Eastern Gap (immediately east of Ward's Island across from Unwin Avenue). From there, ships can access the Ship Channel by passing through the lift bridge along Cherry Street. PortsToronto owns the land south of the Ship Channel and west of Cherry Street. There are 8,670 m of dock walls owned by the Toronto Port Lands Company along the Keating Channel, Cousins and Polson Quays, the Ship Channel, Turning Basin and the Leslie Street Slip. The primary access for truck traffic to and from the port is:

- to/from the west:
  - via Leslie Street, Carlaw Avenue and Cherry Street to Lake Shore Boulevard East and further to the Gardiner Expressway.
- to/from the north/east:
  - via Leslie Street, Carlaw Avenue and the Don Roadway to the DVP (note that there access to/from south of the Ship Channel is limited to the Cherry Street bridge and Leslie Street).

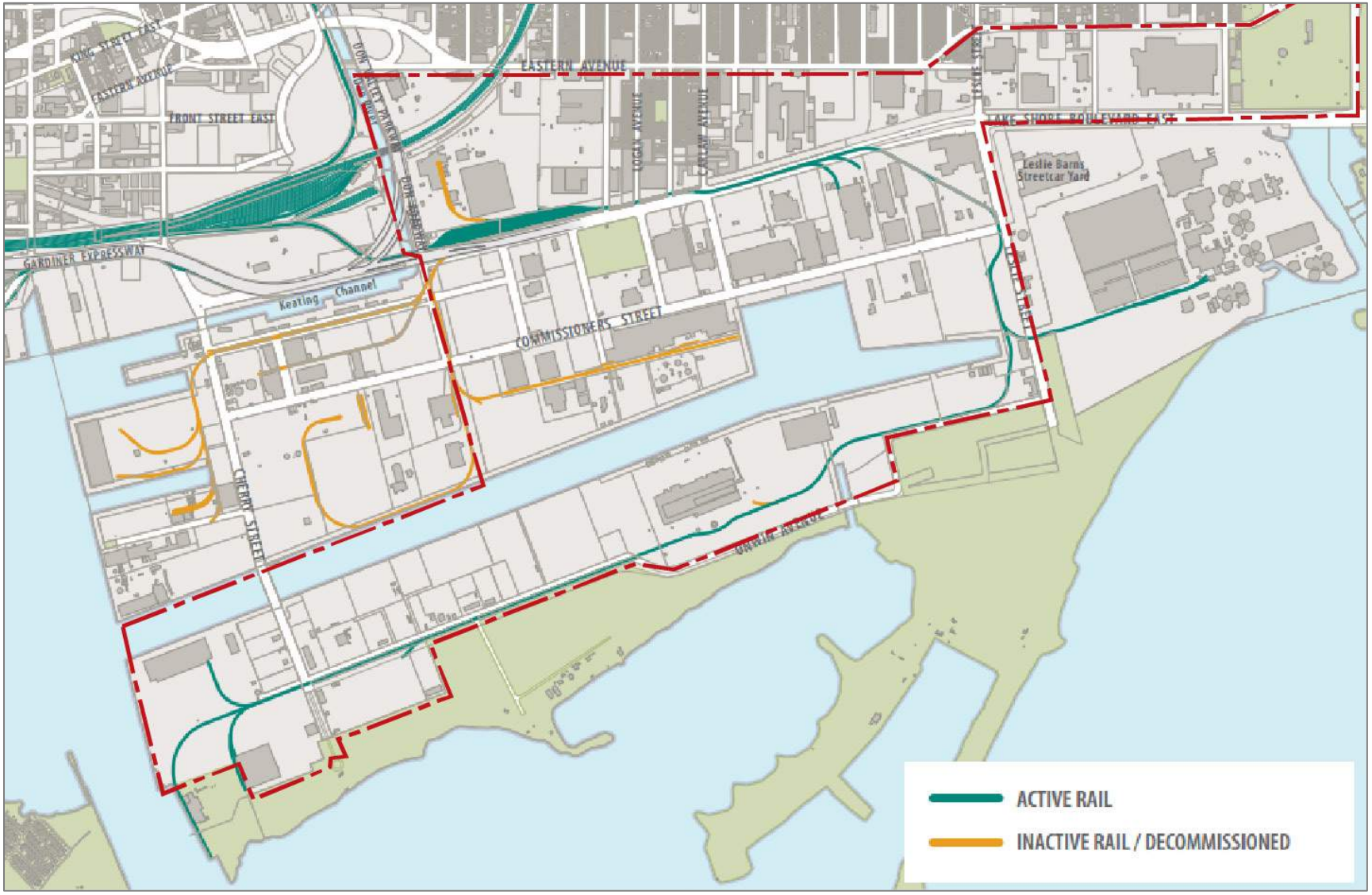
Salt, cement, stone, aggregate and asphalt is primarily moved from the Port Lands shipping receiving areas via truck. Truck sizes range from double-axle to triple-axle loads (32 to 52 tonne units), and could reflect up to 30,000 trucks annually loaded. Daily profiles vary because of the salt activity which is confined to specific months, but on average this activity reflects approximately 150, one-way trucks per day. Traffic counts for the area show that trucks can represent anywhere from 1 percent to 18 percent of total traffic using the roadway in the peak hour, depending on the road and road section.

Based on traffic data collected by the City, there is a significant amount of heavy vehicle activity within the Study Area with some 15,000 vehicles known to access the Study Area annually.

The Don Yard and associated rail corridor is located to the north of the Port Lands (**Figure 5-47**). The yard is located north of Lake Shore Boulevard East between Cherry Street and the DVP. The rail line is currently being used by GO Transit, CNR and VIA Rail. There is also a small rail yard/marshaling area to the north of Lake Shore Boulevard East just east of the Don Roadway (Keating Yard). This rail yard presents challenges for providing connections north of Lake Shore Boulevard East. This yard is the main rail access into the Port Lands. It is being utilized by Toronto Water, CanRoof and PortsToronto. PortsToronto utilizes the corridor to bring in specialized bulk goods manufactured in Ontario to be loaded onto ships, including their property south of the Ship Channel at Cherry Street. Use of this rail connection along Unwin Avenue is infrequent. There are also a number of at-grade rail crossings throughout the Study Area:

- Lake Shore Boulevard East, east of the Don Roadway;
- Lake Shore Boulevard East at Carlaw Avenue;
- Lake Shore Boulevard East approximately 300 m west of Leslie Street;
- Commissioners Street and Leslie Street; and,
- Near the Hearn Generating Station along Unwin Avenue.

FIGURE 5-47 RAIL NETWORK



Source: City of Toronto, 2013a

5.7.1.7 BRIDGES (STRAUSS TRUNION BASCULE BRIDGE + BAILEY BRIDGE)

To provide access to the Port Lands west of the Don Roadway, travelers are required to cross the Keating Channel. There is a lift-bridge at Cherry Street allowing motorists and pedestrians to cross the channel. The Keating Channel lift bridge will be removed as part of the DMNP EA and the LDLMP EA Addendum and ESR implementation and replaced with a fixed bridge at the new Cherry Street alignment.

The Ship Channel lift bridge at the western end of the Study Area is the only bridge across the Ship Channel, allowing Cherry Street to reach Cherry Beach and Unwin Avenue. This bridge is owned, operated and maintained by PortsToronto.

The area south of the Ship Channel can also be accessed via Leslie Street (no bridge). However, there is a single-lane bailey bridge along Unwin Avenue that allows motorists to cross at the Hearn's discharge channel. There is also a separate pedestrian/cycling bridge that provides access across the discharge channel.

5.7.2 Traffic Conditions

5.7.2.1 DATA SOURCES AND ANALYSIS

The Project team consolidated and examined data, mapping, and reports received from the City relating to existing and future transportation in the area. This included information on existing traffic volumes, traffic controls, and goods movement. See **Appendix D** for further information relating to data sources and analysis.

5.7.2.2 EXISTING TRAFFIC VOLUMES

Existing traffic volumes are provided in **Appendix D** along with a list of survey locations and dates for the available turning movement counts and 24-hour mid-block traffic counts as well as detailed traffic data for both the turning movement and 24 -hour mid-block counts.

While data older than 3 years is typically considered outdated, the location and order of magnitude of volume was reviewed for these locations to confirm their validity. It was determined that in all cases the area was mature such that volumes have been stable for many years or that the volumes were relatively low and not expected to have changed significantly.

5.7.2.3 GOODS MOVEMENT

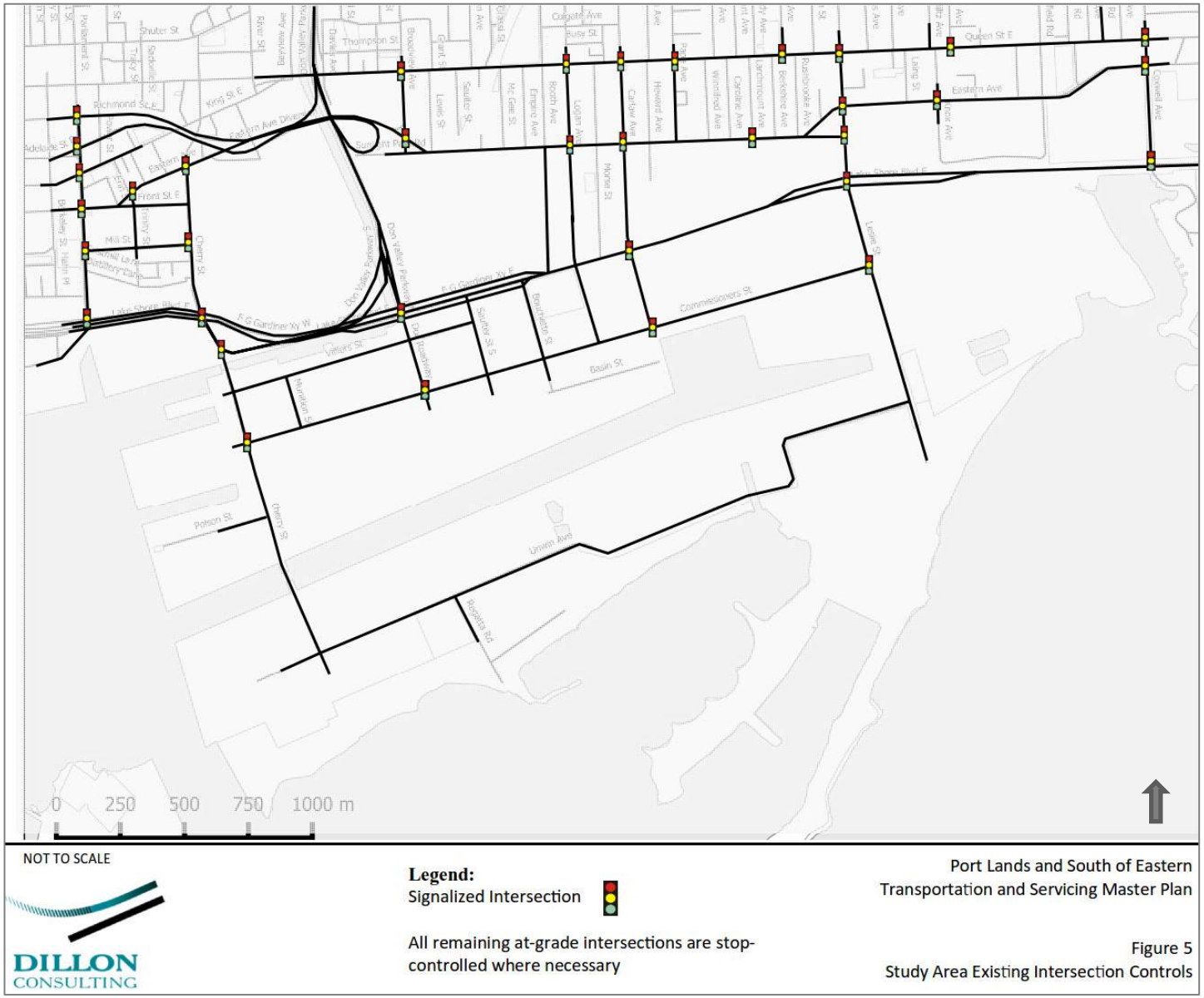
Goods movement in the Study Area is provided by two modes: heavy rail and truck. In the future, heavy rail activity in the Study Area will be limited to very specific industrial activity at the PortsToronto lands and at infrequent times. Rail activity will be accommodated in the future by the existing spur line connecting along Unwin Avenue, Leslie Street, and Lake Shore Boulevard East to the Keating lines.

A much larger portion of the goods movement in the area is currently accomplished via trucking. This is expected to continue in the future at current levels or higher.

5.7.2.4 TRAFFIC CONTROLS

Figure 5-48 provides a graphic of the existing intersection control (signalized intersections) for the Study Area. Traffic control in the area is predominantly signalized or unsignalized (stop or yield signage).

FIGURE 5-48 EXISTING SIGNALIZED INTERSECTIONS

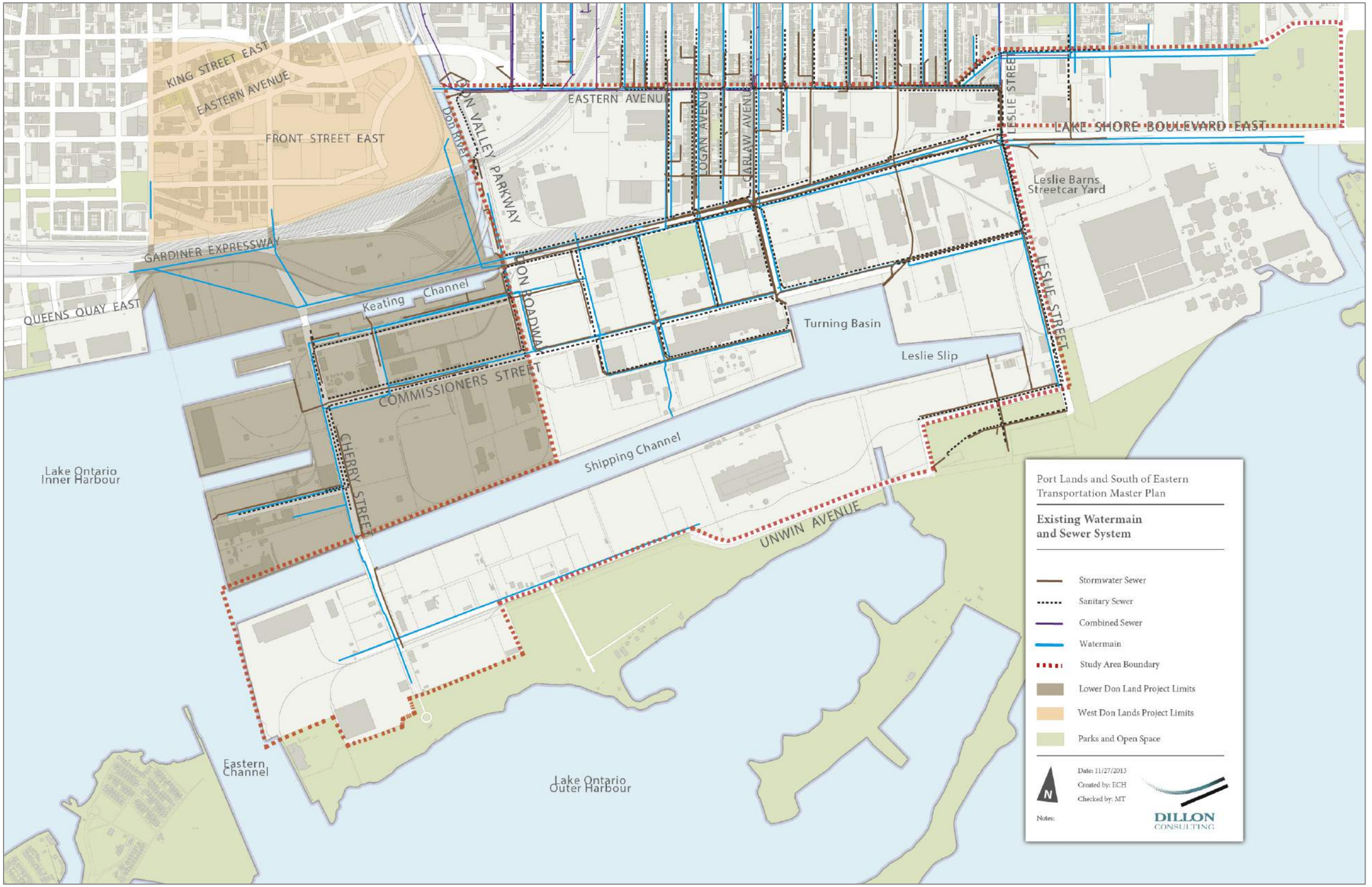


5.8 Municipal Services

The servicing infrastructure within the Study Area adequately accommodates the existing land uses, with the exception of south of the Ship Channel which is limited by the lack of wastewater servicing. The entire Study Area is currently susceptible to flooding from the Don River under the regulatory event which is Hurricane-Hazel with the exception of the area south of the Ship Channel. However, the build-out of the DMNP EA protection strategies will progressively alleviate this risk and allow for more intensive development to proceed. This TSMP EA has assumed that these larger-scale flood protection strategies will be in place and have considered only local stormwater conditions in addition to the area north of the rail embankment particularly as it relates to the Broadview extension.

The following sub-sections describe existing water, wastewater and stormwater servicing present in the Study Area. Additional information is provided in the Water/Wastewater Functional Servicing Report (FSR) (**Appendix E**) and Stormwater FSR as well as additional documentation provided in **Appendix F**. **Figure 5-49** provides an overview of existing municipal services in the Study Area including water, wastewater (sanitary), and stormwater.

FIGURE 5-49 EXISTING MUNICIPAL SERVICING



5.8.1 Water Distribution System

Existing water servicing infrastructure serves most properties in the Port Lands (**Figure 5-49**). There is a network of distribution water mains ranging in size from 150-300 mm in diameter, the majority of which are located north of the Ship Channel. There is also some capacity available to provide the necessary fire protection flows for interim or commercial development. Fire flows available for current development can be estimated using model analysis. Fire hydrants are present on public right-of-ways throughout the Study Area. A review of aerial photos and 2012 meter records shows that there is significant water servicing present in the South of Eastern area (north of Lake Shore Boulevard East)(City of Toronto, 2013a).

The existing water supply network consists of a network of distribution water mains ranges in size from 150-300 mm diameter supplied from Pressure Zone 1 of the City's water supply network.

The City's existing InfoWater Hydraulic Model was updated for the Study Area and used to assess performance of the existing system that could contribute constraints to system expansion. The model identified that the system operates within a pressure range of 88 pounds per square inch (psi) to 94 psi, in compliance with the City's Design Criteria for Sewers and Watermains (2009). It was noted that the maximum pressure reading of 94 psi could result in an internal building pressure exceeding the 2012 Ontario Building Code (OBC) maximum static pressure of 550 kPa (79.8 psi). The high pressures are likely due to the lower elevation of the Study Area, closer to the lake. Individual pressure reducing valves installed on the building-side of any developments with pressure that exceed the Ontario Building Code (OBC) maximum pressure can provide protection against building plumbing over-pressurization.

The model also identified that fire flows are sufficient throughout the majority of the Study Area; however, some isolated areas struggle to meet the target fire flows due to small diameter piping or lack of looping in the system.

5.8.2 Wastewater Collection System

The current wastewater collection system in the Study Area consists of a separated system of pipes ranging in diameter from 200 mm to 675 mm (**Figure 5-49**). The part of the Port Lands that is located to the north of the Ship Channel is currently served by a sanitary sewer system that connects by gravity at Logan Avenue/Eastern Avenue into a large diameter interceptor sewer, termed the Low Level Interceptor (LLI) that collects and conveys flow to the ABTP. The section of the Port Lands to the east and south-east connects to the LLI via Leslie Street. Facilities along the east side of the Ship Channel are serviced through an extension of the Leslie Street sewer along Unwin Avenue that terminates west of the PEC. The remainder of the southern part of the Port Lands, south of the Ship Channel, is currently not connected to a sanitary sewer system. Small businesses and washroom facilities for the recreational fields in this area use septic tanks or other waste treatment/storage systems.

The LLI is one of three interceptors that capture wastewater flow draining in a southerly direction from the majority of the former City of Toronto and parts of North York and Scarborough. The LLI along with

the High Level Interceptor (HLI) to the north and the most recent construction of the Mid-Toronto Interceptor (MTI) convey flow to the ABTP.

Properties in the South of Eastern area portion of the Study Area drain via sanitary sewers that run north to the LLI. The sewer size is mainly 300 mm diameter with a maximum of 450 mm diameter. The trunk sanitary sewer that connects the Port Lands to the LLI via Logan Avenue is 675 mm diameter.

A Study Area specific InfoWorks model was created. Model analysis indicated that at the current low rate of development in the Study Area, sewers are generally underutilized with sanitary peak flows well below the sewer capacities, functioning well during dry weather flow conditions. Due to operational and design challenges with the LLI, including capacity limitations and back-ups from the pumping station at the ABTP, the 675 mm Logan Avenue/600 mm Lake Shore sewer and its tributary sewers within Port Lands and Lower Don Lands surcharge under relatively moderate wet weather events, backing up into the Study Area.

5.8.3 Stormwater Collection System

Existing stormwater pipes within the Study Area discharge predominantly into the Ship Channel and the Keating Channel (**Figure 5-49**). Of the nine existing stormwater outfalls into the Ship Channel, there are four large storm discharge pipes. They are located at the northeastern and northwestern corners of the Ship Channel Turning Basin and they are connected to the upstream stormwater network for the city (to the north and outside the Study Area). Each of the rectangular outfall pipes is 2.5 m by 1.8 m in size. One of the stormwater sewers runs as a deep tunnel (2.7 m diameter, 1 km length, 23 m deep) from Queen Street to approximately 50 m north of the Turning Basin. From there a high level outfall, approximately 3 m deep, connects into the Ship Channel. The tunnel acts as a siphon. The outfalls have the potential to discharge a significant amount of stormwater into the Ship Channel. As an indication of potential discharges, during a 2-year, 4 hour duration storm the maximum indicated discharge flows for the four outfalls are 906 litres per second (L/s), 1000 L/s, 2,448L/s and 2,765L/s, respectively. Eight of the nine stormwater outfalls are within the Study Area and the simulated discharge flows during different storm return periods (**Appendix F)**.

5.9 Utilities

The Study Area contains a range of utilities to service the existing largely employment uses as well as the residents in the South of Eastern area. Major power and energy utilities are located in the Port Lands to service the PEC. The following sub-sections provide an overview of the utilities in the area based on data provided by the City. Limited information was available regarding the energy utilities related to the PEC.

Appendix G provides figures that identify utilities in the Study Area based on major block areas.

5.9.1 Communications

Communications utilities are present in the Study Area. Communications infrastructure includes above ground poles and pedestals, and below ground vault and conduit networks for distribution. Communication utilities identified in the Study Area include Bell Canada, TELUS Canada, and Rogers Cable.

Bell Canada infrastructure is present along every right-of-way within the Study Area, while TELUS and Rogers infrastructure is dispersed in pockets within the Study Area. TELUS and Rogers have a large stretch of buried conduit along the eastern limit of the Study Area on Leslie Street, from Unwin Avenue to Eastern Avenue. The major stretch of TELUS conduit continues along Eastern Avenue before terminating along Heward Avenue.

Within the area surrounding the Basin Street Transformer Station, there is a Bell Canada conduit which runs from the Bouchette Avenue and Basin Street intersection up to the Bouchette and Commissioners Street intersection. From this intersection, the conduit splits to the east and west directions along Commissioners Road. In the west direction, the conduit continues and branches up Saulter Street before exiting the west limit of the Study Area. In the east direction, the conduit continues and is connected with multiple Bell Canada conduits throughout the Study Area.

5.9.2 Toronto Hydro

Toronto Hydro installs and maintains the electrical distribution networks that supply power to residents, businesses, street lights and traffic signals within the city including the Study Area. A majority of Toronto Hydro's infrastructure is buried along the rights-of-way in numerous conduits and underground vaults distributed across nearly all rights-of-way in the Study Area. There is a significant concentration of Toronto Hydro conduits and structures starting at Basin Street north of the transmission station, running north along the intersection of Bouchette Street and Commissioners Street.

On the southeast corner of the intersection of Bouchette Street and Commissioners Street, there are two large vaults from which multiple conduits branch out in the north, west and east directions. The conduits to the north terminate shortly after with two Toronto Hydro poles on either side of Bouchette Street just north of its intersection with Commissioners Street. The conduit continues to the west and branches up Saulter Street before exiting the west limit of the Study Area. To the east, two separate conduits continue along Commissioners Street and connect with multiple structures and additional

conduits throughout the rest of the Study Area. Of note, there is very large concentration of Toronto Hydro infrastructure within the intersection of Lake Shore Boulevard East and Carlaw Avenue. Ten structures host various conduits approaching from all directions within these rights-of-way.

5.9.3 Hydro One Networks

Hydro One operates nearly all the electrical transmission stations and high voltage transmission lines within Ontario. Local distributors, including Toronto Hydro, obtain electricity from Ontario Power Generation through Hydro One's main transmission lines. Hydro One is present within the Study Area as is the PEC, which is located along the southern limit of the Study Area near Unwin Avenue and Leslie Street. The PEC generates approximately 25 percent of the City's power needs and supplies power to the area through Hydro One's overhead and underground infrastructure. There is a large overhead hydroelectric corridor with transmission wires that originate at the PEC, cross the Ship Channel to the north and enter the Basin Street transformer station. Hydro One power lines run north from the station along Bouchette Street and west along Commissioners Street before heading north along the Don Roadway. These high voltage power lines are supported by large steel frame hydroelectric transmission towers contained within boulevard areas along Commissioners Street. Additionally, there are buried high voltage (115 kilovolt) Hydro One conduits that extend out from the PEC toward the northwest limit of the Study Area before crossing the Don River to a transformer station on the west bank of the river.

5.9.4 Enbridge Gas Distribution

Enbridge Gas Distribution (Enbridge) is the natural gas supplier that services the Study Area. Throughout the Port Lands there are a significant number of gas mains that range in size from 50 mm to 500 mm including high pressure distribution mains. The PEC is a natural gas power generation plant which receives gas from Enbridge to supply its operation. A major gas pipeline exists between Enbridge's operations on Eastern Avenue and the PEC. This gas line is approximately three kilometers long and runs east along Eastern Avenue, south along Booth Avenue, east along Lake Shore Boulevard East, south along Logan Avenue, west along Commissioners Street, south along Basin Street, east along Unwin Avenue and finally north to the PEC.

5.9.5 Other Pipelines

There are numerous pipelines throughout the lower Don Lands within the Study Area that may have served industrial tenants that no longer exist. Some of the pipelines that served these past tenants are now likely to be abandoned; however, their current status is unknown. It will be necessary to contact property owners within the area to determine their usage.

6.0 POLICY + PLANNING CONTEXT

This section provides an overview of the land use policy and planning context for the TSMP EA as well as an overview of other studies being completed in, or near, the Study Area.

6.1 City of Toronto Official Plan

The City's Official Plan came into effect in 2006 (consolidated 2015) and provides a long-term vision for growth. While the Official Plan is not in effect in the Central Waterfront, including the Port Lands, it represents city-wide Council direction for how the city should grow.

The City began an Official Plan review in 2011, including a Municipal Comprehensive Review (MCR) to look specifically at designated areas of employment. The Official Plan review and MCR are outlined in **Section 6.10**.

The Official Plan recognizes the Central Waterfront as being part of the Downtown, and that the Central Waterfront offers unique opportunities for substantial employment and residential growth. The Official Plan acknowledges that the development in the Central Waterfront area is guided by its own Secondary Plan.

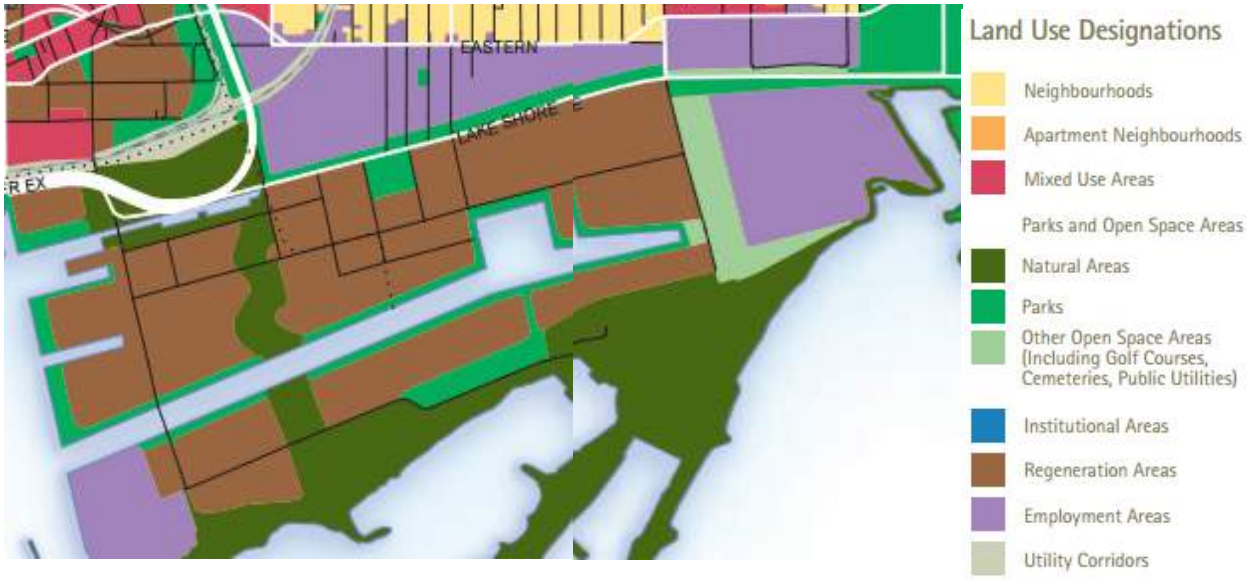
Land Use Designations

The majority of the Study Area located south of Lake Shore Boulevard East (Port Lands) is designated *Regeneration Area*. Some areas are designated *Parks and Open Space Areas*, which includes the identification of Natural Areas and Parks. The most southwesterly end of the Study Area – the Ports Toronto site - is designated *Employment Areas*.

For the section of the Study Area located north of Lake Shore Boulevard East (between Lake Shore Boulevard East and Eastern Avenue), the lands are primarily designated *Employment Areas* with the exception of Morse Street Park and a narrow strip of land adjacent to Lake Shore Boulevard East which are designated *Parks and Open Space Areas - Parks*. Site and Area Specific Policy 190 recognizes the existing residential uses located between Booth Avenue and Carlaw Avenue.

Figure 6-1 shows the land use designations as identified in the Official Plan. Further information with respect to policy is provided below.

FIGURE 6-1 CITY OF TORONTO OFFICIAL PLAN – LAND USE DESIGNATIONS



Source: City of Toronto, 2006

Official Plan Section 4.7 Regeneration Areas – *Regeneration Areas* are unique areas of the city where a wide array of uses are permitted to help attract investment, re-use buildings, encourage new construction and bring life to the streets. These areas are key to the Official Plan's growth strategy, with the general intent of reintegrating areas of the city that are no longer in productive use due to shifts in the local or global economies. In *Regeneration Areas*, commercial, residential, live/work, institutional and light industrial uses can be mixed within the same block or even the same building. Generally, for each Regeneration Area a framework for new development is to be set out in a Secondary Plan which will guide the revitalization of the area through matters such as design, greening strategy, community improvement areas and services, environmental policies and transportation policies. New, large scale, stand-alone retail stores and "power centres" are not permitted in *Regeneration Areas*.

Official Plan Section 4.3 Parks and Open Space Areas - *Parks and Open Space Areas* are the parks and open spaces, valleys, watercourses and ravines, portions of the waterfront, golf courses and cemeteries that comprise a green open space network in Toronto. Development is generally prohibited within *Parks and Open Space Areas* except for recreational and cultural facilities, conservation projects, cemetery facilities, public transit and essential public works and utilities where supported by appropriate assessment.

Natural Areas – Natural areas are generally to be maintained in a natural state while allowing for compatible recreational, cultural and educational uses and facilities that minimize adverse impacts on natural features and functions; and conservation projects, public transit, public works and utilities for which no reasonable alternatives are available, and that are designed to have only minimal adverse impacts on natural features and functions.

Official Plan Section 4.6 Employment Areas – *Employment Areas* include places of business and economic activity. Uses that support this function consist of: offices, manufacturing, warehousing, distribution, research and development facilities, utilities, media facilities, parks, hotels, retail outlets

ancillary to the preceding uses, and restaurants and small scale stores and services that serve area businesses and workers. Large scale, stand-alone retail stores and "power centres" are not permitted in Employment Areas in the Central Waterfront and are only permitted in other *Employment Areas*.

6.2 Central Waterfront Secondary Plan

The CWSP (Secondary Plan 31) was adopted in 2003 as an amendment to the former City Official Plan. It provides policy direction specific for the Central Waterfront area to guide future growth and development related to waterfront revitalization. The CWSP includes the Port Lands, the West Don Lands, East Bayfront, Central Waterfront, Fort York and Exhibition Place within the Secondary Plan area. The CWSP was amended for the Lower Don Lands (an area in the Port Lands) through Official Plan 388 in 2010. The amendment reflected the river and Don Greenway configuration advanced through the Lower Don Lands Framework Plan and DMNP EA.

The CWSP is pending final Ontario Municipal Board (OMB) approval and is not completely in force; however, some sections have been approved including the West Don Lands (in part in 2005), the First Waterfront Place lands (in part in 2007), and lands on south side of Queens Quay East (in part in 2007). While the Plan is not in effect for the Port Lands, the CWSP is nonetheless utilized to guide and inform planning in the Central Waterfront. Additional amendments to the CWSP are anticipated to implement the outcomes of the Port Lands Planning Framework and to address outstanding appeals to the OMB.

The CWSP is a long-term vision document for the renewal of Toronto's Waterfront, emphasizing sustainable actions, policies and planning processes that reduce auto dependence, prioritizes transit and active transportation modes, and removes physical barriers between the Waterfront and the rest of Toronto. It is built on four core principles:

- ***Removing barriers/Making connections*** is about ensuring that the waterfront feels and functions as part of the broader city fabric. Big Moves identified to achieve this includes redesigning the Gardiner corridor, creating a waterfront transit network, transforming Lake Shore Boulevard East and Queens Quay into pedestrian-friendly scenic connections and completing the Waterfront Trail through the area. New connections are needed to better connect the waterfront, both north-south and east-west. The new connections are to be functional, thematic and symbolic in nature and create cultural and heritage corridors that have unique identities. The needs of motorists are to be balanced with efficient transit service and high-quality amenities for pedestrians and cyclists.
- ***Building a network of spectacular waterfront parks and public spaces*** will help transform the area into a destination for both international tourism, culture and the local community, offering a range of cultural and recreational experiences. The Big Moves includes the creation of the Don Greenway, reinforcing the Ship Channel as a unique waterfront amenity and creating a Lake Ontario Park that extends from Cherry Beach to Balmy Beach. The Central Waterfront area will include a number of Inner Harbour Special Places. In the Port Lands, the Plan identifies Inner Harbour Special Places at the dockwalls of the two quays (Cousins and Polson), at Polson Slip

and at the Turning Basin. Other parks will be expanded and redesigned to form a unique network of parks and open spaces to serve the diverse needs of the waterfront community and act as a gateway to the waterfront.

- ***Promoting a clean and green environment*** is aimed at achieving a high level of environmental health. Big Moves and policy direction focus on creating a sustainable transportation system where transit, water transport and active transportation modes are given priority. Vehicular capacity will be limited to meet local traffic needs. The planned re-naturalization of the mouth of the Don River will provide an important gateway and recreational link to the new Port Lands' communities and waterfront park system. The health and biodiversity of the Central Waterfront will be enhanced and restored, and stormwater will be managed as close to its source as possible.
- ***Creating dynamic and diverse new communities*** is about ensuring that as areas undergo revitalization and renewal that a range of development opportunities are provided to encourage all aspects of living, working and leisure. The Port Lands are envisioned, in the Plan, to be transformed into a number of new urban districts set amid the hustle and bustle of the city's port activities. As revitalization proceeds, it is anticipated that a mix of uses would be developed, including residential, commercial, "green" industries, continued port and industrial uses and institutional uses. Individual Precinct Plans are identified as a primary tool to advance strategies to encourage a balance of places to work and live and ensure that retail and community activities are concentrated in accessible locations. New neighbourhoods are to include a mix of housing types and densities, including opportunities for affordable rental housing. Large scale stand-alone retail stores are not part of the vision for the area and significant areas of unscreened surface parking will not be permitted. Heritage buildings will be conserved and adaptive reuse will be explored.

The Port Lands are largely designated *Regeneration Areas* in the CWSP, allowing for a wide variety of land uses, including residential, industrial, offices, retail, community services and parks. The most southwesterly section of the Study Area is designated *Existing Use Areas* at the Port Toronto's Inner Harbour site. The perimeter of the Ship Channel and northwest end of the Study Area is identified as Public Promenade (Dockwall/Water's Edge) (**Figure 6-2**).

FIGURE 6-2 CENTRAL WATERFRONT SECONDARY PLAN – EXCERPT

Source: City of Toronto, 2003 (updated 2007)

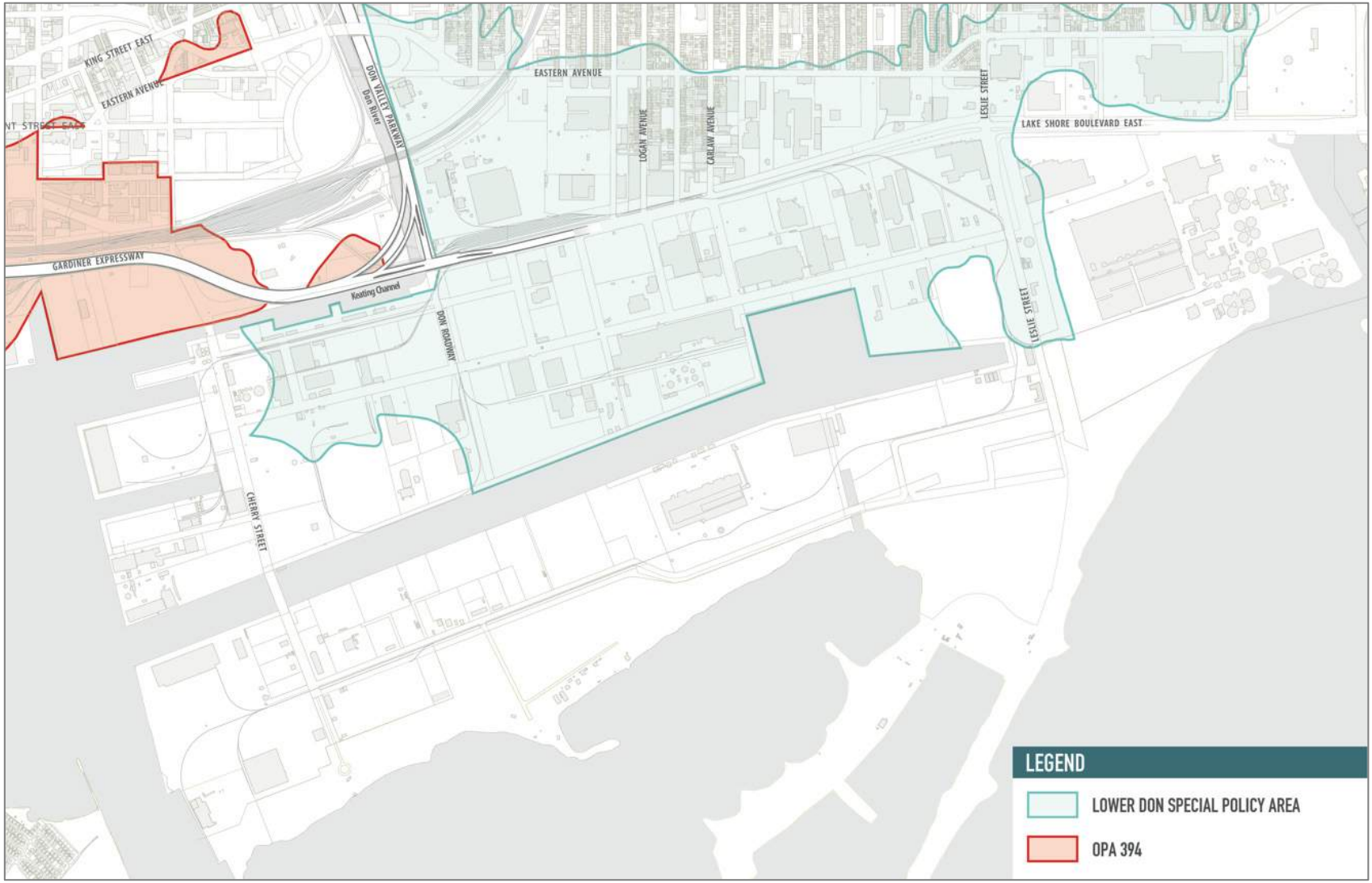
6.3 Former City of Toronto Official Plan

The Toronto Official Plan is not in force and effect for the Central Waterfront, inclusive of the Port Lands. Further, the Official Plan's Special Policy Area policies are currently under appeal and the SPA policies of former municipalities continue to be in effect. The former City of Toronto Official Plan designates the Port Lands *General Industrial Area* and also identified the lands as the "Port Industrial District". These designations were not amended when the CWSP was adopted by City Council in 2003.

Section 2.58 of the Official Plan for the former City of Toronto, states that development may be permitted on condition that it is flood protected to at least the 1:350 year level, in which case no building or structure will be subject to a risk of flooding in excess of 25 percent over an assumed life of 100 years. Section 2.68 of the former City of Toronto Official Plan also contains requirements that all development must meet in addressing the flood risk associated with the Lower Don Special Policy Area. Comprehensive urban renewal projects that advance flood protection solutions are permitted by the Special Policy Area policies, subject to consultation with the TRCA. **Figure 6-3** identifies the areas within the Lower Don Special Policy Area.

An area wide amendment to a portion of the SPA was adopted by City Council on August 27, 2010 (OPA 388) which implemented a two-zone flood concept based on the DMNP EA generally for the lands west of the Don Roadway in the Port Lands. This was appealed to the OMB and is not in effect (City of Toronto, 2013a).

FIGURE 6-3 CENTRAL WATERFRONT SECONDARY PLAN – LOWER DON SPECIAL POLICY AREA



Source: City of Toronto, 2012

6.4 Provincial Policy Statement

The Provincial Policy Statement (PPS) (2014) provides policy direction on land use planning and development in Ontario. The PPS ensures appropriate development while protecting resources of provincial interest, public health and safety and the quality of the natural environment. Land use planning decisions are required to be consistent with the PPS (Government of Ontario, 2014).

The PPS encourages compact, mixed-use development with compatible employment uses and transit and transportation choices that facilitate pedestrian mobility and active transportation. The revitalization of the Port Lands will create a resilient and livable community, supported by key policies in the PPS related to affordable housing, accessibility and open spaces. The PPS also supports opportunities for adaptive reuse of existing infrastructure and recognizes the need to protect the long-term operation and economic role of marine and rail facilities. According to the PPS, these facilities must be appropriately designed, buffered and/or separated from sensitive land uses to ensure the long-term viability of these facilities (Government of Ontario, 2014).

In addition, the PPS encourages the conservation of significant archaeological resources, built heritage resources and cultural heritage landscapes; promotes green infrastructure (natural or human-made elements that provide ecological and hydrological functions and processes) to complement traditional infrastructure; and, active transportation including human-powered travel such as walking, cycling, inline skating, and travel with the use of mobility aids including motorized wheelchairs and other power-assisted devices (Government of Ontario, 2014).

6.5 Places to Grow Growth Plan

The Growth Plan for the Greater Golden Horseshoe (2013) builds on the PPS providing a clear framework for planning decisions related to transportation, infrastructure, urban form, housing, natural heritage and resource protection in the region. Land use planning decisions are required to conform to the Growth Plan. The Growth Plan also recognizes the importance of ports in, or near, settlement areas and identifies the Port Lands as a "Major Port." Key applicable policies for development and intensification in the Port Lands include (Government of Ontario, 2013):

- providing convenient access to transit and creating pedestrian-friendly streets;
- development of a diverse and compatible mix of employment, residential and open space uses. Residential areas are to include a mix of housing alternatives, including affordable housing within intensification areas;
- development of an accessible parkland system that encourages the protection of the natural environment, access to shorelines and urban and public open spaces (e.g. rooftop gardens, communal courtyards, public parks);
- conservation of archaeological and cultural heritage resources;
- development and implementation of energy and water conservation policies and strategies; and,

- planning for land uses adjacent to, or in the vicinity of rail yards and dockyards that are compatible with, and supportive of, the primary goods movement function of these facilities.

The Growth Plan also identifies population and employment forecasts for the city to 2041.

The Growth Plan for the Greater Golden Horseshoe, 2017 was released on May 18, 2017 and came into effect on July 1, 2017, replacing the previous version.

6.6 City Guidelines and Policy Documents

This section provides an overview of pertinent City guidelines and policy documents that were taken into account when completing the TSMP EA. These documents are "living documents" and are expected to be updated periodically. Since the implementation of the TSMP EA will occur over the longer term, the latest policies and guidelines in effect at that time should be applied.

6.6.1 Toronto Walking Strategy

The Toronto Walking Strategy provides an integrated approach to the creation of a pedestrian-friendly urban environment. The strategy outlines building and street level enhancements to improve walkability, including pedestrian scale lighting, easy access to the street, and incorporating weather protection elements into building design. Implementation strategies for specific areas of the city are outlined in the City's Secondary Plans, including the CWSP, and applied throughout the development review process.

6.6.2 City of Toronto Bike Plan

The Toronto Bike Plan outlines a set of integrated principals and objectives to encourage a more bicycle friendly environment. Recommendations are focused on the creation of bicycle friendly streets and an extensive bikeway network, the development and implementation of safety and education programs and monitoring, encouraging cycling and transit connections, and improvements to cycling infrastructure throughout the city and the creation of a bicycle data collection program. The TBP was designed to inform other city planning initiatives, including the Official Plan review and redevelopment of the waterfront.

6.6.3 Toronto Green Standard

The Toronto Green Standard is a two-tier set of performance measures with supporting guidelines to improve our air and water quality, reduce greenhouse gas emissions, increase energy efficiency and reduce solid waste. The TGS is a key component of the City's Climate Change Action Plan and are designed to work with the regular development approvals and inspections process. New planning applications, including zoning bylaw amendments, site plan approval and draft plan of subdivision in the city are required to document compliance with Tier 1 environmental performance measures. Developers may also choose to a voluntary higher level of environmental performance (Tier 2) in exchange for a partial refund on development charges paid to the City. The standards tailored to

different building types, with specific requirements for “low-rise non-residential,” “low-rise residential” and “mid to high-rise” buildings.

6.6.4 Green Roof By-law

Toronto is the first North American city to have a by-law requiring the construction of green roofs on new development. The City Green Roof Bylaw (adopted May 2009) applies to new commercial, institutional, industrial and some residential building permit applications. Residential buildings less than 6 storeys (20 m) high are exempt from the green roof requirement. Coverage requirements vary based on the size of the building and the available roof space, with allowances for renewable energy, private terraces and residential outdoor amenity spaces. New building permit applications for industrial buildings or additions to industrial buildings with specified roof space are required to meet specific requirements for coverage, cool roofing materials, stormwater management performance measures and rainfall retention or collection for reuse.

6.6.5 Vehicle Travel Lane Width Guidelines

The Vehicle Travel Lane Width Guidelines provide guidance on how and when to reduce current lane widths by reallocating roadway space to improve safety and comfort for pedestrians and cyclists. Wider lane widths favour passenger vehicles by creating a more forgiving and comfortable environment for drivers with a measureable influence on driver behavior and travel speed. The Guidelines offer a flexible approach to determining appropriate lane widths in support of existing City guidelines and strategies related to cycling facilities, accessibility and pedestrian-friendly streets.

Given a number of contextual constraints, standard lane widths cannot be universally applied throughout the city. Therefore, rather than recommending specific lane types (e.g., bicycle lane, parking lane, left-turn lane), the Guidelines are intended to ensure that roadway function and/or classification, surrounding land uses, topography, desired vehicular speed, and transportation modes, are considered when allocating space within the roadway once the number and type of required lanes has been determined. Modifications that may be used to reallocate road space include new or expanded bike lanes, edge lines and painted or raised medians. The Guidelines apply to all collector, minor arterial and major arterial roads in the city.

6.6.6 Wet Weather Flow Master Plan

Toronto City Council adopted the WWFMP in 2003 to reduce and ultimately eliminate the adverse impacts of runoff generated during rain and snow events in the city. Unlike in natural settings, where stormwater filters into the vegetated ground, water runoff in urban areas travels across a variety of surfaces, picking up dirt, oil, grease and other pollutants along the way. Once it enters the City’s extensive stormwater system, some of the runoff is mixed with wastewater in combined sewer systems or infiltrates into sanitary sewers. When this happens, the wastewater system and the City’s sewage treatment plants can become overloaded, allowing untreated water to enter local waterways and resulting in degraded water quality conditions, stream bank erosion, loss of fish habitat and basement flooding. A set of Management Guidelines has been developed to support the WWFMP, including

requirements for onsite stormwater quantity and quality control for a new development, infill and redevelopment projects throughout the city, including the Study Area.

6.6.7 Archaeological Conservation and Management Strategy

Since before recorded history, Toronto's waterfront was an important confluence of land and water routes, with semi-permanent villages and trails running northward from the shoreline. Over the last two centuries, the area has been a significant site of settlement, transportation and industrial activity. The Waterfront Toronto Archaeological Conservation and Management Strategy (October 2008) was developed to inform the planning and development review process and to address issues related to the preservation and documentation of archaeological resources and features discovered during the waterfront revitalization process. In order to achieve this, the Strategy provides a framework for the evaluation of significant archaeological resources within the urban waterfront landscape and identifies best practices for the preservation and exhibition of these resources. The study focused on portions of the waterfront from Lake Shore Boulevard East south to the water's edge, between Bathurst Street and the Don River, including the Port Lands.

6.7 Other Guidelines and Policy Documents

6.7.1 Waterfront Toronto Sustainability Framework

Waterfront Toronto's Sustainability Framework provides the policy direction for the integration of sustainable principles into planning decision and project delivery in the Port Lands.
The Sustainability Framework provides specific performance measures related to land use, transportation, cultural resources, natural heritage, water, air quality, energy, materials and waste, human communities, sustainable buildings and innovation. The Framework identifies priorities, addresses performance over time and aligns with Waterfront Toronto's strategic business plan and corporate objectives related to sustainable development, design excellence, accessibility, operational effectiveness, economic prosperity and fiscal sustainability.

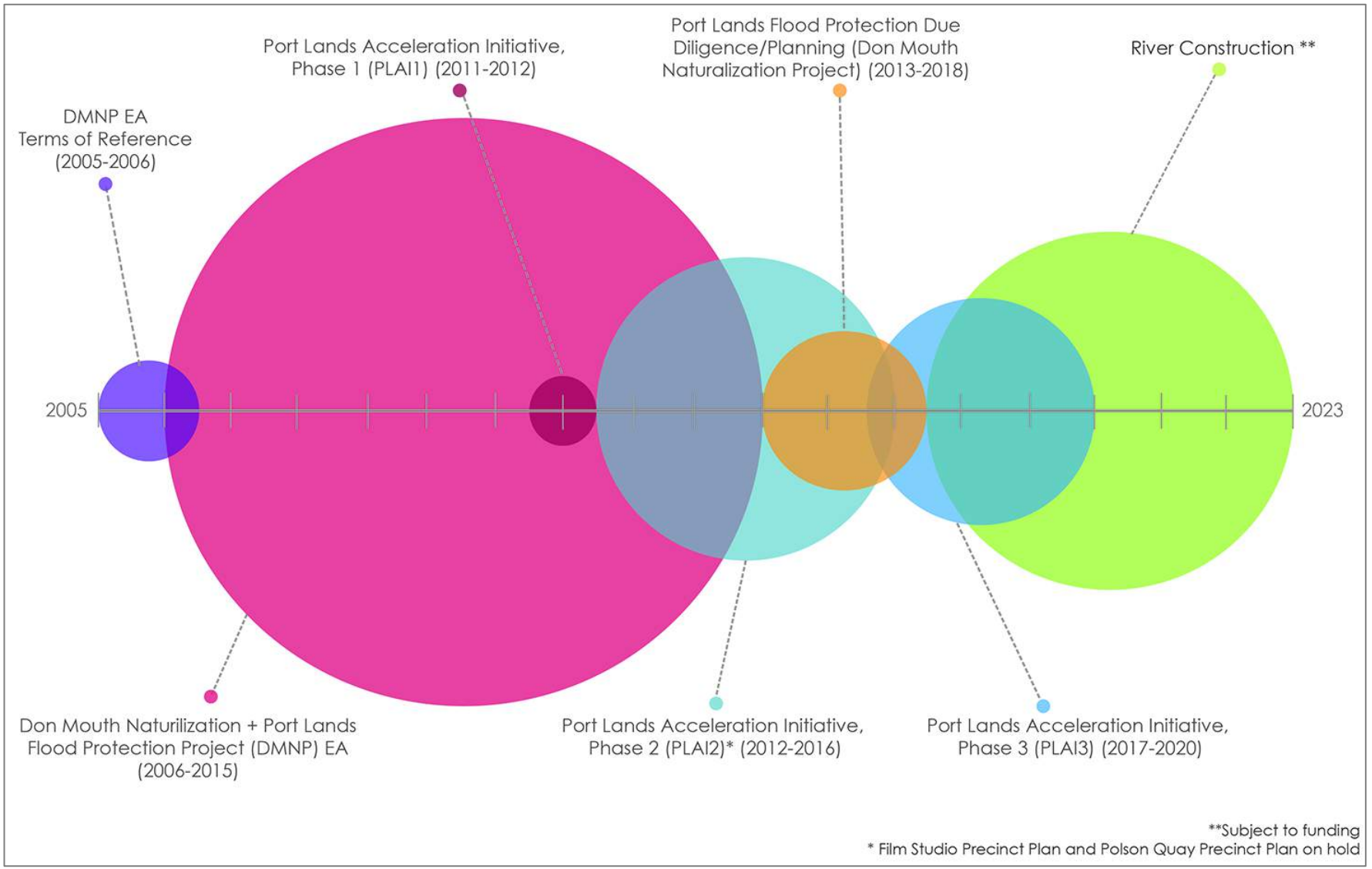
6.7.2 Low Impact Development Guidelines

The Low Impact Development (LID) Stormwater Management Planning and Design Guide was developed by TRCA and Credit Valley Conservation (CVC) as a tool to help engineers, planners and landowners adopt landscape-based stormwater management practices. The Guide is intended to enhance the MOECC's Stormwater Management Planning and Design Manual (2003) and related CVC/TRCA guidance documents. LID is defined in the Guide as "a stormwater management strategy that seeks to mitigate the impacts of increased runoff and stormwater pollution by managing runoff as close to its source as possible" using practices such as green roofs, rainwater harvesting, bio retention, permeable pavement and swales. The key principles for LID design include creating multifunctional landscapes, using existing natural systems as the framework for planning and focusing innovative site design strategies to reduce the impervious area and prevent runoff.

6.8 Previous Planning Initiatives

Over the past 20 years, numerous area-wide and site-specific planning studies related to the Port Lands have been completed. City, Waterfront Toronto and community planning efforts date back to the initiation of the Task Force to Bring Back the Don, followed by a number of other planning initiatives, including the 1998 Unlocking the Port Lands, the 2001 Making Waves: Central Waterfront Part II Plan (now referred to as the CWSP) and 2005 Port Lands Implementation Strategy. In 2005 planning of the naturalized river valley began, with a formal terms of reference for the DMNP EA completed in 2006. **Figure 6-4** provides a high-level timeline of more recent planning activity for the area.

FIGURE 6-4 TIMELINE OF EVENTS THAT LED TO THE TSMP EA



Source: Waterfront Toronto, 2016

More recent planning studies in the Port Lands began in 2006 with the initiation of the DMNP EA (2006-2014). During detailed review of the DMNP EA, the City reflected on an overall vision for the area and supporting studies that would be required to redevelop the area. As a result, the DMNP EA was put on hold in 2011 and the PLAI was established. The City, Waterfront Toronto, and TRCA initiated Phase 1 of the PLAI from 2011–2012 and looked at opportunities and best practices for accelerating redevelopment and managing flood protection of the Port Lands.

The City, with Waterfront Toronto and the TRCA, are completing Phase 2 of the PLAI. A series of more detailed planning studies are undertaken as part of this phase, including this TSMP EA and the Port Lands Planning Framework. The first phase of the PLAI provided an initial starting point for the current studies, and confirmed that the vision for the Port Lands includes a number of mixed-use communities alongside employment and port-related activities.

A formal funding request was submitted to the federal and provincial governments in 2015 for the two-thirds funding of the river and enabling infrastructure. Once the City receives formal funding approval, construction of the river and enabling infrastructure can begin, with an anticipated completion date of 2023.

6.9 Completed Environmental Assessments

There are several EAs that have been completed, or are underway, in the Context Area established for the TSMP EA including the following:

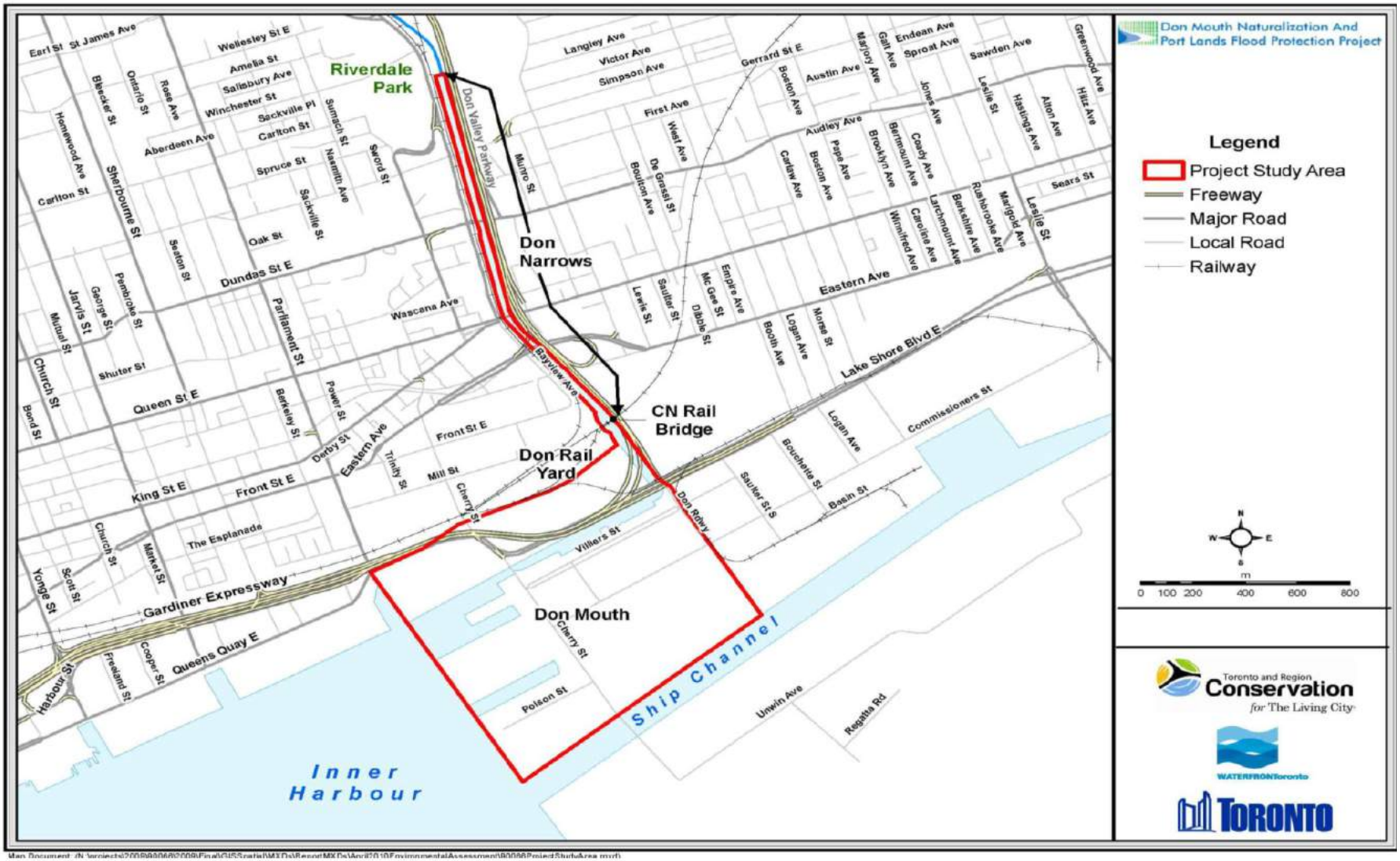
- DMNP EA;
- LDLMP EA;
- Don River and Central Waterfront EA; and,
- WSSMP EA (and update).

6.9.1 Don Mouth Naturalization and Port Lands Flood Protection Project EA

TRCA, in cooperation with Waterfront Toronto and the City, completed an Individual EA for the mouth of the Don River and larger Port Lands referred to as the DMNP EA. The study addressed lands encompassing approximately 290 hectares of urban land east and south of the Don River that was subject to risk of flooding including lands within the Study Area for the TSMP EA. The DMNP EA will transform the existing mouth of the Don River including the Keating Channel, into a healthier, more naturalized river outlet to Lake Ontario, while also removing the risk of flooding to 240 hectares of urban land to the east and south of the existing river. This includes providing flood protection for lands within the Study Area. This project is a key component of Waterfront Toronto and the City's plans to renew and revitalize the city's waterfront area as without it the Port Lands cannot be redeveloped because it is located within the Don River floodplain. The DMNP EA was approved by the MOECC in January 2015. The study area for the DMNP EA is on the west side of the Don Roadway, abutting the

TSMP EA Study Area (**Figure 6-5**). Waterfront Toronto has received commitment to fund a portion of the project (Essroc Quay fill) and as such the project development will commence in 2017.

FIGURE 6-5 DMNP EA STUDY AREA

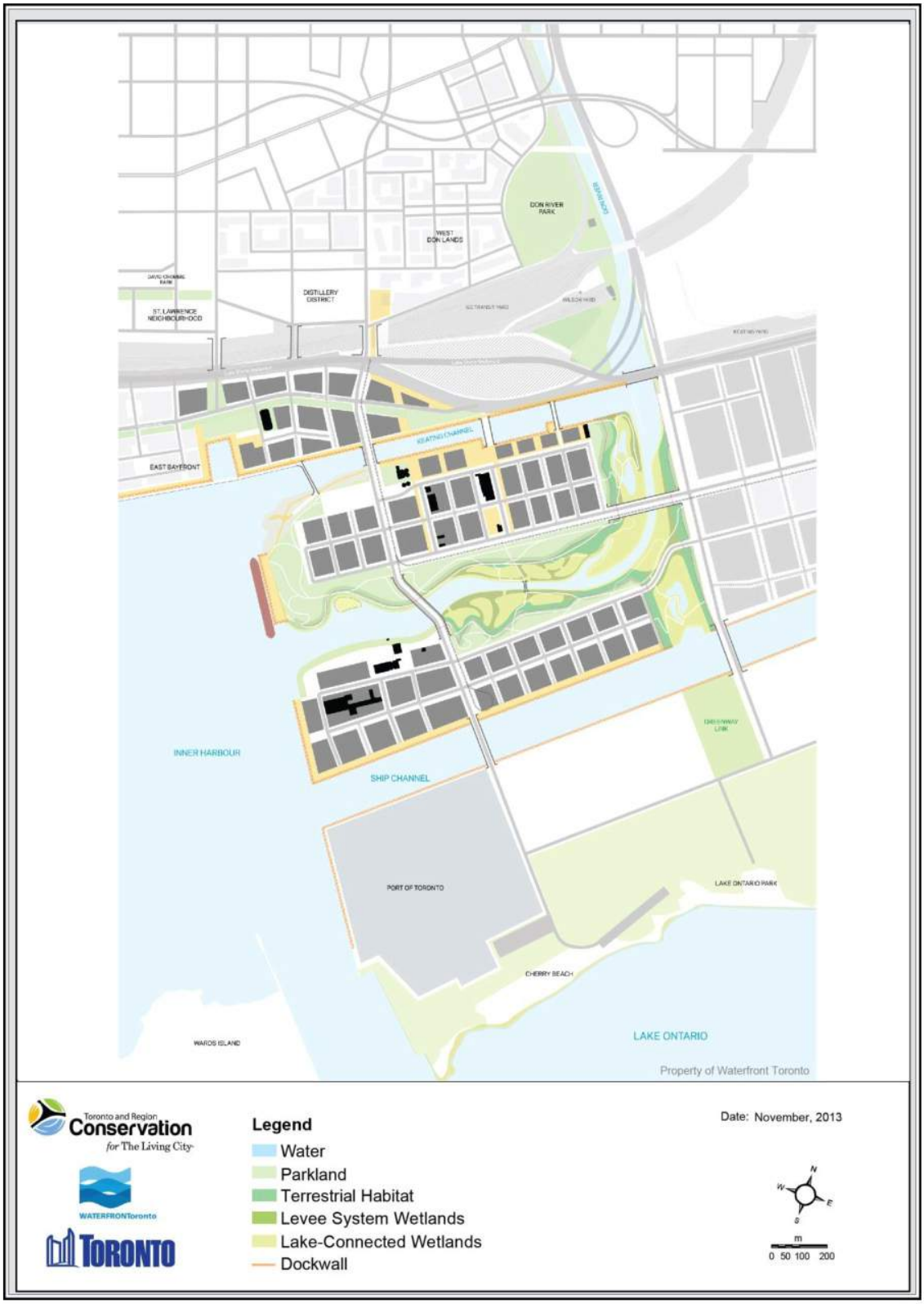


Source: Waterfront Toronto, 2011

The conceptual design for the DMNP includes a new river valley system developed through a combination of cut and fill and an associated low-flow river channel that flows south and then west into the Inner Harbour, with an approximate location halfway between the Ship Channel and the Keating Channel. The river valley system will be stabilized to prevent erosion and movement. The design includes an overflow Greenway to the south along the west side of the Don Roadway which discharges into the Ship Channel and a spillway in the existing Keating Channel. **Figure 6-6** illustrates the conceptual design. Key elements of the design that inform the TSMP EA include:

- Flood protection features:
    - river valley formation, including the Don Greenway to the Ship Channel, Keating Channel spillway, and low flow channel;
    - east bank FPL north of Lake Shore Boulevard East (more information on the FPL is provided in **Section 5.4.5**);
    - east bank VWF south of Lake Shore Boulevard East (more information on the VWF is provided in **Section 5.4.5**);
    - the FPL/VWF in the Unilever Precinct (on First Gulf site) will tie into the railway embankment, and the Eastern Avenue roadway grades will be raised on the east side of the railway embankment, causing any water to be contained to the west of the railway embankment area;
    - modifications to grades surrounding Eastern Avenue at the Kingston Subdivision grade separation;
    - removal of the existing Cherry Street crossing and abutments over Keating Channel;
    - raising of the grades in the Keating Precinct and Lower Don Lands;
    - installation of an adaptive weir upstream of Lake Shore Boulevard East to better manage flow splitting functionality between the three valley segments in the Lower Don Lands; and,
    - widening and deepening the river channel north of Lake Shore Boulevard East to drop the flood levels to fit under Lake Shore Boulevard East.
- Transportation and servicing features:
    - new river crossings constructed to carry vehicular traffic will be designed to span the floodplain and to pass the Regulatory Flood with a minimum of 0.5 m freeboard (with the exception of the Lake Shore Boulevard East and Harbour Lead crossing); and,
    - preinstalled, underground utility conduits will provide servicing across the floodplain without repeated disturbance to the naturalized river valley system.

FIGURE 6-6 DMNP EA CONCEPTUAL DESIGN



Source: Waterfront Toronto, 2011

6.9.2 Lower Don Lands Master Plan EA

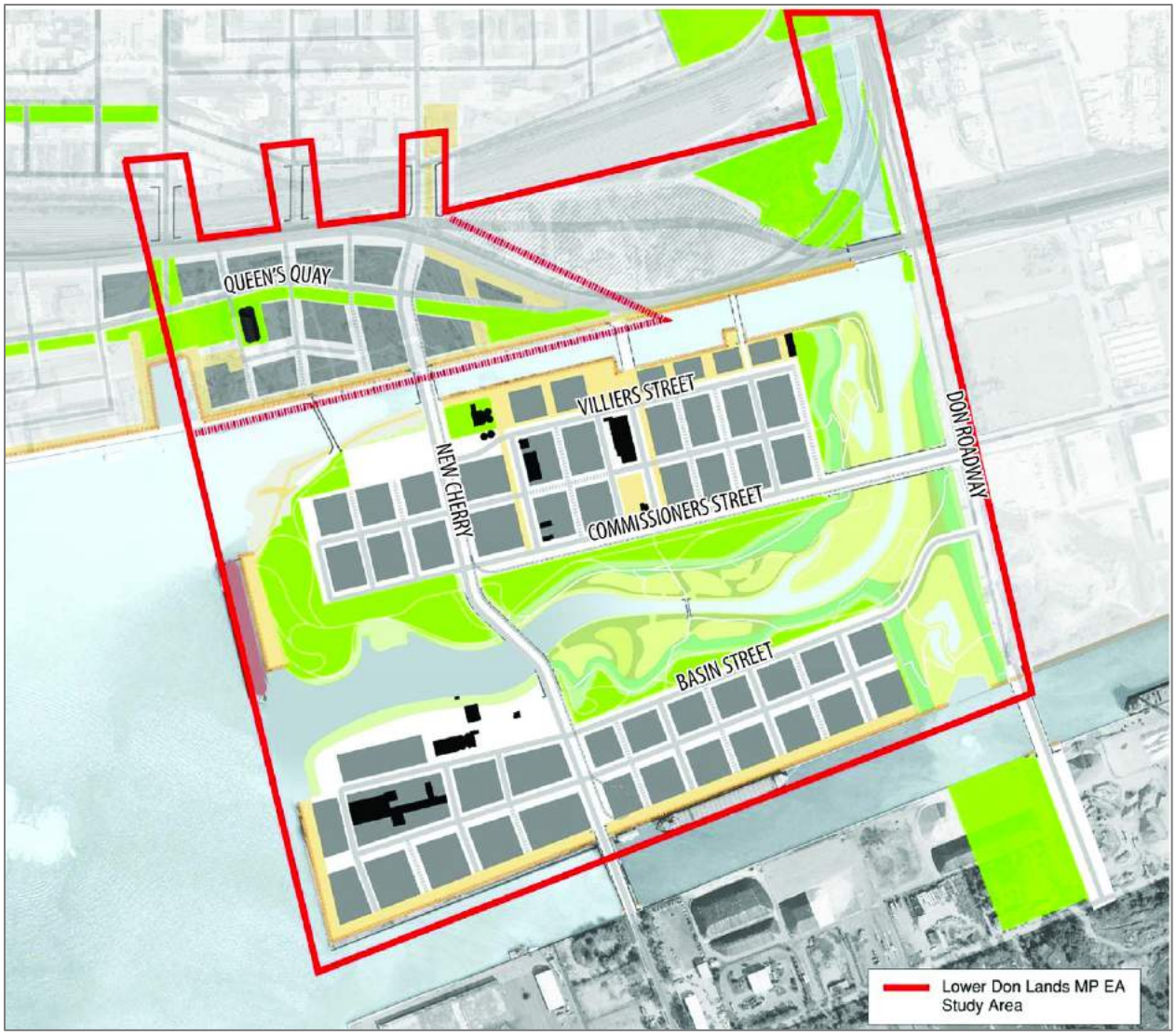
The Lower Don Lands covers an approximate 125 hectare area bounded by the Inner Harbour of Lake Ontario, the Don Roadway, the rail corridor and the Ship Channel. It includes most of the lands within the DMNP EA and is on the west edge abutting the TSMP EA Study Area (**Figure 6-7**). The Lower Don Lands are the developable lands surrounding the DMNP west of the Don Roadway. The naturalization and shifting of the mouth of the Don River is the centrepiece of the plans which will transform the largely underutilized industrial area into new sustainable parks and communities. The LDLMP EA was completed in 2014 and included an Addendum and ESR that was completed to reflect the final design carried forward in the DMNP EA (updates provided in the Addendum are noted in pink in **Figures 6-8** to **6-10)**. The LDLMP EA addressed water, wastewater, stormwater and transportation (including transit) infrastructure servicing requirements necessary to support the proposed land uses and addressed Phases 1 and 2 to reflect the DMNP EA, and completes the Schedule 'B' Class EA requirements for all of the water and wastewater works and most of the major stormwater works.

The plan for the Lower Don Lands ties directly into the TSMP EA. Transportation and servicing solutions for the Lower Don Lands connect to the solutions for the Port Lands and will be integrated as one system servicing the community. Key aspects of the LDLMP EA that have been included and tied into the TSMP EA are:

- Commissioners Street cross-section with the Don Roadway and continuing east of the Don Roadway;
- Cherry Street cross-section;
- location of transit routes to carry passengers east and south;
- bridge connections; and,
- servicing connections.

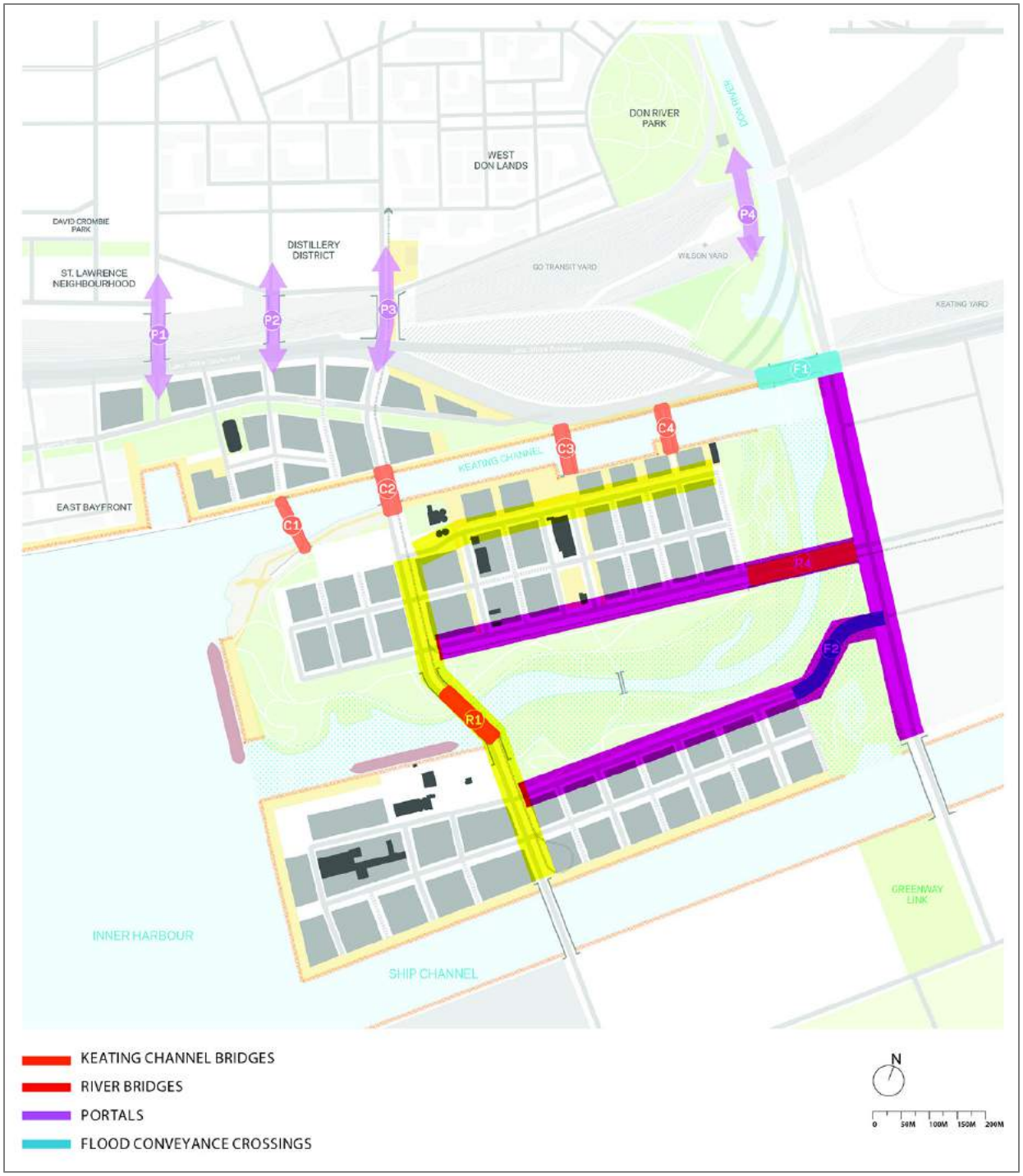
Figure 6-8 and **6-9** illustrates the roads, transit lines and bridges for the Lower Don Lands. The plans for the transportation network are carried through to influence the TSMP EA and maintain consistent crossings where possible. **Figures 6-10** to **6-12** illustrate the Lower Don Lands' servicing infrastructure that is being carried east and south in the Study Area.

FIGURE 6-7 LDLMP EA STUDY AREA



Source: City of Toronto, 2014b

FIGURE 6-8 LDLMP EA ROADS AND BRIDGES

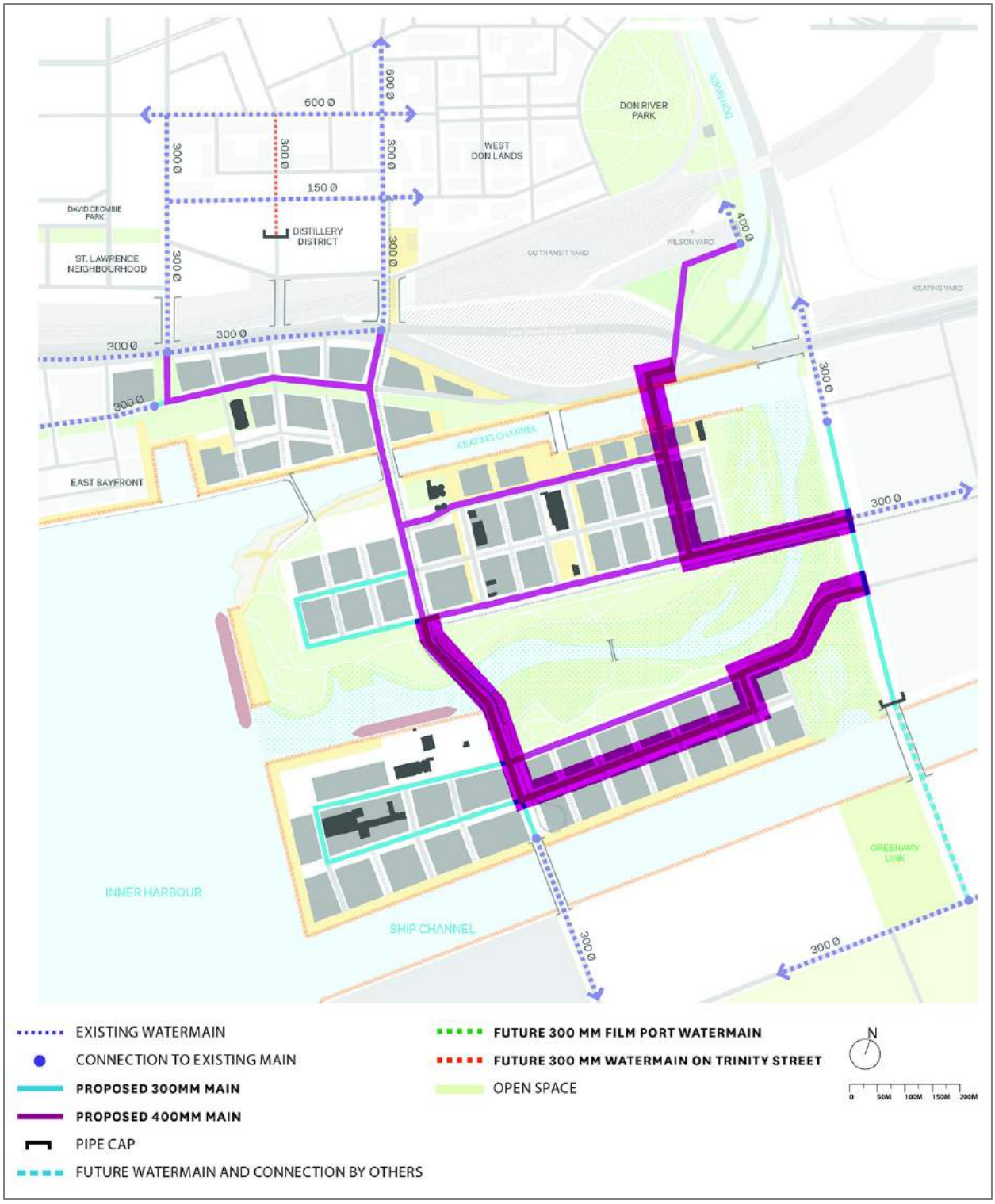


Source: City of Toronto, 2014b

FIGURE 6-9 LDLMP EA TRANSIT

Source: City of Toronto, 2014b

FIGURE 6-10 LDLMP EA WATER SUPPLY INFRASTRUCTURE

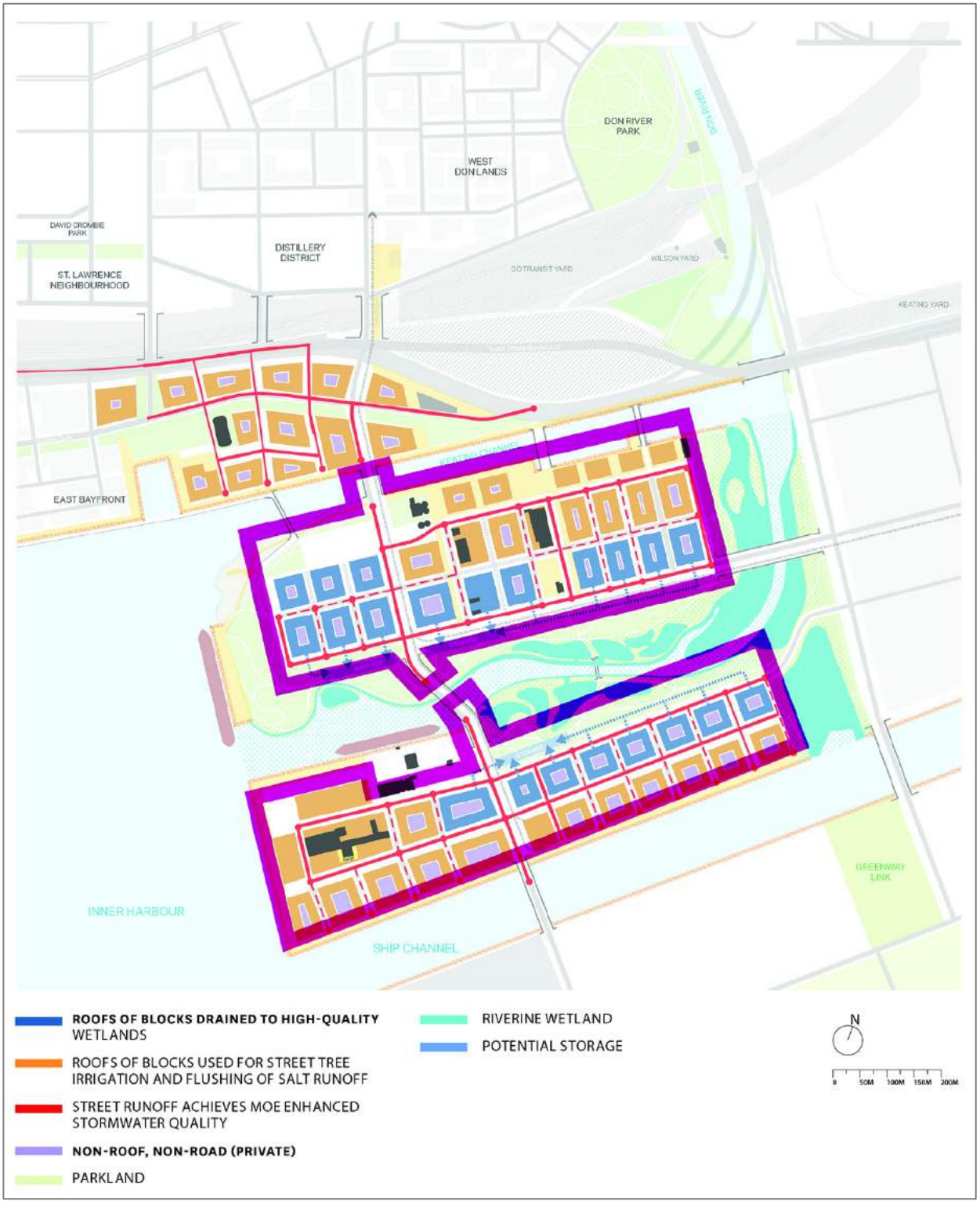


Source: City of Toronto, 2014b

FIGURE 6-11 LDLMP EA SANITARY SEWER

Source: City of Toronto, 2014b

FIGURE 6-12 LDLMP EA STORMWATER DRAINAGE

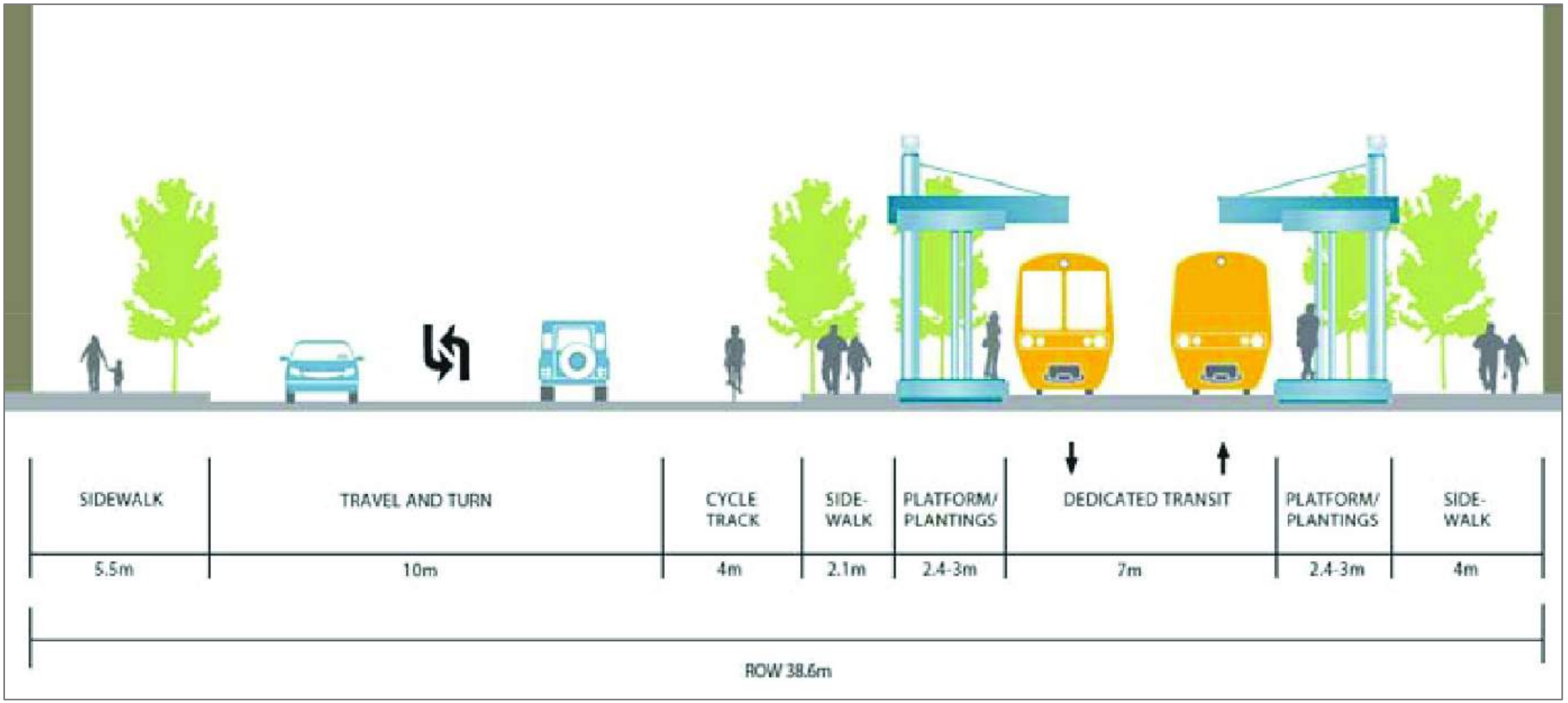


Source: City of Toronto, 2014b

The LDLMP EA also fulfills Phases 3 and 4 of the Class EA planning process for the following Schedule 'C' projects in the Study Area (see provided cross-sections as available):

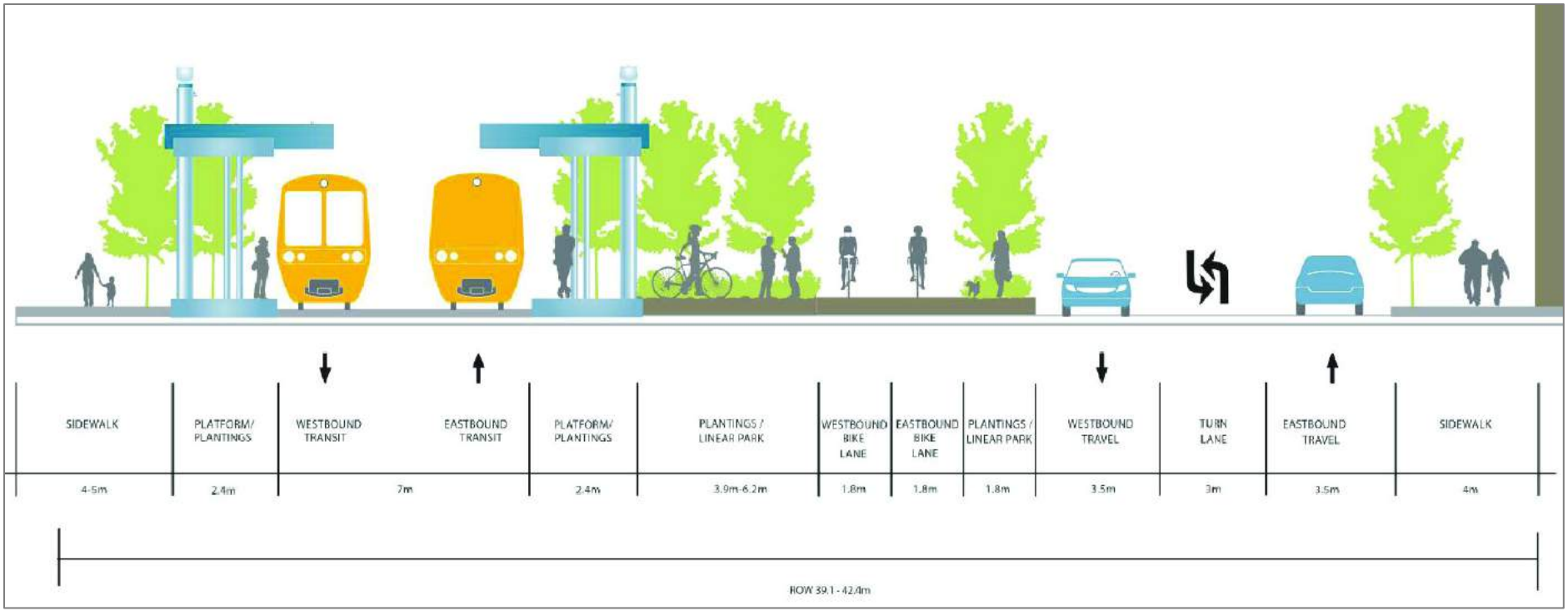
- Cherry Street (including transit) to the Ship Channel;
- Commissioners Street (including transit) from Cherry Street to the Don Roadway;
- Villiers Street (note this street reverts to a local street with two lanes of traffic);
- Basin Street from Cherry Street to the Don Roadway (26 m right-of-way);
- Don Roadway; and,
- mechanical stormwater control facilities.

FIGURE 6-13 CROSS-SECTION – CHERRY STREET BETWEEN LAKE SHORE BOULEVARD EAST AND VILLIERS STREET (NORTH OF COMMISSIONERS STREET, FACING NORTH)



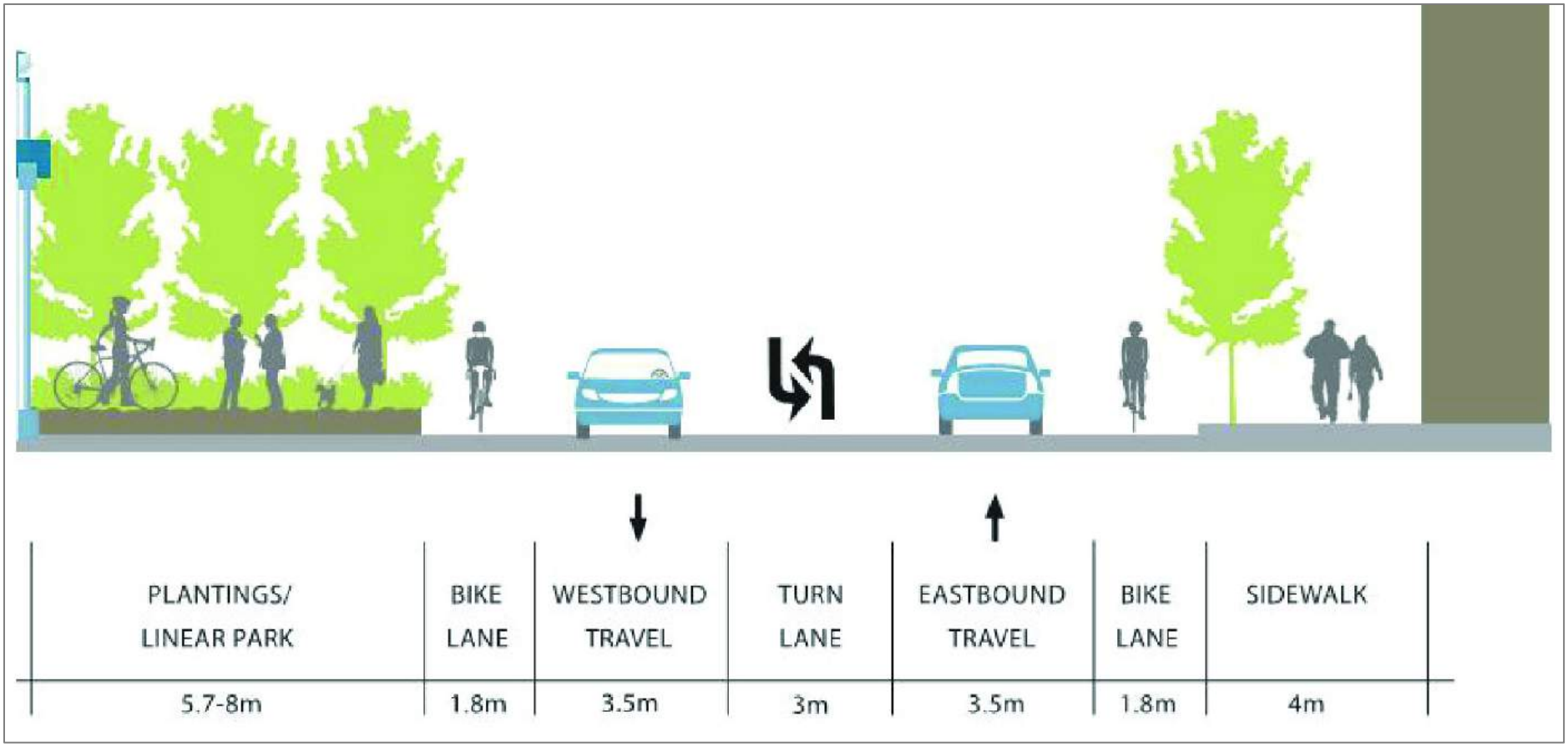
Source: City of Toronto, 2014b

FIGURE 6-14 CROSS-SECTION – COMMISSIONERS STREET



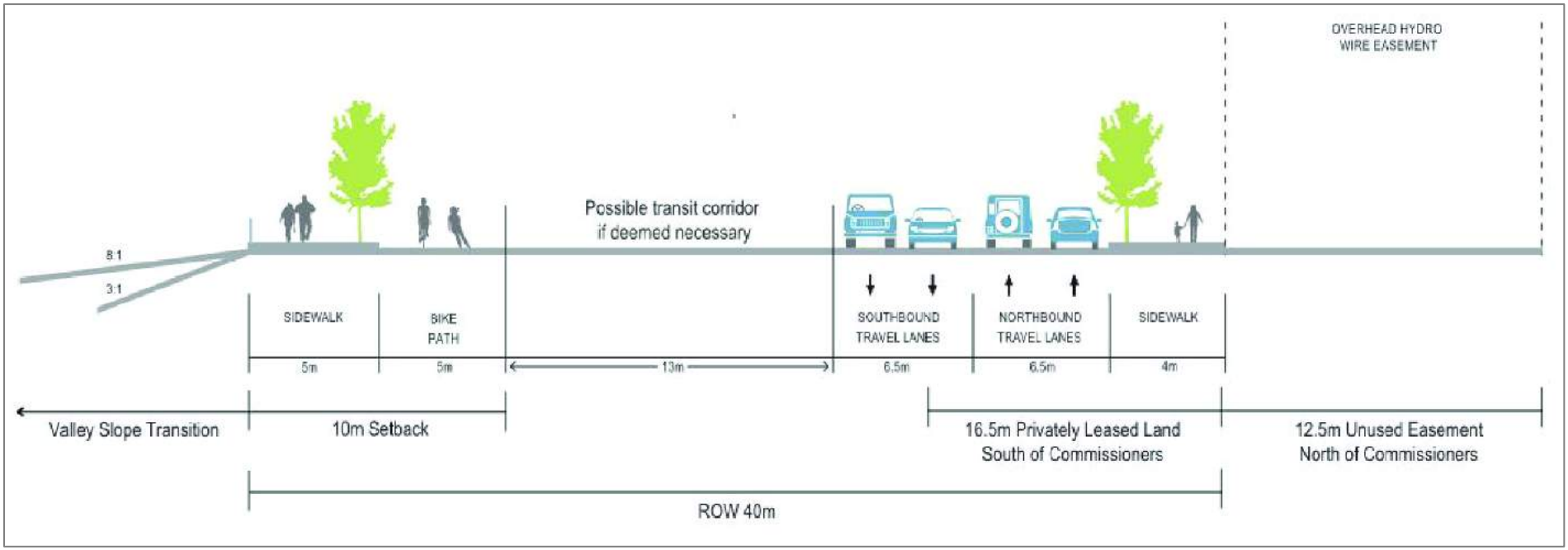
Source: City of Toronto, 2014b

FIGURE 6-15 CROSS-SECTION – VILLIERS STREET



Source: City of Toronto, 2014b

FIGURE 6-16 CROSS-SECTION – DON ROADWAY



Source: City of Toronto, 2014b

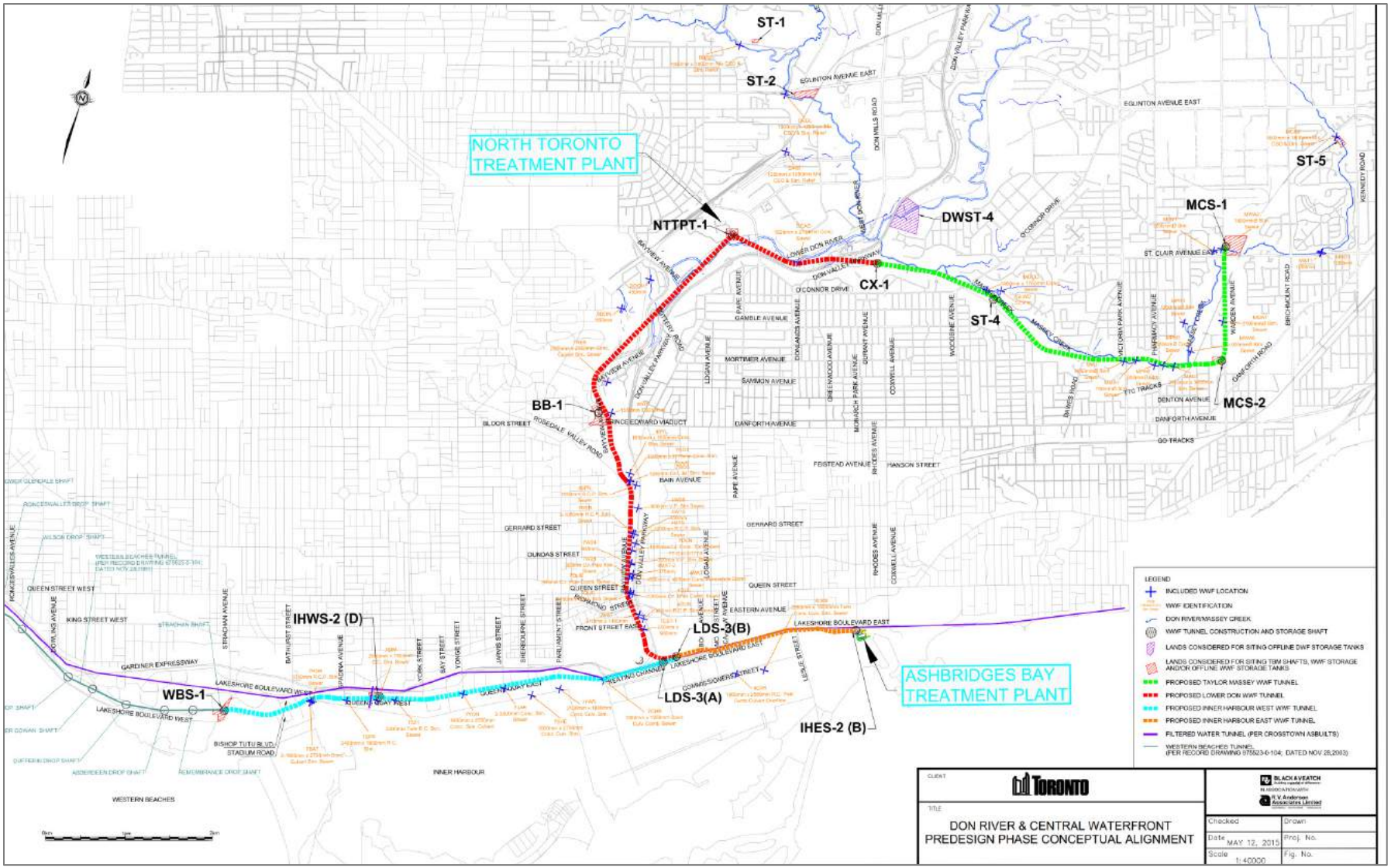
6.9.3 Don River and Central Waterfront EA

The Don River and Central Waterfront Project Class EA was completed by the City to look for solutions to improve water quality, particularly for stormwater runoff and combined sewer overflows. The Class EA recommended solutions to address the problem of stormwater and combined sewer overflow discharges and carried forward the recommendations in the City's WWFMP. The recommendations include installing a series of integrated underground tunnels and storage shafts that will capture, store, and transport stormwater and combined sewer overflows to a new wet weather flow treatment facility. They also recommend a number of offline storage tanks to store peak sanitary flows and to capture combined sewer overflows from remote outfall locations. The recommendations include the following (City of Toronto, 2016d):

- three integrated tunnels (approximately over 22 km in total);
    - Lower Don River Tunnel/ Coxwell Bypass;
    - Taylor Massey-Creek Tunnel;
    - Inner Harbour Tunnel;
- fifteen underground vertical storage shafts (30 m in diameter), connected to the tunnel system that will temporarily store wet weather flows;
- four underground storage tanks for offline storage of peak sanitary flows where additional capacity is needed;
- three underground storage tanks for offline storage of combined sewer overflows from four remote outfall locations;
- wet weather flow connections that will link all of the parts of the system (tanks, tunnels and shafts) with the problematic outfalls;
- new pumping station at Ashbridges Grove Park;
- treatment facility near the ABTP that will provide high-rate treatment of stormwater and combined sewer overflows; and,
- upgrades to the North Toronto Treatment Plant.

The project is currently in the detailed design stage. Construction of the entire project will occur in phases, with the initial phase consisting of the Coxwell bypass beginning in 2018. The construction of the wet weather flow connections and associated infrastructure is the fifth phase. **Figure 6-17** provides an overview of the key project components associated with this EA including the location of the Inner Harbour Tunnel, Lower Don River Tunnel/Coxwell Bypass and the locations of underground storage shafts.

FIGURE 6-17 DON RIVER AND CENTRAL WATERFRONT EA CONCEPTUAL MAP



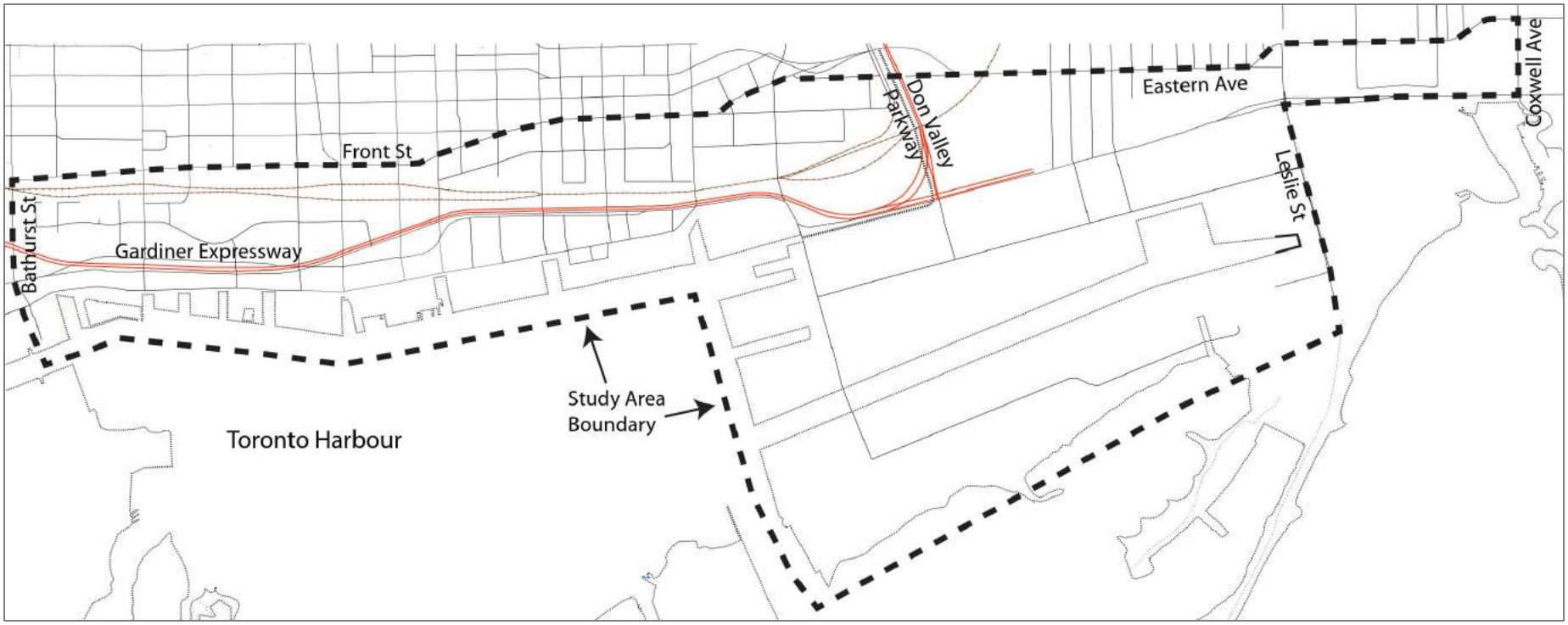
Source: City of Toronto, 2016a

6.9.4 Waterfront Sanitary Servicing Master Plan EA and Update

The City is in the process of completing an update to the WSSMP EA, referred to as the WSSMP EA Update. The WSSMP EA was completed in 2012 and was developed to ensure the necessary infrastructure was in place to provide sanitary servicing for development along the waterfront to 2031. The update is now being completed to address the development growth along the waterfront, updated information on future sanitary servicing needs, and new information on projects from completed EA studies for areas along the waterfront (e.g., the Don River and Central Waterfront Project) that offer an opportunity to integrate infrastructure (City of Toronto, 2015b).

Figure 6-18 shows the study area for the WSSMP EA Update. The study area is serviced by three large interceptor sanitary sewers. Wastewater collected by these three interceptors flows to the ABTP where it is treated and released into Lake Ontario. There are currently four pumping stations including the new Cherry Street Pumping Station in the Study Area, which aid in the flow of wastewater to the treatment plant. The WSSMP EA Update will accommodate wastewater flows from all areas in the TSMP EA as part of the overall servicing strategy for the Central Waterfront. The WSSMP EA Update will accommodate servicing of the TSMP EA Study Area in the overall WSSMP EA Update servicing strategy while the TSMP EA focuses on the proposed local sewer network system. The current work being done for the WSSMP EA Update has informed the development of wastewater solutions for the TSMP EA. The wastewater servicing solutions for the TSMP EA are required to connect into the invert/overt at Carlaw Avenue. The City's Water Division will address any further connection requirements through the WSSMP EA Update.

FIGURE 6-18 WATERFRONT SANITARY SERVICING MASTER PLAN EA AND UPDATE STUDY AREA



Source: City of Toronto, 2015b

6.9.5 Other

Lake Ontario Park Master Plan

A Big Move in the CWSP, the Lake Ontario Park is intended to provide a much enhanced continuous urban park system in the tradition of the city's great parks like High Park. The park boundary is identified as extending from Clarke (Cherry) Beach to Balmy Beach (**Figure 6-19**).

In 2006, Waterfront Toronto and the lead design team, Field Operations, began preparing a master plan to guide the future implementation of Lake Ontario Park. The process culminated with the Lake Ontario Master Plan (Parts 1 and 2). The plan defines a unique design vision for the park and identifies specific implementation projects and embraces the Tommy Thompson Park Master Plan and supports the implementation projects that are already underway in the Port Lands. The goal was to foster the creation of a new waterfront park that is beautiful, sustainable and that serves as a special place for the people who live in and visit Toronto. While the Master Plan has not been adopted by Council, some park features have been, and are continuing to be, implemented, particularly as it relates to the Martin Goodman Trail and restoration activities in Tommy Thompson Park. The park will preserve the features that make it unique but will be enhanced by new landscapes and facilities (Waterfront Toronto, 2008a).

FIGURE 6-19 LAKE ONTARIO PARK MASTER PLAN AREA

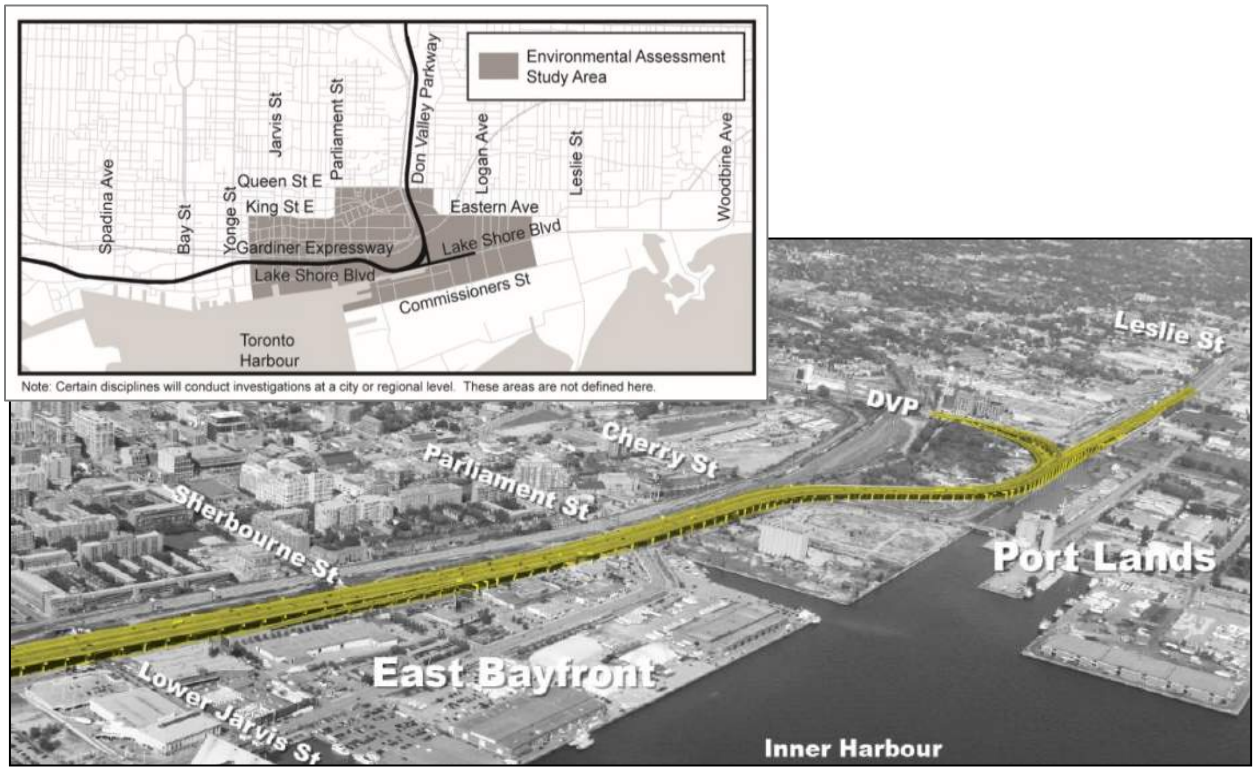
Source: Waterfront Toronto, 2008a

6.10 Adjacent + Related Studies

6.10.1 Gardiner Expressway and Lake Shore Boulevard East Reconfiguration EA and Design Study (Gardiner East EA)

Waterfront Toronto and the City, as co-proponents, are completing the Gardiner East EA. The Gardiner East EA will determine the future of the Gardiner Expressway and Lake Shore Boulevard East, from approximately Jarvis Street to approximately Leslie Street. The study area is illustrated in **Figure 6-20**.

FIGURE 6-20 STUDY AREA FOR THE GARDINER EAST EA



Source: City of Toronto, 2016b

The Gardiner East EA is focused on providing transportation solutions to address the deteriorating infrastructure of the elevated expressway and to identify opportunities to improve connections between the city and the waterfront. The goals of the study are:

- revitalize the waterfront;
- reconnect the city with the lake;
- balance modes of travel;
- achieve sustainability; and,
- create value.

The study area for the Gardiner East EA includes the portion of the Gardiner-Lake Shore Boulevard East corridor extending from the Don Roadway. This rebuilt boulevard would connect with the existing Lake Shore Boulevard East east of Logan Avenue. New streetscaping improvements are proposed on both the north and south sides of Lake Shore Boulevard East, as well as a new left turning lane at Don Roadway for eastbound traffic, and improved pedestrian connections and landscaping. The plans include a planted median through the centre of Lake Shore Boulevard East and a multi-use trail with linear green space along the north edge of the corridor. Removing the Gardiner Expressway through this section provides the opportunity to improve connections north-south across Lake Shore Boulevard East. The design also allows for improved development frontage on Lake Shore Boulevard East, and the opportunity to achieve a more attractive and landscaped boulevard. **Figure 6-21** illustrates the plans for Lake Shore Boulevard East between the Don Roadway and Leslie Street. City Council has now recommended partial removal of the Gardiner – the "Hybrid" option.

FIGURE 6-21 PLANS FOR LAKE SHORE BOULEVARD EAST BETWEEN DON ROADWAY AND LESLIE STREET

Source: City of Toronto, 2016b

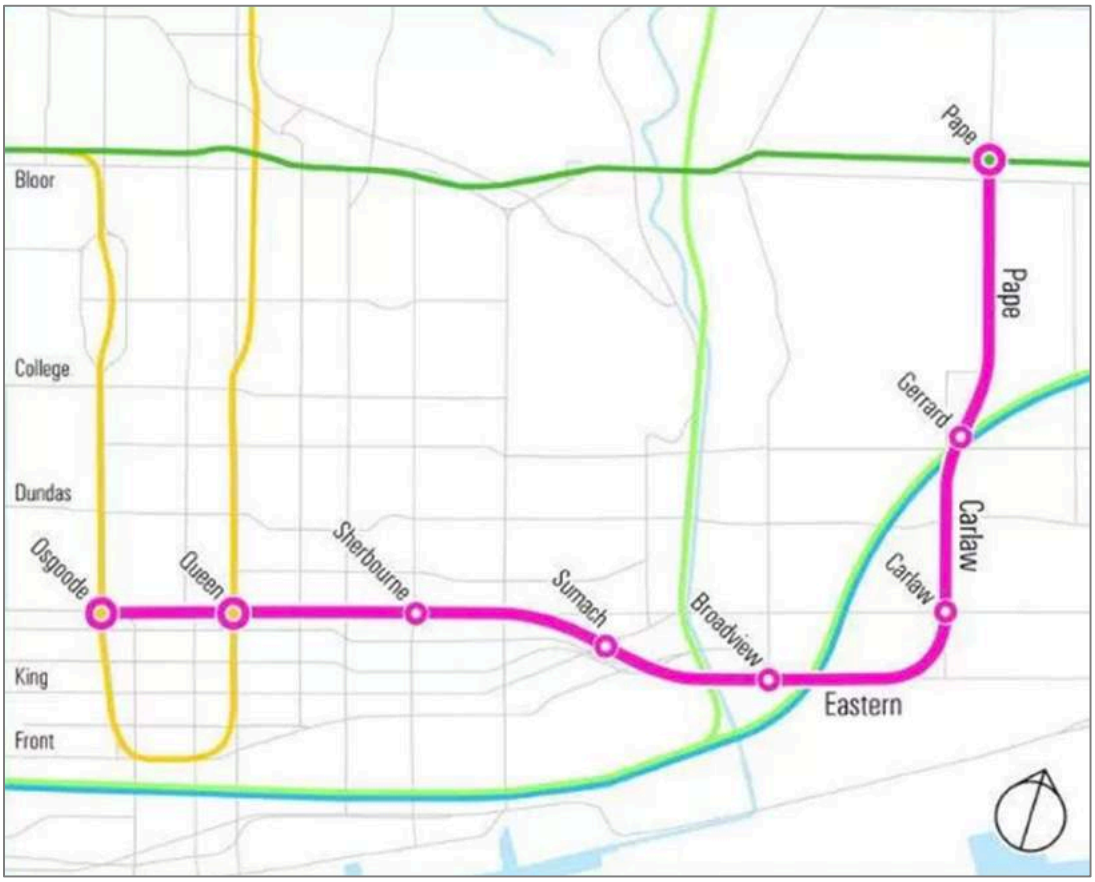
6.10.2 Relief Line Assessment

The City and TTC are undertaking a planning study for Phase 1 of the Relief Line, a future subway line that will connect Downtown Toronto to the Bloor-Danforth Subway east of the Don River. Future phases include extension north to Sheppard Avenue and west to meet up with the Bloor-Danforth subway near Dundas West. The purpose of the Relief Line is to relieve congestion on the Yonge Subway line (south of Bloor) and to relieve crowding at the Yonge-Bloor interchange station. The Relief Line will also provide improved rapid transit service to neighbourhoods east of Downtown, and additional travel options and redundancy within the rapid transit network.

The Relief Line Assessment is following a four-step study process which includes establishing terms of reference, developing evaluation criteria, identifying potential station locations, evaluating potential corridors, and finally selecting a preferred alignment.

In July 2016, City Council approved a Pape/Eastern/Queen alignment for the Relief Line, with the exception of a local segment, located generally between the GO Rail corridor and Queen Street. In May 2017, City Council approved the Carlaw alignment for the local segment. City Council authorized commencing the Transit Project Assessment Process (TPAP), and advancing planning and design (**Figure 6-22**). The TPAP for the Relief Line is anticipated to commence later in 2017. The Relief Line plans include a station at Eastern Avenue and Broadview Avenue, which is within the Study Area for this TSMP EA. This station is planned to provide an interchange with SmartTrack/GO RER and the Broadview Avenue streetcar extension.

FIGURE 6-22 RELIEF LINE ALIGNMENT



Source: City of Toronto, 2017

6.10.3 Waterfront Transit Reset

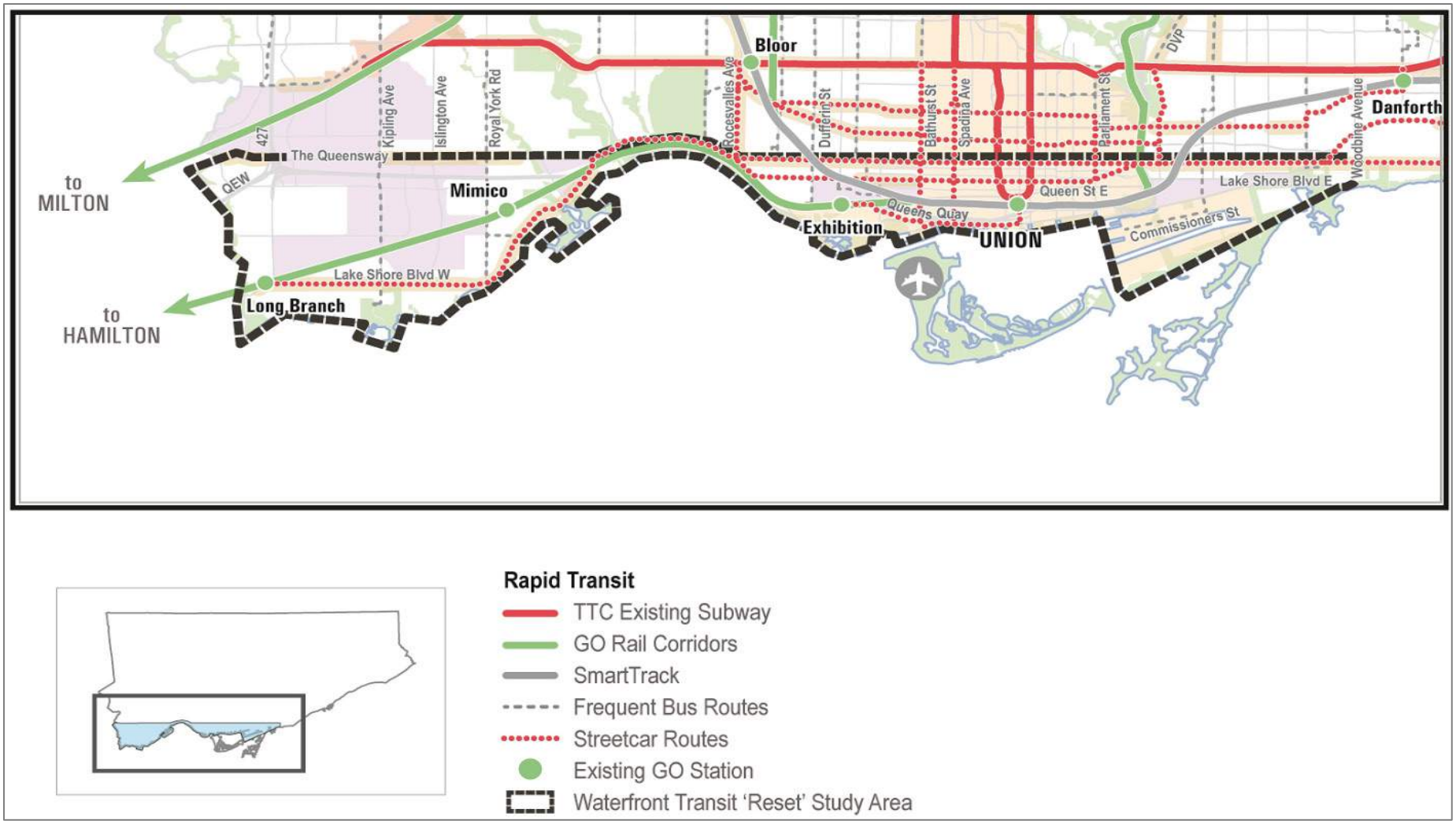
At its meeting of November 3 and 4, 2015, City Council directed staff to work with the TTC and Waterfront Toronto on a comprehensive review of waterfront transit initiatives and options. The study area for this initiative extends from Long Branch in the west to Woodbine Avenue in the east, and south of the Queensway/Queen Street (**Figure 6-23**). While the study area includes the Port Lands in its overall geography, the proposed surface transit network being developed through this TSMP EA will be used as the basis of the Waterfront Transit "reset" initiative, and in particular given the integrated nature of this EA.

The Waterfront Transit "Reset" work program was divided into two phases. Council approved funding for Phase 1 of the "reset", which included:

- a review all relevant background material;
- creation of an overall study vision with related objectives;
- development of a preliminary list of improvement concepts;
- consultation with the public and stakeholders;
- identifying preferred concepts for further study; and,
- development of a scope of work for Phase 2.

At its July 12, 2016 meeting, City Council adopted the recommendations in the City staff report on Phase 1 and directed the City, in partnership with the TTC and Waterfront Toronto to initiate Phase 2 of the initiative. Phase 2 will focus on unresolved areas of the network with the potential to add significant transit network benefits: the East Bayfront and the extension of transit into the Port Lands, and the section from Legion Road and Lakeshore Boulevard to Exhibition Place.

FIGURE 6-23 WATERFRONT TRANSIT RESET STUDY AREA



Source: City of Toronto, 2016

6.10.4 City of Toronto Official Plan 5-Year Review

As required by the *Planning Act*, the City began an Official Plan review in 2011. The Official Plan review process is ongoing. Given the amount of information gathering and consultation required, Council approved a staged approach to the review conducted according to the following thematic areas:

- ***Heritage*** – New heritage policies (OPA 199) were enacted in May 2015 to address the identification, designation and conservation of archaeological and cultural heritage resources, including sites, buildings, districts and views.
- ***Economic Health and Employment Lands*** – The City recently completed a Municipal comprehensive review (MCR) to look specifically at designated areas of employment (**Section 6.10.4.1**).
- ***Transportation*** – Consultation activities and transportation policy amendments established through the Feeling Congested initiative (**Section 6.10.4.2**).
- ***Neighbourhoods, Apartment Neighbourhoods, Healthy Neighbourhoods*** – Amendments incorporate changes to refine existing policies related to infill and underutilized apartment sites, promote renewal and retrofitting of older residential apartment buildings through the Tower Renewal Program, and encourage small scale retail, institutional uses and community facilities in apartment buildings to better serve residents.
- ***Environment*** – Amendments to the Official Plan environmental policies and designation of ESAs.
- ***Greenbelt Conformity*** – Amendments were required to bring the Official Plan into conformity with the provincial Greenbelt Plan, including identifying the Don and Humber Rivers and Etobicoke Creek as Greenbelt River Valley Connections.
- ***Urban Design*** – Proposed amendments include revisions to emphasize connectivity, safety and access to public spaces, promoting access to Lake Ontario and clarifying the purpose and intent of urban design guidelines.
- ***Housing*** – The Official Plan housing policies were reviewed to encourage the creation of affordable housing, with a focus on new affordable ownership housing.

6.10.4.1 MUNICIPAL COMPREHENSIVE REVIEW (OPA 231)

As part of the Official Plan review, a MCR (approved July 29, 2014) was mandated to look specifically at designated areas of employment. The MCR identifies the South of Eastern area as a vital employment area, north of Lake Shore Boulevard East. New policy direction introduced in the MCR promotes office growth in the Downtown, the Centres and Central Waterfront, with a focus on large freestanding office building. Siting within 500 m of rapid transit stations, including subways, light rapid transit routes and GO stations, is also encouraged. Further, the location of established and potential new office concentrations is to be considered in planning for rapid transit routes.

6.10.4.2 FEELING CONGESTED

Feeling Congested involved a three-phase consultation process to engage the public and address congestion in the city through a review of existing Official Plan policies related to transportation and the establishment of a framework for transportation infrastructure and transit expansion decisions, including identifying transportation priorities and infrastructure investment needs.

Phase 1 of the consultation identified a number of transportation planning criteria and transportation revenue tools to guide future decisions. Phase 2 focused on key policy elements of the Official Plan review, including the Bicycle Policy Framework, Complete Streets Framework and new decision-making framework. Phase 3 involved the development of draft amendments to the Official Plan policies related to integration with land use, Complete Streets, active transportation, transportation demand management and parking, and the movement of goods.

The policy amendments provide the framework for the development of a regional transportation system that allows for the integration of transportation and land use planning to increase accessibility, provide modal choices and increase the speed of travel. The policies encourage development centered on major transit station hubs and key intersections to address mobility and proximity issues. The policies also support a more efficient use of infrastructure and increased opportunities to increase active transportation throughout the city.

6.10.4.3 DESIGNATION OF ENVIRONMENTALLY SIGNIFICANT AREAS

Amendments to the Official Plan environmental policies and designation of ESAs (adopted in November 2015) were required to bring the Official Plan into conformity with the new PPS, enhance policies related to energy, biodiversity, natural environment, water, natural hazards, lake filling and green infrastructure, and assist the City to address climate change. Specific amendments related to the Port Lands include directives to restore and enhance existing features, and to maintain and improve connectivity between existing natural heritage features, including connections to Lake Ontario.

Between 2009 and 2012, the City undertook a study to identify and understand the value of ESAs within the natural heritage system. On May 20, 2016, the MMA approved OPA 262, which amends the City Official Plan policies and mapping with respect to environmentally significant areas (ESAs). As there were no appeals to the Ministry's decision, OPA 262 is now in full force and effect. While none of the new designations are within the Study Area, the extension of the Cherry Beach ESA and designation of the Leslie Street Spit and Base of Spit sites are immediately adjacent to the area south of the Ship Channel. The boundaries of Tommy Thompson Park are proposed to remain the same.

6.10.5 Pressure Districts 1, 1W and 2 Water Distribution Study

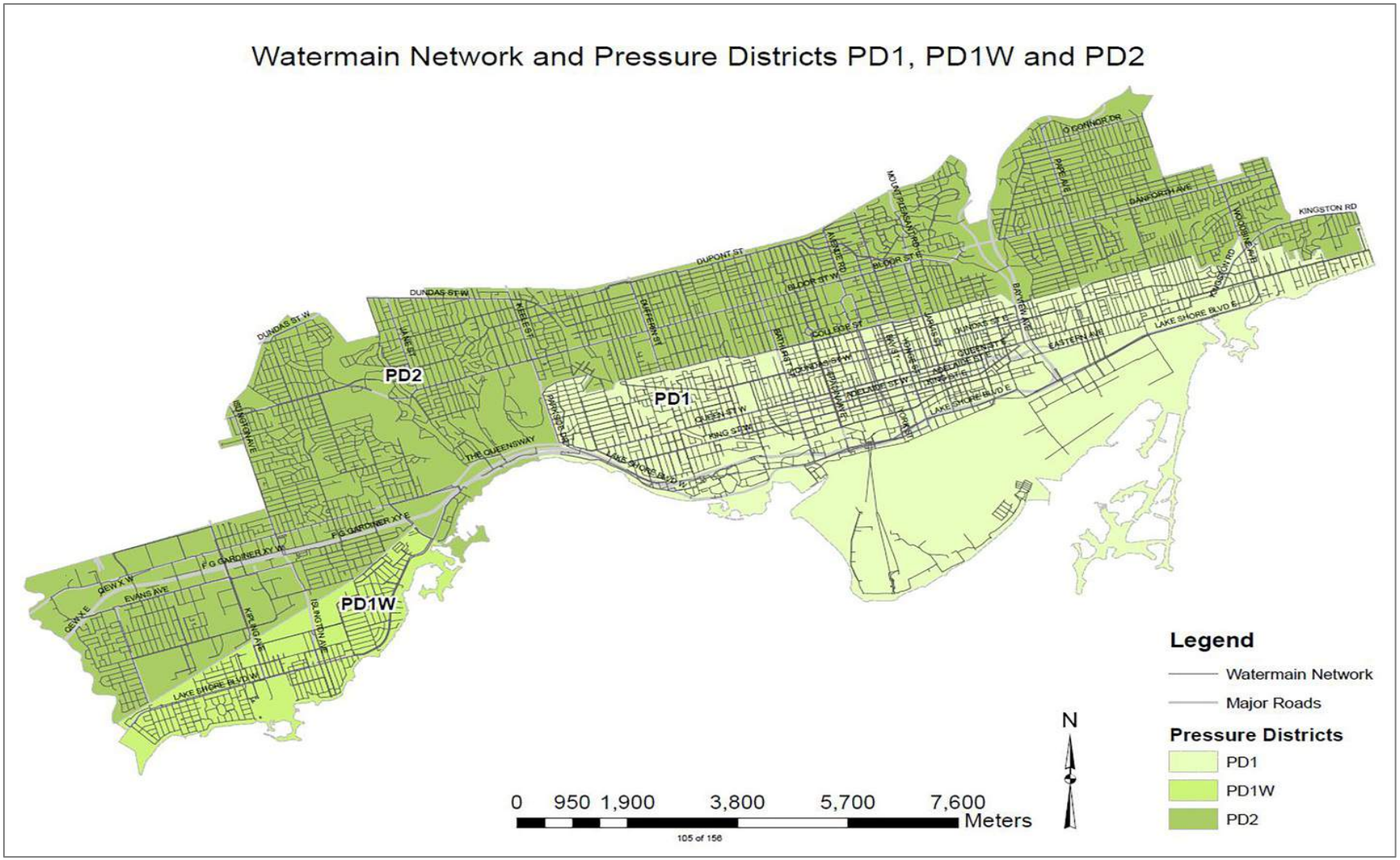
The City has retained a consultant to prepare a Pressure Districts 1, 1W and 2 Water Distribution Study and produce a calibrated and validated hydraulic model for steady-state and extended period simulations. The model will be used for identification of hydraulic system deficiencies and assist in identifying upgrades to allow for future servicing, capital works planning requirements, fire flow requirements, mitigation of operational issues, Pressure District boundary modifications, simulations of

emergency operation scenarios, creation of unidirectional flushing programs, and water loss studies. This study will be informed by outcomes of this TSMP EA (**Figure 6-24**).

6.10.6 Ten Year Cycling Network Plan

On June 9, 2016 Toronto City Council approved a Ten Year Cycling Network Plan to connect, grow and renew infrastructure for Toronto's cycling routes. The Cycling Network Plan will serve as a comprehensive roadmap and workplan, outlining the City's planned investments in cycling infrastructure over 2016-2025. The plan identifies opportunities for cycling infrastructure investments in every part of Toronto, including within the Study Area and its immediate vicinity. It includes recommendations for cycle tracks or bike lanes on fast, busy streets and recommendations for traffic calmed routes with cycling wayfinding on quiet streets. The infrastructure contemplated in this TSMP EA will complement and supplement the proposed cycling infrastructure.

FIGURE 6-24 WATERMAIN NETWORK AND PRESSURE DISTRICTS PD1, PD1W AND PD2



7.0 FUTURE STUDY AREA CONDITIONS

This section describes the potential future Study Area conditions, informed by background work undertaken for the Port Lands Planning Framework and South of Eastern Strategic Direction, and the resulting implications for the TSMP EA.

7.1 Concurrent Planning Initiatives

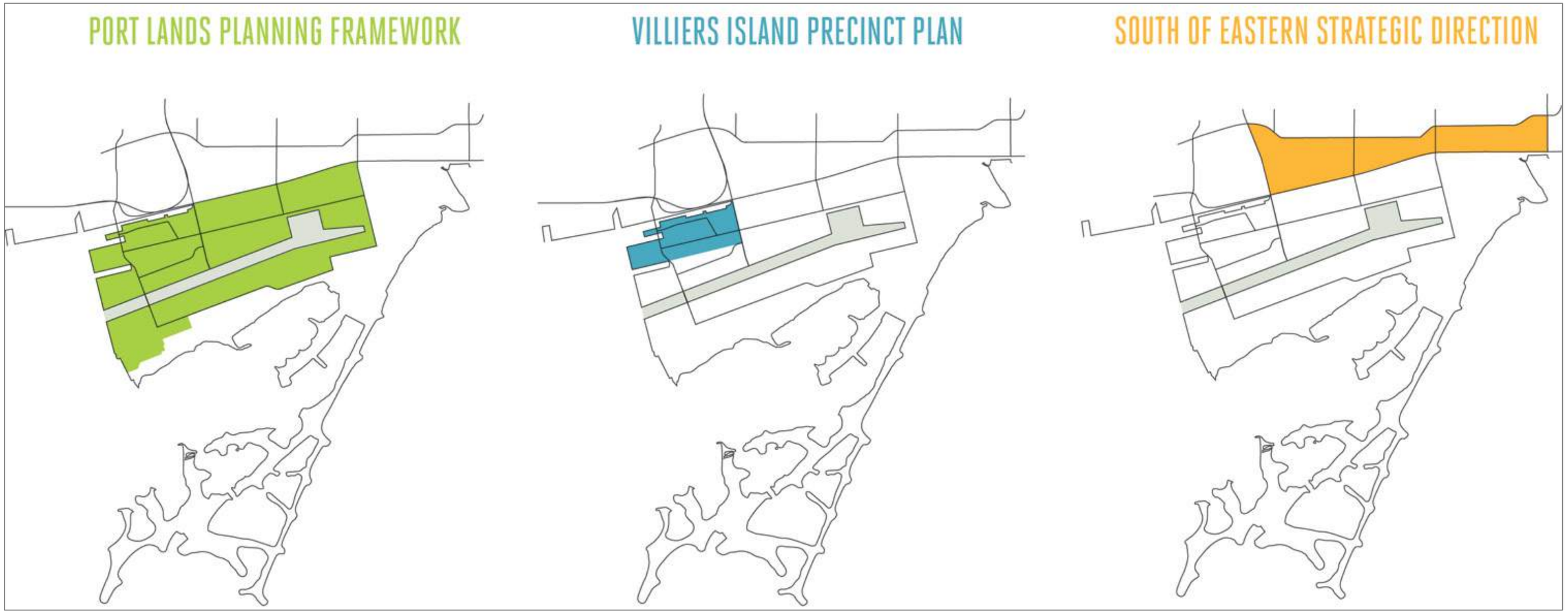
There are three concurrent area planning studies underway that are informing the TSMP EA (**Figure 7-1**). The City, with Waterfront Toronto, is developing a Port Lands wide Planning Framework. Waterfront Toronto is also leading the development of the Villiers Island Precinct Plan, which is both informing and being informed by the Port Lands Planning Framework. The City also initiated the South of Eastern Strategic Direction in 2013.

Initially, a precinct plan for the Film Studio District was also being advanced concurrently with the other studies. However, this was put on hold pending the completion of the Port Lands Planning Framework and this TSMP EA. Land use and other directions for the District is being advanced through the Planning Framework.

To support the anticipated development and diversity of places in both the Port Lands and the South of Eastern area (**Figure 7-2**), a resilient urban structure is needed that better connects the two areas to the city, and that showcases the unique features of the areas.

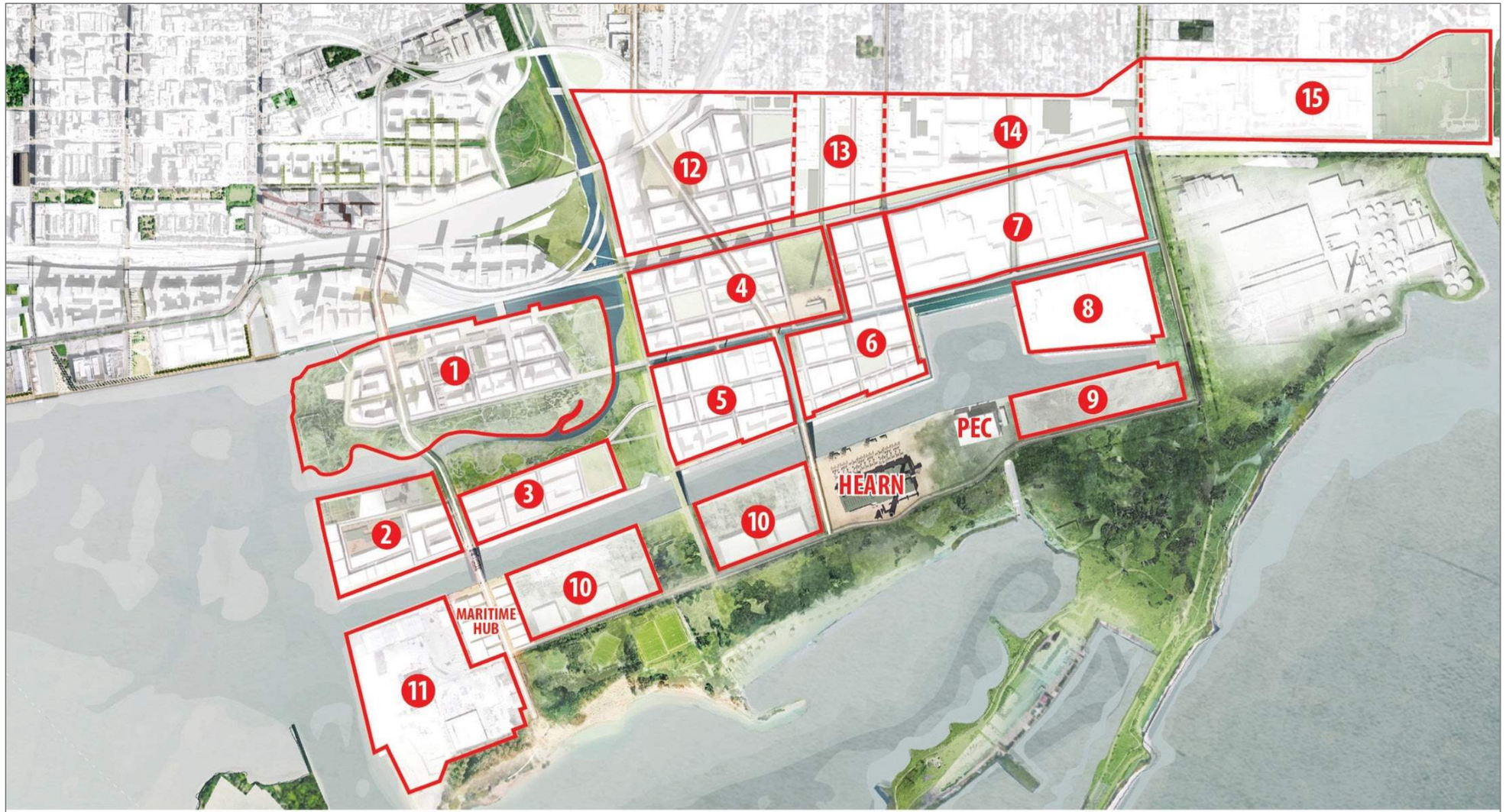
The TSMP EA is identifying the street, transit and municipal servicing networks to support a resilient urban structure, as well as accommodating employment growth envisioned in the South of Eastern area and the Land Use Direction developed for the Port Lands as part of the Port Lands Planning Framework. Population and employment estimates, provided by the City, were used to inform the analysis undertaken as part of this TSMP. Given that the Port Lands Land Use Direction was being refined during the course of the TSMP EA, two potential future land use scenarios were tested. A number of sensitivity tests were also undertaken, in part, due to concurrent studies occurring in or in close proximity to the Study Area. The transportation analysis is documented in more detail in **Appendix D.**

FIGURE 7-1 CONCURRENT PLANNING INITIATIVES



Source: City of Toronto, 2015

FIGURE 7-2 PLACES IN THE PORT LANDS AND SOUTH OF EASTERN AREA



Source: City of Toronto, 2016

7.1.1 Port Lands Planning Framework

The Port Lands Planning Framework will set out a comprehensive vision for the Port Lands to guide its transformation over the near, medium and longer-terms. More detailed and robust policy directions are being advanced in a number of areas, including, but not limited to, land use, built form, views, heritage, biodiversity and natural heritage, and parks and open spaces. Given the size of the Port Lands and need for substantial infrastructure investment, phasing and implementation direction is also being advanced.

7.1.2 Villiers Island Precinct Plan (formerly Cousins Quay)

The Villiers Island Precinct is located to the west of the Study Area. It is approximately 33 hectares in area including the future parks and open spaces associated with the river and Promontory Park. There is approximately 10 hectares of net developable land, excluding streets and parks and open spaces. The precinct area is bounded by the Inner Harbour to the west, the future river to the south and east, and the historic Keating Channel to the north. The precinct is envisioned to transform into a new mixed-use community. The plan takes inspiration from the Island's industrial heritage and urban context. A continuous skirt of waterfront parks will wrap around the water's edges (**Figure 7-3**).

While not located in the TSMP EA Study Area, the vision and anticipated development provide context for the TSMP EA related to transportation and servicing needs. The precinct plan is also being informed by and is informing the Port Lands Planning Framework.

7.1.3 South of Eastern Strategic Direction

The South of Eastern Strategic Direction will be a three-pronged framework that will address the area's economic potential for the South of Eastern area, the resulting transportation needs and urban design implications. Key to unlocking employment potential will be increasing the transit and transportation capacity to the area, which is currently being addressed through this TSMP EA, but also through the SmartTrack/RER and Relief Line Assessment initiatives.

A major office and institutional destination with supportive retail uses is envisioned in the Unilever Precinct, with employment intensification anticipated on sites with redevelopment potential in the balance of the area.

7.2 Planning Horizon

The planning horizon for the Project is a 50+ year build-out. A longer-term horizon has been used in part due to the size of the Study Area and anticipated development roll out. To inform potential infrastructure phasing, an interim horizon was also assessed as part of the TSMP EA.

FIGURE 7-3 VILLIERS ISLAND PRECINCT PLAN AND DEMONSTRATION PLAN AND GUIDING PRINCIPLES

Source: Waterfront Toronto and Urban Strategies, 2015

7.2.1 Interim Horizon (20-25 Years)

The first phase of the PLAI established initial phasing considerations for how the Port Lands would redevelop over the coming decades, informed by market analysis undertaken by Cushman and Wakefield and phasing of the required flood protection works. Areas anticipated to redevelop in the first 20-25 years included Cousins Quay, Polson Quay and the Film Studio District. Cousins Quay and Polson Quay were assumed to redevelop as mixed-use residential communities. The Film Studio District was assumed to primarily redevelop with creative and knowledge-based industries, but some residential uses were also assumed.

The initial development and phasing considerations developed in the first phase of the PLAI were refined by the City and Waterfront Toronto through the course of Project. This was informed by:

- the naturalization of the mouth of the Don River and other associated flood protection measures being implemented as a single project rather a phased approach;
- refinement to the boundary and ongoing precinct planning for Cousins Quay (now Villiers Island);
- more detailed land use analysis undertaken to inform the final recommended Land Use Direction for the Port Lands;
- consideration of more significant employment intensification in the South of Eastern area, including in the Unilever Precinct and associated with other development applications; and,
- other city-building moves and aspirations, such as the potential for consolidated yard relocation and the transformation and adaptive re-use of the Hearn into a major new destination.

As such, areas anticipated to develop in the next 20-25 years are now assumed to include:

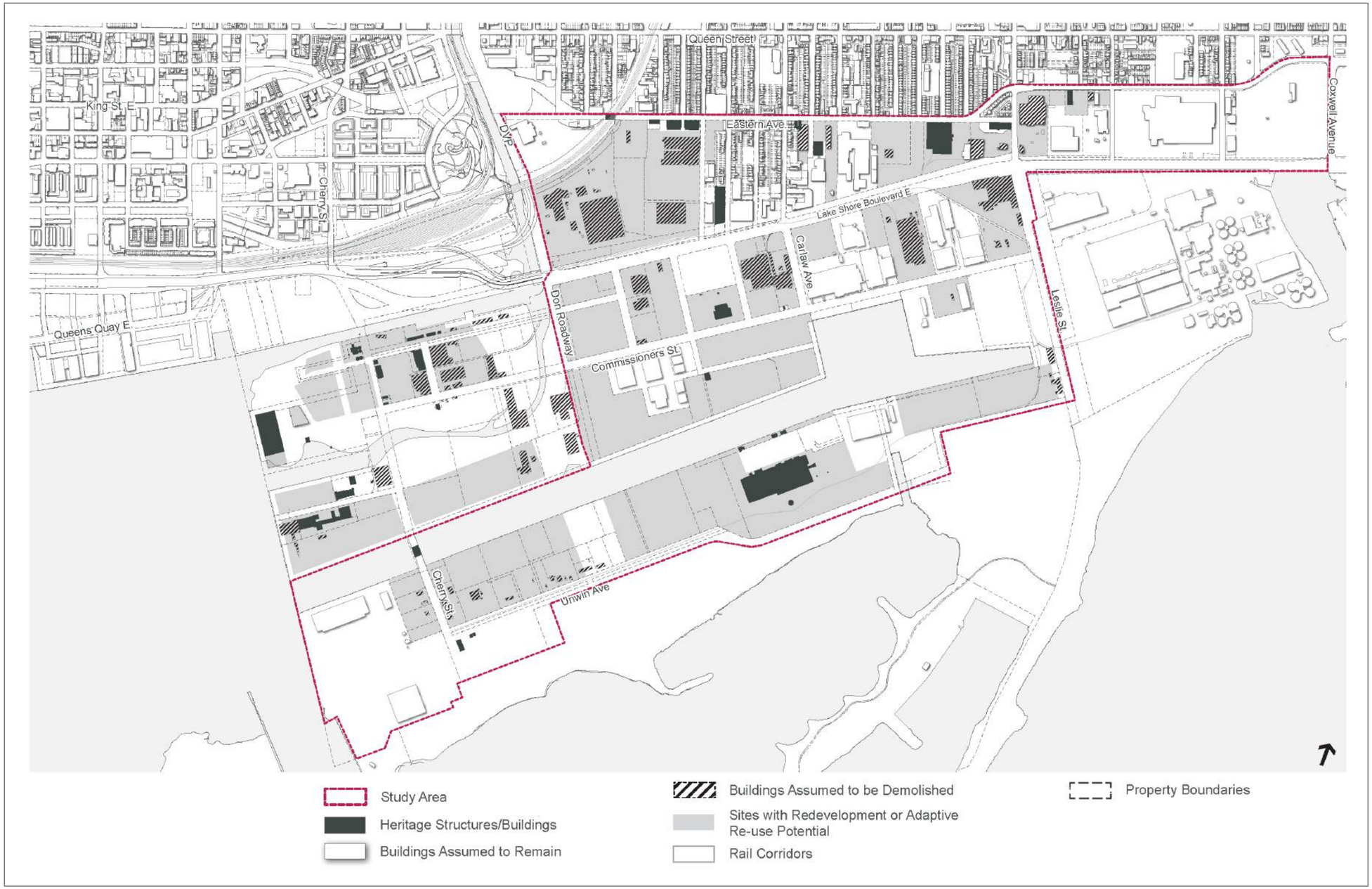
- Villiers Island;
- McCleary District;
- Media City;
- incremental redevelopment of underutilized sites in the East Port area;
- lands south of the Ship Channel, including a portion of the Maritime Hub;
- the Unilever Precinct; and,
- sites with redevelopment potential in the balance of the South of Eastern area.

7.2.2 Full Build Out (50+ Years)

The longer-term projected build-out would see the remaining districts in the Port Lands redeveloping including Polson Quay, South River and the Turning Basin District. Polson Quay and South River may initially redevelop with non-residential uses, but evolve in time into more mixed-use residential districts subject to appropriate mitigation and advancement in technology. The Turning Basin District is envisioned to redevelop with a mix of non-residential uses, including commercial uses at grade on key frontages and creative and knowledge-based industries.

Sites with long-term leases in the Port Lands would redevelop when leases conclude, and in accordance with the final Land Use Direction for the Port Lands. **Figure 7-4** identifies the sites within the Study Area anticipated to remain in the long-term, as well as sites assumed to have redevelopment potential within the horizon of this TSMP EA.

FIGURE 7-4 REDEVELOPMENT POTENTIAL



Source: City of Toronto, 2016

7.3 Land Use

The required infrastructure to support anticipated development levels is, in part, driven by proposed land uses and intensity of development. This TSMP EA has both informed and been informed by parallel work advanced by the City, with Waterfront Toronto, related to establishing more detailed land use direction for the Port Lands. Additionally, potential employment intensification in the South of Eastern area assessed in this TSMP has been informed by background work completed for the South of Eastern Strategic Direction.

7.3.1 Port Lands Land Use Direction

Land use options were developed and consulted on in early 2014 alongside initial alternatives developed for the TSMP EA. Vehicular capacity demands and level of transit service were assessed at a strategic level for the different land use options, which also included assessing different levels of employment intensification in the South of Eastern area.

Following the consultation on the land use options, the City and Waterfront Toronto undertook a comprehensive evaluation of the land use options to arrive at a recommended land use referred to as the Port Lands Planning Framework: Land Use Direction (**Figure 7-5**). This was adopted by City Council in July 2014 to be used as the basis for continued planning in the Port Lands, inclusive of this TSMP EA.

The Council adopted Land Use Direction identified some areas requiring further refinement and more detailed study. Further, it was recommended that a noise and air quality assessment be undertaken to better understand potential land use conflicts and identify approaches to mitigate these conflicts. City Council also directed staff to undertake further consultation with film studio owners and operators.

The City and Waterfront Toronto concentrated on four key activities for refining the Land Use Direction:

- ensuring a critical mass;
- consulting with the film sector;
- assessing land use compatibility; and,
- achieving city building objectives.

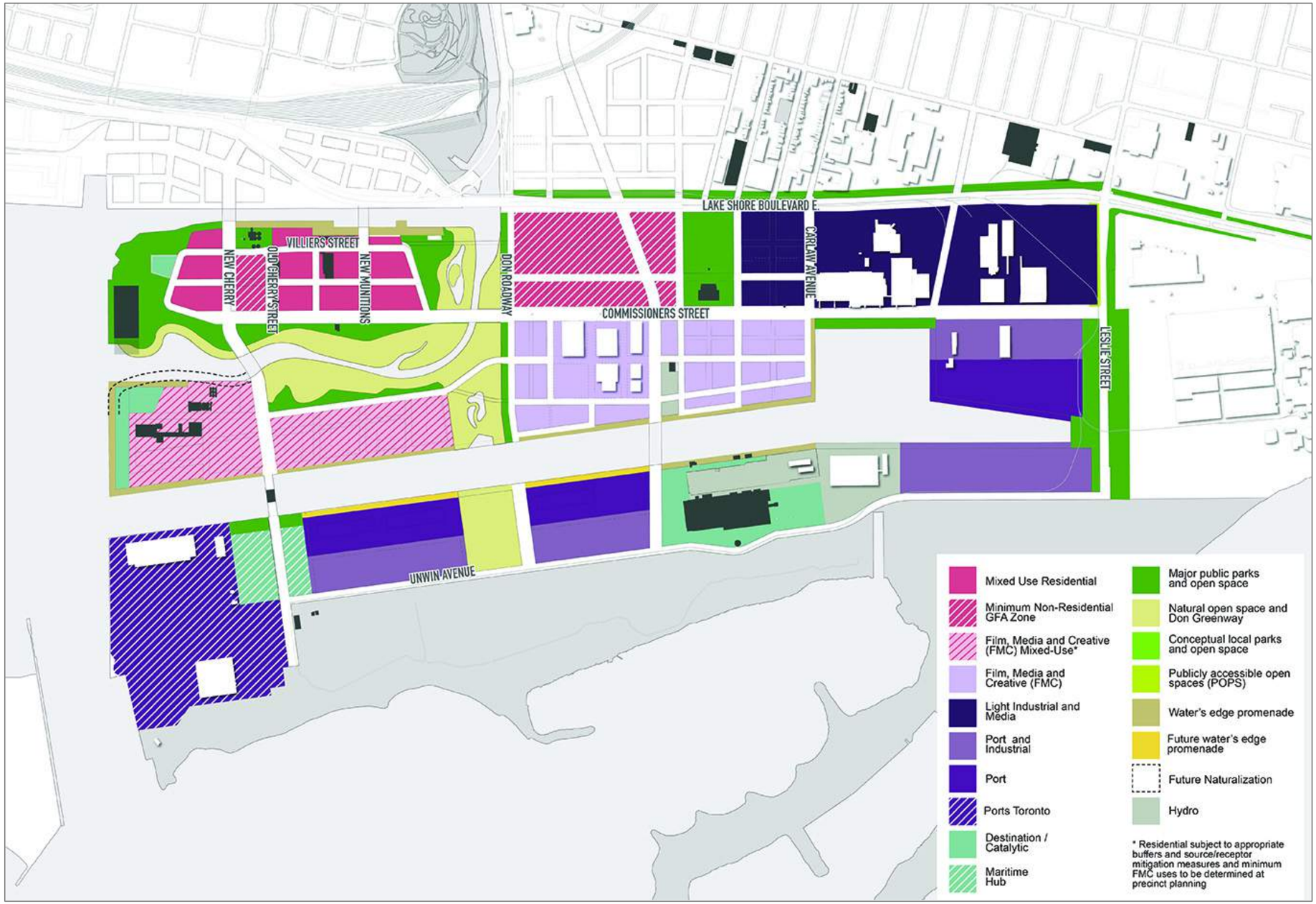
This resulted in four areas of refinement to the Land Use Direction that was presented to the public and stakeholders for feedback and input in November 2015 (**Figure 7-6**).

Since the November 2015 consultation, the City and Waterfront Toronto have been further refining the Land Use Direction based on feedback received and continued consultation with key stakeholders. The final recommended Land Use Direction and Parks and Open Space System Plan is shown in **Figure 7-7**. The recommended land uses and intensity of development is generally consistent with the November 2015 Land Use Direction.

FIGURE 7-5 COUNCIL ADOPTED (2014) PORT LANDS PLANNING FRAMEWORK: LAND USE DIRECTION

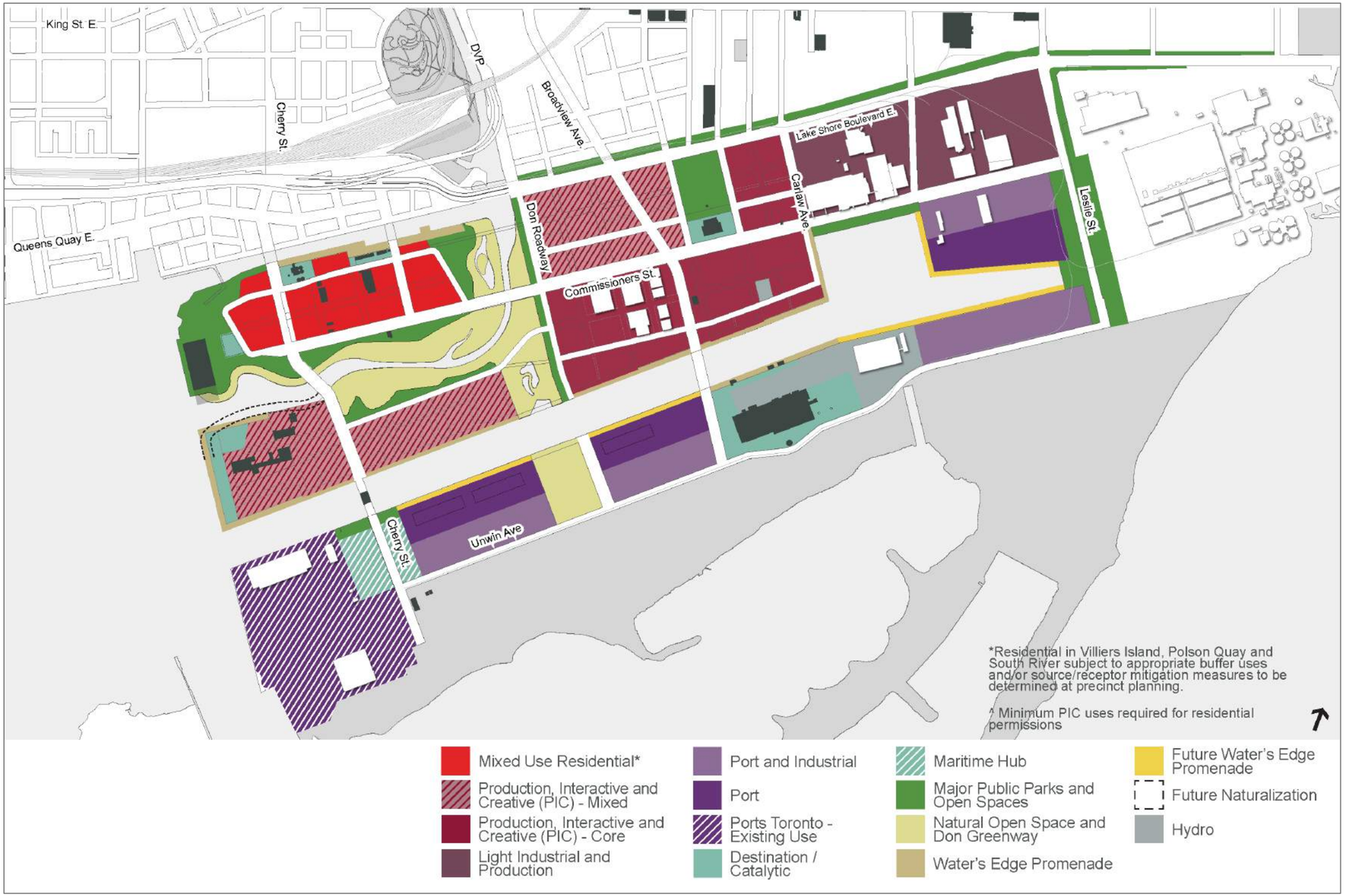
Source: City of Toronto, 2015

FIGURE 7-6 NOVEMBER 2015 LAND USE DIRECTION



Source: City of Toronto, 2015

FIGURE 7-7 FINAL RECOMMENDED LAND USE DIRECTION



Source: City of Toronto, 2016

7.3.2 South of Eastern Employment Intensification

As noted in **Section 6.1**, the South of Eastern area is designated *Employment Areas* in the City's Official Plan, and there are a number of site and area specific policies that apply. As part of the analysis undertaken for the South of Eastern Strategic Direction, a background study was completed that assessed the economic potential of the area and provided some urban design and public realm considerations. The economic development conclusions of the study note that the South of Eastern area enjoys a number of locational advantages for an employment area such as proximity to Toronto's financial core, the downtown area and future development along the waterfront (City of Toronto, 2014c).

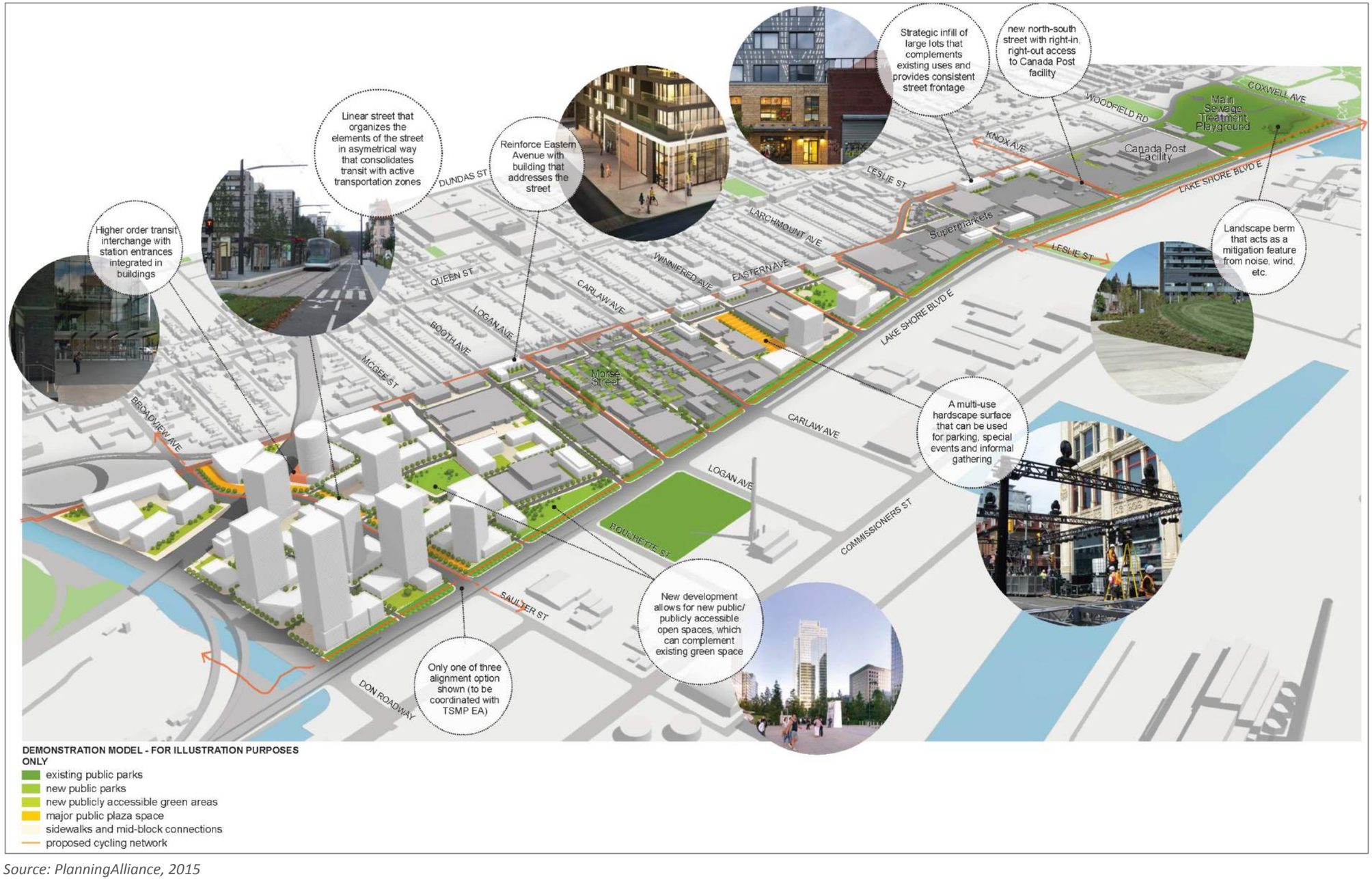
While the city-serving sector present in the area, including various City municipal yards and Canada Post, was identified as likely remaining a major presence, the South of Eastern area will also continue to be an attractive location for Toronto's creative industries because of existing building stock suitable for repurposing and reuse for studios and related office spaces (City of Toronto, 2014c).

The study acknowledged that there are large sites in the area with development potential, including the Unilever Precinct and the lands at 629, 633, and 675 Eastern Avenue. A zoning by-law amendment was recently adopted for the latter for production studies, offices, other ancillary uses and a retail component. Other opportunity sites for employment intensification in the South of Eastern area were also identified. The study provided some initial guidance for the amount of employment intensification that would be feasible on the opportunity sites, including the Unilever Precinct. Three different scenarios were generated (low, medium and high). **Figure 7-8** illustrates an initial development concept generated through the background study for the high employment scenario.

An incomplete Official Plan Amendment application was submitted for the lands south of the rail embankment in the Unilever Precinct (21 Don Valley Parkway) in October 2015. The Official Plan Amendment application was completed by a submission made on December 22, 2016. At the same time, applications for Rezoning and Subdivision Approval were submitted for the lands owned by First Gulf within the Unilever Precinct). These applications are proposing additional employment intensification than contemplated in this TSMP EA. The applicant, First Gulf, is proposing approximately 50,000 employees. Its vision is for a vibrant and active office district supported by retail and services in a compact urban form (City of Toronto, 2016e).

Implementation of higher order transit stations, such as those being advanced through the Relief Line Assessment and SmartTrack/RER, in the vicinity of the Precinct have the potential of accommodating additional intensification. Further, fundamental changes in future travel patterns and demands that reflect walking and cycling as more dominant modes of movement will be needed. Further assessment will be needed in later phases of the EA process and/or through the review of the application for the additional employment intensification contemplated.

FIGURE 7-8 SOUTH OF EASTERN HIGH SCENARIO DEVELOPMENT CONCEPT



Source: PlanningAlliance, 2015

7.4 Population and Employment Estimates

Given the longer-term time horizons associated with the Project, with an estimated full-built out for 2065, the analysis undertaken for the TSMP EA provides a high-level picture of potential transportation and municipal servicing demands that will also provide flexibility as development unfolds.

The transportation, water and wastewater evaluations and associated analysis documented in **Section 8** and respective appendices of this TSMP EA was completed using population and employment estimates provided by the City. The stormwater evaluation and modeling utilized the demonstration plan generated for the Port Lands Planning Framework that also included an updated development concept for the South of Eastern area using the preferred street network.

To advance the TSMP EA concurrently with refinements and more detailed analysis being undertaken to the Land Use Direction for the Port Lands, the City provided population and employment estimates for a potential development scenario for both the South of Eastern area and the Port Lands for analysis purposes. This development scenario was based on the high employment scenario for the South of Eastern area and a potential build-out using the 2014 Port Lands Planning Framework: Land Use Direction. A development scenario for the interim horizon was also provided by the City in recognition that the Study Area would develop over an extended time horizon where existing and/or intensified commercial/industrial development would occur in portions of the Lower Don Lands and Film Studio District. The City also provided an updated development scenario based on the refined Land Use Direction that was presented to the public in November 2015 for testing purposes.

Table 7-1 shows the range of potential population and employment that was tested for the various places within the Study Area. Population and employment estimates are also graphically illustrated in **Figure 7-9**.

TABLE 7-1 POPULATION AND EMPLOYMENT ESTIMATES – FULL BUILD OUT

District	Number of Residents	Number of Jobs
Unilever Precinct	0	23,350
South of Eastern	550	9,500
Lower Don Lands	8,700 – 15,200*	9,000
Film Studio District	9,225 – 13,350*	9,500 – 14,500*
East Port	0	3,800
South of Ship Channel	0	4,300
Approximate Total	18,475 – 28,550	59,450 – 64,450

**Denotes range*

Source: City of Toronto, 2016

FIGURE 7-9 ILLUSTRATION OF POPULATION AND EMPLOYMENT ESTIMATES – FULL BUILD OUT

PART 3:

Alternative Solutions

8.0 ALTERNATIVE SOLUTIONS

This section summarizes the process undertaken to develop and evaluate Alternative Solutions for transportation, water, wastewater and stormwater infrastructure.

8.1 Transportation Alternative Solutions

The overall transportation analysis followed a logical progression of assessing existing transportation conditions and potential land use futures to understand potential vehicular capacity and transportation infrastructure needs. A comparative transportation modelling analysis, at both strategic and operational levels, was also undertaken to test the preferred transportation network identified through the evaluation of alternatives, further solidifying potential future transportation infrastructure needs and to assess potential limitations of the preferred and surrounding network and how these might be operationally improved. The process for establishing preferred transportation solutions consisted of:

- identification of initial alternatives and evaluation approach (February 2014);
- consultation on initial alternatives and evaluation framework (February to July 2014);
- refinement of alternatives and initial evaluation (August 2014 to March 2015);
- preliminary preferred network and consultation with stakeholders (March 2015 to August 2015);
- refinement to evaluation and preliminary preferred network (September 2015 to November 2015);
- transportation modelling and sensitivity tests (May 2015 to November 2015);
- consultation on the recommended preferred solutions and network (November 2015);
- incorporation of feedback from consultation and continued discussion with key stakeholders (December 2015 to August 2016); and,
- finalization of recommended preferred solutions and network.

8.1.1 Development and Evaluation of Alternative Transportation Solutions

The development of transportation solutions within the Study Area was based on the Problems and Opportunities identified in **Section 2.2.** A further breakdown of the Problems and Opportunities specific to transportation are provided below:

- Problems
    - existing infrastructure is insufficient or is non-existent;
    - major infrastructure like the Gardiner Expressway, Lake Shore Boulevard East and rail corridors are impediments for better connections;
    - challenges with areas remaining in the floodplain and need to support/complement the flood protection features identified in the DMNP EA;

- significant existing hydroelectric infrastructure (PEC and hydroelectric transmission towers/lines);
- significant cultural heritage resources to be protected;
- street networks are limited;
  - lack of surface street connections;
  - lack of connections to transit;
  - limited street network equates to long blocks with few options;
  - limited/insufficient Ship Channel crossings, and what exists is in need of repair;
  - auto-dependent transportation network;
  - significant heavy truck traffic open to all streets;
- the area lacks defined streetscapes and pedestrian amenities;
  - limited amenities for pedestrians and cyclists;
  - discontinuous or no sidewalks;
  - streets lack defined streetscapes;
  - streets are not desirable destinations;
- transit is limited;
  - lack of connections to transit outside the Study Area;
  - existing bus service north of the Ship Channel is insufficient to support growth;
  - limited transit service in the Study Area results in increased auto-dependency;
- several existing intersections in the Study Area have safety concerns, notably the Don Roadway/Lake Shore Boulevard East and Carlaw Avenue/Lake Shore Boulevard East intersections; and,
- the long-term revitalization and development of the lands necessitates developing strategies to ensure compatibility between existing industrial/commercial traffic, existing stable residential areas and revitalized city environments.

- Opportunities
  - proximity to downtown Toronto;
  - potential for introducing and extending higher-order surface transit in dedicated rights-of-way and for accommodating enhanced bus service;
  - potential for improving existing streets and establish new streets;
  - potential for managing and facilitating goods movement;
  - potential for supporting redevelopment through a fine grained block pattern and access to development sites;
  - potential to provide access and highlight amenities and destinations;
  - potential to support vibrant streets;
  - provision of Complete Streets and associated active transportation amenities; and,
  - managing transportation impacts of growth on established, stable residential neighbourhoods.

As part of the TSMP EA, alternatives were developed as reasonable options for solving the problems identified above. The alternatives were generated to meet key transportation-focused objectives including the following:

- support future development aspirations;
- promote a shift towards non-auto modes;
- increase and improve the pedestrian network;
- prioritize transit;
- increase and improve the bicycle network;
- support goods movement;
- improve the public realm; and,
- accommodate future vehicular demand.

Ultimately, improvements to the transportation network are needed to support the proposed redevelopment of lands within the Study Area.

Assumptions

Several key infrastructure needs in the Study Area are already the subject of separate and concurrent EAs and/or development studies including future plans for:

- Gardiner East EA;
- Relief Line Assessment;
- SmartTrack/RER;
- Hydro Feasibility Study; and,
- flooding in the area (e.g., DMNP EA).

As the TSMP was under development, the ongoing Gardiner East EA was identifying assessing the potential future of the Gardiner Expressway in the Study and Context Areas. Alternative Solutions for the Gardiner Expressway were being assessed that had broader, system-wide implications, but also implications on the TSMP given the Gardiner Expressway currently terminates at Bouchette Street within Lake Shore Boulevard East. Solutions were concurrently explored for maintaining, improving, removing and replacing the Gardiner Expressway which also addressed Lake Shore Boulevard East. As such, the Gardiner Expressway and Lake Shore Boulevard East were excluded from this TSMP EA. Further, given the final recommended solution was not known at the time of developing Alternative Solutions for the TSMP, a key principle in the development of alternatives that intersected with Lake Shore Boulevard East was ensuring viable alternatives capable of being implemented for all Gardiner East EA Alternative Solutions. To ensure a degree of conservatism in the evaluation of alternatives for the TSMP, it was largely assumed that the Gardiner Expressway would be maintained. Sensitivity testing was also undertaken to understand potential implications to the ultimate recommendations and ensure flexibility in the preferred network.

A hybrid solution was ultimately selected as the preferred solution, consisting of the partial removal of the Gardiner Expressway and replacing the Gardiner from the on/off ramps of the DVP westward to

Cherry Street with a new elevated expressway structure. At the time of writing this TSMP, no provincial approval has been received on the Gardiner East EA.

Planning for future higher order transit service across the city is the subject of significant current planning studies. While the need for higher order transit service associated with regional transit within the rail corridor and Relief Line subway were well established, the alignment for the Relief Line and potential higher order transit locations for both regional rail and the Relief Line were not known through the majority of the TSMP EA process. The TSMP acknowledged higher order transit service associated with the Relief Line and regional rail and their importance to supporting development in the Study Area. The alignment and station locations identified in the City's regional transportation model were utilized in the transportation analysis, with a sensitivity test to assess potential implications associated with new higher order transit stations in the immediate vicinity of the Unilever Precinct. While forecasts for the Study Area assume these services are important to achieving future transit potential for the area, no assumptions were specifically made for new station locations within the Study Area. Sensitivity testing was undertaken looking at the potential implications to the ultimate recommendations, assuring that the future network is flexible enough to accommodate change.

The TSMP focused its analysis on the higher order surface transit service being considered as part of the transportation solutions. This includes streetcar in dedicated rights-of-way for the Broadview Avenue extension and along Commissioners Street connecting to planned streetcar service on Cherry Street in the Lower Don Lands and the newly constructed connecting track on Leslie Street. Additionally, background conditions included introducing enhanced bus service on key routes.

As noted in **Section 7**, significant employment intensification in the Unilever Precinct is being assessed as part of the TSMP EA. However, the major landowner in the Precinct, First Gulf, is proposing an office district supported by retail and service and approximately 50,000 employees. This amount of development will require significant investment in higher order transit beyond the infrastructure being assessed in the TSMP EA. It was established that intensification beyond the employment estimates tested in this EA would need to be assessed by the property owners as part of their development application. Additional analysis could also occur in later phases of the Class EA process.

Hydro One concurrently undertook a Feasibility Study on behalf of the City and Waterfront Toronto to explore the physical works and initial order of magnitude costs for undergrounding hydro transmission wires and reconfiguring existing infrastructure. The results of this study were considered in the TSMP.

In summary, there were several concurrent studies in and around the Study Area. The final decisions for these studies are not expected to materially affect the results of the TSMP EA analysis or its conclusions.

8.1.2 Identification of Sub-Areas

The size and complexity of the Study Area resulted in the need to identify sub-areas for the purposes of developing transportation alternatives. Each area has a unique environment, where needs vary due to land use, existing uses and buildings to remain, physical constraints, and natural and social environments.

For this reason, the Study Area used for the transportation evaluation was divided into six specific sub-areas. The sub-area boundaries were defined based on the role and function of the area streets, context and existing condition, and the strategic roadway capacity needs. The six sub-areas are described in the following sections.

For this reason, the Study Area used for the transportation evaluation was divided into six specific sub-areas. The sub-area boundaries were defined based on the role and function of the area streets, context and existing condition, and the strategic roadway capacity needs. The six sub-areas are described in the following sections.

8.1.2.1 SUB-AREA 1: BROADVIEW EXTENSION

Sub-Area 1 is bounded by Carlaw Avenue to the east, Ship Channel to the south, Don Roadway to the west, and Eastern Avenue to the north (**Figure 8-1**). This existing industrial area is planned for significant redevelopment to office and commercial activity north of Lake Shore Boulevard East in the Unilever Precinct, some mixed-use development in the McCleary District and continued production, interactive and creative uses in the Media City (**Figure 7-2, Section 7.1**). There are limited existing streets and transit serving the area. Key issues for the area included the following:

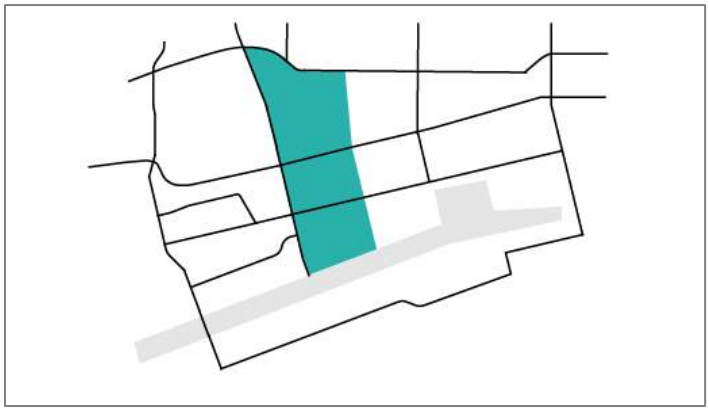


FIGURE 8-1 SUB-AREA 1: BROADVIEW EXTENSION

- minimal north-south connectivity across Lake Shore Boulevard East;
- providing adequate access to development lands north of Lake Shore Boulevard East;
- providing adequate access to the Film Studio District;
- infrastructure needs to accommodate essential flood protection structures (FPL/VWF) identified in the DMNP EA (**Section 5.4.5**);
- a two-lane deficiency for north/south travel was identified through the transportation assessment;
- a number of cultural heritage resources requiring appropriate conservation;
- protection of existing businesses to remain;
- minimal transit service and connections;
- lack of a fine grained block structure to support intensification;
- lands to the north of the rail embankment remain in the flood plain post-construction of the DMNP EA, unless a flood protection solution is advanced through a separate EA process. The City, with the TRCA and Waterfront Toronto are now initiating an EA for such purposes. Breaching the rail embankment without a flood protection solution in place would reintroduce a flood risk during a regulatory event (e.g. Hurricane Hazel) south of the rail embankment. The existing rail embankment is approximately 5-7 m above grade; and,

- maintaining functionality of Lake Shore Boulevard East for both the Study Area and surrounding areas (Beaches, Upper Beaches, East Danforth) with intersection spacing being an important consideration from a safety and efficiency perspective.

Other key considerations that emerged through the process for the sub-area, and extending Broadview Avenue southward in particular, included:

- creating a continuous connection across the Ship Channel;
- preserving the ability to achieve a second connection across the Ship Channel;
- creating porosity across Lake Shore Boulevard East;
- connecting to Unilever and destinations;
- ensuring continued viability of existing film studios;
- ensuring developable blocks; and,
- creating a place - take advantage of views, destinations etc.

The Preferred Alternative identified in the DMNP EA includes the creation of a FPL (or the potential for a VWF) along the Don Roadway on the west side of the Unilever Precinct which ties into the railway berm in the north and a height of land to the south at Lake Shore Boulevard East. Further, the grade of Eastern Avenue will be raised on the east side of the railway berm. Together, these works, in conjunction with the balance of required flood protection elements identified in the DMNP EA, will eliminate the risk of flooding to the area east of the Don River and south of the rail embankment, up to and including flows during a Regulatory Flood event. The Broadview Avenue extension has the potential to introduce flood risk. As such, any solution needs to mitigate for this. Additionally, any solution also needs to recognize the required works in the DMNP EA.

8.1.2.2 SUB-AREA 2: NORTH-SOUTH CONNECTIONS EAST OF CARLAW AVENUE

Sub-Area 2 is bounded by Leslie Street to the east, Commissioners Street to the south, Carlaw Avenue to the west, and Eastern Avenue to the north (**Figure 8-2**).

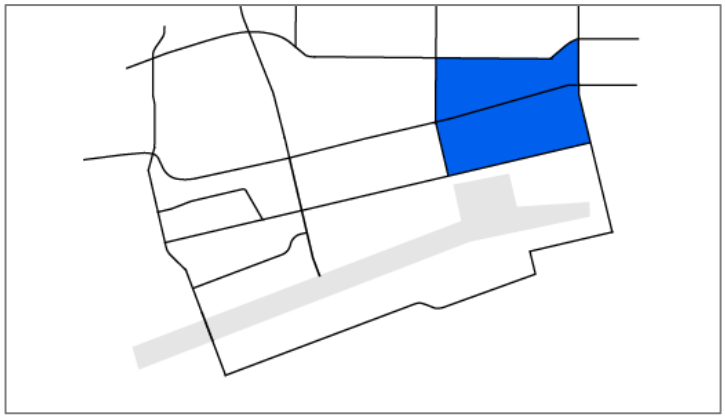


FIGURE 8-2 SUB-AREA 2: NORTH-SOUTH CONNECTIONS EAST OF CARLAW AVENUE

Key issues for the area include the following:

- providing adequate north-south connections to provide access for development;
- lack of a fine grained block structure to support additional development;
- a one-lane deficiency for north/south travel was identified through the transportation assessment;

- many of the existing streets north of Eastern Avenue are "one-way". This makes major intersections more efficient and reduces traffic volumes passing through established neighbourhoods;
- a number of cultural heritage resources requiring appropriate conservation;
- minimal transit service and connections;
- protection of existing residences and businesses to remain;
- need to break up larger development sites;
- providing adequate north-south connectivity to and across Lake Shore Boulevard East; and,
- concerns regarding potential for traffic infiltration to existing residential neighborhood to the north.

8.1.2.3 SUB-AREA 3: SHIP CHANNEL CONNECTIONS

Sub-Area 3 is bounded by Leslie Street to the east, Unwin Avenue to the south, Cherry Street to the west, and the northern dockwall of the Ship Channel (**Figure 8-3**). The Ship Channel acts as a barrier for accessing the industrial lands on the south side of the Ship Channel and the recreational lands/activity on the shore of Lake Ontario. There are only two ways in and out of the area including:

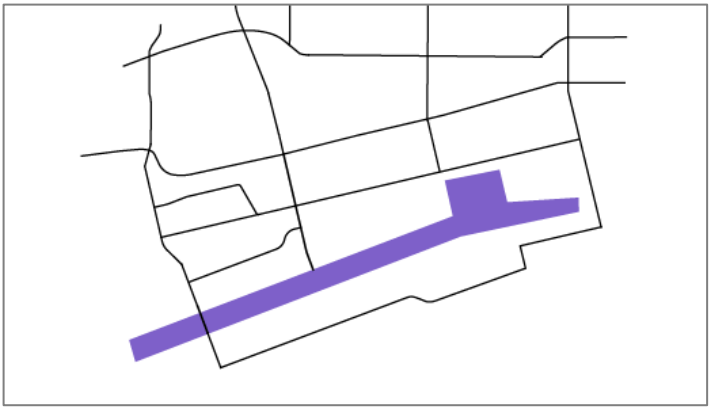


FIGURE 8-3 SUB-AREA 3: SHIP CHANNEL CONNECTIONS

- the existing Strauss Trunion Bascule Bridge on Cherry Street; and,
- Leslie Street which skirts the east end of the Study Area and connects to Unwin Avenue. There is a one-lane bailey bridge on Unwin Avenue crossing the PEC circulating channel.

The effectiveness of these linkages is constrained due to the nature of the Cherry Street bridge operation and condition, and limited capacity of the bailey bridge. Further, these connections are spaced close to 3 km apart further limiting access. Key issues for the area include the following:

- need for improved north-south connectivity to and across the Ship Channel for vehicles, transit, cyclists and pedestrians;
- need for appropriate bridge spacing to support continued port and industrial uses, goods movement and shipping. PortsToronto has identified minimum federal regulations related to the separation of bridge crossings of the Ship Channel. An optimal spacing of 475 m is required to allow for the safe start/stop logistics of the large, tanker vessels and ships;
- a one-lane deficiency for north/south travel was identified through the transportation assessment. The lane deficiency identified refers to north and south travel;

- desire for any new connection to provide enhanced access for key destinations (e.g., Hearn and recreational uses south of the Ship Channel);
- a number of cultural heritage resources requiring appropriate conservation, including the Ship Channel itself and the Strauss Trunion Bascule bridge;
- consideration of natural heritage and aquatic impacts of new bridge; and,
- the PEC and associated sub-station, utilities and wires on the south side of the Ship Channel need to be protected.

8.1.2.4 SUB-AREA 4: SOUTH OF EASTERN AVENUE EAST-WEST CONNECTIONS

Sub-Area 4 is bounded by Coxwell Avenue to the east, Lake Shore Boulevard East to the south, Don Roadway to the west and Eastern Avenue to the north (**Figure 8-4**). The focus of this sub-area is east-west travel. Key issues for area included the following:

FIGURE 8-4 SUB-AREA 4: SOUTH OF EASTERN AVENUE EAST-WEST CONNECTIONS

- providing adequate east-west connections to provide access for development;
- lack of a fine grained block structure to support higher density development in the Unilever Precinct;
- one-lane deficiency for east-west travel was identified in the transportation assessment;
- cultural heritage resource protection;
- minimal transit service and connections;
- protection of existing residences and businesses to remain;
- need to improve the function and provide a consistent and enhanced character for Eastern Avenue to the extent possible; and,
- constraints to changing the right-of-way for Eastern Avenue due to stable residential and cultural heritage resources throughout the area.

This sub-area was further sub-divided into two discrete areas: Sub-Area 4A (Eastern Avenue Connections) and Sub-Area 4B (Mid-Block Connections).

8.1.2.5 SUB-AREA 5: EAST-WEST CONNECTIONS BETWEEN LAKE SHORE AND THE SHIP CHANNEL

Sub-Area 5 is bounded by Leslie Street to the east, the Ship Channel to the south, Don Roadway to the west and Lake Shore Boulevard East to the north (**Figure 8-5**).

FIGURE 8-5 SUB-AREA 5: EAST-WEST CONNECTIONS BETWEEN LAKE SHORE BOULEVARD EAST AND THE SHIP CHANNEL

Commissioners Street, Villiers Street (Don Roadway to Saulter) and existing Basin Street (Bouchette to the Turning Basin) are the only east-west streets in the area. Commissioners Street has an existing four-lane cross-section and a wide right-of-way that includes existing hydroelectric towers and transmission lines in the middle of the right-of-way between Don Roadway and Bouchette Street. The street acts as the current main street for the Port Lands. The planned conditions west of the Don Roadway for Commissioners Street as part of the LDLMP EA includes two vehicular lanes and a streetcar in dedicated right-of-way. Key issues for the area include:

- limited east-west connectivity north and south of Commissioners Street;
- potential to improve Commissioners Street to provide an attractive, vibrant complete main street through the Port Lands;
- the need for additional east-west capacity over and above the existing four lanes of Commissioners Street. A one-lane deficiency for both east and west travel was identified;
- the need to appropriately conserve cultural heritage resources and opportunities to integrate resources within the Commissioners Street right-of-way;
- limited existing transit service;
- protection of existing businesses to remain; and,
- need to support continued goods movement, particularly in the East Port area.

8.1.2.6 SUB-AREA 6: UNWIN AVENUE

Sub-Area 6 is bounded by Leslie Street to the east, Lake Ontario to the south, Cherry Street to the west and the Ship Channel to the north (**Figure 8-6**). Unwin Avenue is the only east-west street through this area. The area is physically constrained by the Ship Channel, and Unwin Avenue is also constrained by natural areas, a rail corridor, the former Hearn Power Station and the PEC.

FIGURE 8-6 SUB-AREA 6: UNWIN AVENUE

Today, Unwin Avenue serves primarily heavy industrial traffic and recreational uses. In order to support future growth in the area while maintaining the potential for recreational activity, the existing street must be reconstructed to a standard suitable to accommodate multiple modes. Key issues for the area include:

- current alignment with 90 degree jogs with impacts to operations;
- insufficient capacity with the one-lane bailey bridge across the circulating channel;
- significant constraints within the vicinity of the PEC, including the circulating channel, major gas infrastructure and existing Environmentally Significant Areas and other natural areas/cover;
- need to support continued goods movement;
- lack of pedestrian and cycling facilities results in safety concerns;
- maintaining the existing rail spur, while used infrequently, to the Port Toronto marine terminals at 8 Unwin Avenue; and
- opportunities to:
    - accommodate on street parking for recreational users and also staging of trucks during busy winter months;
    - provide a net environmental gain with new alignment;
    - improve access for all uses and users; and,
    - provide a complete street design.

8.1.3 Development of Initial Alternative Solutions

As part of the TSMP EA, initial alternatives were developed as reasonable options for solving the problems and opportunities identified above within each sub-area. A total of 28 alternatives were presented to the public in February and March 2014 for feedback. In addition, the Do Nothing alternative was considered and consisted of existing conditions and recognized approved infrastructure in the LDLMP EA. **Figure 8-7** shows the initial street network alternatives from 2014.

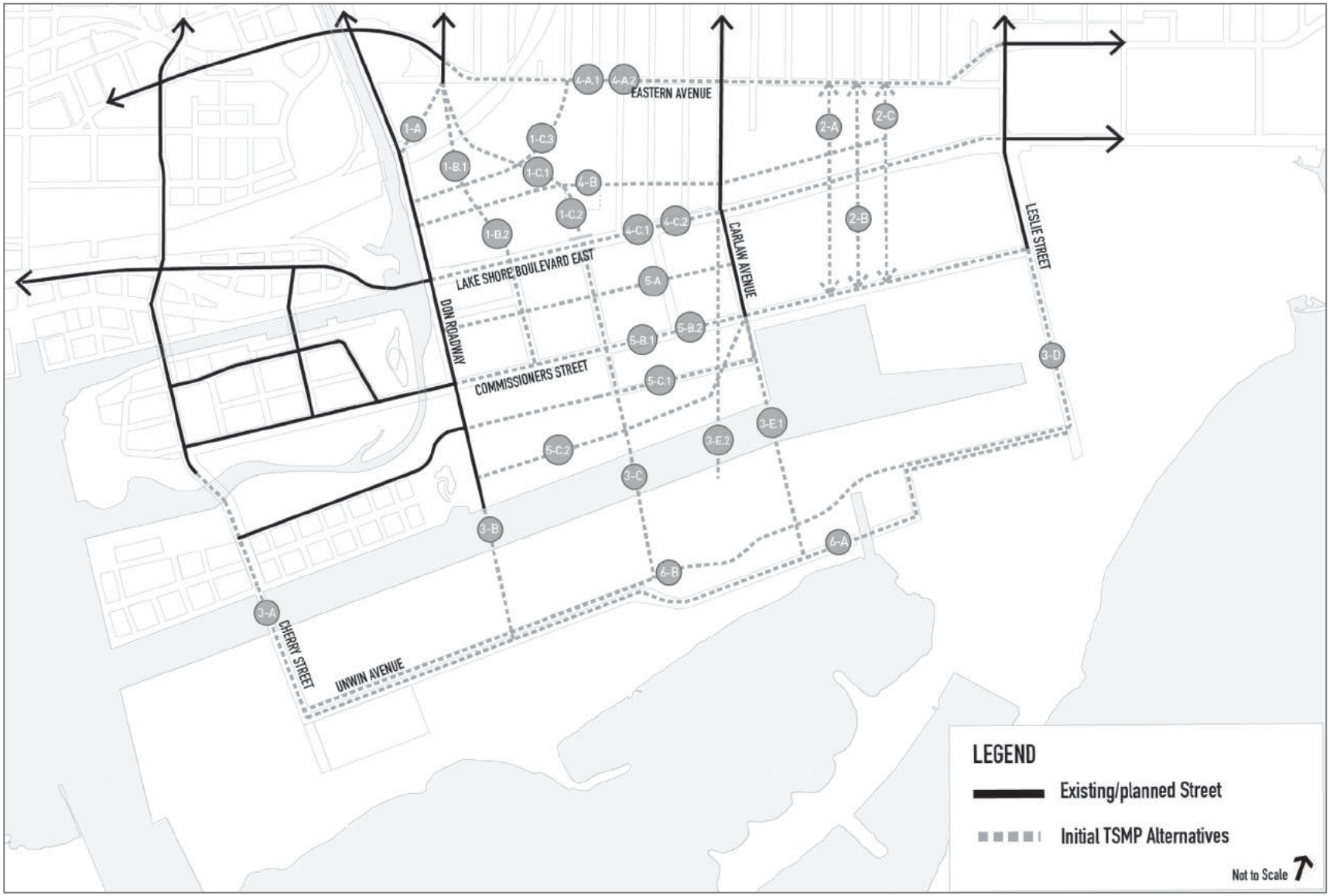
Street segments generally identified in the CWSP were all included as potential alternatives. These were supplemented with the identification of new alternatives throughout the Study Area to address the problems and opportunities. These additional alternatives included:

- alternative alignments for the Broadview extension;
- alternatives for a new north-south street east of Carlaw Avenue;
- alternatives for new east-west streets; and,
- alternatives for Eastern Avenue and Lake Shore Boulevard East.

Additionally, the final river configuration and associated flood protection works from the DMNP EA provided base conditions for the development of alternatives.

Based on direction from City Council, it was assumed that the overhead transmission lines on Commissioners Street would be relocated to accommodate transit and that the cost would be addressed outside the costs for the TSMP EA. Initial costs to accommodate the relocation and undergrounding were included in the City's Development Charges By-law in 2013.

FIGURE 8-7 INITIAL STREET NETWORK ALTERNATIVES (FEBRUARY 2014)



Sub-Area 1

Initial alternatives in Sub-Area 1 consisted of:

- three alternative alignments were identified including Don Roadway, Saulter Street, and Bouchette Street;
- for the Saulter Street and Bouchette Street alignments, grade-separation alternatives consisting of going over and under the rail embankment were identified; and,
- a new-east connection connecting from the Don Roadway to Eastern Avenue, in tandem with the Bouchette Street alignment was identified.

Sub-Area 2

Initial alternatives in this sub-area consisted of introducing a new two-lane street between Eastern Avenue and Commissioners Street at:

- Winnifred Avenue
- Caroline Avenue; and,
- Larchmount Avenue.

Sub-Area 3

Initial alternatives in this sub-area consisted of introducing new and expanded facilities consisting of:

- widening Cherry Street from the river valley to Unwin Avenue;
- a new bridge at the Don Roadway;
- a new bridge in the vicinity of Bouchette Street;
- a new bridge and extension of Carlaw Avenue;
- a realigned Carlaw Avenue and new bridge; and,
- widening Leslie Street and improving the existing bailey bridge.

Any new bridge across the Ship Channel would need to accommodate continued port activity in the Ship Channel, as well as future streetcar service in dedicated right-of-way. Three potential bridge types that could be employed include fixed, lift and swing. The TSMP EA has assumed that the most viable bridge type would need to be a lift bridge. A fixed bridge would result in heights and grades that would not be feasible given available landing areas. Swing bridges typically consist of symmetrical layout with a pivot pier in the centre, resulting in two shipping lanes on either side of the centre pier. They generally require more time to open and are more intrusive in the waterway. A lift bridge, such as a double bascule bridge, is able to accommodate continue shipping, continuous water's edge promenades and future transit service.

Sub-Area 4

Initial alternatives in this sub-area included identifying alternatives for Lake Shore Boulevard East, Eastern Avenue and new mid-block connections. Lake Shore Boulevard East alternatives included Maintain, Urbanize or Widen Lake Shore Boulevard East. Eastern Avenue alternatives included Maintain, Urbanize or Widen Eastern Avenue. Additionally, a new east-street between Eastern Avenue and Lake Shore Boulevard East and extending from the Don Roadway to a new street in Sub Area was also

identified. Lake Shore Boulevard East was subsequently removed from the TSMP EA and addressed in the Gardiner East EA.

Sub-Area 5

Initial alternatives in this sub-area included:

- two alternative alignments for Basin Street from the Don Roadway to an extended Carlaw Avenue; widening Commissioners Street; and,
- alternatives for extending Basin Street to the Don Roadway.

Sub-Area 6

Initial alternatives in this sub-area consisted of improving or widening Unwin Avenue.

8.1.4 Consultation and Incorporation of Feedback

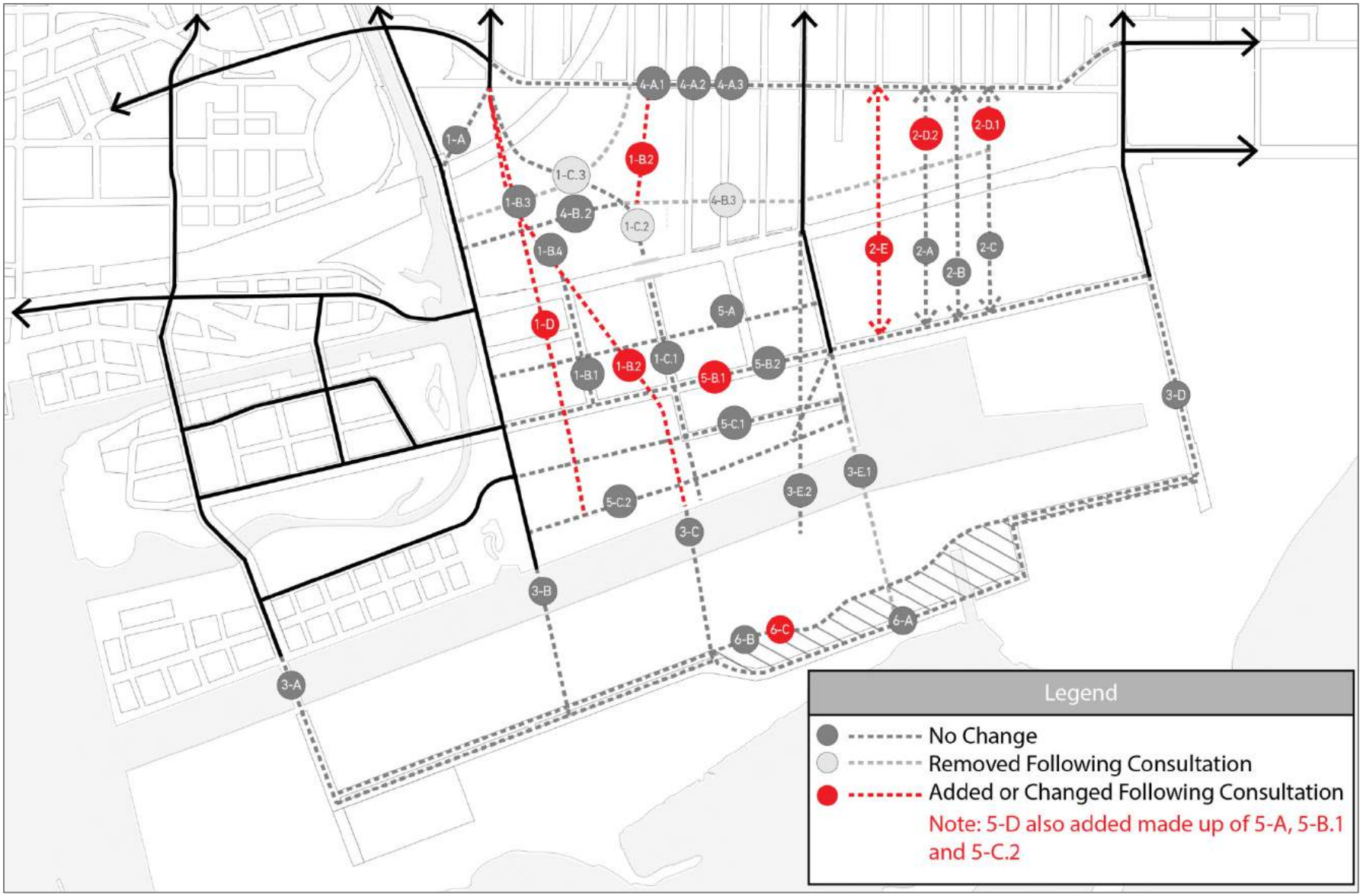
The initial alternatives were presented to the public and stakeholders for feedback in February and March 2014. Feedback was incorporated and alternatives were refined following the consultation. Additional analysis was also undertaken which led to further refinement of the alternatives.
Key stakeholder consultation and feedback is identified below. **Figure 8-8** shows the final long-list of alternatives.

- ***CCM #2, SAC and LUAC meetings, on-line engagement February, 2014*** – The desire to adjust the east-west street south of Lake Shore Boulevard East to avoid McCleary Park was suggested. While there continues to be an east-west alternative that extends from the Don Roadway to Carlaw Avenue, the alternative was shifted southward to maintain a large contiguous park space that could accommodate active recreation. There was also an expressed desire for more streets as opposed to wider streets with an emphasis on vehicular travel lanes. These comments led to the refinement of alternatives in Sub-Area 5 by introducing an Urbanize Commissioners Street alternative (5-B-1), a maintain and improve Commissioners Street alternative (5-B.2) as well as alternatives that relied on multiple connections (5-A, 5-C.1, 5-C.2 and 5-D) to remove the need to have an alternative for widening Commissioners Street to six.
- ***March 5, 2014 Community Meeting*** – Many participants indicated a preference for a street that could connect mid-point in the Film Studio District and to destinations. The team explored additional alternatives that could accomplish this which resulted in the identification of a new alternative (1-B.2).
- ***South of Eastern Community Meeting, June 2014*** – At this meeting, new alternatives were identified by participants, including Pape Avenue as an alternative and one-way contra- flow alternatives (added 2-E, 2-D.1, 2-D.2). There was also a desire to limit the addition of new east-west streets due to impacts to existing stable residential (4-B.3 was removed).
- ***Two Day Port Lands Charrette, July 23 and 24, 2014*** – Key input from this meeting related to the desired character of the streets which was important in the identification of aspirational street cross-sections that were used in the evaluation of the final short list of alternatives.

Additionally, north-south connections were explored in more detail and discussion and feedback influenced the Commissioner's Street options to focus on a narrow vehicular right-of-way (added 5-B.1). Lastly, the overarching ideas generated at the Charrette assisted in refining evaluation criteria. Other input included connecting destinations, such as the Hearn, with a Hearn crossing identified in particular and noting the crossing should be fun and iconic. This led to the identification of a new Broadview extension alternative (1-B.2), coupled with responding to other feedback received on the alternatives.

- ***Pinewood Toronto Studios*** - Landowners in the Film Studio District expressed support for the north-south connections and also requested the team review and evaluate a new Broadview extension alternative located between the Don Roadway and Saulter Street. This input led to the inclusion of a new alternative in Sub-Area 1 (1-D).
- ***Friends of the Spit (March 2014)*** – Suggested an Unwin Avenue alternative with only two vehicular lanes, but with improvements to increase capacity, to protect the natural areas south of the street. 6-C was added to address this issue (also proposed at March 2014 Community Meeting).

FIGURE 8-8 INCORPORATION OF FEEDBACK INTO ALTERNATIVE SOLUTIONS



8.1.5 Review and Refinement of Alternatives and Evaluation Approach

From the outset, it was a goal of the transportation assessment to support and implement the Port Lands Planning Framework and South of Eastern Strategic Direction. The Planning Framework was establishing a vision for the Port Lands, including direction on future land uses, but also Identifying the particular qualities of the Port Lands which make it unique to form the basis for the creation of a distinct and memorable city district, integrating ecology and habitat into the design of streets and ensuring that streets are places that encourage public life and vitality. The South of Eastern Strategic Direction was establishing the elements and amenities needed to support economic growth in the area and ensuring a thriving and vibrant employment area. To support these initiatives, it was key that the transportation analysis strived to achieve the necessary function and desired character of the streets. To achieve this, each alternative was further refined and analyzed in the context of Complete Street principles developed for the project. Conceptual aspirational cross-sections were also developed to provide context for the evaluation of alternatives. The intent was to ensure that sufficient space was being allocated to accommodate all the required functions of the streets, but also to integrate aspects of the broader visioning.

Each street was analyzed in the context of Complete Street principles developed for the Project. The alternative potential design for each street was considered in the context of the role, function, and needs of the area it serves. Existing and potential right-of-way widths were identified, along with how the space within the right-of-way could be allocated to meet the multi-modal transportation and planning vision for the street.

8.1.6 Development of Complete Street Principles and Conceptual Cross-Sections

Complete Streets in the context of this Project focuses on increasing active transportation modes (pedestrian and cycling) and transit while reducing the role of automobile; maintaining commercial vehicle activity; accommodating service and/or delivery trucks associated with office, commercial, and warehouse activity; accommodating heavy trucks associated with industry, including aggregate and salt activity; creating a system that provides a safe and efficient environment for all transport modes; and, supporting place-making in the Study Area.

Complete Streets Principles

The streets in the Study Area will be designed to ensure all modes of travel (walking, cycling, driving, taking transit and moving goods) are balanced while also recognizing that different streets have different purposes, constraints and character. The Complete Street principles incorporated into this TSMP EA include:

Transit Prioritization will be achieved through the use of dedicated transit right-of-ways, where appropriate, to improve the reliability of transit routes and convenience for passengers.

Minimum Lane Widths will assist in making streets safer and more pedestrian friendly. Narrower pavement widths contribute to safer vehicle speeds.

Bicycle Lanes and Cycle Tracks provided on all major streets, creates a well-connected, robust, and safe cycling network enabling active transportation as a primary means of moving in, and through, the area.

Wide Sidewalks with unobstructed, accessible pedestrian clearways encourages walking and contribute to the overall vibrancy of the Port Lands and the South of Eastern area public realm.

Accommodation of Goods Movement to ensure the continued economic vitality of industry. Critical goods movement corridors will be designed with suitable conditions for truck access balanced with other Complete Street objectives.

Water as a Community Resource where greenscape elements divert stormwater and can allow for infiltration while also improving air quality, providing habitat and adding visual interest to an area. Streets celebrate and embrace stormwater as a valuable resource and provide access for life.

Permeable Surfaces for roadways and sidewalks reduces flooding, preserves capacity in storm drains and sewers where provided and adds visual interest in the overall street design.

Street Trees with adequate room to grow and high-quality soil conditions provide shade, beauty and wildlife habitat. They also reduce air pollution and energy consumption.

Pedestrian and Cycling Amenities are important elements to be considered in the design of streets and encourages people to be on the streets. Benches, bike rings, pedestrian-scaled lighting, weather protection, garbage and recycling receptacles and public art, among others, will be provided.

Innovative Features such as the port/industrial/infrastructural qualities of the Study Area contributes to the character of the area. Other features like electric vehicle charging stations, bicycle and car sharing stations and renewable energy features contributes to a sustainable future for the area.

Conceptual Cross-Sections

Conceptual cross-sections were developed using the Complete Street principles to further guide the development and evaluation of alternatives. They were also developed to ensure that sufficient rights-of-way widths were being considered from the outset that provided the necessary functionality, but also to ensure the integration of other important elements. In some instances, studies of different rights-of-way widths and configurations were undertaken for particular streets to reflect the different alternatives under consideration. This provided the ability to effectively evaluate the different alternatives, with some being able to better satisfy the desired function and character.

Cross-sections are conceptual and developed to assist in achieving Complete Street principles and establishing minimum right-of-way widths. The actual widths of street elements (e.g., cycle tracks) shown in the conceptual cross-sections may need to be revised in Phases 3 and 4 of a future EA process and/or at detailed design. The specific design and form of stormwater treatment will also be reviewed and refined as part of future EA work and detail design.

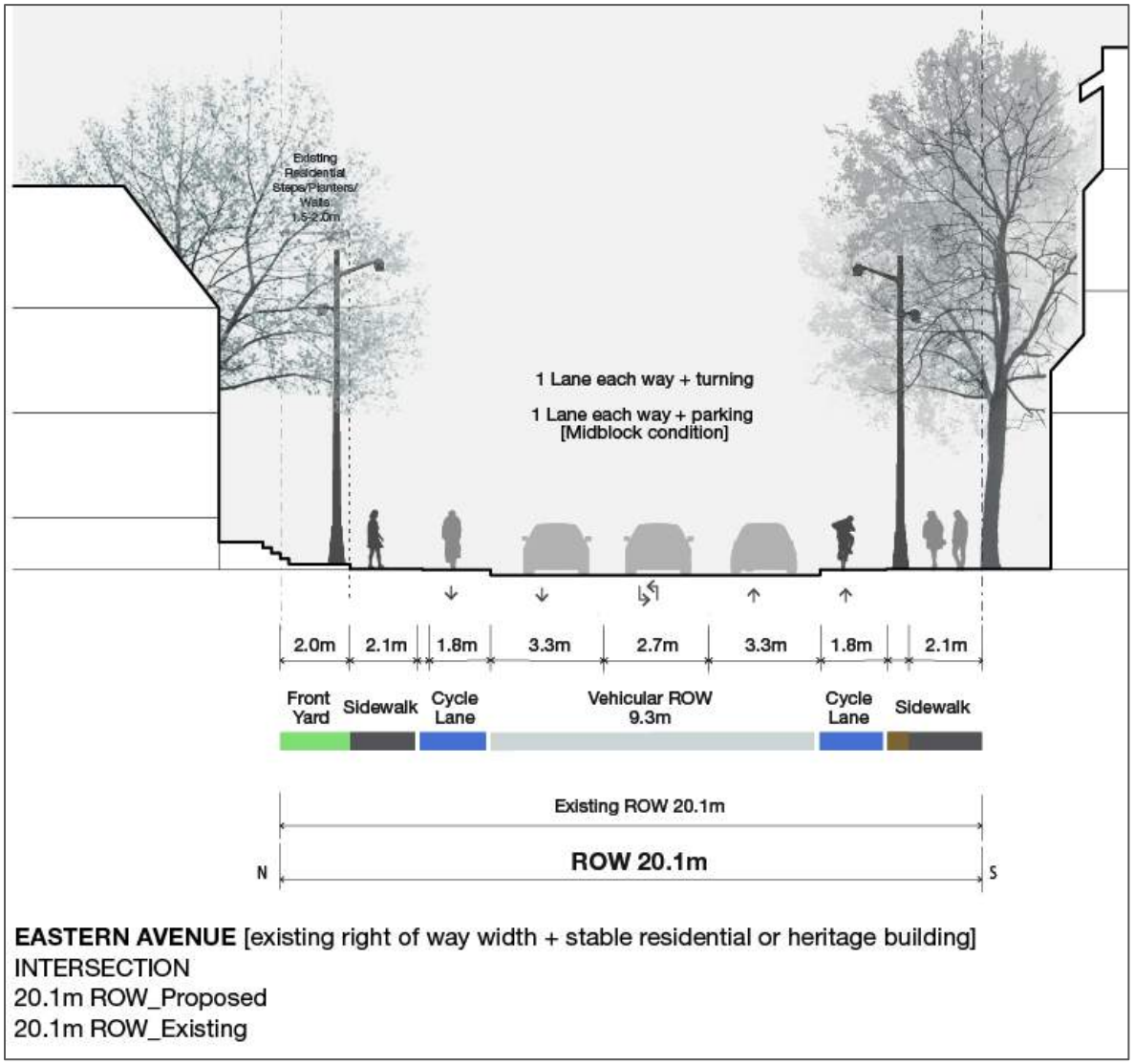
Eastern Avenue

Eastern Avenue is a compact right-of-way with varying conditions across the Study Area including established residential, active industry, film uses and heritage resources. The desired character for this street needs to acknowledge the existing uses and constraints while identifying improvements to the pedestrian realm and cycling infrastructure - maintaining on-street parking and great trees, where possible.

PHOTO: VARIOUS VIEWS OF EASTERN AVENUE

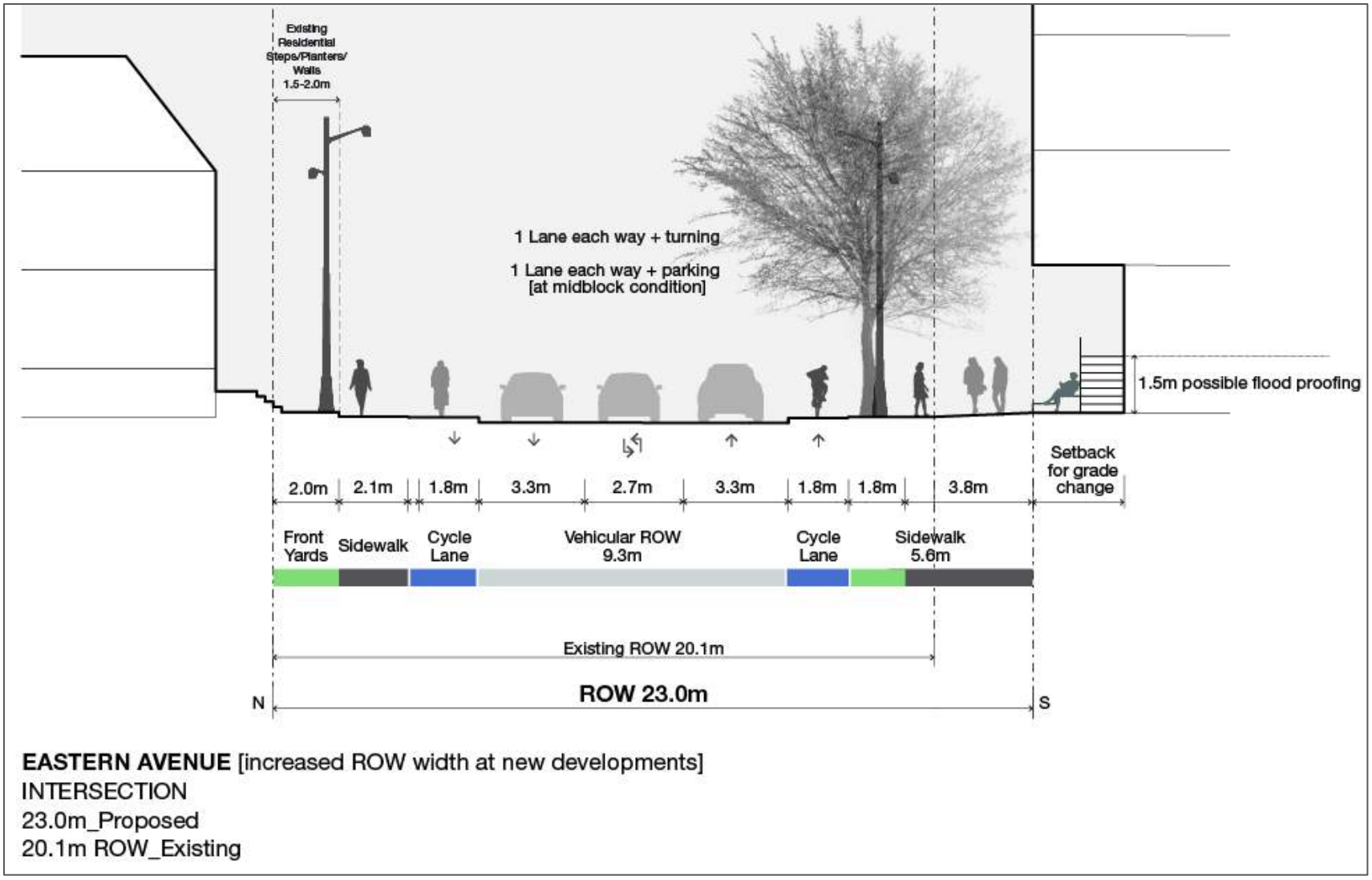
In recognition of the different characteristics of Eastern Avenue across the Study Area, a series of cross-sections were developed for different segments of the streets. **Figures 8-9** to **8-12** represent cross-sections for an urbanized Eastern Avenue. **Figure 8-13** represents a cross-section for consistently providing four lanes of vehicular traffic (note: that at the Russell Yard this would be revert to its current configuration due to the streetcar tracks).

FIGURE 8-9 CONCEPTUAL CROSS-SECTION – EASTERN AVENUE, EXISTING RIGHT-OF-WAY WDITH + STABLE RESIDENTIAL OR HERITAGE BUILDING, WEST OF LOGAN AVENUE



EASTERN AVENUE [existing right of way width + stable residential or heritage building]
INTERSECTION
20.1m ROW_Proposed
20.1m ROW_Existing

FIGURE 8-10 CONCEPTUAL CROSS-SECTION – EASTERN AVENUE, EAST OF LOGAN AVENUE, URBANIZE



EASTERN AVENUE [increased ROW width at new developments]
INTERSECTION
23.0m_Proposed
20.1m ROW_Existing

FIGURE 8-11 CONCEPTUAL CROSS-SECTION – EASTERN AVENUE, EAST OF LESLIE STREET TO WOODFIELD ROAD, INCREASED RIGHT-OF-WAY AT NEW DEVELOPMENTS

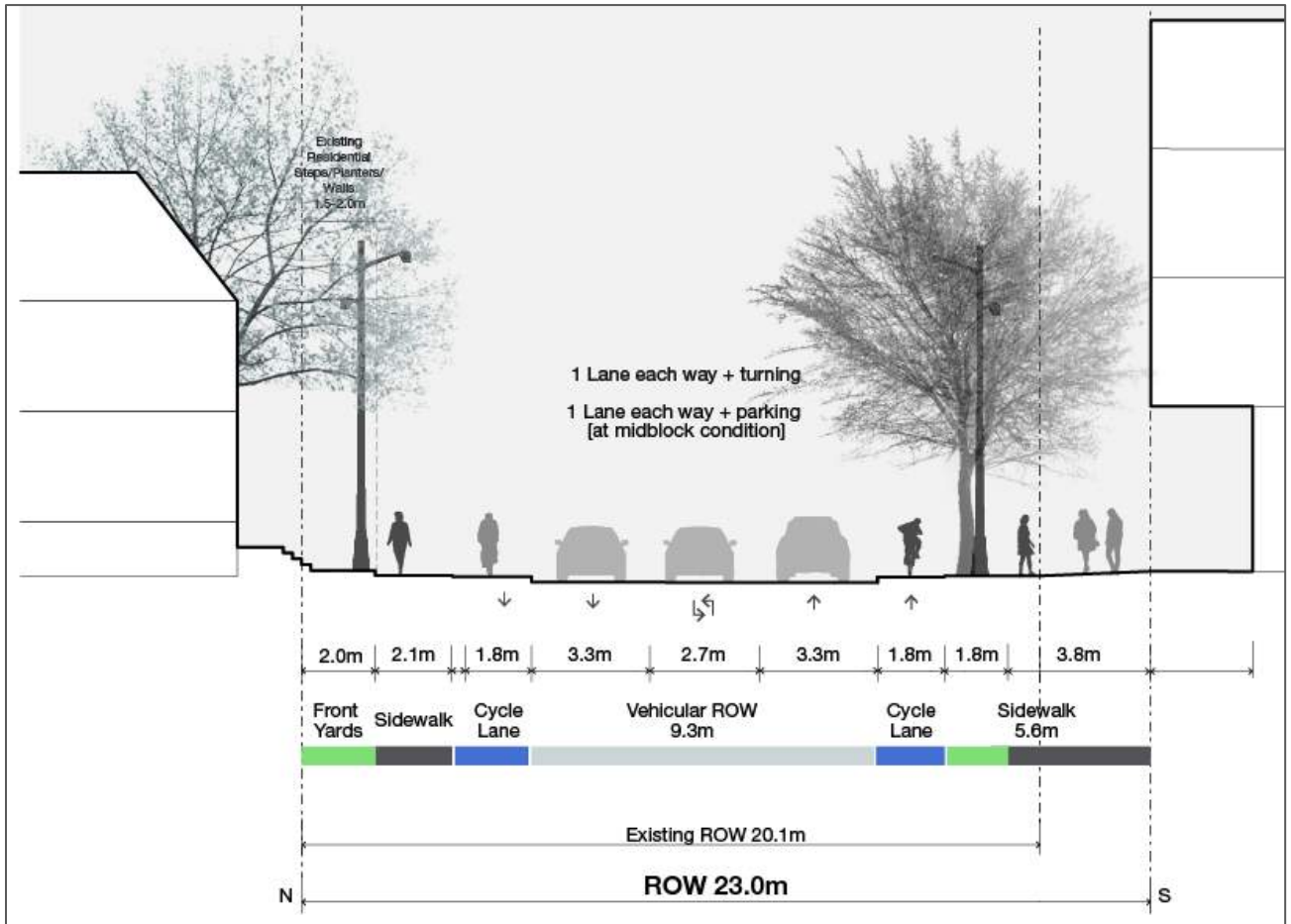


FIGURE 8-12 CONCEPTUAL CROSS-SECTION – EASTERN AVENUE, INCREASED RIGHT-OF-WAY AT NEW DEVELOPMENTS (SECTION OF EASTERN AVENUE AT THE RUSSELL CARHOUSE

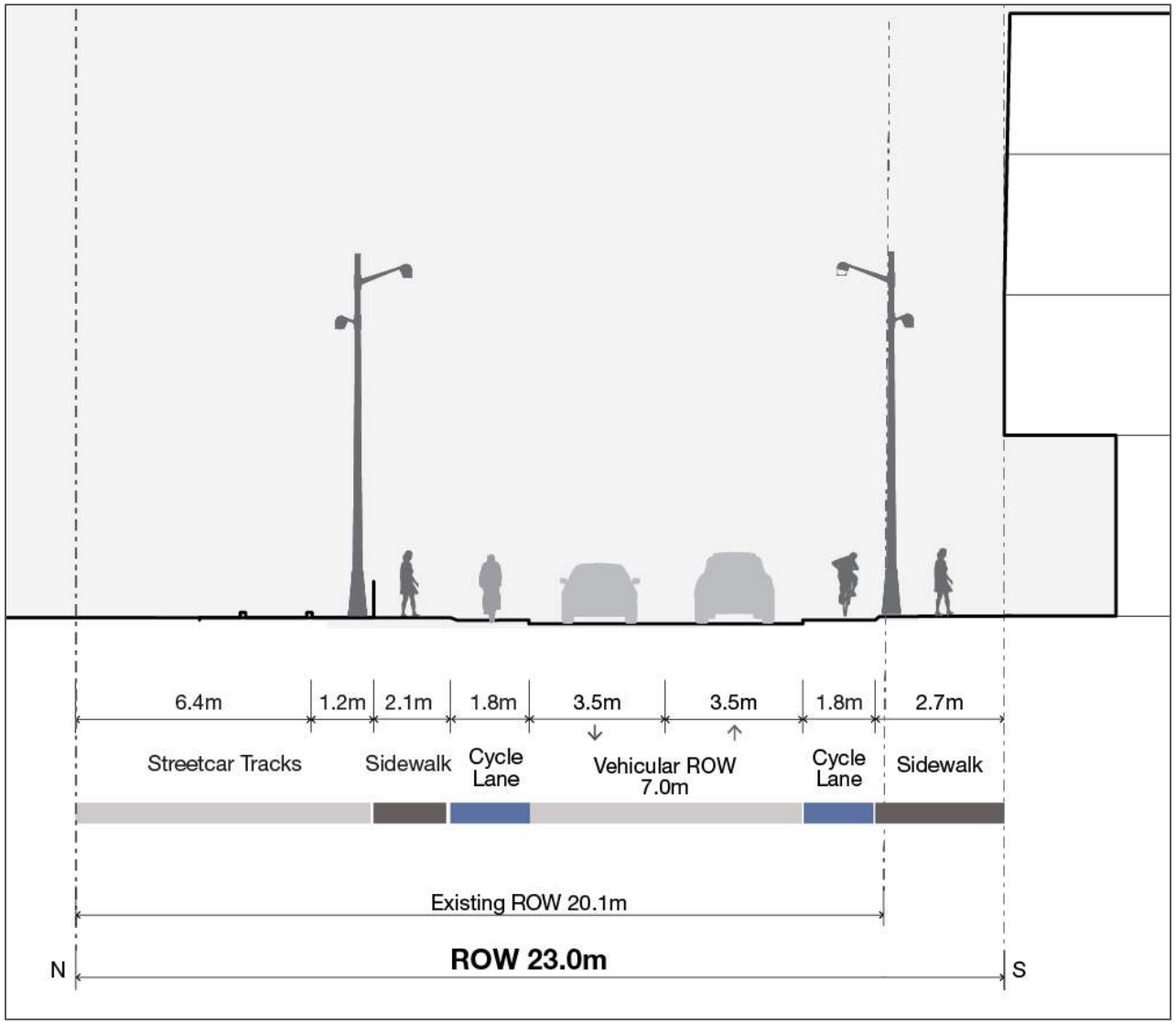
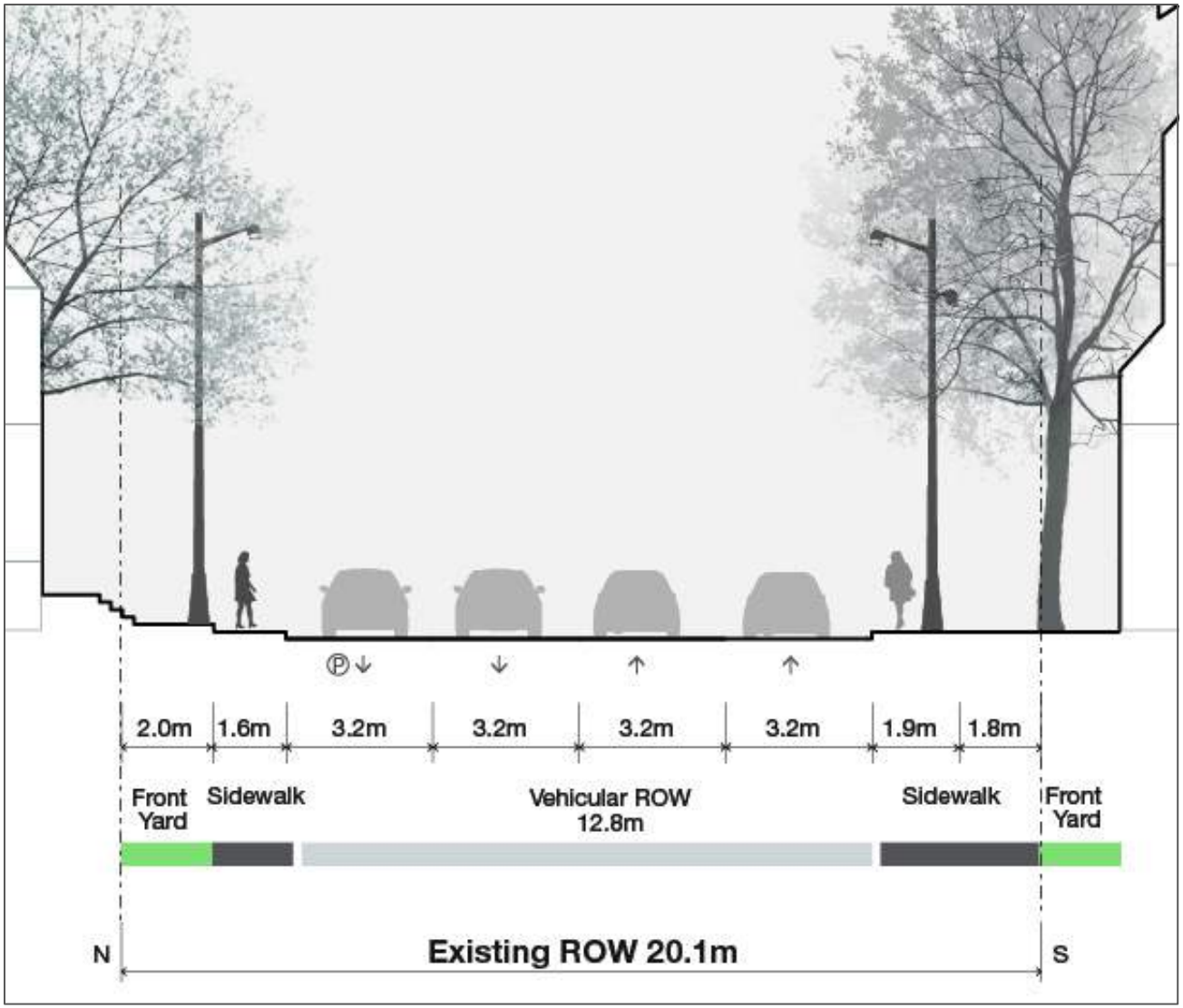


FIGURE 8-13 CONCEPTUAL CROSS-SECTION – EASTERN AVENUE, FOUR LANES



Commissioners Street

PHOTO: VARIOUS VIEWS OF COMMISSIONERS STREET

Commissioners Street is the Port Lands' oldest street – a key east-west corridor that will connect future public spaces such as the new Don Estuary, the potential Commissioner's community hub and the Turning Basin Water Square. The desired street character includes ensuring wide pedestrian clearways, sufficient space to grow a mature tree canopy, a separated multi-use trail, transit in a dedicated right-of-way, integrating key heritage and cultural heritage landscape elements into the design and integrating stormwater features within the overall streetscape.

The conceptual cross-sections developed to inform the TSMP EA utilized the cross-section for Commissioners Street in the LDLMP EA as a starting point (**Figure 6-15**), which has a streetcar in a dedicated right-of-way offset on the south side of the street, a wide landscape median with multi-use trail and two lanes of vehicular traffic with a centre turn lane. Additionally, various constraints along the length of Commissioners Street from the Don Roadway to Leslie Street were taken into consideration including existing buildings to remain and major stormwater infrastructure serving the broader city that is to remain and additional upgrades planned through the Don River and Central Waterfront project. The cross-sections integrate a wide, stormwater management feature and linear open space with multi-use trail. In the urbanize cross-section, and where there was sufficient space, the cultural heritage landscape of the existing Commissioners Street right-of-way was integrated into the overall concept.

The TTC indicated its preference for the streetcar to be located in the centre of the street. More detailed study will be required at Phase 3 of the Class EA process that reviews alternative designs for the right-of-way, including designs that explore a variety of configurations for the dedicated streetcar lanes and in recognition of the various constraints along the length of Commissioners Street.

Much like Eastern Avenue, a series of cross-sections were developed for Commissioners to reflect the various constraints and features along its length. **Figures 8-14** to **8-18** represent cross-section for urbanizing Commissioners Street. Figure **8-19** represents a typical cross-section for maintaining and improving Commissioners Street.

FIGURE 8-14 CONCEPTUAL CROSS-SECTION – COMMISSIONERS STREET, DON ROADWAY TO BROADVIEW AVENUE (URBANIZE)

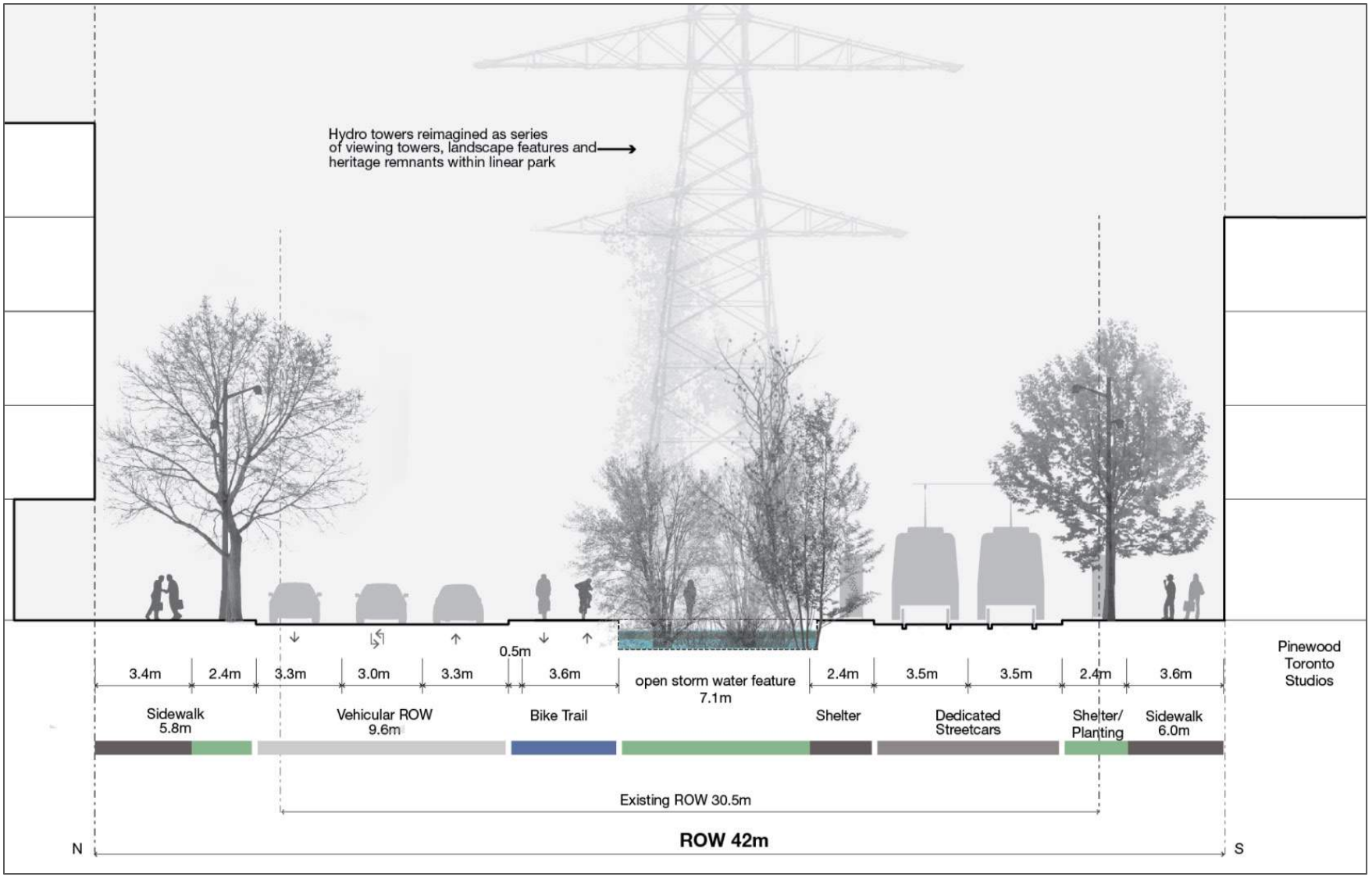


FIGURE 8-15 CONCEPTUAL CROSS-SECTION – COMMISSIONERS STREET, BROADVIEW AVENUE TO CARLAW AVENUE

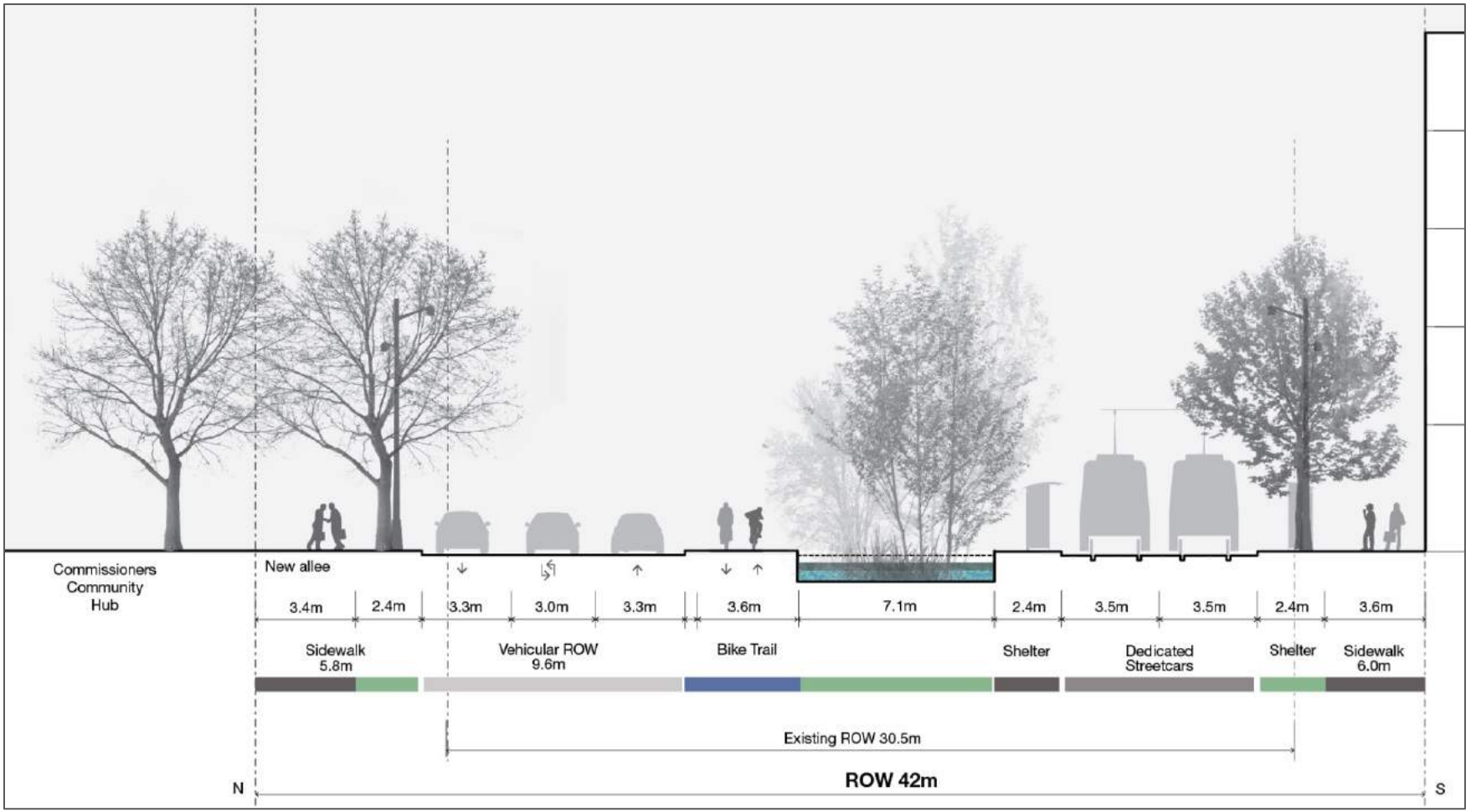
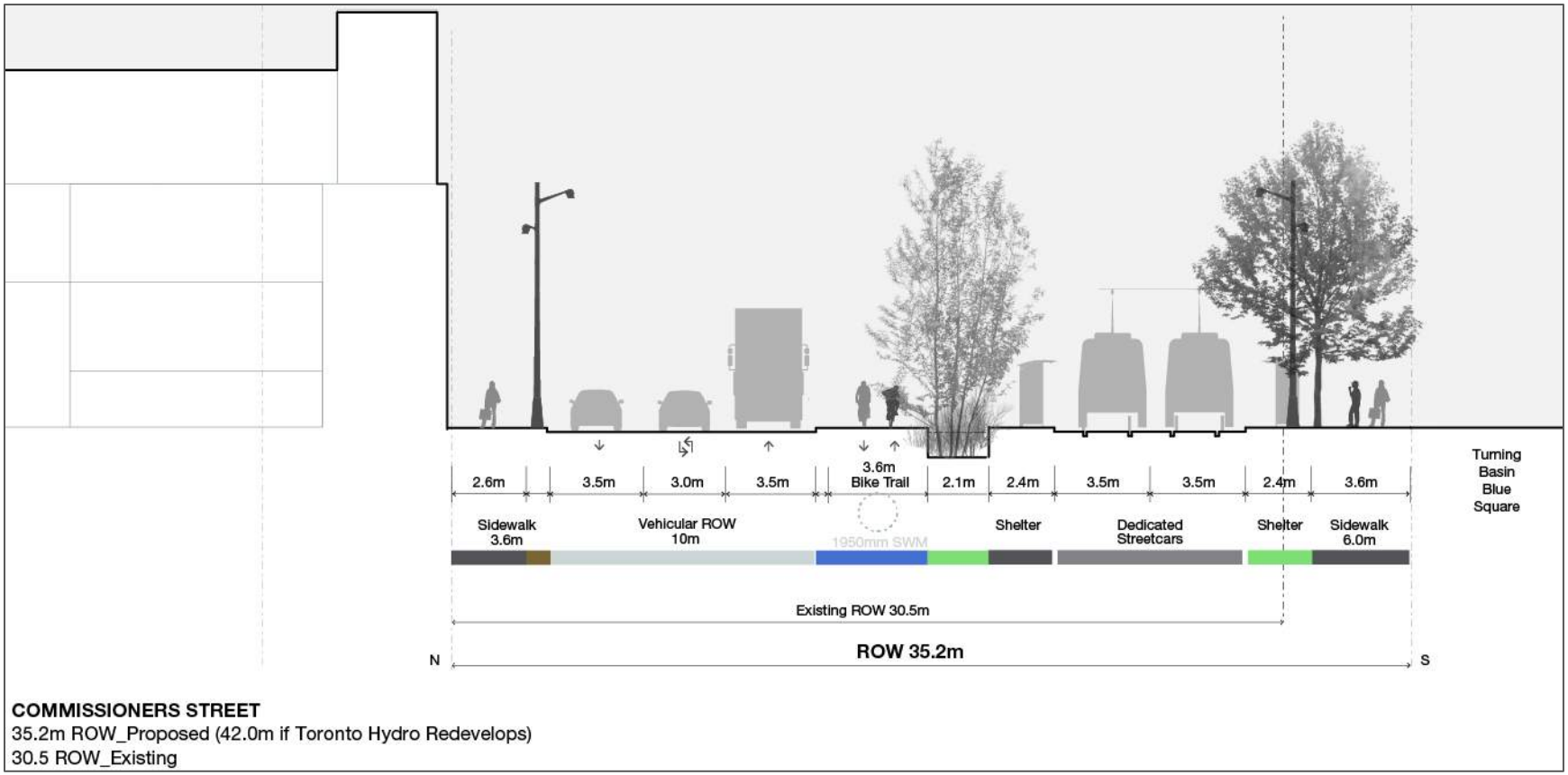


FIGURE 8-16 CONCEPTUAL CROSS-SECTION – COMMISSIONERS STREET, TURNING BASIN



COMMISSIONERS STREET
35.2m ROW_Proposed (42.0m if Toronto Hydro Redevelops)
30.5 ROW_Existing

FIGURE 8-17 CONCEPTUAL CROSS-SECTION – COMMISSIONERS STREET, TURNING BASIN TO LESLIE STREET

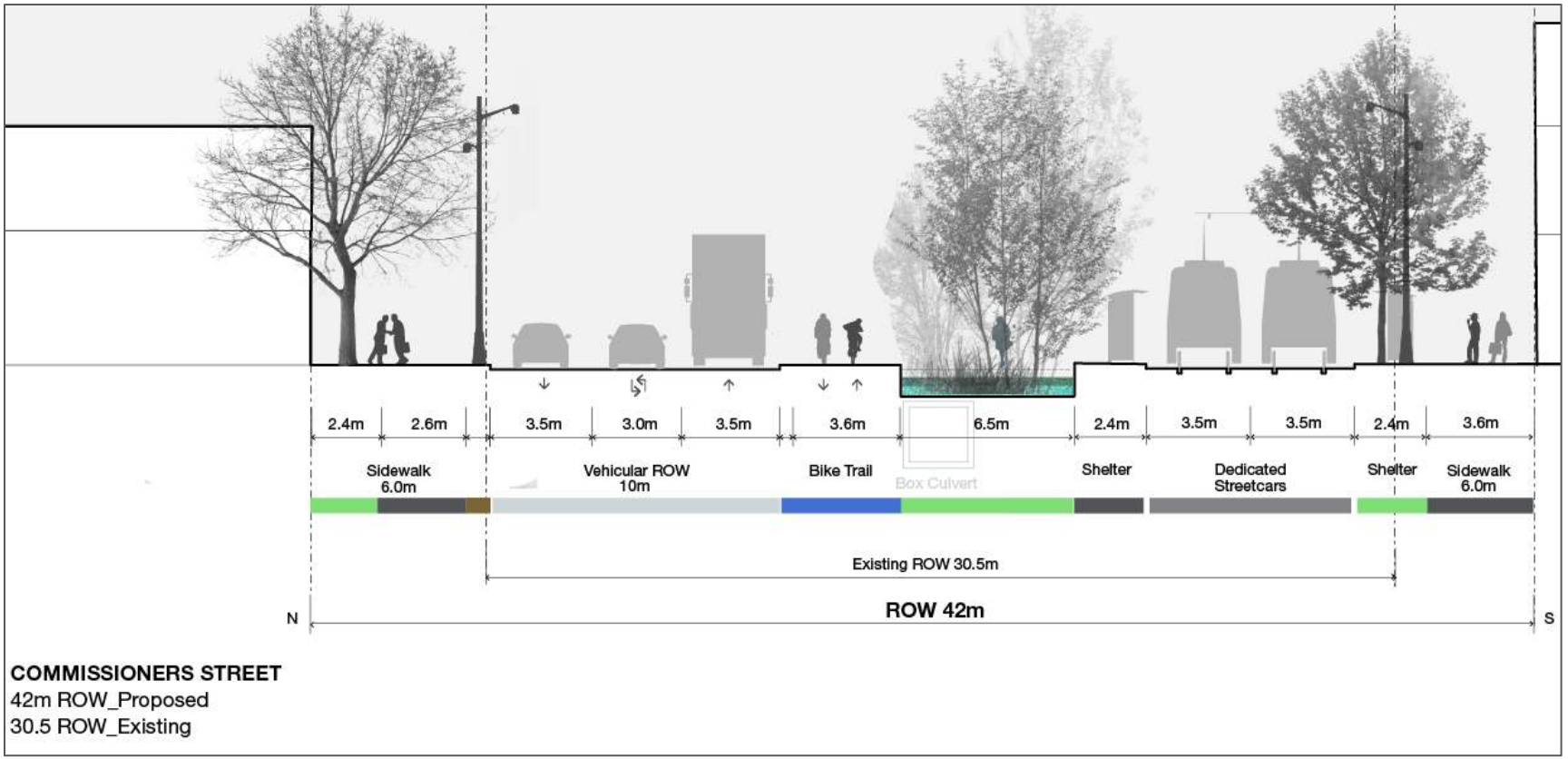
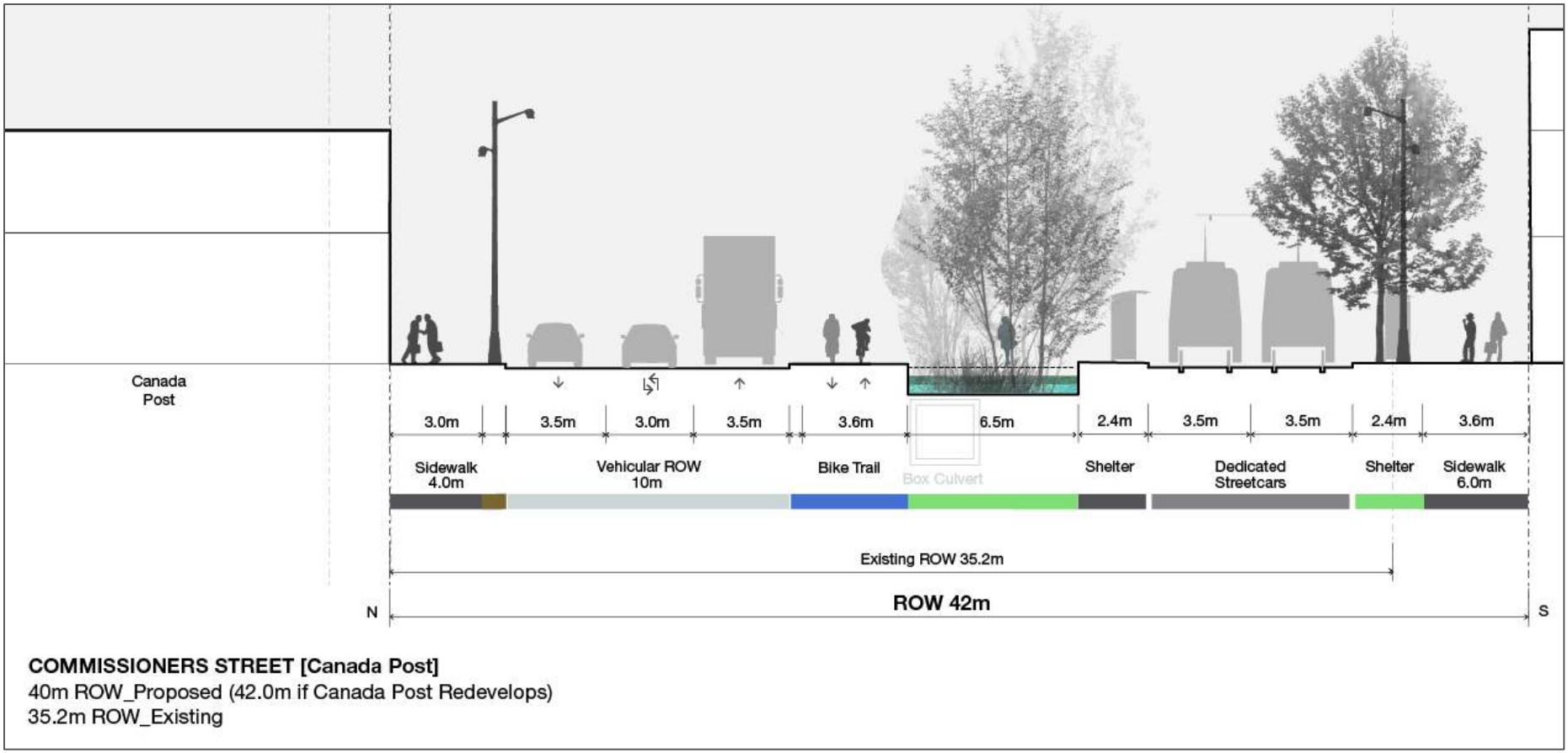


FIGURE 8-18 CONCEPTUAL CROSS-SECTION – COMMISSIONERS STREET, TURNING BASIN TO LESLIE STREET (CANADA POST)



COMMISSIONERS STREET [Canada Post]
40m ROW_Proposed (42.0m if Canada Post Redevelops)
35.2m ROW_Existing

FIGURE 8-19 CONCEPTUAL CROSS-SECTION – COMMISSIONERS STREET, FOUR LANES

Unwin Avenue

PHOTO: VARIOUS VIEWS OF UNWIN AVENUE

Unwin Avenue will be the seam between an urban industrial district and the wilderness of the future Lake Ontario Park. Key objectives for this street were to create a seam between the industrial lands to the north and the natural "wild" areas to the south and integrate the existing rail corridor. The desired character for this street includes wide, continuous pedestrian and cycling facilities, a continuous, curbless bioswale along the south side of the vehicular right-of-way, the potential for lay-by parking and continued accommodation of goods movement.

Figure 8-20 and **8-21** provide conceptual cross-sections of Unwin Avenue developed using Complete Street principles.

FIGURE 8-20 CONCEPTUAL CROSS-SECTION – UNWIN AVENUE (URBANIZE)

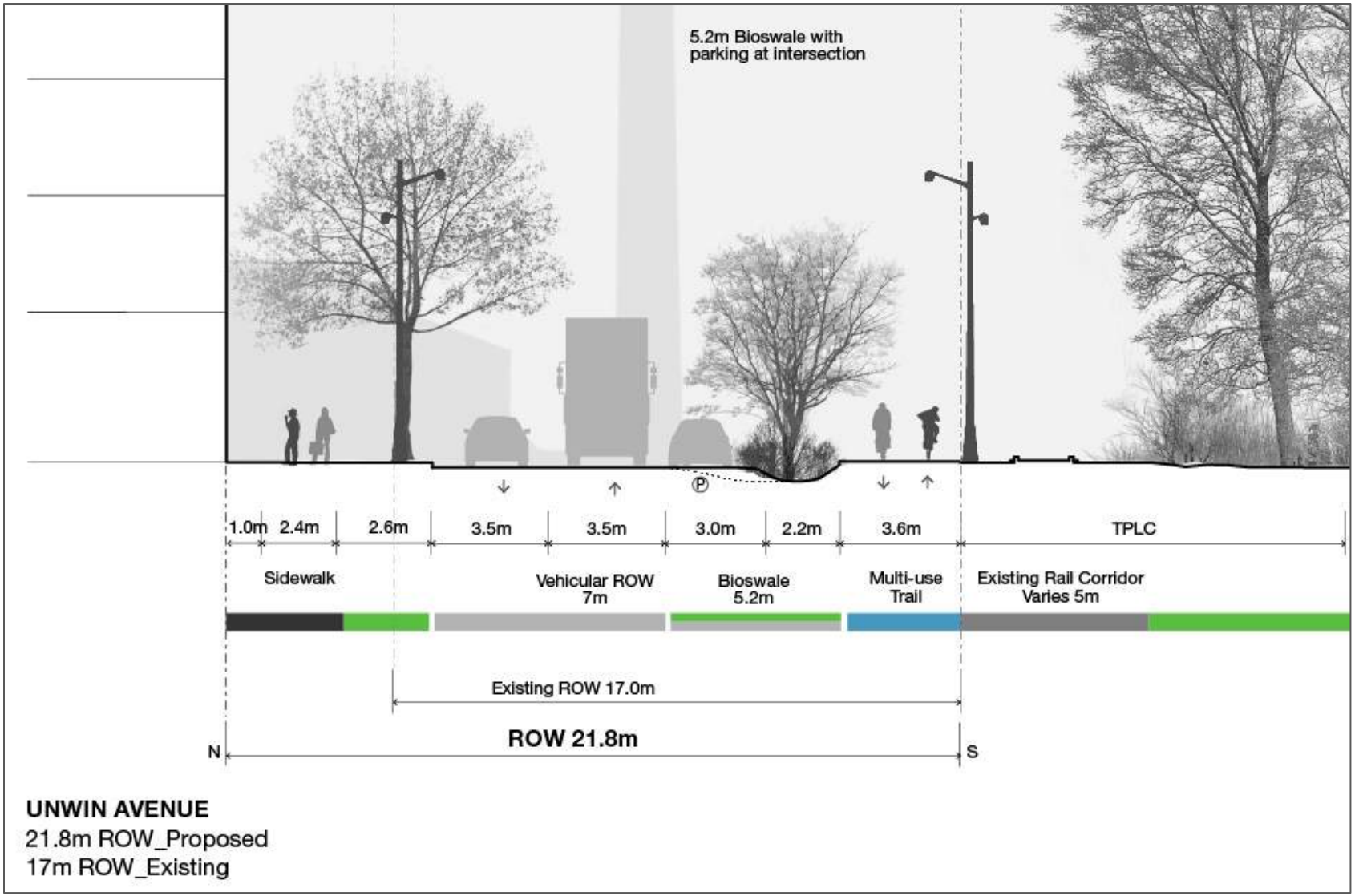
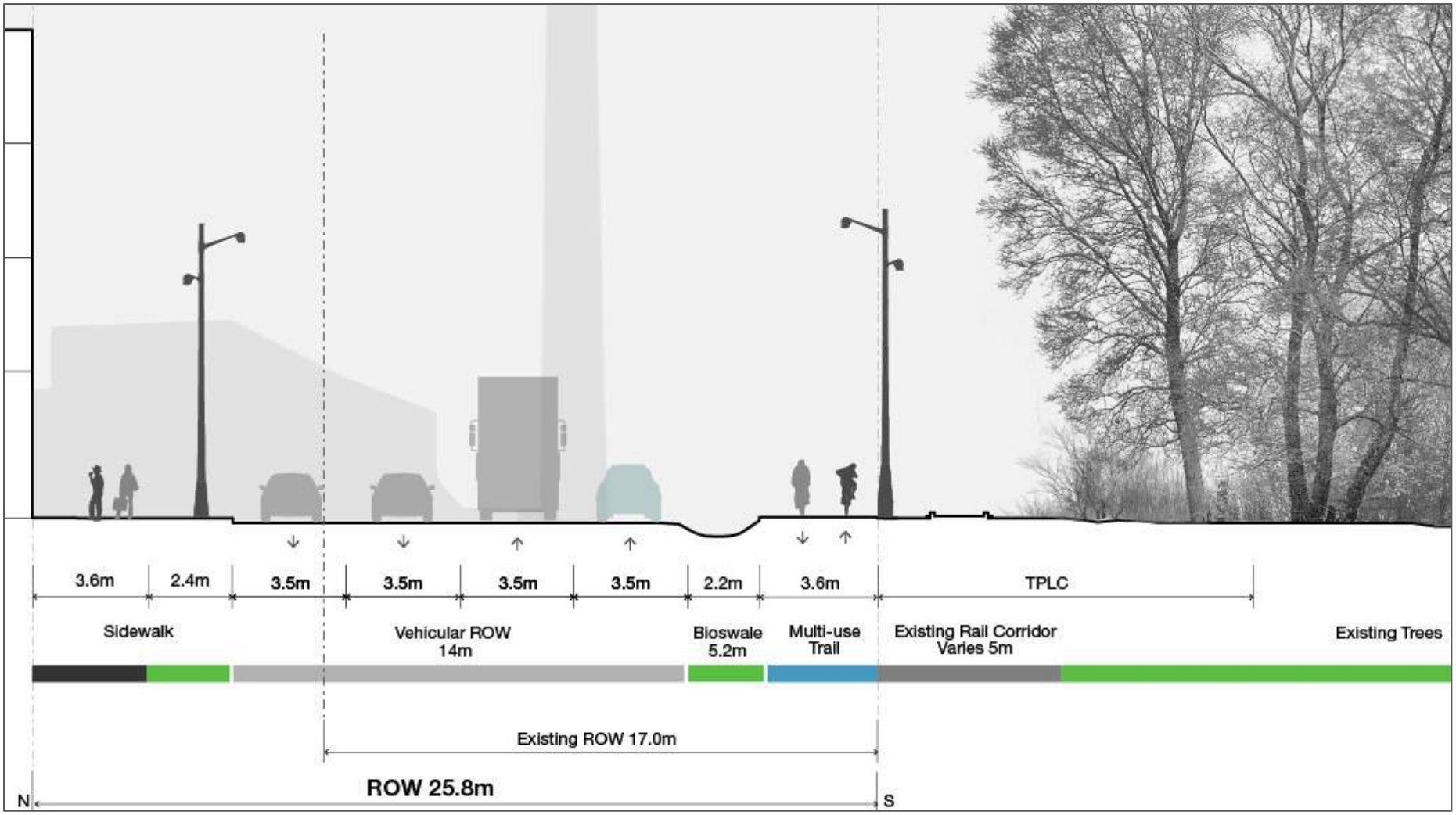


FIGURE 8-21 CONCEPTUAL CROSS-SECTION – UNWIN AVENUE, ADDITIONAL VEHICULAR LANES



Cherry Street

The TSMP EA is generally addressing Cherry Street south of the Ship Channel. The LDLMP EA addressed Cherry Street north of the Ship Channel. South of the Ship Channel opportunities for a wide stormwater and public feature, coupled with improved pedestrian and cycling facilities are desirable. These are represented in **Figures 8-22** and **8-23**. Alternative 3-A would reduce space allocated to the public realm.

PHOTO: VARIOUS VIEWS OF CHERRY STREET

Figures 8-22 and **8-23** provide conceptual cross-sections of Cherry Street developed using Complete Street principles.

FIGURE 8-22 CONCEPTUAL CROSS-SECTION – CHERRY STREET, SOUTH OF SHIP CHANNEL TO UNWIN AVENUE (MARITIME HUB)

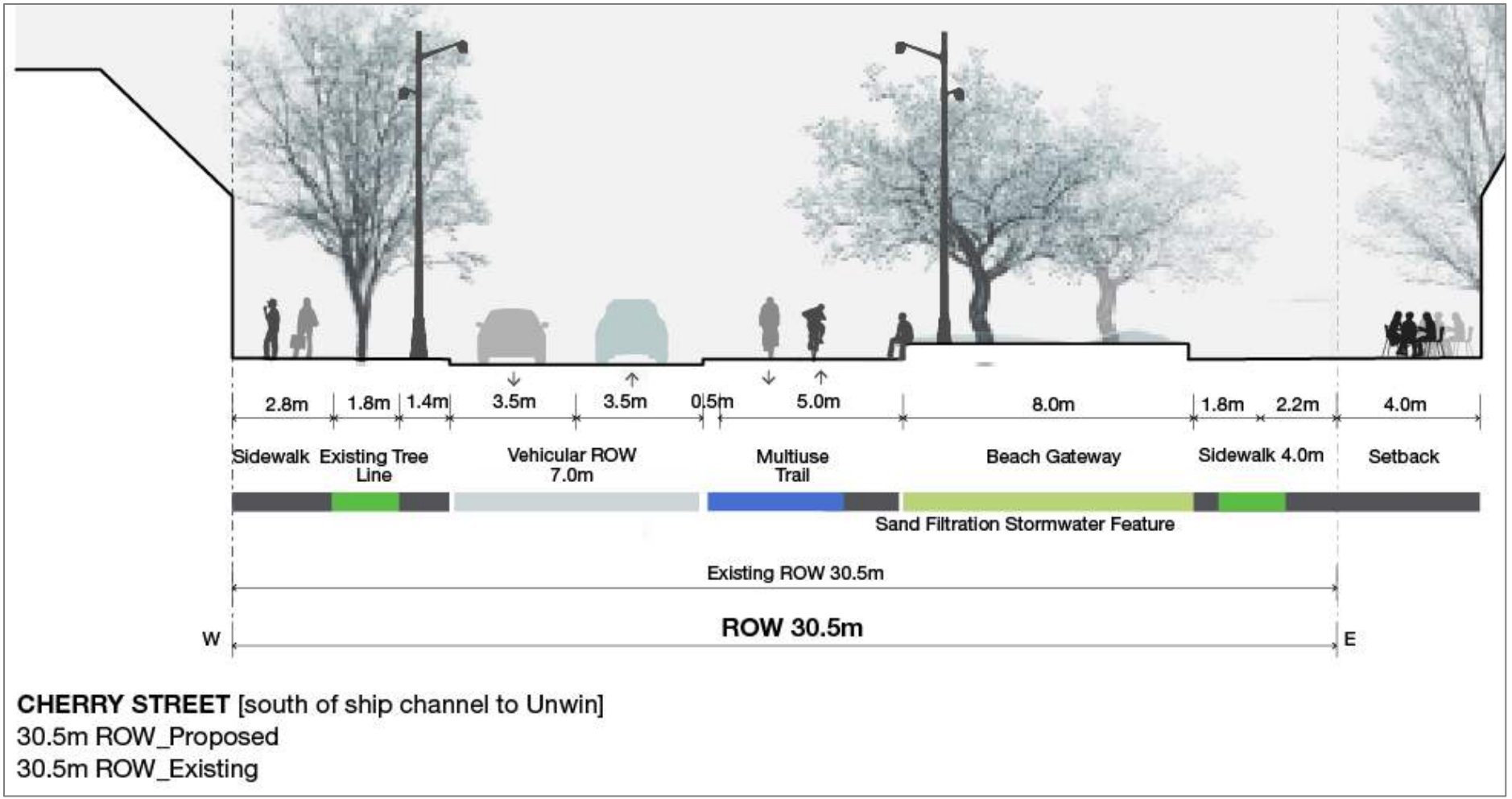
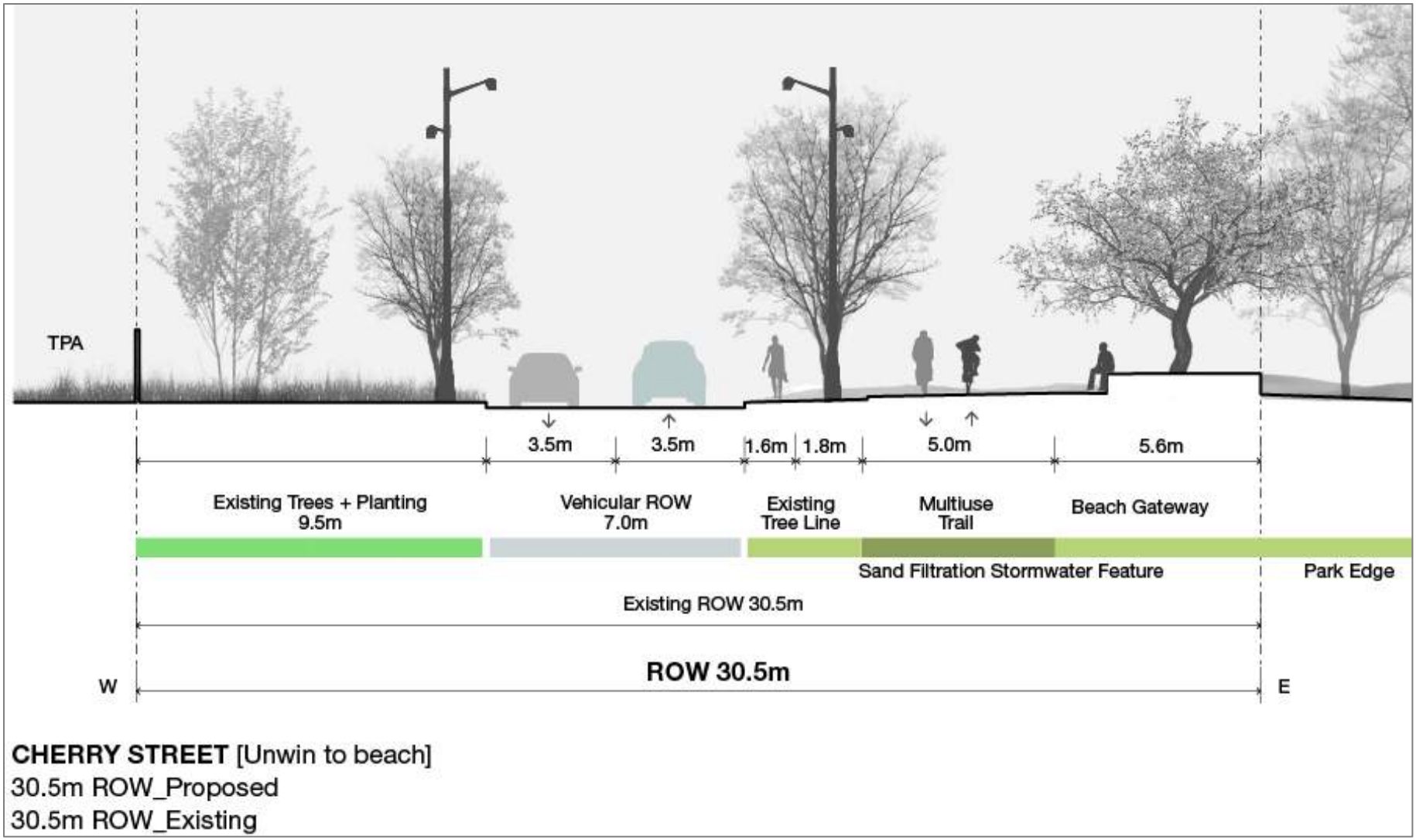


FIGURE 8-23 CONCEPTUAL CROSS-SECTION – CHERRY STREET, UNWIN AVENUE TO CHERRY BEACH (BEACH STREET)



Don Roadway

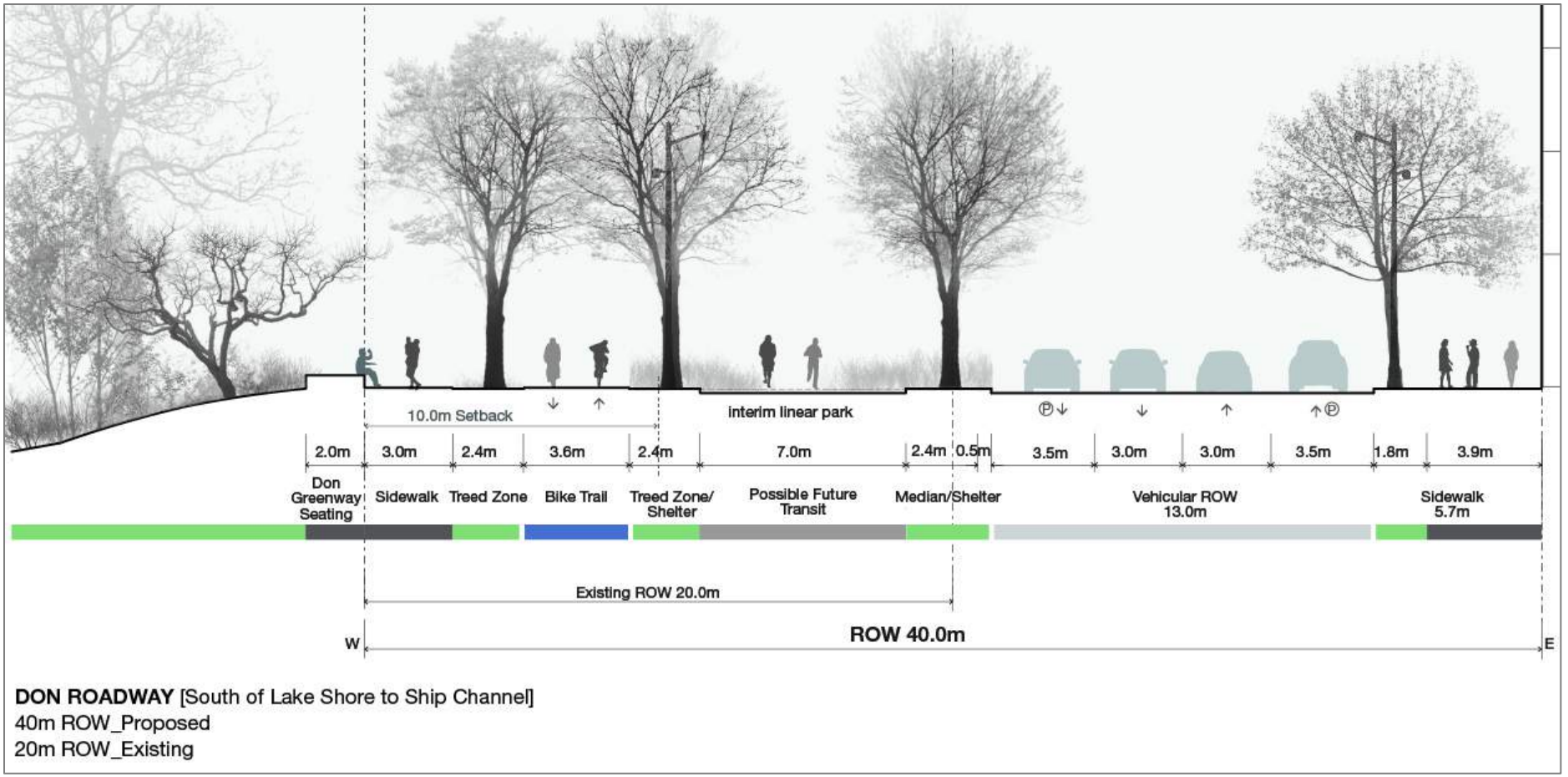
North of the Ship Channel, the Don Roadway was addressed in the LDLMP EA. This street will be defined by its adjacency to the future Don Estuary. A continuous estuary wall along the western edge of the street will be the interface with the new Greenway, providing places to sit while taking in views over the new estuary. The design of the street protects for the possibility of future transit expansion within a temporary linear park.

CONCEPT: FUTURE DON ESTUARY

Within the TSMP EA Study Area, the Don Roadway is being addressed from the Ship Channel to Unwin Avenue as part of new connections across the Ship Channel. The future character of this street should draw on the qualities of the Don Roadway north of the Ship Channel.

Figure 8-24 provides a conceptual cross-section of the Don Roadway developed using the LDLMP EA cross-section. Note, only two-lanes are required south of the Ship Channel.

FIGURE 8-24 CONCEPTUAL CROSS-SECTION – DON ROADWAY, SOUTH OF LAKE SHORE BOULEVARD EAST TO SHIP CHANNEL (RIVER STREET)

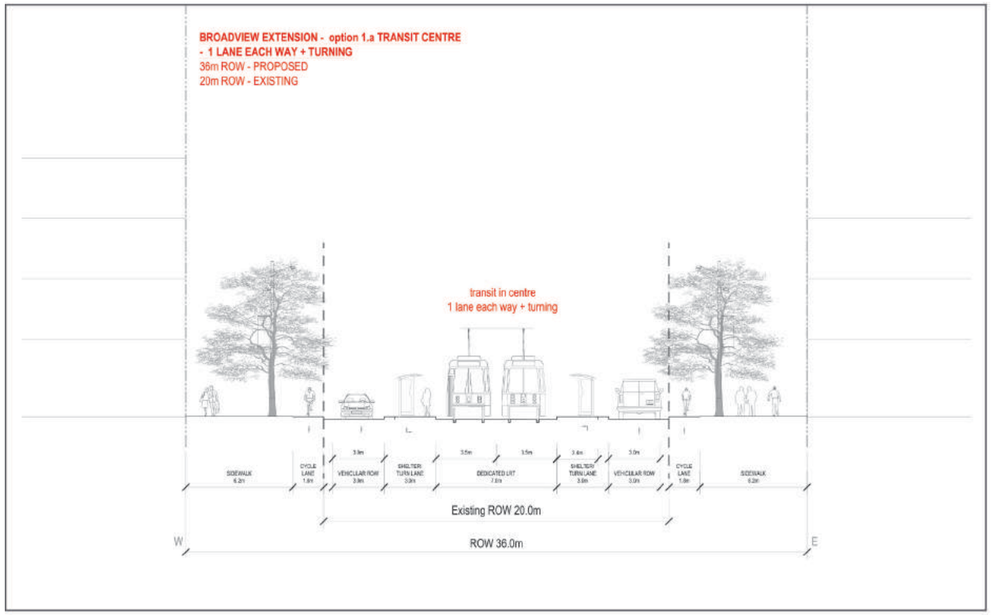


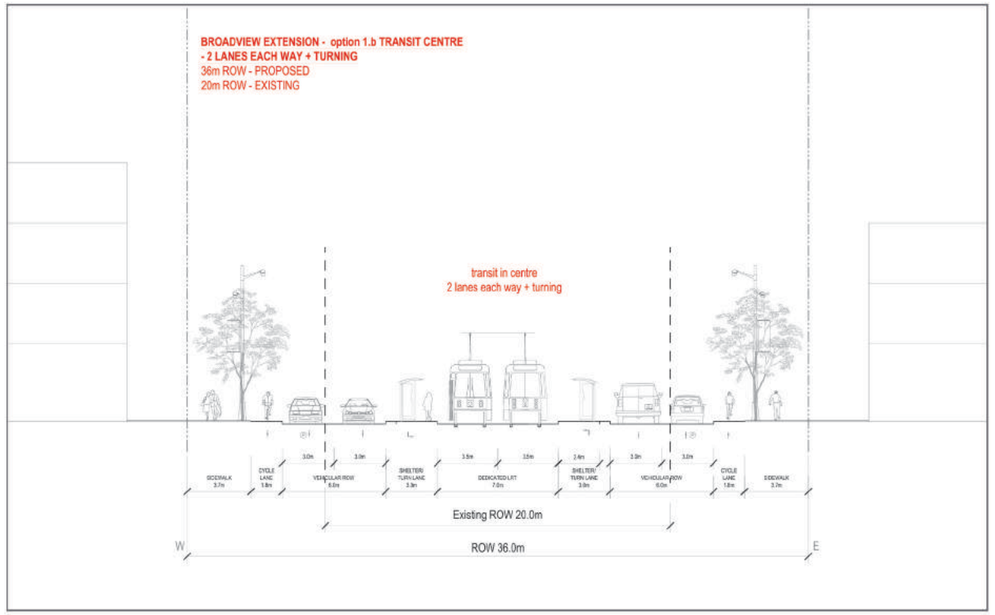
Broadview Extension

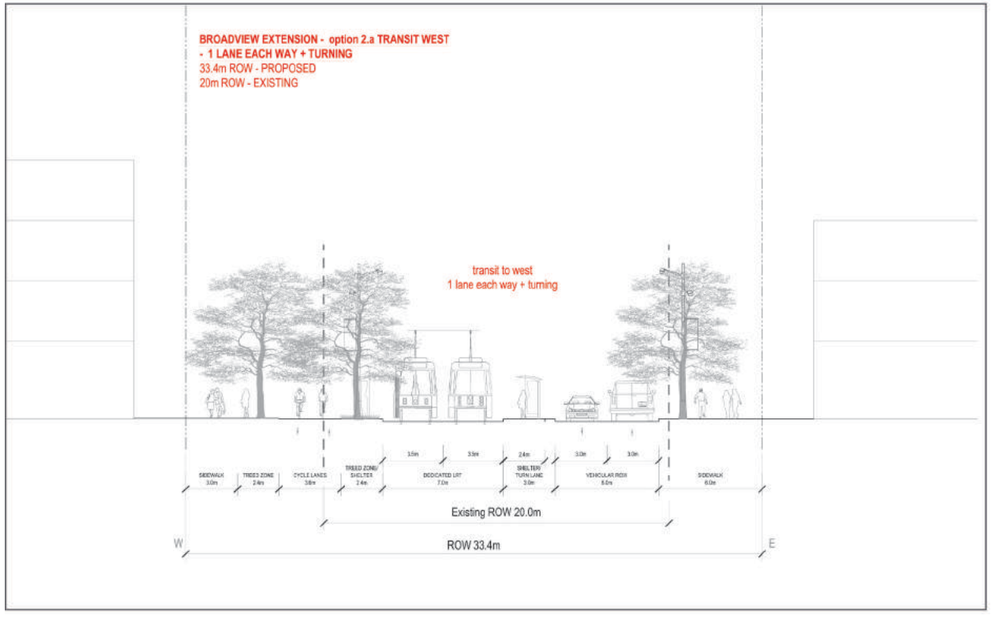
The Broadview Avenue extension is a critical connection for the area that introduces dedicated transit across Lake Shore Boulevard East and potentially further across the Ship Channel. The street will be the main north-south street through the Unilever Precinct and is envisioned as being a retail high street through this area, as well as in the Film Studio District. Wide sidewalks capable of accommodating pedestrian, cafes/restaurants and seating are desired as are raised cycle tracks with generous landscaping. The street will also have to accommodate a dedicated right-of-way for streetcars.

Initially, the Project team explored a number of potential cross-sections for the street (**Figure 8-25).** These section studies explored different right-of-way widths, number of vehicular lanes and locations for dedicated transit (centre of the street versus offset). The TTC indicated that their preference for dedicated transit is centre of the street, and as such options were carried forward with transit in the centre of the street (note: Phase 3 of the Class EA process would further develop and evaluate alternative designs for Broadview Extension that would include offset alternatives). Further refinements were undertaken to minimize rights-of-ways to the extent possible in the final options that were carried forward for analysis. **Figure 8-26** and **8-27** illustrate the cross-sections developed for a 35 m right-of-way and **Figure 8-28** illustrates a cross-section for right-of-way of approximately 40 m.

FIGURE 8-25: BROADVIEW CROSS-SECTION STUDIES







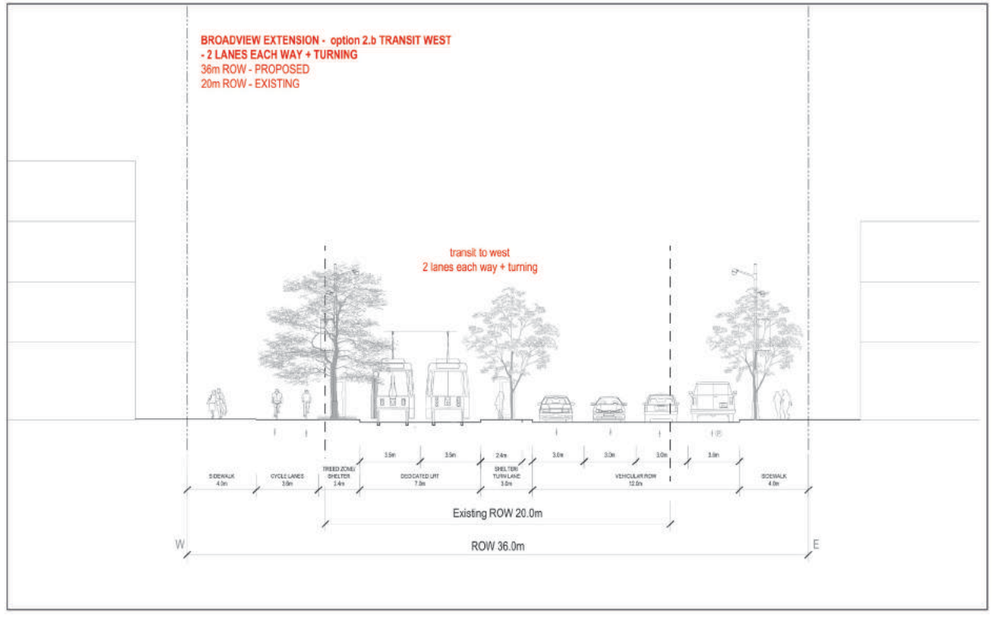
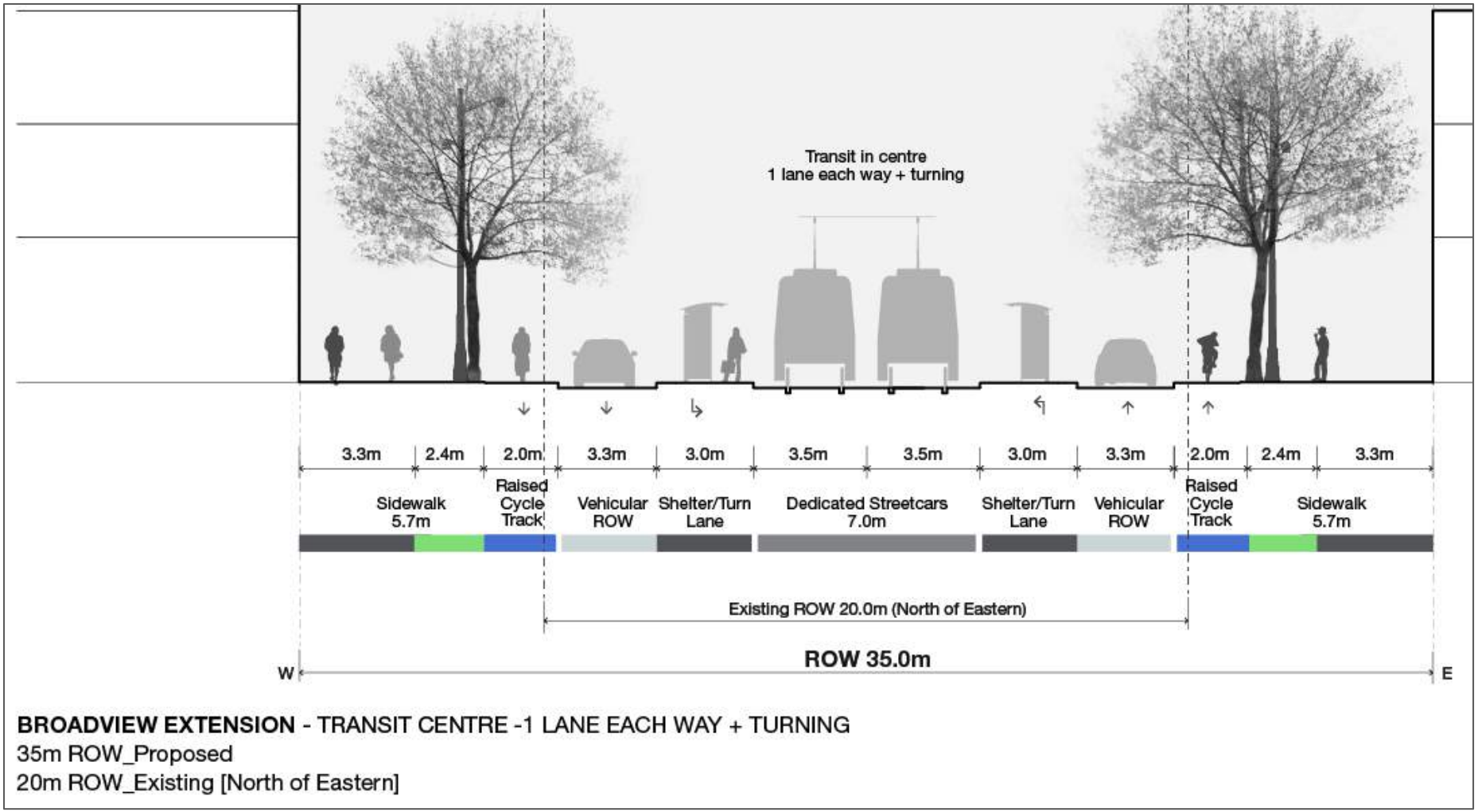
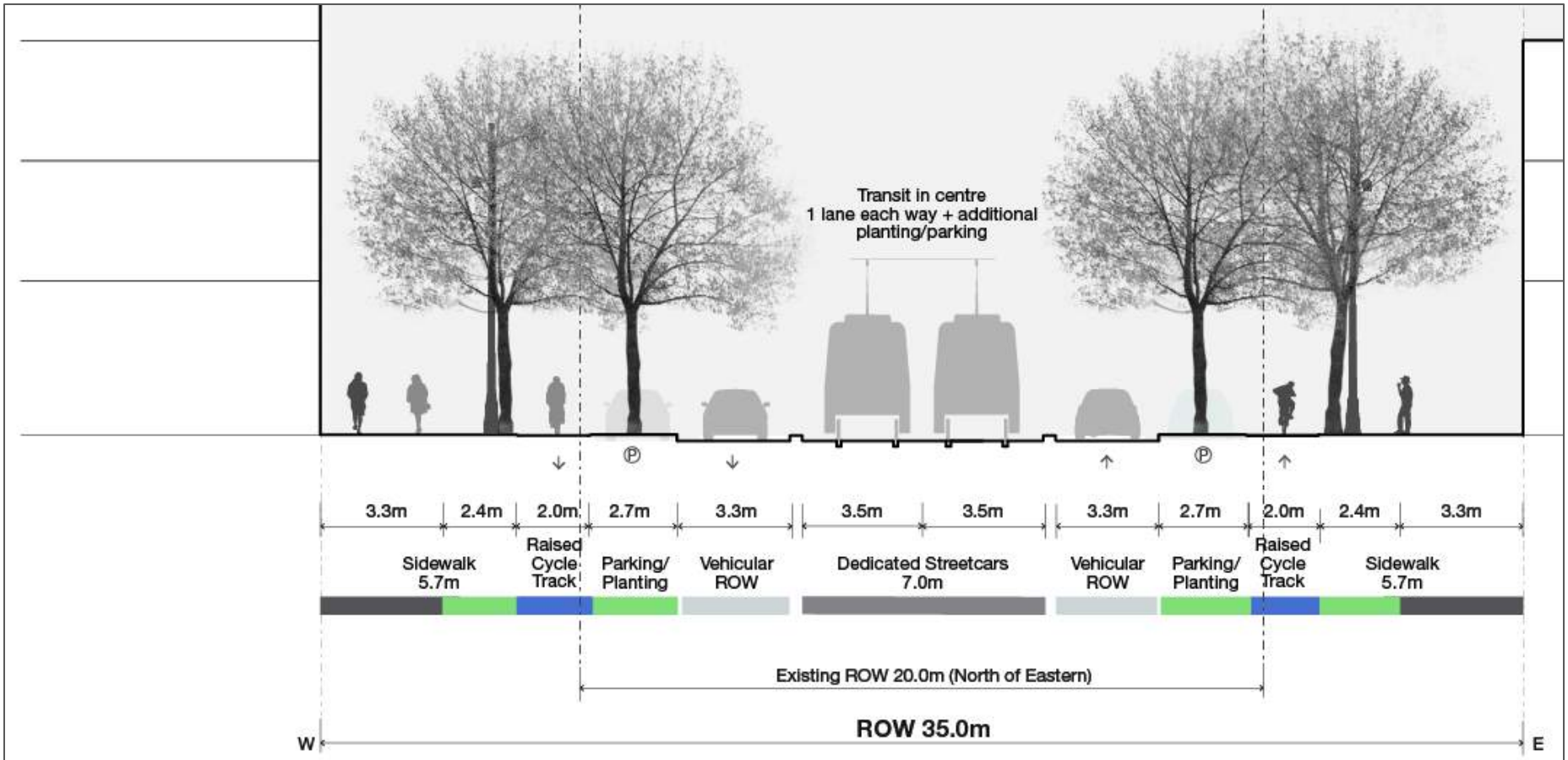


FIGURE 8-26 CONCEPTUAL CROSS-SECTION – BROADVIEW AVENUE EXTENSION (SIGNALIZED INTERSECTIONS/TTC STOPS) (35 M RIGHT-OF-WAY)



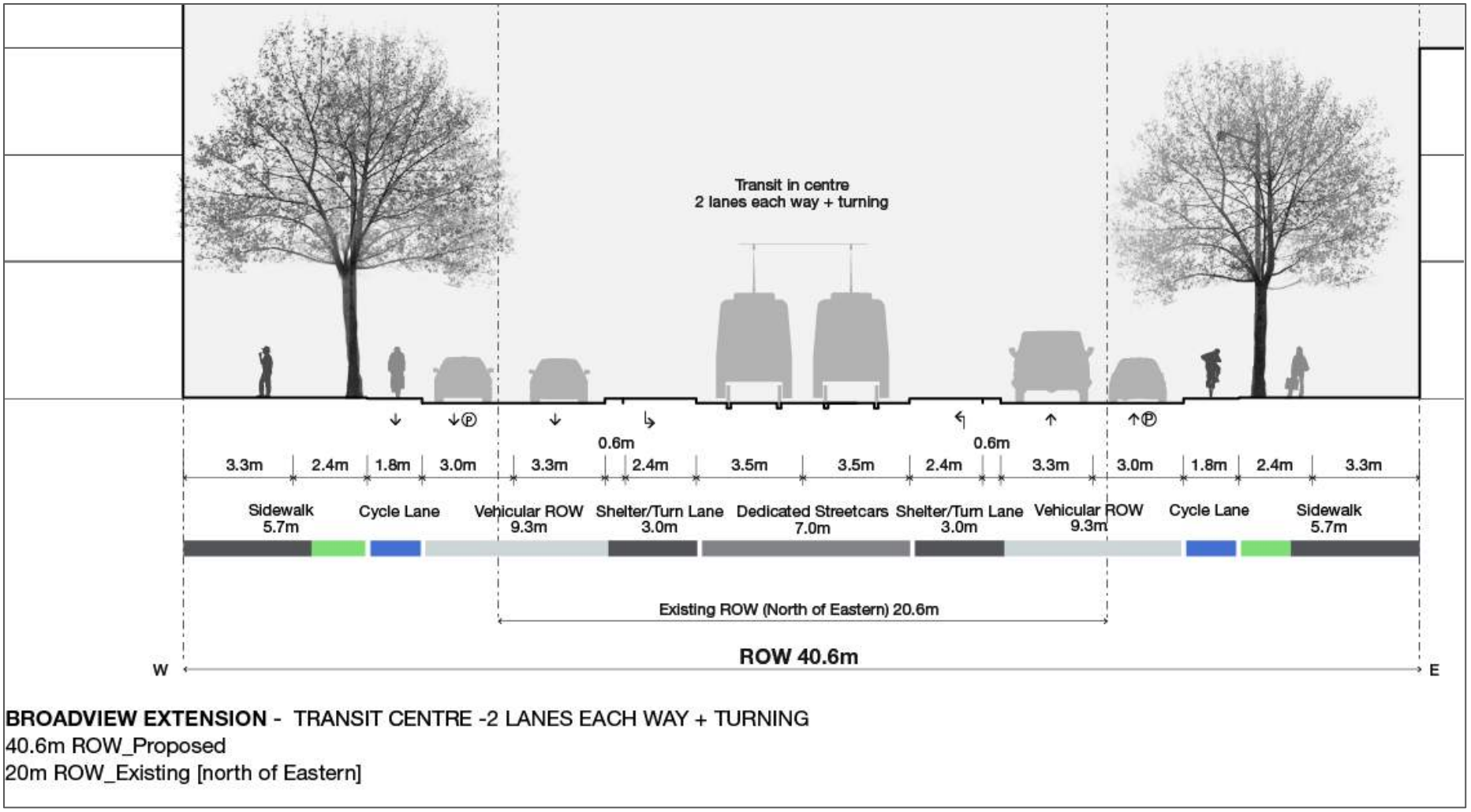
BROADVIEW EXTENSION - TRANSIT CENTRE -1 LANE EACH WAY + TURNING
35m ROW_Proposed
20m ROW_Existing [North of Eastern]

FIGURE 8-27 CONCEPTUAL CROSS-SECTION – BROADVIEW AVENUE EXTENSION (MID-BLOCK) (35 M RIGHT-OF-WAY)



BROADVIEW EXTENSION - TRANSIT CENTRE -1 LANE EACH WAY + ADDITIONAL PLANTING/PARKING
35m ROW_Proposed
20m ROW_Existing [North of Eastern]

FIGURE 8-28 CONCEPTUAL CROSS-SECTION – BROADVIEW AVENUE EXTENSION (40 M RIGHT-OF-WAY)

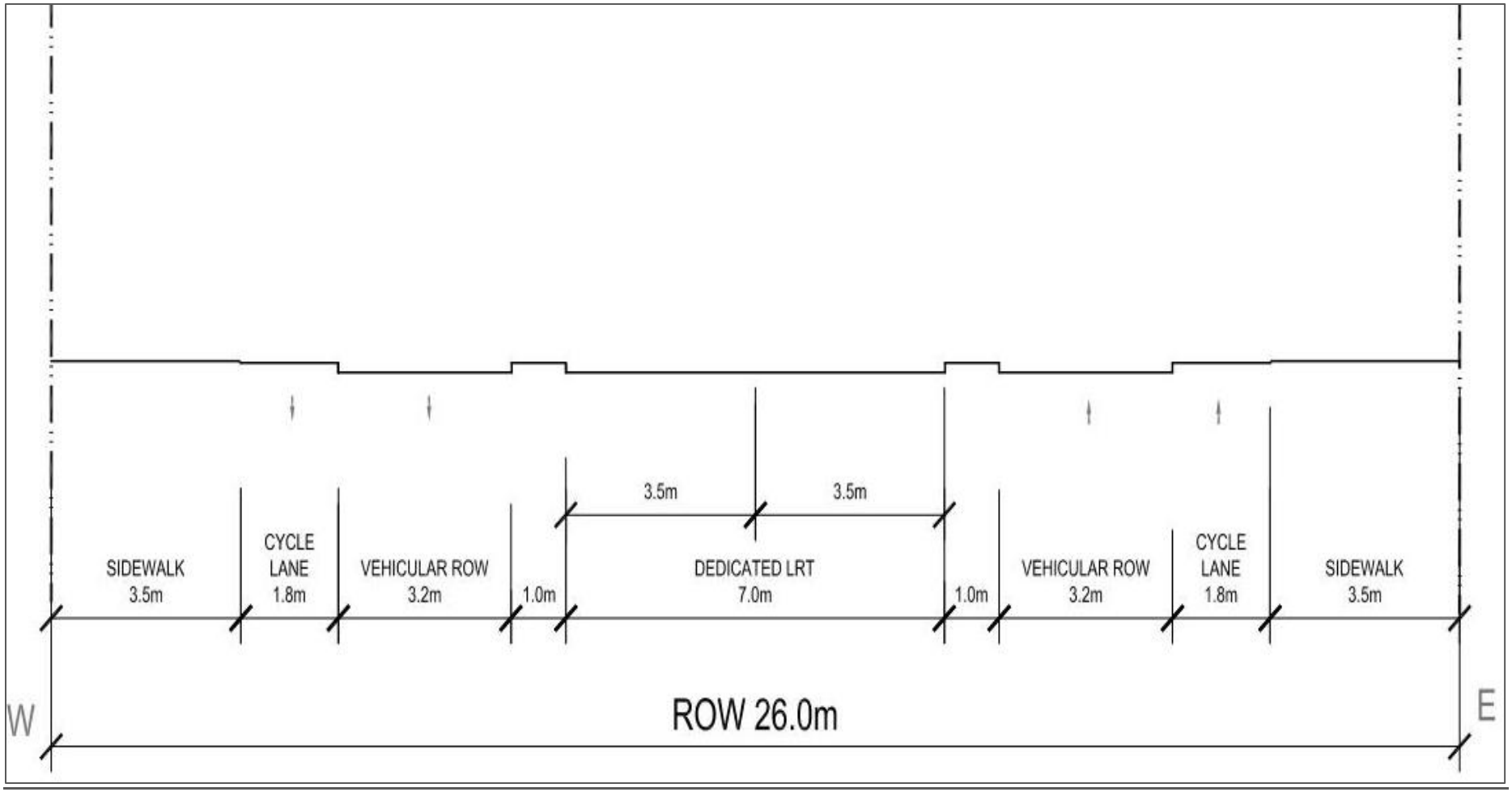


BROADVIEW EXTENSION - TRANSIT CENTRE -2 LANES EACH WAY + TURNING
40.6m ROW_Proposed
20m ROW_Existing [north of Eastern]

Ship Channel Crossing

Conceptual cross-sections were developed for the ship channel crossing along Broadview Avenue and the Don Roadway. **Figure 8-29** provides a cross-section of the bridge crossing.

FIGURE 8-29 CONCEPTUAL CROSS-SECTION – BROADVIEW AVENUE EXTENSION BRIDGE CROSSING



Carlaw Avenue

PHOTO: VARIOUS VIEWS OF CARLAW AVENUE

North of Lake Shore Boulevard East, Carlaw Avenue is a compact right-of-way lined with stable residential dwellings and industrial uses. Reconfiguration of the existing right-of-way would enable additional pedestrian and cyclist amenity while maintaining vehicular capacity, residential, and industrial access and on-street parking. Within the Port Lands, Carlaw Avenue would be improved along its length and extended to the preferred Basin Street extension. The street's adjacency to the Turning Basin provides an opportunity to draw the water's edge promenade into the street, minimizing the right-of-width of the street while still delivering a high-quality promenade.

Figures 8-30 and **8-31** provide conceptual cross-sections of Carlaw Avenue developed using Complete Street principles.

FIGURE 8-30 CONCEPTUAL CROSS-SECTION – CARLAW AVENUE, NORTH OF LAKE SHORE BOULEVARD EAST

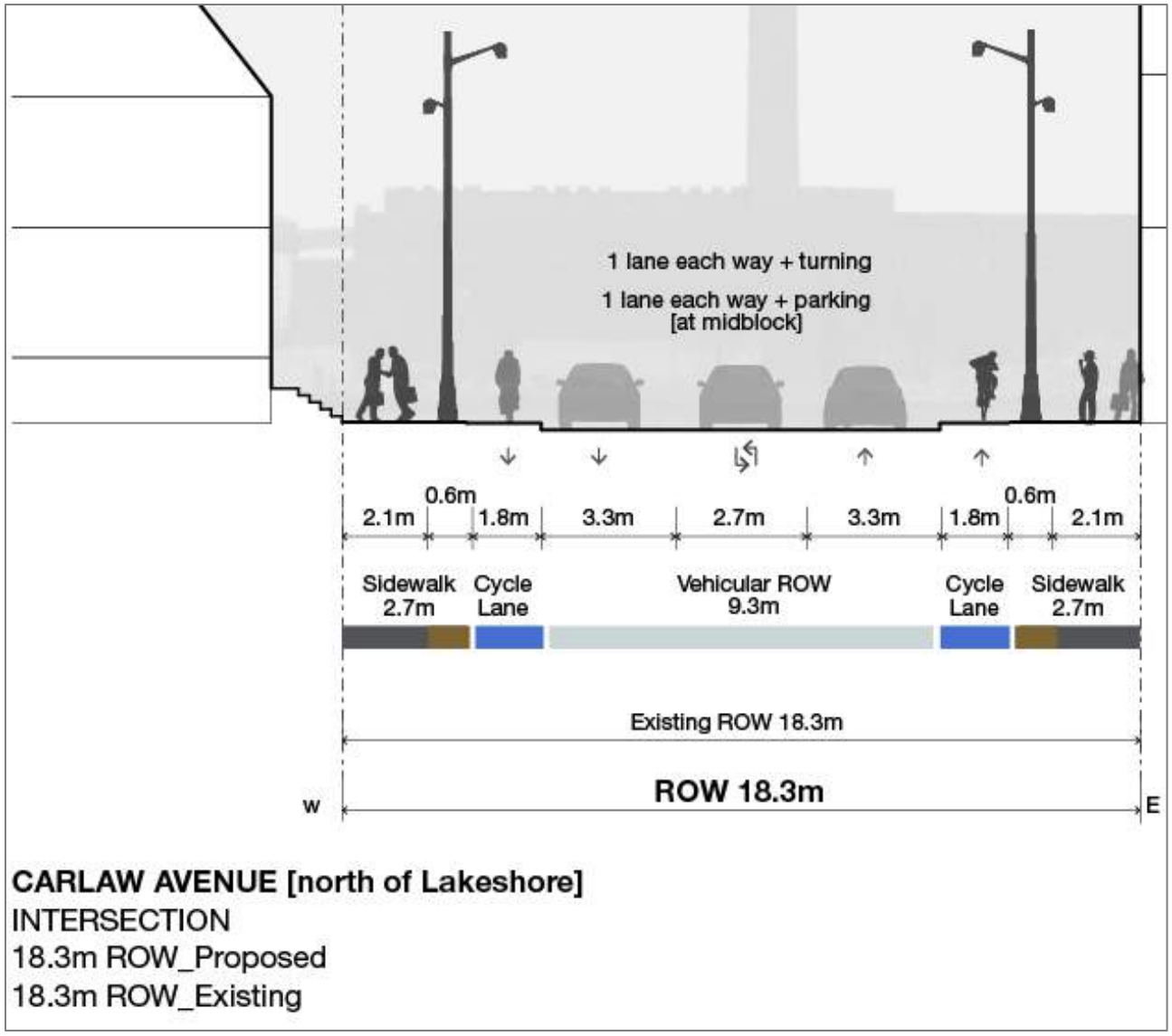
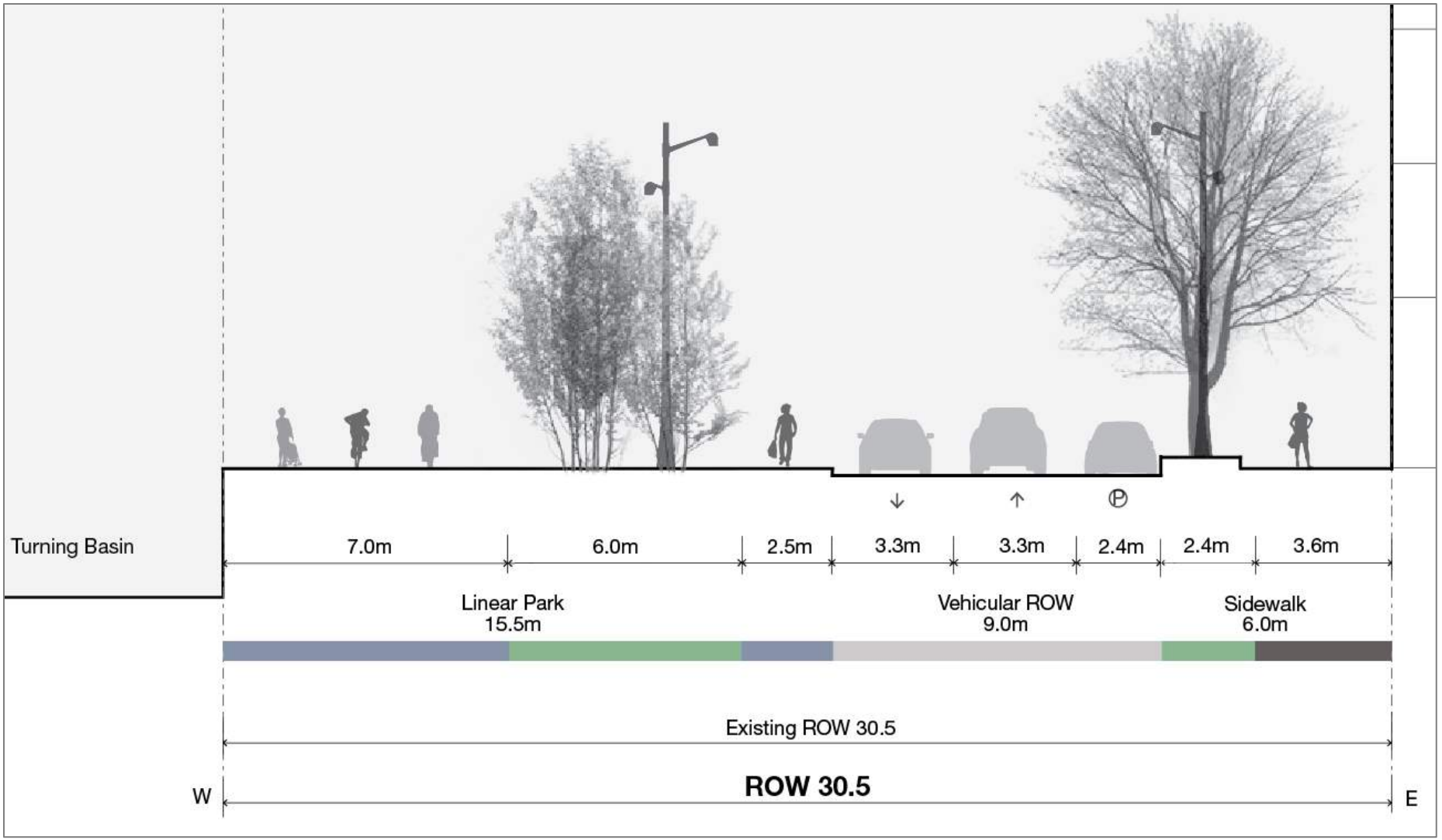


FIGURE 8-31 CONCEPTUAL CROSS-SECTION – CARLAW AVENUE, SOUTH OF LAKE SHORE BOULEVARD EAST (TURNING BASIN LINEAR PARK)



Leslie Street

Leslie Street and surrounding lands are envisioned as a green portal to Tommy Thompson Park. North of Commissioners Street, Leslie Street was recently redesigned to accommodate streetcar tracks and enhanced landscaping and streetscaping. South of Commissioners Street, the street benefitted from greening and enhanced landscaping. Reconfiguration and/or a potential widening are being considered by the TSMP EA for the portion of the street south of Commissioners Street. The desired character includes additional improvements to the pedestrian and cycling environment, continuing to accommodate goods movement and integrating stormwater management into the overall design.

Figures 8-32 and **8-33** provide conceptual cross-sections of Leslie Street using Complete Street principles.

New Streets

PHOTO: VIEW OF THE TURNING BASIN

New north-south and east-west streets will assist in "stitching" the Port Lands into the city and creating connectivity across the Study Area. New streets need to be designed to perform diverse functions to both accommodate and ensure continued employment growth in the Study Area, while also minimizing potential impacts to existing stable residential areas to the north and creating enhanced multi-modal connections into and out of the Port Lands. New north-south streets considered included Winnifred, Caroline, Larchmount, and Pape (Woodfield Road and Knox Avenue were added later).

Figures 8-34 to **8-36** provide conceptual cross-sections of new streets using Complete Street principles.

FIGURE 8-32 CONCEPTUAL CROSS-SECTION – LESLIE STREET, SOUTH OF COMMISSIONERS STREET (PASTORAL GATEWAY)

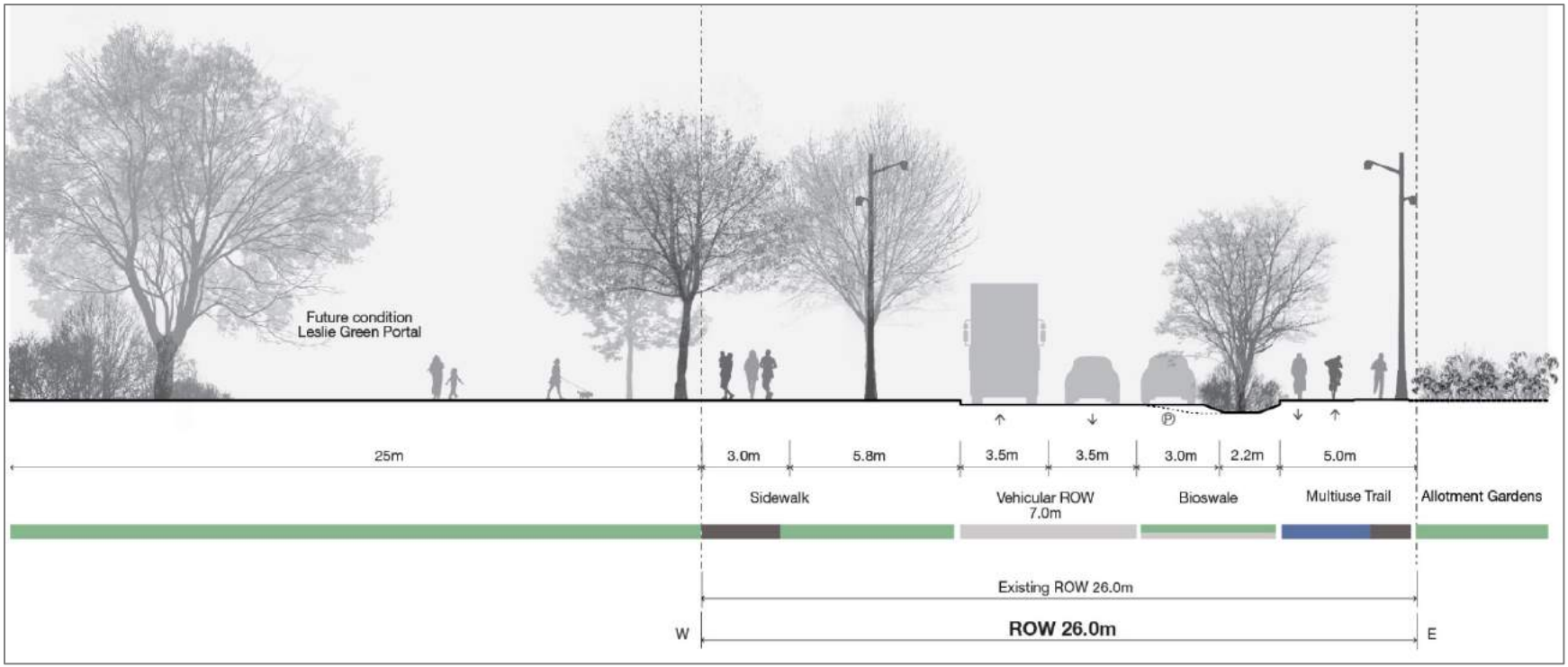


FIGURE 8-33 CONCEPTUAL CROSS-SECTION – LESLIE STREET (FOUR LANES)

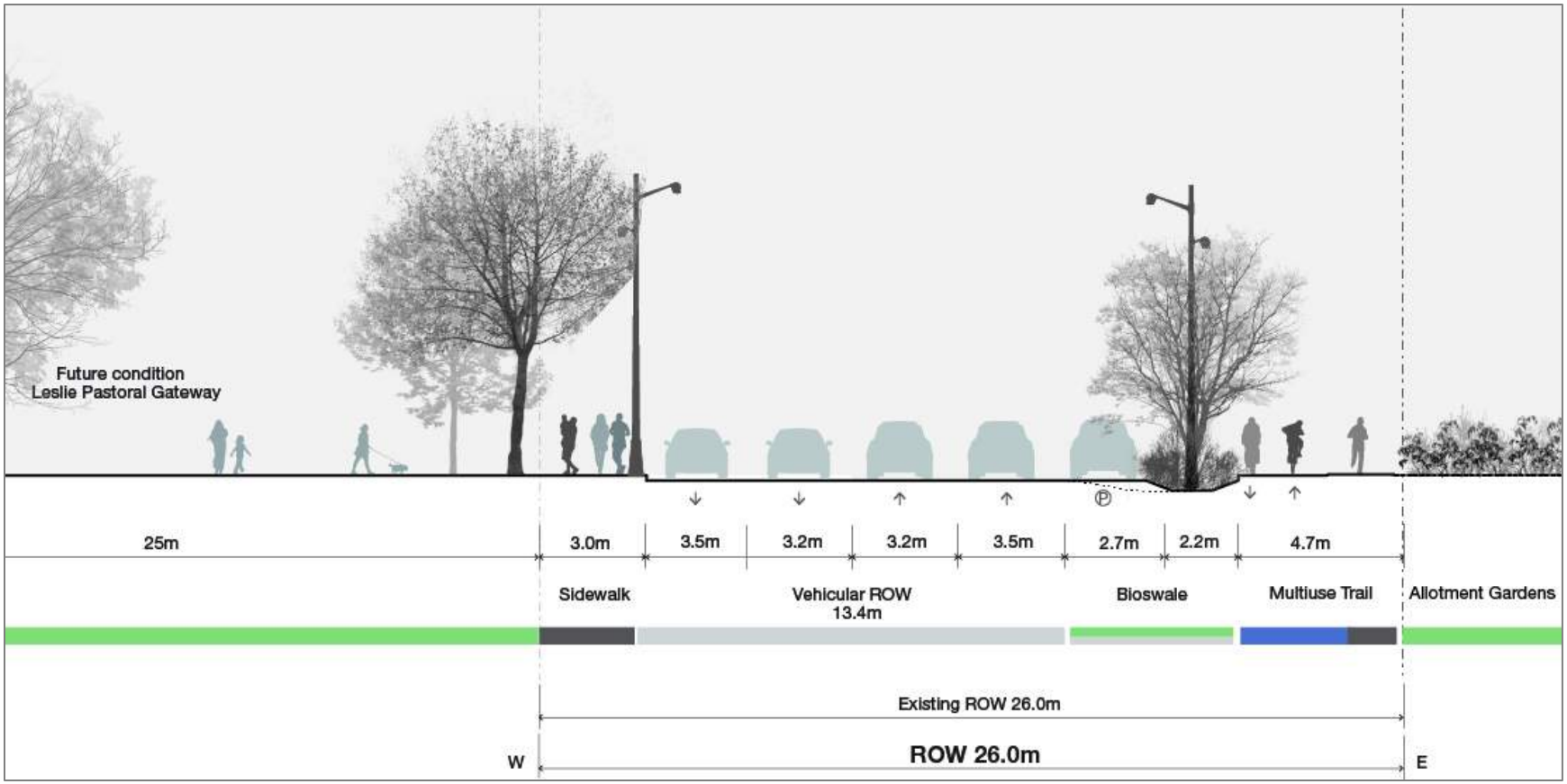


FIGURE 8-34 CONCEPTUAL CROSS-SECTION – NEW NORTH-SOUTH STREETS

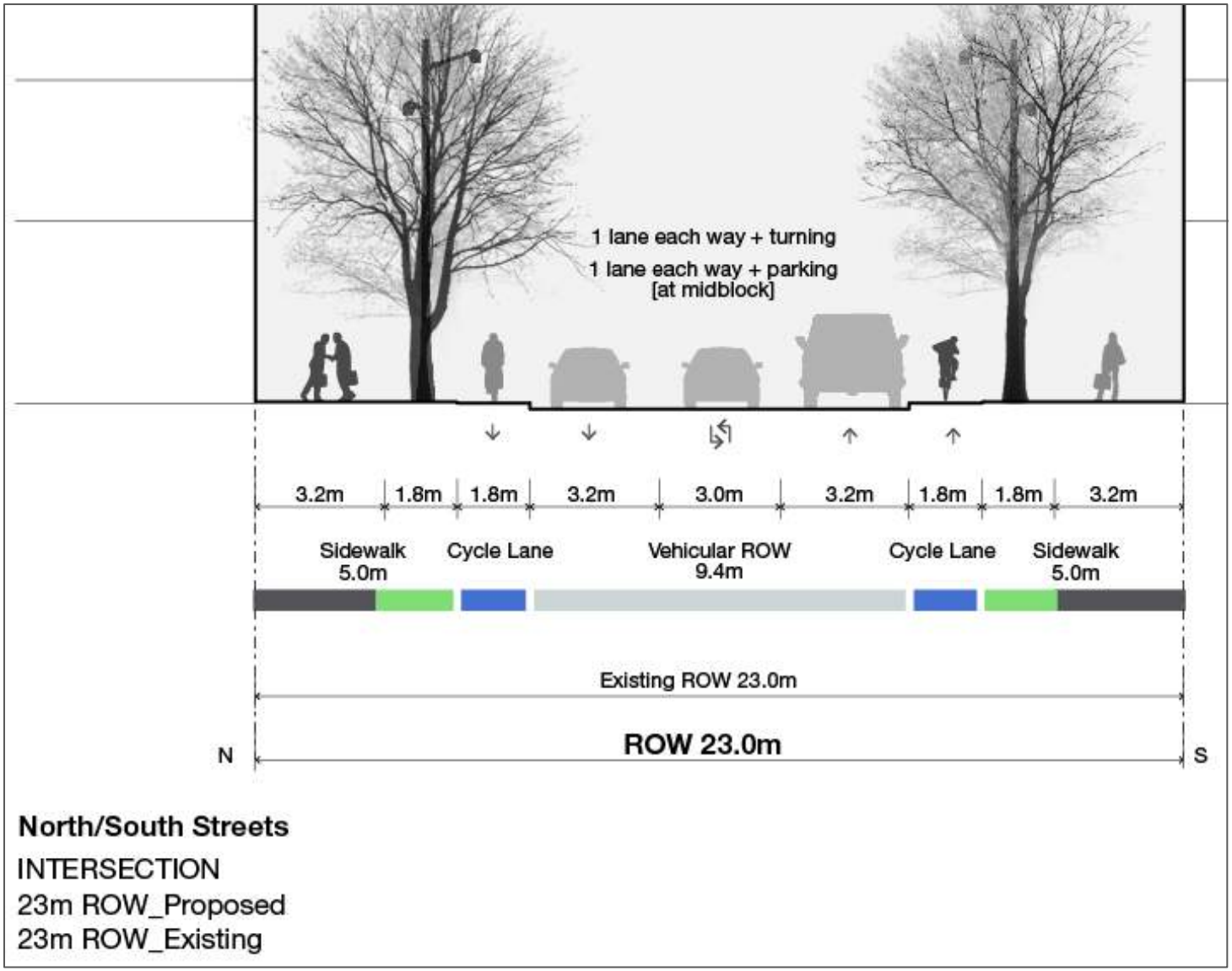


FIGURE 8-35 CONCEPTUAL CROSS-SECTION – NEW EAST-WEST STREETS (23 M RIGHT-OF-WAY)

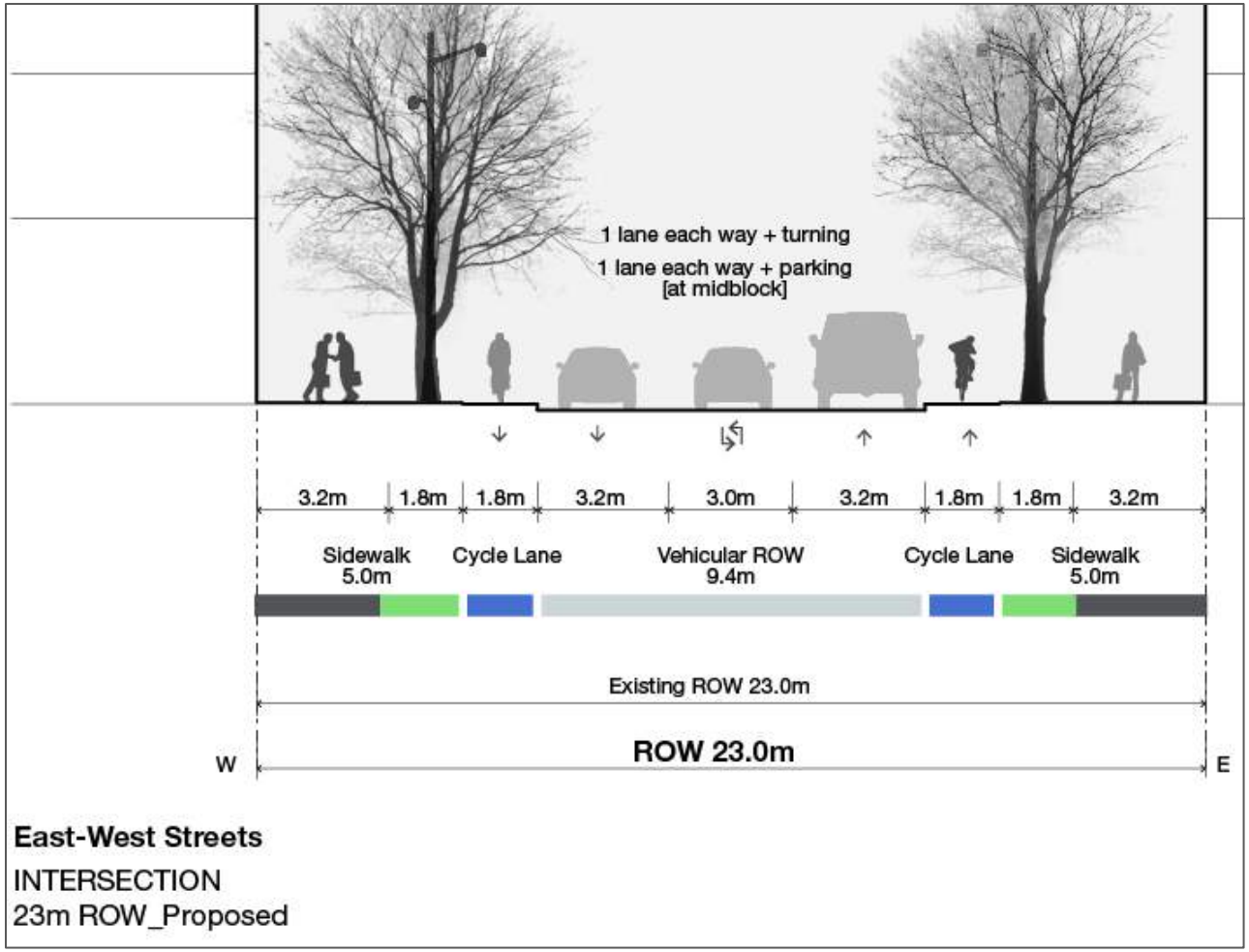
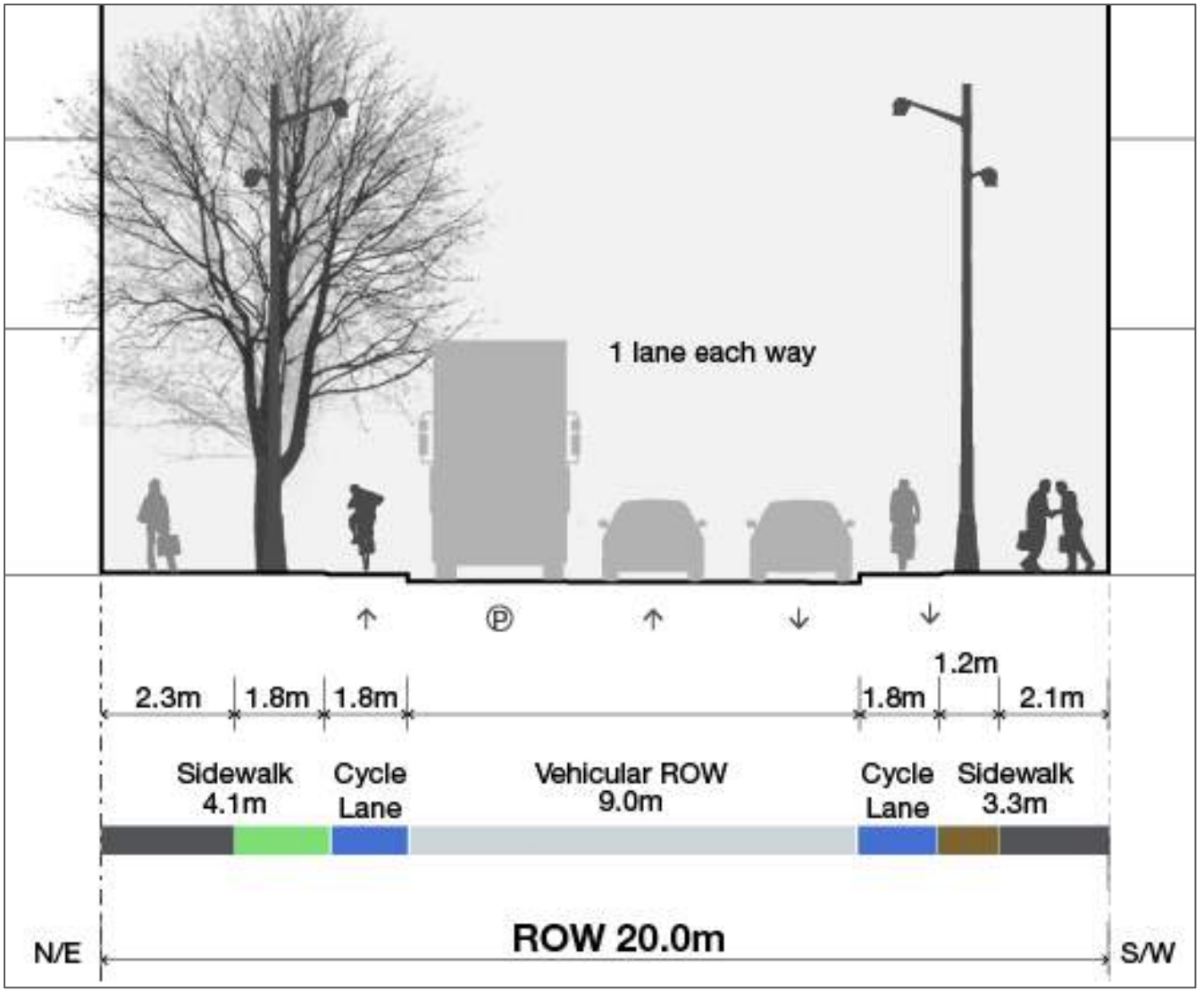


FIGURE 8-36 CONCEPTUAL CROSS-SECTION – NEW EAST-WEST STREETS (20 M RIGHT-OF-WAY)



8.1.7 Screening of Long List of Alternatives

Following consultation with the public and stakeholders and completing refinements to the alternatives, and concurrent with the development of the conceptual cross-sections, the long-list of alternatives were screened to eliminate any that were not technically feasible or that would have significant, undesirable impacts.

Sub-Area 1

The Do Nothing alternative was screened out. Transit and additional multi-modal connections are required to support redevelopment and renewal.

A high-level analysis was undertaken for alternatives for crossing the rail embankment in the Unilever Precinct. The existing rail embankment is approximately 5 to 7 m above grade. Alternatives consisted of crossing the rail embankment over and under the embankment to connect Broadview Avenue southward. Crossing over the rail embankment (Alternatives 1-B.4 and 1-C.3) was not feasible, and were screened out, because of the height of the bridge that would be required and the implications to the landing areas just north of Eastern Avenue and at Lake Shore Boulevard East. Crossings under the rail embankment (1-B.2, 1-B.3 and 1-C.2) were determined to be feasible subject to mitigating flood risk south of any new structure in the absence of a flood protection solution north of the rail embankment. A comprehensive grading plan for the Unilever Precinct was developed to introduce a third flood protection landform at the extension for testing by the TRCA to confirm the ability to mitigate flood risk. The TRCA inputted the grading plan into their DELFT model and it was determined that solutions under the rail embankment were generally viable. A separate EA is required to advance any flood protection solution north of the rail embankment.

Alternatives that contemplated an east-west connection (1-B.3 and 1-C.2) were screened out as Sub-Area 4 addresses east-west connections.

While impacts associated with Alternative 1-A were significant (removal of on and off ramps to the DVP), the alternative was carried forward for evaluation given its potential as a solution that would not create additional flood risk.

Sub-Area 2

No alternatives were screened out. All were carried forward for evaluation.

Sub-Area 3

The Carlaw Avenue alternatives (3-E.1 and 3-E.2) were screened out due to implications on newly constructed hydro infrastructure and insufficient landing areas. The Do Nothing alternative was also screened out as it would not meet the need for additional capacity and connectivity across the Ship Channel.

Sub-Area 4

The east-west alternative in the Unilever Precinct was moved to Sub-Area 4. The continuous east-west alternative from the Don Roadway to the new north-south street in Sub-Area 2 was screened out due to its significant property impacts and impacts to cultural heritage resources.

Sub Area 5

Commissioners Street will play a significant role as a multi-modal street through the Port Lands. The Do Nothing alternative was screened out as this alternative would preclude the ability for dedicated transit lanes, continuous sidewalks and cycling infrastructure. Widening Commissioners Street (5-B.3) to a six-lane cross-section was also screened out. This would result in an undesirable cross-section and was not consistent with the objectives for the TSMP.

Sub-Area 6

The Do Nothing alternative was screened out because the one-lane bailey bridge is insufficient to meet future needs. Pedestrian and cycling amenity is also required to ensure the safety of all modes.

Table 8-1 provides the long-list of alternatives that were considered and also indicates the alternatives that were screened out from further consideration. The table also identifies the alternatives that were added following the various consultation events.

TABLE 8-1 ALTERNATIVES THAT WERE SCREENED OUT OR ADDED

Alternative	Description	Status
Sub-Area 1: Broadview Extension		
Do Nothing	No extension of Broadview is provided through the South of Eastern area into the Port Lands.	Screened Out
1-A Don Roadway	This alternative includes extending Broadview Avenue by connecting to the Don Roadway in the Port Lands (Don Roadway south of Lakeshore Boulevard East addressed in the LDLMP EA) by widening the existing rail bridge to the east and providing two vehicular lanes in each direction with dedicated transit and create a vibrant multi-modal corridor (maximum 40 m right-of-way). Existing access to/from the DVP is removed. Potential to connect to a new lift bridge across Ship Channel.	Carried Forward
1-B Saulter Alternatives		
1-B.1 Under	This alternative includes extending Broadview Avenue under the rail embankment with two vehicular lanes in each direction, dedicated transit and creating a vibrant multi-modal corridor by connecting to Saulter Street as far as Commissioners Street in the Film Studio District (maximum 40 m right-of-way).	Carried Forward
1-B.2 Realigned Saulter (Under) and New North South Street	This alternative includes extending Broadview Avenue under the rail embankment by realigning Saulter Street diagonally through the Unilever Precinct and Film Studio District to create a vibrant multi-modal corridor with one vehicular lane in each direction and dedicated transit (maximum 35 m right-of-way). Potential to connect to a new lift bridge across the Ship Channel. Broadview extension is paired with a new north-south street between Eastern Avenue and Lake Shore Boulevard with one vehicular lane in each direction (maximum 23 m right-of-way.	Identified Through Consultation
1-B.3 Under with a New East West Connection to Eastern Avenue	Extend Broadview Avenue and create a vibrant multi-use corridor by connecting to Saulter Street and create a new east-west connection through the sub-area connecting to the Don Roadway and Eastern Avenue.	Screened Out – East West Addressed in Sub-Area 4
1-B.4 Over	Extend Broadview Avenue by connecting over the rail embankment to, and across, Lakeshore Boulevard East to connect with Saulter Street, thereby providing continuous connection to Commissioners Street.	Screened Out
1.C. Bouchette Alternatives		
1-C.1 Under	This alternative includes extending Broadview Avenue under the rail embankment and creating a vibrant multi-modal corridor by connecting to Bouchette Street in the Film Studio District with two vehicular lanes in each direction and dedicated transit (maximum 40 m right-of-way). Potential to connect to a new lift bridge across the Ship Channel.	Carried forward
1-C.2 Under with a New East West Connection to	Extend Broadview Avenue and create a vibrant multi-use corridor by connecting to Bouchette Street in the Film Studio District and create a new east-west connection through the	Screened Out – East West Addressed in Sub-

Alternative	Description	Status
Eastern Avenue	sub-area connecting the Don Roadway to Eastern Avenue.	Area 4
1-C.3 Over	Extend Broadview Avenue over the rail embankment by connecting to Bouchette Street in the Film Studio District.	Screened Out
1-D. Extend Between Don Roadway and Saulter	This alternative includes extending Broadview Avenue under the rail embankment and creating a vibrant multi-use corridor by connecting to a new north-south street through the Film Studio District to a Basin Street extension with two vehicular lanes in each direction and dedicated transit (maximum 40 m right-of-way.	Identified Through Consultation
Sub-Area 2: North South Connections East of Carlaw Avenue		
Do Nothing	No new north-south connection is provided between Carlaw Avenue and Leslie Street.	Carried Forward
2-A. Winnifred	Create a two-way multi-modal connection from Eastern Avenue to Commissioners Street at Winnifred Avenue with one vehicular lane in each direction (23 m right-of-way).	Carried Forward
2-B. Caroline	Create a two-way multi-modal connection from Eastern Avenue to Commissioners Street at Caroline Avenue with one vehicular lane in each direction (23 m right-of-way).	Carried Forward
2.C. Larchmount	Create a two-way multi-modal connection from Eastern Avenue to Commissioners Street at Larchmount Avenue with one vehicular lane in each direction (23 m right-of-way).	Carried Forward
2-D. One-Way Pairs		
2-D.1 One-Way Pair (Caroline + Larchmount)	Create a one-way multi-modal northbound connection at Caroline Avenue (16.5 m right-of-way) and one-way multi-modal southbound connection at Larchmount Avenue (16.5 m right-of-way) from Eastern Avenue to Commissioners Street (contra flow to existing).	Identified Through Consultation
2-D.2 One-Way Pair (Caroline + Winnifred)	Create a one-way multi-modal northbound connection at Caroline Avenue (16.5 m right-of-way) and one-way multi-modal southbound connection at Winnifred Avenue (16.5 m right-of-way) from Eastern Avenue to Commissioners Street (contra flow to existing).	Identified Through Consultation
2-E. Two-Way Pape Extension	Create a two-way multi-modal extension of Pape Street from Eastern Avenue to Commissioners Street with one vehicular lane in each direction (23 m right-of-way).	Identified Through Consultation
Sub-Area 3: Ship Channel Connections		
Do Nothing	Maintain the existing connections (2-lane Cherry and Leslie/Unwin/1-lane bailey bridge) across the Ship Channel.	Screened Out
3-A. Widen Cherry	Widen Cherry Street from the planned condition in the LDLMP EA south of the new river valley to Unwin Avenue to provide a four-lane (two-lanes in each direction) multi-modal street (minimum 42 m right-of-way north of the Ship Channel and 36 m right-of-way south of the Ship Channel). The alternative would also require either the removal/relocation of the Bascule bridge and a new four lane lift bridge; or retention of existing bridge with a new structure constructed adjacent to the existing bridge.	Carried Forward

Alternative	Description	Status
3-B. Don Roadway	Create a new two-lane (one-lane in each direction) multi-modal street with a new two lane lift bridge that protects for transit across the Ship Channel at the Don Roadway to Unwin Avenue (26 m wide lift bridge and protect for a 35 m right-of-way for the street).	Carried Forward
3-C. Broadview	Create a new two-lane (one-lane in each direction) multi-modal crossing with a new two lane lift bridge that protects for transit across the Ship Channel in the vicinity of the existing Bouchette Street to Unwin Avenue (26 m wide lift bridge and protect for a 35 m right-of-way for the street).	Carried Forward
3-D. Widen Leslie	Provide two additional vehicular travel lanes in the existing right-of-way for a total of four vehicular lanes and maintain multi-modal access (26 m right-of-way south of Commissioners Street).	Carried Forward
3-E Carlaw Alternatives		
3-E.1. Extend Current Alignment	Extend Carlaw Avenue south of Commissioners Street along its current alignment across the Ship Channel.	Screened Out
3-E.2. Realign	Extend Carlaw Avenue by realigning the street parallel with the edge of the Turning Basin south of Lake Shore Boulevard East across the Ship Channel.	Screened Out
Sub-Area 4: East-West Connection between Eastern + Lake Shore		
4-A. Eastern Avenue Connections		
4-A.1. Do Nothing	Maintain Eastern Avenue in its current configuration with two vehicular lanes in each direction from Broadview Avenue to Logan Avenue, one vehicular lane in each direction with on-street cycling from Logan Street to Leslie Street, and two vehicular lanes in each direction east of Leslie Street.	Carried Forward
4-A.2. Consistently Provide Four Vehicular Lanes	Provide four vehicular lanes consistently through the Study Area (two lanes in each direction), remove on-street cycling lanes between Logan and Leslie, and generally maintain current pedestrian clearways. Enhancements to pedestrian amenity is achieved through a right-of-way widening on the south side of Eastern Avenue as properties with redevelopment potential redevelop.	Carried Forward
4-A.3. Urbanize	Create a multi-modal street by providing two vehicular lanes consistently through the Study Area (one-lane in each direction), improving efficiency and consistency of vehicular lanes and enhancing pedestrian/cyclist amenity. Further enhancements to pedestrian/cyclist amenity is achieved through a right-of-way widening on the south side of Eastern Avenue as properties with redevelopment potential redevelop.	Carried Forward
4-B. Lake Shore Mid-Block East West Connections		
4-B.1. Do Nothing	No new mid-block east-west collector street is provided between the Don Roadway and Bouchette/Booth. Servicing	Carried Forward

Alternative	Description	Status
	and access for the Unilever Precinct is provided through a network of local streets and the Broadview Extension. No connection is provided to the Don Roadway.	
4-B.2. New East West Connection in Unilever Precinct	Provide a new east-west multi-modal collector street (23 m right-of-way) through the Unilever Precinct with two-lanes of vehicular capacity (one-lane in each direction). The alignment of the east-west street would be confirmed in Phase 3 (Alternative Designs) of the Class EA process and once design of Valley Wall Feature/Flood Protection Landform adjacent to the Don Roadway has been confirmed.	Carried Forward
4-B.3. New East West Mid-Block Connection	Provide a new east-west collector multi-modal street through the South of Eastern area with two-lanes of vehicular capacity (one-lane in each direction).	Screened Out
Sub-Area 5: East West Connections Between Lake Shore and the Ship Channel		
Do Nothing	Maintain the existing capacity and configuration of existing east-west streets in the sub-area.	Screened Out
5-A. New East West Street	Create a new east-west multi-modal street with a maximum right-of-way of 23 m through the Film Studio District north of Commissioners Street with one vehicular lane in each direction and Maintain + Enhance Commissioners Street (5-B.2).	Carried Forward
5-B. Commissioners Street		
5.B.1. Urbanize	Create a multi-modal corridor with one vehicular travel lane in each direction, transit in a dedicated right-of-way, enhanced pedestrian amenity, separated cycling facilities and a wide integrated stormwater management/landscaped median (maximum 42 m right-of-way).	Identified Through Consultation
5-B.2. Maintain and Enhance	Maintain two vehicular travel lanes in each direction, introduce transit in a dedicated right-of-way, enhanced pedestrian amenity, separated two-way cycle track with an integrated stormwater feature (maximum 42 m right-of-way).	Carried Forward
5-B.3. Widen	Provide six vehicular travel lanes and introduce transit in a dedicated right-of-way with limited pedestrian amenity (minimum 42 m right-of-way).	Screened Out
5-C. Basin		
5-C.1. Extend	Extend Basin Street westward to the Don Roadway and connect to Carlaw Avenue with one vehicular lane in each direction and pedestrian and cyclist amenity (maximum 20 m right-of-way), and Maintain + Enhance Commissioners Street (5-B.2).	Carried Forward
5-C.2. Realign and Extend	Realign Basin Street south of Pinewood Toronto Studios and create a multi-modal corridor with one vehicular travel in each direction and pedestrian and cyclist amenity (maximum 20 m right-of-way), and Maintain + Enhance Commissioners Street (5-B.2).	Carried Forward
5-D. Multiple Connections	Provide multiple multi-modal connections consisting of an Urbanized Commissioners Street (5-B.1) with a Realigned and Extended Basin Street (5-C.2) and New East-West Street north	Identified Through Consultation

Alternative	Description	Status
	of Commissioners Street (5-A.).	
Sub-Area 6: South of Ship Channel		
Do Nothing	Maintain the existing alignment, configuration and capacity of Unwin Avenue, including the one-lane bailey bridge.	Screened Out
6-A. Do Nothing with an Improved Bailey Bridge	Maintain the existing alignment and capacity and improve the existing one-lane bailey bridge by providing a two-lane bridge across the circulating channel.	Carried Forward
6-B. Realign and Add Additional Vehicle Lanes	Realign Unwin Avenue and provide two lanes of traffic in each direction (four lanes total) with improved pedestrian and cycling amenity and some integrated stormwater management. Alignment in the vicinity of the Hearn/PEC to be confirmed in Phase 3 of the Class EA process.	Carried Forward
6-C. Realign and Urbanize	Realign Unwin Avenue and provide one-lane of traffic in each direction (two-lanes total) while optimizing carrying capacity and providing enhanced pedestrian and cyclist amenity and integrated stormwater management. Alignment in the vicinity of the Hearn/PEC to be confirmed in Phase 3 of the Class EA process.	Identified Through Consultation

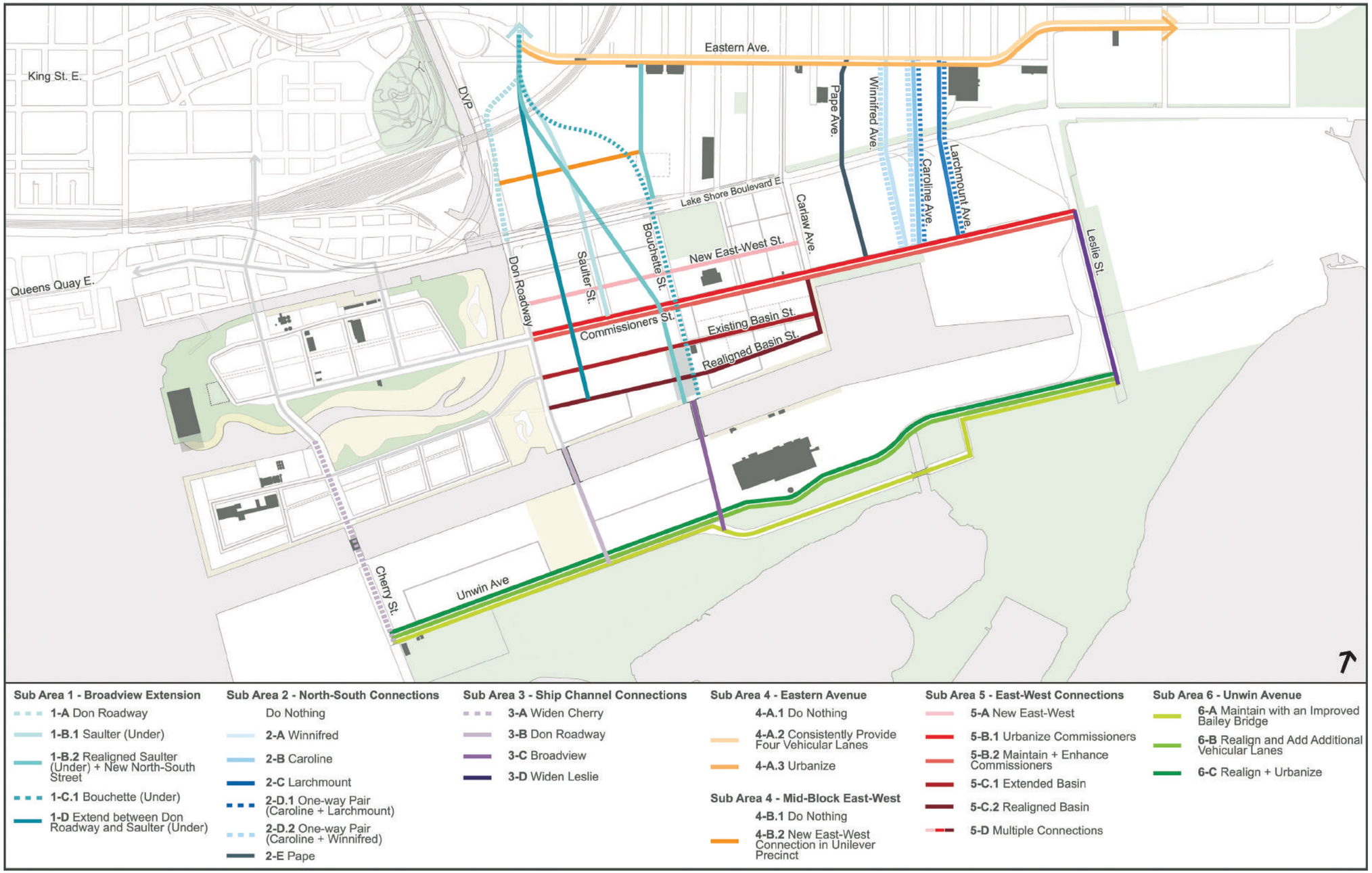
8.1.8 Short-List of Alternatives

The screening of the long-list of alternatives resulted in a short list of reasonable alternatives to be carried forward and evaluated. The final short-list of alternatives consisted of a total of 30 alternatives across the six sub-areas. **Table 8-2** identifies the final list of alternatives. These are also illustrated on **Figure 8-37**. Detailed descriptions and diagrams of the alternatives are provided in **Appendix H**.

TABLE 8-2 FINAL SHORT LIST OF ALTERNATIVES

Sub-Area	Alternative
Sub-Area 1: Broadview Extension	1-A. Don Roadway 1-B.1 Saulter (Under) 1-B.2 Realigned Saulter (Under) and New North-South Street 1-C.1 Bouchette (Under) 1-D. Extend Between Don Roadway and Saulter (Under)
Sub-Area 2: North-South Connections East of Carlaw Avenue	1. Do Nothing 2-A. Winnifred 2-B. Caroline 2-C. Larchmount 2-D.1 One-Way Pair (Caroline + Larchmount) 2-D.2 One-Way Pair (Caroline + Winnifred) 2-E. Pape
Sub-Area 3: Ship Channel Connections	3.A. Widen Cherry 3.B. Don Roadway 3.C. Broadview 3-D. Widen Leslie
Sub-Area 4: Eastern Avenue Connections	4-A.1 Do Nothing 4-A.2 Consistently Provide Four Vehicular Lanes 4-A.3 Urbanize
Sub-Area 4: Mid-Block Connections	4-B.1 Do Nothing 4-B.2 New East-West Connection in Unilever Precinct
Sub-Area 5: East-West Connections between Lake Shore and the Ship Channel	5-A. New East-West 5-B.1 Urbanize Commissioners 5-B.2 Maintain + Enhance 5-C.1 Extended Basin 5-C.2 Realigned and Extended Basin 5-D. Multiple Connections
Sub-Area 6: Unwin Avenue	6-A Maintain with an Improved Bailey Bridge 6-B Realign and Add Additional Vehicular Lanes 6-C Realign and Urbanize

FIGURE 8-37 ILLUSTRATION OF SHORT LISTED ALTERNATIVES EVALUATED



8.1.9 Evaluation of Short-Listed Alternatives

As described in **Section 2.3.1**, the Evaluation Criteria developed for the TSMP EA reflect the six Objectives identified as foundational for the TSMP EA and the planning processes (Port Lands Planning Framework and South of Eastern Strategic Direction). The short list alternatives were evaluated using both qualitative and quantitative measures. The alternatives were evaluated on how well each alternative met the evaluation criteria and measures, using a scoring system of very good, good, poor and very poor to establish each alternative's overall performance in meeting the six Objectives. The alternative with the best overall performance in meeting the Objectives was identified as the preferred alternative for the sub-area. The following provides a summary of the results for each sub-area.

The results of this evaluation for the short-listed alternatives were presented at the Community Consultation round #3 consultation events (November 2015, Open House and Workshops). Participants were generally supportive of the transportation elements of the plans, particularly the proposed transit, cycling and pedestrian networks. The desire for a goods movement strategy was also expressed to balance the needs to move goods with the introduction of mixed-use communities that prioritize cycling, walking and transit.

Note, minor changes were made to the evaluation tables after the consultation was completed in November 2015 due to continued engagement with City divisions, agencies and other stakeholders.

8.1.9.1 SUB-AREA 1: BROADVIEW EXTENSION

The alternatives explored in Sub-Area 1 focused on different potential alignments for extending Broadview Avenue southward into the Port Lands providing a critical, yet challenging, multi-modal transit connection to support employment intensification in the Unilever Precinct and regeneration and renewal in the Port Lands. Achieving the extension and crossing the rail embankment requires that flood risk be mitigated south of the GO Rail berm.

A quantitative and qualitative assessment of each of the viable alternatives was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-3** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-3 SUMMARY OF EVALUATION OF TRANSPORTATION SUB-AREA 1 ALTERNATIVES

OBJECTIVES AND CRITERIA		1-A.	1-B.1	1-B.2	1-C.1	1-D.1
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	●	●	●	●	●
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	●	●	●	●	●
	Existing/planned neighbourhoods.	●	●	●	●	●
	Existing businesses and industry and opportunities for new businesses and industry.	●	●	●	●	●
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	●	●	●	●	●
	Redundancy in the network.	●	●	●	●	●
	Existing physical barriers.	●	●	●	●	●
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	●	●	●	●	●
LEVERAGE ASSETS	Cultural heritage resources.	●	●	●	●	●
	Archaeological resources and traditional uses of Aboriginal people.	●	●	●	●	●
	Existing/planned parks and open spaces.	●	●	●	●	●
	Compatibility with the natural environment.	●	●	●	●	●
	Visual connections.	●	●	●	●	●
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	●	●	●	●	●
	Cycling routes.	●	●	●	●	●
	Place-making opportunities.	●	●	●	●	●
	Health and safety.	●	●	●	●	●
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	●	●	●	●	●
	Transit accommodation.	●	●	●	●	●
	Flood risk potential.	●	●	●	●	●
	Noise and air quality.	●	●	●	●	●
	Resiliency and climate change.	●	●	●	●	●
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	●	●	●	●	●
	Consistency with approved area Environmental Assessments.	●	●	●	●	●
	Engineering feasibility and construction cost.	●	●	●	●	●
	Existing municipal infrastructure and utilities.	●	●	●	●	●
	Property acquisition costs.	●	●	●	●	●
	Maintenance and operations.	●	●	●	●	●
	OVERALL PERFORMANCE	●	●	●	●	●

● VERY POOR ● POOR ● GOOD ● VERY GOOD

Commentary on Alternative Solutions

The evaluation revealed that **Alternative 1-A-Don Roadway** scored poorly from the perspective of creating an interesting and dynamic urban setting, and connecting the Port and to the city. It's location on the west edge of the Study Area, adjacent to the Don River, and its role as the DVP access ramps, resulted in several critical inadequacies. The alignment was constrained by property and natural features, and by its critical larger role in connecting major transportation infrastructure. Specific criteria for which it did not perform well in included:

- limits access and ability to achieve a vibrant pedestrian realm due to existing constraints, grade and need for flood protection features directly to the east;
- highly irregular lot configurations through the BMW site;
- significant impacts to goods movement corridors;
- limited contribution to redundancy in the network and would continue to provide flood conveyance capacity;
- limited opportunity to frame and celebrate heritage resources;
- active uses at grade limited and would be single-sided; and,
- transit service is oriented to the west, leaving much of the Film Studio District outside of desired walking distances.

Alternative 1-D-Extend Between Don Roadway and Saulter (Under) scored poorly from the perspective of connecting the Port Lands to the city because of its proximity to the existing Don Roadway and the fact it does not meet the Ship Channel or have the potential to connect across given the objective of protecting for future crossings. Resultant intersection spacing on this busy western section of Lake Shore Boulevard East was shown to be inadequate and capacity and traffic operations crossing Commissioner Street was determined to be deficient. Specific criteria for which it did not perform well also included the creation of visual connections, place-making opportunities, minimizing health and safety issues and flood risk potential/geotechnical challenges. Its proximal location to Don Roadway results in poor roadway grid spacing and operation issues at Don Roadway and less developable land as a result of grading associated with an underpass structure, Broadview Avenue VWF and the required VWF at the Don Roadway.

Alternative 1-B.1-Saulter (Under) performed well in property acquisition and construction costs. A significant weakness of this alternative is that it terminates at Commissioners Street and its inability to extend further south of Commissioners Street thus reducing connections and place-making opportunities, and diminishing the potential of this street to provide a new vibrant city spine to the water. **Alternative 1-C.1** performed well in a number of criteria, including connectivity, providing linkages and place-making opportunities. Challenges include a curvilinear alignment through the Unilever Precinct creating an irregular block configuration, the width of the vehicular area impacts the character and scale of the pedestrian and cycling environment and crossing distances and may require land from existing McCleary Park and impact cultural heritage features, impacts to existing Cinespace studios on Booth Street (note: acquired by First Gulf for redevelopment), Gardiner on/off ramps

currently terminate at Bouchette and require removal as anticipated in the Gardiner East EA to achieve connectivity south of the Gardiner, and high cost to relocate transformer station as for 1-B.2.

Alternative 1-B.2-Realigned Saulter (Under) and New North-South Street consistently exceeded and met the criteria and objectives.

Preferred Solution

Alternative 1-B.2-Realigned Saulter (Under) and New North-South Street is the Preferred Solution. It creates a new city "spine" that is functional, thematic and symbolic in nature while removing barriers and reconnecting the waterfront with the city (**Figure 8-38**). The alternative divides larger sites into smaller development blocks and improves the visibility, access and prominence of unique human-made features, in particular by providing a new southbound view corridor to the Hearn. The new multi-modal streets greatly enhance the pedestrian and cycling environment of the area, minimizes pedestrian crossing distances and provides access to a number of key destinations. The alternative will support a vibrant, grade-related urban mix. Together, the streets meet the necessary vehicular capacity and maintain inter-regional transportation connections. Impacts are minimized to private property north of the rail embankment and support is provided for the intensification assumed within the Unilever Precinct and Port Lands for the purposes of the TSMP EA. Identified technical challenges can be addressed however costs are higher and the alternative requires relocating the Basin Transmission Station to achieve the full extension.

Additional detailed analysis and design was undertaken to confirm the feasibility of the Broadview Avenue extension in the context of area grading and the need to fully demonstrate that flood mitigation was achievable. Through consultation and the development of an area grading plan, the issues and controls required for the alternative have been confirmed. The property owner for the 21 Don Roadway site expressed significant concerns with the flood mitigation solution advanced as part of the TSMP EA, which would be applicable to a number of the alternatives. The concerns relate to the negative impact of the proposed flood mitigation solution in a large portion of their lands, and the resulting restrictive zoning that would need to be advanced for the mitigation solution, as well as restricting proximity and the ability of achieving direct connections of new development to higher order transit stations. They expressed their strong preference for flood protecting the lands north of the rail embankment which requires a separate EA process to be advanced.

The mitigation solution consists of a comprehensive grading strategy (**Section 8.2.3.4**) for the Unilever Precinct, south of the rail embankment. The preferred alignment for the Broadview Avenue extension is not anticipated to be materially impacted should a flood protection solution be advanced north of the rail embankment.

For the Broadview Avenue extension, alternative designs for the underpass will be advanced and determined as part of future EA work and detail design. Clearance requirements will need to be reviewed with Transportation Services, Urban Design, Engineering and Construction Services, TRCA, TTC and Metrolinx, as well as consultation with affected property owners and other stakeholders/agencies.

FIGURE 8-38 CREATING THE "SPINE"

8.1.9.2 SUB-AREA 2: NORTH-SOUTH CONNECTIONS EAST OF CARLAW AVENUE

The alternatives explored in Sub-Area 2 focused on providing new multi-modal mid-block connection(s) and new street frontages between Carlaw Avenue and Leslie Street to support new and existing employment uses and provide additional north-south capacity between Eastern Avenue and Commissioners Street. There are stable residential neighbourhoods north of Eastern Avenue and an important aspect of this analysis is to ensure that traffic infiltration can be mitigated.

A quantitative and qualitative assessment of each of the viable alternatives was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-4** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-4 SUMMARY OF EVALUATION OF TRANSPORTATION SUB-AREA 2 ALTERNATIVES

OBJECTIVES AND CRITERIA		Do Nothing	2-A	2-B	2-C	2-D.1	2-D.2	2-E
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	●	●	●	●	●	●	●
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	●	●	●	●	●	●	●
	Existing/planned neighbourhoods.	●	●	●	●	●	●	●
	Existing businesses and industry and opportunities for new businesses and industry.	●	●	●	●	●	●	●
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	●	●	●	●	●	●	●
	Redundancy in the network.	●	●	●	●	●	●	●
	Existing physical barriers.	●	●	●	●	●	●	●
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	●	●	●	●	●	●	●
LEVERAGE ASSETS	Cultural heritage resources.	●	●	●	●	●	●	●
	Archaeological resources and traditional uses of Aboriginal people.	●	●	●	●	●	●	●
	Existing/planned parks and open spaces.	●	●	●	●	●	●	●
	Compatibility with the natural environment.	●	●	●	●	●	●	●
	Visual connections.	●	●	●	●	●	●	●
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	●	●	●	●	●	●	●
	Cycling routes.	●	●	●	●	●	●	●
	Place-making opportunities.	●	●	●	●	●	●	●
	Health and safety.	●	●	●	●	●	●	●
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	●	●	●	●	●	●	●
	Transit accommodation.	●	●	●	●	●	●	●
	Flood risk potential.	NA	NA	NA	NA	NA	NA	NA
	Noise and air quality.	●	●	●	●	●	●	●
	Resiliency and climate change.	●	●	●	●	●	●	●
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	●	●	●	●	●	●	●
	Consistency with approved area Environmental Assessments.	NA	NA	NA	NA	NA	NA	NA
	Engineering feasibility and construction cost.	●	●	●	●	●	●	●
	Existing municipal infrastructure and utilities.	●	●	●	●	●	●	●
	Property acquisition costs.	●	●	●	●	●	●	●
	Maintenance and operations.	●	●	●	●	●	●	●
	OVERALL PERFORMANCE	●	●	●	●	●	●	●

● VERY POOR ● POOR ● GOOD ● VERY GOOD

Commentary on Alternative Solutions

The **Do Nothing** alternative fails to meet many of the basic needs of the Study Area and Objectives. It provides no additional capacity or redundancy in the network with the potential to further exacerbate traffic congestion and infiltration in the existing stable neighbourhoods. It also would not contribute to enhanced pedestrian and cycling connectivity.

Alternatives 2-D.1-One-Way Pair (Caroline + Larchmount) and **Alternative 2-D.2-One-Way Pair (Caroline + Winnifred)** score poorly from the perspective of impacts to existing physical barriers, provision of safe continuous and connected cycling routes, minimizing health and safety issues, and transit accommodation, while the alternatives provide carrying capacity, the nature of the residential area and the contra-flow limits their ability to meet Project Objectives.

The two-way alternatives score well or better in most of the criteria related to service, social and environmental criteria. **Alternative 2-E Pape** performed poorly in a number of criteria and measures, including connectivity, impacts to businesses and developing a high quality public realm. **Alternatives 2-A Winnifred** and **2-C Larchmount** performed well in a number of the criteria and measures. **Alternative 2-A Winnifred** would have major impacts on existing businesses to remain and property impacts, which would also have a direct impact on the cost of achieving the alternative (property acquisition and construction costs). There are more physical constraints associated with achieving **Alternative 2-C Larchmount**.

Preferred Solution

Alternative 2-B-Caroline is the Preferred Solution. The alternative provides optimal spacing between Carlaw Avenue and Leslie Street, better connecting the Port Lands to the rest of the city. It has the least impact on private property and development that is anticipated to remain in the area. This street alternative also has limited impact on cultural heritage resources and breaks up larger blocks and supports the growth intentions of the City's Official Plan by creating viable employment blocks and supporting continued employment growth in the South of Eastern area and the Port Lands. Connections are made that improve walkability and cycling to destinations as well as connecting to the broader cycling network. This street alternative terminates at the Turning Basin and creates a visual connection to this important feature. The management of traffic infiltration in adjacent stable residential areas is possible through the implementation traffic calming measures.

8.1.9.3 SUB-AREA 3: SHIP CHANNEL CONNECTIONS

The alternatives explored in Sub-Area 3 focus on providing additional capacity/connections across the Ship Channel. New and/or expanded bridges would protect for future streetcar in dedicated right-of-way. It is essential to maintain the Ship Channel for vessel navigation by ensuring a sufficient navigational span, and for new bridges to lift to allow vessel passage. PortsToronto advised that optimal spacing between bridges is approximately 450 m to enable safe passage of vessels. Consideration was also given to the bridge approaches to support a water's edge promenade as well as to identify other possible infrastructure constraints such as the Basin Street extension, further impacts on the Pinewood

Toronto Studios secure perimeter and the heritage building BHR9 (BHR9 is the Sun Oil building located on Basin Street) as noted in **Section 5.3**.

A quantitative and qualitative assessment of each of the viable alternatives was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-5** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-5 SUMMARY OF EVALUATION OF TRANSPORTATION SUB-AREA 3 ALTERNATIVES

OBJECTIVES AND CRITERIA		3-A.	3-B.	3-C.	3-D.
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🟡	🟢	🟢	🟡
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	🟡	🟢	🟢	🟡
	Existing/planned neighbourhoods.	🟡	🟢	🟢	🟡
	Existing businesses and industry and opportunities for new businesses and industry.	⚫	🟡	🟢	🟡
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	🔴	🟡	🟢	🔴
	Redundancy in the network.	🔴	🟢	🟢	🔴
	Existing physical barriers.	🟡	🟡	🟡	🟢
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	🔴	🟢	🟡	🟡
LEVERAGE ASSETS	Cultural heritage resources.	⚫	🟡	🟡	🟡
	Archaeological resources and traditional uses of Aboriginal people.	🟡	🟡	🟡	🟡
	Existing/planned parks and open spaces.	🟡	🟢	🟢	🟡
	Compatibility with the natural environment.	🟡	🟡	🟡	🟡
	Visual connections.	🔴	🟢	🟢	🔴
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	🔴	🟢	🟢	🟡
	Cycling routes.	🟡	🟢	🟢	🔴
	Place-making opportunities.	🟡	🟢	🟢	🔴
	Health and safety.	🟢	🟢	🟢	🟢
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	🟡	🟢	🟢	🔴
	Transit accommodation.	🟡	🟡	🟢	🟡
	Flood risk potential.	NA	NA	NA	NA
	Noise and air quality.	🟢	🟢	🟢	🟢
	Resiliency and climate change.	🔴	🟡	🟢	🔴
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	🔴	🟢	🟢	🔴
	Consistency with approved area Environmental Assessments.	🔴	🟢	🟢	🟢
	Engineering feasibility and construction cost.	🟡	🟡	🟡	🟢
	Existing municipal infrastructure and utilities.	🟢	🟢	🟡	🟢
	Property acquisition costs.	🟡	🟡	🔴	🟡
	Maintenance and operations.	🔴	⚫	⚫	🔴
	OVERALL PERFORMANCE	🔴	🟡	🟢	🔴

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

Commentary on Alternative Solutions

Alternatives 3-A Widen Cherry and **3-D Widen Leslie** performed poorly in a number of the criteria and Objectives, including connectivity, network redundancy and meeting the Complete Street principles. Key issues with the alternatives is that they are existing facilities at the western and eastern edges of the Study Area. As existing facilities they do not provide alternative routes to distribute traffic more evenly across the Study Area, or provide good access for pedestrians and cyclists. This would limit the connectivity and performance of the network, as well as limit the ability to support development.

Further, to provide the necessary capacity, additional vehicular lanes are required. For **Alternative 3-A Widen Cherry** this would have potential significant impacts to the existing historic Strauss Trunion Bascule Bridge or require a new lift bridge adjacent to the existing bridge, but would also impact the planned function and character of Cherry Street north of Ship Channel as defined in the LDLMP EA. For **Alternative 3-D Widen Leslie**, while the existing width of the travel portion of the right-of-way can be utilized to accommodate the additional vehicular lanes, there would be limited ability for additional improvements to the pedestrian and cycling realms.

Alternative 3-B. Don Roadway generally performed well in the evaluation. Key issues with this alternative are its location relative to lands identified for continued port purposes and challenges associated with accommodating shipping adjacent to the dockwall. It provides better connectivity than alternatives **3-A** and **3-D**, and would also enable the potential for establishing a terrestrial corridor across the Ship Channel associated with planned Don Greenway natural areas (protect for in the longer-term).

Preferred Solution

Alternative 3-C-Broadview is the Preferred Solution. The alternative increases access and permeability to, and across, the Ship Channel for all modes. The alternative maintains large tracts of contiguous land south of Ship Channel to support port and employment uses. There is excellent spacing between the existing lift-bridge at Cherry Street for vessel movement through the Ship Channel, and good potential to protect for additional future connections. The connection is centrally located within the Study Area, providing better spacing and access to recreational amenity. Coupled with an extension of Broadview Avenue north of the Ship Channel, the alternative creates a new city “spine” that better connects the waterfront with the city. An even distribution of streets is achievable with an optimally spaced bridge centrally within the area. The connection would provide access and frontage for the Hearn, including the opportunity to create a suitably-scaled forecourt to the building which could be used for public gatherings. The alternative achieves the necessary vehicular capacity and supports multi-modal functions across the Ship Channel.

8.1.9.4 SUB-AREA 4A: EASTERN AVENUE CONNECTIONS

Eastern Avenue is an existing urban street with an inconsistent treatment from Broadview Avenue to Coxwell Avenue. The street has narrow sidewalks, and on-street cycling facilities between Logan Avenue and Leslie Street. The street has stable residential neighbourhoods to the north and in some areas to the south, as well as a well-established employment area. In many locations, existing buildings, including heritage buildings, are located in close proximity to the property boundary. The alternatives explored in Sub-Area 4A are focused on providing a consistent multi-modal street for the length of Eastern Avenue from Broadview Avenue to Woodfield Avenue.

A quantitative and qualitative assessment of each of the viable alternatives was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-6** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-6 SUMMARY OF EVALUATION OF TRANSPORTATION SUB-AREA 4A (EASTERN AVENUE CONNECTIONS) ALTERNATIVES

OBJECTIVES AND CRITERIA		4-A.1	4-A.2	4-A.3
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🟡	🟡	🟢
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	🔴	🟡	🟢
	Existing/planned neighbourhoods.	🔴	🟡	🟢
	Existing businesses and industry and opportunities for new businesses and industry.	🟡	🟢	🟢
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	🔴	🟡	🟢
	Redundancy in the network.	⚫	🟢	🟡
	Existing physical barriers.	NA	NA	NA
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	🔴	🔴	🟢
LEVERAGE ASSETS	Cultural heritage resources.	🟡	🟢	🟢
	Archaeological resources and traditional uses of Aboriginal people.	🟢	🟢	🟢
	Existing/planned parks and open spaces.	🟢	🟢	🟢
	Compatibility with the natural environment.	🟢	🟢	🟢
	Visual connections.	🟡	🟡	🟡
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	🔴	🔴	🟢
	Cycling routes.	⚫	⚫	🟢
	Place-making opportunities.	⚫	🟡	🟢
	Health and safety.	🔴	🟡	🟢
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	🔴	🔴	🟢
	Transit accommodation.	🟢	🟢	🟢
	Flood risk potential.	🟢	🟢	🟢
	Noise and air quality.	🟢	🟡	🟡
	Resiliency and climate change.	🟡	🟢	🟢
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	⚫	🔴	🟢
	Consistency with approved area Environmental Assessments.	🟢	🟢	🟢
	Engineering feasibility and construction cost.	🟡	🟡	🟡
	Existing municipal infrastructure and utilities.	🟢	🟡	🟡
	Property acquisition costs.	🟢	🟢	🟢
	Maintenance and operations.	🟢	🟡	🟡
	OVERALL PERFORMANCE	🔴	🟡	🟢

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

Commentary on Alternative Solutions

Alternative 4-A.1-Do Nothing for this corridor does not score well in the evaluation. It generally fails to meet a number of criteria related to urban design, supporting a dynamic mix of uses and travel modes or creating a quality private realm. **Alternative 4-A.2-Consistently Provide Four Vehicular Lanes** performs reasonably well; however, it is weakest in terms of obtaining the desired street character and its ability to safely accommodate alternative modes (cycling).

Preferred Solution

Alternative 4-A.3-Urbanize is the Preferred Solution as it supports a mix of uses and enhances access and permeability to, and through, the area for all modes. It establishes a greatly enhanced and consistent cycling and pedestrian environment, with the potential for further expansion as properties redevelop. This alternative provides potential to contribute to a vibrant, grade-related urban mix and supports continued employment growth in the South of Eastern area with improved amenities for workers and businesses. Improved vehicle and multi-modal capacity is achieved with operational optimization and identified technical challenges can be addressed.

8.1.9.5 SUB-AREA 4B: MID-BLOCK CONNECTIONS

The alternatives explored in Sub-Area 4B Mid-Block Connections were focused on providing a new multi-modal east-west connection to support development in the Unilever Precinct. A VWF is required to the east of the Don Roadway as part of the DMNP EA. The new mid-block connector will need to cross this feature while maintaining flood control integrity. Functional spacing to Lake Shore Boulevard East and configuration of existing ramps to/from the DVP are also complex. The final alignment will be confirmed in Phase 3 of a future Class EA process.

A quantitative and qualitative assessment of each of the viable alternatives was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-7** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-7 SUMMARY OF EVALUATION OF TRANSPORTATION SUB-AREA 4B (MID-BLOCK CONNECTIONS) ALTERNATIVES

OBJECTIVES AND CRITERIA		4-B.1	4-B.2
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🟡	🟢
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	🔴	🟢
	Existing/planned neighbourhoods.	🔴	🟢
	Existing businesses and industry and opportunities for new businesses and industry.	🔴	🟢
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	⚫	🟢
	Redundancy in the network.	⚫	🟢
	Existing physical barriers.	🟢	🟡
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	🟡	🟡
LEVERAGE ASSETS	Cultural heritage resources.	🟢	🟢
	Archaeological resources and traditional uses of Aboriginal people.	🟢	🟢
	Existing/planned parks and open spaces.	NA	NA
	Compatibility with the natural environment.	🟢	🟢
	Visual connections.	🟡	🟢
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	⚫	🟢
	Cycling routes.	⚫	🟢
	Place-making opportunities.	🟡	🟢
	Health and safety.	🟡	🟢
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	⚫	🟡
	Transit accommodation.	⚫	🟡
	Flood risk potential.	NA	NA
	Noise and air quality.	🟢	🟡
	Resiliency and climate change.	⚫	🟢
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	⚫	🟢
	Consistency with approved area Environmental Assessments.	🟢	🟡
	Engineering feasibility and construction cost.	🟡	🟡
	Existing municipal infrastructure and utilities.	🟢	🟢
	Property acquisition costs.	🟡	🟢
	Maintenance and operations.	🟢	🟡
	OVERALL PERFORMANCE	🔴	🟢

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

Commentary on Alternative Solutions

Alternative 4-B.1-Do Nothing scores very poorly in many of the evaluation criteria. While it has little impact from a cost or physical environment perspective, it fails to meet the basic needs to the sub-area problem, and fails to meet the needs of the Complete Streets. It is not supportive of development and does not serve to provide the multi-modal needs of the area development.

Preferred Solution

Alternative 4-B.2-New East-West Connection in Unilever Precinct is the Preferred Solution. The alternative supports a mix of uses, provides much needed vehicular capacity that will assist in providing relief to Lake Shore Boulevard East, and enhances the pedestrian and cycling experience by providing multi-modal access in, and through, the area. Active and animated street frontages can be created to support a vibrant public realm with limited interruptions for servicing and access. The alternative breaks up the large area, enabling the ability to achieve a fine grained network of streets. The new connection will require resolving grade changes associated with the flood protection requirements of the DMNP EA. This street provides an opportunity to terminate at a potential plaza to frame a heritage resource at Booth Avenue, as well as a view of the Don River to the west. Final location will be determined in Phase 3 and 4 of a future Class EA process.

8.1.9.6 SUB-AREA 5: EAST-WEST CONNECTIONS BETWEEN LAKE SHORE AND THE SHIP CHANNEL

Commissioners Street is currently two vehicular lanes in each direction, with discontinuous sidewalks and no cycling facilities. Basin Street and Villiers Street are discontinuous local east-west streets in the area. Additional capacity (i.e. one additional lane for a total of three lanes) and connectivity is required as well as accommodating a streetcar in the dedicated right-of-way for Commissioners Street to support regeneration and renewal. The alternatives explored provide different approaches for addressing the key problems in the sub-area.

A quantitative and qualitative assessment of each of the viable alternatives was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-8** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-8 SUMMARY OF EVALUATION OF TRANSPORTATION SUB-AREA 5 ALTERNATIVES

OBJECTIVES AND CRITERIA		5-A.	5-B.1	5-B.2	5-C.1	5-C.2	5-D.
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🟡	🟡	🔴	🟡	🟡	🟢
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	🟡	🟡	🟡	🟡	🟡	🟢
	Existing/planned neighbourhoods.	🟡	🟡	🔴	🟡	🟡	🟢
	Existing businesses and industry and opportunities for new businesses and industry.	🟢	🟡	🟡	🟡	🟢	🟢
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	🟡	⚫	⚫	🟡	🟡	🟢
	Redundancy in the network.	🟡	⚫	🔴	🟡	🟡	🟢
	Existing physical barriers.	🟢	🟢	🟢	🟡	🟢	🟢
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	🟡	🟡	🟡	🟡	🟡	🟢
LEVERAGE ASSETS	Cultural heritage resources.	🔴	🟡	🔴	⚫	🔴	🟡
	Archaeological resources and traditional uses of Aboriginal people.	🟢	🟢	🟢	🟢	🟢	🟢
	Existing/planned parks and open spaces.	🟡	🟢	🟢	🟢	🟢	🟢
	Compatibility with the natural environment.	🟢	🟢	🟢	🟢	🟢	🟢
	Visual connections.	🟢	🟡	🟡	🟡	🟡	🟢
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	🔴	🟡	🔴	🔴	🔴	🟢
	Cycling routes.	🟡	🔴	🔴	🟢	🟡	🟢
	Place-making opportunities.	🟡	🟢	🟡	🟡	🟡	🟢
	Health and safety.	🟢	🟢	🟢	🟢	🟢	🟢
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	🔴	🟡	🔴	🟡	🟡	🟢
	Transit accommodation.	🟢	🟢	🟢	🟢	🟢	🟢
	Flood risk potential.	🟢	🟢	🟢	🟢	🟢	🟢
	Noise and air quality.	🟡	🟢	🟢	🟢	🟢	🟢
	Resiliency and climate change.	🔴	🟡	🟡	🔴	🔴	🟢
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	🟡	🟡	🔴	🟡	🟡	🟢
	Consistency with approved area Environmental Assessments.	🟢	🟢	🟢	🟢	🟢	🟢
	Engineering feasibility and construction cost.	🟢	🟡	🟢	🟢	🟢	🟡
	Existing municipal infrastructure and utilities.	🟡	🟡	🟡	🟡	🟡	🟡
	Property acquisition costs.	🔴	🟢	🟢	🟡	🔴	⚫
	Maintenance and operations.	🔴	🟡	🟡	🔴	🔴	⚫
	OVERALL PERFORMANCE	🟡	🟡	🟡	🟡	🟡	🟢

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

Commentary on Alternative Solutions

The nature of this sub-area is complex. There are a number of existing uses and buildings to remain, including heritage resources. Commissioners Street is and will continue to be the main east-west street for the Port Lands. Its function is to provide capacity, but also transit service in a dedicated right-of-way and act as a major pedestrian and cycling route. **Alternative 5-B.2 Maintain and Enhance** provides the necessary vehicular capacity; however, it does not support creating vibrant mixed-use areas and employment areas and results in a right-of-way dominated by vehicular traffic. It also does not create a distributed network of collector streets that would contribute to better overall connectivity and distribution of traffic in the area. Access may be limited due to the dedicated streetcar and to encourage a vibrant pedestrian realm and as such additional redundancy is needed on the network. There would be limited opportunity for conserving the cultural heritage landscape of Commissioners Street. **Alternatives 5-A**, **5-C.1** and **5-C.2** incorporate **Alternative 5-B.2**, but also introduces new east-west connections north of Commissioners Street and south of Commissioners Street respectively. The performance of these alternatives is improved as a result of the introduction of the new streets as connectivity in and through the area is enhanced.

Alternative 5-B.1 Urbanize Commissioners performs well in a majority of the criteria. However, it would not provide the necessary capacity. Similar to **Alternative 5-B.2**, it also does not result in enhanced connectivity or a distributed network of streets. In order for Commissioners Street to fulfill its expectation as the main street for the Port Lands, it needs to be combined with other east-west streets. As such, A**lternative 5-D Multiple Connections** performs very well in the majority of the criteria and Objectives.

Preferred Solution

Alternative 5-D–Multiple Connections is the Preferred Solution. Multiple new streets provide for varied size and configuration of blocks and provide opportunities for a vibrant urban mix that promotes a diversity of uses and achieves the necessary lanes of vehicular capacity in each direction. The multiple connections support a mix of uses and an enhanced transit, pedestrian and cycling environment on Commissioners Street and in connection to the Don River Recreation Trail. An urbanized main street with the potential for urban frontages offers the potential for six new urban frontages to support a vibrant, grade-related urban mix and provides varying relationships with the Ship Channel and water's edge. Access is provided to the Film Studio District. It provides multiple opportunities for place-making including access to McCleary Park, celebration of heritage connections, views and integration of decommissioned hydroelectric transmission towers that can be a component of stormwater management design in the street. There are higher costs associated with a multiple street alternative. To achieve a parallel continuous east-west connection south of Commissioners Street, the alternative contributes to the need to relocate the Basin Transmission Station.

8.1.9.7 SUB-AREA 6: UNWIN AVENUE

Unwin Avenue is currently underserviced with several tight curves and no active transportation amenities. The street provides access to a potential destination at the Hearn as well as the active industries that flank the Ship Channel. The street is constrained by a one-lane bailey bridge near the PEC where there are also significant PEC related utilities, and there are significant natural heritage features and parks along much of the south side of the street. There are opportunities for increasing the net natural area protected through a realignment as well as to support multi-modal uses. Truck use is also important on Unwin Avenue and needs to be accommodated.

Before proceeding with the sub-area evaluation, and to better understand Unwin Avenue conceptual alignments, feasibility level drawings were prepared to inform realignment alternatives and possibilities.

Conceptual Alignments for Unwin Avenue

The alignment of Unwin Avenue in the vicinity of the PEC will be further explored in Phase 3 and 4 of a future Class EA process. However, to better understand opportunities and constraints, the Project team explored potential conceptual alignments. For the purposes of the TSMP EA, Option 1A was carried forward for analysis.

Unwin Alignment Option 1A

- Opportunity to create significant net environmental gain.
- Street engages the Hearn stack on axis from both directions and frames the edge of the naturalized area or “wilds”.
- Alignment interferes with existing PEC/Enbridge infrastructure.
- Street cross-sections will need to respond sensitively to naturalized areas and could integrate naturalization into the street’s character.

Unwin Alignment Option 1B

- Opportunity to create significant net environmental gain although bisects the PEC property.
- Street engages the Hearn stack on axis from both directions and frames the edge of the naturalized area or “wilds”.
- New bridge needed or fill and modifications/extensions to PEC infrastructure required.
- Potentially avoids PEC/Enbridge infrastructure.

- Street cross-sections will need to respond sensitively to naturalized areas and could integrate naturalization into the street's character.

Unwin Alignment Option 2A

- Opportunity to create net environmental gain – but limited by bisecting street through PEC naturalization.
- Street engages the Hearn stack from the west side and immerses within the extended wilds from the east side.
- New bridge needed or fill required.
- Alignment avoids interference with existing PEC infrastructure.
- Alignment avoids interference with PEC naturalized area.

Unwin Alignment Option 2B

- Opportunity to create net environmental gain.
- Street engages the Hearn from both directions, meandering quality.
- New bridge needed or fill required.
- Alignment avoids interference with existing PEC infrastructure.

For the purposes of this TSMP EA, Option 1A has been utilized to illustrate the realignment. It achieves the necessary functionality and objectives and improvement to habitat functionality and terrestrial connectivity between natural areas. Further assessment of alternative alignments will occur in Phase 3 and 4 of the Class EA.

The three alternatives for Unwin Avenue were quantitatively and qualitatively assessed against the evaluation criteria and measures. **Table 8-9** provides a summary of the evaluation. Additional details are provided in **Appendix I.**

TABLE 8-9 SUMMARY OF EVALUATION OF TRANSPORTATION SUB-AREA 6 ALTERNATIVES

OBJECTIVES AND CRITERIA		6-A.	6-B.	6-C.
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🟡	🟡	🟢
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	🟡	🟢	🟢
	Existing/planned neighbourhoods.	🔴	🟡	🟢
	Existing businesses and industry and opportunities for new businesses and industry.	🟡	🟡	🟢
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	🔴	🟢	🟢
	Redundancy in the network.	⚫	🟡	🔴
	Existing physical barriers.	🟢	🔴	🟡
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	🔴	🟢	🟢
LEVERAGE ASSETS	Cultural heritage resources.	🟡	🟡	🟡
	Archaeological resources and traditional uses of Aboriginal people.	🟢	🟡	🟡
	Existing/planned parks and open spaces.	🟡	🟢	🟢
	Compatibility with the natural environment.	🟡	🟢	🟢
	Visual connections.	🟡	🟢	🟢
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	⚫	🟡	🟢
	Cycling routes.	⚫	🟢	🟢
	Place-making opportunities.	🔴	🟡	🟢
	Health and safety.	🔴	🟢	🟢
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	⚫	🟡	🟢
	Transit accommodation.	🟡	🟢	🟢
	Flood risk potential.	NA	NA	NA
	Noise and air quality.	🟢	🟢	🟢
	Resiliency and climate change.	🔴	🟡	🟢
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	⚫	🟡	🟢
	Consistency with approved area Environmental Assessments.	NA	NA	NA
	Engineering feasibility and construction cost.	🟡	🟡	🟡
	Existing municipal infrastructure and utilities.	🟢	🟡	🟡
	Property acquisition costs.	🟢	🔴	🟡
	Maintenance and operations.	🟢	🟡	🟡
	OVERALL PERFORMANCE	🔴	🟡	🟢

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

Commentary on Alternative Solutions

Alternative 6-A-Maintain with an Improved Bailey Bridge generally provides the required roadway capacity. However, its shortcomings as an alternative relate to significant operational challenges due to the current alignment and jogs as well as concerns with its ability to achieve consistency with Complete Street designs and policy, and its lack of support for safe and continuous cycling. **Alternative 6-B-Realign and Add Additional Vehicular Lanes** consistently performed well for many measures but had short-comings related to creating a Complete Street and meeting objectives for street character and sustainable design. It also has greater potential to impact businesses and industry and has more barriers with the wider right-of-way (PEC, circulating channel and existing rail). **Alternative 6-C-Realign and Urbanize** outperformed the other alternatives based on its consistency in contributing to the sustainability of the city and providing a quality realm for all modes. As well, the property acquisition costs for this scenario are less than the **Alternative 6-B-Realign and Add Additional Vehicular Lanes**.

Preferred Solution

The **Alternative 6-C. Realign and Urbanize** is the Preferred Solution. The alternative enhances access for continued port and industrial usage while also accommodating safe and separated active transportation facilities. The alternative reinforces the "wild" character of the southern edge of Unwin Avenue. The alternative achieves the necessary lane of vehicular capacity in each direction and improves operation of the street through removal of the existing ninety degree jogs. There is a significantly improved opportunity for the management and integration of stormwater. Improvements to Unwin Avenue will provide access to businesses south of the Ship Channel and assist in facilitating a potential dedicated truck route with on-street parking to accommodate both park users in the off peak and the staging of trucks during busy winter months. The final alignment will be developed as part of Phases 3 and 4 of the future Class EA process including confirmation that the alignment can be located north of the existing alignment and will no longer necessitate a crossing of the Ship Channel.

8.1.10 Continued Consultation on the Transportation Network

Broadview Avenue

Following the November 2015 consultation, additional consultation with agencies and stakeholders occurred to address concerns noted on the preferred alignment. Specifically, consultation occurred with the tenant of 300 Commissioners First Gulf and Pinewood Toronto Studios. The team also worked with Waterfront Toronto to review all alternatives and determine whether any additional viable alternatives were missed. Through this process, an additional alternative was identified in Sub-Area 1. The alternative was a refinement of existing options and included the extension of Broadview Avenue to Saulter Street and diagonally to Don Roadway with a new north-south street. The alternative was called **Alternative 1-D.2. Extend Diagonally Between Don Roadway and Saulter (Under) with a New North-South Street**. **Appendix I** provides the evaluation of this option against the other alternatives previously identified. This alternative was developed to provide another option that facilitates a second potential continuous Ship Channel crossing, create more porosity across Lake Shore Boulevard East, connect to multiple destinations, ensure continued viability of the existing studios and has the potential for place making. A detailed description of the alternative is provided in **Appendix H**.

The evaluation results indicated that this new option was not superior to **Alternative 1-B.2** (the previously preferred option). **Alternative 1-D.2 - Extend Diagonally Between Don Roadway and Saulter (Under) with a New North-South Street** scored slightly less than **1-B.2** for the following reasons:

- creates a new main street but biased to the west through the Film Studio District, connecting to the Don Greenway;
- intersection configuration at Don Roadway and Basin Street connection will require coordinated signal operations: shorter cycle length and/or greater flexibility in signal timing, which will increase intersection efficiency by reducing delays/queues. Don Roadway/Broadview Avenue intersection must be signalized due to left turn conflicts with streetcar tracks. Northbound left must be fully protected, presenting the potential for queue spillback depending on demand and signal operations. Short signal spacing (120 m Basin Street to Don Roadway, 155 m Don Roadway to Commissioners Street, and 110 m on Commissioners Street between Don Roadway and Broadview Avenue) could be a challenge for signal coordination and queue management, the short spacing will require shorter and coordinated signal phasing to reduce queue lengths and manage potential for spillback (queuing from one intersection to and through the next, creating gridlock);
- potential safety concerns associated with signal spacing;
- requirement to relocate the Basin Street bridge west of the Don Roadway will reduce the size of high-quality wetlands identified in the DMNP EA. Potential impacts to aquatic species through reduction to the size of high-quality wetlands in the DMNP EA. Requires a Major Amendment to the DMNP EA. It also requires reconfiguration of the Don Roadway and Basin Street as identified in the LDLMP EA; and,
- provides a view corridor to the Ship Channel, however the Ship Channel is narrow with a lack of view termini.

Like **1-B.2**, the alternative's diagonal alignment through the Film Studio District presents challenges, but these can be addressed through public realm and building design. There are also property impacts with the alternative, although this alternative would not contribute to the need to relocate the Basin Transmission Station.

Other Changes

Stakeholder engagement with landowners in the Port Lands resulted in additional technical analysis and due diligence to resolve issues raised during the consultation on **Alternative 1-B.2**. This post-consultation analysis resulted in a number of important minor amendments to the preferred alignment and ultimately acceptance by key stakeholders. These included:

- traffic/truck movement assessments for entrances and exits to Pinewood Studios as well as more detailed property and grading impact assessments. This work resulted in general agreement with the preferred alternative recognizing that Pinewood Toronto continues to indicate that the preferred alignment impacts expansion opportunities adjacent to Studios 10, 11 and 12;

- more detailed assessment and provision of additional contiguous lands to create a larger developable parcel at 300 Commissioners Street; and,
- additional work on the preferred Broadview Avenue alignment focusing on intersection function and a slightly more detailed alignment configuration to assist in discussions with TTC, Metrolinx and landowners in the Unilever Precinct.

New North-South Street East of Leslie

In 2014, at the South of Eastern Transportation Issues Community meeting, stakeholders identified the potential to relieve congestion by increasing the connections southbound from Eastern Avenue to Lake Shore Boulevard East. In response, a sensitivity test was undertaken in 2015 to consider how traffic would be improved by adding another connection east of Leslie Street. The results were reported at the November 2015 workshops and it was identified that a connection at either Knox Avenue or Woodfield Road was being explored. The sensitivity analysis showed a reduction of traffic on Eastern Avenue and had a positive impact on other corridors within the Study Area overall by extending a north-south street to Lake Shore Boulevard East. It is beneficial to introduce a new north-south connection, creating additional redundancy in the network and would also tie into other projects, such as the 10-year Cycling Network Plan.

As a result, three new options were considered further in 2016:

- Do Nothing;
- Extend Knox Avenue; and,
- Extend Woodfield Road.

Knox Avenue and Woodfield Road currently end just north of Lake Shore Boulevard East. The unopened City-owned road allowances are proposed to be re-opened to allow a connection with Lake Shore Boulevard East. A detailed description of the alternatives is provided in **Appendix H**.

Existing Conditions

Knox Avenue is the first street east of Leslie Street and runs from Queen Street to just north of Lake Shore Boulevard East. The portion of the street south of Eastern Avenue provides access points to the Canada Post parking lot and facility adjacent to the east. The street ends in the south with a trail access to the Waterfront Trail and bicycle route. Woodfield Road runs from Eastern Avenue southward and like Knox Avenue, does not have a connection with Lake Shore Boulevard East. Woodfield Avenue also provides access points to the Canada Post facility to the west. The Ashbridges Bay Treatment Facility is located to the east of Woodfield Road along with other employment uses. To the north of Eastern Avenue between these streets are mixed residential and commercial land uses including a TTC streetcar yard.

Screening and Evaluation

The Do Nothing alternative was screened out because it will not address reduction of traffic on Eastern Avenue and improvements on other corridors within the Study Area overall by extending a north-south street to Lake Shore Boulevard East including tying into the cycling network.

A quantitative and qualitative assessment of Knox Avenue and Woodfield Road was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-10** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-10 SUMMARY OF SCREENING FOR NEW NORTH-SOUTH STREET EAST OF LESLIE STREET ALTERNATIVES

OBJECTIVES AND CRITERIA		KNOX AVENUE	WOODFIELD ROAD
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🟡	🟢
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	🟡	🟡
	Existing/planned neighbourhoods.	🟡	🟡
	Existing businesses and industry and opportunities for new businesses and industry.	🔴	🟡
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	🟢	🟢
	Redundancy in the network.	🟢	🟢
	Existing physical barriers.	🟡	🟢
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	NA	NA
LEVERAGE ASSETS	Cultural heritage resources.	🟢	🟢
	Archaeological resources and traditional uses of Aboriginal people.	🟢	🟢
	Existing/planned parks and open spaces.	🟢	🟢
	Compatibility with the natural environment.	🟢	🟢
	Visual connections.	NA	NA
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	🟢	🟢
	Cycling routes.	🟡	🟢
	Place-making opportunities.	NA	NA
	Health and safety.	🔴	🟢
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	NA	NA
	Transit accommodation.	NA	NA
	Flood risk potential.	NA	NA
	Noise and air quality.	🟢	🟢
	Resiliency and climate change.	🟢	🟢
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/ frameworks.	🟢	🟢
	Consistency with approved area Environmental Assessments.	NA	NA
	Engineering feasibility and construction cost.	🟢	🟢
	Existing municipal infrastructure and utilities.	🟡	🟡
	Property acquisition costs.	🟡	🟢
	Maintenance and operations.	NA	NA
	OVERALL PERFORMANCE	🟡	🟢

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

Commentary on Alternatives

The two remaining alternatives – **Extend Knox Avenue** and **Extend Woodfield Road** are very similar. Both have employment lands on either side of the street, with no residential uses. Both end slightly north of Lake Shore Boulevard East at Woodfield Road and would be extended through un-opened City-owned road allowances over the multi-use cycle trail to Lake Shore Boulevard East. The right-of-way for Knox Avenue would need to be widened by 5 m to accommodate the Complete Street character desired whereas Woodfield Road requires no additional right-of-way.

Evaluation Results

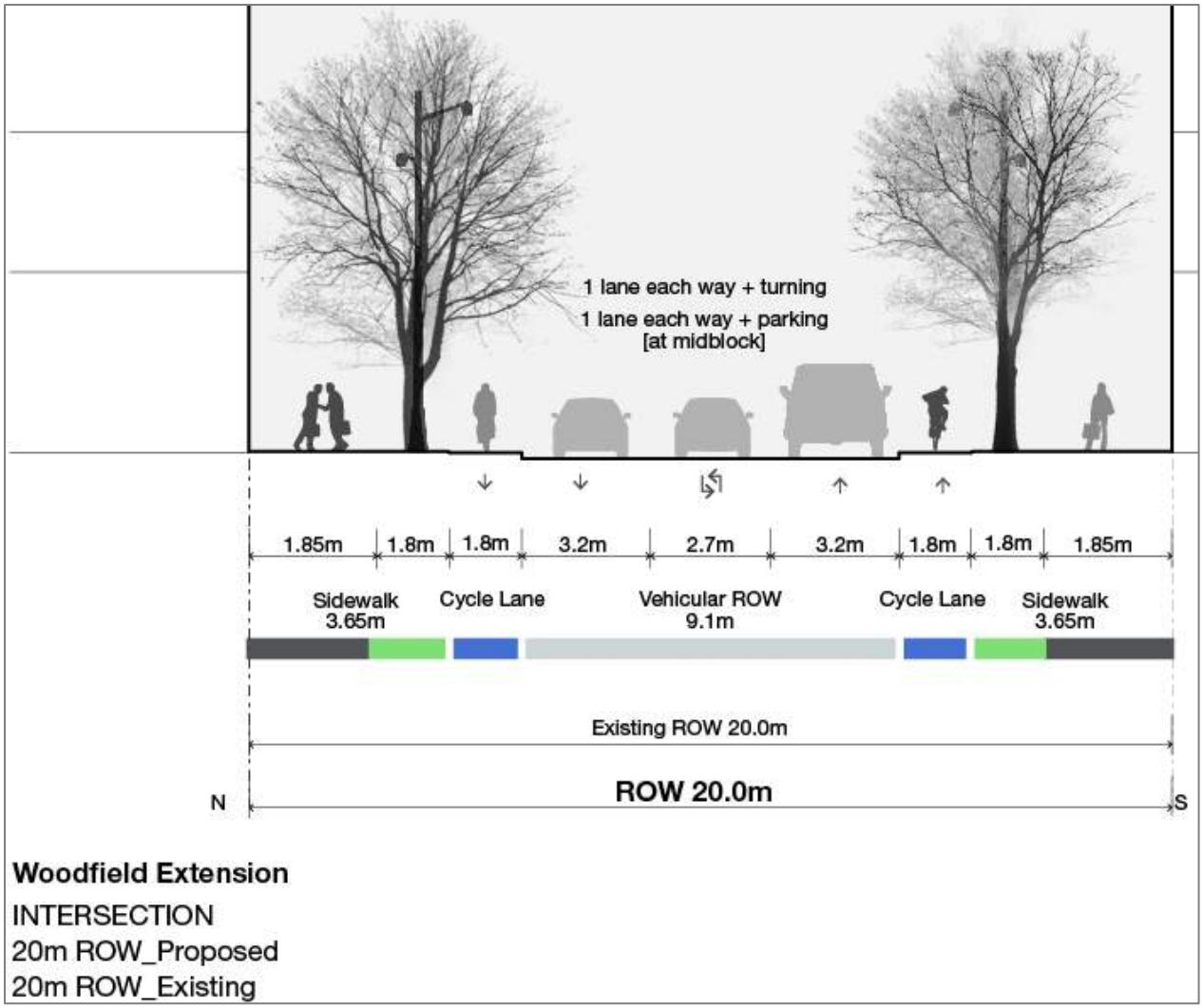
It was determined that the extension of Woodfield Road to Lake Shore Boulevard East as a complete, multi-modal street with two vehicular lanes (20 m right-of-way) was most beneficial (**Figure 8-39**). The Knox Avenue alternative has several disadvantages – the need for a right-of-way widening will impact parking space and truck access to the Canada Post facility, and the median at the Lake Shore Boulevard East intersection will prevent full turns and impact effective traffic signal spacing along this portion of Lake Shore Boulevard East.

With respect to Canada Post operations, it is anticipated that any potential impacts will be minor and that the additional connection would be beneficial as it would provide alternative routing during ongoing maintenance and/or reconstruction of area infrastructure.

Canada Post indicated the following for consideration with respect to the extension:

- design of the street will need to address the driveway access at the south end of the Canada Post site;
- design of the street will need to ensure continued truck movements in and out of the Canada Post site; and,
- consideration of accommodating new turning movements into the Canada Post site at its southern access from the extended Woodfield Road.

FIGURE 8-39 CONCEPTUAL CROSS-SECTION – WOODFIELD ROAD EXTENSION



8.1.11 Preferred Transportation Solution

From the individual sub-area evaluation, the following Preferred Solutions were identified:

- Alternative 1-B.2 – Realigned Saulter (Under) and New North-South Street – Broadview Extension (one-lane each direction with streetcar in dedicated right-of-way) and New North-South Bouchette Street;
- Alternative 2-B Caroline – Carline Avenue Extension (two way, Complete Street design);
- Alternative 3-C Broadview – Broadview Avenue extension crossing of Ship Channel;
- Alternative 4-A.3 – Urbanize Eastern (consistent Complete Street design);
- Alternative 4-B.2 – New East-West Connection in Unilever Precinct – New Street Don Roadway to Booth;
- Alternative 5-D – Multiple Connections including:

  - Urbanize Commissioners Street (one-lane in each direction with streetcar in dedicated right-of-way);
  - Realigned and Extended Basin Street (provide extension of Basin Street easterly - Don Roadway to Carlaw Avenue, south of Film Studio;
  - New East-West Street North of Commissioners Street (provide new east-west collector road between Don Roadway and Bouchette Street);
- Alternative 6-C – Realign and Urbanize Unwin Avenue; and,
- New North-South Street East of Leslie (Woodfield Road).

The Preferred Solutions from each sub-area were combined to create the Preferred Street Network identified in **Figure 8-40**. **Figures 8-41** and **8-42** illustrate the resulting transit and pedestrian/cycling networks.

Transit and Pedestrian/Cycling Network

The preferred Transportation Solutions integrate transit and pedestrian/cycling infrastructure. The overall transportation network has been designed to provide multi-modal access and recognizing that the success of the transportation system is contingent on achieving high mode splits in favour of transit and active transportation. The network prioritizes pedestrians and cyclists, as well as transit, to achieve sustainability objectives and create an interesting and dynamic urban mix. The pedestrian and cycling networks provide:

- high-quality cycling facilities and wide, unobstructed pedestrian clearways providing safe and accessible connectivity;
- sufficient space for other amenities such as benches, space to grow great trees, and other features; and,
- direct and continuous connections between existing and planned communities and employment areas and destinations in the Study Area.

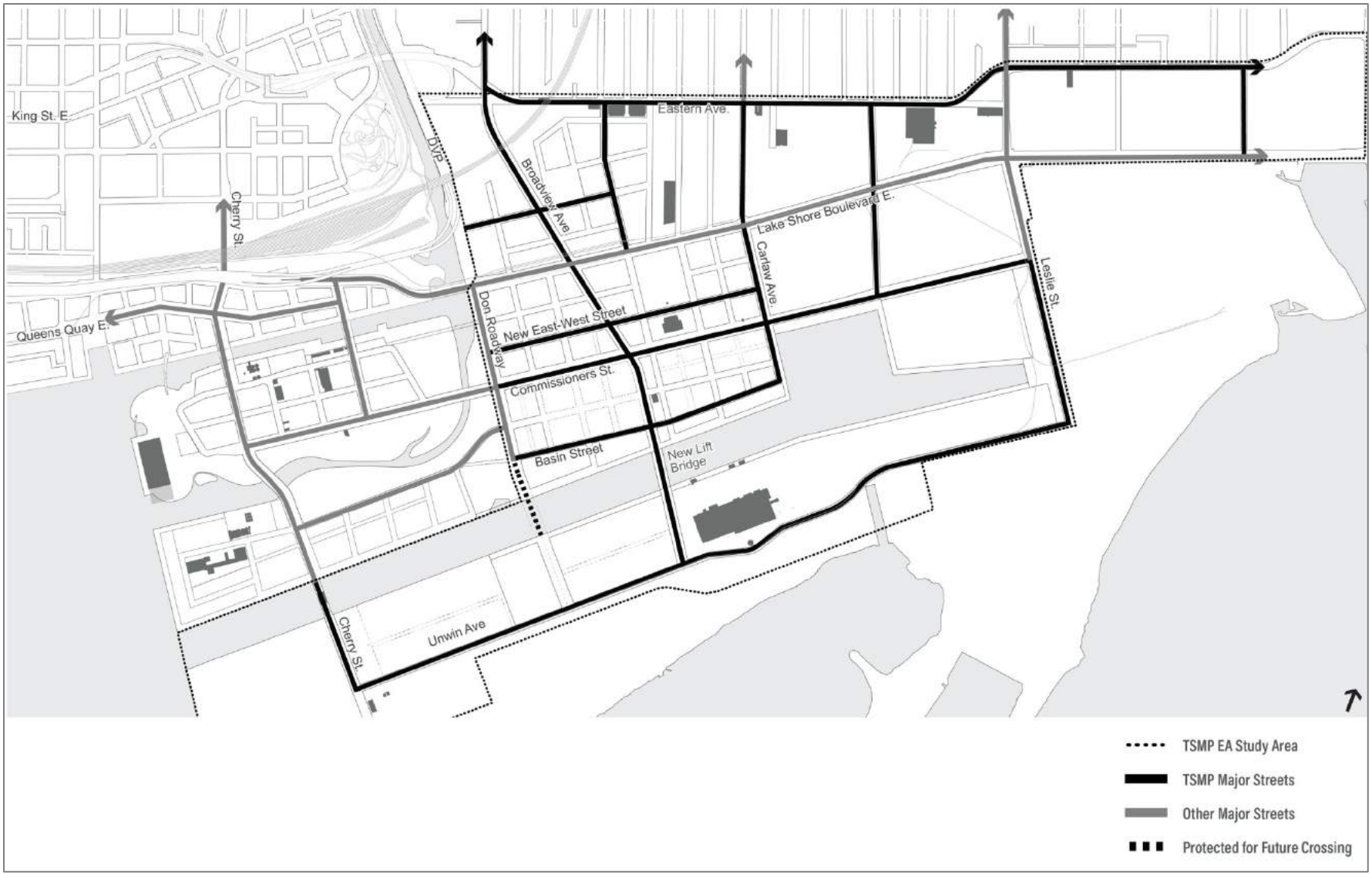
From a transit perspective, the network provides:

- the ability to integrate with planned higher-order transit lines – SmartTrack RER and Relief Line – and stations at the rail embankment and Unilever Precinct;
- a focus on streetcars in dedicated rights-of-way on Commissioners Street and the Broadview Avenue extension that connects to existing routes north of the Study Area, but also to Union Station and waterfront line;
- transit prioritization and the ability for more reliable service through the use of dedicated rights-of-way for streetcar service;
- the ability to supplement streetcar service with bus in mixed traffic and to service current underserviced areas such as the South of Eastern area, and lands south of the Ship Channel that will continue to be used for port, industrial and recreational uses;

- the ability to achieve a fine-grained block pattern enabling access and servicing of development blocks to be taken from local streets rather than from major streets, or streets with streetcar in dedicated right-of-way; and,
- protection for extending streetcar service in a dedicated rights-of-way across the Ship Channel. Streetcar service could be introduced south of Commissioners Street in the Broadview Avenue extension to the Hearn to support the Hearn transforming into a major city destination, but also in recognition of the difficulty in achieving additional connections across the Ship Channel.

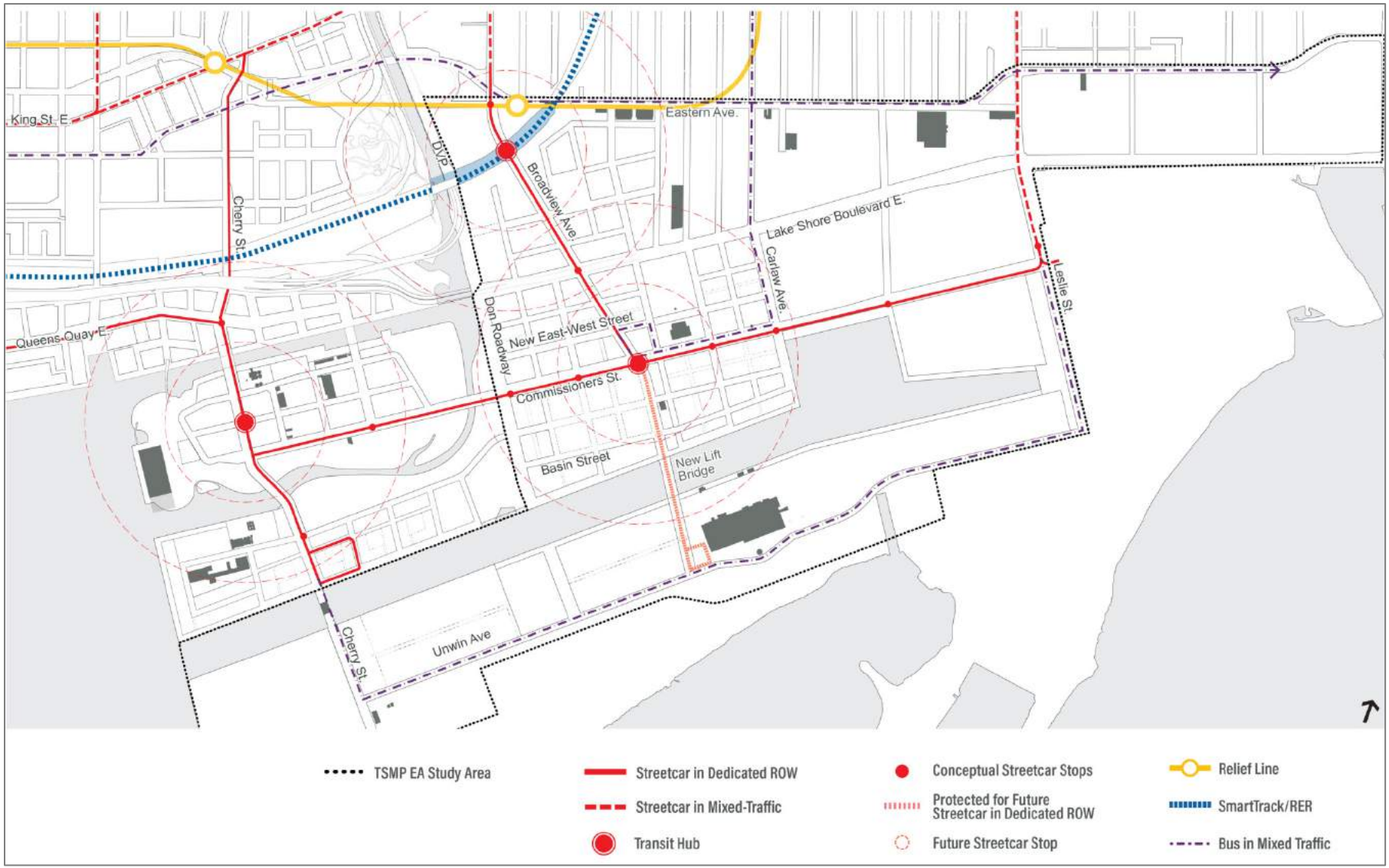
Appendix D provides details on the transit network analysis.

FIGURE 8-40 PREFERRED STREET NETWORK



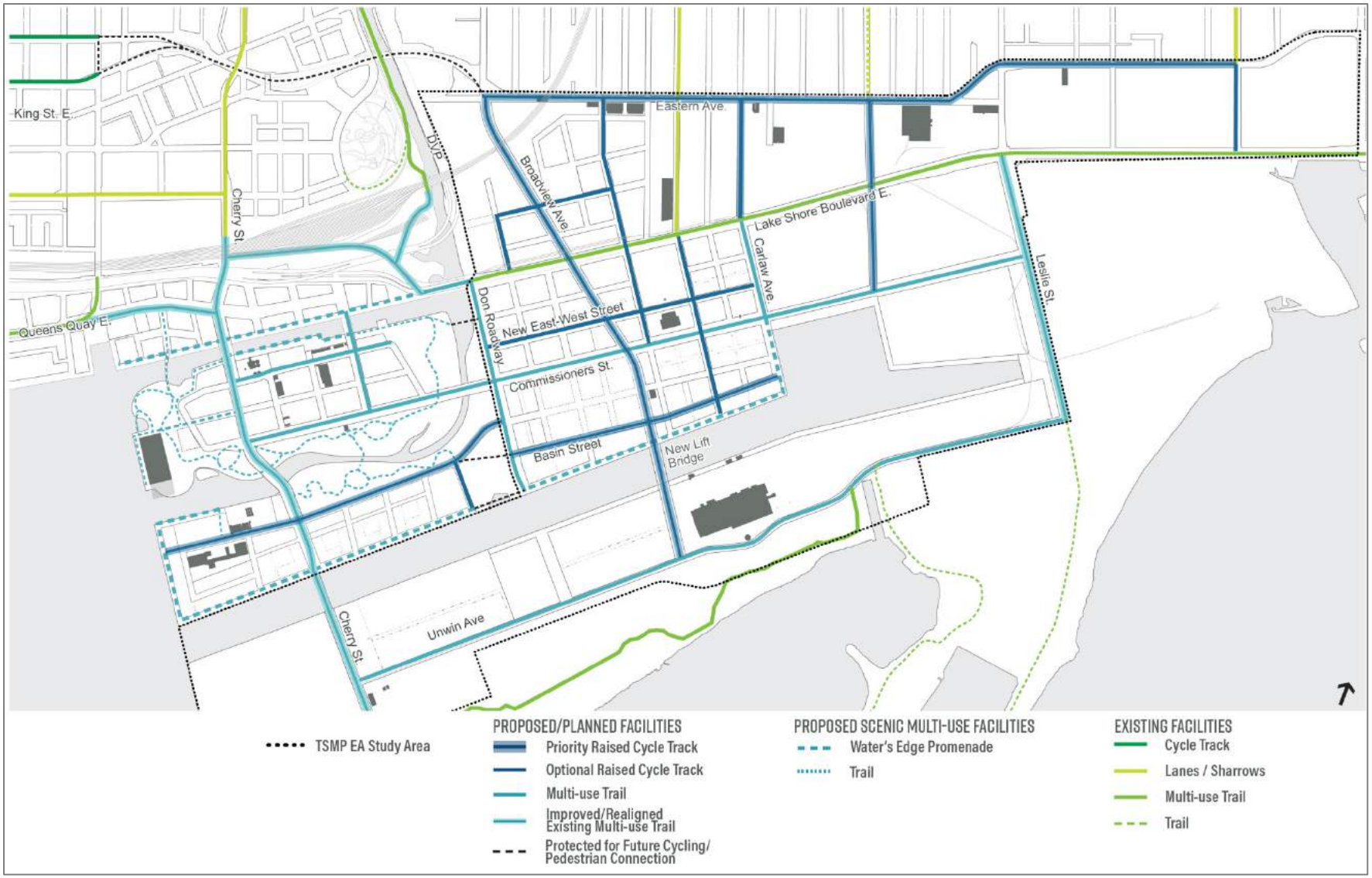
Source: City of Toronto, 2017

FIGURE 8-41 TRANSIT NETWORK



Source: City of Toronto, 2017

FIGURE 8-42 PEDESTRIAN AND CYCLING NETWORK



Source: City of Toronto, 2017

8.1.12 Testing the Preferred Transportation Network

The preferred street and transit networks were tested and modeled at both strategic and operational levels, with their performance compared against a future base case street and transit network (**Figure 8-43**). The future base street and transit network consisted of a combination of approved infrastructure as identified in the LDLMP EA, street and transit connections generally identified in the CWSP (streetcar in dedicated right-of-way was excluded south of the Ship Channel due to the nature of the land use proposed) and existing conditions in the South of Eastern area. The results of the comparative analysis demonstrated that the preferred street and transit networks operate within acceptable levels of service, but also outperformed the base case future network. **Appendix D** provides additional detail on the analysis undertaken.

A number of sensitivity tests were also undertaken on the preferred street and transit networks. The analysis confirmed that the preferred street and transit networks are robust and adaptable.

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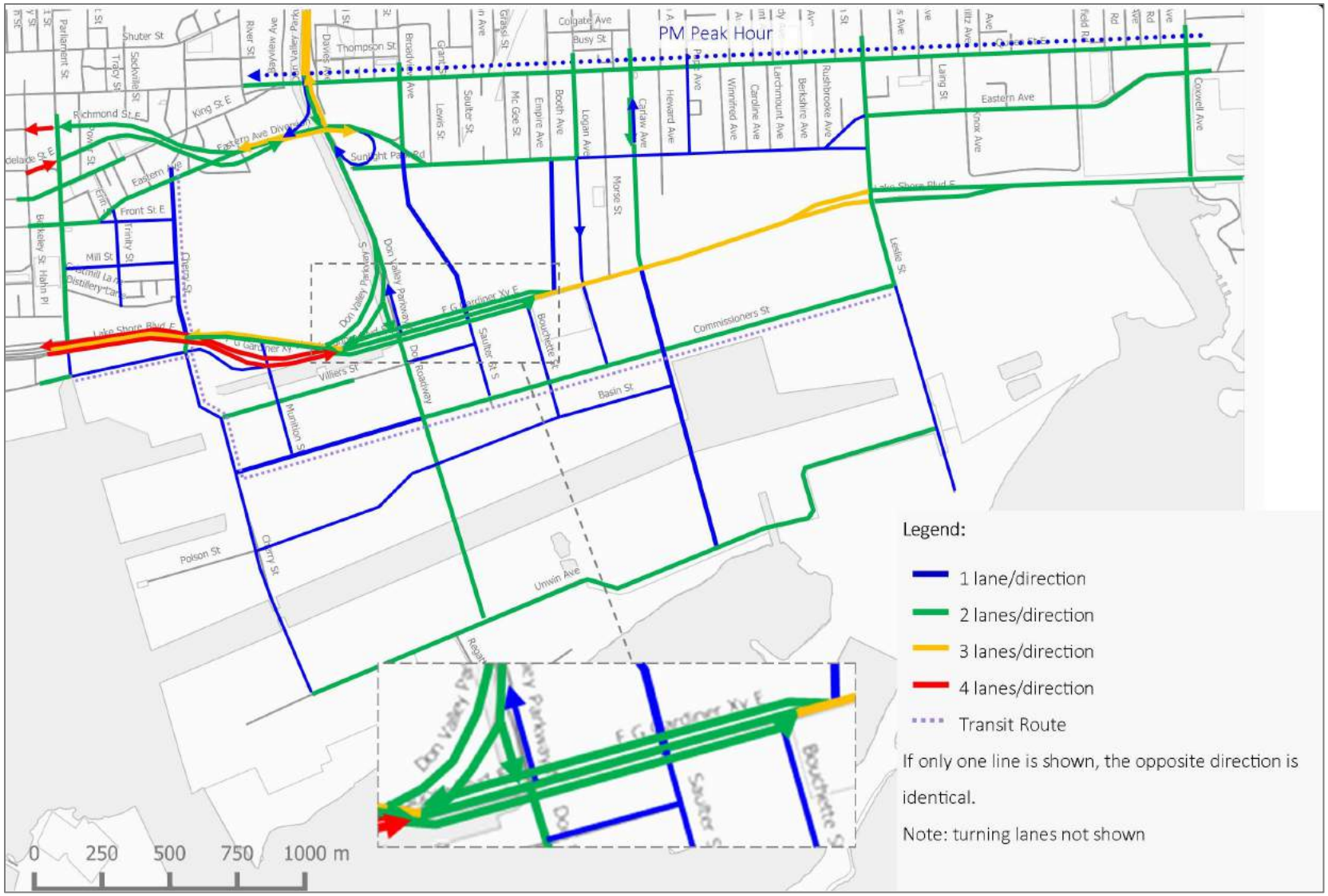
FIGURE 8-43 FUTURE BASE NETWORK – EXISTING AND APPROVED STREETS



8.2 Municipal Servicing Alternative Solutions

This section outlines the alternatives and evaluation undertaken for water, wastewater and stormwater infrastructure.

8.2.1 Water Alternatives

There is an existing network of watermains in the Study Area that range in size from 150-300 mm diameter and is supplied from City's water supply network (Pressure Zone 1). The water system provides the necessary flows at adequate pressures to the majority of the Study Area; however, there are some areas closer to the lake where water pressures are higher due to the lower ground elevation and buildings need to install pressure reducing valves to prevent plumbing damage. In some streets in the Study Area, fire flows are lower due to smaller diameter piping or lack of looping in the system.

8.2.1.1 RATIONALE

Generally, the existing water servicing in the Study Area is insufficient (and non-existent in some areas) and cannot support redevelopment efforts. The water distribution system servicing the Study Area was therefore evaluated to determine the improvements required to meet the projected needs in terms of quantity and supply for potable water for the projected residential, commercial and other development uses, and for firefighting. Alternatives were evaluated that provide safe and reliable water supply for interim and future conditions that maximize the use of existing infrastructure, where feasible, without significant impact on City operation and maintenance. Water conservation measures that meet Waterfront Toronto sustainability objectives aimed at minimizing the use of potable water were also reviewed.

8.2.1.2 ALTERNATIVE SOLUTIONS

The following alternatives were identified in accordance with the requirements of the Class EA process and developed based on the City's master planning for future infrastructure requirements undertaken through the Joint Optimization Study and the City's Water Conservation program and were presented to the public for feedback in January of 2014. The alternatives include:

- Alternative 1: Reduce Water Usage by Users and Keep Existing Network
- Alternative 2: Reduce Water Usage by Users and Enlarge/Extend Network
- Alternative 3: Install Separate Pipe System for non-Potable Users

Alternative 1-Reduce Water Usage by Users and Keep Existing Network serves as a baseline analysis, a modification on the typical EA Do Nothing approach and includes the reduction of water demand through the implementation of water efficiency measures such as the use of high efficiency fixtures/appliances and low water landscaping, in keeping the Waterfront Toronto Sustainability Framework (**Section 6.7.1**) and the City's Green Standards and other initiatives such as the City of

Toronto Water Efficiency Plan (2002). As no additional infrastructure would be constructed under this alternative on new streets, it is not considered a complete solution as it does not provide complete servicing throughout the Study Area; however, it forms part of all subsequent alternatives in order to reduce infrastructure requirements.

Alternative 2-Reduce Water Usage by Users and Enlarge/Extend Network includes upsizing components of the existing network to meet future demand and the provision of new watermains aligned with the preferred street network and additional watermains required for system security/looping.

Alternative 3-Install Separate Pipe System for non-Potable Users expands on **Alternative 2-Reduce Water Usage by Users and Enlarge/Extend Network** and considers offsetting the size of new watermains installed in the existing network and new watermains aligned with the preferred street network with a secondary non-potable water supply system that could provide a water supply for water usages that do not require the high degree of water quality provided by the City's water supply system. Some examples of non-potable uses include toilet flushing, building air conditioning needs, irrigation and fire flow supply. The system would require development of components for supply, treatment and distribution with details depending on the source of supply which could range from lake water through to recaptured rain water or greywater. Decisions on source and end use of the non-potable supply would dictate the degree of treatment required to protect end users from the potential health risk of coming in contact with an untreated supply that may contain levels of bacterial and other contaminants. An essential component of the distribution system is the provision of fail-safe measures to avoid connection and resulting cross-contamination of the City's water supply system. This would include as a minimum, complete hydraulic separation of the systems with backflow prevention devices and identification of the non-potable system with the industry-standard colour and labelling for reclaimed water.

8.2.1.3 ASSESSMENT AND EVALUATION OF ALTERNATIVE SOLUTIONS

Future Water Demands

Future water demands were estimated using the population and employment estimates utilized for the analysis provided by the City as identified in **Section 7.0** and **Appendix E**. The future water demands formed the foundations for the modelling used to evaluate the water alternatives. Revised future water demand estimates were also completed for the updated development scenario the City provided based on the refined Land Use Direction for the Port Lands that was presented to the public in November 2015. No changes were deemed necessary to the modeling results as the updated estimates for the preferred Land Use Direction generated less demand than what was originally used in the initial modeling allowing for a degree of conservatism and flexibility in the water system.

InfoWater Hydraulic Model

The City's existing InfoWater Hydraulic Model was updated for the Study Area and used to assess performance of the existing system that could contribute constraints to system expansion. The model identified that the system operates within a pressure range of 88 psi to 94 psi, in compliance with the

City's Design Criteria for Sewers and Watermains (2009). It was noted that the maximum pressure reading of 94 psi could result in an internal building pressure exceeding the 2012 Ontario Building Code (OBC) maximum static pressure of 550 kilopascal (kPa) (79.8 psi). The high pressures are likely due to the lower elevation of the Study Area, closer to the lake. Individual pressure reducing valves installed on the building-side of any developments with pressure that exceed the OBC maximum pressure can provide protection against building plumbing over-pressurization.

The model also identified that fire flows are sufficient throughout the majority of the Study Area; however, some isolated areas struggle to meet the target fire flows due to small diameter piping or lack of looping in the system. In addition, the modeling also identified the following:

- minimum pressures during peak hour demands are predicted to be above 40 psi;
- maximum pressures during average day demands are predicted to be below 100 psi; and,
- available fire flows are predicted to exceed the target fire flows for the proposed land uses assuming that the planned 400 mm watermain on Cherry Street in the Lower Don Lands is implemented to complete looping.

The hydraulic model was updated using the preferred street network developed under the transportation component of the master plan and future populations/land use were distributed along the new network. Water demand for future populations have been developed applying per capita demand factors for each land use type as noted below, assuming implementation of full Water Conservation programs, in accordance with the City's/Region of York Joint Optimization Study and Waterfront Toronto's Sustainability Framework:

- Residential: 255.3 L/person/d
- Retail: 229.6 L/employee/d
- Office: 239.2 L/employee/d
- Light Industrial: 267.8 L/employee/d
- Hotel: 464.6 L/employee/d
- Other Commercial: 464.6 L/employee/d

Maximum day and peak hour multipliers of 1.88 and 2.48 respectively were then applied to the Average Day Demands.

The demand factors were developed assuming full implementation of water conservation programs, as outlined in the City of Toronto Water Efficiency Plan 2002 that include:

- system leak detection;
- computer controlled irrigation;
- watering restrictions;
- toilet and clothes washer replacement; and,
- water audits.

Water conservation measures identified in Waterfront Toronto's Sustainability Framework and Toronto's Green Standards include:

- reduce potable water demand for irrigation by harvesting rainwater. Grey water may be used if heated as required in the Ontario Building Code (Tier 2).

For a master planned area, the following would also be applicable per the Sustainability Framework and Toronto Green Standards:

- drought tolerant landscaping; and,
- water efficient fixtures to achieve up toi 30 percent (Tier 2) reduction in potable water consumption.

Evaluation

A quantitative and qualitative assessment of each of the viable alternatives was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-11** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-11 SUMMARY OF EVALUATION OF WATER SUPPLY ALTERNATIVES

OBJECTIVES AND CRITERIA		1 - Reduce Water Usage by Users and Keep Existing Network.	2 - Reduce Water Usage by Users and Enlarge/Extend Network.	3 - Install Separate Pipe System for non-Potable Users.
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	●	●	●
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	●	●	●
	Existing/planned neighbourhoods.	●	●	●
	Existing businesses and industry and opportunities for new businesses and industry.	●	●	●
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	●	●	●
	Redundancy in the network.	●	●	●
	Existing physical barriers.	●	●	●
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	NA	NA	NA
LEVERAGE ASSETS	Cultural heritage resources.	●	●	●
	Archaeological resources and traditional uses of Aboriginal people.	●	●	●
	Existing/planned parks and open spaces.	●	●	●
	Compatibility with the natural environment.	●	●	●
	Visual connections.	NA	NA	NA
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	●	●	●
	Cycling routes.	NA	NA	NA
	Place-making opportunities.	NA	NA	NA
	Health and safety.	●	●	●
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	●	●	●
	Transit accommodation.	●	●	●
	Flood risk potential.	●	●	●
	Noise and air quality.	●	●	●
	Resiliency and climate change.	●	●	●
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	●	●	●
	Consistency with approved area Environmental Assessments.	●	●	●
	Engineering feasibility and construction cost.	●	●	●
	Existing municipal infrastructure and utilities.	●	●	●
	Property acquisition costs.	●	●	●
	Maintenance and operations.	●	●	●
	OVERALL PERFORMANCE	●	●	●

● VERY POOR ● POOR ● GOOD ● VERY GOOD

Commentary on Alternative Solutions

The evaluation identified that while **Alternative 1-Reduce Water Usage by Users and Keep Existing Network** met key water conservation goals, the alternative did not allow for the network expansion necessary to provide servicing along new roads in the preferred street network. Further, it would not allow for the watermain additions required to address the lack of looping and redundancy that was identified in the hydraulic assessment of existing conditions.

Alternative 2-Reduce Water Usage by Users and Enlarge/Extend Network makes effective use of available capacity in existing infrastructure where it can be maintained, thereby minimizing additional operational and maintenance requirements and provides the necessary servicing to meet the growth needs of the Study Area and provide for looping and redundancy of supply to improve fire flows, maintain water quality and provide operational flexibility.

While **Alternative 3-Install Separate Pipe System for non-Potable Users** would reduce the demand on treated water supply, it would require the construction of a dual system that may be difficult to accommodate within the rights-of-way identified for the desired street character. Further, the cost of installation and operation of a dual pipe system is difficult to justify given the immediate proximity of an abundant and readily treated water supply. In addition, measures would be required to eliminate the potential for connection and resulting cross-contamination of the City's water supply system and protect end users from the potential health risk of coming in contact with an untreated supply.

8.2.1.4 PREFERRED SOLUTION

In summary, **Alternative 2-Reduce Water Usage by Users and Enlarge/Extend Network** is the Preferred Solution because it provides new and upsized infrastructure, aligned with the new street network in a cost-effective means to meet design standards for supply pressure, fire flow supply and operational flexibility.

The Preferred Solution includes new and upsized watermains that connect to the new 400 mm watermain proposed in the Lower Don Lands as shown in **Figure 8-44** below to serve projected employment/population numbers, realign the network to new roads and to provide for looping and redundancy of supply to improve fire flows and maintain water quality. Major features of the network include the following:

- upsizing of the existing watermains along Leslie Street and Unwin Avenue to provide for looping and redundancy of supply to south of the Ship Channel;
- new 300 mm watermain on Unwin Avenue to connect the western section to the network;
- new 200 to 300 mm watermains on new streets in the Unilever Precinct and Film Studio District to accommodate infill development and employment intensification;
- additional watermain crossing has been added under the Ship Channel at the Broadview Avenue extension for operational redundancy; and,
- construction of new and replacement watermains throughout the Study Area will be coordinated in detailed design with other major infrastructure construction including new street and transit and sewer networks.

Subsurface utility engineering investigations will be required to confirm the location of existing utilities, in particular the high pressure gas main that traverses the Study Area to the PEC. Construction of

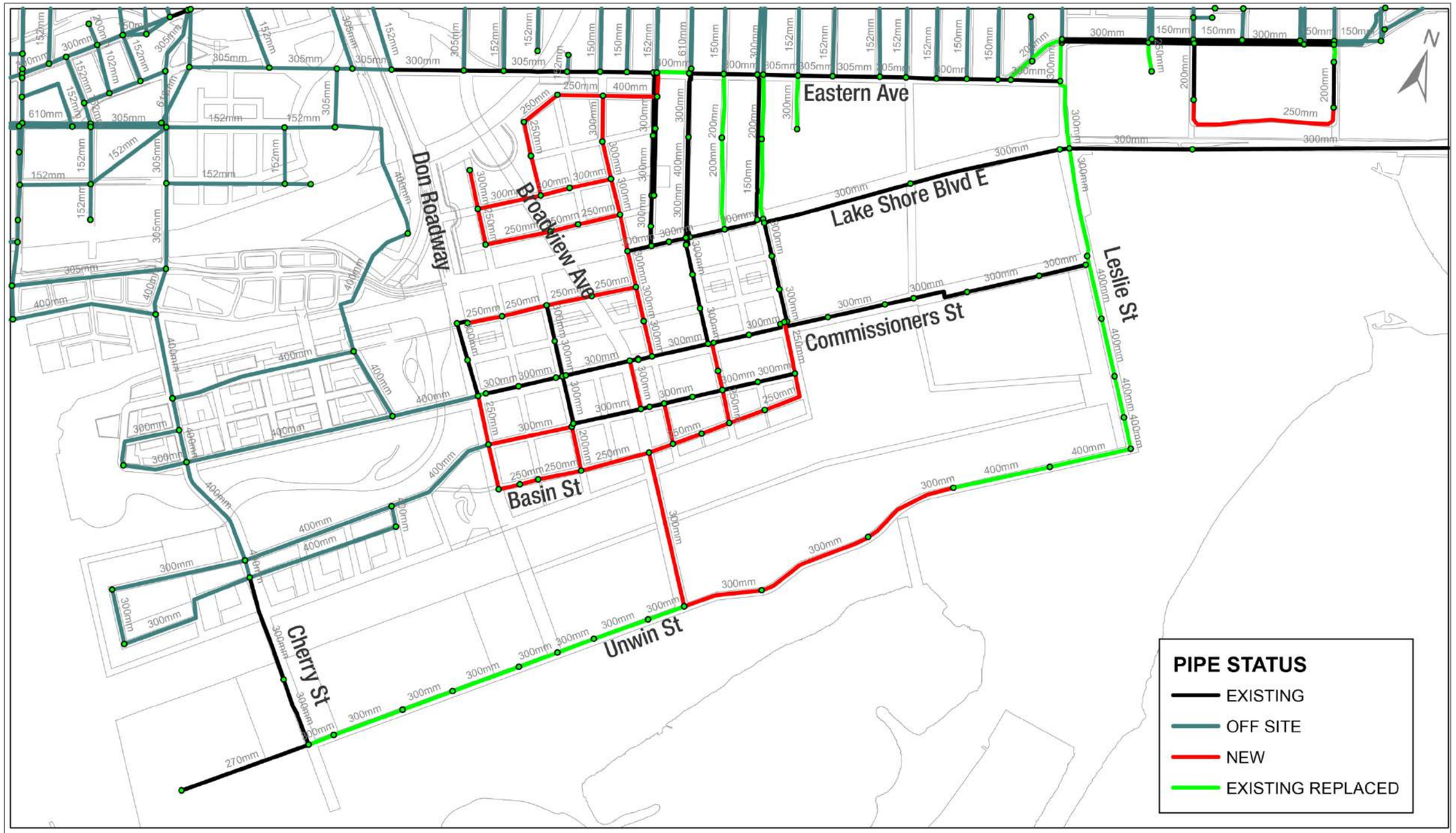
connections to the Lower Don Lands network upgrades will require crossing of the VWF proposed under the DMNP EA. Coordinating the timing of that connection will allow for appropriate utility corridors to be considered in the VWF design so that appropriate cover is provided over the watermain without impacting the core of the VWF.

The development forecast for the Study Area extends well into the future and is conditional on implementation of major infrastructure developments outside the Study Area. As much of the existing infrastructure is currently operating at, or near, the end of its typical lifespan, replacement prior to development may be required for state of good repair purposes and new infrastructure installed should, where feasible, be sized in accordance with development needs for the Study Area. There is potential; however, that new infrastructure sized for full build-out may operate at below desired conditions in the interim and additional operating/maintenance measures may be needed to maintain water quality and protect against odour generation.

While existing watermains are shown in **Figure 8-44**, this only accounts for the fact that the watermains are an adequate diameter to support the anticipated growth. Many if not all of the existing watermains will need to be upgraded and/or relocated to:

- accommodate the required flood protection measures (e.g., the watermain identified in the Don Roadway);
- accommodate transit (streetcar) in dedicated right-of-way;
- accommodate reconstruction of existing streets to ultimate configuration; and,
- accommodate relocation and/or burial of other utilities and servicing.

FIGURE 8-44 PREFERRED ALTERNATIVE SOLUTION – WATER



Notes:
Pipe diameters indicated in millimetres.
Revision Date: May 26, 2016

0 100 200 400 Meters

FULL BUILD-OUT - WATERMAIN STATUS AND DIAMETERS
Port Lands and South of Eastern Transportation and Servicing Master Plan

ch2m

8.2.2 Wastewater Alternatives

The wastewater system in the Study Area is a separated system of pipes for sanitary and stormwater flows. The sanitary sewers range in diameter from 200 mm to 675 mm and connect by gravity to the large diameter LLI for treatment at the ABTP located directly adjacent to the Study Area.

South of the Ship Channel, there are no sanitary sewers located west of the PEC and the businesses and the washroom facilities for the recreational fields rely on septic tanks or other private waste treatment/ storage systems.

Properties in the South of Eastern area drain via sanitary sewers that run north to the LLI. Sewer size is primarily 300 mm with a maximum of 450 mm diameter.

At the current low rate of development in the Study Area, sewers are generally underutilized and function well during dry weather flow conditions. During moderate wet weather events, the high level in the LLI can cause sewage flow to back up into areas of the Study Area which can result in flooding of basements.

8.2.2.1 RATIONALE

Generally, the existing sanitary servicing in the Study Area is insufficient and cannot support re-development efforts. The sanitary system servicing the Study Area was therefore evaluated to determine the improvements required to meet the projected needs and capacities for the residential, commercial and other development uses. Alternatives were evaluated that provide safe and reliable wastewater collection for the interim and future conditions that maximize the use of existing infrastructure, where feasible, without significant impact on City operation and maintenance.

8.2.2.2 ALTERNATIVE SOLUTIONS

Initial Alternative Solutions

The following alternatives were identified in accordance with the requirements of the Class EA process and in conjunction with the overarching WSSMP EA (WSSMP, 2012) and were presented to the public for feedback in January of 2014.

- Alternative 1: Reduce Waste Water Flows
- Alternative 2: Enlarge/Extend Collection - Convey flow via MTI to Treatment Plant
- Alternative 3: Enlarge/Extend Collection - Convey Flows via Low Level Interceptor to Treatment Plant
- Alternative 4: Enlarge/Extend Collection - Convey Flows via New Pump Station Directly to Treatment Plant

Alternative 1-Reduce Waste Water Flows serves as a baseline analysis, a modification of the typical EA Do Nothing approach and includes the reduction of wastewater flows, in keeping with the Waterfront Toronto Sustainability Framework. No additional infrastructure would be constructed under this alternative on new streets or south of the Ship Channel. As a result, it is not considered a complete

solution as it does not provide complete servicing throughout the Study Area; however, it forms part of all subsequent alternatives in order to reduce infrastructure requirements.

Alternative 2-Enlarge/Extend Collection - Convey flow via Mid Toronto Interceptor to Treatment Plant includes extension of servicing into un-serviced areas with new sewers aligned with the preferred street network. Flows from the Port Lands would be conveyed to the ABTP with a servicing connection to Carlaw Avenue inter-connecting sewer at Eastern Avenue. Smaller network branches in the South of Eastern area will remain connected to the LLI.

Alternative 3-Enlarge/Extend Collection - Convey Flows via Low Level Interceptor to Treatment Plant includes the extension of servicing into un-serviced areas with new sewers aligned with the preferred street network. Flows from the Port Lands would be conveyed to the treatment plant through the servicing connection to the LLI. Smaller network branches in the South of Eastern area will remain connected to the LLI.

Alternative 4-Enlarge/Extend Collection - Convey Flows via New Pump Station Directly to Treatment Plant includes the extension of servicing into un-serviced areas with new sewers aligned with the preferred street network. Flows from the Port Lands would be routed to a new sewage pumping station for direct pumping to the treatment plant to avoid impact on the interceptors. The smaller network branches in the South of Eastern area will remain connected to the LLI.

Waterfront Sanitary Servicing Master Plan Class EA, Update and Consultation

Subsequent to the presentation of the original alternatives, an update to the WSSMP EA was initiated, driven by significant increases in residential population and employment forecasts and progress in upgrading local infrastructure. It was determined that the WSSMP EA Update would address interceptor conveyance for the Study Area and broader catchment area being reviewed as part of the WSSMP EA Update, and the TSMP EA would only address area specific issues. As such alternatives were reviewed and revised to reflect alternatives specific for the Study Area.

Alternative 4-Enlarge/Extend Collection represented an option independent of the operation of the LLI and MTI; however, an update to the WSSMP EA in 2015 was ongoing and noted that with the advancement of the Integrated Pumping Station project currently in detailed design, improved control of hydraulic conditions along the MTI sewer could increase the amount of unused flow conveyance capacity available within the MTI. As the contributing flow to the MTI from the Port Lands represents in the order of 1 percent of the overall MTI flow capacity (reported as 12,000-19,000 L/s), the further negligible offset in capacity is not considered sufficient to justify the financial impact of an additional pumping station, combined with the mitigation measures required to minimize the impact on the community of siting a pumping station in the Port Lands.

Public comments received following the presentation of alternatives led to the addition of an alternative that provides for a local or decentralized solution for wastewater treatment for some areas of the Study Area that employs innovative measures.

Decentralized systems are typically smaller systems, located in close proximity to the source of water being managed. Decentralized wastewater management refers to systems “for the collection,

treatment, and dispersal/reuse of wastewater from individual homes, clusters of homes, isolated communities, industries, or institutional facilities, at or near the point of waste generation" (Water Environment, 2010). In reviewing the Study Area, it was considered that there was an opportunity to investigate a decentralized system for development where municipal servicing currently does not exist (e.g., south of the Ship Channel and west of the Hearn Generating Station). This area is challenging to service due to the shallow grade which requires deep sewers to connect by gravity to the adjacent collection system and the need to avoid conflict with significant underground infrastructure at the PEC.

Consideration of decentralized treatment in a municipal environment is an emerging field and there are few regulations or standards available to guide the development of a viable alternative. In the absence of local guidance, various research papers were used (such as Decentralized Water Resources: Answers to the Most Frequently Asked Questions - A Guide to Research and Products from the Decentralized Water Resources Collaborative, 2010) to develop a framework for the alternative for use in the evaluation of alternatives.

A decentralized facility would be configured similarly to a conventional centralized system with collection piping and pumps, treatment and effluent discharge. The details of each system would depend on the number and nature of facilities serviced and treatment needs for the end use of the treatment system effluent. Collection can range from a building service connection to an adjacent facility to small diameter gravity or pressure collection systems, depending on the number of connections.

A similar treatment sequence to centralized treatment would be provided consisting of screening and primary settling, often provided in a single, combined process unit followed by a biological treatment regime ranging from activated sludge, trickling or biological filters or membrane bioreactors. Effluent from the treatment process would receive additional treatment commensurate with the end-use. Treated effluent is typically discharged to a nearby water body or in some cases, decentralized systems are able to take advantage of soil dispersal fields for enhanced removal of nutrients and effluent disposal. This is unlikely to be a feasible option south of the Ship Channel due to the high groundwater table and resulting reduced soil infiltration capacity. Disposal to the lake or Ship Channel requires a complex regulatory review process which could be avoided by conveying the effluent to the ABTP; however, the cost of the required infrastructure and the energy requirement to pump to the plant would need to be factored in to the overall solution. Reuse options for treated effluent to avoid this infrastructure can be explored, depending of the nature of the development.

Solids removed in the treatment system must be periodically removed from the system for disposal and/or further treatment requiring either pumping infrastructure to convey solids to the treatment site or connection infrastructure at the facility to allow for truck collection. There are emerging advanced infrastructure developments that can also be considered to support resource recovery from the wastewater flow, including, among others:

- digestion of wastewater biosolids residuals to generate methane; and,
- cogeneration of combined heat and power, for concurrent power production and recovery of thermal energy.

Their applicability in this setting would depend on final decisions made with respect to facility sizing and resulting impact on community land uses.

Revised Alternative Solutions

Based on the above, the alternatives that were therefore taken forward into the evaluation include the following:

- Alternative 1: Do Nothing & Reduce Waste Water Flows
- Alternative 2: Reduce Waste Water Flows & Enlarge/Extend Collection – Convey flow from Port Lands via Carlaw Avenue inter-connecting sewer at Eastern Avenue to Treatment Plant
- Alternative 3: Reduce Waste Water Flows & Enlarge/Extend Collection and Provide Decentralized Treatment – for flows South of Ship Channel (west of, and including the Hearn)

8.2.2.3 ASSESSMENT AND EVALUATION OF ALTERNATIVE SOLUTIONS

Future Wastewater Flows

Future water demands were estimated based on projections for employment and residential growth (**Appendix E**). The projections formed the framework for identification and evaluation of servicing alternatives.

Population and employment projections used in the modeling were developed in September 2014. Revised estimates were completed in October 2015. The revisions were reviewed and no change to the modeling results was deemed necessary as the updated projections were less than what was originally used in the modeling and thus considered conservative.

InfoWorks Hydraulic Model

A Study Area specific InfoWorks model was created for the Project. Model analysis indicated that at the current low rate of development in the Study Area, sewers are generally underutilized with sanitary peak flows well below the sewer capacities, functioning well during dry weather flow conditions. Due to operational and design challenges with the LLI, the 675 mm Logan Avenue/600 mm Lake Shore Boulevard East sewer and its tributary sewers within Port Lands and Lower Don Lands surcharge under relatively moderate wet-weather events, backing up into the Study Area.

The wastewater hydraulic model was updated similarly based on the preferred road network. Future population projections were distributed across the Study Area, creating sub-catchments assigned to the network of piping aligned with the preferred road network.

Wastewater generation rates have been developed based on an infiltration/inflow allowance of 0.26L/s/ha and a non-residential flow rate of 250 L/employee/day. Originally, residential wastewater flow rates were based on 240 L/person/day, in-line with the reduced water demand realized through implementation of water conservation programs; however, at the request of the City to allow for future flexibility, the model was revised so that the contribution to the trunk system is based on wastewater flow reduction, while the network of pipes are sized for the City Design Standard for new development of 450 L/person/day. It is cautioned that the difference in design criteria for water and wastewater

systems could result in a sewer network that is oversized for flows experienced well into the life of the network. Additional monitoring and maintenance would be recommended for those areas of the network where flows do not result in sufficient velocity for self-cleaning. Peaking factors for residential flow were calculated using the Harmon Peaking factor methodology.

Evaluation

A quantitative and qualitative assessment of each of the viable alternatives was undertaken against relevant evaluation criteria and measures from the complete evaluation criteria to assess the ability/benefit of each to meet Project Objectives, City Design Standards and other regulatory requirements. **Table 8-12** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

TABLE 8-12 SUMMARY OF EVALUATION OF WASTEWATER SUPPLY ALTERNATIVES

OBJECTIVES AND CRITERIA		1 - Do Nothing and Reduce Waste Water Flows.	2 - Reduce Waste Water Flows & Enlarge/Extend Collection - Convey flow via Carlaw Avenue inter-connecting sewer.	3 - Reduce Waste Water Flows, Enlarge/ Extend Collection and Provide Decentralized Treatment South of Ship Channel
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🔴	🟢	🟢
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	⚫	🟢	🟢
	Existing/planned neighbourhoods.	🔴	🟢	🟢
	Existing businesses and industry and opportunities for new businesses and industry.	🔴	🟢	🟢
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	⚫	🟢	🟡
	Redundancy in the network.	⚫	🟢	🟡
	Existing physical barriers.	🟡	🟡	🟢
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	NA	NA	NA
LEVERAGE ASSETS	Cultural heritage resources.	🟢	🟢	🟢
	Archaeological resources and traditional uses of Aboriginal people.	🟢	🟢	🟢
	Existing/planned parks and open spaces.	🟡	🟢	🟢
	Compatibility with the natural environment.	🟢	🟡	🟡
	Visual connections.	NA	NA	NA
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	⚫	🟢	🟢
	Cycling routes.	NA	NA	NA
	Place-making opportunities.	NA	NA	NA
	Health and safety.	🔴	🟢	🟡
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	⚫	🟡	🟢
	Transit accommodation.	🔴	🟢	🟢
	Flood risk potential.	🟢	🟢	🟢
	Noise and air quality.	🟢	🟢	🟢
	Resiliency and climate change.	🟡	🟡	🟡
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/TRCA objectives/frameworks.	🔴	🟢	🟢
	Consistency with approved area Environmental Assessments.	🔴	🟢	🟢
	Engineering feasibility and construction cost.	🔴	🟡	🟡
	Existing municipal infrastructure and utilities.	🟢	🟢	🟢
	Property acquisition costs.	🟢	🟡	🟡
	Maintenance and operations.	🟢	🟢	🔴
	OVERALL PERFORMANCE	🔴	🟢	🟡

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

Commentary on Alternative Solutions

The evaluation identified that **Alternative 1-Do Nothing & Reduce Waste Water Flows** does not provide a complete solution to the Study Area as it does not extend servicing into the area south of the Ship Channel and a continued connection of the Port Lands to the LLI will constrain the nature of the development to prevent flooding during surcharge conditions.

Alternative 2-Reduce Waste Water Flows & Enlarge/Extend Collection and **Alternative 3-Reduce Waste Water Flows & Enlarge/Extend Collection and Provide Decentralized Treatment** are both formed on the basis of enlarging/extending the collection system which will support redevelopment of the Study Area and redirect flow from the Port Lands to the Carlaw Avenue inter-connecting sewer which will remove the risk of flooding and remove constraints on development. The revised sewer network includes a new Commissioners Street sewer installed at the elevation required to support gravity conveyance of flows from the adjacent Lower Don Lands.

The location of a decentralized component south of the Ship Channel would result in a significant increase in capital and operating costs due to the emerging nature of this technology. Regulatory requirements would result in the City owning and operating the facility. This additional cost could not be justified with more than sufficient capacity available at the immediately adjacent ABTP. It is further noted that regulatory and technical challenges related to disposal of the treated effluent and plant biosolids would likely result in additional infrastructure to convey these components to the treatment plant which would further negate many of the benefits that decentralized treatment can provide in other less-urbanized areas.

Alternative 2-Reduce Waste Water Flows & Enlarge/Extend Collection is therefore the Preferred Solution as it makes effective use of available capacity in existing infrastructure and provides the necessary servicing to meet the growth needs of the Study Area.

8.2.2.4 PREFERRED SOLUTION

In summary, **Alternative 2-Reduce Waste Water Flows & Enlarge/Extend Collection** is the Preferred Solution because it provides full municipal servicing to the entire Study Area in a cost-effective means that takes advantage of available capacity of major infrastructure in direct proximity to the Study Area. It allows for the prevention of potential flooding and supports the implementation of the recommended gravity connection of adjacent Lower Don Lands. This solution can proceed directly to design implementation in a straight-forward manner following City standards, without requiring more detailed discussions with regulatory and operating authorities on individual design components and operating model. In addition, the alternative is the Preferred Solution because it:

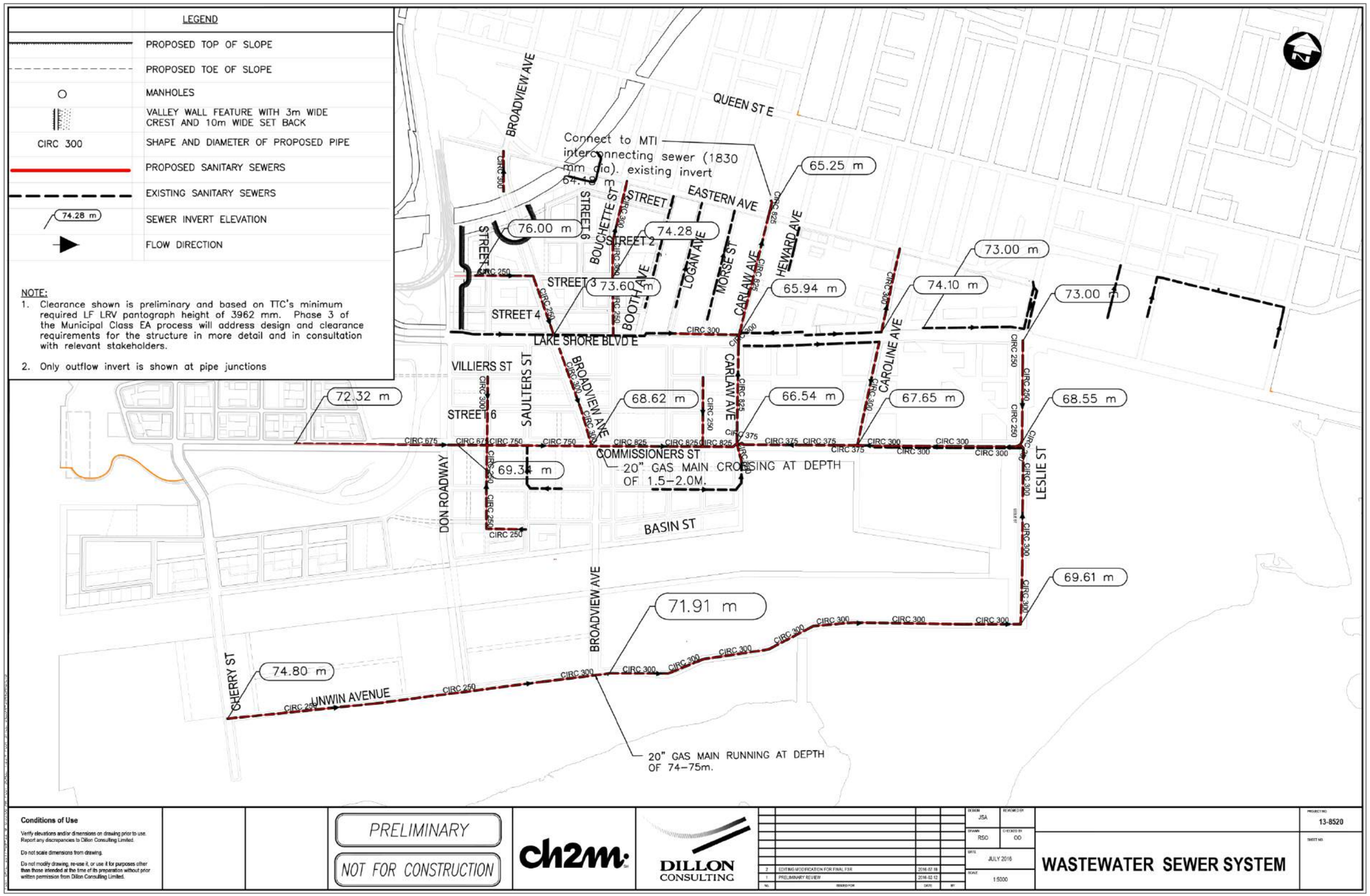
- prevents potential flooding and supports redevelopment of the Unilever Precinct;
- provides full municipal servicing to users south of Ship Channel that are currently on holding/septic tanks;
- the South of Eastern area from Leslie Street in the east to west of Logan Street continue to discharge to the LLI as the difference in topography allows for continued connection to the LLI without the surcharge issues currently experienced south of Lake Shore Boulevard East;

- redevelopment of Unilever Precinct in the northwest corner of the Study Area, south of Eastern Avenue is supported by a network with four main components, aligned with the proposed site grading and proposed road network;
- implementation of a decentralized facility would also require compliance with a complex and undefined regulatory approvals process; and,
- connection of the Port Lands area to Carlaw Interconnecting Sewer removes potential of flooding.

The Preferred Solution includes new and upsized sewers as shown in **Figure 8-45** to serve the employment/population estimates and realign the network to new roads. Smaller diameter pipes and branches of the existing network are reused, where feasible. Major features of the network include the following:

- new 675/825 mm diameter sewer along Commissioners Street and Carlaw Avenue to support disconnection of the Port Lands from the LLI at Leslie Street and Logan Street and re-directing flows by gravity to Carlaw Interconnecting Sewer connection at Eastern Avenue;
- new 300 mm diameter sewer on Leslie Street from Lakeshore Blvd, flowing south to Commissioners Street and north from the 250/300 mm diameter Unwin Street sewer, providing servicing to previously un-serviced area south of the Ship Channel. Note that servicing the relatively flat topography of the Study Area while tying into fixed connection points for the Lower Don Lands and the Carlaw Interconnecting Sewer connection result in significantly deep sewer connections. The sewer at Leslie Street and Unwin Street is at 7.5 m depth to support gravity flow from the western extremity. Service connections directly to the sewer at this depth are not feasible and during detailed design, when the nature of future development is known, connections can be provided to the sanitary manholes, as per City design criteria;
- the South of Eastern area from Leslie Street in the east to west of Logan continue to discharge to the LLI as the difference in topography allows for continued connection to the LLI without the surcharge issues currently experienced south of Lake Shore Boulevard East;
- redevelopment of Unilever Precinct in the north-west corner of the Study Area, south of Eastern Avenue is supported by a network with four main components, aligned with the proposed site grading and proposed street network:
    - north west corner bounded by CNR will connect at Broadview/Eastern to the LLI;
    - south west corner will connect south to existing Lakeshore sanitary sewers for conveyance to Carlaw MTI connection. The Lake Shore Sewer west of Broadview Avenue extension has been retained for flexibility; however, may not be necessary depending on final development decisions;
    - center and north areas will drain north via new connection into LLI; and,
    - areas in the east of the site will connect to the existing Booth Avenue sewer.

FIGURE 8-45 PREFERRED ALTERNATIVE SOLUTION – WASTEWATER



8.2.3 Stormwater Alternatives

A comprehensive stormwater assessment was completed to identify gaps and inadequacies in the existing system and enable these issues to be addressed as part of the proposed stormwater management solution. It was determined that existing stormwater management measures within the Study Area are insufficient to meet the needs of the future development. Existing stormwater issues identified include:

- *Aging and limited stormwater infrastructure in the areas north of the Ship Channel:* The existing storm sewer networks lack the capacity to convey and manage additional stormwater flows from the projected future development. Existing infrastructure is typically comprised of localized sewer networks that outlet to the Ship Channel or Turning Basin and were designed to service individual developments.
- *Stormwater runoff draining overland south of the Ship Channel:* Due to the lack of stormwater infrastructure, particularly storm sewers, in the area stormwater runoff typically drains overland to the Ship Channel resulting in ponding/ localized flooding of low-lying areas during heavy rainfall.
- *Lack of water quality treatment for stormwater runoff in the Study Area*: Stormwater runoff generally discharges directly into the Ship Channel and Lake Ontario without treatment resulting in untreated or contaminated runoff discharging into the Lake and impacting the water quality.

In addition to the issues highlighted above, there is limited stormwater infrastructure in place to meet regulatory requirements for water quality, water quantity and water balance. The regulatory requirements and criteria are intended to reduce the impacts of urban development on stormwater runoff, such as the increased volume and peak flows, and degraded water quality. Municipal and provincial stormwater management guidelines were reviewed to determine the governing stormwater criteria including the City's Wet Weather Flow Management Guidelines (WWFMG), the MOECC Stormwater Planning and Design Manual (MOECC SWMPD) and the TRCA Stormwater Management Criteria. The City's WWFMG criteria were selected as the governing criteria as they are the most specific and are described below:

- **Water quantity:** The allowable release rate to the municipal storm sewer system from the site should not exceed the peak runoff rate from the 2-year pre-development storm at a maximum runoff coefficient of 0.5. The major drainage system must be designed to accommodate and/or convey runoff from the major storm flow (i.e. storms greater than the 2-year event and up to the 100-year event), without causing flooding damage to adjacent properties. The depth and spread of overland flow to be accommodated within the major system are limited based on road classification (including local roads, collector and industrial roads, and arterial roads)
- **Water quality:** The long term removal of 80 percent of total suspended solids (TSS) on an annual basis is required for proposed water quality systems. TSS removal can be achieved through a "treatment train" approach which could include source or lot-level controls, conveyance controls and end-of-pipe controls. This requirement does not apply to existing development

where the built form will remain unchanged. Another method of water quality treatment is disinfection which is discussed further in **Section 8.2.4.**

- **Water balance:** The minimum on-site retention requirement is for all runoff from the 5 mm design rainfall event to be retained through infiltration, evapotranspiration and/or rainwater re-use. In order to be conservative in the analysis and provide flexibility in the system, 5 mm on-site retention was utilized. It is an objective of this TSMP EA to provide greater on-site retention requirements to achieve a progressive stormwater management system that can better respond to a changing climate. The City's Toronto Green Standard establishes a 10 mm on-site retention requirement in its Tier II standards. It is anticipated that City and/or MOECC will be advancing more stringent requirements for on-site retention in the coming years.

Further details on the governing stormwater management criteria can be found in the Stormwater Management FSR (**Appendix F**).

8.2.3.1 RATIONALE

The assessment aimed to identify an Alternative Solution that would meet regulatory requirements, but also provide an opportunity to integrate stormwater into the public realm where it would allow for public education, the aesthetic enhancement of public spaces and potential natural environment benefits. The Alternative was also required to provide safe and reliable management of stormwater for future conditions and maximize the use of existing infrastructure, where feasible, without significant impact on City operation and maintenance.

Alternatives were developed and evaluated for stormwater management and stormwater disinfection to determine which would best fulfill the criteria.

8.2.3.2 STORMWATER MANAGEMENT ALTERNATIVE SOLUTIONS

The following alternatives were identified in accordance with the requirements of the Class EA process and other regulatory requirements. The alternatives include:

- Alternative 1: Do Nothing
- Alternative 2: Conventional Stormwater Management
- Alternative 3: "Water as a Resource"

Alternative 1-Do Nothing: This alternative maintains the existing infrastructure and practices for the future development scenarios. Redevelopment would occur under this alternative and based on the preferred street network. The grading changes associated within DMNP EA would be implemented, but little to no other grading changes in the Study Area would occur. The alternative does not propose expansions or upgrades to the existing SWM infrastructure within the street right-of-ways, nor does it introduce new infrastructure in areas currently lacking service. Each property owner would continue to be responsible for ensuring that the City's WWFMG criteria for new development or redevelopment properties are met. Aside from water quality treatment mandated in the WWFMG for development, no other treatment would be implemented with this alternative.

Alternative 2-Conventional Stormwater Management: This alternative considers the use of standard stormwater methods to meet the City's WWFMG criteria and would include the use of a treatment train approach to meet water quantity, quality and water balance criteria. These standard methods include:

- Lot-level measures such as underground storage tanks/cisterns, oil-grit separators (OGS) and rooftop storage/green roofs;
- Conveyance measures such as storm sewers for minor system flow and surface re-grading for overland flow; and,
- End-of-Pipe measures such as end-of-pipe OGSs, and stormwater management ponds, as appropriate.

The flow direction of the major drainage system would be based on grading of proposed streets and may include some minor grading modifications to existing streets. The proposed grading will aim to maintain existing overland drainage patterns to the extent possible and convey overland flows by the appropriate drainage routes to discharge to the Turning Basin north of the Ship Channel and through the proposed Don Greenway south of the Ship Channel. Minor system flows would be managed by storm sewers and lot level controls as described above. Runoff from redevelopment properties will be restricted and discharged to the storm sewers at the 2-year pre-development peak flow rate based on a pre-development land use coverage of 43 percent impervious surface (which corresponds to the runoff coefficient of 0.5 specified in the City's WWFMG). On-site storage would be required in order to ensure the peak flow rate meets the required allowable release rate.

Water quality treatment to achieve the long-term 80 percent TSS removal rate would be achieved on an individual lot basis for properties to redevelop as per the WWFMP criteria. An end-of pipe treatment system would be introduced for the entire Study Area to further achieve the TSS removal requirement, especially for the areas that are to remain under existing conditions and currently do not have any treatment. Water balance criteria would also be addressed on an individual lot basis for properties to redevelop. Each redevelopment property would be responsible for retaining and re-using the runoff from the minimum 5 mm event with techniques such as grey-water reuse or irrigation for landscaping areas or green roofs. Higher on-site retention would be implemented as appropriate by the City.

Alternative 3-Water as a Resource: This alternative utilizes Low Impact Development (LID) approach to managing stormwater and is based on an integrated SWM approach. The concept incorporates key ideas from the City's WWFMG, in addition to the TRCA and Credit Valley Conservation LID Manual, the TRCA SWM Manual and the MOECC Stormwater Management Planning and Design Manual. In this concept, stormwater runoff is managed with a combination of open channels (e.g., bioswales) and/or a storm sewer system.

The distinguishing feature of this alternative is the integration of LID features into the local landscape of all major streets and on some local streets. Hybrid channels consisting of at-grade open channels and sub-surface perforated pipes to be connected to the storm sewers in the rights-of-way are located on major and minor streets within the study area including Broadview Avenue, Carlaw Avenue, the Caroline extension, Leslie Street and Unwin Avenue. Runoff for the minor system in other areas will continue to be conveyed by an existing or proposed storm sewer network depending on whether the area or site is

to redevelop or remain as existing Major system flows will be managed by a combination of roadway and open channels/bioswales and will discharge to the Turning Basin and Ship Channel.

Another feature of this alternative is the introduction of a "pilot area" to showcase naturalized stormwater management systems, highlight stormwater runoff as a valuable resource, and further integrate SWM measures into the local landscape. The pilot area (e.g., the Commissioner's Street pilot area) relies entirely on open channels, bioswales or hard channels for stormwater conveyance instead of a storm sewer system. Runoff from at-grade impervious surfaces from development sites north and south of Commissioners Street are being directed to open channels which differs from City's traditional application of WWFMG. The planted open channel along Commissioners Street within the pilot area will be designed as the main stormwater feature in the area. It will be a wide, planted feature that will be a key aspect of the public realm.

The TSS removal requirement is expected to be achieved through a treatment train approach involving lot-level measures for properties being redeveloped, the proposed open channel features within the rights-of-way, as well as an end-of pipe treatment system which would be introduced for the entire Study Area, including the areas that are to remain under existing conditions and currently do not have any treatment. There is also the potential for a small-scale passive end-of-pipe treatment system at the Turning Basin and Don Greenway south of the Ship Channel to demonstrate alternative methods of water quality treatment. Each redevelopment property would be responsible for retaining and re-using the runoff from the minimum 5 mm event with techniques such as grey-water reuse or irrigation for landscaping areas or green roofs. Higher on-site retention would be implemented as appropriate by the City.

8.2.3.3 ASSESSMENT AND EVALUATION OF ALTERNATIVE STORMWATER MANAGEMENT SOLUTIONS

Evaluation

A qualitative assessment of each of the alternatives was undertaken to assess the ability of each to meet City design criteria and other regulatory requirements and determine the advantages and disadvantages of each alternative. **Table 8-13** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

Commentary on Alternative Solutions

Alternative 1-Do Nothing would not provide a complete solution for the Study Area. Existing stormwater management infrastructure and practices will remain unchanged and due to the proposed redevelopment in the study area, the stormwater infrastructure in this alternative would be insufficient to handle future development needs. This alternative does not provide opportunities for improvement of existing neighbourhoods, does not support biodiversity objectives, may have potentially significant impacts on cultural heritage resources and does not meet minimum design standards and criteria. Surface runoff drains directly into the Ship Channel and Lake Ontario without treatment which has the potential to create adverse effects to water quality and impact aquatic species in the area. The lack of

appropriate overland drainage routes may result in continued localized ponding in areas north and south of the Ship Channel and potentially create unsafe conditions for the public.

Alternative 2-Conventional Stormwater Management provides an acceptable solution for the Study Area that would meet regulatory requirements and support projected development and land use change. However, there are limited opportunities to demonstrate innovative and exemplary solutions that reflect the high standards for sustainability and implement low impact development measures that would contribute to the area's resiliency. The alternative provides enhanced water quality conditions, will adequately support new neighbourhoods and employment growth and will not adversely impact cultural heritage features or existing parks and open spaces. There are limited opportunities to support biodiversity objectives. The underground storm sewer network does not provide the opportunity to integrate stormwater runoff into the public realm as an amenity or urban design feature. Initial construction and commissioning costs are anticipated to be marginally higher than typical due to the need to install storm sewers at depth.

Alternative 3-Water as a Resource is the preferred alternative. The alternative meets the minimum design standards, and provides the necessary capacity for the creation of vibrant new neighborhoods and employment areas. It proposes low-impact methods for managing stormwater runoff on a system wide basis that provides the opportunity for integration of water into the public realm and supports biodiversity and sustainability objectives for the area by replicating natural hydrologic characteristics. Maintenance of the proposed open channels will be required in accordance with any practices established by the City. The system of open channels and bioswales can be designed to ensure no adverse effects to public health. Initial construction and commissioning costs are anticipated to be higher than typical due to the enhanced standards proposed for the bioswales and open channels, coupled with the need to implement hybrid systems consisting of a perforated pipe to a storm sewer.

TABLE 8-13 SUMMARY OF EVALUATION OF STORMWATER ALTERNATIVES

OBJECTIVES AND CRITERIA		1 - Do Nothing	2 - Conventional	3 - Water as a Resource
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🔴	🟡	🟢
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	⚫	🟢	🟢
	Existing/planned neighbourhoods.	🔴	🟢	🟢
	Existing businesses and industry and opportunities for new businesses and industry.	🔴	🟢	🟢
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	🔴	🟢	🟢
	Redundancy in the network.	NA	NA	NA
	Existing physical barriers.	🔴	🟡	🟡
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	⚫	🟡	🟢
LEVERAGE ASSETS	Cultural heritage resources.	⚫	🟡	🟢
	Archaeological resources and traditional uses of Aboriginal people.	🟢	🟡	🟡
	Existing/planned parks and open spaces.	🟡	🟢	🟢
	Compatibility with the natural environment.	🔴	🟢	🟢
	Visual connections.	NA	NA	NA
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	⚫	🟡	🟢
	Cycling routes.	NA	NA	NA
	Place-making opportunities.	⚫	🟡	🟢
	Health and safety.	⚫	🟢	🟢
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	⚫	🟡	🟢
	Transit accommodation.	⚫	🟢	🟢
	Flood risk potential.	⚫	🟢	🟢
	Noise and air quality.	⚫	🔴	🟢
	Resiliency and climate change.	⚫	🟡	🟢
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/ TRCA objectives/frameworks.	⚫	🟡	🟢
	Consistency with approved area Environmental Assessments.	⚫	🟡	🟡
	Engineering feasibility and construction cost.	🔴	🟢	🟡
	Existing municipal infrastructure and utilities.	🟢	🟡	🟡
	Property acquisition costs.	🟢	🟡	🟡
	Maintenance and operations.	⚫	🟢	🟡
	OVERALL PERFORMANCE	⚫	🟡	🟢

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

8.2.3.4 PREFERRED STORMWATER MANAGEMENT SOLUTION

Alternative 3-Water as a Resource was selected as the Preferred Solution due to its ability to meet the City guidelines and incorporate a forward-thinking stormwater management approach. The alternative provides multiple benefits including:

- The opportunity to link natural habitat and open spaces to support biodiversity in the Study Area through proposed open channels along some roadways while incorporating water into the public realm.
- The opportunity to highlight existing cultural and natural resources in the Study Area through means of LIDs (vegetated open channels in pilot areas) along roadways, and an emphasis on a sustainable approach to water quality treatment. These "green" features would be compatible with proposed parks (existing and planned) and open spaces and allow for better cohesion with the natural environment. The proposed open channels would be vegetated and as a result, there would be direct enhancement of the natural environment (**Figure 8-46**).
- The opportunity to highlight water as a feature and encourage daily interaction with it through the use of aesthetically pleasing open channels and other sustainable LID measures in the Study Area. LIDs integrated within street right-of-ways would contribute to maintaining the Complete Street character and the pilot area has the potential to utilize alternative water quality treatment methods for disinfection of stormwater runoff.
- The opportunity for reduced greenhouse gas emissions with the use of appropriately selected LIDs such as the proposed plantings that would be located along the banks of the proposed open channels.
- The opportunity to integrate innovative solutions, in accordance with the Central Waterfront Secondary Plan, with the system-wide integration of green infrastructure and the proposed pilot area.

The ability of the alternative to support projected development and meet current provincial and municipal planning policy and minimum design standards are also key reasons for this alternative being preferred. It should be noted that the most updated guidelines and policy documents at the time of implementation should be applied in the design of the stormwater management measures. The alternative meets current standards through the use of the infrastructure described below:

- Outside of the pilot areas, stormwater runoff will be managed based on whether the areas are to be serviced by existing infrastructure or be serviced by new proposed infrastructure. The South of Eastern area is expected to remain as existing and will be serviced by existing infrastructure. Consequently, any existing water quantity, quality and water balance measures are assumed to remain in place. Major system flows are expected to be managed in existing roadways. Properties to redevelop in this area are expected to meet the City's WWFMG as and when they redevelop and will still connect into the existing sewer network. In the long-term, these properties will be provided with appropriate treatment through the Don River and Central Waterfront project.

- In the East Port Area, it is proposed to introduce a new local storm sewer system which was designed to serve both the existing properties to remain undeveloped, as well as the properties that will be redeveloped. In addition, the proposed open channels will supplement the new storm sewer system by capturing the runoff from the roadway and the overland flow component from the properties to remain as existing.
- Within the pilot area, minor system runoff will be conveyed by planted and paved open channels and directed towards the main planted open channel on Commissioners Street. Major system runoff will be conveyed by proposed roadways and open channels and will be discharged at the Turning Basin and Ship Channel, for areas north and south of the Ship Channel respectively. The minimum 5mm of rainfall will be required to be retained on site for properties to be redeveloped (and is reflected in the modelling exercise) and the 80 percent TSS removal will be required to be achieved on lot level using an OGS or similar measure. Higher on-site retention rates will be implemented as and when it is deemed appropriate by the City.
- Areas to be serviced by new/proposed infrastructure are generally expected to redevelop and meet the City's WWFMG criteria for stormwater management (e.g., runoff from storms to the 100-year event to be controlled to 2-year peak flow rate based on runoff coefficient of 0.5 for water quantity, 80 percent TSS removal for water quality and 5 mm rainfall retention for water balance). This includes the Unilever Precinct, the Film Studio District and the south of Ship Channel area. Major system flows in these areas will be managed by a combination of the roadways and hybrid channels within the road right-of-way. The existing storm sewer for the Pinewood Studio buildings (within the Film District) is to be replaced with new upgraded storm sewer system to account for additional flows from adjacent properties to redevelop. The expectation would be for the City to reconnect existing services (including Pinewood Studios) to the new storm sewer in the course of replacement.

Figure 8-47 shows the proposed stormwater management infrastructure and channel system for preferred alternative in the Study Area.

InfoWorks Hydraulic Model

As part of the stormwater management assessment completed for the TSMP EA, a hydrologic and hydraulic model was developed to assess the feasibility of preferred alternative and to fully assess the changes in land use and increases in impervious surfaces. The hydrodynamic model *Infoworks CS* was used for the modelling exercise. The objective of the model was to validate the effectiveness of the concept for various design storm events.

Properties to redevelop and properties to remain as existing are differentiated in the model to ensure that the redevelopment properties meet the WWFMG criteria. Some of the criteria used to develop the model were:

- Minor system to be sized to accommodate the 2-year storm;
- Major system flows to be conveyed overland within the road ROW and hybrid channels, where applicable;

- Maximum overland flow depth within roadway for the 100-year event to be based on road classification (local, collector/industrial, or arterial); and,
- 1-year storm flow to be diverted from minor system for water quality treatment.

The following conclusions and limitations were drawn from the modeling:

Minor System

The hydraulic grade line (HGL) for the 100-year storm event within the storm sewers in the area north of the Ship Channel meets the City's 1.80 m of freeboard requirement with no minor flows overspilling to the Ship Channel. However, for the area south of the Ship Channel, the storm sewer system would be surcharged during the 100-year event due to lake level conditions, resulting in an overspill of excess minor system flows to the Ship Channel.

Model results show that several sections of the system inside the existing South of Eastern area do not provide the required level of service during the 100-year storm event. The problems in this area include surcharged sewers and surface water ponding. It is recommended that solutions for this area should be investigated and coordinated with concurrent projects in the area

Major System

Model validation using the 100-year event shows that the overland system is able to convey all overland flows, without exceeding the maximum depth of ponding within the proposed roadways.

At some locations in Broadview Avenue and Commissioners Street, the proposed overland channels are overtopped, but the maximum water depths in the streets still meet the maximum allowable road ponding depth, demonstrating that the dual drainage system takes advantage of all the components of the drainage system during extreme event conditions.

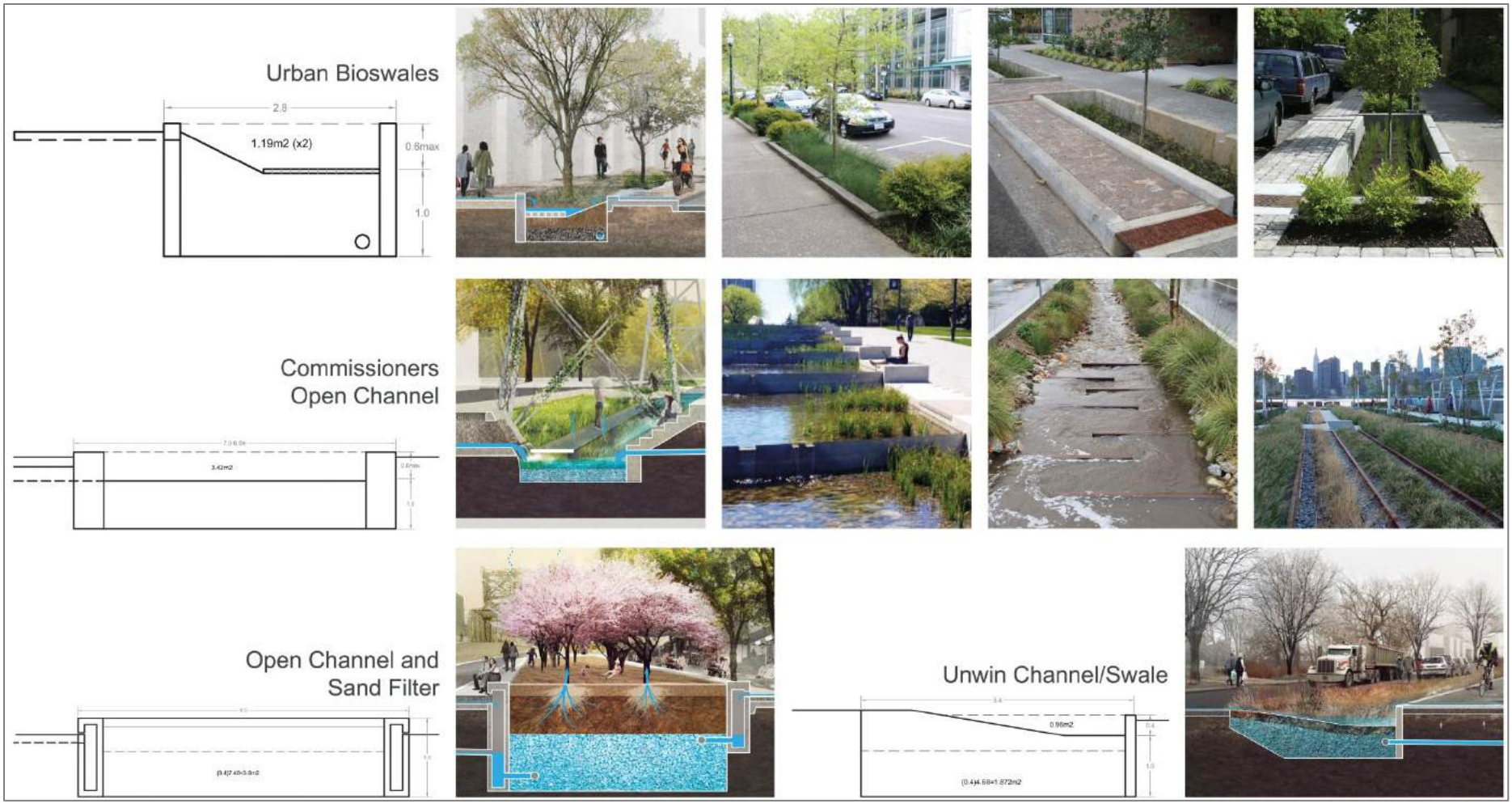
Limitations

There is a potential conflict with the crossing of the planted open channel on Commissioners over the 20" gas main crossing Commissioners at a depth of 1.5m to 2m. There is a similar condition on Unwin Avenue, where the proposed channel crosses a gas main at an elevation between 74 m and 75 m. A potential channel break may be required, including a siphon to interconnect the channels. It is recommended that the need for channel breaks or siphons be considered during future studies.

Flow controls used in the model like the orifice plates and interconnection weirs meet the requirements for the conceptual design. During future stages of project implementation, such controls will need to be refined according to the final engineering designs.

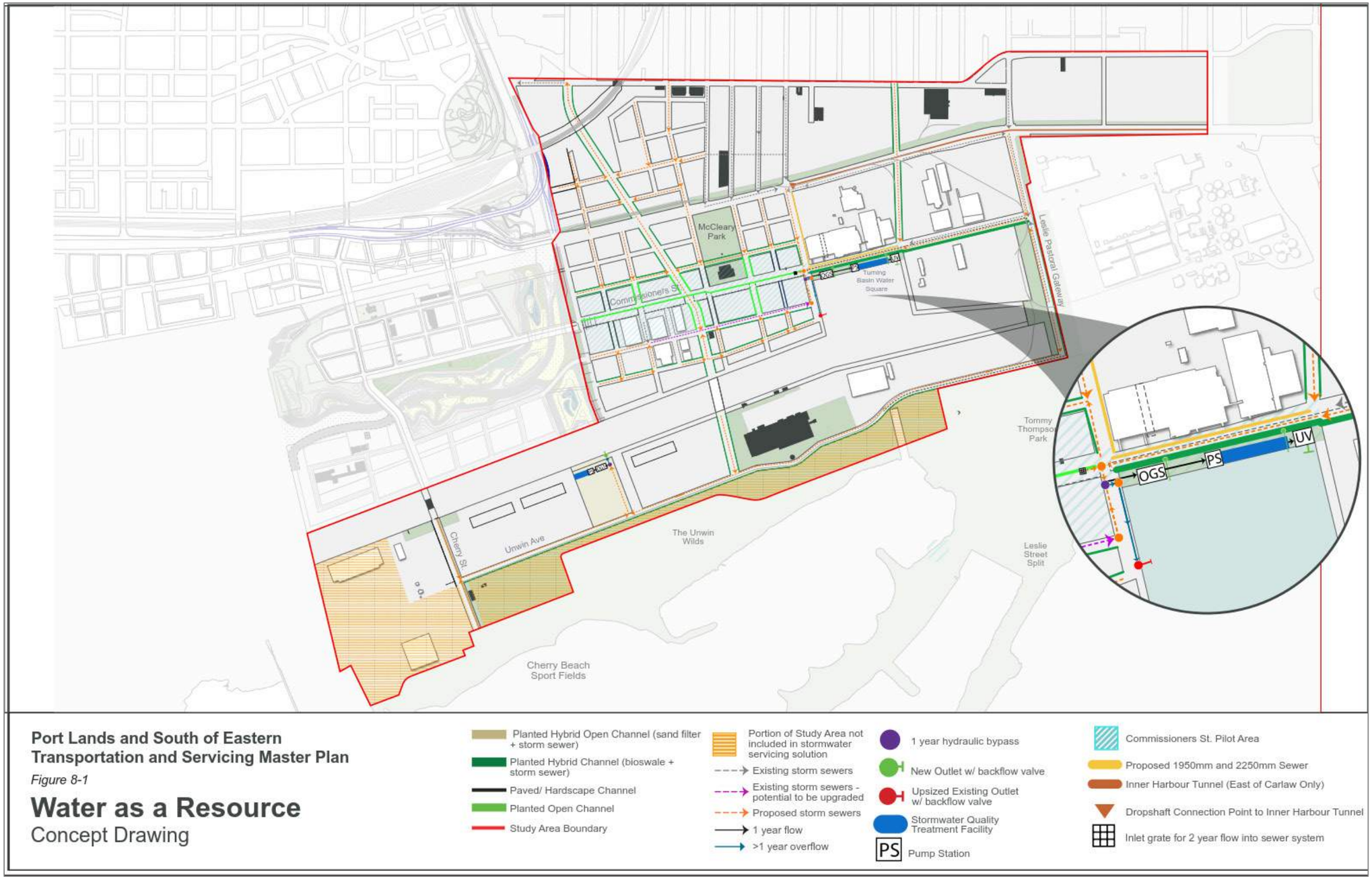
The impact of the paved channels in the pilot area was considered minimal and therefore these channels were not specifically modeled. Meeting the City's 1.8 m freeboard criteria was considered highly desirable however due to high lake level conditions that was not possible in the entirety of the study area. Areas where this criteria is not met were highlighted.

FIGURE 8-46 STORMWATER MANAGEMENT EXAMPLES



Source: City of Toronto, 2016

FIGURE 8-47 PREFERRED ALTERNATIVE SOLUTION – STORMWATER



Preliminary Grading Plan

A preliminary grading plan was developed for the Study Area to support the Preferred Alternative. The existing topography, location of the DMNP EA valley wall features, and fixed roadway elevations were all incorporated into the development of the grading plan. A preliminary grading plan is included in **Appendix J** and more detail is provided in **Section 9.**

Taking into consideration the extremely flat nature of the Port Lands and the relatively high lake levels, the grading plan aimed to maintain existing drainage patterns to the extent possible yet to design overland flow routes that reduce or eliminate localized ponding and enable positive (gravity-based) drainage towards the major system drainage outlets, provide a flood mitigation solution at the CN rail embankment, and accommodate a new bridge connection across the Ship Channel.

A comprehensive grading solution was also specifically completed for the Unilever Precinct due to need to mitigate flood risk associated with the Broadview extension. This grading plan has been integrated into the preliminary grading plan for the entire Study Area and reflects the minimum grades required for flood protection and mitigation purposes. A flood protection solution north of the rail embankment would result in changes to the grading south of the rail embankment in the Unilever Precinct, including the potential to eliminate regrading on the east side of the Eastern Avenue underpass. These changes are anticipated to have positive effects in the area.

The preliminary grading plan is based on the proposed street network, and was used as a basis to determine the open channel inverts, in coordination with the modelling results. Taking into consideration the extremely flat nature of the Port Lands and the relatively high lake levels, the preliminary grading plan aimed to maintain existing drainage patterns to the extent possible, and to design overland flow routes that reduce or eliminate localized ponding and enable positive (gravity-based) drainage towards the major system drainage outlets.

Key considerations in the development of the grading plan were existing buildings to remain, ensuring regrading in the vicinity of heritage buildings/ structures would be minimized or would avoid impacting these resources and avoiding impacts to ESAs, Additionally, the grading plan addresses the grades required to support the new lift-bridge across the Ship Channel that enables a continuous water's edge promenade from the Don Roadway to the Turning Basin. The grading plan does not specifically address soils remediation, nor does it address the needs for underground infrastructure or plantings in green spaces. Additional fill may be required to address these aspects, which would be determined and established in more detailed design. Highlights and considerations of the preliminary grading plan are provided below:

North of the Ship Channel

Regrading in the area north of the Ship Channel directs overland flow to the Turning Basin and Ship Channel. Overland flow north of Ship Channel will be predominantly within the road right-of-way and public spaces. Properties to be redeveloped will control major system flows in accordance with the WWFMG criteria.

Existing Low Points

There are two existing low points on Booth Avenue and Logan Street in the South of Eastern area that experience overland ponding depths in excess of the City requirement for maximum depth of ponding. Potential methods to alleviate the depth of overland flooding include increasing inlet capacity into the storm sewer and/or upsizing the storm sewer.

Flood Protection Landforms

A VWF immediately east of the Don Roadway south of Lake Shore Boulevard East, coupled with a FPL or VWF north of Lake Shore Boulevard East adjacent to the Don Roadway are key flood protection measures for the Study Area. The location and elevations of these features were taken from the DMNP EA. The final location and grading for the new east-west street in the Unilever Precinct will be determined in Phases 3 and 4 of the Class EA process for this street and through the review of development applications.

South of the Ship Channel

Grading in the South of Ship Channel area directs overland flows to two outlets: the Ship Channel via the Don Greenway Park and the PEC circulation channel. Major system flows will be from ROW only since properties to redevelop will be controlling flows as per the City's water quantity criteria for discharge to municipal sewers.

8.2.4 Stormwater Disinfection Alternatives

8.2.4.1 RATIONALE

Based on the Provincial Water Quality Objectives (PWQO) for recreational water quality (for swimming and bathing at beaches) as well as the WWFMG, it has been identified that the bacteria count at the beaches must be at a level that is safe for swimming and bathing. According to the PWQO, *E. coli* (Escherichia Coli) is considered the most suitable and specific indicator of fecal contamination and it can, therefore, be used as an indicator of the amount of bacteria within water. The treatment method for E. coli is disinfection, which is to be provided for runoff from sites which discharge directly to the lake or waterfront areas, due to the potential use for swimming and bathing in these areas. Based on this requirement, stormwater runoff entering Lake Ontario, including the Ship Channel, will require disinfection. Disinfection is required only for the "first flush" of runoff because it typically contains the most sediment and contaminated material and tends to have the highest fecal coliform count. The "first flush" has been defined as the runoff from a 1-year storm event for this study.

The typical treatment method for disinfection is a UV treatment facility where UV light is directed into water to eliminate waterborne bacteria. UV treatment requires that the turbidity of the water be low enough to allow UV light to penetrate the water. As noted in the LDLMP EA, the City is planning to use a Ballasted Flocculation Facility (BFF) which will provide additional cleansing of runoff prior to UV treatment. A BFF is also proposed at 480 Lake Shore Boulevard East to treat runoff from the West Don Lands, East Bayfront and Keating Channel Precinct. These facilities are needed in the Central Waterfront particularly because of the poor water quality in the area, sediment issues in the Inner Harbour and the

loss of fish habitat and contamination. Further reasons for the need for these facilities are highlighted in the Don River and Central Waterfront EA.

Based on the above, a number of options were evaluated to determine the most suitable location for Stormwater Quality Treatment Facilities (SWQTF). SWQTFs would be sized to accommodate a 1-year storm flow; flows in excess of the 1-year storm flow would bypass the proposed SWQTF and discharge to the lake without treatment.

8.2.4.2 STORMWATER DISINFECTION ALTERNATIVE SOLUTIONS

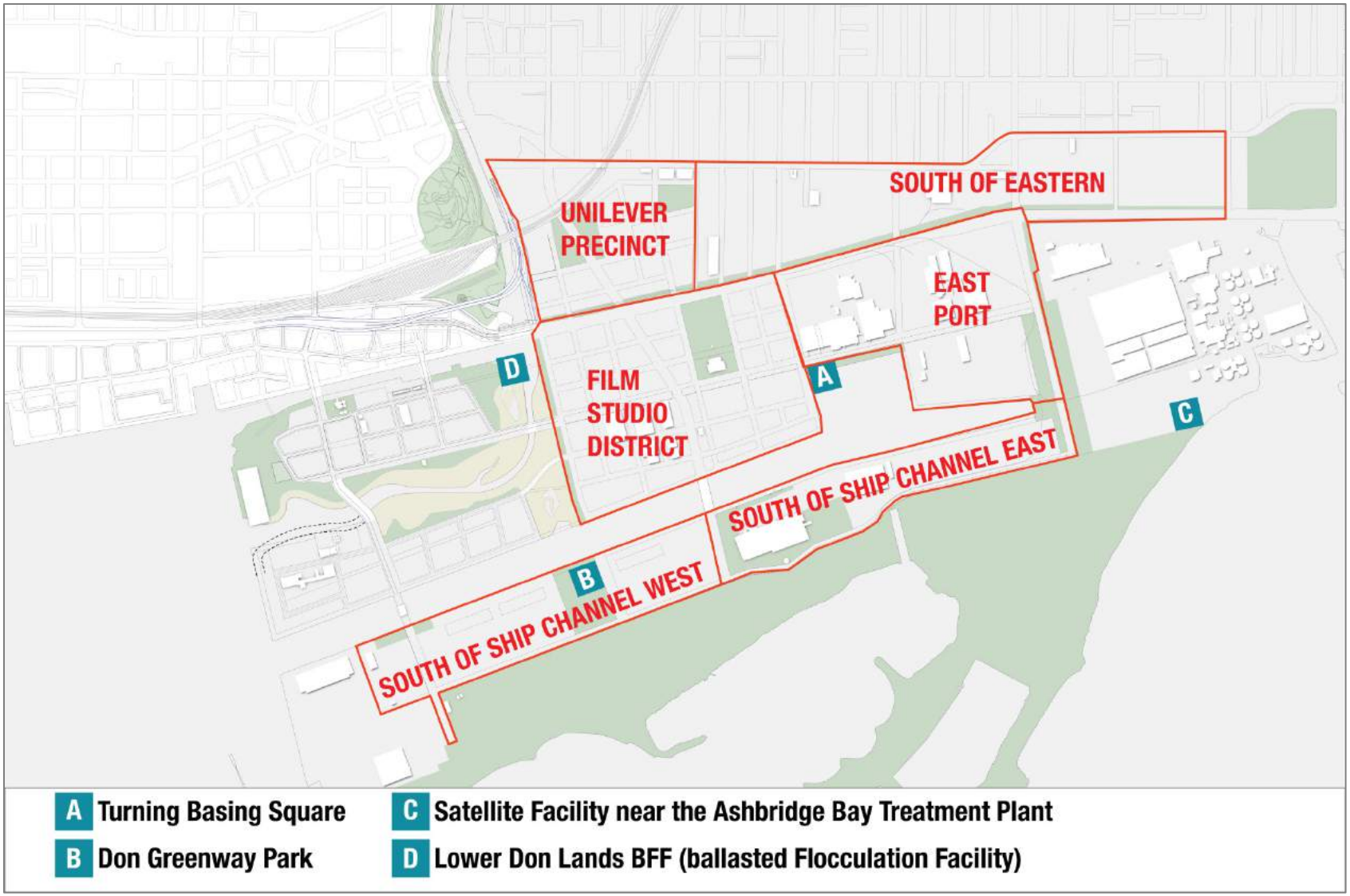
Figure 8-48 identifies four potential disinfection locations which include the Turning Basin Square (identified as A), Don Greenway Park (identified as B), satellite facility near the ABTP (identified as C), and the Lower Don Lands BFF (identified as D).

The location of the Turning Basin SWQTF (identified as A) was considered for its proximity and potential ability to service the area north of the Ship Channel, including the Unilever Precinct. The location of the Don Greenway Park SWQTF (identified as B) was considered for its proximity to and ability to service the areas south of the Ship Channel. The satellite facility near ABTP (identified as C) was considered as a potential option because it has already been identified by the City for disinfection for other areas outside the Study Area in the Don River and Central Waterfront Environmental Assessment. The Lower Don Lands BFF (identified as D) was considered as an option because it was already identified in the LDLMP EA.

Based on the above potential disinfection locations, various options were identified and organized into north and south of the Ship Channel within the Study Area. The options include the following:

- **Option 2A - South of Ship Channel** - All 1-Year Flows to SWQTF at Don Greenway Park.
- **Option 2B - South of Ship Channel** - All 1-Year flows to Lower Don Lands BFF.
- **Option 2C - South of Ship Channel** – All 1-Year Flow to a satellite wet weather flow treatment facility near the ABTP.
- **Option 2D - South of Ship Channel** – 1-Year Flow Split Between a satellite wet weather flow treatment facility near the ABTP and BFF/UV at Don Greenway Park.
- **Option 2E - North of Ship Channel** - All 1-Year flow to a satellite wet weather flow treatment facility near the ABTP.
- **Option 2F - North of Ship Channel** – 1-Year flow from Unilever Precinct, Film Studio District and East Port area to potential SWQTF at Turning Basin and 1-Year flow from South of Eastern area to the ABTP via Inner Harbour Tunnel.

FIGURE 8-48 DISINFECTION LOCATION OPTIONS AND CATCHMENT AREAS



8.2.4.3 ASSESSMENT AND EVALUATION OF ALTERNATIVE DISINFECTION SOLUTIONS

Evaluation

A qualitative assessment of each of the viable options was undertaken to assess the ability/benefit of each to meet City Design Standards and regulatory requirements. **Table 8-14** provides a summary of the evaluation. Additional details are provided in **Appendix I**.

Commentary on Alternative Solutions

The alternatives (options) identified locations for proposed BFF/UV facilities and the areas proposed to drain to these locations. The evaluation table provided the basis determining the preferred locations.

Option 2A - South of Ship Channel - All 1-Year Flows to BFF/UV at Don Greenway Park: This alternative creates an independent treatment system that services the area south of the Ship Channel. The facility would be sized to meet needs of development as and when properties redevelop and will include end-of-pipe sediment removal methods, in addition to UV treatment/disinfection to treat bacteria before discharge. The alternative will meet City guidelines and criteria for discharge to lake, however a downside of this alternative is the introduction of multiple facilities within the Port Lands, increasing City maintenance costs. As this facility will ultimately be treating flows from the ROW only, it may be a smaller facility that provides opportunities to explore innovative treatment options and promotes public interaction with stormwater management treatment processes.

Option 2B - South of Ship Channel - All 1-Year flows to Lower Don Lands BFF would allow for a connection to the proposed treatment facility located within the Lower Don Lands. However, it would be necessary to tunnel underneath the Ship Channel in order to convey the flows from south of the Ship Channel to the BFF/UV facility in the Lower Don Lands which would increase the overall construction cost. Due to the proposed tunneling, detailed investigations would need to be completed for existing infrastructure to minimize potential conflicts with other subsurface infrastructure. Directing flows to LDL facility will require expansion of facility to accommodate increase in flows which will affect the planned park as a potentially larger footprint or more space will be needed.

Option 2C - South of Ship Channel - All 1-Year Flow to a satellite wet weather flow treatment facility near the ABTP has similar issues as those identified for **Option 2B** (e.g., engineering feasibility, tunneling and construction cost). The option is also dependent on timing of IHT so there may potentially be delays in treatment of properties if development of south of Ship Channel area proceeds before IHT is completed and satellite facility is constructed.

TABLE 8-14 SUMMARY OF EVALUATION OF DISINFECTION LOCATION OPTIONS

OBJECTIVES AND CRITERIA		South of the Ship Channel				North of the Ship Channel	
		2A	2B	2C	2D	2E	2F
CREATING AN INTERESTING + DYNAMIC URBAN MIX	Creation of new, vibrant mixed use communities and employment areas.	🟢	🟢	⚫	⚫	⚫	🟢
	Necessary capacity to support the anticipated mix of uses while minimizing rights-of-way widths.	🟢	🔴	🟢	🟢	🟢	🟢
	Existing/planned neighbourhoods.	🟢	🟢	🔴	🔴	🔴	🟢
	Existing businesses and industry and opportunities for new businesses and industry.	🟢	🟢	🟢	🟢	🟢	🟢
CONNECT THE PORT LANDS TO THE CITY	Better connect the Port Lands with the South of Eastern area and the rest of the city.	🟢	🔴	🔴	⚫	🔴	🟢
	Redundancy in the network.	NA	NA	NA	NA	NA	NA
	Existing physical barriers.	NA	NA	NA	NA	NA	NA
	Opportunities for linking natural habitat and open spaces and improving biodiversity.	🟡	⚫	🔴	⚫	🟢	🟢
LEVERAGE ASSETS	Cultural heritage resources.	🟢	🟢	🟢	🟢	🟢	🟢
	Archaeological resources and traditional uses of Aboriginal people.	🟢	🟢	🟢	🟢	🟢	🟢
	Existing/planned parks and open spaces.	🟢	🔴	🟢	🔴	🟢	🟡
	Compatibility with the natural environment.	🟡	🟢	🟡	🟡	🟡	🟡
	Visual connections.	NA	NA	NA	NA	NA	NA
DEVELOP A HIGH QUALITY PUBLIC REALM	Complete street principles and street character.	NA	NA	NA	NA	NA	NA
	Cycling routes.	NA	NA	NA	NA	NA	NA
	Place-making opportunities.	🟢	🔴	⚫	🟢	⚫	🟢
	Health and safety.	🟢	🟢	🔴	🔴	🔴	🟢
CONTRIBUTE TO THE SUSTAINABLE FUTURE OF THE CITY	Opportunities for innovation.	NA	NA	NA	NA	NA	NA
	Transit accommodation.	NA	NA	NA	NA	NA	NA
	Flood risk potential.	NA	NA	NA	NA	NA	NA
	Noise and air quality.	🟢	🟢	🟢	🟢	🟢	🟢
	Resiliency and climate change.	🟡	🟡	🟢	🟡	🟢	🟡
IMPLEMENTATION	Compatibility with City, provincial planning policies and Waterfront Toronto/ TRCA objectives/frameworks.	NA	NA	NA	NA	NA	NA
	Consistency with approved area Environmental Assessments.	🟢	🔴	🟢	🟢	🟢	🟢
	Engineering feasibility and construction cost.	🟡	⚫	🔴	⚫	🟡	🟡
	Existing municipal infrastructure and utilities.	🟢	🟡	🟡	🟡	🟢	🟢
	Property acquisition costs.	🟢	🟢	🟢	🟢	🟢	🟢
	Maintenance and operations.	🔴	🟡	🟢	🔴	🟢	🔴
	OVERALL PERFORMANCE	🟢	🔴	🟡	🔴	🟡	🟢

⚫ VERY POOR 🔴 POOR 🟡 GOOD 🟢 VERY GOOD

Option 2D - South of Ship Channel – 1-Year Flow Split Between a satellite wet weather flow treatment facility near the ABTP and BFF/UV at Don Greenway Park provides similar benefits as those identified for **Option 2A**. However, with this option, an additional proposed connection would be required from south of the Ship Channel to the proposed satellite facility near the ABTP leading to a potential increase in costs associated with additional tunneling as well as potential impacts to existing municipal infrastructure and utilities. However, the advantage would be phased construction of the treatment facility based on redevelopment needs of the area (e.g., facility would not need to be constructed all at one time allowing for incremental costs). The alternative will reduce size of the facility at DGP and also reduce flows to ABTP (in comparison to Alternatives 2A and 2C). The areas draining to the DGP facility would meet treatment criteria as and when properties being directed to it are redeveloped, however areas being directed to the IHT would be dependent on construction timing of drop shafts, leaving flows from this area untreated in the interim which does not meet City guidelines

Option 2E - North of Ship Channel - All 1-Year flow to a satellite wet weather flow treatment facility near the ABTP would provide treatment for all the area north of the Ship Channel to be treated in one facility. This option has the same advantage as **Option 2D** in that this option would make use of the proposed IHT conveying the 1-year storm to the satellite facility near the ABTP. There will be no need for an additional SWQTF however this alternative is dependent on the IHT timing, which may result in flows from the area being untreated in the interim if development proceeds before construction of IHT and IHT drop shaft is complete. The satellite facility at ABTP will be expected to accommodate these flows, and its capacity will need to be confirmed by City's IHT team. Under ultimate conditions, this option will meet City criteria for disinfection and treatment.

Option 2F - North of Ship Channel – 1-Year flow split between SWQTF at Turning Basin and satellite facility near the ABTP via Inner Harbour Tunnel: This option directs treatment flows from the Unilever Precinct, Film Studio Precinct and East Port area to a SWQTF at the Turning Basin. Flows from the balance of the South of Eastern area that are expected to experience incremental development would be directed to the satellite facility at the ABTP. This alternative provides the same advantages as **Options 2D** and **2E** in that it can be constructed on an as-needed basis and/or as redevelopment warrants and can make use of the IHT. It is our understanding that a portion of existing flows from the South of Eastern area will be intercepted by the proposed 1950 and 2550 mm storm sewers on Commissioners Street and Carlaw Avenue that would discharge to the IHT and be directed for treatment at the satellite facility at the ABTP. This option will support phased development of the Study Area by providing an interim treatment option that is not dependent on IHT timelines for areas to be redeveloped and will allow the properties to redevelop to meet City requirements for treatment in the interim. It provides the opportunity to explore innovative treatment options at the Turning Basin, alongside the SWQTF, and promotes public interaction with stormwater management treatment processes.

8.2.4.4 PREFERRED DISINFECTION SOLUTION

North of the Ship Channel

For the area north of the Ship Channel, stormwater can be treated in two possible locations (A – Turning Basin Square, and C – Satellite Facility near the ABTP). **Options 2E** and **2F** performed good to very good in the evaluation. **Option 2F**, however, is dependent on implementation of the additional infrastructure (WWF, drop shaft at Carlaw Avenue and Lake Shore Boulevard East and new/upgraded sewers) which are not proposed in the interim horizon considered as part of the TSMP EA. As such, the preferred solution is **Option 2E**, but flexibility is provided to enable a decision to allow for **Option 2F** to proceed should the other necessary infrastructure be in place at the time of redevelopment, or for the City to decommission the Turning Basin SWQTF.

South of the Ship Channel

For the area south of the Ship Channel, it is preferred that future stormwater be treated at location B (B – Don Greenway Park). As such, **Option 2A** is preferred. All treatment flows south of the Ship Channel would be directed to a facility at Don Greenway Park area (B) with the potential for exploring innovative treatment methods. This creates an independent treatment system which can be integrated with the natural environment and provide opportunities for public interaction and education on stormwater treatment processes.

The locations for the preferred disinfection facilities are shown on **Figure 8-48**.

PART 4:

Recommended Master Plan

9.0 SUMMARY OF RECOMMENDED MASTER PLAN

The recommended TSMP was developed to balance the needs of the various land uses and users in the Study Area through the application of Complete Street principles developed for the Project, prioritization of transit and active transportation and provision of municipal services to support growth. Ensuring a high-quality public realm and better connecting the Port Lands to the city were key considerations in the development of the TSMP.

The recommended TSMP best meets the overall Vision and Objectives established for the Project. It also addresses the Problems/Opportunities identified in **Section 2.2** and **8.1** while providing infrastructure needs to support future growth and redevelopment in the Study Area. The TSMP balances the needs of the various uses that would be served by the infrastructure network, while taking into account urban design, active transportation and the Study Area's unique cultural heritage attributes and natural heritage. The TSMP will support the evolution of the Study Area from an infrastructure perspective over the next 30 to 50 years and has been integrated with ongoing planning studies in the area to the extent possible.

The recommended TSMP appropriately incorporates the comments received from the public and agencies during the course of the Class EA. While the TSMP addresses need and justification at a broad level, more detailed studies for some of the projects included in the TSMP will be required at a later date following the Class EA (e.g., Class EA Schedule B and C projects).

This section provides an overview of the recommended TSMP, high level potential effects to be considered in future Class EA studies, future studies that may be required, phasing/timing considerations, cost estimates, Class EA schedules for future EA work, monitoring and the process to update the TSMP by means of a detailed review, if deemed to be required in the future.

9.1 Transportation

The recommended TSMP for transportation is illustrated in **Figure 9-1** and was developed to balance the needs of the various uses that would be served by the transportation network, while recognizing urban design (e.g., Complete Streets) and pedestrian environment considerations.

The overall approach taken in the TSMP was to select a transportation network that balances efficient transit service, high-quality amenities for pedestrians and cyclists and the needs of motorists and goods movement. The approach is based on a shift towards non-auto modes of transportation. The TSMP includes extensive pedestrian, transit and cycling networks to serve the Study Area. Each of the

networks is readily accessible from the neighbourhoods and employment areas within the Study Area and transit stops will be placed at regular intervals to encourage walking. Together, the pedestrian, transit and cycling networks will provide a high level of circulation and service to accommodate a majority of the trips made in the Study Area. The following provides an overview of the key aspects of the recommended TSMP.

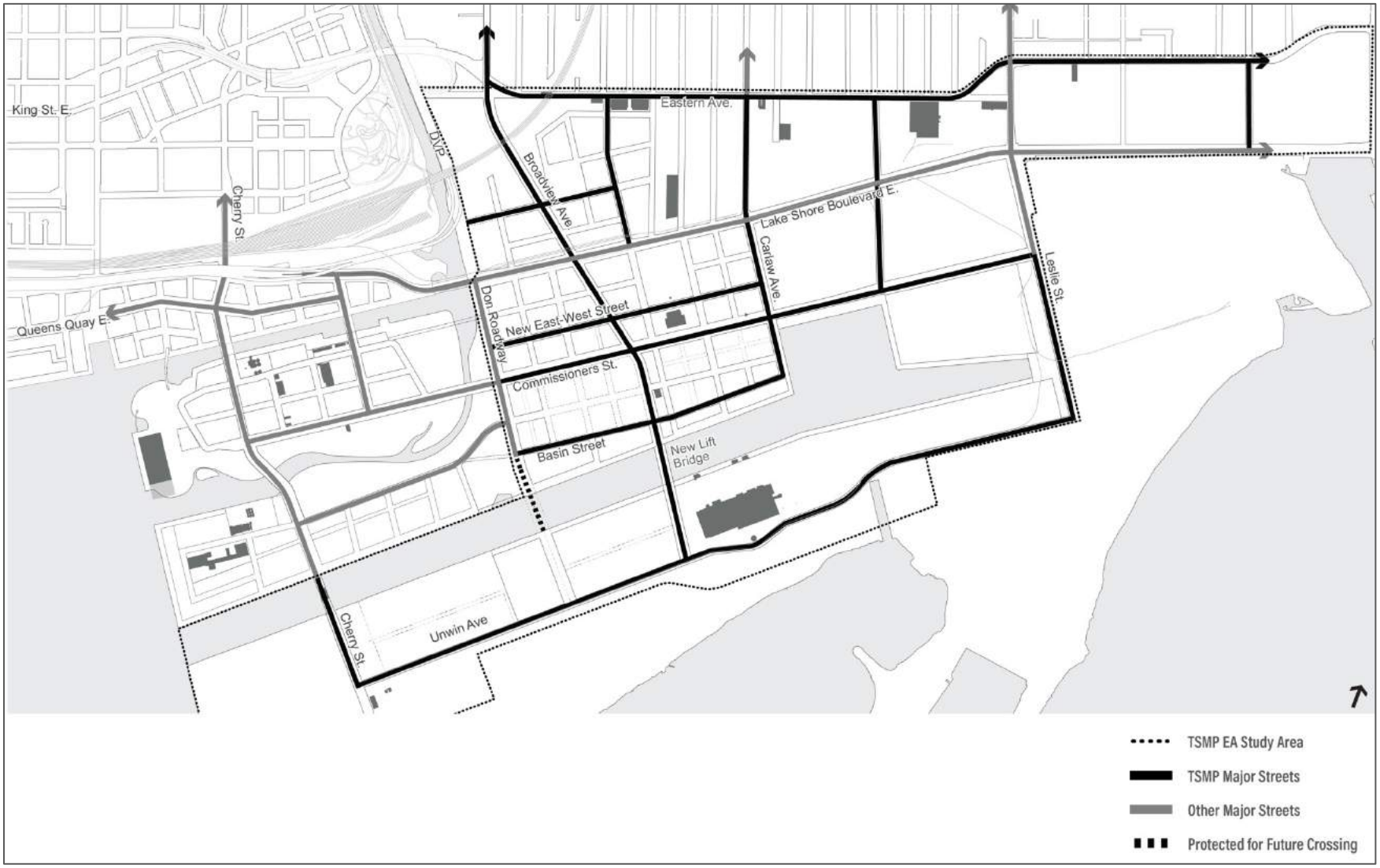
- **Support future development aspirations** – The transportation system for the TSMP has been identified through a rigorous assessment of the transportation demands generated by estimated future area development. The assessment focused on the mobility needs of all users (residential, employment, commercial, and industrial),
- **Promote a shift towards non-auto modes** – The TSMP transportation system has been designed to promote a shift towards non-auto modes, and includes extensive transit, pedestrian and cycling networks to serve the entire Study Area. Higher-order surface transit supplemented by new and expanded bus service, are foundational aspects of the TSMP to support a fundamental shift for how people will move through and in the area in the future. High-quality pedestrian and cycling facilities and amenities have also been integrated in the design of streets to make these travel modes more attractive and entice more people to travel by foot or bike.
- **Increase and improve the pedestrian network** – The TSMP places an emphasis on creating high-quality pedestrian environments. Wide, unobstructed pedestrian clearways and other pedestrian amenity can be achieved on all streets in the network to support walking. New and improved connections are created throughout, and at strategic points to connect to destinations.
- **Prioritize transit** – The TSMP transit network includes streetcar in dedicated rights-of-ways on key major streets that are connected to the broader waterfront system and existing streetcar service north of the Study Area. This system will enable a high-level of reliable service. Dedicated rights-of-way have also been optimally located to provide a high degree of access across the Study Area, create linkages to major future destinations and enable the creation of transit hubs in areas where there is a convergence of different transit lines.
- **Increase and improve the bicycle network** – The TSMP advances an extensive network of cycling facilities to make cycling an attractive and safe transportation mode. Priority raised cycle tracks and multi-use trails are identified on key streets. Raised cycle tracks can also be achieved on all other major streets. The cycling facilities link with the broader cycling network, providing opportunities for both utilitarian and recreational use.
- **Support goods movement** – The TSMP recommendations recognize the continuing role of the Port Lands as a key port and industrial area. The proposed land use and transportation network has been designed to accommodate port industrial activity and connect that activity with the greater Toronto street network and goods movement corridors.
- **Improve the public realm** – The streets identified in the TSMP will not only be people movers, but also social spaces and public destinations. Existing streets that cater primarily to vehicular traffic are rebalanced to better accommodate pedestrians, bikes and cars along with an

expanded tree canopy with understory planting to support biodiversity objectives. The area's cultural and natural heritage can be integrated in streetscape design further enhancing the character of the streets and places. Stormwater is able to be celebrated and is proposed as a central feature of many of the streets.

- **Accommodate future vehicular demand** – The transportation system for the TSMP has been designed to balance the mobility needs of all users including vehicular traffic (residential, employment, commercial, and industrial). The basic transportation capacity for both local and regional trip making have been addressed in the proposed design of the preferred street network.

The recommended transit and pedestrian/cycling networks are provided in **Sections 9.1.2** and **9.1.3**, respectively.

FIGURE 9-1 TSMP –PREFERRED STREET NETWORK



Source: City of Toronto, 2017

9.1.1 Streets

With at least 70 percent (or a minimum) of the trips being made by transit and other active transportation modes, the streets have all been designed using Complete Street principles with sidewalks, public space amenities, cycling facilities and transit optimized for each street. The balance of the trips could be vehicular in nature with the street network able to accommodate 30 percent of the trips. The street network features improve internal circulation and access in and out of the Study Area with the extension of several existing streets. Each street assessed in this TMSP will operate at Level of Service (LOS) D or better during peak periods. Many streets contain innovative stormwater management features including open channels, bioswales and open planted channels. Individual streets are described in more detail below. The street network is shown in **Figure 9-1**.

Broadview Avenue

The extension of Broadview Avenue south of Eastern Avenue across Lake Shore Boulevard East and into the Port Lands is a critical link to the Study Area. The extension will act as a primary north-south link within the central section of the Port Lands and will connect the South of Eastern area to the Port Lands. The recommended TSMP promotes the street as a mobility and visual connection to the Ship Channel and destinations south of the Channel (e.g., Hearn and recreation features) and to the city. **Figure 9-2** illustrates the concept of the future street and **Figure 9-3** is a preliminary design of the street to highlight its main features. Key features of the extension are:

- a continuous extension from Eastern Avenue to Unwin Avenue midpoint through the Unilever Precinct, Film Studio District and south of the Ship Channel, connecting to multiple destinations;
- the street is proposed as a vibrant multi-modal corridor with a 35 m right-of-way that includes streetcar in dedicated rights-of-way, generous sidewalks, raised separated cycle tracks, urban bioswales and tree planting areas and two vehicular traffic lanes;
- the new multi-modal extension starts at the terminus of the existing Broadview Avenue and moves across the Unilever Precinct and McCleary District at a 70 degree angle, providing a visual connection to the Hearn, a significant important human-made feature. While it is generally preferred that intersecting roadways cross each at 90 degrees to each other, the minimum accepted standard (Transportation Association of Canada design guideline - TAC) is 70 degree skew angle;
- the proposed alignment creates good intersection geometry at the Lake Shore Boulevard East and Commissioners Street intersection, and also on the future crossing over the Ship Channel;
- creates good spacing of intersections along Lake Shore Boulevard East;
- provides transit connections to the proposed Relief Line and SmartTrack RER stations, and Line 2 Bloor-Danforth and to Commissioners Street;

- fosters a street character that is intended to provide a high quality and safe public realm while connecting a major new office destination, new neighbourhoods, destinations in the Port Lands, important employment clusters and major recreational uses;
- access to transit will be provided at logical and convenient locations to provide adequate transit coverage, which enables transit mode split targets to be met. Transit stops can be configured to accommodate streetcars up to 60 m long in the future. Achieving transit will likely require reducing the number of rail spurs in the Keating Yard to one;
- requires a new grade-separated structure under the existing rail embankment and crossing the Keating Yard;
- the Basin Transmission Station is proposed to be relocated to accommodate the extension and other streets in the overall network. This would have the added benefit of reducing the overall footprint of the transmission station, enclosing or using attractive screening of the relocated station, creating an unencumbered water's edge promenade, removal of overhead transmission wires across the Ship Channel and potentially free up land on the south side of the Ship Channel at the Hearn for additional public open space;
- accommodates continued operational needs at Pinewood Toronto Studios, and in particular truck turning movements in and out of Studios 10, 11 and 12, but requires a widening of the existing Bouchette Street right-of-way encroaching on the Studio's site;
- accommodates the proposed building program for the Unilever Precinct as proposed by First Gulf;
- provides excellent spacing between the Don Roadway at Lake Shore Boulevard East and acceptable spacing to the new north-south street to the east;
- has limited impact to cultural heritage resources and maintains all existing heritage buildings and structures;
- creates a forecourt to the Hearn, at its front façade; and,
- provides excellent spacing between bridges across the Ship Channel and large contiguous tracks of land for continued port uses, as well as enables the potential for additional connections across the Ship Channel in the future.

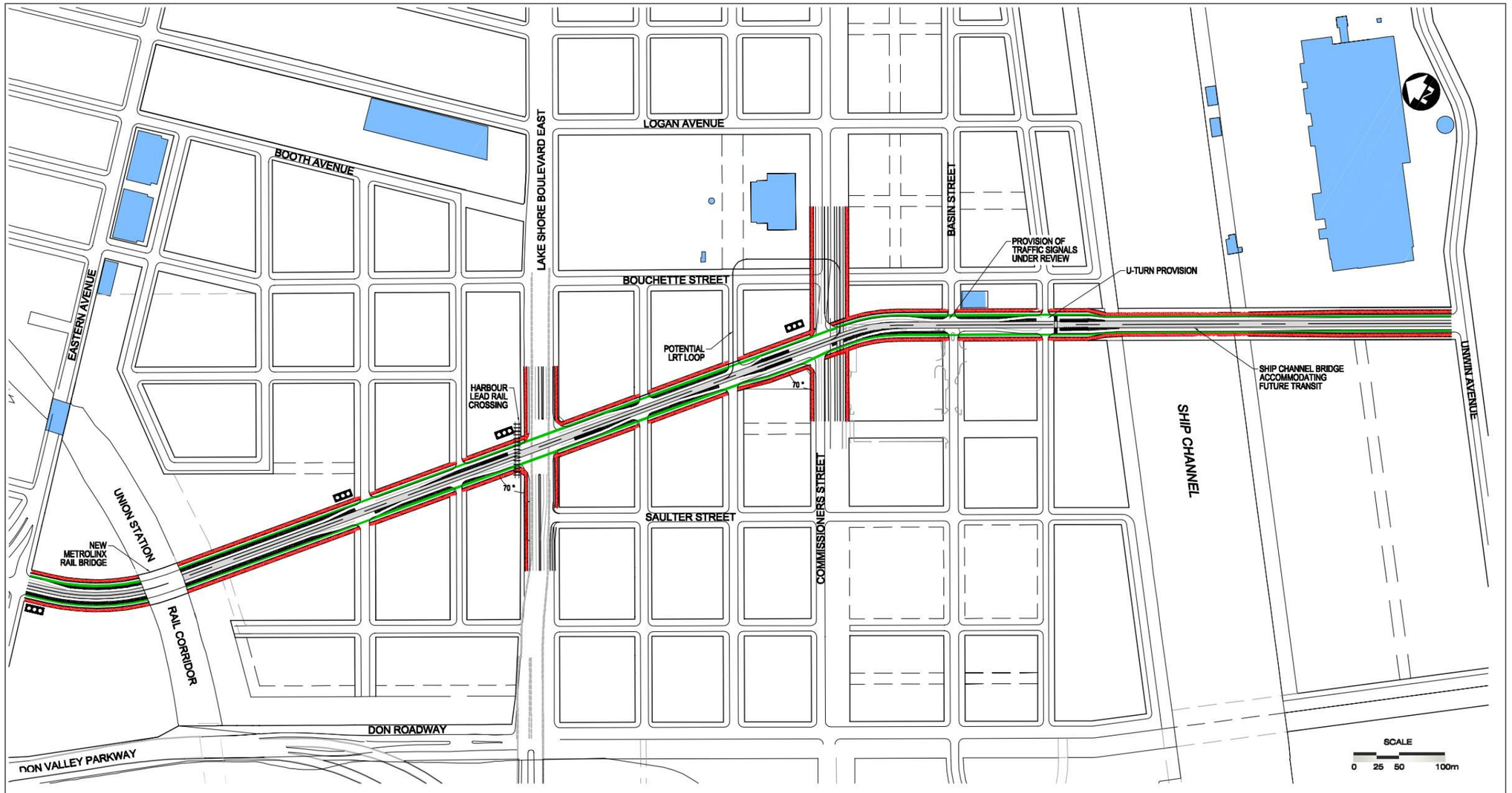
Key design issues that will be resolved during future EA work include:

- extending streetcar tracks from Queen Street to Eastern Avenue within a constrained existing right-of-way;
- the design of the underpass and profile of the street at the rail embankment. Key considerations would be the high water table, grading north and south of the rail embankment, clearance requirements and the physical design of the structure itself;

- determining whether Bouchette Street south of Lake Shore Boulevard East should be relocated and the extent of this relocation;
- the location of transit stops and signalized intersections;
- intersection configuration at Eastern Avenue, Lake Shore Boulevard East and Commissioners Street;
- property impacts associated with existing sites where redevelopment is not contemplated;
- advancement of more detailed design with Hydro One on the Basin Transmission Station re-location; and,
- the design of the new the bridge crossing at the Ship Channel.

FIGURE 9-2 CONCEPTUAL RENDERING – BROADVIEW AVENUE

FIGURE 9-3 KEY FEATURES OF THE BROADVIEW AVENUE EXTENSION



DILLON CONSULTING

LEGEND

- Signalized Intersection
- Heritage building / structure
- Sidewalk
- Bicycle lane

NOTE:

Broadview Avenue Extension Concept is preliminary only and subject to further reveiw / revision during subsequent design phases.

Revised: December 5, 2016.
13-8520

Port Lands and South of Eastern Transportation and Servicing Master Plan

PROPOSED BROADVIEW AVENUE EXTENSION
(60 km/h design speed - posted 50 km/h)

Bouchette Extension (New North-South Bouchette Street)

Bouchette Street will be extended north of Lake Shore Boulevard East with a 23 m right-of-way with the ability to connect to the existing or relocated local street in the Port Lands with the removal of the Gardiner Expressway on/off-ramps. The street will fulfill two important roles 1) provide additional connectivity and capacity for the Unilever Precinct, and 2) provide access for development. The street will be multi-modal accommodating sidewalks, tree planting, cycle tracks and two vehicular lanes. The relocation of the street south of Lake Shore Boulevard East will be addressed in future planning. Features of the street include:

- one vehicular lane in each direction, with a parking/turn lane;
- accommodation of raised separated cycle tracks;
- generous pedestrian clearways to support the type and intensity of uses proposed; and,
- space to grow great trees and other street furniture and appurtenances.

New East-West Street, Don Roadway to Booth Avenue

This new, 23 m east-west, multi-modal collector street provides an important connection mid-block in the Unilever Precinct, and helps to alleviate congestion on Eastern Avenue and Lake Shore Boulevard East with traffic destined to the Precinct. The street will support a mix of office, institutional and commercial uses, provide enhanced access and contribute to the establishment of a distributed network and hierarchy of streets in the Precinct. Features of the street include:

- one vehicular lane in each direction, with a parking/turn lane;
- accommodation of raised separated cycle tracks;
- generous pedestrian clearways to support the type and intensity of uses proposed; and,
- space to grow great trees and other street furniture and appurtenances.

The final alignment of the east-west street will be confirmed in Phase 3 of the Class EA process, and once the design of the VWF/FPL adjacent to the Don Roadway has been confirmed. Additionally, the design for the Gardiner and associated infrastructure reconfiguration needs to be further advanced and grading resolved.

Commissioners Street

Commissioners Street will be the main east-west spine of the Port Lands, serving multiple roles. It will provide vehicular and transit access to lands north and south of the street and will be linked with the broader waterfront transit system currently being advanced through the Waterfront Transit Reset process. Proposed improvements to the street and key features include:

- the right-of-way width will be up to 42 m, where possible;
- the street is planned to have:
    - a bi-directional multi-use trail integrated into a landscaped median providing an attractive route for commuter and recreational cyclists and connecting to existing trails on Cherry Street and Leslie Street;

  - wide, unobstructed pedestrian clearways that would ideally be 3 to 3.6 m and where the street is not constrained by existing development to remain;
  - generous tree planting areas, where possible;
  - two vehicular lanes and a centre turn lane;
  - a wide stormwater feature integrated into the overall public realm;
  - streetcar in dedicated right-of-way with associated infrastructure; and,
- the existing hydroelectric transmission towers are part of a cultural heritage landscape and should be retained and repurposed as public realm elements.

A conceptual rendering depicting the function and character of Commissioners Street is provided in **Figure 9-4**. Key design issues to resolve at Phase 3 of the Class EA process:

- the location of dedicated transit within the right-of-way;
- existing accesses from Commissioners Street;
- advancement of more detailed design for undergrounding the hydroelectric transmission wires; and,
- ensuring consistency and/or appropriate transitions along the length of the street and in recognition of the various constraints, such as existing buildings unable to be relocated.

Basin Street Realignment (Don Roadway to Carlaw Avenue, south of the Film Studio)

As a new two-lane collector street connecting Don Roadway to Carlaw Avenue, the street will support a mix of uses and will enhance access to the Film Studio District. Basin Street's alignment south of the existing Pinewood Toronto Studios will protect the existing secured perimeter and enable expansion. Land uses south of the street can likewise be designed to ensure secure access within development sites. The street contributes to the overall network capacity in the area and increases connectivity between the Film Studio District and the Lower Don Land Features of the street include:

- one vehicular lane in each direction (maximum 23 m right-of-way) with an additional parking/travel lane, as well as separated cycling lanes (one in each direction) and sidewalks;
- an enhanced pedestrian and cycling environment; and,
- a new two-sided street in a potential high density commercial area, offering the potential for new urban frontages to the Ship Channel.

New East-West Collector Road, between the Lakeshore Boulevard East and Commissioners Street

As a new two-lane collector street connecting Don Roadway to Bouchette Street, the street will support a mix of uses and will enhance access and permeability to, and through, the area for all modes of transportation. The new east-west collector road will provide a viable east-west corridor of access in addition to Commissioners Street. Features of the street include:

- one vehicular lane in each direction (maximum 23 m right-of-way) with an additional parking/travel lane, as well as separated cycling lanes (one in each direction) and sidewalks;

- an enhanced pedestrian and cycling environment; and,
- a new two-sided street in a potential high density residential commercial area that will offer the potential for new urban frontages to support a vibrant, urban mix.

The treatment of the street through the expanded McCleary Park will require special consideration at a precinct planning level and during future EA work. The street has been located to preserve a large contiguous park space to the north to accommodate active recreation and to generally align with Centre Street in the Villiers Island to create long views to the Inner Harbour/Promontory Park, and to the Commissioners Incinerator stack. The street, through the expanded park, will need to be designed to be integral to the park, and as a predominantly pedestrian street.

FIGURE 9-4 CONCEPTUAL RENDERING – COMMISSIONERS STREET

Eastern Avenue

Eastern Avenue will continue to serve a significant role in moving traffic across the north end of the Study Area and into and out of the city core (**Figure 9-5**). As the South of Eastern area develops, it will be important to preserve the community and commercial nature of the street while providing (and protecting) a multi-modal environment. Features of the street include:

- a multi-modal street by providing two vehicular lanes consistently through the Study Area (one lane in each direction);
- provide enhanced and consistent cycling (raised cycle track) and pedestrian (wide sidewalks with amenities) environments; and,
- cross-section to support continued employment growth in the South of Eastern area with improved amenities for area workers and businesses.

Caroline Avenue Extension

As a two-lane, multi-modal, two-way street connecting Eastern Avenue to Commissioners Street, the Caroline Avenue extension will provide an opportunity to connect the neighbourhoods north of Eastern Avenue to the Port Lands, while providing access to the network for future development south of Eastern Avenue (**Figure 9-6**). Features of the street include:

- one vehicular lane in each direction (maximum 23 m right-of-way) with a central lane to facilitate property access;
- an enhanced pedestrian and cycling environment, with separated cycling lanes (one in each direction) and sidewalks; and,
- future southerly extension has been aligned to terminate at the Turning Basin to connect the neighbourhood with the Ship Channel area (name for extension will be determined through a future process).

Unwin Avenue

Unwin Avenue enhances access for continued port and industrial usage while also accommodating safe and separated active transportation facilities (**Figure 9-7**). The street will reinforce the "wild" character of the southern edge of Unwin Avenue and will achieve the necessary lane of vehicular capacity in each direction while improving operation of the street through removal of the existing ninety degree jogs. Features of the street include:

- one-lane of traffic in each direction (two-lanes total plus one lane for parking or truck staging);
- provision of 3.5 m lanes to accommodate large vehicles (trucks);
- new alignment eliminating existing 90 degree jogs and associated impacts and constraints on operations;
- opportunities for on-street parking which could also support truck staging;
- integrating stormwater features; and,
- provision of dedicated space for pedestrian and cycling through multi-use path.

The alignment in the vicinity of the Hearn/PEC (and potential need for new crossing of the circulating channel) will be confirmed in Phase 3 of the Class EA process. A subsurface utility exploration will be required to be undertaken.

FIGURE 9-5 CONCEPTUAL RENDERING – EASTERN AVENUE

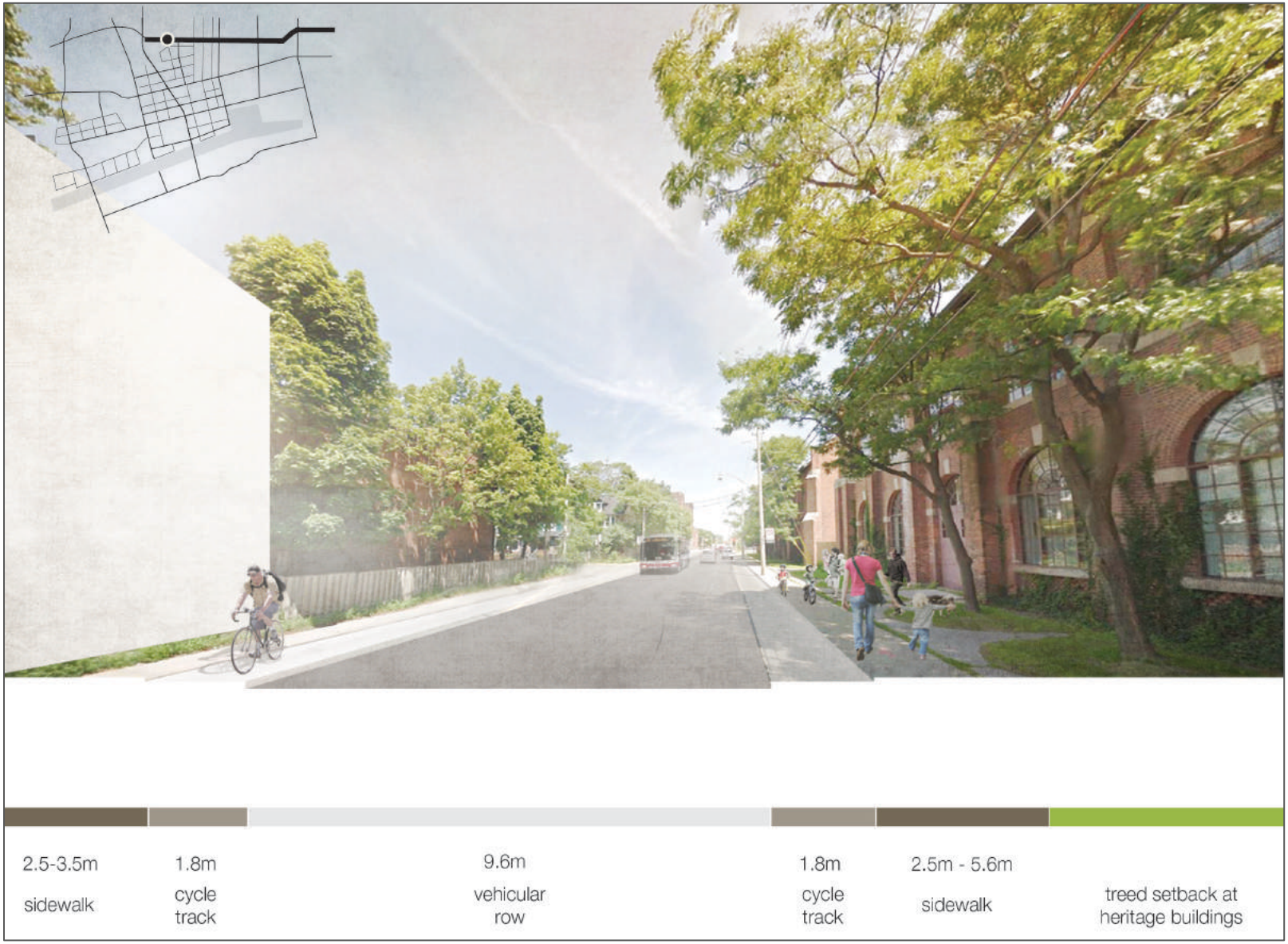


FIGURE 9-6 CONCEPTUAL RENDERING – CAROLINE AVENUE EXTENSION

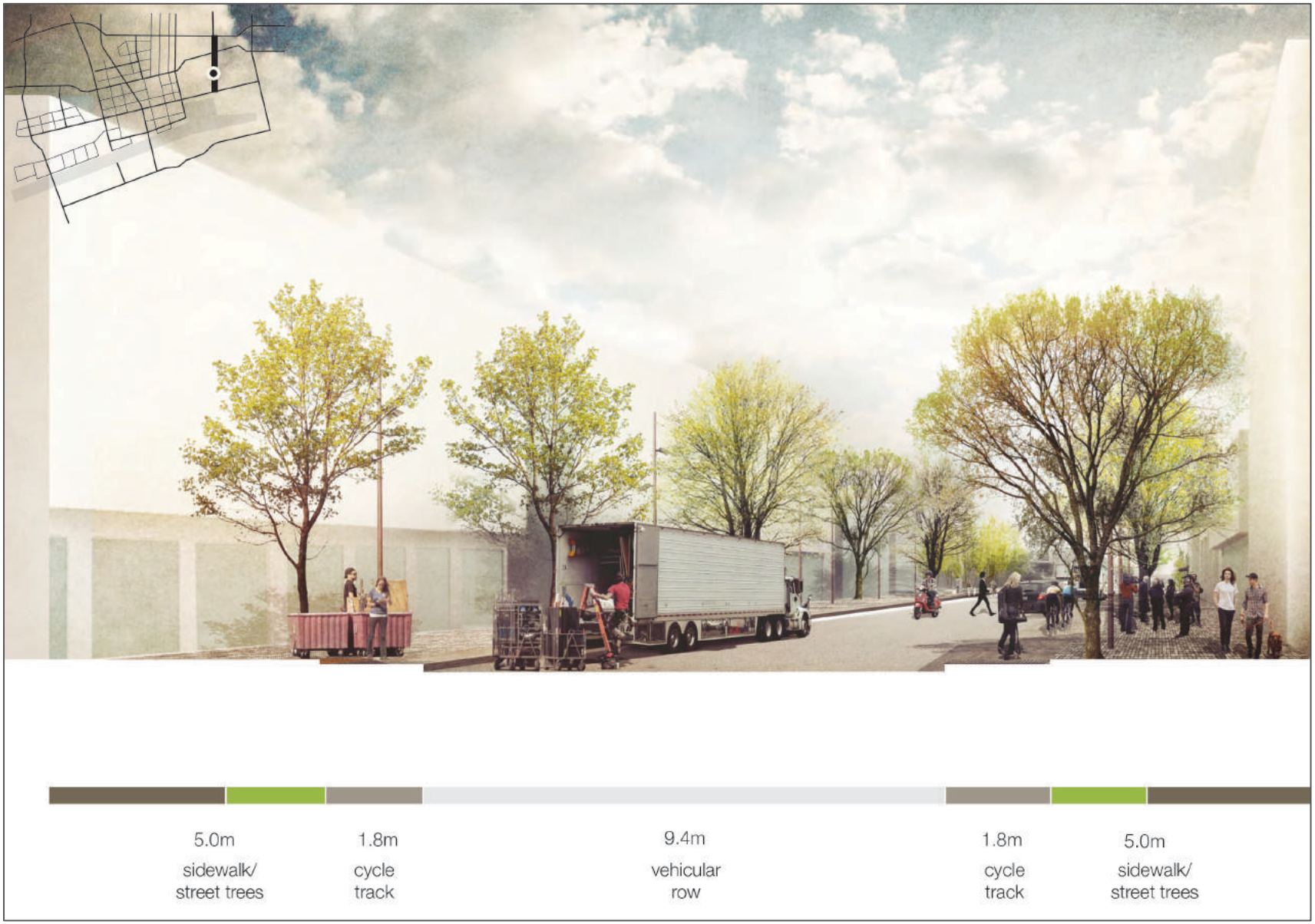


FIGURE 9-7 CONCEPTUAL RENDERING – UNWIN AVENUE

Woodfield Road

The extension of Woodfield Road to connect with Lake Shore Boulevard East was identified as part of the public consultation. Woodfield Road exists today as a local crescent providing access for light industrial activity. The road is approximately 50 m short of connecting with Lake Shore Boulevard East. In consideration of some of the north-south capacity issues north of Lake Shore Boulevard East, additional capacity east of Leslie Street would provide local operational relief to Leslie Steet and Eastern Avenue. It also provides additional redundancy in the network. Features of the street include:

- one vehicular lane in each direction (maximum 20 m right-of-way) with a central lane to facilitate property access; and,
- an enhanced pedestrian and cycling environment, with separated cycling lanes (one in each direction) and sidewalks.

Improvements to Other Streets in the Study Area

Although not specifically identified as alternatives, several streets in the Study Area are recommended to be improved to support the area as it evolves and were reviewed and assessed as part of the process. A focus of the improvements is to ensure that they are designed for all modes of travel (walking, cycling, driving, taking transit and moving goods) and recognize that different streets have different purposes, constraints and character. These streets include Cherry Street, Don Roadway, Carlaw Avenue, and Leslie Street.

Cherry Street

Cherry Street will be a gateway to the beach that will complement the proposed Maritime Hub (**Figure 9-8**). South of the Ship Channel is shown as including a wide stormwater feature. Given the character envisioned for this area, the feature has been conceptualized as a constructed linear beach that will extend Cherry Beach into the Port Lands. Stormwater collected from the street would be filtered within a sandy strip. The street will also include a wide multi-use trail and sidewalk.

Don Roadway

The future design of Don Roadway south of the Ship Channel will be an extension of the street north and will protect for future transit expansion with an interim park-like boulevard. A continuous estuary wall along the western edge of the street will be the interface with the new Greenway which will provide places to sit while taking in views over a new estuary. A focus of the street will be pedestrian and cycling activity with a treed zone and sidewalk (**Figure 9-9**). A 35 m right-of-way would be protected for south of the Ship Channel enabling the potential to include dedicated transit. Similar to north of the Ship Channel, an interim park-like boulevard would be developed as illustrated in **Figure 9-9**.

Carlaw Avenue

North of Lake Shore Boulevard East, Carlaw Avenue is a compact, 18.3 m right-of-way that accommodates existing development, stable residential and industrial uses. Reconfiguration of the existing right-of-way will enable this section of Carlaw Avenue to become a Complete Street and tie into planned improvements south of Lake Shore Boulevard East (**Figure 9-10**).

South of Lake Shore Boulevard East, the 30.5 m right-of-way is repurposed to continue to include two lanes of traffic, but a linear promenade on the east side of the street is introduced and wide sidewalks and tree planting areas are identified on the west side. The street is extended southward adjacent to the Turning Basin to the realigned Basin Street and forms part of the future water's edge promenade.

Leslie Street

Leslie Street is a multi-functional arterial street that accommodates commercial and industrial uses south of Lake Shore Boulevard East. In the future commercial activity is anticipated to increase. The existing right-of-way will be reconfigured to enable additional pedestrian and cyclist amenities while maintaining vehicular (auto and truck) capacity, residential, and industrial access and on-street parking.

Leslie Street will include a vehicular right-of-way, sidewalk, bioswale, multi-use trail and integrate with the envisioned Pastoral Gateway.

FIGURE 9-8 CONCEPTUAL RENDERING – CHERRY STREET

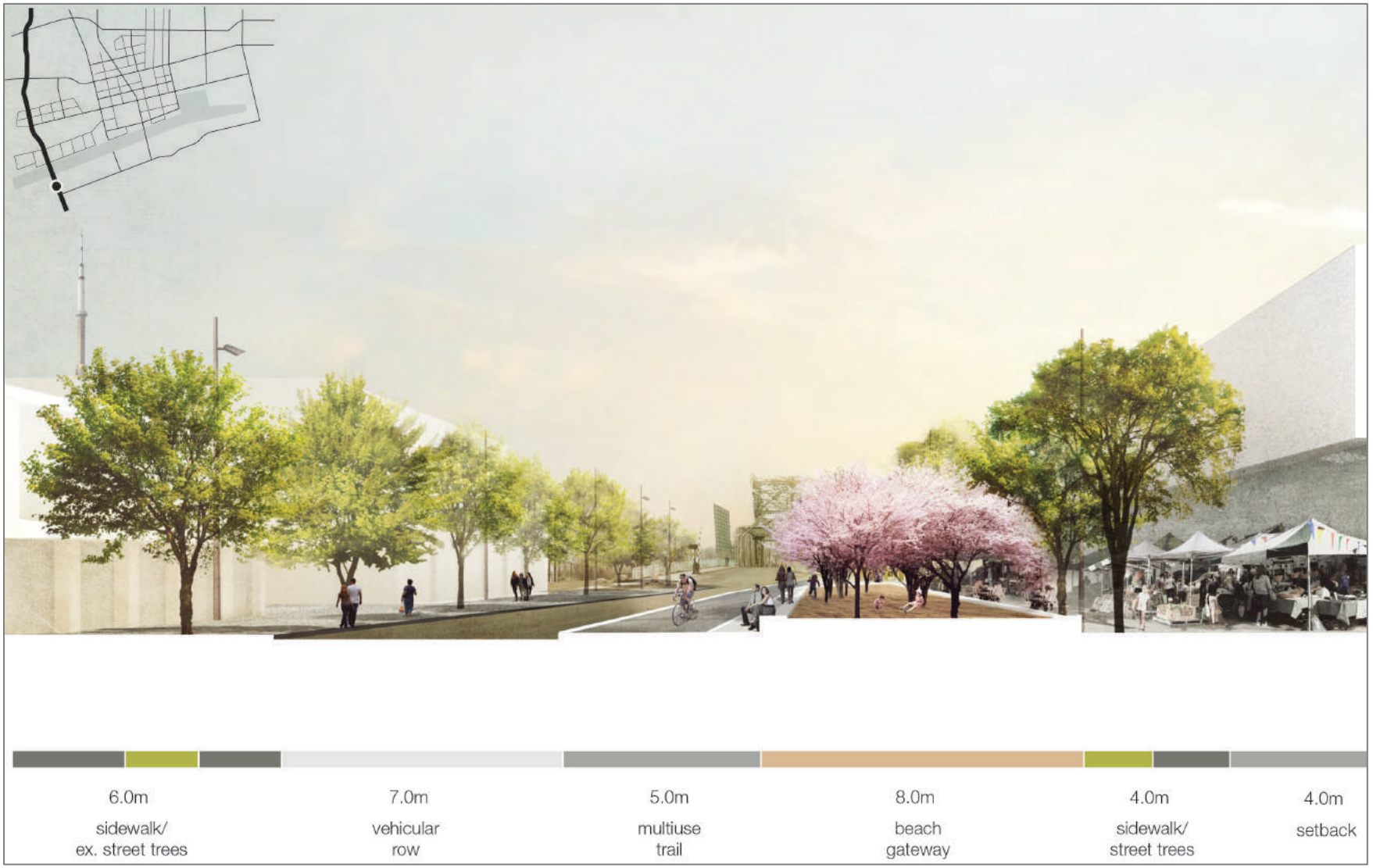


FIGURE 9-9 CONCEPTUAL RENDERING – DON ROADWAY

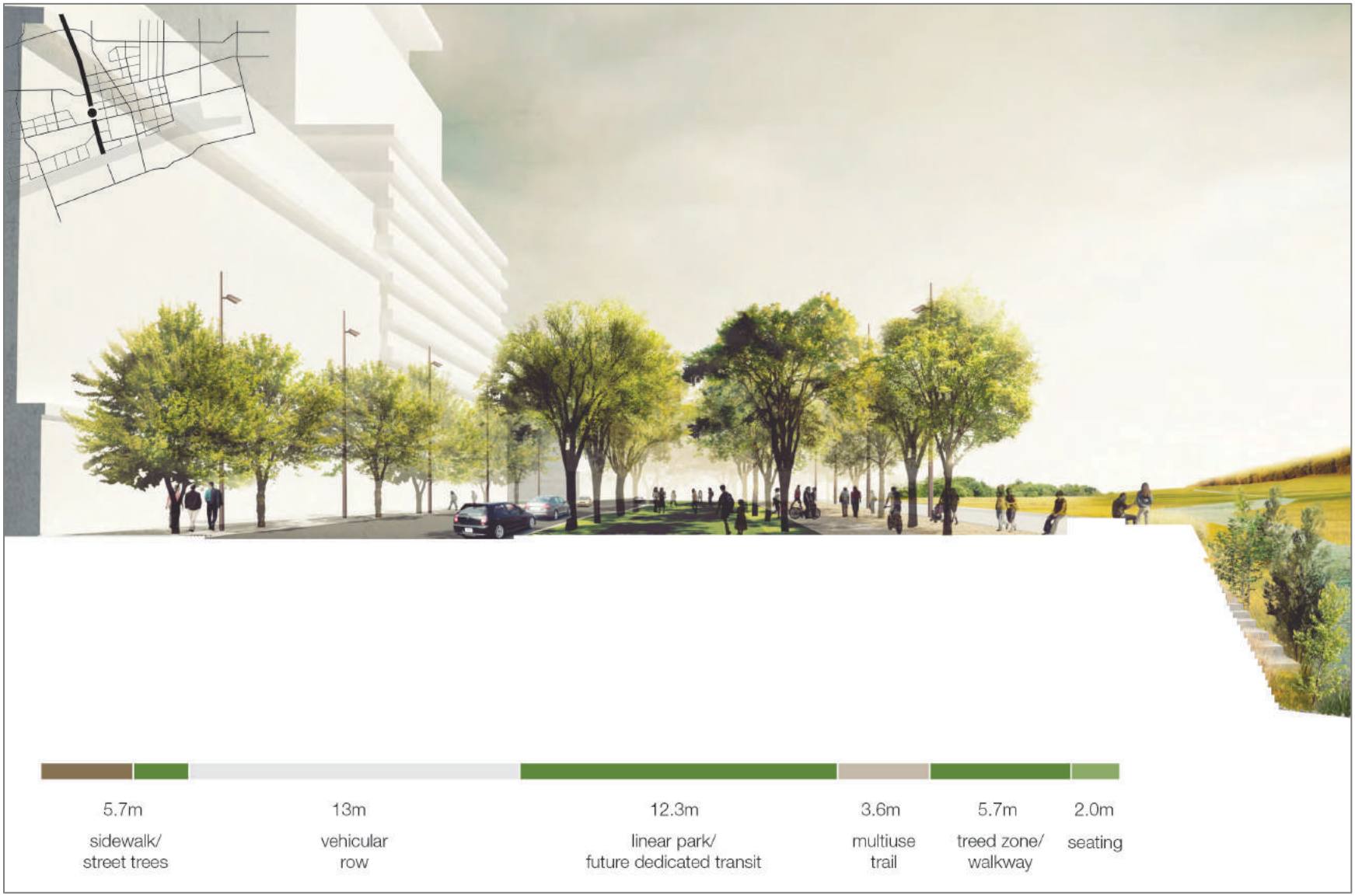


FIGURE 9-10 CONCEPTUAL RENDERING – CARLAW AVENUE

9.1.2 Transit

The preferred transit network consists of:

- streetcar in dedicated right-of-way on Commissioners Street, connecting to planned service in the Lower Don Lands to the west and to existing streetcar tracks on Leslie Street in the east;
- streetcar in dedicated right-of-way on the Broadview Avenue extension from Queen Street to Commissioners Street. Streetcar in a dedicated right-of-way has been protected for south of Commissioners Street to Unwin Avenue to support any transformation of the Hearn into a major destination; and,
- accommodating bus service in mixed traffic on Eastern Avenue, Carlaw Avenue and Unwin Avenue. Any consideration of future streetcar within dedicated rights-of-way on Carlaw Avenue or Unwin Avenue would be subject to a separate Class EA.

The preferred transit network will provide a high-level of service and access within, and to, the Study Area (**Figure 9-11**). It has been aligned to capture maximum ridership and to support growth. An aggressive, average transit mode split of 62 percent has been advanced through this TSMP EA. The mode splits developed and utilized for this TSMP EA represent a worst case scenario and maxes out available transit capacity within the surface transit assessed as part of this EA. Further assessment should be undertaken in later phases of the Class EA process or through the Transit Project Assessment Process (TPAP) to refine and further assess available capacity, including opportunities to capture a greater number of trips through active transportation and as planning is further advanced on higher order transit lines and stations in the area.

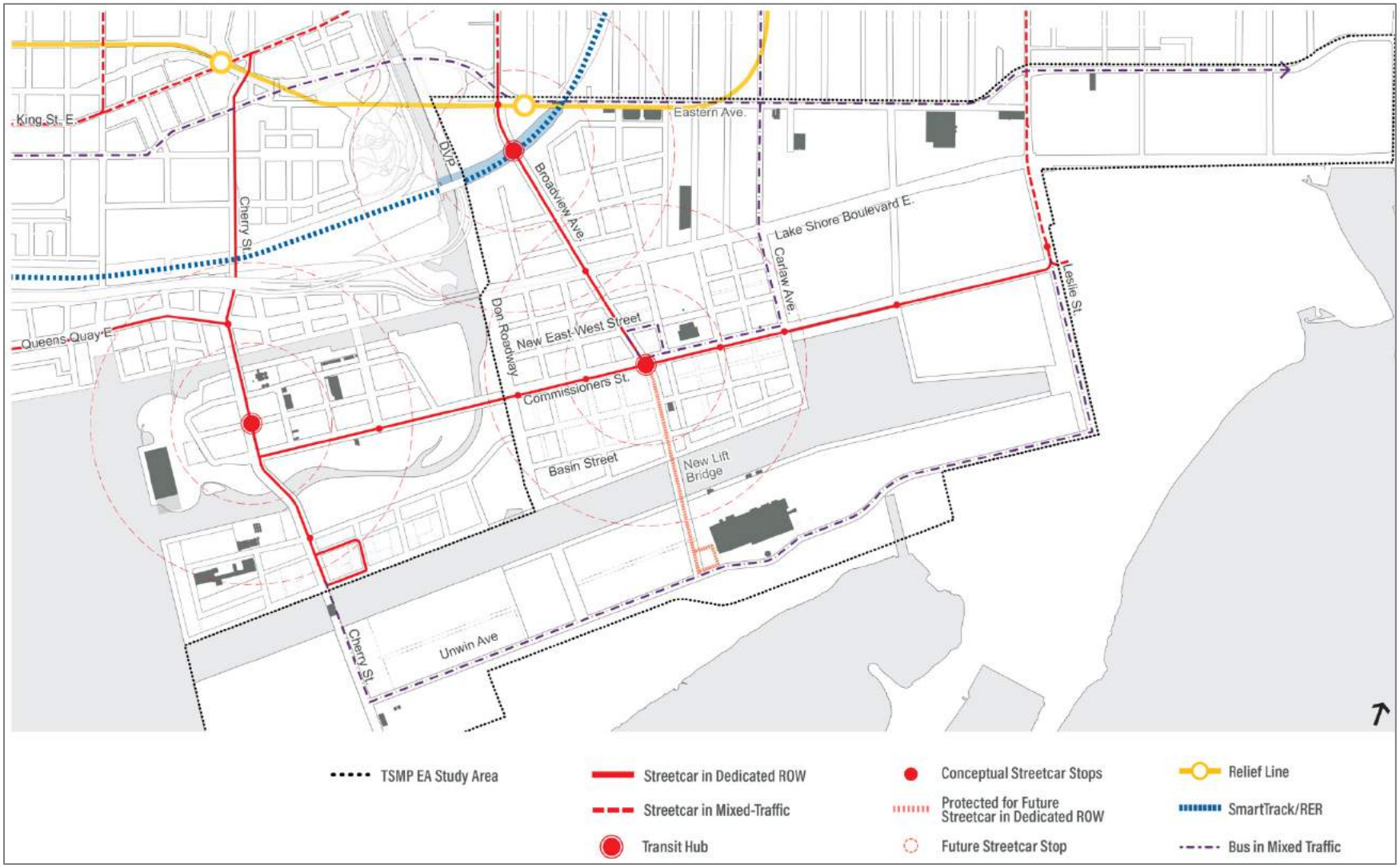
Service has been located within future rights-of-ways to minimize impacts. Lane widths to accommodate the TTCs preferred lane widths (3.3 m) for bus service can be provided for on key streets to both accommodate bus service, but also routine maintenance of streetcar lines or disruptions in service. The lane widths have been accommodated in the conceptual cross-sections for the Broadview Avenue extension, Commissioners Street, Eastern Avenue, Cherry Street, Carlaw Avenue, Leslie Street and Unwin Avenue.

Transit hubs are identified where multiple lines or transit service will converge. A transit hub is identified at the Broadview Avenue extension and the rail embankment where future higher order transit lines – SmartTrack/RER and Relief Line - and stops are proposed. A second transit hub is identified midpoint in the Film Studio District at the Broadview Avenue extension and Commissioners Street where two streetcar lines and a bus route converge. These transit hubs will enable effective and seamless transfers between different transit service and routes.

Alternative designs for the streetcar in dedicated rights-of-way will need to be undertaken as part of Phase 3 of Class EA process or through a TPAP. As part of this TSMP, the dedicated streetcar service on Commissioners Street was shown as a continuation of the planned location in the Lower Don Lands. Streetcar service on the Broadview extension was assumed within the centre of the extension. Key considerations as the design progresses for streetcar routes include:

- existing constraints and driveway accesses for development anticipated to remain, particularly along Commissioners Street;
- major stormwater infrastructure serving external areas;
- intersection design;
- the location of transit stops and signalized intersections that are transit-supportive, but also conducive to active transportation objectives. The conceptual block structure advances transit-supportive development blocks, but also enables minimal interruptions to dedicated service on Commissioners Street with proposed collector streets north and south of Commissioners Street that will provide the primary access for development;
- accommodating overhead systems, which should be suspended by side poles;
- level (flat) track for curves;
- accommodating space for on-street streetcar and bus loops. Where off-street loops are considered, these should be integrated with future development or make use of existing infrastructure such as the Leslie Barns facility;
- accommodating the necessary ducts, hand-wells and turn-ups to allow the implementation of Transit Signal Prioritization; and,
- the road level should be flush with grade, separated by curbs and provisions at un-signalized intersections to enable the dedicated rights-of-way to be used by emergency vehicles.

FIGURE 9-11 TSMP – TRANSIT NETWORK



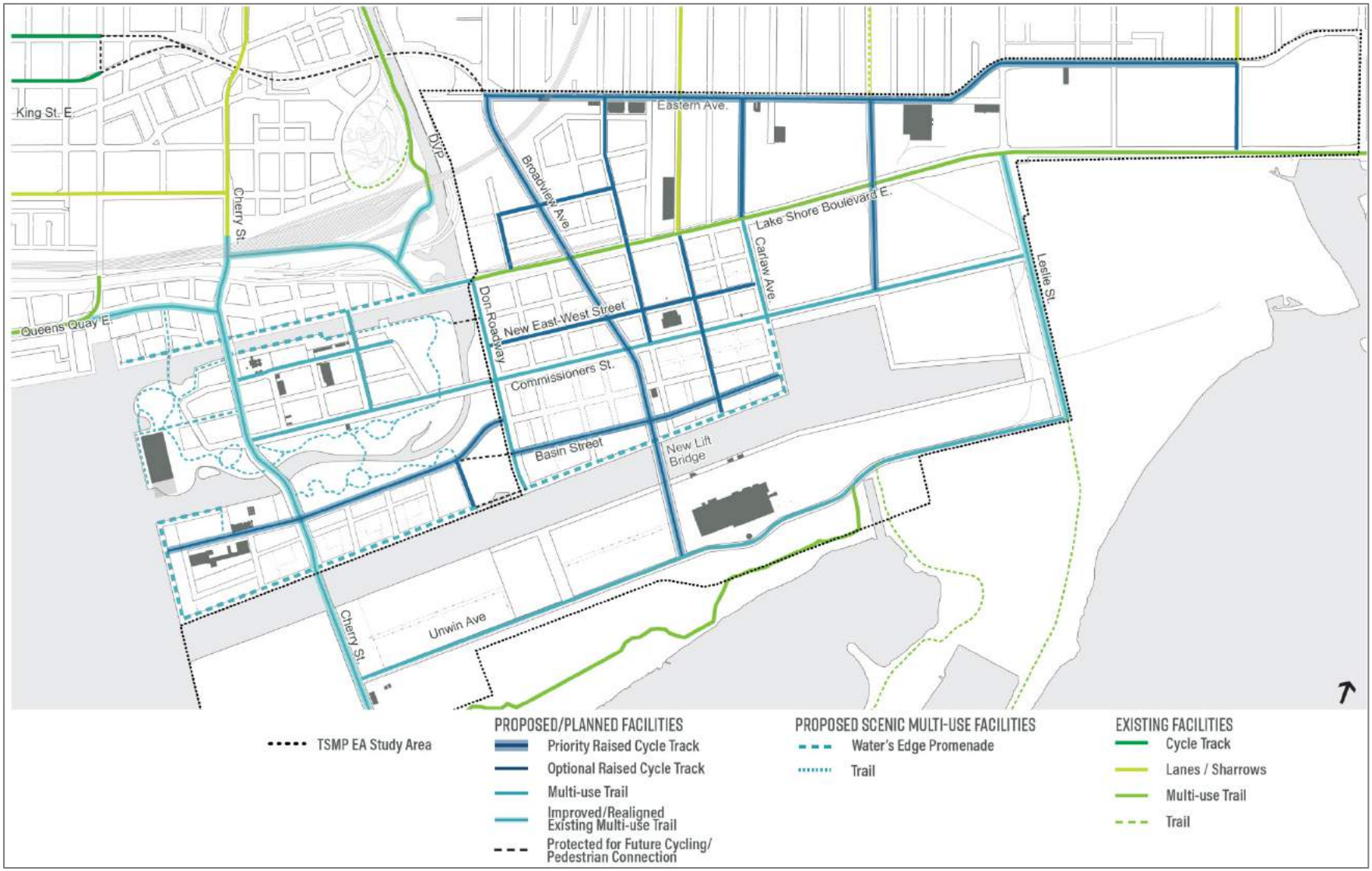
Source: City of Toronto, 2017

9.1.3 Pedestrians

The extensive transit coverage proposed in the TSMP is a major driver for the pedestrian network. All transit users are pedestrians at the beginning and end of their trips. It is essential that the mobility needs of pedestrians are met not only with high quality pedestrian amenities (such as appropriately sized sidewalks) but also with a high degree of access to transit. The streetcar corridors were planned with consideration of walking distances from anywhere in the Study Area. Generous sidewalks are proposed on all streets. Some streets have wider sidewalks in recognition of the role they perform in the overall network. Aspects of the pedestrian network are included in the cycling network illustrated in **Figure 9-12**. The conceptual cross-sections and renderings developed all include the provision for dedicated pedestrian space. The network prioritizes pedestrian comfort and safety. Each street in the network plays a role in the connectivity of pedestrian movement and to ensure a safe and friendly environment, particularly in consideration of continued goods movement within the area.

The cycling network includes an interconnected multi-use trail along the perimeter of the Port Lands including Cherry Street, Unwin Avenue and Leslie Street. The multi-use trail would make use of existing (improved and/or realigned trails along Cherry Street and Leslie Street) and new trails (along Unwin Avenue) in the area and would connect to the Martin Goodman Trail and Tommy Thompson Park located along the waterfront. A waters' edge promenade is also proposed from Carlaw Avenue west to Cherry Street along the north side of the Ship Channel. In addition, the TSMP network connects to a series of interconnected trails proposed west of the Don Roadway and north of the proposed water's edge promenade in the future Villier's Island area, as well as north-south cycling tracks through the Port Lands providing connectivity to Eastern Avenue and further north into the city. To improve connectivity between areas within the broader Port Lands geography, two pedestrian connections are identified across the Don Greenway. These require more detailed assessment, including ensuring no impacts to flood conveyance and integration with high quality wetlands planned as part of the DMNP EA.

FIGURE 9-12 TSMP – PEDESTRIAN AND CYCLING NETWORK



Source: City of Toronto, 2017

9.1.4 Cyclists

The TSMP provides for an extensive cycling network that connects to existing and/or planned facilities within the broader area as shown on **Figure 9-12**. The network integrates pedestrian and cycling infrastructure through a combination of existing and proposed (or improved/realigned) multi-use trails/water's edge promenades, priority raised cycle tracks and optional raised cycle tracks.

The combination of the different types of high-quality facilities will serve to meet the needs of both commuters and recreationists. They have also been conceptualized and located to offer a series of safe and memorable cycling experiences. The cycling network can meet the needs and appeal to all cycling abilities and age groups.

Multi-Use Trails

Within the Study Area, bi-directional multi-use trails are proposed on Cherry Street, the Don Roadway, Commissioners Street, Leslie Street, Carlaw Avenue between Lake Shore Boulevard East and Commissioners Street, and Unwin Avenue. The TSMP EA continues to recognize the multi-use trail along Lake Shore Boulevard East and the Martin Goodman Trail. New, 3.6 m trails, and in accordance with the City's Multi-Use Trail Guidelines for "Primary Trails," are identified for the Don Roadway, Commissioners Street and Unwin Avenue. New and improved 5 m wide trails (up to 4 m for movement with a one m buffer) are proposed on Cherry Street south of the Ship Channel and Leslie Street south of Commissioners Street. The wider trails in these locations are per the City's guidelines for "High Capacity Trails."

Water's Edge Promenades

Multi-use trails integrated into water's edge promenades have also been identified on Carlaw Avenue south of Commissioners Street and along the north edge of the Ship Channel.

Raised Cycle Tracks

The conceptual cross-sections developed for the TSMP EA utilized raised one-way cycle tracks located adjacent to flowing traffic for the balance of the cycling connections in the Study Area. Raised cycle tracks are "bicycle facilities that are vertically separated from motor vehicle traffic" (NACTO, 2011). In some instances, raised cycle tracks can also include amenities, landscaping or on-street parking between the cycle track and vehicular travel lanes and/or pedestrian area. Providing these buffers between different modes assists in reducing conflicts, but also clear delineation of travel areas. The cycle tracks developed for the TSMP are 1.8 m wide at a minimum allowing for sufficient space for maintenance and operations. Priority and optional raised cycle tracks are identified on **Figure 9-12**.

Priority routes have been identified for major streets anticipated to experience high traffic volumes or where there will be continued high volumes of truck traffic. These include the Broadview Avenue extension, realigned and extended Basin Street, Eastern Avenue and Caroline Avenue extension. On the Broadview Avenue extension, a wider (2 m) cycle track has been identified to accommodate anticipated higher volumes destined to the future office destination and into the Port Lands. Optional raised cycle tracks are identified for the balance of connections in the Study Area and are located on either major

TSMP EA streets (Carlaw Avenue north of Lake Shore Boulevard East, Woodfield Road, the Bouchette Street extension and the new north-south streets in the Unilever Precinct and north of Commissioners Street) or on the some of the local streets shown conceptually within the network diagram.

Protecting for Additional Connections

Two pedestrian and cyclist connections across the Don Greenway are identified to better connect lands east of the Don Roadway to the Lower Don Lands. These connections should be protected for. These connections require further assessment to ensure flood conveyance in the Don Greenway and river would not be impacted. Further, impacts to the planned high quality wetlands and other habitat through this area would also need to be assessed.

9.1.5 Goods Movement

Trucks will continue to be a method of travel activity in the Study Area, especially south of Eastern Avenue in the Port Lands. Several significant industrial activities are expected to continue to operate and be an integral part of the function and character of the Port Lands including aggregate/cement production, salt storage and transportation, film studios, and shipping.

A strategic framework for goods movement is needed to identify and address areas where trucking and local quality of life and safety concerns may conflict, to identify the methods to mitigate these conflicts, and improve the overall management of trucks and commercial vehicles within the Study Area. The goals and objectives of a truck management strategy should be:

- provide safe, efficient, and connective routes;
- provide seamless transition between external truck traffic on internal street network;
- provide easy access to truck information in the form of consistent, readable and accurate signage, readily available maps and reduced time and weight restrictions;
- provide efficient movement which saves time/money and reduces cost to consumer;
- maintain quality of life while fostering economic growth;
- reduce traffic congestion; and,
- establish recommendations to mitigate the negative impacts of truck traffic within the Port Lands.

The movement of goods to and from the Port Lands is focused around two major origin/destination points relative to the Study Area - the Gardiner Expressway and the DVP. These two facilities provide access to and from the GTA and beyond, allowing the various Port Lands businesses to receive and distribute product locally and to the larger region.

As an area historically dedicated to industrial and warehousing uses, there have, to date, not been any restrictions on the movement of trucks along streets in the Port Lands. However, with the transformation of large portions of the area towards residential, commercial, and office land uses, the character of the area will change and heavy trucks will no longer be compatible with some areas of the Port Lands. There will, therefore, need to be an emphasis on creating dedicated truck routes and some

restrictions placed on the movement of trucks into and out of the area to ensure a safe and welcoming street environment for residents and other users, to minimize potential conflicts.

To address the above, this may require restricting truck traffic to the use of Unwin Avenue, Commissioners Street east of Carlaw Avenue and Leslie Street to access Lake Shore Boulevard East, the Gardiner Expressway, and the DVP. This restriction on truck movements will naturally result in longer travel times, but will be more reliable given the future activity in the area. With this restriction in place, transportation modeling undertaken resulted in the typical travel time from a mid-point of Unwin Avenue to the foot of the DVP to increase on average by roughly four minutes. On average, truck travel time in the Study Area was shown to increase by three minutes during the morning and afternoon peak hours. More detailed analysis will be required in Phase 3 of the Class EA process that addresses potential scenarios for establishing dedicated truck routes. This more detailed analysis should include completing cordon counts of track activity on days throughout the year to reflect the different operations in the Port Lands.

9.2 Water

The recommended system for water supply identified through the TSMP EA is to reduce water usage by users and enlarge/extend the network to serve new employment and populations, realign the network to new roads and to provide for looping and redundancy of supply to improve fire flows and maintain water quality. Features of the network include the following:

- upsizing of the existing watermains along Leslie Street and Unwin Avenue to provide for looping and redundancy of supply to south of the Ship Channel;
- new 300 mm watermain on Unwin Avenue to connect the western section to the network;
- new 200 to 300 mm watermains on new streets in the Unilever Precinct and the Film Studio District to support redevelopment;
- additional watermain crossing has been added under the Ship Channel at the Broadview Avenue extension for operational redundancy; and,
- construction of new and replacement watermains throughout the Study Area will be coordinated in detailed design with other major infrastructure construction including new street and transit and sewer networks.

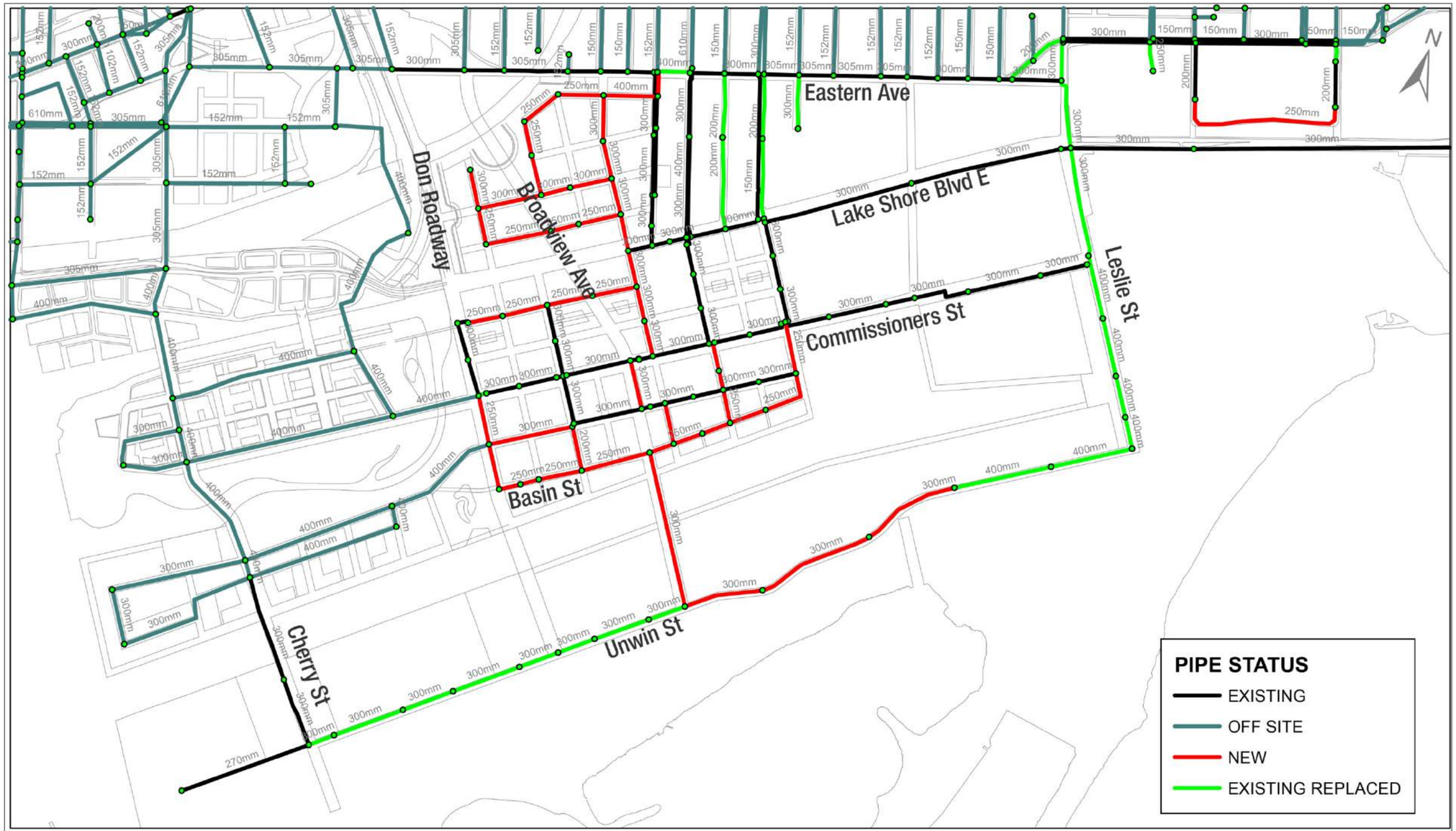
The recommended water supply system is provided in **Figure 9-13.** Additional information is provided in **Appendix E.**

Key issues to be addressed during detailed design phases include:

- Subsurface utility engineering investigations will be required to confirm the location of existing utilities, in particular the high pressure gas main that traverses the Study Area to the PEC.
- Construction of connections to the Lower Don Lands network upgrades will require crossing of the VWF proposed under the DMNP EA. Coordinating the timing of that connection will allow for appropriate utility corridors to be considered in the VWF design so that appropriate cover is provided over the watermain without impacting the core of the VWF.

- As much of the existing infrastructure is currently operating at, or near, the end of its typical lifespan, replacement prior to development may be required for state of good repair purposes and new infrastructure installed should, where feasible, be sized in accordance with development needs for the Study Area.
- While existing watermains are shown in **Figure 9-13**, this only accounts for the fact that the watermains are an adequate diameter to support the anticipated growth. Many if not all of the existing watermains will need to be upgraded and/or relocated to accommodate flood protection measures, transit, reconstruction of existing streets and relocation and/or burial of other utilities and servicing.

FIGURE 9-13 TSMP – WATER



Notes:
Pipe diameters indicated in millimetres.
Revision Date: May 26, 2016

FULL BUILD-OUT - WATERMAIN STATUS AND DIAMETERS
Port Lands and South of Eastern Transportation and Servicing Master Plan

ch2m:

9.3 Wastewater

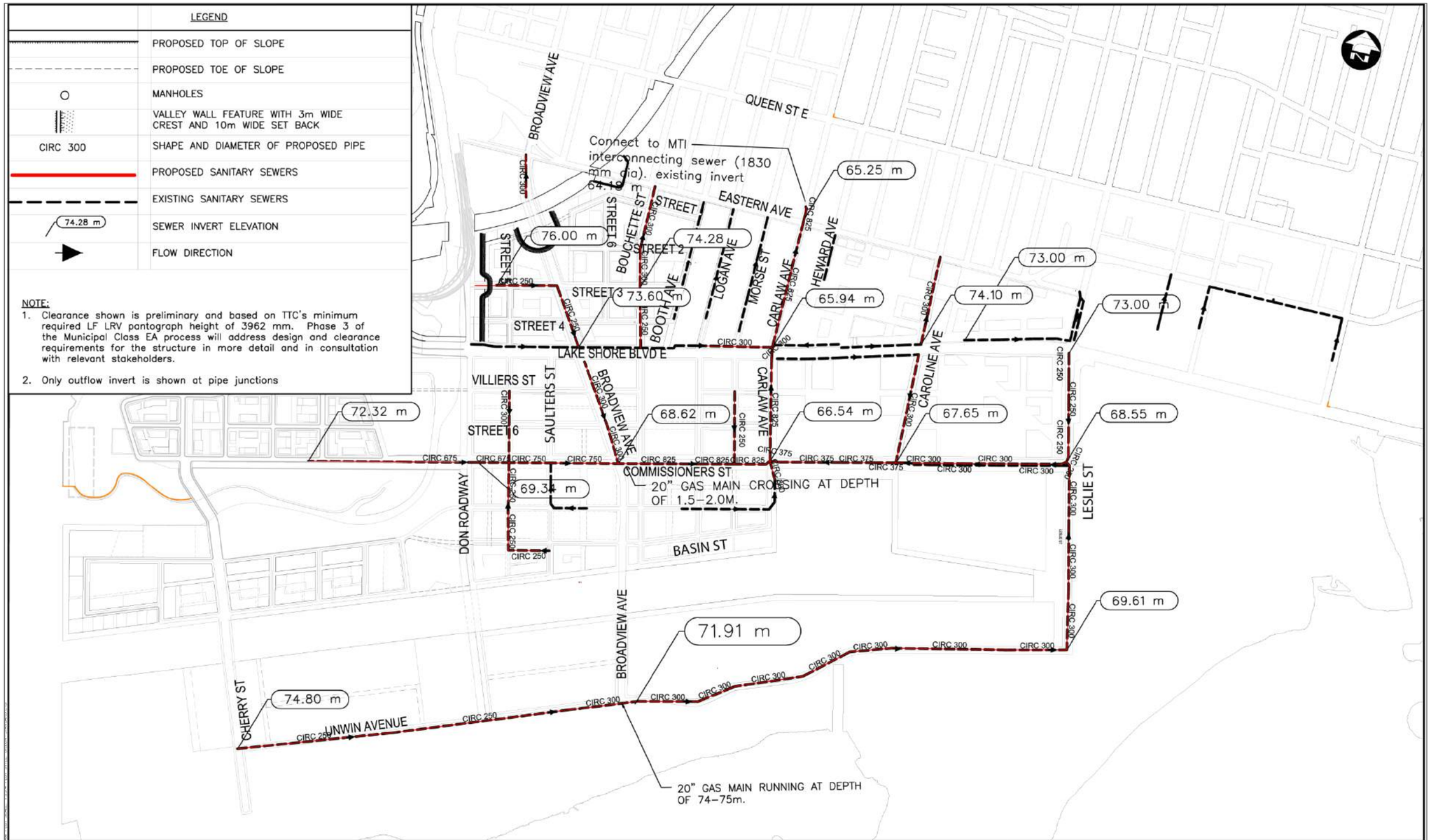
The recommended system for wastewater servicing identified through the TSMP EA is to reduce wastewater flows and enlarge/extend collection – convey flow from the Port Lands via Carlaw Avenue inter-connecting sewer at Eastern Avenue to the ABTP. The plan includes disconnection of the Port Lands from the LLI and new and upsized sewers to service new employment and population growth and to realign the sewer network to new roads. Smaller diameter pipes and branches of the existing network will be reused, where feasible. Features of the network include the following:

- new 675/825 mm diameter sewer along Commissioners Street and Carlaw Avenue to support disconnection of the Port Lands from the LLI at Leslie Street and Logan Street and re-directing flows by gravity to Carlaw Interconnecting Sewer connection at Eastern Avenue;
- the alignment of the Commissioners Street sewer allows for gravity flow from Lower Don Lands, however, it is understood that interim measures being considered in the adjacent Lower Don lands (including the provision of a temporary pumping station) may allow for the Lower Don Lands redevelopment to proceed in advance of this construction. Construction of the arterial sewer on Commissioners Street will then allow the pumping station to be abandoned and further development in the Film Studio area to proceed. The sizing of the connection to the Lower Don Lands has been undertaken using the unit rates identified above and will be confirmed during detail design to ensure consistency between the two development areas;
- new 300 mm diameter sewer on Leslie Street from Lake Shore Boulevard East, flowing south to Commissioners Street and north from the 250/300 mm diameter Unwin Street sewer, providing servicing to previously un-serviced area south of the Ship Channel. Note that servicing the relatively flat topography of the Study Area while tying into fixed connection points for the Lower Don Lands and the Carlaw Interconnecting Sewer connection result in significantly deep sewer connections. The sewer at Leslie Street and Unwin Street is at 7.5 m depth to support gravity flow from the western extremity. Service connections directly to the sewer at this depth are not feasible and during detailed design, when the nature of future development is known, connections can be provided to the sanitary manholes, as per City design criteria;
- the South of Eastern area from Leslie Street in the east to west of Logan Avenue continue to discharge to the LLI as the difference in topography allows for continued connection to the LLI without the surcharge issues currently experienced south of Lake Shore Boulevard East;
- redevelopment of Unilever Precinct in the north-west corner of the Study Area, south of Eastern Avenue is supported by a network with four main components, aligned with the proposed site grading and proposed street network:
    - north west corner bounded by CNR will connect at Broadview Avenue/Eastern Avenue to the LLI;
    - south west corner will connect south to existing Lake Shore sanitary sewers for conveyance to the Carlaw MTI connection. The Lake Shore Sewer west of the Broadview Avenue extension has been retained for flexibility; however, may not be necessary depending on final development decisions;

- center and north areas will drain north via new connection into LLI; and,
- areas in the east of the site will connect to the existing Booth Avenue sewer.

The recommended wastewater system is provided in **Figure 9-14.** Additional information is provided in **Appendix E.**

FIGURE 9-14 TSMP – WASTEWATER



9.4 Stormwater

The recommended system for managing stormwater uses water as a resource and proposes methods for treatment of stormwater runoff that provide the opportunity to highlight water as a feature and encourage daily interaction with it through the use of aesthetically pleasing open channels and other sustainable LID measures in the Study Area (**Figure 9-15**). This approach allows for the integration of water into the community rather than construction of the typical stormwater management facility such as underground sewers, tanks, and cisterns.

Designing with water as a resource embeds the movement and treatment of stormwater into the everyday experience of streets and open spaces. The concept daylights stormwater management through open, vegetated channels, swales and tree plantings that are integrated into the public realm - enhancing the Port Lands identity and position on the Lake. Stormwater elements take on new meaning - offering communal places for shade and gathering and bringing the narrative of water to life. This alternative contributes to the sustainable future of the City while creating a high quality urban realm.

Stormwater Disinfection

Stormwater quality treatment utilizes a treatment train approach, consisting of lot-level, conveyance and end-of-pipe measures to improve the quality of stormwater runoff from the 1-year storm event, as outlined below:

- **Lot level measures** are to be implemented by properties that are to be redeveloped, in accordance with the City's WWFMG.
- **Conveyance measures** consist of the proposed open and hybrid channels which will provide a level of total suspended solids removal for runoff from the road right-of-way, as well as the properties that are to remain as existing and currently do not have treatment measures in place.
- **End-of-pipe stormwater quality treatment measures** were assessed separately for the areas north and south of the Ship Channel, as outlined below:
    - North of the Ship Channel:
        - For the South of Eastern area:
            - The City proposes to implement a 1950 mm diameter and 2550 mm diameter storm sewer on Commissioner Street and Carlaw Avenue to direct a portion of the runoff from the existing storm sewer system serving this area (including areas north of Eastern, outside our study area) to the IHT at Lake Shore Boulevard East/Carlaw Avenue.
        - For the remaining Port Lands area north of the Ship Channel:
            - The preferred solution is to direct 1-year runoff to the satellite facility at the ABTP (Option 2E) by directing these flows to the IHT at Lake Shore Boulevard East/Carlaw Avenue.
            - In the event that Option 2E is not available in a timely manner to address redevelopment needs in this part of the Study Area, flexibility

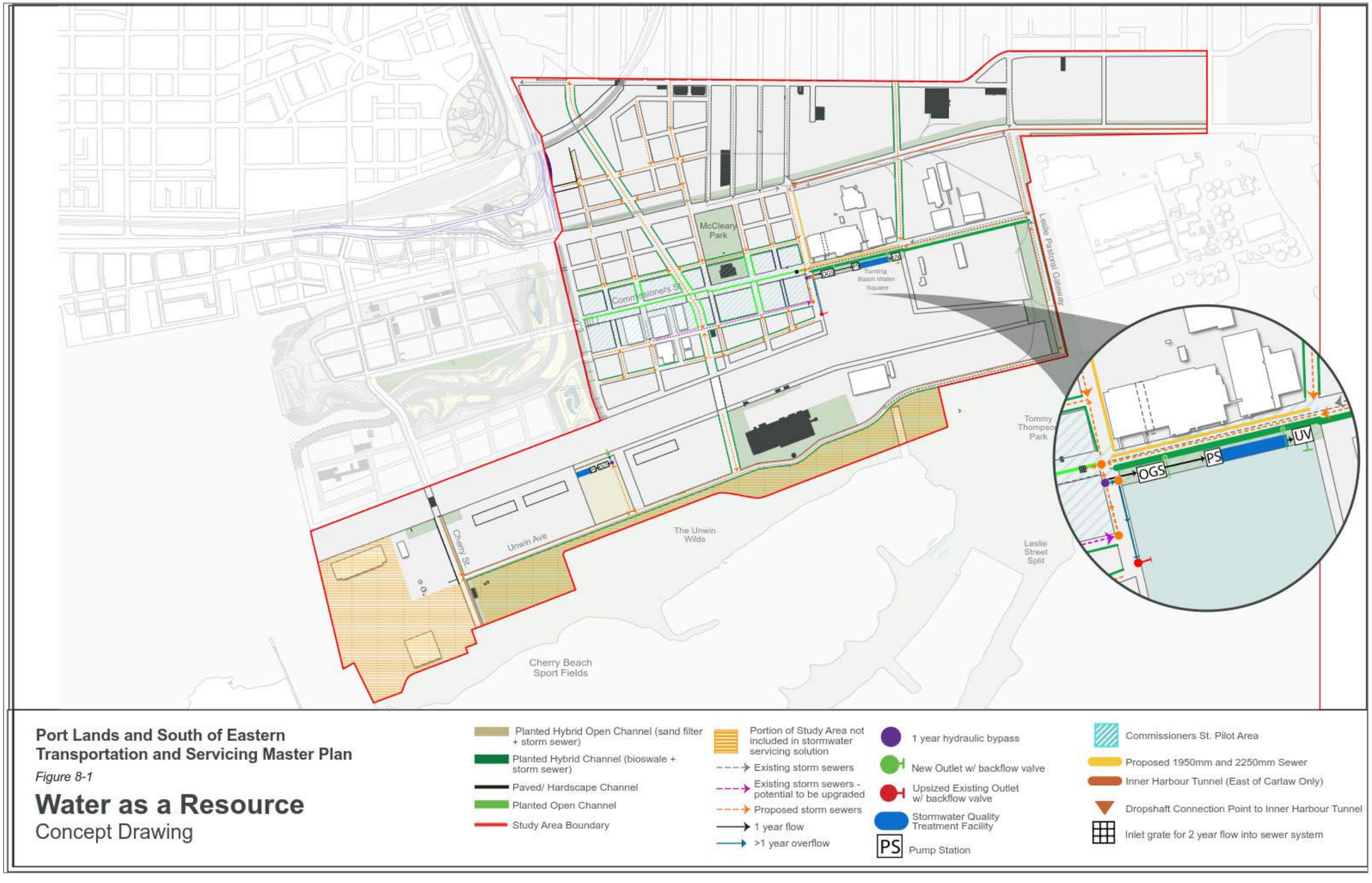
has been provided to direct these 1-year flows to a proposed OGS and SWQTF at the Turning Basin (Option 2F).

- South of the Ship Channel
  - Stormwater quality treatment would be addressed by an OGS and SWQTF at Don Greenway Park (Option 2A), with the option to consider other innovative treatment methods. This would result in an independent treatment system which could be integrated with the natural environment and provide opportunities for public interaction and education on stormwater treatment processes.

In the above end-of-pipe solutions, the proposed OGS would provide for additional removal of total suspended solids (beyond lot level and conveyance measures outlined above), which would then be directed to the SWQTF for further treatment, including a UV system for biological treatment.

Additional information is provided in **Appendix F**.

FIGURE 9-15 TSMP – STORMWATER



9.5 Environmental Considerations for Future EA Work

General environmental issues associated with the Study Area's historical industrial use were identified during the TSMP EA including potential soil/groundwater contamination, and geotechnical and hydrogeological challenges (as described below). These considerations should be taken into account for future, more detailed EA work (project-specific level) anticipated to occur for the recommended Master Plan (**Section 9.7**).

Soil and Groundwater Contamination

The combination of more than a century of industrial activity and extensive lake filling in the area has resulted in soil and groundwater contamination. Elevated contaminant concentrations are typically found at shallow depths and groundwater issues are generally localized for inorganic type contaminants. However, organic contaminants resulting from certain industrial uses and disposal activities could be more widespread and may be present to, and within, bedrock.

In 2001, TPLC completed the Preliminary Environmental Liability Assessment for the Toronto Port Area. This study concluded that although the nature of contamination is case specific, properties throughout the area have been shown to exhibit contamination by heavy metals, non-metal inorganic parameters, petroleum hydrocarbons, volatile organic compounds and semi-volatile aromatic hydrocarbons. Further investigation may be needed for any infrastructure-related activities, such as new streets and servicing infrastructure identified through the TSMP EA (City of Toronto, 2013a).

The City has policies to protect workers from exposure to contaminated materials when working on existing or installing future services. During design and construction, consideration will need to be given to the City's "Policy for Accepting Potentially Contaminated Lands to be Conveyed to the City under the Planning Act." The policy applies mainly to parks and roadways under City control, but if lands are to be conveyed to the City then the City requires 1.5 m of fill as a cap and an appropriate buffer around servicing below 1.5 m. This is in addition to any Risk Management Measures imposed on contaminated lands as part of the Certificate of Property Use issued by the MOECC (if a Record of Site Condition is filed). The specific policies indicate:

> *5.4.6. The acceptable un-impacted material barrier thickness in City parks and rights-of-way must be at least 1.5 metres in depth. Acceptable vertical cross-sections (profile) for City parks and road rights-of-way may utilize both hard and soft material, as negotiated by the applicant with the recipient City Division.*
>
> *5.4.7. All new or replaced utilities constructed below the 1.5 metre un-impacted material barrier must be placed within a corridor (trench) of un-impacted material. The width and depth of the trench must provide acceptable access distances around the utility to the satisfaction of the Executive Director of Engineering & Construction Services.*

The cost analysis for this TSMP has included consideration of addressing mitigation for contamination. It did not assume any costs associated with disposal of any existing contaminated soil.

Geotechnical and Hydrogeological

Revitalizing the Port Lands is generally known to be challenging from a geotechnical and hydrogeological standpoint. Some of the sub-soils consist of varying types and depth of fill material over former lakebed or organic material that is a consequence of filling of the Ashbridges Bay marsh in the early twentieth century. Fill and organic material is generally not suitable for carrying development, infrastructure loads and special provisions, such as excavation and removal or deep foundations, which would require further investigation. The groundwater table is also generally high due to the Port Lands being in close proximity to Lake Ontario and the perviousness of the subsoil (City of Toronto, 2013a). Consideration of these unique conditions will be necessary in future work.

Other Key Considerations

Cultural Resources – Built heritage and cultural heritage landscapes were identified in the Study Area. Some of these features will be preserved and/or integrated into the urban fabric. **Section 5.3** provides additional information. **Appendix C** provides an overview of potential impacts and mitigation.

Existing Utilities – The Study Area contains existing utilities that will need to be taken into account during detail design as noted in **Section 5.9**.

Flood Management – Significant flood protection works are approved in the Don River both in and adjacent to the Study Area (DMNP EA, LDLMP EA). As these projects proceed, consideration to supporting and tying into the flood protection features in the Unilever Precinct and along the Don Roadway will be important in finalizing infrastructure design (streets, pipes and grading). **Section 5.4.5** provides additional information.

It is acknowledged that costing for flood protection components were included as part of the Port Lands Flood Protection and Enabling Infrastructure Due Diligence works. However, it is generally anticipated that the developer of the site required to meet certain grading and compaction and tie-off considerations to meet the flood protection needs, as part of their permit application process.

CEAA and Other Permits/Approvals – A review of CEAA and other permitting requirements in effect at the time of detail design for the projects identified in **Section 9.7** should be undertaken. Currently none are identified on CEAA's Designating Physical Activities however other permits may be required.

9.5.1 Future Studies Potentially Required

Future Class EAs

Other EA studies will be required to fulfill the recommended TSMP. **Section 9.7** provides an overview of future EAs to be completed as well as their respective Schedules.

Technical Studies

Technical studies may be required as part of future, project-specific EA work required to fulfill the recommended TSMP. These reports/studies should build upon the recommended TSMP and demonstrate conformity with the Official Plan and other regulatory requirements. Some of these studies may include the following:

- Truck Management Strategy;

- Geotechnical and Hydrogeological Assessment;
- Hydraulic Studies;
- Soil and Groundwater Assessment;
- Contaminated soil approvals/mitigation (Phase 1/2 Environmental Site Assessment);
- Implementation of mitigation measures identified in the Stage 1 Archaeological Assessment completed for the Project;
- Implementation of mitigation measures identified in the Cultural Heritage Assessment Report completed for the Project;
- Air/Noise Studies;
- Natural Heritage Evaluations;
- Water Operations Studies – There is potential that new infrastructure sized for full build-out may operate at below desired conditions in the interim and additional operating/maintenance measures may be needed to maintain water quality and protect against odour generation;
- Wastewater Operations Studies – Additional monitoring and maintenance is recommended for those areas of the network where flows do not result in sufficient velocity for self-cleaning; and,
- Stormwater/Grading – Final location and grading for the new east-west street north of Lake Shore Boulevard East where it meets the Don Roadway will be determined in future phases of EA and design.

9.6 Phasing and Timing Considerations

Transportation

The Preferred Network represents the street network required to support the transportation needs for the long-term (2065), full build-out land use scenario. The long-term network will be phased in, subject to land use development and travel growth in specific areas over the course of the 50 year timeline. To assist in determining when particular street segments may be required from a phasing and implementation perspective, a review was completed for an interim scenario that was based on a 20-25 year land use scenario provided by the City.

The interim land use scenario assumed that the Unilever Precinct would be fully developed, and infill employment in the balance of the South of Eastern area has been achieved. Portions of the Port Lands would undergo redevelopment within the interim time horizon. Phasing assumptions in the Port Lands were consistent with the first phase of the PLAI. The western portion of Villiers Island and Polson Quay are assumed to have developed, and likewise for the western portion of the Film Studio District. Some growth occurs on vacant or underutilized sites in the East Port and south of the Ship Channel areas. The Hearn is also assumed to be adaptively reused and a major destination.

The objective for assessing the interim land use scenario was to identify from a vehicular capacity perspective where surplus capacity might exist, with the potential of deferring the implementation of particular street segments until required from a capacity perspective. Other factors, such as improving connectivity, providing street segments in tandem with development or in coordination with municipal servicing requirements, are other considerations for determining timing for implementation.

Based on the interim and long-term traffic forecasts, the phased needs would be as follows:

Interim Needs

- Broadview Avenue extension using the preferred alignment (one lane each direction with streetcar in dedicated right-of-way);
- New east-west street Don Roadway to Booth Avenue;
- Caroline Avenue extension (two way, as a Complete Street);
- Urbanize Eastern Avenue (consistent Complete Street design);
- Urbanize Commissioners Street (one lane in each direction with streetcar in dedicated right-of-way); and,
- New north-south street east of Leslie Street (Woodfield Avenue).

Full Build Out Needs

- Broadview Avenue extension crossing of Ship Channel;
- New east-west collector street between Don Roadway and Bouchette Street;
- Extension and realignment of Basin Street easterly (Don Roadway to Carlaw, south of Film Studio); and,
- Urbanize Unwin Avenue.

With respect to the phasing, the following observations are noted:

- The success of transit is critical to the future potential for the Study Area as a development area. The ability of a Complete Street to provide the necessary capacity and service to maintain a functional environment is contingent on the ability to achieve high mode share to transit, thereby reducing the role and reliance of the automobile in the area. Not only must frequent service be provided in the long-term but also connections made to other regional and high order transit service. Transit service must be provided in the short-term, and network infrastructure must be in place to support the move away from auto use to high transit use. Active transportation will play a key role in the future transportation environment. Connected trails, pathways, and cycling tracks will foster an active lifestyle, providing not only commuter opportunities but also recreation opportunities. The early adoption of this culture will support the long-term viability of the area.
- Broadview Avenue will serve as the north-south “spine” for the area, and the primary street to service the Unilever Precinct. Without this connection/linkage in the short-term, the development potential for the area is limited. In the long-term, it is crucial that the Unilever Precinct be connected to higher-order surface transit in dedicated right-of-way. While bus service may suffice in the very short-term, to achieve the planned densities a multi-modal connection to the broader area network (Broadview Avenue) is required.
- Commissioners Street needs to leverage its multi-modal role to foster active lifestyles and provide support to vibrant districts. The implementation of a multi-modal street must be synchronized with development to ensure that the long term trend to active and vibrant spaces is supported from the beginning.

- From a transportation modeling perspective, improved connections across and south of the Ship Channel are considered a long-term need but are dependent on the rate and type of development. At a minimum upgrades to the existing bailey bridge may be required to accommodate continued employment growth. In the short-term, continuous and connected pedestrian and multi-use paths and cycling tracks are required to enhance recreational opportunities.

Water and Wastewater

Construction timing of infrastructure will be required to match final decisions with respect to phasing of development with the following observations:

- In order for the Port Lands to develop, as identified in population and employment estimates, disconnection from the LLI will be required and reconnection of the Port Lands wastewater network to the MTI. This will require construction of the approximately 750 m of 825 mm diameter sewer on Carlaw Avenue between Commissioners Street and Eastern Avenue. The watermain replacement (150-300 mm) identified for this stretch could be constructed at the same time. A portion of the Unilever Precinct will also be connected to the MTI.
- The upsized arterial sewer identified on Commissioner Street would need to be constructed (approximately 1,710 m of sewer ranging from 375-825 mm diameter) to enable further developments in the Film Studio district as well as support gravity servicing of the adjacent Lower Don Lands development. Upsized watermains along the easterly section of Commissioners Street between Carlaw and Avenue and Leslie Street would be constructed at the same time. Reconstruction of aging watermains from Carlaw Avenue to the Don Roadway should be coordinated with construction of streetcar infrastructure (to avoid conflicts) and with construction of the VWF on the Don Roadway to make adjustments for the increased cover needed over the watermain.
- Water or wastewater pipes connecting across the VWF will need to protect the core of this structure. Consideration should be given to planning for these services during final design/construction of the VWF.
- The construction of the Commissioner Street sewer would permit connection of the Leslie Street upgrade, allowing the new Unwin Sewer to be constructed to drain by gravity to Leslie Street (approximately 3,300 m of 250-300 mm diameter). The Unwin watermain would be upsized at the same time and the construction of the 400 mm watermain connection of the new Lower Don Lands network would complete looping through the Port Lands development.

Stormwater

The study area was separated into blocks to facilitate a phasing strategy that will be undertaken by the City as a separate exercise. Based on discussions with the City, the estimated time for full build-out is approximately 30 -50 years. As such, some staging of infrastructure has been considered to support the phased development of the area. Key infrastructure that would be required to support new development within the study area includes:

Spines and Outlets – North and South of the Ship Channel

The main storm sewer infrastructure north of the Ship Channel, or "spine", is the Broadview Avenue and Basin Street storm sewer. This spine will act as the main trunk sewer for conveyance of the minor system flow from the proposed redevelopment blocks. The main storm sewer infrastructure south of the Ship Channel is to be located within the Don Greenway Park and connects the proposed minor system with the hydraulic diversion structure in the park.

OGS, Pump Stations and SWQTF - North and South of the Ship Channel

The OGS, pump stations and SWQTF at the Turning Basin and Don Greenway Park are also key pieces of infrastructure that will need to be constructed to support development in the study area. This infrastructure is particularly important to meet the water quality treatment criteria and to control the amount of flow being directed to the treatment facility, as well as provide end-of-pipe measures for the spines and outlets.

The Inner Harbour Tunnel (IHT) – North of the Ship Channel

It is likely that the IHT will be in place before full-buildout conditions for the area north of the Ship Channel will be achieved. The IHT will be constructed as part of the phasing for the infrastructure components of the Don River and Central Waterfront Master Plan EA. The proposed five stage implementation process begins with the construction of the Coxwell Bypass Tunnel and Inner Harbour Tunnel East which is estimated to be complete by 2030. Stages two to five involve the construction of the Taylor Massey Tunnel, the DWF and WWF offline storage tanks, the Inner Harbour Tunnel West and the WWF connections and vertical storage shafts. The schedules for stages two to five are to be determined by funding.

9.7 Cost Estimate and Class EA Schedules

This section provides cost estimates and anticipated Class EA schedules for the recommended Master Plan.

Cost Estimate

The costs that are shown in this section are specifically for the infrastructure identified for the recommended TSMP. The cost estimate should be considered preliminary and be used only for planning purposes. Actual costs will be based on the tendered prices of the fully designed infrastructure project and may vary from this preliminary estimate depending upon design considerations, the timing of the projects and the market conditions at the time of tendering.

Costs have been included for the relocation of hydroelectric utility infrastructure in the vicinity of Commissioners Street and the future Broadview Avenue extension (south of Commissioners Street) as provided by Hydro One in the Feasibility Study undertaken for the Project. The costs provided are +/- 50 percent. Additional consultation and detailed design is required with Hydro One to determine final costs of implementation of the recommended TSMP in this area.

Also included in the cost estimate is provision for streetcar infrastructure along Commissioners Street and along the Broadview Avenue extension. These costs have been generated based on typical benchmark unit costs for track and station potentials. Operating and maintenance, and equipment costs are not included, nor are specific costs associated with any mitigation that may be required due to the unique conditions of the Study Area (e.g., flood control/protection at the north end of the Broadview Avenue extension and underpass provisions in the same area, system design specifications that may be required in the hydroelectric transmission corridor along Commissioners Street). The following cost assumptions were applied:

- costs align with the Port Lands Flood Protection and Enabling Infrastructure Due Diligence Report;
- boulevards/planting/bioswale areas included into the overall calculations;
- for the larger stormwater features (e.g. Commissioners street open channel) costs are separate;
- a consistent cost assumption for soil contamination is applied; and,
- all contingencies have been made consistent using 13 percent design contingency and 40 percent engineering and construction contingency which also includes any applicable HST that is unable to be recovered.

Water and wastewater infrastructure that is new or required to be replaced and upgraded have been costed. During reconstruction, existing sewers may need to be replaced as described in **Section 9.2**. Costs for these watermains have not been included and will be determined during detailed design and as the development unfolds.

Tables 9-1, **9-2**, and **9-3** provide cost estimates along with the anticipated Class EA schedules for future projects identified in this TSMP EA (e.g., recommended Master Plan).

The cost estimates are based on historical costs, and unit cost information provided by City divisions and/or informed by the more detailed costing undertaken in the Port Lands through the first phase of the PLAI and ongoing work undertaken for the flood protection due diligence. The costs in **Table 9-1** exclude the following:

- Reconstruction of Broadview Avenue from Queen Street to Eastern Avenue $26.9 M;
- Basin Transmission Station Relocation $94.9 M;
- Repair Bascule Bridge $23.7 M;
- preliminary engineering;
- final design;
- re-grading and additional fill;
- demolishing/removals of existing structures/streets/servicing;
- relocation of heritage buildings (450 Commissioners Street);
- related development costs (land acquisition, fees and expenses);
- project management;
- construction and traffic management;
- other non-construction insurance; and,
- escalation.

Contingencies have been included to address unknowns. Further, allowances were included for the following:

- utility removals or re-locations (except hydroelectric infrastructure); and,
- satisfying the City's policies with respect to soil contamination. Further geotechnical, hydrogeological and environmental site assessments will be needed to further develop these costs.

Class EA Schedules

This TSMP satisfies Phases 1 and 2 of the Class EA process for all identified projects, unless otherwise noted as being completed as part of a separate process. Separate EA studies will be completed for Phases 3 and 4 of the Class EA process in accordance with the recommended TSMP. According to the Class EA, future EAs will be classified based on Schedules including Schedule A/A+, B, or C which are determined based on their potential for environmental impacts. Generally, Schedule A/A+ projects are expected to have minimal environmental impacts and Schedule C are expected to have the greatest impact. The Class EAs are identified as either:

- Schedule A or A+ of the Class EA (pre-approved);
- Schedule B (approved subject to screening) (note, Schedule B projects were not identified); and,
- Schedule C (requires completion of an Environmental Study Report or ESR).

Projects that are identified in the following tables as Schedule A and A+ are pre-approved and can proceed to construction when they are needed upon appropriate notification of adjacent residents. Schedule A projects include normal and/or emergency operational and maintenance activities where the environmental effects of these activities are usually minimal and, therefore, these projects are pre-

approved. Schedule A+ projects are also pre-approved however the public is to be advised prior to project implementation. It should be noted that while these projects are generally pre-approved, other permits and/or approvals may be required.

Although no Schedule B projects were identified, they generally include improvements and minor expansions to existing facilities. There is the potential for some adverse environmental impacts and therefore the proponent is required to proceed through a "screening process" including consultation with affected parties.

Schedule C projects generally include construction of new facilities and major expansions to existing facilities. These projects identified as part of this TSMP require additional EA work (e.g., ESR) and cannot be constructed until this additional work and consultation is complete.

Future EA requirements will be reviewed at the time additional EA work is contemplated and the various projects identified below will be subject to the EA requirements applicable at that time.

TABLE 9-1 CLASS EA SCHEDULES AND COST ESTIMATE – TRANSPORTATION

Street	Total Estimated Cost (2016)	EA Schedule	Rationale
Sub-Area 1: Broadview Extension			
Broadview Avenue (Eastern to Lakeshore)			
Extend Broadview Avenue, including Broadview Underpass, Broadview Valley Wall Feature, streetcar in dedicated right-of-way.	$ 96,500,000.00	C	Construction of new road over $2.4M; only used cost from Eastern to Lakeshore as Queen is not in costing
Broadview Avenue (Lake Shore to Commissioners)			
Extend Broadview Avenue to Commissioners, including streetcar in dedicated right-of-way.	$ 26,500,000.00	C	Construction of new road over $2.4M
Broadview Avenue (Commissioners to the Ship Channel)			
Broadview Extension and Protect for Future Streetcar in Dedicated Right-of-Way	$ 9,500,000.00	C	Reconstruction or widening where the road will not be for the same purpose, use, capacity or at the same location (e.g., additional lanes, etc.) over $2.4M. Portion from Pinewood Studio south to ship channel is also a new road.
Bouchette Street (Eastern to Lake Shore)			
Bouchette Extension	$ 8,000,000.00	C	Construction of new road over $2.4M

Street	Total Estimated Cost	EA Schedule	Rationale
Sub-Area 2: North-South Connections East of Carlaw Avenue			
Carlaw Avenue (Eastern to Commissioners)			
Carlaw Avenue Reconstruction (Eastern to Lake Shore)	$ 4,500,000.00	A+	Reconstruction of road used for same purpose, use, capacity and same location; no financial limit (e.g. no change in number of vehicle lanes, etc.)
Carlaw Avenue Reconstruction (Lake Shore to Commissioners)	$ 7,000,000.00	A+	Reconstruction of road used for same purpose, use, capacity and same location; no financial limit (e.g. no change in number of vehicle lanes, etc.)
Carlaw Avenue Extension (Commissioners to Basin Extension)	$ 3,500,000.00	C	Construction of new road over $2.4M
Caroline Avenue			
Caroline Extension (Eastern to Lake Shore)	$ 10,000,000.00	C	Construction of new road over $2.4M
Caroline Extension (Lake Shore to Commissioners)	$ 6,500,000.00	C	Construction of new road over $2.4M
Woodfield Road			
Woodfield Extension and Upgrades	$ 2,000,000.00	A+	Reconstruction of road used for same purpose, use, capacity and same location; no financial limit (e.g. no change in number of vehicle lanes, etc.)
Sub-Area 3: Ship Channel Connections			
Cherry Street			
Cherry Street Upgrades (Ship Channel to Unwin)	$ 8,500,000.00	A+	Reconstruction of road used for same purpose, use, capacity and same location; no financial limit (e.g. no change in number of vehicle lanes, etc.)
Broadview Avenue			
Construct Broadview Bridge and Extension to Unwin	$ 73,000,000.00	C	Construction of new road over $2.4M

Street	Total Estimated Cost	EA Schedule	Rationale
Leslie Street			
Leslie Street Upgrades (Commissioners to Unwin)	$ 8,500,000.00	A+	Reconstruction of road used for same purpose, use, capacity and same location; no financial limit
Sub-Area 4A: Eastern Avenue Connections			
Eastern Avenue			
Eastern Avenue Upgrades (Broadview to Logan) with Allowance for upgrade the Underpass	$ 18,500,000.00	C	Upgrades to underpass and reconstruction of road
Eastern Avenue Upgrades (Logan to Leslie)	$ 13,000,000.00	A+	Reconstruction of road used for same purpose, use, capacity and same location; no financial limit
Eastern Avenue Upgrades (Leslie to Woodfield)	$ 9,500,000.00	A+	Reconstruction of road used for generally same purpose, use, capacity and same location; no financial limit (e.g. no change in number of vehicle lanes, etc.)
Sub-Area 4B: Mid-Block Connections			
New Street			
New East-West Street	$ 14,500,000.00	C	Construction of new road over $2.4M
Sub-Area 5: East-West Connections between Lake Shore and the Ship Channel			
Commissioners Street			
Commissioners Street (Don Roadway to Carlaw Avenue) with streetcar in dedicated right-of-way.	$ 75,000,000.00	C/TPAP	Reconstruction or widening including transit where the road will not be for the same purpose, use, capacity or at the same location (e.g., additional lanes, etc.) over $2.4M
Commissioners Street (Carlaw Avenue to Leslie Street) with streetcar in dedicated right-of-way.	$ 71,500,000.00	C/TPAP	Reconstruction or widening, including transit where the road will not be for the same purpose, use, capacity or at the same location (e.g., additional lanes, etc.) over $2.4M

Street	Total Estimated Cost	EA Schedule	Rationale
New East-West Street			
New East-West Street in McCleary District (Don Roadway to Logan)	$ 13,000,000.00	C	Construction of new road over $2.4M
New East-West Street in Turning Basin District (Logan to Carlaw)	$ 4,500,000.00	C	Construction of new road over $2.4M
Basin Street			
Basin Street Extension in Media City (Don Roadway to Broadview)	$ 9,000,000.00	C	Construction of new road over $2.4M
Basin Street Extension in Turning Basin District (Broadview to Carlaw)	$ 8,500,000.00	C	Construction of new road over $2.4M
Sub-Area 6: Unwin Avenue			
Unwin Avenue			
Unwin Avenue Realignment and Upgrades, including allowance for relocation of PEC infrastructure, fill or new circulating channel bridge	$ 53,000,000.00	C	Construction of new road over $2.4M

TABLE 9-2 CLASS EA SCHEDULES AND COST ESTIMATE – WATER/WASTEWATER

Location	Total Estimated Cost (2016)	EA Schedule*
Unilever Precinct		
Unilever Precinct Site Wide Servicing (water, sanitary and storm)	$ 11,500,000.00	A+
South of Eastern		
Caroline Sanitary Sewer (Eastern to Lake Shore)	$ 1,500,000.00	A+
Watermain Upgrades (Eastern, Morse, Heward, Woodfield and Leslie)	$ 5,000,000.00	A+
Film Studio District		
Commissioners Street Sanitary Sewer (Don Roadway to Carlaw Avenue)	$ 15,000,000.00	A+
Carlaw Avenue Interconnecting Sewer (Commissioners to Eastern)	$ 11,000,000.00	A+
Commissioners Watermain Upgrade	$ 3,000,000.00	A+
Carlaw Watermain Replacement	$ 1,000,000.00	A+
McCleary District and Media City Site Wide Servicing	$ 14,500,000.00	A+
Turning Basin District Site wide Servicing	$ 5,500,000.00	A+
East Port		
Caroline Sanitary Sewer and Watermain	$ 3,500,000.00	A+
South of Ship Channel		
Leslie/Unwin Watermain	$ 10,000,000.00	A+
Commissioners Street Watermain (include in Film Studio District above)	$ -	A+
Leslie/Unwin Sanitary Sewer	$ 19,500,000.00	A+
Commissioners Street Sanitary Sewer (included in the Film Studio District above)	$ -	A+
Construct new watermain across the Ship Channel at Broadview (allowance)	$ 3,000,000.00	A+

** Assumes construction in the existing road allowance.*

TABLE 9-3 CLASS EA SCHEDULES AND COST ESTIMATE – STORMWATER

Location	Total Estimated Cost (2016)	EA Schedule*	Rationale
Unilever Precinct			
Unilever Precinct	$ 10,228,791	A	-
South of Eastern			
South of Eastern SWM	$ 2,326,718	A	-
Film Studio District			
McCleary District	$ 25,734,858	A	-
Media City	$ 8,375,157	A	-
Turning Basin District	$ 35,098,474	A	-
East Port			
Warehouse District	$ 147,445,708	C	Two new storm outlets from the Commissioners Street open channel and the proposed OGS and SWQTF are **Schedule C** projects.
East Port	$ 3,260,095	A	-
South of Ship Channel			
South Port East	$ 12,147,471	A	-
South Port - Hearn	$ 8,649,247	A	-
South Port – Don Greenway Park	$ 98,823,703	C	A new storm outlet to the Ship Channel and the proposed OGS and SWQTF are Schedule C projects.
South Port - Cherry	$ 3,677,644	A	-

* The EA Schedule has been determined based on stormwater infrastructure within each individual district/block and does not consider the interdependencies with infrastructure in other blocks. The new storm sewer systems would be Schedule A projects, subject to any required new road allowances being established either through this TSMP or under a Plan of Subdivision.

9.8 Monitoring

Proper monitoring before, during and after construction is an important component of the successful implementation of the proposed infrastructure improvements. For Schedule C projects, details on monitoring will be confirmed during future Class EA work (e.g., Phases 3 and 4).

Construction monitoring is provided as guidance for future Schedule A/B projects recognizing that many projects will undergo further EA work and detail design.

The following sub-sections provide a general guideline to ensure that contractors are made aware of environmental considerations so that standards and commitments for both construction and operation are met.

Pre-Construction Monitoring and Inspection

Good site management is a priority for all phases of construction to limit the impact on environmental features within the Study Area. Typical site management practices for site preparation and construction phases to be followed by the Contract Administrator are listed below.

- install temporary erosion and sediment control measures prior to the commencement of any construction activities, including the installation of silt fencing to delineate the work zones from

no-go zones. Such measures shall be maintained throughout the duration of all construction activities;
- choose equipment that is best suited to site conditions and sensitivities;
- construction sheds, site offices, toilets, other temporary structures and storage areas for material and equipment shall be grouped in a compact manner and maintained in a neat and orderly condition at all times; and,
- confine construction operations to the working area. The Contract Administrator shall not enter upon or occupy any private property for any purpose, unless prior written permission is received.

The pre-construction monitoring activities typically carried out by the Contractor Administrator include the following:

- review applicable reports prepared for the Project (e.g., TSMP, ESR, other environmental reports) and contract documents to confirm all environmental conditions and obligations (e.g., mitigation measures identified in the Stage 1 Archaeological Assessment and Cultural Heritage Report prepared for the Project);
- ensure all permits and approvals have been obtained (or are in the process of completion) prior to onset of construction;
- ensure obligations in the contract package are met, including:
    - erosion and sedimentation control plan;
    - fuel/oil storage containment is located away from the fish-bearing watercourses and other drainage ditches that discharge into these watercourses; and,
    - prepare a photographic record of the existing environment prior to construction.

Monitoring and Inspection During Construction

During construction, the Contract Administrator and/or Inspection Staff will be responsible for monitoring the effectiveness of mitigation measures prescribed in any associated reports prepared for the individual projects. Mitigation measures and monitoring plans should be included as part of Contract Documents to ensure that they will be implemented in an effective manner. Immediate action should be taken to correct non-functioning mitigation measures.

Furthermore, the Contract Administrator and/or Inspector will also be responsible for identifying any activities that may cause negative environmental impacts that are different, or at a greater level of intensity, than anticipated, and which may be in contravention with applicable environmental regulations. In such instances, the Contract Administrator will take the necessary steps to modify the method(s) of operation to reduce those impacts or recommend immediate suspension of specific construction activities until the situation can be effectively remedied.

Construction activities will be sensitive to the presence of film activities present in the Study Area which can be impacted by noise. It is recommended that these noise sensitive facilities be notified of upcoming construction activities and that noise be mitigated to the extent possible.

Post-Construction Monitoring and Inspection

Although surplus materials and debris will be removed following each successive construction activity, a final cleanup of the construction zone and/or working area should be carried out by the Contract Administrator once construction activities have been completed. The purpose of post-construction monitoring and environmental inspection programs is to ensure, to the extent possible, that lands disturbed as a result of construction activities will be restored to their original use and condition as soon as possible after construction.

To ensure that restoration efforts have been carried out in a satisfactory manner, the Contract Administrator and/or Inspector will be responsible for carrying out a visual inspection of:

- all disturbed lands within the construction area established for the project; and,
- all lands where sodding, seeding or other vegetation has been planted.

The areas/features listed above will be visually inspected to ascertain the level of success of re-vegetation efforts and examined for evidence of subsidence. Any other environmental sensitivities that have developed after construction should also be identified at this time. In the event a problem or issue is identified, it should be addressed at on-site meetings with the Contract Administrator.

9.9 Process to Update the Master Plan

The TSMP is intended to be a living document and provide guidelines for future growth and development in the Study Area. This TSMP EA was carried out concurrently with several other studies in the immediate area, some of which are physically connected to the Study Area such as the Gardiner East EA, South of Eastern Strategic Direction and the Port Lands Planning Framework. In addition, there are several completed studies that are now progressing towards implementation such as the DMNP EA and LDLMP EA. **Section 6.9** provides an overview of the ongoing developments and other studies in the area that were considered in the preparation of this TSMP.

Considering the above, it is possible that significant changes to one or more of these projects could require modifications of the proposed infrastructure improvements proposed in the TSMP. This could include for example, major adjustments to the street alignments. Given the transitional and dynamic nature of the project area, the Project team acknowledges that flexibility to the TSMP is required to accommodate potential future changes that cannot be predicted at this time.

It is anticipated that changes to the TSMP would be accommodated in the following ways:

- As individual projects identified in the TSMP are implemented, the proposed project would be reviewed to confirm if it is still appropriate given other projects or plans that may have advanced in the project area. This review and update would occur in the following ways:
    - for Schedule A and A+ projects, which are considered to be preapproved, a review of these projects would be done to confirm their suitability considering other changes that may have occurred in the project area.

  - for Schedule B projects, this would be done as part of the Class EA "screening process" including consultation with potentially affected stakeholders as well as describing applicable mitigation measures for the project and the release of a project file (note, Schedule B projects were not identified).
  - for Schedule C projects, required updates would be made through the completion of Phases 3 and 4 of the Class EA process including the filing of an Environmental Study Report (ESR) for public review. As part of the of alternative design work to be undertaken in Phase 3, for each applicable Project, the location and alignment of proposed infrastructure would be reviewed and confirmed.

- During the review of the TSMP that would be undertaken on a regular basis. Under the Class EA, it is recommended that a Master Plan be reviewed every 5-years to determine the need for a detailed formal review. During this review, changes may have been made to individual projects as part of their implementation, to original assumptions that warrant further consideration, or to the environment. These changes may warrant revisiting decisions previously made for the TSMP.

Examples of changes that could warrant updates to the TSMP include the following:

- major changes to original assumptions used to arrive at the recommended TSMP (e.g., major revisions to land use such as the introduction of residential uses south of the Ship Channel, major changes to population and employment estimates that have the potential to result in unacceptable levels of service in a highly-urbanized, downtown Toronto context, or that result in the need for additional water or wastewater infrastructure outside of future street right-of-ways); and,
- changes to the environmental setting that result in significant changes to project effects and the reasons for project selection (e.g. a significant change in the proposed flood protection system affecting the protected area or the VWFs, climate change effects extending beyond those considered in the TSMP such as rising lake levels).

As the individual projects identified in the TSMP are advanced for implementation it is expected that many minor changes would be made to these projects as a result of detailed design work. Minor changes that are expected and which would not warrant a full TSMP update include for example:

- minor shift in a proposed street, sewer or watermain alignment that do not result in a significant change to project effects;
- minor change in the location of infrastructure (e.g. stormwater facilities) that do not result in a significant change to project effects;
- minor change to bridges including approaches and clearances;
- minor changes to proposed flood protection measures identified in the DMNP EA; and,
- conclusions from other studies that result in the need for minor changes to the recommended road and other infrastructure network identified in the TSMP.

The specific process that will be followed by the City to update the TSMP (if deemed necessary) will be identified during that time when additional detail (e.g., scope/magnitude of the change) is known; however, it is common to follow a similar assessment schedule as the Official Plan review.

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