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Final Early Works Report

Ontario Line East Harbour Station Early Works

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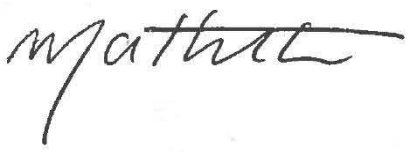

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Executive Summary

ES.1 Ontario Line East Harbour Station Early Works

The Ontario Line Project (the Project) is being assessed in accordance with Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act. Ontario Regulation 341/20: Ontario Line Project outlines a Project-specific environmental assessment process that includes an Environmental Conditions Report, Environmental Impact Assessment Report, and an opportunity for Early Works Report(s) for assessment of works that are ready to proceed in advance of the Environmental Impact Assessment Report. The Environmental Conditions Report documents the local environmental conditions of the Ontario Line Study Area and provides a preliminary description of the potential environmental impacts from the Project. Information outlined in the Environmental Conditions Report is used to inform the Early Works Report(s) and Environmental Impact Assessment Report, which study environmental impacts in further detail and confirm and refine preliminary mitigation measures identified in the Environmental Conditions Report.

Ontario Line early works are components of the Project that are proposed to proceed before the completion of the Ontario Line environmental impact assessment process. An overview of the Project is provided in **Section 1.2**. Early works are defined in Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act as follows:

> "any components of the Ontario Line Project that Metrolinx proposes to proceed with before the completion of the Ontario Line assessment process, such as station construction, rail corridor expansion, utility relocation or bridge replacement or expansion."

East Harbour Station early works are considered to be of strategic importance in enabling the timely implementation of the Project. These early works are being advanced in an area where the Project interfaces with GO Expansion. Advancing early works and supporting environmental and technical studies in this area provides planning and design efficiencies for the Project and GO Expansion and facilitates the timely implementation of both.

AECOM Canada Limited (AECOM) was retained by Metrolinx and Infrastructure Ontario to complete this Ontario Line East Harbour Station Early Works Report (this Report) to document the assessment of East Harbour Station early works (**Figure ES-1**). The East Harbour Station early works components and construction activities are further described in **Section 1.3**. East Harbour Station was previously assessed through the SmartTrack program in 2018 and since the completion of that assessment, a number of changes have been made to the project to accommodate the Ontario Line, documented within this Report.

ES.2 Study Process

This Report has been completed in accordance with Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act and contains the information outlined in **Table ES-1**.

Table ES-1: Report Contents in Accordance with Ontario Regulation 341/20: Ontario Line Project

Reg. Section	Requirement	Report Section
Section 8(2)1	A description of the early works including a description of the alternatives that were considered.	**Section 1.3 and Section 3**
Section 8(2)2	The rationale for proceeding with the early works and a summary of background information relating to them.	**Section 1.3**
Section 8(2)3	A map showing the site of the early works.	**Figure 3-1 and Appendix A**
Section 8(2)4	A description of the local environmental conditions at the site of the early works.	**Section 5 and Appendix A**
Section 8(2)5	A description of all studies undertaken in relation to the early works, including, i. a summary of all data collected or reviewed, and ii. a summary of all results and conclusions.	**Section 5, Section 6, and Appendix A**
Section 8(2)6	Metrolinx's assessment and evaluation of the impacts that the preferred method of carrying out the early works and other methods might have on the environment, and Metrolinx's criteria for assessment and evaluation of those impacts.	**Section 6 and Appendix A**
Section 8(2)7	A description of any measures proposed by Metrolinx for mitigating any negative impacts that the preferred method of carrying out the early works might have on the environment.	**Section 6 and Appendix A**
Section 8(2)8	A description of the means Metrolinx proposes to use to monitor or verify the effectiveness of mitigation measures proposed.	**Section 6 and Appendix A**
Section 8(2)9	A description of any municipal, provincial, federal or other approvals or permits that may be required for the early works.	**Section 7 and Appendix A**
Section 8(2)10	A consultation record, including, i. a description of the consultations carried out with Indigenous Nations and interested persons, ii. a list of the Indigenous Nations and interested persons who participated in the consultations, iii. summaries of the comments submitted by Indigenous Nations and interested persons, and iv. a summary of discussions that Metrolinx had with Indigenous Nations, and copies of all written comments submitted by Indigenous Nations.	**Section 8 and Appendix B**

Refer to **Section 2** of this Report for more information on the early works study process.

ES.3 Early Works Description

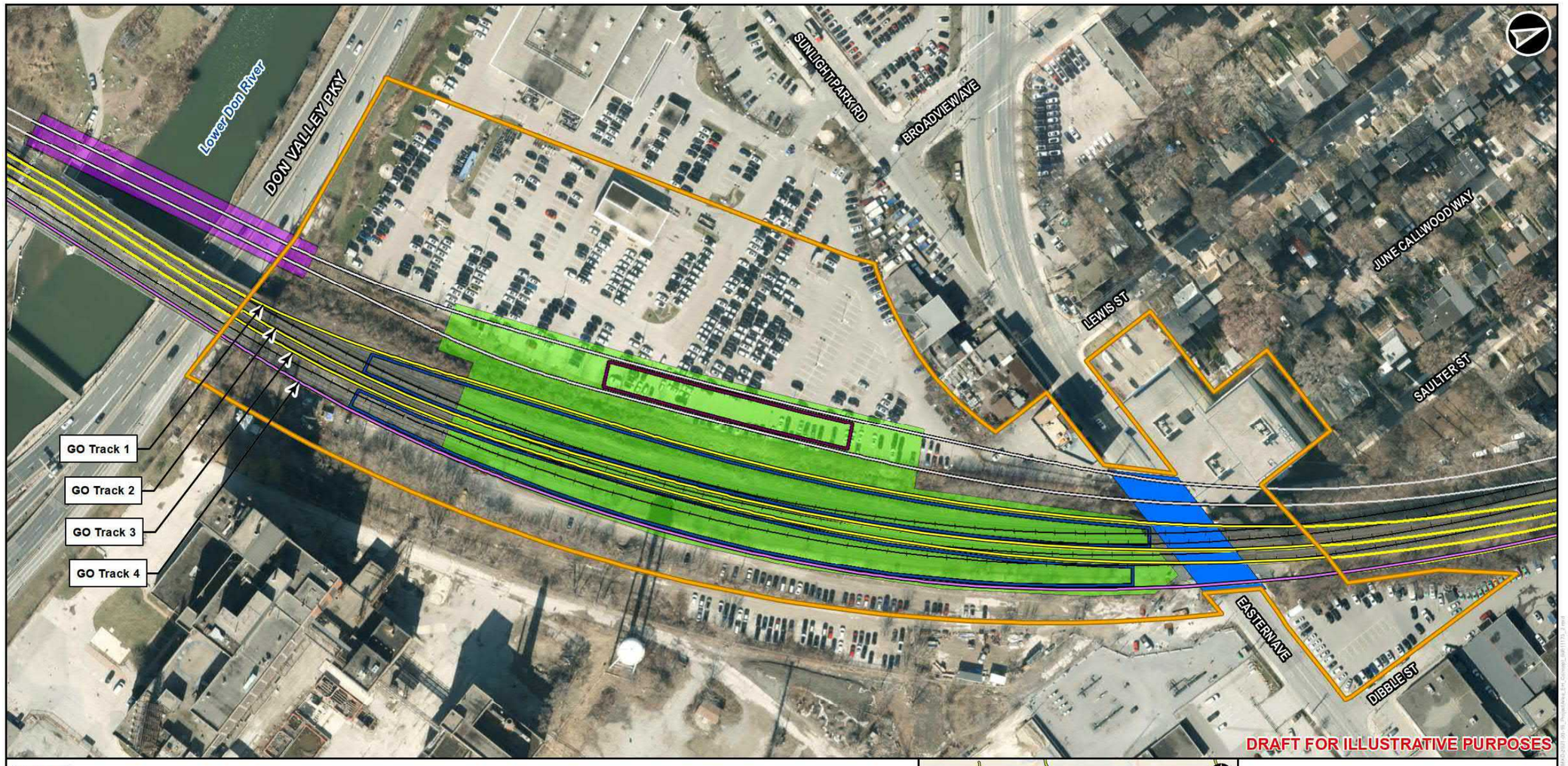
This Report documents the assessment of East Harbour Station early works. The locations and components of these early works are shown in **Figure ES-1**.

The East Harbour Station early works will include:

- Reconfiguration of the existing Lakeshore East GO tracks to accommodate station facilities and future Ontario Line tracks;
- Construction of station facilities such as platforms and entrances;
- Replacement and expansion of the existing Eastern Avenue rail bridge to accommodate four Lakeshore East GO tracks and two future Ontario Line tracks; and
- Site preparation activities such as grading, demolition of existing structures where required, and utility relocation or protection.

The East Harbour Station Early Works Project Footprint shown in **Figure ES-1** includes permanent infrastructure to be built as part of the East Harbour Station early works as well as lands anticipated to be temporarily impacted by early works construction staging/laydown and access; these lands are anticipated to be refined and reduced to the extent feasible as project planning progresses. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities. Assessment of Project operations and construction of other project components will be documented in the Ontario Line Environmental Impact Assessment Report in accordance with Section 15 of Ontario Regulation 341/20: Ontario Line Project. Note that the assessment of the Lakeshore East Joint Corridor operational noise and vibration impacts is documented in the Lakeshore East Joint Corridor Noise and Vibration Operations Report found in **Appendix C** of this report.

Figure ES-1: East Harbour Station Early Works Conceptual Design



ES.4 Local Environmental Conditions

This section provides a summary of the existing natural, technical, socio-economic, and cultural aspects of the existing environment in the context of East Harbour Station early works. Information on the following environmental components is provided in the sections below, and where applicable, is supplemented with supporting detailed technical reports:

- Natural Environment.....**Section 5.1** and **Appendix A1**
- Soil and Groundwater.....**Section 5.2**
- Hydrology and Surface Water.....**Section 5.3**
- Air Quality.....**Section 5.4** and **Appendix A2**
- Noise and Vibration .....**Section 5.5** and **Appendix A3**
- Socio-Economic and Land Use Characteristics .....**Section 5.6**
- Built Heritage Resources and Cultural Heritage Landscapes .....**Section 5.7**
- Archaeological Resources.....**Section 5.8**
- Traffic and Transportation .....**Section 5.9** and **Appendix A4**
- Utilities.....**Section 5.10**

The Ontario Line Final Environmental Conditions Report (AECOM, 2020a)[1] was reviewed to support the determination of local environmental conditions within the discipline-specific study areas developed for the East Harbour Station early works. Where necessary, review of additional desktop and field information was undertaken. The local environmental conditions for East Harbour Station early works are summarized below.

Natural Environment

The East Harbour Station Natural Environment Study Area includes the East Harbour Station Early Works Project Footprint and a 120-metre buffer. This buffer has been applied in accordance with the Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, Second Edition (Ministry of Natural Resources and Forestry, 2010).

1. The Ontario Line Final Environmental Conditions Report (AECOM, 2020) was published on November 30, 2020 in accordance with Ontario Regulation 341/20: Ontario Line Project.

The East Harbour Station Early Works Project Footprint falls within the City of Toronto's Natural Heritage System (1.43 hectares), and Toronto and Region Conservation Authority's regulation limits (5.16 hectares). The Lower Don River is designated as an Urban River Valley under the Greenbelt Plan, of which 0.43 hectares overlaps the footprint. All of the vegetation communities in the East Harbour Station Natural Environment Study Area are generally disturbed as a result of anthropogenic activities and are largely limited to narrow vegetation strips within the existing rail corridor and along the Lower Don River, which are surrounded by heavily developed commercial, industrial and residential areas. These vegetation communities contain large proportions of non-native and invasive plant species and none were identified as being provincially significant (AECOM, 2017; AECOM, 2018; 4Transit, 2018a).

According to the Ministry of Natural Resources and Forestry's GeoHub Mapping (2020), there are no Provincially Significant Wetlands, Locally Significant Wetlands, significant valleylands or provincially significant Areas of Natural and Scientific Interest within the East Harbour Station Natural Environment Study Area. In addition, there are no woodlands or unevaluated wetlands within the East Harbour Station Natural Environment Study Area as mapped by the Ministry of Natural Resources and Forestry.

A portion of the Lower Don River is located within the East Harbour Station Natural Environment Study Area, which flows under the Lakeshore East rail bridge. The Lower Don River provides fish habitat important for migration, feeding and refuge. However, conditions are generally non-limiting throughout with no specialized (critically limiting spawning) habitat identified (AECOM, 2017; 4Transit, 2018b). No barriers to fish use were identified. Migratory species (e.g., Chinook Salmon) use the Lower Don River as a seasonal migratory corridor to and from Lake Ontario (AECOM, 2017). The fish community is composed of mainly tolerant warmwater fish species (HDR, 2018).

Habitat for the Northern Map Turtle, a Species of Conservation Concern, is present within the East Harbour Station Natural Environment Study Area, and candidate habitat may occur for Common Nighthawk, Eastern Wood-pewee, Monarch and Snapping turtle (all identified as Species of Conservation Concern) within the East Harbour Station Natural Environment Study Area.

Barn Swallow and Chimney Swift, both Species at Risk, have a high probability to occur within the East Harbour Station Natural Environment Study Area. Bat Species at Risk including Eastern Small-footed Myotis, Little Brown Myotis, Northern long-eared Myotis and Tri-coloured Bat have medium probability to occur within the East Harbour Station Natural Environment Study Area. Butternut tree has medium probability to occur within the East Harbour Station Natural Environment Study Area as well.

The following Species at Risk have been identified to have a low probability to occur within the East Harbour Station Natural Environment Study Area: Bank Swallow, Bobolink, Eastern Meadowlark, and Blanding's Turtle.

Soil and Groundwater

The East Harbour Station Soil and Groundwater Study Area includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer. This buffer has been applied in accordance with the Hydrogeological Assessment Submissions Conservation Authority Guidelines for Development Applications (Toronto and Region Conservation Authority, 2013a), which recommends well data for private wells within 500 metres be used for impact assessment.

The East Harbour Station Soil and Groundwater Study Area is within the Iroquois Plain physiographic region. The Iroquois Plain is a lowland mainly composed of sand extending north up to 10 kilometres from the shoreline of Lake Ontario.

A review of the Ministry of the Environment, Conservation and Parks water well records database indicates that bedrock depths within the East Harbour Station Soil and Groundwater Study Area range from approximately 11 to 35 metres below ground surface. Overburden (above bedrock) geologic materials within the East Harbour Station Soil and Groundwater Study Area consist primarily of clayey silt, silty clay, sandy silt, and silty sand.

Source water areas/features, as defined by the Ministry of the Environment, Conservation and Parks were reviewed and it was determined that the East Harbour Station Soil and Groundwater Study Area overlaps with a Highly Vulnerable Aquifer, which is an aquifer that is susceptible to contamination due to its location near the ground surface or the surrounding soils. The East Harbour Station Soil and Groundwater Study Area is also within an Intake Protection Zone (areas of land and water that contribute source water to a surface water drinking system intake with a specified distance) and Event Based Areas (areas within a watershed where a spill could pollute the surface water drinking supply because of sanitary sewers, oil/fuel storage tanks, sewage treatment plants or pipelines close to rivers, streams, and other water bodies).

Hydrology and Surface Water

The East Harbour Station Hydrology and Surface Water Study Area includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer. Based on the Toronto and Region Conservation Authority's Stormwater Management Criteria (Toronto and Region Conservation Authority, 2012), the zone of potential impacts is defined by presence of waterbodies. The Lower Don River is located within the East

Harbour Station Hydrology and Surface Water Study Area. The 500 metre buffer has been applied to include the Toronto and Region Conservation Authority Regulation Limit and Don River Floodplain based on the scale and significance of the Don River, and to consider surrounding flood protection initiatives.

According to Toronto and Region Conservation Authority flood and hazard mapping, the East Harbour Station Hydrology and Surface Water Study Area is within the Toronto and Region Conservation Authority's Regulation Area (Toronto and Region Conservation Authority, 2020), and the Don River Floodplain. The West Don Lands Flood Protection Landform located west of the Richmond Hill rail corridor, within the East Harbour Station Hydrology and Surface Water Study Area, is a flood protection landform that was constructed in 2012 to reduce the risk of flooding to the West Don Lands neighbourhood.

Air Quality

The East Harbour Station Air Quality Study Area includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer. This buffer has been applied in accordance with the Ministry of Transportation's Environmental Guide for Assessing and Mitigating the Air Quality Impact and Greenhouse Gases of Provincial Transportation Projects (Ministry of Transportation, 2020), which states that for major roads, a distance of 500 metres is expected to capture the maximum pollutant concentrations. Though the East Harbour Station early works do not include construction of major roads, similar ground level sources of fugitive emission, for example on-site vehicle movement, which are expected to have a similar range of pollutant concentration impacts may be anticipated.

Air quality measurements indicate there are background level existing exceedances of benzene and benzo(a)pyrene according to the Ambient Air Quality Criteria (Ministry of the Environment, 2012) relevant to the East Harbour Station Air Quality Study Area. Benzene has elevated annual contributions which exceed the threshold guideline from the Ambient Air Quality Criteria. Benzo(a)pyrene, the representative polycyclic aromatic hydrocarbon, shows extremely elevated levels of concentration for both annual and daily provincial air quality thresholds. This is due mainly to high presence of regional air quality contributions, high traffic volumes within the Greater Toronto Area, and industrial contributions from Toronto, the Greater Toronto Area, and Hamilton.

When considering the existing background air quality levels within the East Harbour Station Study Area and local meteorological data, predicted areas of impact can be determined. The predominant wind direction, as taken from the Toronto City Centre meteorological station located on Toronto Island, is from the northeast towards the southwest. In the East Harbour Station Study Area, there are no identified sensitive or

critical receptors within 500 metres southwest of the early works construction activities. Secondary predominant winds blow from the west, northwest and southwest. As a result, impacts from early works construction activities may be potentially directed towards the receptors located north of Eastern Avenue and the receptors along Lewis Street, McGee Street, Saulter Street, and Degrassi Street, as well as Boulton Avenue (SR10 to SR16). The aforementioned receptors are located between 30 and 450 metres from the early works project footprint. Due to their proximity, the sensitive receptors at 9 Lewis Street (SR10) and 2 McGee Street (SR11) are likely to be the most impacted. Due to the proximity of receptors to the project footprint, construction activities could be expected to impact receptors in all directions, however, more prevalently the receptors located downwind of the predominant wind directions identified.

Noise and Vibration

The East Harbour Station Noise and Vibration Study Area includes the East Harbour Station Early Works Project Footprint and an approximately 250 metre buffer. This buffer was developed using noise and vibration screening areas which were determined by calculating the distances where the applicable criteria are predicted to be met, using a conservative approach where it was assumed that all construction equipment listed in **Table 3-1** would be simultaneously active. The approximately 250 metre night-time noise screening area was the largest and was thus used to define the East Harbour Station Noise and Vibration Study Area. This buffer distance was also developed in accordance with the United States Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (2018), and City of Toronto By-law 514 (2008).

Noise measurements indicate that average existing daytime, evening, and night-time noise levels in the vicinity of the East Harbour Station Noise and Vibration Study Area range as follows:

- **Daytime** (7 AM to 7 PM) Leq, 1hr: 64 dBA;
- **Evening** (7 PM to 11 PM) Leq, 1hr: 62 dBA to 64 dBA; and
- **Night-time** (11 PM to 7 AM) Leq, 1hr: 52 dBA to 58 dBA.

The local environment does not have any normally occurring sources of perceptible vibration; the most significant source of vibration near the early works is the existing rail lines. Therefore, for the majority of the East Harbour Station Noise and Vibration Study Area, existing vibration levels are expected to be below human perceptibility, except in close proximity to the existing rail lines. The construction vibration assessment in this Report uses absolute vibration levels, which are not affected by the existing vibration levels.

Socio-Economic and Land Use Characteristics

The East Harbour Station Socio-Economic and Land Use Characteristics Study Area includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer.

The lands within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area are designated as Employment Areas, Parks, Neighbourhoods and Mixed Use Areas, with pockets of Apartment Neighbourhoods, Open Space and Regeneration Areas. Provincial and municipal policies applicable to the East Harbour Station Socio-Economic and Land Use Characteristics Study Area have a shared objective of strengthening connections and access to economic opportunities through improved transit networks.

Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area, the following notable public realm elements exist: Riverside and Leslieville communities, Lower Don Trail, and Corktown Common.

There are several parks and open spaces and multiple community groups and institutional uses located within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area.

The East Harbour Station Socio-Economic and Land Use Characteristics Study Area overlaps with the South Riverdale neighbourhood in the City of Toronto. According to 2016 Census data, the South Riverdale neighbourhood experienced a population increase from 2011 of approximately 8.7%.

Applications for proposed future development were reviewed to understand the scope of future potential changes within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area. There were 12 active development applications identified within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area, as of July 7, 2021.

Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area, there are plans for new or expanded public spaces and community service facilities as part of the Don Mouth Naturalization and Port Lands Flood Protection Project Lower Don River West Remedial Flood Protection Project, Improving the Esplanade and Mill Street Project, and the Broadview and Eastern Flood Protection Municipal Class Environmental Assessment; and improvements to existing public spaces through the Lower Don Trail Master Plan and Lower Don Trail Phase 2 Improvements (City of Toronto, et al., 2021).

Built Heritage and Cultural Heritage Landscapes

The East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area includes the East Harbour Station Early Works Project Footprint, adjacent properties[2] to account for potential indirect impacts, and properties within 11.1 metres of the East Harbour Station Early Works Project Footprint to account for potential impacts to built heritage resources and cultural heritage landscapes that may result from vibration. The distance of 11.1 metres from the East Harbour Station Early Works Project Footprint was included in the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area to account for potential vibration impacts to buildings extremely susceptible to vibration damage (including heritage buildings and their foundations) in accordance with the Ontario Line East Harbour Station Early Works – Final Noise and Vibration Report (AECOM, 2021b[3]).

Based on data collection, including a review of the Ontario Line Cultural Heritage Report (AECOM, 2020b), the 40-year threshold, the Criteria Checklist (Ministry of Heritage, Sport, Tourism and Culture Industries, 2016), and the field review conducted for early works by a qualified cultural heritage professional on June 24, 2021, no known, previously identified or potential built heritage resources/cultural heritage landscapes were identified in the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area.

Archaeological Resources

Review of archaeological resources was limited to the East Harbour Station Early Works Project Footprint. Based on the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism and Culture, 2011), only areas of direct construction impacts are subject to archaeological assessment.

As per the results of the Stage 1 archaeological assessment developed for the Project, the majority of the East Harbour Station Early Works Project Footprint has been cleared of archaeological concerns by previous archaeological assessments completed by

2. Adjacent is defined in Section 3.1.5 (Heritage Conservation) of the City of Toronto's Official Plan as "those lands adjoining a property of the heritage register or lands that are directly across from and near to a property on the heritage register and separated by land used as a private or public road, highway, street, lane, trail, right-of-way, walkway, green space, park and/or easement, or an intersection of any of these; whose location has the potential to have an impact on a property on the heritage register; or as otherwise defined in a Heritage Conservation District Plan adopted by by-law" (City of Toronto, 2019).
3. The 250 metre buffer from the Ontario Line Cultural Heritage Report was refined using analysis from the Ontario Line East Harbour Station Early Works – Noise and Vibration Report (AECOM, 2021). The refined buffer was calculated based on the Project-specific anticipated impacts of early works using a conservative approach (where construction equipment was assumed to operate at the edge of the East Harbour Station Early Works Project Footprint, closest to nearby buildings/structures) and accounts for potential vibration impacts to buildings extremely susceptible to vibration damage (including heritage buildings and their foundations). The resulting buffer is 11.1 metres from the East Harbour Station Early Works Project Footprint.

multiple consultants, including AECOM (2016; 2020c; 2021) and ASI (2017). However, there are small areas retaining high to moderate archaeological potential within the East Harbour Station Early Works Project Footprint for the recovery of Indigenous artifacts and 19th century sites related to the City of Toronto expansion.

Traffic and Transportation

The East Harbour Station Traffic and Transportation Study Area includes the East Harbour Station Early Works Project Footprint and adjacent road segments and intersections which meet either of the following criteria:

- Provide connection to the East Harbour Station Early Works Project Footprint (i.e., Eastern Avenue, Broadview Avenue, Lewis Street, Sunlight Park Road, and Dibble Street) and are thus potentially considered a part of the construction vehicles routes, where heavy vehicles are permitted; or,
- Impacted directly by the early works activities within the East Harbour Station Early Works Project Footprint (e.g., replacement of the Eastern Avenue rail bridge is anticipated to result in potential lane closures along Eastern Avenue).

Existing elements of the transportation and transit networks within the East Harbour Station Traffic and Transportation Study Area include:

- A major east-west arterial road (Eastern Avenue), a minor north-south arterial road (Broadview Avenue), a one-way local street (Lewis Street), and an east-west local road (Sunlight Park Road);
- Sidewalks that run along Eastern Avenue, Broadview Avenue, Lewis Street, Sunlight Park Road, and Dibble Street, and painted crosswalks across all legs of the signalized intersection of Eastern Avenue and Broadview Avenue,
- Shared roads for cyclists;
- Metrolinx-owned rail tracks that service commuter trains operated by Metrolinx (i.e., Lakeshore East and Stouffville GO lines) and VIA Rail (i.e., Toronto-Ottawa and Toronto-Montreal lines) and Canadian National Railway and Canadian Pacific Railway freight trains operate on these lines; and
- One bus route operated by Toronto Transit Commission (bus route #143 – Downtown/Beach Express).

The Ontario Line Final Environmental Conditions Report (AECOM, 2020a) notes that turning movement counts and signal timing plans were not available at some intersections within the Ontario Line Study Area, and were not collected through new traffic surveys considering the uncharacteristic traffic conditions as a result of the

COVID-19 pandemic. As a result of the data limitations related to the identified road network within the East Harbour Station Traffic and Transportation Study Area, a quantitative level of service assessment of some intersections could not be undertaken and is not included in this Report.

Utilities

Review of utilities was limited to the East Harbour Station Early Works Project Footprint. This approach captures potential direct impacts to private and public utilities as a result of the early works construction activities.

Existing private and public utilities were reviewed within the East Harbour Station Early Works Project Footprint. Private utilities include Hydro One Networks Incorporated, Zayo Group, Enbridge Gas Distribution, Imperial Oil, Bell Canada, Rogers Communications Partnership, and Group Telecom. Public utilities within the East Harbour Station Early Works Project Footprint include Toronto Hydro and Toronto Water. A refined list will be confirmed as planning progresses.

ES.5 Potential Impacts, Mitigation Measures and Monitoring Activities

Section 6 includes information related to potential impacts, mitigation measures, and monitoring activities.

Refer to **Table ES-2** for a complete list of potential impacts, mitigation measures, and monitoring activities for the East Harbour Station early works.

Table ES-2: Potential Impacts, Mitigation Measures and Monitoring Activities for the East Harbour Station Early Works

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Natural Environment	Designated Natural Areas	■ No potential impacts as there are no Designated Natural Areas within 120 metres of the East Harbour Station Early Works Project Footprint	■ None Required	■ None Required
Natural Environment	Policy Area – City of Toronto Natural Heritage System	■ Vegetation removal within the City of Toronto Natural Heritage System	■ Refer below to mitigation measures described for Vegetation Communities. ■ Consultation with City of Toronto.	■ Refer below to monitoring described for Vegetation Communities.
Natural Environment	Policy Area – City of Toronto Ravine and Natural Feature Protection	■ No potential impacts as the East Harbour Station Early Works Project Footprint is located outside of the City of Toronto Ravine and Natural Feature Protection By-Law Area.	■ None Required.	■ None Required.
Natural Environment	Policy Area – Toronto and Region Conservation Authority Regulation Areas	■ Vegetation removal within Toronto and Region Conservation Authority Regulated Areas	■ Refer below to mitigation measures described for Vegetation Communities, Wildlife and Wildlife Habitat, Migratory Breeding Birds and Nests, Significant Wildlife Habitat, Species at Risk, and Aquatic Environment. ■ Further consideration to reduce potential impacts within the Toronto and Region Conservation Authority Regulated Areas to the extent feasible will be undertaken during detailed design.	■ Refer below to monitoring described for Vegetation Communities. ■ Recommendations for additional monitoring related to vegetation removal within regulated areas may be determined through consultation with Toronto and Region Conservation Authority.
Natural Environment	Policy Area – Urban River Valley under the Greenbelt Plan	■ Vegetation removal within the Urban River Valley	■ Refer below to mitigation measures described for Vegetation Communities, Wildlife and Wildlife Habitat, Significant Wildlife Habitats, Migratory Breeding Birds and Nests, Species at Risk and Aquatic Environment. ■ Compensation for the removal of vegetation in accordance with Metrolinx's Vegetation Guideline (2020) approach will consider maintaining or enhancing connectivity along the Lower Don River to the extent feasible.	■ Refer below to monitoring described for Vegetation Communities, Wildlife and Wildlife Habitat and Aquatic Environment.
Natural Environment	Vegetation Communities	■ Removal of vegetation communities ■ Damage to adjacent vegetation or Ecological Land Classification communities as a result of accidental intrusion	■ Vegetation removal will be reduced and limited to within the East Harbour Station early works construction areas. ■ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the East Harbour Station early works construction areas and prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ■ Compensation for the removal of vegetation will be provided in accordance with Metrolinx's Vegetation Guideline (2020). ■ Temporarily disturbed areas will be re-vegetated using non-invasive, preferably native plantings and/or seed mix appropriate to the site conditions and adjacent vegetation communities. Seed mixes will be used in conjunction with an appropriate non-invasive cover crop as needed. ■ Vegetation removals will also consider and mitigate potential impacts to sensitive species (e.g., migratory birds) and features (e.g., Significant Wildlife Habitat). Refer to the wildlife and wildlife habitat and Species at Risk mitigation measures described below.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Monitoring will include inspection of construction fencing/silt fencing to confirm appropriate installation, maintenance and rehabilitation to prevent accidental damage to vegetation or Ecological Land Classification communities outside of the work construction area. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. ■ If required, the approach to compensation monitoring will be developed in accordance with Metrolinx's Vegetation Guideline (2020).

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Natural Environment	Vegetation Communities	■ City and private tree removal	■ An Arborist Report by an International Society of Arboriculture Certified Arborist will be prepared in accordance with the Ontario Forestry Act R.S.O. 1990, and other regulations and best management practices as applicable. ■ The Arborist Report will include, but not be limited to the individual identification of all trees within the East Harbour Station early works construction areas including those that require removal or preservation, or trees that may be injured. Trees to be identified may include those on Metrolinx property, trees on public and private lands, and boundary trees. City of Toronto by-laws dictate the minimum area buffers to be inventoried and Diameter at Breast Height which requires inventory. ■ Prior to the undertaking of tree removals, a Tree Removal Strategy/Tree Preservation Plan will be developed during detailed design to document tree protection and mitigation measures that follow the City of Toronto Tree Protection Policy and Specifications for Construction Near Trees Guidelines (2016b) and adherence with best practices, standards and regulations on safety, environmental and wildlife protections. ■ Compensation for tree removals will be undertaken in accordance with provisions outlined in the Metrolinx Vegetation Guideline (2020). ■ Pruning of branches will be conducted through the implementation of proper arboricultural techniques by an International Society of Arborists certified Arborist. ■ Tree Protection Zone fencing will be established to protect and prevent tree injuries. Tree Protection Zones will be clearly staked prior to construction using barriers in accordance with local by-law requirements.	■ Regular inspection in areas of vegetation removal will be undertaken as required during construction to ensure that fencing is intact, only specified trees are removed and no damage is caused to the remaining trees and adjacent vegetation communities. ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. ■ If required, the approach to compensation monitoring will be developed in accordance with Metrolinx's Vegetation Guideline (2020).
Natural Environment	Vegetation Communities	■ Potential for the spread of emerald ash borer, associated with removal, handing and transport of ash trees	■ Removal of ash trees, or portions of ash trees, will be carried out in compliance with the Canada Food and Inspection Agency Directive 'D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the emerald ash borer. To comply with this Directive, all Ash trees requiring removal, including any wood, bark or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts.
Natural Environment	Vegetation Communities	■ Increased soil erosion and sedimentation	■ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the East Harbour Station early works construction areas and prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ■ An Erosion and Sediment Control Plan, in accordance with the Erosion and Sediment Control Guide for Urban Construction (Toronto and Region Conservation Authority, 2019), will be prepared prior to and implemented during construction to reduce the risk of sedimentation to the vegetation communities.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. ■ All erosion and sediment control measures should be inspected weekly, after every rainfall and significant snow melt event, and daily during periods of extended rain or snow melt. ■ All damaged erosion and sediment control measures will be repaired and/or replaced within 48 hours of the inspection.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Natural Environment	Vegetation Communities	■ Soil or water contamination as a result of spills (e.g., grease and/or fuel) from equipment use ■ Introduction or spread of invasive species	■ A Spill Prevention and Contingency Plan will be developed and adhered to. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. ■ Refuelling of equipment will occur at least 30 metres away from any watercourse. ■ Refuelling shall be done within refuelling stations lined with appropriate material to prevent seepage and fuel discharge. ■ All machinery, construction equipment and vehicles arriving on-site should be in clean condition (e.g., free of fluid leaks, soils containing seeds of plant material from invasive species) and be inspected and washed in accordance with the Clean Equipment Protocol for Industry (Halloran et al., 2013).	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts.
Natural Environment	Wildlife and Wildlife Habitat – General	■ Disturbance, displacement or mortality of wildlife	■ Prior to construction, investigation of the East Harbour Station early works construction areas for wildlife and wildlife habitat that may have established following the completion of previous surveys will be undertaken, as appropriate. ■ If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat. For example, construction activities will cease or be reduced, and wildlife will be encouraged to move off-site and away from the construction area on its own.	■ Regular on-site inspection by on-site environmental workers or construction staff should occur within the construction area to ensure that no wildlife is trapped within the construction area. ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts.
Natural Environment	Significant Wildlife Habitat - Eastern Wood-pewee	■ Removal of up to 1.5 hectares of candidate habitat for Eastern Wood-pewee	■ Refer below to mitigation measures described for Migratory Breeding Birds and Nests.	■ Refer below for monitoring requirements described for Migratory Breeding Birds and Nests.
Natural Environment	Significant Wildlife Habitat - Monarch	■ Removal of up to 0.32 hectares of candidate habitat for Monarchs	■ Identify opportunities to promote pollinator species and habitat in accordance with the Metrolinx Vegetation Guideline (2020). This may include planting or seeding native flowering plants in temporarily disturbed areas.	■ Regular monitoring (site inspections) will be undertaken during construction to prevent unauthorized impacts to habitat used by Monarch.
Natural Environment	Significant Wildlife Habitat - Common Nighthawk	■ Removal of candidate nesting habitat for Common Nighthawk	■ Refer below to mitigation measures described for Migratory Breeding Birds and Nests. ■ Demolition of buildings should be scheduled outside of the breeding bird season of April 1 to August 31. If this is not possible and buildings must be demolished during this period, the following will be completed: – The roofs will be checked for presence of gravel. If gravel is not present, then the building is unlikely to provide suitable nesting habitat for Common Nighthawk. If gravel is present, a search for eggs and nesting activity for Common Nighthawk on the roof will be conducted. If nests or nesting activity of Common Nighthawk are confirmed, the building cannot be demolished until it is confirmed by a Qualified Biologist that young have fully fledged and left the nest.	■ Refer below for monitoring requirements described for Migratory Breeding Birds and Nests.
Natural Environment	Migratory Breeding Birds and Nests	■ Disturbance or destruction of migratory bird nests	■ All works must comply with the Migratory Birds Convention Act, including timing windows for the nesting period (April 1 to August 31 in Ontario). ■ If activities (i.e., vegetation clearing and building demolition) are proposed to occur during the general nesting period, a breeding bird and nest survey will be undertaken prior to required activities. Nest searches by an experienced searcher are required and will be completed by a qualified Biologist no more than 48 hours prior to vegetation removal. ■ If a nest of a migratory bird is found outside of this nesting period (including a ground nest) it still receives protection.	■ Regular monitoring will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Natural Environment	Wildlife Habitat Connectivity	■ Decrease of habitat connectivity for wildlife	■ Refer to the mitigation measures described above for Urban River Valley under the Greenbelt Plan, Vegetation Communities, Wildlife and Wildlife Habitat, Significant Wildlife Habitats, Migratory Breeding Birds and Nests, Species at Risk and Aquatic Environment. ■ During detailed design, considerations for maintaining or enhancing connectivity opportunities will be explored to the extent feasible.	■ Refer to monitoring described for Vegetation Communities.
Natural Environment	Species at Risk – General	■ Habitat loss, disturbance and/or mortality to Species at Risk	■ All requirements of the Endangered Species Act will be met. Species-specific mitigation measures will be implemented, as required, in consultation with Ministry of the Environment, Conservation and Parks.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. ■ Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the Endangered Species Act.
Natural Environment	Species at Risk – Barn Swallow	■ Habitat loss, disturbance and/or mortality to Barn Swallow	■ Field surveys will be undertaken prior to construction to confirm presence of any Barn Swallow nests on buildings that will be demolished. ■ Where loss or disturbance cannot be avoided (e.g., building demolition), all requirements under the Endangered Species Act will be met, including any registration, compensation, replacement structures and/or permitting requirements. ■ If disturbance to structures confirmed to provide Barn Swallow habitat is scheduled during the nesting season for Barn Swallow (April 1 to August 31), a nest search will be undertaken to confirm that no Barn Swallow are nesting on structures that may be affected by construction activities on or near these areas. Exclusion measures will be implemented prior to nesting season to dissuade use of these areas for nesting.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. Additional monitoring measures will be developed with the Ministry of the Environment, Conservation and Parks, if required.
Natural Environment	Species at Risk – Bats	■ Habitat loss, disturbance and/or mortality to Species at Risk Bats	■ All requirements of the Endangered Species Act will be met. Additional monitoring, mitigation and compensation for removal of suitable treed or anthropogenic roosting habitat may be required based on the results of additional surveys and consultation with the Ministry of the Environment, Conservation and Parks.	■ If mitigation is required, on-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. Additional monitoring measures will be developed in consultation with Ministry of the Environment, Conservation and Parks, if required.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Natural Environment	Aquatic Environment ■ Wetlands and Waterbodies ■ Fish and Fish Habitat	■ The East Harbour Station Early Works Project Footprint is located 30 metres away from the Lower Don River and east of the Don Valley Parkway and no in-water works are proposed in the Lower Don River. Potential effects on fish and fish habitat are not anticipated, provided that best management practices are implemented.	■ Construction activities will maintain the buffers established during the design phase to reduce potential negative impacts to the Lower Don River. ■ An Erosion and Sediment Control Plan, in accordance with the Erosion and Sediment Control Guide for Urban Construction (Toronto and Region Conservation Authority, 2019), as amended from time to time, will be prepared prior to and implemented during construction to reduce the risk of sedimentation to the waterbody. ■ A Spill Prevention and Response Plan will be developed before work commences to ensure procedures and policies are in place during construction to reduce impacts to watercourses. ■ Any temporary mitigation measures will be installed prior to the commencement of any site clearing, grubbing, excavation, filling or grading works and will be inspected and maintained on a regular basis. ■ To the extent feasible, schedule work to avoid wet, windy and rainy periods that may result in high flow volumes and/or increase erosion and sedimentation. ■ Stockpiled materials or equipment will be stored within the East Harbour Station early works construction areas but shall be kept at least 30 metres away from any watercourse to the extent possible. ■ All equipment fuelling and maintenance will be done at a safe distance from the water (i.e., 30 metres or more) to ensure that no deleterious substances enter the waterway.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions, if required. Corrective actions may include alteration of activities to reduce impacts and enhance mitigation measures. ■ All erosion and sediment control measures should be inspected weekly, after every rainfall and significant snow melt event, and daily during periods of extended rain or snow melt. ■ All damaged erosion and sediment control measures will be repaired and/or replaced within 48 hours of the inspection.
Soil and Groundwater	Soil Stability and Quality	■ Construction activities will cause displacement of the soils and potentially bedrock. This may result in ground movement and settlement (e.g., through excavation/grading, demolition and/or dewatering activities). ■ Dewatering activities can cause soil subsidence/settlement and impacts on surface/subsurface structures within the zone of influence. ■ Potential heaving of the excavation base caused by groundwater pressures below the depth of excavation. ■ If required, use of pressurized fluids subsurface could result in fluid migration to surface. ■ Construction activities (e.g., excavation) could expose contaminated materials and/or result in the spreading of contaminated materials.	■ Complete detailed soil investigations, as project planning progresses. ■ Complete pre-construction inspections of structures within the dewatering zone of influence, as required. ■ Potential heave of an excavation base is mitigated through a groundwater depressurization program completed in advance of excavation that sufficiently lowers the potentiometric head in the confined groundwater system and stabilizes the soils being excavated. ■ Excavation support systems will be employed, as required. ■ Conduct dewatering such that ground loss is controlled/minimized. ■ Use excavation/grading equipment designed to reduce the potential for ground loss and the associated potential for ground settlement. ■ If required, conduct ground treatment such as jet grouting to reduce the risk of ground loss. ■ Develop management plan(s) for the handling, management and disposal of all excavated material (i.e., soil, rock and waste) that is generated or encountered during the work. ■ Development and implementation of remedial action plans, risk assessment and risk mitigation plans for encountering contamination, as necessary. ■ Requirements of Ontario Regulation 406/19: On-Site and Excess Soil Management will be met.	■ If required, develop and conduct a settlement monitoring program that includes all infrastructure and structures within the dewatering zone of influence to identify construction effects, adverse trends and the need for additional mitigation measures. ■ Soil sampling and monitoring plans shall be implemented as required prior to, during, and post construction. Soil will be tracked in the registry, as required by Ontario Regulation 406/19.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Soil and Groundwater	Groundwater Quantity	■ Construction dewatering may include impacts to groundwater-dependent natural features (i.e., Lower Don River) as a result of decreases in groundwater discharge to these features and impacts to private groundwater supply wells (if present) caused by a reduction in local groundwater levels. ■ In the case of discharge to the natural environment, the discharge rate and total volume must be considered within the context of the capacity of the conveyance route (e.g., drainage ditch, etc.) and receiving waterbody. Introducing a quantity of effluent above the capacity of these features can result in impacts such as erosion, scour, and flooding.	■ Potential impacts to groundwater-dependent natural features and/or private groundwater supply wells (if present) can be mitigated with measures such as avoidance of dewatering requirements, minimizing dewatering, and/or utilizing groundwater cut-off techniques to physically exclude groundwater from flowing into excavations advanced for construction. ■ Example contingency measures for impacts to groundwater-dependent natural features and/or private groundwater supply wells (if present) include supplementation of flow within the natural features, minimizing dewatering volume requirements, avoidance of dewatering during low-flow conditions, and provision of temporary water supply during the period of supply well impact. ■ Determination of water taking quantities, quality, and resultant dewatering zone of influence will be completed as project planning progresses, for example through completion of a site-specific hydrogeological investigation, construction dewatering assessment and a plan to manage groundwater. ■ The construction dewatering assessment will be completed as required to: – Provide an estimate of groundwater and/or surface water taking rates and quantities; – Estimate a zone of influence for each dewatering area; – Characterize groundwater and/or surface water quality; – Recommend appropriate dewatering methodologies; and – Provide an assessment of potential impacts related to the dewatering. ■ Dewatering should be assessed in accordance with the Toronto and Region Conservation Authority Technical Guidelines for the Development and Environmental Management Plans for Dewatering (Toronto and Region Conservation Authority, 2013b) and Ontario Regulations 64/16 and 387/04, as amended under the Ontario Water Resources Act, as required. ■ The plan to manage groundwater and dewatering will be completed as required to: – Evaluate potential groundwater discharge options (i.e., sanitary and/or storm sewer, natural environment, off-site disposal, etc.); – Identify effluent treatment requirements; – Outline monitoring, mitigation, and contingency program (if required); – Determine the potential need for regulatory approvals; and – Identify notification and reporting requirements. ■ Identification of site-specific mitigation measures inclusive of monitoring programs relating to groundwater-dependent natural features, private supply wells (if present), and geotechnical heave/settlement within the anticipated dewatering zone of influence will be determined prior to works commencement.	■ Regular site inspections and monitoring activities such as monitoring of water levels in adjacent groundwater and/or surface water features, if required, will be completed by qualified members of the construction team to ensure that mitigation measures are fulfilled and that all regulatory requirements are met.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Soil and Groundwater	Groundwater Quality	■ Previous land use may have resulted in local contamination of groundwater which may be encountered during construction excavation and/or dewatering activities. ■ General construction activities such as vehicle and machinery operation have the potential to affect groundwater and/or surface water quality through minor contaminant releases. Spills may affect the surrounding groundwater quality and nearby supply wells (if present). ■ Improperly managed construction dewatering activities can result in accidental releases of contaminated groundwater to the environment and/or result in the migration of existing impacted groundwater. ■ The following materials may impact groundwater quality within the highly vulnerable aquifer and Event Based Area: – Application of road salt; – Storage/use of organic solvents and/or dense non-aqueous phase liquids; and, – Storage and handling of fuel.	■ The existing groundwater within each potential construction dewatering area will be characterized prior to construction activities, during a site-specific hydrogeological investigation, as required. ■ On-site treatment of dewatering effluent, if required, such that parameters in excess of the established discharge criteria are removed/reduced and discharge can proceed. ■ Dewatering should be assessed in accordance with the Toronto and Region Conservation Authority Technical Guidelines for the Development and Environmental Management Plans for Dewatering (Toronto and Region Conservation Authority, 2013b). ■ Measures such as avoidance of dewatering requirements, minimizing dewatering, and/or utilizing groundwater cut-off techniques to physically exclude groundwater from flowing into excavations advanced for construction could be considered, when on-site treatment is not technically and/or financially feasible. The removal of water to an off-site disposal facility could also be considered. ■ A Spill Prevention and Response Plan, outlining the steps required to prevent and contain any contaminant releases and/or to avoid impacts to groundwater/surface water is required to be developed prior to initiation of construction activities. This Spill Prevention and Response Plan should include a requirement for spill kits to be maintained on-site at all times during construction. ■ Pre-construction (baseline) groundwater quality testing should be performed at all construction dewatering locations before the outset of any discharge activities and compared to appropriate regulatory guidelines (i.e., Provincial Water Quality Objectives for discharge to the natural environment, storm and sanitary by-laws for discharge to municipal sewers). Appropriate water quality management (i.e., filtration systems and/or water treatment systems) will be required to be designed and implemented in the event that exceedances of regulatory guidelines or limits are detected in the influent groundwater quality. Discharge of dewatering effluent will be governed by the discharge approval(s) obtained for the Project, which could include one or a combination of Municipal Discharge Permits, Conservation Authority Approval, and/or Ministry of the Environment, Conservation and Parks Environmental Compliance Approval. ■ Ensuring that machinery is maintained and free of leaks to reduce the possibility of fluid release and storing any potential contaminants (e.g., oils, fuels, and chemicals) in designated areas using appropriate secondary containment, where necessary. ■ Education of workers regarding appropriate chemical use, handling, storage and transportation procedures, including spill response and reporting requirements. ■ Conduct a review of Source Protection Plan (SPP) policies and implement the following measures: – A Salt Management Plan that incorporates best management practices where the storage and application of road salt is required; – Best management practices if the handling and storage of dense non-aqueous phase liquids is required; – Best management practices if the storage of organic solvent is required; and – Best management practices if the storage and handling of fuel is required in an Event Based Area.	■ Monitoring activities such as groundwater and dewatering effluent sample collection and measurement of groundwater parameters (e.g., pH) in the field will be completed as required by qualified members of the construction contractor, and in accordance to the discharge requirements of the approval and/or permit, as applicable. ■ Regular inspections of equipment for fuel/fluid leaks, dewatering equipment and containment tanks for leakage, and installed erosion and sediment control measures.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Hydrology and Surface Water	Floodplain	■ Potential to impact flooding conditions within the Don River Floodplain	■ Floodplain impact assessment will be conducted during detailed design following Toronto and Region Conservation Authority guidelines once relevant design information is available. ■ Toronto and Region Conservation Authority, Waterfront Toronto and City of Toronto will be consulted during detailed design to avoid potential infrastructure conflicts and impacts to flood protection measures/initiatives within the East Harbour Station Hydrology and Surface Water Study Area and beyond, as required with consideration of, but not limited to, the following: – West Don Lands Flood Protection Landform (Toronto and Region Conservation Authority, 2005); – Broadview and Eastern Flood Protection Municipal Class Environmental Assessment (Toronto and Region Conservation Authority, 2021b); – Flood protection measures and tie-in with the existing railway embankment at Don Roadway and Eastern Avenue underpass as identified in the Don Mouth Naturalization and Port Lands Flood Protection Project Environmental Assessment (Toronto and Region Conservation Authority, 2014a); – New Broadview underpass with expanded flood protection tie-ins and drainage with the railway embankment as identified in the Port Lands and South of Eastern Transportation and Servicing Master Plan Class Environmental Assessment (Waterfront Toronto and City of Toronto, 2016); and, – Opening of bridge crossing on east side of Don River through railway embankment to accommodate Hybrid 3 as identified in the Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment (Waterfront Toronto and City of Toronto, 2017). ■ Continue to consult with the Toronto and Region Conservation Authority to align the East Harbour Station early works to the Lower Don Special Policy Area requirements, including the approach to floodproofing and flood modelling. Should a station entrance or public space within the proposed station be located within the floodplain, a comprehensive public safety protocol for egress and ingress, emergency preparedness and service access for evacuation purposes in case of a flood will be developed.	■ None identified.
Hydrology and Surface Water	Floodplain	■ Potential for flooding impacts on-site during construction	■ Prior to construction, develop a Flood Contingency Plan which considers policies specific to the Lower Don Special Policy Area, with specific mitigation measures for any proposed works or temporary laydown and staging areas that are located within the Don River Floodplain. The Flood Contingency Plan may include risk mapping, monitoring strategy. ■ Include construction site on Toronto and Region Conservation Authority flood warning system to prepare site in advance of possible flood events	■ Include a monitoring strategy in the Flood Contingency Plan to monitor surface water levels during construction activities.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Hydrology and Surface Water	Surface Water/ Stormwater and Drainage	■ Change in stormwater quality and quantity, including: – Erosion of exposed soil and increased sediment loading which may impact receiving waterbodies and/or municipal stormwater drainage system; and, – Increased surface water/stormwater runoff.	■ The overall stormwater quality and quantity control strategy will be developed in accordance with all relevant municipal, provincial, and federal requirements, as amended, and outlined in a Stormwater Management Report. Stormwater management design will consider guidance provided by the Ministry of the Environment, Conservation and Parks, formerly the Ministry of the Environment and Climate Change Stormwater Management Planning and Design Manual (2003) and Ontario Ministry of Transportation Drainage Management Manual (2008), Toronto and Region Conservation Authority Stormwater Management Criteria (2012), and the Low Impact Development Stormwater Management Planning and Design Guide (Toronto and Region Conservation Authority/Credit Valley Conservation, 2010), as required. ■ The following stormwater management best management practices will be considered and implemented, as required: – Minimize clearing and amount of exposed soil; – Install key sediment control before grading/land alterations begin; – Sequence construction activities so that the soil is not exposed for long periods of times; – Protect storm drain inlets to filter out debris; and – Stabilize all exposed soil areas as soon as land alterations have been completed. ■ Prior to construction, a Stormwater Management Plan that will outline stormwater discharge management associated with construction activities, and an Erosion and Sediment Control plan will be developed. ■ The Toronto and Region Conservation Authority's Living City Policies (Toronto and Region Conservation Authority, 2014b) will be followed during detailed design ■ The Toronto and Region Conservation Authority's Stormwater Management Criteria (Toronto and Region Conservation Authority, 2012) will be considered during detail design, including those policies related to impervious areas. If required, obtain a Municipal Discharge Permit (City of Toronto Private Water Discharge Permit/Agreement) to manage excess surface water/stormwater.	■ Monitoring activities will be implemented as outlined in the Stormwater Management Plan and/or Erosion and Sediment Control Plan and may include regular inspections and reporting on the performance of implemented erosion and sediment control measures, best management practices, and other monitoring activities, as required. ■ All monitoring procedures should stay in place throughout East Harbour Station early works construction.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Air Quality	Construction Air Quality	■ Potential air quality impacts could include effects from diesel combustion and particulate emissions. Odour and visible dust may also cause public annoyance. ■ Exhaust emissions from construction vehicles may contribute to increased levels of nitrogen oxides, and volatiles such as benzene and benzo(a)pyrene, which given their existing background concentrations can contribute to existing levels of provincial criteria exceedance. ■ Certain construction activities are likely to emit particulates in higher quantities, which include site preparation and earth works activities, demolition activities, unpaved surfaces with heavy equipment travel, and uncovered soil storage piles. ■ Disruption of contaminated soils may release contaminants.	■ On-site construction vehicle activity shall be managed to control emissions of odourous contaminants and diesel exhaust, including benzene and benzo(a)pyrene emissions from exhaust. A plan to manage air quality will be developed to ensure consistent attention to mitigation of dust and particulates, including silica, from the construction site. The following mitigation measures should be considered in the plan to manage air quality: – All equipment complies with Canadian engine emissions standards. – All equipment visually inspected prior to use and properly maintained. – Implement a no idling policy on site (unless necessary for equipment operation). – Use of electricity from the grid over diesel generators wherever possible. – Retrofitting of combustion engines with specific exhaust emission control measures such as particulate traps. – If applicable, follow guidelines on hot mix asphalt outlined in the Ontario Hot Mix Producers Association's Environmental Practices Guide: Ontario Hot Mix Asphalt Plants, Fifth Edition (Ontario Hot Mix Producers Association, 2015). ■ Applicable mitigation measures from Environment Canada's Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc., 2005), the Ministry of the Environment, Conservation and Parks' Technical Bulletin Management Approaches for Industrial Fugitive Dust Sources, shall be followed. The following mitigation measures should be considered in the plan to manage air quality: – Complete earthwork grading within 10 days of ceased active construction. – Temporary seeding or mulching of bare soil and storage piles. – Compression or clodding of soil surfaces and storage piles to reduce erosion. – Confine storage pile activity to downwind side of piles. – Reduction of activities during high wind conditions. – Full or partial enclosure of demolition activities. – Wind screens or barriers where possible or necessary. – Off-site construction of certain structures or parts of structures to minimize air emission due to interference with the normal flow of traffic. – Scheduling certain construction activities (i.e., site preparation and earth works activities, demolition activities, unpaved surfaces with heavy equipment travel, and uncovered soil storage piles) to periods of time when exposure to dust is expected to be limited (e.g., avoid scheduling activities during dry, windy weather conditions). – Landscaping materials ordered close to time of use to reduce on-site storage. – Application of non-chloride soil stabilizers or dust control polymers where feasible. – Daily removal of accumulated mud, dirt and debris deposits on-site, and regular truck washing – Paved and unpaved roadway cleaning, watering or application of a non-chloride dust suppressant. – Minimize drop height of materials on-site. – Covering surface area of hauled bulk material. – Methods and equipment for clean-up of accidental spill of dusty materials. – Limit travel speeds on-site to a maximum of 16 to 24 kilometres per hour. ■ If disruption of contaminated soils is anticipated at any time, **Section 6.2** of this Report includes remedial action plans, risk assessment and risk mitigation plans for encountering contamination and minimizing the release of contaminants. ■ Develop a communications protocol which includes timely resolution of complaints.	■ The following monitoring activities should be considered in the development of the plan to manage air quality: – Baseline conditions should be established prior to construction for longer than one week to capture representative concentrations under varying meteorological conditions. – On-site air quality monitoring including real-time particulate monitoring representative of receptor impacts. – Place monitors both upwind and downwind of construction activities, where possible. – Application of threshold "Action Level" triggers for implementation of specific and increasing intensity mitigation activities linked to specific construction activities. – Reporting detailing results of ongoing monitoring and mitigation activities. – Monitoring at locations where there are persistent complaints, as required. ■ In addition, relevant construction monitoring activities from the following recommended guidelines will be implemented during construction: – Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc., 2005); and Operations Manual for Air Quality Monitoring in Ontario (Ministry of the Environment, Conservation and Parks, 2018).

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Noise and Vibration	Construction Noise Note: Details of the operational noise impacts and planned mitigation are included in the Lakeshore East Joint Corridor Noise and Vibration Operations Report, found in **Appendix C**.	■ Environmental noise may cause annoyance and disturb sleep and other activities. ■ The severity of the noise effects resulting from construction projects varies, depending on: – Scale, location and complexity of the project – Construction methods, processes and equipment deployed – Total duration of construction near sensitive noise receivers – Construction activity periods (days, hours, time period) – Number and proximity of noise-sensitive sites to construction area(s)	■ Establish and apply project-specific noise criteria/limits. Construction noise impact mitigation measures to be considered to meet project-specific noise criteria/exposure limits include but are not limited to the following: – Siting construction staging and laydown areas to avoid/reduce adverse impacts to sensitive receivers where feasible. – Use construction equipment compliant with noise level specifications in Ministry of Environment, Conservation, and Parks guidelines NPC-115 and NPC-118. – Keep equipment in good working order and operate with effective muffling devices. – Equipment enclosures for equipment such as generators and compressors. – Additional equipment silencers/mufflers. – Use of upgraded construction hoarding (considering requirements from Canadian Standards Association Z107.9 for noise barriers) between construction equipment and noise sensitive receivers. – Use of localized movable noise barriers/screens for specific equipment and operations. – Minimize simultaneous operation of equipment where feasible. – Implement a no idling policy on site (unless necessary for equipment operation). – Restrict construction hours where feasible: – Perform construction during daytime hours where feasible. If night time construction is necessary, the activities with the highest noise levels should be conducted during day time periods where feasible. – If construction will occur outside of normal daytime hours, inform local residents before construction of type of construction and expected duration outside of daytime hours. – Consider construction duration limits for construction near 68 Broadview Avenue (night), 9 Lewis Street, 2 McGee Street (night), and 20 Saulter Street. – Limit the number of heavy trucks on site to the minimum required. – Stage construction vehicles away from noise sensitive locations, if feasible. – Undertake noise monitoring and regular reporting throughout the construction phase. Where noise level limits are exceeded, additional noise mitigation measures shall be implemented. – Review construction and occupation timelines for new noise sensitive development in West Don Lands. As the completion date of these new noise sensitive receivers relative to the early works construction period is not yet determined, mitigation may be adjusted based upon the new developments (unoccupied as of June 2021) construction/occupation schedule. – Undertake noise monitoring and regular reporting throughout the construction phase. Where noise level limits are exceeded, additional noise mitigation measures shall be implemented. – Develop a communications protocol which includes timely resolution of complaints. – Additional mitigation measures not listed above may be considered.	■ Noise levels will be monitored where the impact assessment indicates that noise limits may be exceeded, to identify if any additional mitigation is required and verify mitigation measures(s) effectiveness. ■ Continuous noise monitoring should be completed at each geographically distinct active construction site associated with the Project with monitor(s) located strategically to capture the worst-case construction related noise levels at receiver locations based on planned construction activities, their locations, and the number, geographic distribution and proximity of noise sensitive receivers. ■ Monitoring at locations where there are persistent complaints, as required.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Noise and Vibration	Construction Vibration Note: Details of the operational noise impacts and planned mitigation are included in the Lakeshore East Joint Corridor Noise and Vibration Operations Report, found in **Appendix C**.	■ Exposure to vibration may result in public annoyance and complaints. Vibration may also cause damage to buildings and other structures.	■ Construction vibration impact mitigation measures to be considered include but are not limited to the following to meet applicable vibration criteria: – Siting construction staging and laydown areas to avoid/reduce adverse impacts to sensitive receivers where possible. – Utilize equipment with low vibration emissions where possible. – Off-site construction of components away from sensitive areas. – Restrict construction hours where feasible: – Perform construction during daytime hours where feasible. If night time construction is necessary, the activities with the highest vibration levels should be conducted during the daytime periods where feasible. – Review vibration assessment based upon refined site staging, construction areas/equipment, and building locations prior to the commencement of construction, and update if necessary. – Review and refine the construction activities to avoid potential impacts to the car dealership at 11 Sunlight Park Road, 341 and 353 Eastern Avenue, 9/11 Lewis Street, and 20 Saulter Street. – Review other applicable vibration limits that may apply, such as the City of Toronto Specification GN117SS. – Conduct monitoring and pre-construction inspections in accordance with City of Toronto By-law 514-2008. Monitoring and preconstruction requirements can be determined by calculation of Zone of Influence of construction equipment. – Provide smooth surfaces for trucks to travel and route heavily loaded trucks away from vibration sensitives sites where possible. – Operate construction equipment on lower vibration settings where available. – Maximize distance between equipment and sensitive receivers while receivers where feasible. – Establish and apply project-specific construction vibration criteria limits. – Do not operate equipment where the City of Toronto By-law 514-2008 prohibited limits are predicted to be exceeded. Alternative construction methods and/or equipment with lower vibration emissions or power settings can be used if they do not exceed the City of Toronto's prohibited vibration limits. – As Project planning and design progress, conduct a review to identify any sensitive structures/operations that require more stringent vibration limits than the limits in City of Toronto By-law 514-2008; assess requirements, review/revise vibration limits for these locations and, if necessary, develop mitigation measures. US Federal Transit Administration Report No. 0123, Transit Noise and Vibration Impact Assessment Manual (2018) could be used as a source of additional criteria. – Develop communications protocol which includes timely resolution of complaints. – Additional mitigation measures not listed above may be considered.	■ Monitoring will be undertaken at locations within the Zone of Influence to ensure compliance with the City of Toronto By-law 514-2008 and to identify the need for additional mitigation if required. ■ Monitoring will be undertaken to ensure compliance with other applicable vibration level limits identified, as required. ■ Monitoring will be undertaken to verify mitigation measure(s) effectiveness. ■ Pre-construction building inspection of the potentially impacted buildings adjacent to the early works construction sites are to be undertaken in accordance with City of Toronto By-law 514-2008. Continuous vibration monitoring along the construction site property lines closest to these structures will be initiated as warranted. ■ Monitoring at locations where there are persistent complaints, if required.
Socio-Economic and Land Use Characteristics	Property	■ Property acquisition – permanent and temporary	■ Specific permanent property requirements associated with the early works infrastructure components and temporary property requirements associated with construction laydown and access will be minimized to the extent feasible as planning and design progress.	■ None identified.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Socio-Economic and Land Use Characteristics	All Land Uses and Adjacent Lands	■ Nuisance effects from construction activities	■ Mitigation measures related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration potential impacts, mitigation measures, and monitoring activities tables. ■ An Erosion and Sediment Control Plan will be developed in accordance with the Erosion and Sediment Control Guide for Urban Construction (Toronto and Region Conservation Authority, 2019), as amended from time to time, that addresses sediment release to adjacent properties and roadways.	■ Monitoring activities related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration potential impacts, mitigation measures, and monitoring activities tables. ■ Erosion and sediment control monitoring to be conducted (e.g., on-site inspection of erosion and sediment control measures).
Socio-Economic and Land Use Characteristics	All Land Uses and Adjacent Lands	■ Land use and access disruption	■ Provide well connected, clearly delineated, and appropriately signed temporary walkways and cycling route options, with clearly marked detours where required. ■ Provide temporary walkways with a pedestrian clearway of 2.1 metres, where possible. Temporary walkways required during construction will also meet Accessibility for Ontarians with Disabilities Act requirements for universal accessibility. ■ Provide temporary lighting, as required, and wayfinding signs and cues for navigation around the construction site. ■ Regular (existing) access to businesses during working hours will be maintained, where feasible. Where regular access cannot be maintained, alternative access and signage will be provided.	■ Regular monitoring (e.g., on-site inspection) of temporary access paths, walkways, cycling routes and fencing to ensure effectiveness.
Socio-Economic and Land Use Characteristics	Visual Characteristics	■ Visual effects from permanent public-facing structures and construction activities/areas	■ Consult with the City of Toronto as planning progresses. ■ Minimize the visual effects of station structures and the Eastern Avenue bridge by selecting appropriate building materials and architectural design. ■ A fence/screened enclosure for the construction area(s) will be provided, as required.	■ Regular monitoring (e.g., on-site inspection) of construction visual effects mitigation measures to ensure effectiveness.
Socio-Economic and Land Use Characteristics	Light Pollution	■ Light trespass, glare and light pollution effects	■ Comply with all local applicable municipal by-laws and Ministry of Transportation practices for lighting in areas near or adjacent to highways and roadways regarding outdoor lighting for both permanent and temporary construction activities, and incorporate industry best practices provided in ANSI/IES RP-8-18 – Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting. Obtrusive light with respect to adjoining residents, communities, and/or businesses will be limited. ■ Perform the work in such a way that any adverse effects of construction lighting are controlled or mitigated to avoid unnecessary and obtrusive light with respect to adjoining residents, communities and/or businesses.	■ Regular monitoring (e.g., on-site inspection) of light pollution mitigation measures to ensure effectiveness.
Socio-Economic and Land Use Characteristics	Public Realm	■ Potential permanent or temporary relocation or removal of streetscaping materials, furniture, and landscaping in the public realm	■ Relocation or removal of streetscaping materials, furniture, and landscaping in the public realm will be minimized to the extent feasible. Wherever feasible, lands impacted by construction will be restored to the current City of Toronto standard following construction completion. ■ Consult with the City of Toronto and Business Improvement Areas, as necessary, for restoration of assets owned by the City or Toronto and local Business Improvement Areas.	■ There are no monitoring activities associated with the public realm

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Archaeological Resources	Archaeological Potential	■ Potential for the disturbance of unassessed or documented archaeological resources.	■ Areas identified as retaining archaeological potential in the East Harbour Station Early Works Project Footprint, as per the Ontario Line South Stage 1 Archaeological Assessment Report (AECOM, 20204), are shown on **Figure 5-19**. Should ground disturbing activities be planned within these areas, further archaeological assessment must be completed prior to any ground disturbing activities. ■ Any additional Archaeological Assessments (e.g., Stage 2, Stage 3 if recommended by the Stage 2) shall be completed as early as possible, and prior to the ground disturbing activities. This work shall be done in accordance with the Ministry of Heritage, Sport, Tourism and Culture Industries' Standards and Guidelines for Consultant Archaeologists (2011) to identify any archaeological resources that may be present. ■ Recommendations from the Stage 1 archaeological assessment reports and any subsequent archaeological assessments will be followed. The report will be submitted to and reviewed by Ministry of Heritage, Sport, Tourism and Culture Industries and a letter will be issued confirming that the report(s) has been entered into the Register, prior to any ground disturbing activities. ■ Indigenous Nations will be invited to participate in any subsequent archaeological work. All future archaeological assessment findings will be shared with the Indigenous Nations that were engaged during the Stage 1 archaeological assessment.	■ None identified.
Archaeological Resources	Archaeological Resources	■ Potential recovery of archaeological resources during construction.	■ Should previously unknown or unassessed deeply buried archaeological resources be uncovered during construction activities, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological field work, in compliance with Section 48 (1) of the Ontario Heritage Act. Any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services. In addition, consultation with relevant Indigenous Nations will be initiated in the event that archaeological resources or human remains are discovered.	■ None identified.
Traffic and Transportation	Transportation Network – Roads	■ If required, temporary lane closures along Eastern Avenue and Broadview Avenue may result in impeding traffic flow and increased average delay of vehicles, including emergency vehicles. ■ Construction vehicle traffic may impact traffic operations resulting in increased vehicular delays and queue lengths, especially at intersections where construction traffic is required to make left-turning movements. ■ Potential overlapping construction timelines with other planned projects (e.g., capital projects and local developments) nearby may result in impacts to the transportation network and its road users.	■ A quantitative traffic impact assessment will be completed as project planning progresses to consider vehicular traffic impacts as a result of the East Harbour Station early works. ■ Develop and implement a transit and traffic management plan(s), which could include temporary changes to intersection lane configurations, traffic signal timing optimization, modifications to existing signal timing plans, etc. The transit and traffic management plan(s) will also address specific emergency services requirements in consultation with the City of Toronto. ■ Traffic signal timing optimization may be assessed/implemented to increase capacity of affected intersections and to aid in the movement of traffic. Traffic signal timing adjustments would require coordination between Metrolinx and City of Toronto, and will be undertaken if required, to determine appropriate changes to traffic signal timings. ■ Consider scheduling construction activities during off-peak periods and weekends to minimize disruptions to road users during the critical peak periods. ■ Co-ordinate with the City of Toronto regarding other ongoing construction projects when scheduling the early works activities to maintain the mobility of road users.	■ The effectiveness of the transit and traffic management plan(s) will be monitored throughout the construction period and adjustments will be made based on actual field observations, as needed.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
		■ Potential sightline deficiencies might develop near construction egress locations for the eastbound traffic along Eastern Avenue due to the road's curvature upstream of the rail bridge.	■ Implement flagging at locations with potential sightline deficiencies to ensure general traffic are aware of the construction vehicles operation within the construction area.	
Traffic and Transportation	Transportation Network – Active Transportation	■ Potential traffic congestion along the East Harbour Station Traffic and Transportation Study Area roads, as a result of the increase in heavy vehicle traffic, could increase pedestrians' and cyclists' exposure to traffic. ■ If required, temporary realignment of the existing sidewalks along some of the East Harbour Station Traffic and Transportation Study Area roads (i.e., Eastern Avenue, Lewis Street, Broadview Avenue, Sunlight Park Road, and Dibble Street) may increase walking distances and impact the convenience of pedestrians.	■ Reduce interference with pedestrians and cyclists. This may include fencing, hoarding (minimum 2 meters high, solid, and secured), shared-lane markings, signals, wayfinding signs, and lighting as required to provide pedestrians and cyclists with safe, accessible, and continuous routes. ■ If required, co-ordinate with the City of Toronto to ensure any modifications to pedestrian crossing distances at signalized intersections are reflected in revised pedestrian clearance timings. ■ Any temporary pedestrian facilities including temporary or relocated Toronto Transit Commission transit stops will be designed to meet Toronto Transit Commission accessibility standards. ■ Implement flagging where construction vehicles are present to ensure construction vehicle operators are aware of pedestrian and vehicular traffic within the construction area.	■ The effectiveness of the transit and traffic management plan(s) will be monitored throughout the construction period and adjustments will be made based on actual field observations, as needed.
Traffic and Transportation	Transportation Network – Rail	■ Early works construction may require temporary full or partial closure of existing rail tracks, which may disrupt existing commuter and freight rail operations.	■ Consult with rail operators with current service along the rail corridor (i.e., VIA Rail, Canadian National Railway, and Canadian Pacific Railway) to assess how track closures would impact their service and co-ordinate temporary schedules to accommodate all rail services on the open tracks.	■ The effectiveness of the transit and traffic management plan(s) will be monitored throughout the construction period. Adjustments to the construction staging plans and transit and traffic management plan(s) will be made based on actual field observations, as needed.
Traffic and Transportation	Transit Network	■ Potential increase of construction vehicles traffic could result in travel time delays to existing surface transit routes (i.e., Toronto Transit Commission bus route #143 Downtown/Beach Express) that travel within the East Harbour Station Traffic and Transportation Study Area. ■ Potential temporary lane restrictions on Eastern Avenue and Broadview Avenue could result in travel time delays to Toronto Transit Commission bus #143 Downtown/Beach Express travelling within the East Harbour Station Traffic and Transportation Study Area.	■ Co-ordinate with the Toronto Transit Commission and notify transit users regarding travel delays to the bus services in advance, if required. ■ Consider scheduling some construction activities during off-peak periods and weekends to minimize delays to bus services during the critical peak periods.	■ Transit services will be monitored through actual field observations throughout the construction period and additional mitigation measures will be considered, as needed.
Utilities	Private Utilities	■ Utilities modification and relocation. ■ It is anticipated that there may be temporary impacts to existing utilities during the construction of early works, with potential relocations and	■ In-depth utility investigations will be undertaken during detailed design to confirm impacts. Any potential conflicts and association relocation requirements or mitigation measures will be identified in consultation with utility providers.	■ None identified.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
		associated disruptions to be determined. ■ Potential impacts to utilities are under review and will be confirmed as project planning progresses.	■ During detailed design, the potential impacts to utilities, relocations and mitigation measures will be further refined and confirmed through a subsurface utility engineering investigation. ■ Appropriate mitigation measures including next steps related to consultation with utility companies and stakeholders, and phasing plans will be determined once the impacts are confirmed. Utility relocations will consider potential impacts to the natural environment and comply with mitigation measures outlined in **Table 6-1**.	
Utilities	Public Utilities and Municipal Servicing	■ Utilities modification and relocation. ■ It is anticipated that there may be temporary impacts to existing utilities during the construction of early works, with potential relocations to be determined. ■ Potential impacts to utilities are under review and will be confirmed as project planning progresses.	■ In-depth utility-related investigations such as subsurface utility engineering investigation will be completed during detailed design. Metrolinx will consult with the City of Toronto during the development of these studies to ensure concerns are addressed. ■ Metrolinx will also consult with the City of Toronto and Toronto Hydro, as required, during detailed design regarding potential impacts to municipal infrastructure and servicing and ensure that applicable City standards, guidelines, and criteria are met. ■ Utility relocations will consider potential impacts to the natural environment and comply with mitigation measures outlined in **Table 6-1**.	■ None identified.

ES.6 Permits and Approvals

Section 7 includes a list of permits that may be required for the East Harbour Station early works construction activities. These potential permitting requirements are summarized below.

Federal

No federal permits are anticipated to be required for the East Harbour Station early works.

Provincial

A number of provincial permits and approvals have been identified as potentially required, which include, but are not limited to, the following:

- Species at Risk authorizations in accordance with the Endangered Species Act, 2007:
  - Metrolinx will comply with the conditions of the Permit CR-D-002-19 issued on August 7, 2020 under Section 17(1) in accordance with clause 17(2)(d) of the Endangered Species Act, 2007 for Species at Risk that may be affected by the East Harbour Station early works including Barn Swallow and bat Species at Risk.
- Registration through the Environmental Activity and Sector Registry in accordance with Ontario Regulation 63/16 for surface water takings that are more than 50,000 Litres per and are for highway projects and/or transit projects;
- Registration through the Environmental Activity and Sector Registry in accordance with Ontario Regulation 63/16 for water taking for construction site dewatering in excess of 50,000 litres/day and less than or equal to 400,000 Litres per day.
- Approvals for the discharge of pumped water, as required, which may include a combination of:
  - Municipal Discharge Permits (City of Toronto Private Water Discharge Permit/Agreement);
  - Conservation Authority notification (Permit for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses); and

  - Environmental Compliance Approvals from the Ministry of the Environment, Conservation and Parks in accordance with the Ontario Water Resources Act, 1990.
- Environmental Compliance Approval(s) from the Ministry of the Environment, Conservation and Parks for equipment held by contractors, owners and operators of that equipment in advance of construction, as required.

Conservation Authority

Metrolinx will consult with Toronto and Region Conservation Authority with respect to construction activities in regulated areas for the East Harbour Station early works in relation to Ontario Regulation 166/06: Toronto and Region Conservation Authority Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

Municipal

A range of municipal permits and approvals including Permits to Injure or Remove Trees, and transportation-related permits and approvals (e.g., Street Occupation Permit) may be required for the Project, particularly pertaining to municipally owned lands and infrastructure. Metrolinx as a Crown Agency of the Province of Ontario is exempt from certain municipal processes and requirements. In these instances, Metrolinx will engage with the municipalities to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals. Metrolinx shall continue to communicate and engage with the City of Toronto during detailed design and construction planning to address municipal concerns.

A construction vibration control form is typically required to accompany a building permit as per the City of Toronto By-law 514-2008. This will be confirmed during the design and implementation phases of the East Harbour Station early works. Should a building permit be required, Metrolinx will consult with the City of Toronto.

ES.7 Consultation Process

The consultation program followed by Metrolinx for the early works is described in **Section 8** of this Report and all consultation materials are included in **Appendix B**.

The overall approach to consultation for the Project is outlined in Section 7.1.1 of the Ontario Line Final Environmental Conditions Report. To share information and collect feedback related to early works, Metrolinx has undertaken the following communication and engagement activities prior to the publication of the East Harbour Station Early Works Report:

- Early works specific updates on the Engagement webpage (Project website) (www.metrolinx.com/ontarioline) including:
  - East segment neighbourhood updates (East Harbour Station is within the East segment) – published on September 17, 2020 and updated on November 30, 2020, April 6, 2021, April 23, 2021 and September 23, 2021;
  - East segment virtual presentation and live question and answer session hosted on April 22, 2021 (https://www.metrolinxengage.com/en/OLliveApril22), June 24, 2021 (https://www.metrolinxengage.com/en/OLLiveEJune24), September 23, 2021 (https://www.metrolinxengage.com/en/olLIVEsept23) and October 5, 2021 (https://www.metrolinxengage.com/en/OLLIVEOct5); and
  - The Ontario Line – Environment webpage (https://www.metrolinxengage.com/en/content/ontario-line-environment) that includes the Ontario Line environmental reporting timeline, early works scope overview and locations and provides an option to learn more about each early works location – published on September 17, 2020 and updated on August 9, 2021, September 23, 2021 and November 17, 2021 to include East Harbour Station early works.
- Mailings/notifications;
- Emails via the Project email address (ontarioline@metrolinx.com);
- E-newsletters to the Project Distribution List (see **Section 8.1.3** for more details);
- Newspaper advertisements;
- Elected Officials Briefings (see **Section 8.5** for list of Elected Officials and associated electoral districts and Ward numbers);
- Outreach to Indigenous Nations, government review agencies and other technical stakeholders;
- Online consultation via the Engagement webpage (Project website); and
- Meetings with local community groups.

In accordance with Section 8(2)(10) of Ontario Regulation 341/20: Ontario Line Project, the consultation record summarized in **Section 8** and provided in **Appendix B** summarizes the East Harbour Station early works consultation activities carried out with Indigenous Nations, members of the public, review agencies and other technical

stakeholders, Elected Officials, property owners, and other interested parties, including a summary of feedback and comments received.

On September 23, 2021, the Notice of Publication of Draft East Harbour Station Early Works Report was issued through a variety of media (e.g., Engagement webpage, newspaper advertisements, email and registered mail), to commence the 31-day public review period, effective until October 24, 2021, along with the up to 65-day review and Issues Resolution Process period. The Notice was distributed via:

- Engagement webpage (Project website);
- Newspaper advertisements in three major newspapers in English and French and three community newspapers in English, French, Greek and Traditional Chinese;
- Email to individuals on the Project Distribution List, including community stakeholders and groups, government review agencies and other technical stakeholders, Elected Officials, and Indigenous Nations; and
- Mailed to 73 property owners within 30 metres of the East Harbour Station Early Works Project Footprint and approximately 12,380[4] addresses (i.e., apartments, houses, businesses) within and surrounding the East Harbour Station Study Area.

Following the consultation program described in **Section 8**, Notice of Publication of Final East Harbour Station Early Works Report was issued to the public on November 17, 2021 through a variety of media (Project website, email, registered mail, newspapers, and mail drop to nearby addresses). All parties notified of the Draft East Harbour Station Early Works Report were notified of the publication of the Final East Harbour Station Early Works Report and provided with access to a copy of it. Input/feedback received during the 31-day public review period of the Draft East Harbour Station Early Works Report was incorporated into the Final East Harbour Station Early Works Report.

- Extensive consultation was also undertaken by Metrolinx for the broader Project, which is detailed in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) (under separate cover).

4. The property list has been updated since publishing the Draft East Harbour Station Early Works Report from 12,112 to 12,380 to accommodate the most recent Canada Post mail routes, which are updated on a monthly basis.

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Appendices

1. Introduction

1.1 Purpose of the Ontario Line East Harbour Station Works

The Ontario Line Project (the Project) is being assessed in accordance with Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act. Ontario Regulation 341/20: Ontario Line Project outlines a Project-specific environmental assessment process that includes an Environmental Conditions Report, Environmental Impact Assessment Report, and an opportunity for Early Works Report(s) for assessment of works that are ready to proceed in advance of the Environmental Impact Assessment Report. The Environmental Conditions Report documents the local environmental conditions of the Ontario Line Study Area and provides a preliminary description of the potential environmental impacts from the Project. Information outlined in the Environmental Conditions Report is used to inform the Early Works Report(s) and Environmental Impact Assessment Report, which study environmental impacts in further detail and confirm and refine preliminary mitigation measures identified in the Environmental Conditions Report.

Ontario Line early works are components of the Project that are proposed to proceed before the completion of the Ontario Line environmental impact assessment process. An overview of the Project is provided in **Section 1.2**. AECOM Canada Limited (AECOM) was retained by Metrolinx and Infrastructure Ontario to complete this Early Works Report (this Report) for the Project. Early works are defined in Ontario Regulation 341/20: Ontario Line Project under the Environmental Assessment Act as follows:

> "any components of the Ontario Line Project that Metrolinx proposes to proceed with before the completion of the Ontario Line assessment process, such as station construction, rail corridor expansion, utility relocation or bridge replacement or expansion."

This Report documents the assessment of the East Harbour Station early works. The rationale for proceeding with the East Harbour Station early works is provided in **Section 1.3.1** and the detailed early works description in **Section 3**.

East Harbour Station was previously assessed through the SmartTrack program in 2018 and since the completion of that assessment, changes have been made to the project to accommodate the Ontario Line, documented within this Report.

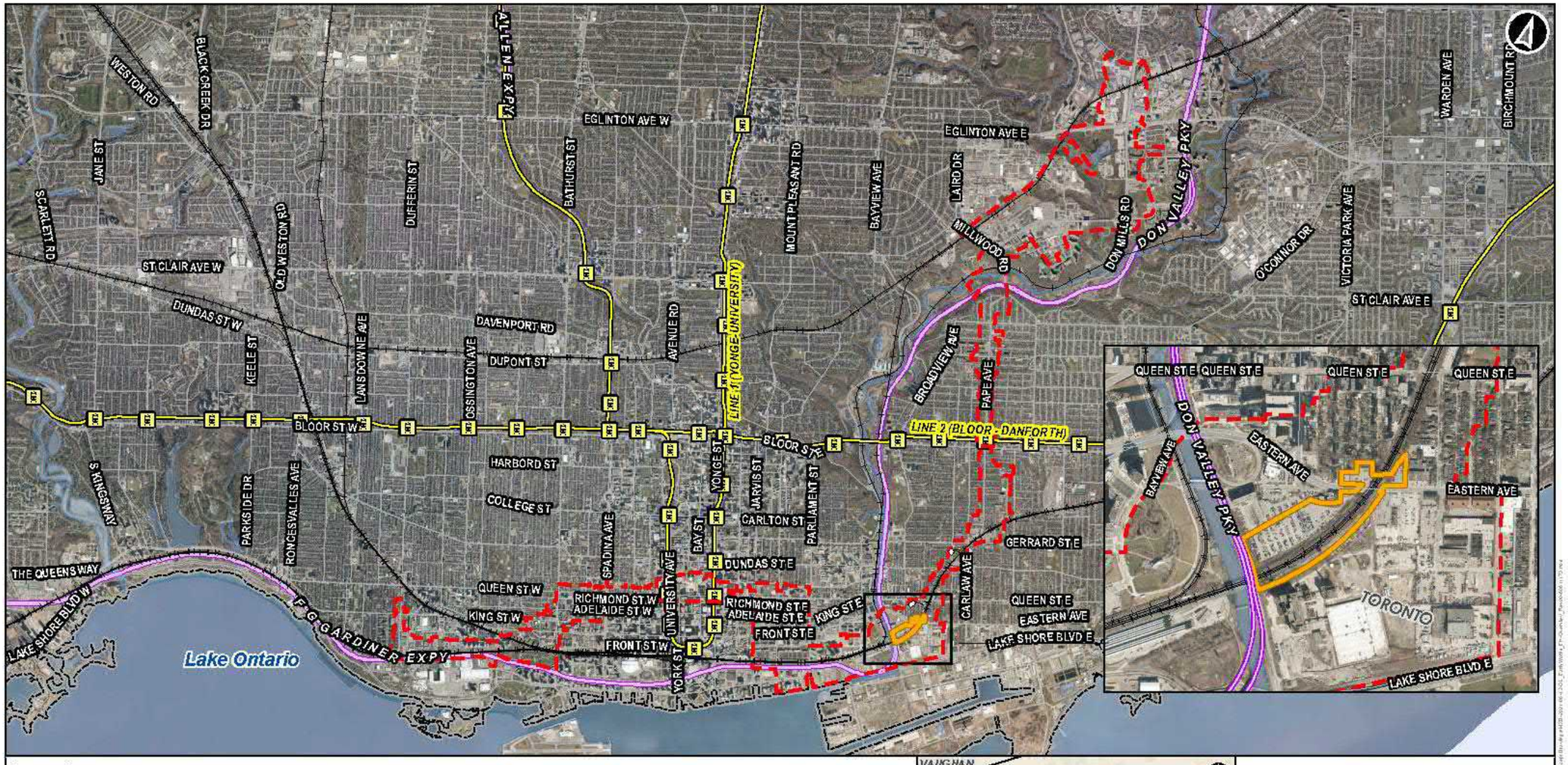
1.2 Ontario Line Project Overview

Metrolinx, an agency of the Province of Ontario, is proceeding with the planning and development of the Ontario Line, extending from Exhibition/Ontario Place to the Ontario Science Centre in the City of Toronto.

The Project is a new approximately 15.6 kilometre subway line with connections to Line 1 (Yonge-University) subway service at Osgoode and Queen Stations, Line 2 (Bloor-Danforth) subway service at Pape Station, and Line 5 (Eglinton Crosstown) light rail transit service at the future Science Centre Station. Fifteen stations are proposed, with additional connections to three GO Transit lines (Lakeshore East, Lakeshore West and Stouffville), and the Queen, King, Bathurst, Spadina, Harbourfront, and Gerrard/Carlton streetcar routes. The Project will reduce crowding on Line 1 and provide connections to new high-order rapid transit neighbourhoods. The Project will be constructed in a dedicated right-of-way with a combination of elevated (i.e., above existing rail corridor/roadway), tunnelled (i.e., underground), and at-grade (i.e., at grade with existing rail corridor) segments at various locations.

The East Harbour Station early works location within the context of the Project is shown in **Figure 1-1**.

Figure 1-1: Ontario Line Project and East Harbour Station Early Works Location



Legend

- Existing Station
- Toronto Subway Lines
- Freeway
- Major Road
- Watercourse
- Waterbody
- Ontario Line Project Study Area
- East Harbour Station Early Works Project Footprint

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Ontario Line Project Study Area and Early Works Project Footprints

0 250 500 1,000 1,500 2,000 2,500 3,000 3,500
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

METROLINX	AECOM
Aug, 2021	1:50,000
P#: 60611173	REV: 05

Figure 1-1

1.3 Early Works Overview

The East Harbour Station early works will include:

- Reconfiguration of the existing Lakeshore East GO tracks to accommodate station facilities and future Ontario Line tracks;
- Construction of station facilities such as platforms and entrances;
- Replacement and expansion of the existing Eastern Avenue rail bridge to accommodate four Lakeshore East GO tracks and two future Ontario Line tracks; and
- Site preparation activities such as grading, demolition of existing structures where required, and utility relocation or protection.

The detailed project description is provided in **Section 3.1**.

1.3.1 Rationale for Proceeding with the East Harbour Station Early Works

East Harbour Station early works are considered to be of strategic importance in enabling the timely implementation of the Project. Advancing East Harbour Station early works and supporting environmental and technical studies in this area provides planning and design efficiencies for East Harbour Station, GO Expansion and the Ontario Line Lakeshore East Joint Corridor and Lower Don Bridge early works, and facilitates the timely implementation of these undertakings.

Further, these early works will set the groundwork for other major construction for the Ontario Line project, reducing risk of construction delays to the main contracts by completing this East Harbour Station work in advance of the main contracts.

1.3.2 Summary of Background Information related to the East Harbour Station Early Works

East Harbour Station is a multi-modal transit hub that will provide seamless connectivity with GO service and the Ontario Line, as well as protect for connectivity with the planned extension of the Broadview Avenue streetcar.

In July 2016, Metrolinx issued the Initial Business Case for the East Harbour SmartTrack Station (previously referred to as Don Yard/Unilever). In Fall 2016, the City of Toronto confirmed the location, general design concept and inclusion of the station in the SmartTrack Stations Program. The Environmental Project Report for the New

SmartTrack Stations Project, including East Harbour Station, was completed in 2018 in accordance with Ontario Regulation 231/08 (Transit Project Assessment Process).

Since the completion of the New SmartTrack Stations Project Environmental Project Report, the East Harbour Station layout has evolved to accommodate the inclusion of the Ontario Line, shown in **Figure 1-2.** The original layout, or the Station's Initial Preferred Design (IPD), was described in Appendix A of the New SmartTrack Stations EPR Volume V (Metrolinx and City of Toronto, 2018). The changes to the IPD that are being proposed to integrate the Ontario Line include a shift in station location to the east, to be located entirely between the existing Lakeshore East rail bridge over the Lower Don River and Eastern Avenue, and an additional platform to accommodate the Ontario Line service (see Section 3.1 for more details). Further, the Eastern Avenue rail bridge is proposed to be replaced and expanded to accommodate four GO tracks and two future Ontario Line tracks.

Having East Harbour Station proceed to implementation as part of early works accelerates the construction of this important transfer point and ensures timely Project delivery.

1.3.3 Description of the Alternatives Considered

East Harbour Station is situated between the Don Valley Parkway and Eastern Avenue, along the joint Ontario Line–GO corridor Project segment between the tunnel portal located in the Don Yard and the tunnel portal located north of Gerrard Street East, or Lakeshore East Joint Corridor (**Figure 1-2**). Metrolinx has revised the design concept of this segment for the Ontario Line tracks to be located entirely on the north side of the Lakeshore East GO tracks (North Alignment) rather than on both sides of the GO tracks (Straddle Alignment), as shown in **Figure 1-3**. As a result, a single centre platform serving exclusively Ontario Line trains is required at East Harbour Station, and two platforms serving exclusively GO trains, with the ability to serve both express and non-express GO trains. In addition, infrastructure footprint is limited to the existing corridor as well as immediately adjacent area to the north of the corridor, rather than south.

Metrolinx considered alternative methods of delivering the Project including a non-phased approach to Project implementation. It has been determined that a phased approach to implementation – that is, proceeding with East Harbour Station early works before the completion of the Ontario Line assessment process – is beneficial for Project planning and design and facilitates timely implementation of the East Harbour Station, Ontario Line and GO Expansion.

Figure 1-2: Ontario Line Alignment

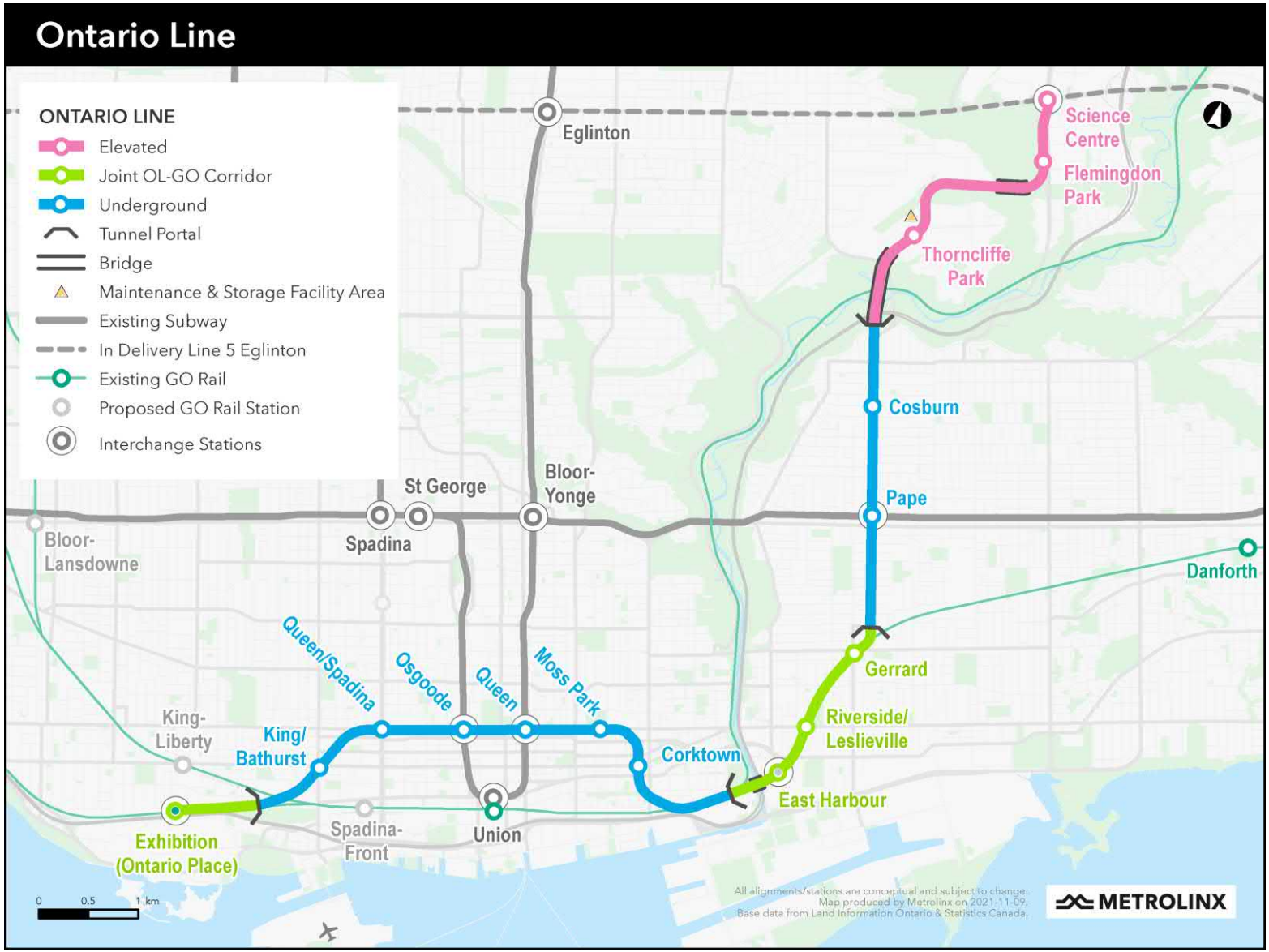
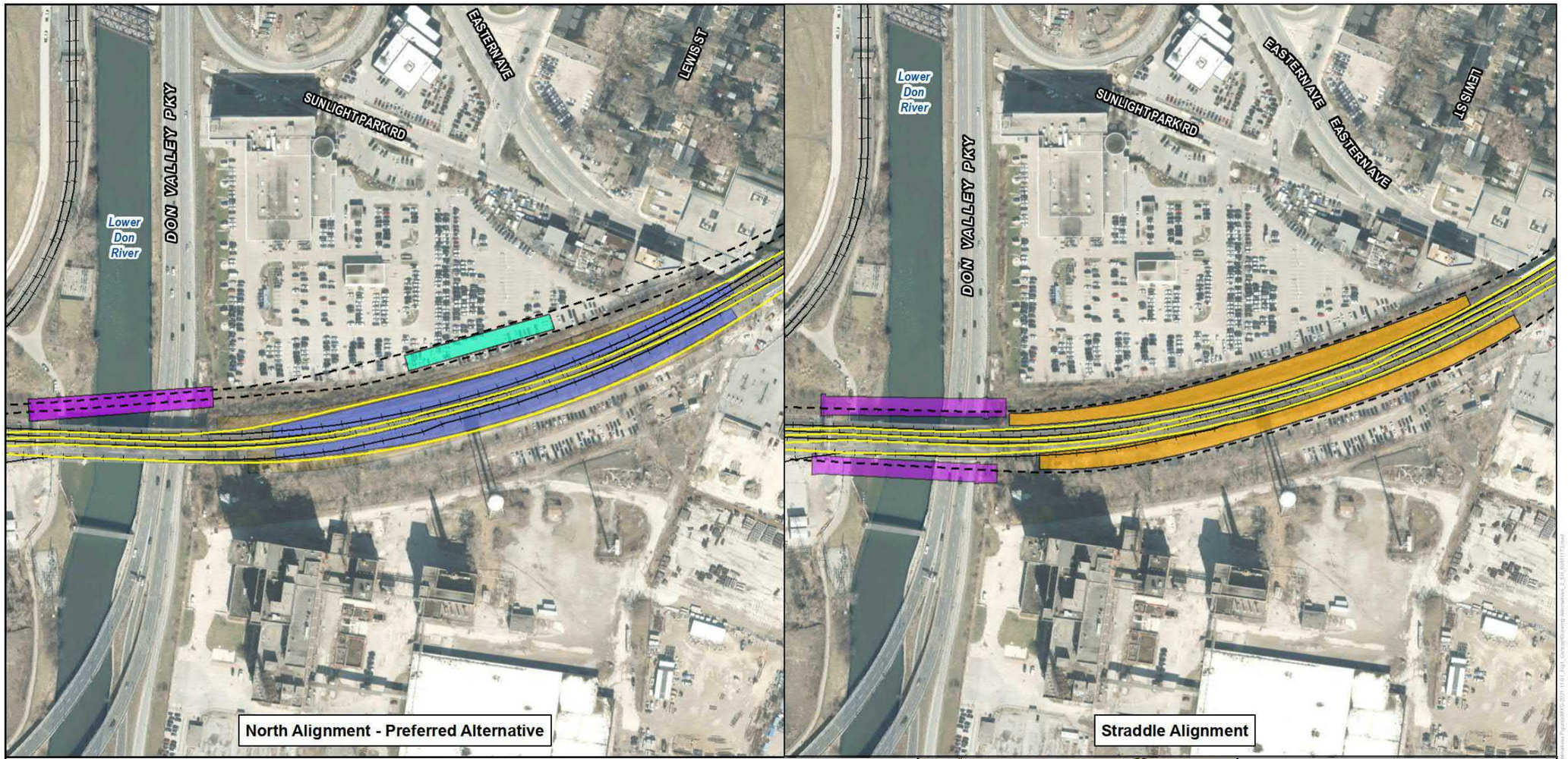


Figure 1-3: East Harbour Station Early Works Alternatives Considered



2. Study Process

2.1 Ontario Regulation 341/20: Ontario Line Project

This Project is being assessed in accordance with Ontario Regulation 341/20: Ontario Line Project, under the Environmental Assessment Act. Ontario Regulation 341/20: Ontario Line Project provides a defined framework for the proponent to follow to conduct assessment and decision-making surrounding the potential environmental impacts of the Project.

Ontario Regulation 341/20: Ontario Line Project requires consultation with Indigenous Nations and interested persons, an Environmental Conditions Report, and an Environmental Impact Assessment Report. Ontario Regulation 341/20: Ontario Line Project provides opportunity for Metrolinx to prepare one or more early works reports.

2.1.1 Early Works Report

2.1.1.1 Draft Early Works Report

This Report was prepared to satisfy the requirements of Section 8 of Ontario Regulation 341/20: Ontario Line Project. This Report summarizes the local environmental conditions within the discipline-specific study areas developed for the East Harbour Station early works. The local environmental conditions were characterized through a combination of desktop review and field studies by practitioners using industry standard techniques and provincial standards, protocols, and guidelines, where appropriate. A detailed description of local environmental conditions is documented in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a)[5], prepared under a separate cover in accordance with Section 4 of Ontario Regulation 341/20: Ontario Line Project.

This Report also provides an assessment and evaluation of the impacts that early works might have on the environment. Based on the potential impacts, a description of mitigation measures and monitoring activities is outlined. A list of any municipal, provincial, federal or other permits and approvals that may be required for the early works is also provided.

5. The Ontario Line Final Environmental Conditions Report (AECOM, 2020) was published on November 30, 2020 in accordance with Ontario Regulation 341/20: Ontario Line Project.

Discipline-specific assessment and evaluation of impacts were undertaken for the following disciplines:

- Natural Environment;
- Soil and Groundwater;
- Hydrology and Surface Water;
- Air Quality;
- Noise and Vibration;
- Socio-Economic and Land Use Characteristics;
- Built Heritage Resources and Cultural Heritage Landscapes;
- Archaeological Resources;
- Traffic and Transportation; and
- Utilities.

Lastly, this Report provides a consultation record including a description of the consultations carried out with Indigenous Nations and interested persons.

2.1.1.2 Consultation on the Early Works Report

In order to build strong relationships, to develop an understanding of local issues in the surrounding communities, and to ensure communities stay engaged and informed, Metrolinx engages the public and a range of interested parties, including: Indigenous Nations, Elected Officials, regulatory agencies, community stakeholders and groups and other interested persons. The East Harbour Station early works consultation activities are outlined below and further detailed in **Section 8** of this Report. All consultation materials are included in **Appendix B**.

The overall approach to consultation for the Project is outlined in Section 7.1.1 of the Ontario Line Final Environmental Conditions Report (AECOM, 2020a). To share information and collect feedback related to early works, Metrolinx has undertaken the following communication and engagement activities prior to the publication of the Final East Harbour Station Early Works Report and during the 31-day public review period:

- Early Works specific updates on the Engagement webpage (Project website) (www.metrolinx.com/ontarioline) including:
  - East segment neighbourhood updates (East Harbour Station is within the East Segment) – published on September 17, 2020 and updated on November 30, 2020, April 6, 2021, April 23, 2021 and September 23, 2021;
  - East segment virtual presentation and live question and answer session hosted on April 22, 2021 (https://www.metrolinxengage.com/en/OLliveApril22), June 24, 2021

(https://www.metrolinxengage.com/en/OLLiveEJune24), September 23, 2021 (https://www.metrolinxengage.com/en/olLIVEsept23) and October 5, 2021 (https://www.metrolinxengage.com/en/OLLIVEOct5); and
  - The Ontario Line – Environment webpage (https://www.metrolinxengage.com/en/content/ontario-line-environment) that includes the Ontario Line environmental reporting timeline, early works scope overview and locations and provides an option to learn more about each early works location – published on September 17, 2020 and updated on August 9, 2021, September 23, 2021 and November 17, 2021 to include East Harbour Station early works.
- Mailings/notifications;
- Emails via the Project email address (ontarioline@metrolinx.com);
- E-newsletters to the Project Distribution List (see **Section 8.1.3** for more details);
- Newspaper advertisements;
- Elected Officials Briefings (see **Section 8.5** for list of Elected Officials and associated electoral districts and Ward numbers);
- Outreach to Indigenous Nations, government review agencies and other technical stakeholders;
- Online consultation via the Engagement webpage (Project website); and
- Meetings community stakeholders and groups.

In accordance with Section 8(2)(10) of Ontario Regulation 341/20: Ontario Line Project, the consultation record summarized in **Section 8** and provided in **Appendix B** summarizes the East Harbour Station early works consultation activities carried out with Indigenous Nations, members of the public, government review agencies and other technical stakeholders, community stakeholders and groups, Elected Officials, and other interested parties, including a summary of feedback and comments received.

On September 23. 2021, the Notice of Publication of the Draft East Harbour Station Early Works Report was issued through a variety of media to commence the public review period, effective until October 24, 2021, along with the up to 65-day review and Issues Resolution Process period. The Notice was distributed via:

- Engagement webpage on the Project website (www.metrolinx.com/ontarioline);

- Newspaper advertisements in three major newspapers in English and French, and three community newspapers in English, French, Greek, and Traditional Chinese;
- Email to individuals on the Project Distribution List, including community stakeholders and groups, government review agencies and other technical stakeholders, Elected Officials, and Indigenous Nations; and
- Mailed to 73 property owners within 30 metres of the East Harbour Station Early Works Project Footprint and approximately 12,380[6] addresses (i.e., apartments, houses, businesses) within and surrounding the East Harbour Station Study Area.

Extensive consultation was also undertaken by Metrolinx for the overall Project, which is detailed in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a), under separate cover.

2.1.1.3 Issues Resolution Process

In accordance with Section 10(6) of the Ontario Regulation 341/20: Ontario Line Project, Metrolinx established an issues resolution process for the East Harbour Station early works. Any concerns raised by Indigenous Nations and interested persons during the 31-day public review period of the Draft East Harbour Station Early Works Report have been documented in **Section 8.7.2** of this Report, as required by Section 11(1)(b) of Ontario Regulation 341/20: Ontario Line Project. Concerns received after the public review period will be addressed outside of the issues resolution process.

2.1.1.4 Final Early Works Report

Following the consultation program described in **Section 2.1.1.2** and **Section 8**, the Notice of Publication of the Final East Harbour Station Early Works Report was issued to the public on November 17, 2021 through a variety of media (Project website, email, registered mail, social media, newspapers, and mail drop to nearby addresses). All parties notified of the Draft East Harbour Station Early Works Report were notified of the publication of the Final East Harbour Station Early Works Report and provided with access to a copy of it. Input/feedback received during the 31-day public review period was incorporated into this Report.

Within 35 days of receipt of the Notice of Publication of the Final East Harbour Station Early Works Report, the Minister may issue a notice to Metrolinx imposing conditions

6. The property list has been updated since publishing the Draft East Harbour Station Early Works Report from 12,112 to 12,380 to accommodate the most recent Canada Post mail routes, which are updated on a monthly basis.

related to the early works, in accordance with Section 12 of the Ontario Regulation 341/20: Ontario Line Project.

After the 35-day Minister review period, Metrolinx will submit a Statement of Completion of the early works assessment process to the Directors of the Ministry's Environmental Assessment Branch and Central Region Office and post the Statement of Completion on the Project website. Metrolinx shall proceed in accordance with the Final East Harbour Station Early Works Report, subject to any conditions imposed by the Minister.

2.1.2 Contents of the Early Works Report

This Report has been prepared in accordance with Section 8 of Ontario Regulation 341/20: Ontario Line Project and contains the information outlined in **Table 2-1**.

Table 2-1: Report Contents in Accordance with Ontario Regulation 341/20: Ontario Line Project

Reg. Section	Requirement	Report Section
Section 8(2)1	A description of the early works including a description of the alternatives that were considered.	**Section 1.3 and Section 3**
Section 8(2)2	The rationale for proceeding with the early works and a summary of background information relating to them.	**Section 1.3**
Section 8(2)3	A map showing the site of the early works.	**Figure 3-1 and Appendix A**
Section 8(2)4	A description of the local environmental conditions at the site of the early works.	**Section 5 and Appendix A**
Section 8(2)5	A description of all studies undertaken in relation to the early works, including, i. a summary of all data collected or reviewed, and ii. a summary of all results and conclusions.	**Section 5, Section 6, and Appendix A**
Section 8(2)6	Metrolinx's assessment and evaluation of the impacts that the preferred method of carrying out the early works and other methods might have on the environment, and Metrolinx's criteria for assessment and evaluation of those impacts.	**Section 6 and Appendix A**
Section 8(2)7	A description of any measures proposed by Metrolinx for mitigating any negative impacts that the preferred method of carrying out the early works might have on the environment.	**Section 6 and Appendix A**
Section 8(2)8	A description of the means Metrolinx proposes to use to monitor or verify the effectiveness of mitigation measures proposed.	**Section 6 and Appendix A**
Section 8(2)9	A description of any municipal, provincial, federal or other approvals or permits that may be required for the early works.	**Section 7 and Appendix A**
Section 8(2)10	A consultation record, including, i. a description of the consultations carried out with Indigenous Nations and interested persons,	**Section 8 and Appendix B**

Reg. Section	Requirement	Report Section
	ii. a list of the Indigenous Nations and interested persons who participated in the consultations, iii. summaries of the comments submitted by Indigenous Nations and interested persons, and iv. a summary of discussions that Metrolinx had with Indigenous Nations, and copies of all written comments submitted by Indigenous Nations.	

2.2 Planning Context

The Province of Ontario and City of Toronto have plans and policies which are relevant to the development of the Project. An overview of the Project is provided in **Section 1.2**. These plans and policies serve as important elements of the planning framework and provide insight into key provincial and municipal objectives, while encouraging strategic transportation development.

The following sections provide an overview of the planning policies affecting the Project. These individual plans and policies, as well as other planning considerations such as municipal strategies and guidelines, and relevant environmental assessment studies, are described in more detail in **Section 5.6** of this Report.

2.2.1 Provincial

2.2.1.1 Provincial Policy Statement, 2020

The Provincial Policy Statement, 2020 is issued under Section 3 of the Planning Act and provides policy direction on matters related to land use planning and development. The Provincial Policy Statement is premised upon the efficient use of land and infrastructure, the protection of environmental resources, and ensuring sufficient land is available for the development of future employment and residential uses.

Of relevance to the East Harbour Station Study Area are policies that relate to transportation systems and infrastructure, long-term economic prosperity, and the protection of natural, cultural heritage and archaeology. In particular, the Provincial Policy Statement promotes:

- Healthy and active communities by facilitating active transportation and community connectivity (Provincial Policy Statement, 2020, Section 1.5.1);
- The planning for and protection of transportation infrastructure and transit to meet current and projected needs (Provincial Policy Statement, 2020, Section 1.6.8.1);

- Providing safe, energy efficient, integrated, and reliable multimodal transportation systems which facilitate the movement of people and appropriately address projected needs (Provincial Policy Statement, 2020, Section 1.6.7);
- Maintaining or restoring the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems (Provincial Policy Statement, 2020, Section 2.1.2);
- Restricting development and site alteration in, or adjacent to, significant wetlands, woodlands, valley lands, wildlife habitat, and Areas of Natural and Scientific Interest, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions (Provincial Policy Statement, 2020, Sections 2.1.4 and 2.1.5);
- Restricting development and site alteration in habitat of endangered or threatened species except in accordance with Provincial and Federal requirements (Provincial Policy Statement, 2020, Section 2.1.7);
- Restricting development and site alteration in or near sensitive surface or groundwater features such that their features and related hydrological functions will be protected, improved, or restored (Provincial Policy Statement, 2020, Section 2.2.2); and
- Providing conservation to significant built heritage resources and significant cultural heritage landscapes (Provincial Policy Statement, 2020, Section 2.6.1).

The Project is consistent with the objectives of the Provincial Policy Statement as it supports the expansion and optimization of a multi-modal transportation system that provides connectivity to existing local and regional transit and supports long-term economic prosperity. The Project will also support areas that are planned for residential and employment growth and the potential to support multiple modes of travel, foster improved connectivity, and allow for the development of compact, mixed-use communities.

As noted in **Section 1.3.1**, the East Harbour Station early works support the timely implementation of the Project and are therefore also consistent with the objectives of the Provincial Policy Statement.

2.2.1.2 A Place to Grow: Growth Plan for the Greater Golden Horseshoe

A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020 (Growth Plan) is a long-term plan for Ontario designed to promote economic growth, increase housing supply, create jobs, and build communities that make life easier, healthier, and more

affordable for people of all ages. As one of the most dynamic and fast-growing regions in North America, the Greater Golden Horseshoe is a designation for many people and businesses relocating from other parts of Canada and around the world. To accommodate such growth, an integral part of the Plan's vision is focused on investing in transit infrastructure to support the regional transit network.

The Project is consistent with the relevant policies of the Growth Plan by extending the higher-order transit network into existing residential and employment areas, which optimizes the efficiency and viability of existing and planned transit and help develop more vibrant and complete communities.

The Growth Plan identifies Downtown Toronto as an "urban growth centre" and the GO Transit rail lines and subway lines within the Downtown Toronto area "priority transit corridors" (Province of Ontario, 2020). The Growth Plan notes that urban growth centres will be planned:

a) as focal areas for investment in regional public service facilities, as well as commercial, recreational, cultural, and entertainment uses;
b) to accommodate and support the transit network at the regional scale and provide connection points for inter- and intra-regional transit;
c) to serve as high-density major employment centres that will attract provincially, nationally, or internationally significant employment uses; and
d) to accommodate significant population and employment growth.

Each "urban growth centre" is given a minimum density target to achieve by 2031. The minimum density target for Downtown Toronto is 400 residents and jobs combined per hectare. To support these growth and density targets, "priority transit corridors" are identified with policies for infrastructure development, such as requiring municipalities to recognize these areas in their official plans to implement the policies of the Growth Plan.

The Project promotes the Growth Plan's policies by providing Downtown Toronto with improved regional connections that will accommodate the increased population and employment to be achieved by the density targets.

As noted in **Section 1.3.1**, the East Harbour Station early works support the timely implementation of the Project and are therefore also consistent with the objectives of the Growth Plan.

2.2.1.3 2041 Regional Transportation Plan

The 2041 Regional Transportation Plan is a strategic, long-term vision for interconnected transportation in the Greater Toronto and Hamilton Area. The Regional Transportation Plan was adopted by Metrolinx in March 2018. The Regional

Transportation Plan is the successor to Metrolinx's first long-term transportation plan, The Big Move (2008).

The Regional Transportation Plan identifies the following five key strategies:

1. Complete delivery of current regional transit projects.
2. Connect more of the region with frequent rapid transit.
3. Optimize the transportation system.
4. Integrate transportation and land use.
5. Prepare for an uncertain future.

Under Strategy 1, the Regional Transportation Plan notes that planning is underway for 13 rapid transit projects including the Relief Line Subway, which is described as a "new subway line linking downtown Toronto, the Bloor-Danforth Subway and Sheppard Avenue" and "will manage congestion along the Yonge Subway Line, from Osgoode Station to Sheppard Avenue East in Toronto" (Metrolinx, 2018). The Relief Line Subway is listed under "Projects in Development" and Relief Line Subway West Extension (Osgoode Station – Bloor West) is listed under "Projects beyond 2041" (Metrolinx, 2018). The Regional Transportation Plan notes that earlier planning will occur for the West Extension (Metrolinx, 2018).

The Project meets the intent of the Regional Transportation Plan, as it will provide a new subway connecting downtown Toronto and providing relief to the existing Yonge-University Subway (Line 1). As noted in **Section 1.3.1**, the East Harbour Station early works support the of the timely implementation of the Project and are therefore also consistent with the objectives of the Regional Transportation Plan.

2.2.1.4 The Greenbelt Plan, 2017

The Greenbelt Plan, 2017, identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological and hydrological features, areas, and functions occurring within the Greater Golden Horseshoe landscape (Province of Ontario, 2017). The Greenbelt Plan was introduced in 2005 under the Greenbelt Act, 2005, and includes lands within, and builds upon the ecological protections provided by, the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Plan[7]. The Greenbelt Plan, together with the Growth Plan, builds on the Provincial Policy Statement to establish a land use planning framework for the Greater Golden Horseshoe that supports a thriving economy, a clean healthy environment, and social equity (Province of Ontario, 2017).

7. The East Harbour Station Study Area does not fall within the protections of the Niagara Escarpment Plan or Oak Ridges Moraine Conservation Plan.

The Don River is designated as an Urban River Valley under the Greenbelt Plan, 2017. The Urban River Valley designation promotes protection of natural and open space lands along river valleys in urban areas, provides connectivity between the Greenbelt and Lake Ontario, and directs land use planning in areas where the Greenbelt occupies river valleys in an urban context (Province of Ontario, 2017).

The Project is consistent with the Greenbelt Plan, 2017, as the Urban River Valley policies, provided under Section 6 of the Greenbelt Plan, 2017, note that all existing, expanded, or new infrastructure subject to and approved under the Environmental Assessment Act (or similar approval) are permitted within the Urban River Valley designation, provided that the goals of the Growth Plan and Greenbelt Plan are supported (Province of Ontario, 2017).

A portion of the Don River is adjacent to the East Harbour Station Early Works Project Footprint; therefore, the Urban River Valley policies outlined in the Greenbelt Plan, 2017 are applicable to the East Harbour Station early works.

2.2.1.5 Conservation Authorities Act, 1998

The East Harbour Station Early Works Project Footprint falls under the jurisdiction of the Toronto and Region Conservation Authority. Ontario Regulation 166/06 under Section 28 of the Conservation Authorities Act (1998), establishes regulated areas within Toronto and Region Conservation Authority's jurisdiction where development could be subject to flooding, erosion or dynamic beaches, or where interference with wetlands and alterations to shorelines and watercourses might have an adverse effect on those environmental features. The East Harbour Station Early Works Project Footprint is located within the Toronto and Region Conservation Authority Regulation Limit; therefore, Toronto and Region Conservation Authority policies are applicable under the Conservation Authorities Act, 1990.

2.2.1.6 Toronto and Region Conservation Authority Living City Policies, 2014

The Toronto and Region Conservation Authority Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority (Toronto and Region Conservation Authority, 2014b) outlines the objectives and policies approved by the Toronto and Region Conservation Authority's roles and responsibilities in the planning and development approvals process (Toronto and Region Conservation Authority, 2014b). The purpose of the Toronto and Region Conservation Authority Living City Policies include guiding Toronto and Region Conservation Authority's review of planning applications and environmental assessments and provide the basis for approving permit applications under Section 28 of the Conservation Authorities Act.

As noted in **Section 2.2.1.5**, the East Harbour Station Early Works Project Footprint is located within the Toronto and Region Conservation Authority Regulation Limit, therefore the policies outlined within the Toronto and Region Conservation Authority Living City Policies apply to the East Harbour Station early works.

2.2.2 Municipal

2.2.2.1 City of Toronto Official Plan

The City of Toronto Official Plan (Official Plan) is intended to ensure that the City of Toronto evolves, improves, and realizes its full potential in areas such as transit, land use development, and the environment. Chapters 1 to 5 of the Official Plan contain city-wide policies that guide new development and related decision-making. As a municipal document, the Official Plan reflects provincial policies, plans, and initiatives (as described in **Section 2.2.1**) for effective implementation at the city level.

Further to the Official Plan's city-wide policies, Chapter 6 of the Official Plan is dedicated to Secondary Plans, which are more detailed local development policies to guide growth and change in a defined area of the City. Each Secondary Plan focuses on a key area, community, or neighbourhood to implement visions and objectives specific to these areas.

The following four City of Toronto secondary plans are applicable to the East Harbour Station Study Area:

- King-Parliament Secondary Plan;
- Central Waterfront Secondary Plan;
- Downtown Plan; and
- Unilever Precinct Secondary Plan.

The East Harbour Station Early Works Project Footprint is within the boundary of the Lower Don: Don River Special Policy Area within the Official Plan.

Refer to **Section 5.6** for descriptions of all secondary plans applicable to the East Harbour Station early works.

2.2.2.2 Unilever Planning Framework

The City of Toronto initiated the Unilever Planning Framework, approved in June 2018. to guide the transformation of the Unilever Precinct. The framework provides an opportunity to re-imagine former industrial lands east of the downtown core as a thriving employment node supported by new transit, flood protection, open space, servicing and transportation infrastructure. The study applies a city-building lens to area development

applications, to capitalize on and coordinate development with adjacent infrastructure investments. The Unilever Planning Framework is intended to provide direction for redevelopment of the Unilever Precinct through a comprehensive visioning statement and series of recommendations. The Unilever Precinct is designated for employment uses, supported by additional non-residential uses such as retail, cultural uses, community uses, and open spaces. These uses, in addition to the surrounding existing and emerging neighbourhoods, are essential components of the vibrancy of the precinct (City of Toronto, n.d.f).

2.2.2.3 City of Toronto Parkland Strategy

The City Planning Division and the Parks, Forestry and Recreation Division developed the Parkland Strategy to provide the City of Toronto with a long-term vision and framework for enhancing Toronto's park system (City of Toronto, 2019b). The following principles support the City's vision for the parks system and form the foundation of the Parkland Strategy:

Expand the parks system by creating new parks to support growth and address gaps to ensure an effective parks system that will support the needs of a livable, diverse city;

Improve the function of existing parks to promote community cohesion, ecological sustainability, and health and well being through active living, access to nature, and the provision of spaces for rest, relaxation, and leisure;

Connect parks and other open spaces, physically and visually, and leverage opportunities to use other open spaces so that people, communities and wildlife have abundant access to parks and open spaces and can seamlessly navigate to and through the parks and open space system;

Include everyone by removing barriers so that parks and other open spaces are inclusive and inviting places that are equitably accessible for people of all ages, cultures, genders, abilities, and incomes.

The Final Parkland Strategy Report was adopted by Council on November 26, 2019.

2.2.3 Applicable Environmental Assessments and Planning Studies

2.2.3.1 East Harbour Station – SmartTrack Transit Project Assessment Process

The East Harbour Station will be located south of Eastern Avenue on the Metrolinx Lakeshore East rail corridor and will occupy lands from the eastern side of the Don Valley Parkway to Eastern Avenue. The transit hub station will serve both Ontario Line and GO service. The station will provide connectivity with the future Broadview Ave streetcar, as well as connectivity with adjacent communities.

2.2.3.2 Waterfront Transit Reset

The City of Toronto, in partnership with the Toronto Transit Commission and Waterfront Toronto, is undertaking the Waterfront Transit "Reset" study, including a comprehensive assessment of needs and options for transit improvements for the waterfront area. The Waterfront Transit Reset study area extends from the Long Branch GO Station and the Mississauga border in the west to Woodbine Avenue in the east, and south of the Queensway/Queen Street corridor to Lake Ontario.

The Phase 1 study was completed in 2016 and the Phase 2 study was completed in 2018. City Council endorsed the overall Waterfront Transit Network Plan on January 31, 2018 and directed City staff to proceed with detailed planning and design studies (City of Toronto, 2020e). Consultation activities are currently underway for detailed design between Union Station and Cherry Street (City of Toronto, 2020e).

2.2.3.3 Don Mouth Naturalization and Port Lands Flood Protection Project

The East Harbour Station Early Works Project Footprint is within the boundary of the Don Mouth Naturalization and Port Lands Flood Protection Project (Toronto and Region Conservation Authority, 2014a).

Toronto and Region Conservation Authority, on behalf of and in cooperation with Waterfront Toronto and the City of Toronto, completed an Individual Environmental Assessment for the Don Mouth Naturalization and Port Lands Flood Protection Project. The environmental assessment study was approved by the Minister of the Environment, Conservation and Parks (formerly the Minister of the Environment and Climate Change) in March 2014. Construction commenced in the Port Lands in late 2018.

A minor amendment to the March 2014 Environmental Assessment Report was released in April 2021 to address the following modifications (Toronto and Region Conservation Authority, 2021a):

- Hydraulic modifications in the vicinity of the Lake Shore Bridge
  - Four-bay Lake Shore Bridge and upstream sediment trap configuration;
  - Hydro One Networks Inc. utility bridge across Don River (to remain); and
  - Flow diversion structures (adjustable and fixed sideflow weir to detachable flow curtain).
- Revised phasing approach to the Don Mouth Naturalization Project
  - Overall Port Lands Flood Protection Project construction phasing approach;
  - Interim sediment management area; and
  - Keating Channel revetment.

2.2.3.4 Lower Don River West Remedial Flood Protection Project

The West Don Lands area was a brownfield site within the Don River flood plain, and before any revitalization and development of the area could occur, the area required flood mitigation. The Lower Don River West Remedial Flood Protection Project Class Environmental Assessment (Toronto and Region Conservation Authority, 2005) was undertaken to examine alternative flood protection systems for the elimination of flood risk along the Don River. The study was completed by Toronto and Region Conservation Authority in partnership with Waterfront Toronto, and in 2007 construction began on a flood protection landform along the Don River from the rail corridor to King Street. The landform is eight hectares in size and was constructed to provide flood protection for the West Don Lands community and Toronto's financial district. Corktown Common is located atop the flood protection landform.

2.2.3.5 Lower Don Trail Master Plan

The Lower Don Trail Master Plan was developed by the City of Toronto to provide a long-term strategy to improve access, environmental protection and possibilities for public art in the Don River valley lands (City of Toronto, 2013). The Lower Don Trail Master Plan include the following main principles:

- **Accessibility:** provide clear and safe access to the trail;
- **Connectivity:** connect major destinations, existing infrastructure and neighbourhoods while promoting the Don Valley as a destination unto itself;
- **Preservation:** protect and preserve the most sensitive natural areas;
- **Recreation:** enhance responsible interaction with the natural environment and develop recreation routes;
- **Education:** share the story of the Don Valley's history through public art and other installations;
- **Visibility:** develop clear and consistent wayfinding and interpretive signage, and elevate the visibility of the trail through public art; and
- **Participation:** invite opportunities for public participation in future improvements to the trail system.

In 2018, the City of Toronto began a refresh of the Lower Don Trail Master Plan to expand the existing principles into a larger study area, coordinate with relevant City Plans and strategies, recognize recently completed and upcoming work, and developing a new list of actions and strategies for users to better engage with the trail system (City of Toronto, n.d.b.).

The City of Toronto released a Site Information Bulletin on the Lower Don Trail Phase 2 Improvements on January 25, 2021. Phase 2 includes five components from just north

of the Lakeshore East rail bridge for about 2 kilometres of trail north. Within the East Harbour Station Study Area, the scope includes general trail improvements including asphalt path widening, grading improvements, planting, guard rails, fencing, line painting and inlaid thermoplastic paving (City of Toronto et al., 2021).

The project is currently on hold; however, a draft of the Lower Don Master Plan Refresh is expected to be available to stakeholders and the public by the end of 2021 (City of Toronto, n.d.b.).

2.2.3.6 Gardiner Expressway Strategic Rehabilitation Plan

The City of Toronto developed the Gardiner Expressway Strategic Rehabilitation Plan to establish the immediate and long-term rehabilitation needs of the Gardiner Expressway, improve transportation corridors within the area, and provide more efficient public transit connections (City of Toronto, n.d.b). The rehabilitation is being completed in seven sections, one of which is within the East Harbour Station Study Area, the segment between Cherry Street and east of the Don Valley Parkway at Logan Avenue with a projected timeline of planned construction between 2026 and 2029 (City of Toronto, n.d.b). The City of Toronto's website notes that the planned construction timelines are subject to change (City of Toronto, n.d.b).

2.2.3.7 Port Lands and South of Eastern Transportation and Servicing Master Plan and Class Environmental Assessment

The City of Toronto, in collaboration with Waterfront Toronto and Toronto and Region Conservation Authority, completed the Port Lands and South of Eastern Transportation and Servicing Master Plan and Environmental Assessment in 2017 to support Toronto's only active port and continued employment growth in the South of Eastern area. The Transportation and Servicing Master Plan Environmental Assessment identifies preferred solutions for streets, including transit in dedicated rights-of-way, pedestrians and cycling, and water, wastewater and stormwater infrastructure, as well as preferred conceptual cross-sections for Eastern Avenue and Broadview Avenue extension. The Transportation and Servicing Master Plan Environmental Assessment seeks to create a dynamic urban mix, connect the Port Lands to the city, develop a high quality public realm, and contribute to the sustainable future of the city (City of Toronto, 2017b).

2.2.3.8 Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment and Integrated Urban Design Study

The City of Toronto and Waterfront Toronto completed an environmental assessment for changes to the existing Gardiner Expressway and Lake Shore Boulevard from approximately Lower Jarvis Street to just east of the Don Valley Parkway at Logan Avenue. The preferred alternative includes the removal of the existing Gardiner-Don

Valley Parkway connection and rebuilding of the connection along an alignment closer to the rail corridor. The preferred alternative design also requires the lengthening of the Metrolinx Don River/Don Valley Parkway rail bridge, removal of the Logan Street ramps and the addition of two ramps in Keating Channel Precinct (City of Toronto, 2017c).

2.2.3.9 Broadview and Eastern Flood Protection Municipal Class Environmental Assessment

Toronto and Region Conservation Authority, in conjunction with the City of Toronto and Waterfront Toronto completed a Class Environmental Assessment to identify a flood protection solution for an 8-hectare parcel of urban land near the intersection of Broadview Avenue and Eastern Avenue, north of the Metrolinx railway corridor, east of the Don River. The study built upon the outcomes of the Don Mouth Naturalization and Port Lands Flood Protection Project, and the Port Lands and South of Eastern Transportation and Servicing Master Plan, to address the project area that remains at risk to flooding under the regional storm. The Notice of Completion was released on April 13, 2021, allowing the project to move into the detailed design and implementation phase (Toronto and Region Conservation Authority, 2021b).

2.2.3.10 Improving The Esplanade and Mill Street Project

The City of Toronto is proposing changes to both The Esplanade and Mill Street to improve safety; make walking, cycling and taking transit more attractive; and maintain access to local and citywide destinations (City of Toronto, n.d.d.). The following changes are being proposed for this project:

- Bi-directional cycle tracks on The Esplanade and Mill Street;
- Protected bike lane along the north side of Parliament Square Park;
- Connections to existing bikeways on Bayview Avenue, Cherry Street, Lower Sherbourne Street and Yonge Street; and
- Changes to intersections to enhance safety of road users.

The proposed improvements to The Esplanade and Mill Street overlap with the East Harbour Station Study Area.

The Improving The Esplanade and Mill Street Project will be considered by the Infrastructure and Environment Committee in May 2021, and by City Council in June 2021.

2.2.3.11 GO Rail Network Electrification

In support of the GO Expansion Program, Metrolinx is electrifying six GO-owned rail corridors including: Union Station Rail Corridor, Lakeshore West Rail Corridor,

Kitchener Rail Corridor, Barrie Rail Corridor, Stouffville Rail Corridor, and Lakeshore East Rail Corridor (Metrolinx, 2017).

Since the completion of the GO Rail Network Electrification Environmental Project Report in 2017, an Addendum was prepared to:

- Assess additional electrification infrastructure across various portions of the GO Rail Network that were not previously examined;
- Assess additional infrastructure within the Union Station Rail Corridor to address identified utility conflicts; and
- Update noise, vibration and air quality assessment.

The Environmental Project Report Addendum for the GO Rail Network Electrification Addendum has been reviewed by the Minister of the Environment, Conservation and Parks and is proceeding to the detailed design and implementation phases (Metrolinx, 2021a).

2.2.3.12 Union Station East Rail Corridor

Metrolinx is working on various projects along the Union Station East Rail Corridor including the following within the East Harbour Station Study Area (Metrolinx, 2021b):

- Signalling System Upgrades:
  - The Signaling and Train Control Improvement Program includes projects designed to improve reliability and service of the signalling and train control systems. Once complete the new system will reduce signal disruptions improve recovery time and combine operations into one control centre, providing a more effective service.
- Signal Tower Renewal Project:
  - Required state-of-good-repair restoration of the signalling towers at John, Scott and Cherry Streets is underway and is schedule to be complete in May 2022.
- Wilson Yard Upgrade and Expansion:
  - Upgrading and expanding the Wilson Yard will allow trains to be serviced closer to Union Station and avoid using the corridor to move empty trains. Construction is expected to start in early 2022.

2.2.3.13 Leslieville Traffic Management and Mitigation Study

There have been a large number of development projects approved and proposed within the Leslieville Community that will impact travel patterns and congestion. The

Traffic Management and Mitigation Study will assess the impacts on traffic from development projects on the transportation network within the Leslieville Community, and include associated mitigation measures (City of Toronto, n.d.e).

The focus of this study is to determine the following:

- Existing traffic conditions and future traffic conditions with proposed development;
- Determine if the existing and future transportation system can accommodate additional traffic generated by the proposed developments; and
- Evaluate if road improvements are necessary in addition to those included in the Transportation Master Plan.

Since the Notice of Study Commencement for the project in June 2018, the study team is developing the Traffic Management and Mitigation Plan on the basis of feedback received from the first Public Open House. As of September 2019, the second Public Open House has been postponed to a later date (City of Toronto, n.d.e).

2.2.3.14 Broadview Avenue Extension Environmental Assessment

The City of Toronto is completing the Broadview Avenue Extension Environmental Assessment to develop recommendations for:

- Broadview Avenue extension, south between Eastern Avenue and Lake Shore Boulevard; and
- New East-West Street, between Don Roadway and Booth Avenue in the Unilever Precinct.

The Broadview Avenue Extension Environmental Assessment continues work completed in the Port Lands Transportation and Servicing Master Plan (City of Toronto, n.d.g.). The Broadview Extension Environmental Assessment will complete Phases 3 and 4 of the Municipal Class Environmental Assessment Process.

2.2.3.15 Riverside Business Improvement Area Streetscape Master Plan

In 2018, the Riverside Business Improvement Area undertook a process to develop a comprehensive streetscape plan to guide future streetscape improvements.

The plan identifies a long term vision for streetscape improvements within the Riverside Business Improvement Area, along with more tangible proposed projects which can be implemented by the Business Improvement Area with support from City of Toronto Business Improvement Area cost-sharing programs and other government and private sector funding sources (Riverside Business Improvement Area, 2019).

3. Early Works Description

3.1 Project Description

The East Harbour Station early works will include:

- Reconfiguration of the existing Lakeshore East GO tracks to accommodate station facilities and future Ontario Line tracks;
- Construction of station facilities such as platforms and entrances;
- Replacement and expansion of the existing Eastern Avenue rail bridge to accommodate four Lakeshore East GO tracks and two future Ontario Line tracks; and
- Site preparation activities such as grading, demolition of existing structures where required, and utility relocation or protection.

As noted in **Section 1.3.2**, since the completion of the New SmartTrack Stations Project Environmental Project Report, the East Harbour Station layout has evolved to accommodate the inclusion of the Ontario Line, as described below. East Harbour Station early works components are shown in **Figure 3-1**.

3.1.1 Relocation of Existing Lakeshore East GO Tracks

The existing GO tracks will be shifted from their current position to accommodate the station infrastructure and future Ontario Line tracks which will be located to the north of the Lakeshore East rail tracks, as shown in **Figure 3-1**. Track 1 will be shifted approximately 12.5 metres and Tracks 2 and 3 approximately 1.5 metres to the north.

Realignment of the existing GO tracks will be completed such that rail operations are maintained during construction, utilizing temporary diversion track(s) and/or conducting track shifts in phases. Track 4 will be installed as part of GO Expansion implementation. Ontario Line tracks will be built as part of the main Ontario Line contracts and assessed in the Ontario Line Environmental Impact Assessment Report.

3.1.2 Station Platforms

The East Harbour Station will include two platforms to serve GO trains (one platform between GO Tracks 1 and 2, and one platform between GO Tracks 3 and 4) and one platform (between Ontario Line tracks) to serve Ontario Line trains. All platforms will be located entirely between the existing Lakeshore East rail bridge and the planned Ontario Line Lower Don River bridge in the west and Eastern Avenue rail bridge in the east.

3.1.3 Station Access

The station will be designed to protect for the future Broadview Avenue extension, facilitating connectivity across the rail corridor.

Access from the west side of the Lower Don River will be facilitated via a bridge that will provide a multi-use-trail connection across the river. This connection will be assessed as part of the Ontario Line Environmental Impact Assessment Report.

3.1.4 Eastern Avenue Rail Bridge Replacement and Expansion

The Eastern Avenue rail bridge is proposed to be replaced and expanded to accommodate four GO rail tracks and two Ontario Line tracks. The new bridge is anticipated to be completed in stages, such that rail operations are maintained during construction.

3.1.5 Preparatory Work and Relocation and Protection of Utilities

Preparatory works include grading, and demolition of existing structures or buildings where required. Railway signalling infrastructure and utilities such as sewers, water, electrical, communications, and gas located within the rail corridor as well as other parts of the East Harbour Station Project Footprint will be relocated or protected to facilitate completion of the work, as required.

East Harbour Station early works components are shown in **Figure 3-1**.

3.2 Early Works Project Footprint and Study Area

The East Harbour Station Early Works Project Footprint, shown in **Figure 3-2**, is defined as the area of direct disturbance associated with the early works construction activities, including anticipated required construction staging and laydown areas and construction access. Construction is anticipated to occur primarily within the existing Metrolinx right-of-way. The extent of lands anticipated to be temporarily impacted by construction staging/laydown and access will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

The East Harbour Station Early Works Project Footprint extends from east of the Don Valley Parkway, continues east along the Lakeshore East rail corridor, extending approximately 20 metres south of the Lakeshore East rail corridor, and approximately

100 metres north of the Lakeshore East rail corridor to approximately 60 metres north of Eastern Avenue.

The East Harbour Station Study Area, shown in **Figure 3-2**, includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer. This general study area was identified for assessment of potential impacts of the East Harbour Station early works. As shown in **Table 4-1**, select discipline-specific study areas were identified for assessment of the discipline-specific potential impacts of the East Harbour Station early works.

3.3 Construction Activities

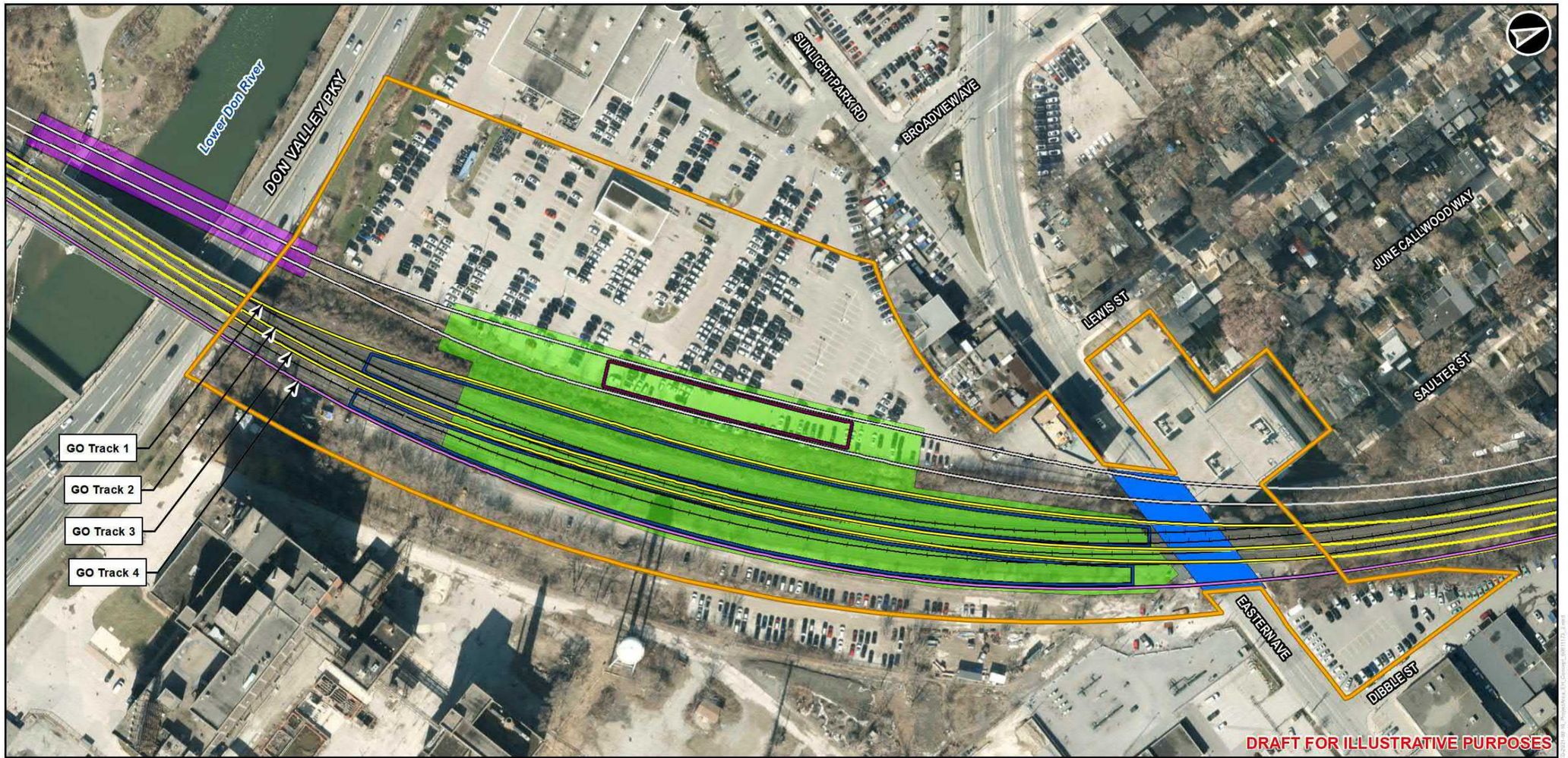
Table 3-1 provides a description of the anticipated construction activities for the East Harbour Station early works. These typical activities serve as the basis for the assessment of construction-related potential environmental effects. These activities may be expanded, further refined, or found to be unnecessary as the Project progresses through detailed design and construction.

Table 3-1: Anticipated Construction Activities for the Ontario Line East Harbour Station Early Works

Anticipated Construction Activity	Description	Associated Equipment
Site Preparation	■ Mobilization of equipment and temporary facilities to the site. ■ Clearing and grubbing. ■ Erection of temporary and permanent fences. ■ Installation of environmental management features (e.g., erosion and sediment controls).	■ Site compaction equipment and grading equipment. ■ Vegetation removal equipment. ■ Excavation equipment. ■ Haulage/dump trucks.
Track Diversion/Installation	■ Grading. ■ Temporary drainage. ■ Relocation/Installation of track, ties, and fastenings. ■ Clear delineation and protection between active rail service and construction work zones.	■ Site compaction equipment and general grading equipment, dump trucks spoil removal equipment. ■ Thermal welding. ■ Tie placement (cranes, lifting equipment). ■ Ballast placement equipment. ■ Concrete pouring equipment. ■ Temporary concrete barriers. ■ Rail saw. ■ Stabilizers. ■ Tampers.
Temporary Road Closures	■ Temporary road closures, as required.	■ Temporary traffic control devices such as signs, signals, barriers, traffic barrels.
Management of Stormwater	■ All precipitation falling within the construction limits will be managed as stormwater within the existing system of collection, conveyance, and discharge features. Surface flows within the site will be managed within the site to ensure discharge to off-site receivers (e.g., municipal storm sewers) is appropriate in terms of water quantity and quality.	■ Site compaction equipment and general grading equipment. ■ Groundwater pumping equipment.
Site Servicing	■ Construction, relocation and/or extension of services and utilities on the site; which may include both underground and aerial services and utilities (e.g., sewers, water, electrical, communications, gas). This may also involve installation of utilities within the site.	■ Excavation equipment including backhoe, dump trucks, spoil removal equipment, jackhammers. ■ Vacuum trucks.

Anticipated Construction Activity	Description	Associated Equipment
Excavation and Grading	■ Excavation and grading activities may involve earth-moving activities and stockpiling, as applicable. Excavated material will be accommodated on-site on the degree practicable, however, where necessary, surplus material will be disposed of off-site to an approved facility. ■ Any off-site disposal shall be done in compliance with applicable law, including as it relates to contaminated material that may be encountered. ■ Any groundwater encountered will be managed and disposed of in accordance with applicable law.	■ Site compaction equipment and general grading equipment, dump trucks, soil removal equipment. ■ Groundwater pumping equipment. ■ Excavation equipment including backhoe, dump trucks, soil removal equipment, and jack hammers.
Construction of Buildings and Structures (including Eastern Avenue Bridge)	■ Retaining walls. ■ All buildings and structures will be constructed using standard civil construction techniques.	■ Foundation placement equipment. ■ Augured piles or rammed aggregate piers. ■ Drill rigs. ■ Cranes and hoists. ■ Concrete trucks, pumps and vibrators. ■ Flatbed trucks, crane, excavators, and light equipment. ■ Hoe rams. ■ Backhoes.
Construction of Ancillary Facilities	■ Ancillary facilities may include electrical transformer/supply equipment, parking areas, exterior yard facilities including lighting, electrification enabling facilities.	■ Flatbed trucks, cranes, concrete trucks. ■ Backhoe, pavement excavation equipment. ■ Mobile cranes and hoists. ■ Concrete trucks, pumps and vibrators.
Demolition of buildings and structures	■ Removal of buildings and structures on properties acquired by Metrolinx for East Harbour Station or as required for construction of new infrastructure.	■ Demolition and excavation equipment including backhoe, dump trucks, soil removal equipment, and hoe rams.

Figure 3-1: East Harbour Station Early Works Conceptual Design



Legend

- East Harbour Station Early Works Project Footprint *
- Existing GO Track
- Ontario Line Lower Don Bridge

Early Works Components:

- Expanded Eastern Avenue Bridge
- GO Track
- East Harbour Station Footprint **
- Proposed GO Platform
- Proposed Ontario Line Platform

Future Work (Not Part of Early Works):

- Ontario Line Track
- GO Track 4

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

** Station footprint is approximate and is subject to change.

Ontario Line Project

East Harbour Station Early Works Conceptual Design

0 50 100
Meters
DATUM: NAD 1983 UTM Zone 17N

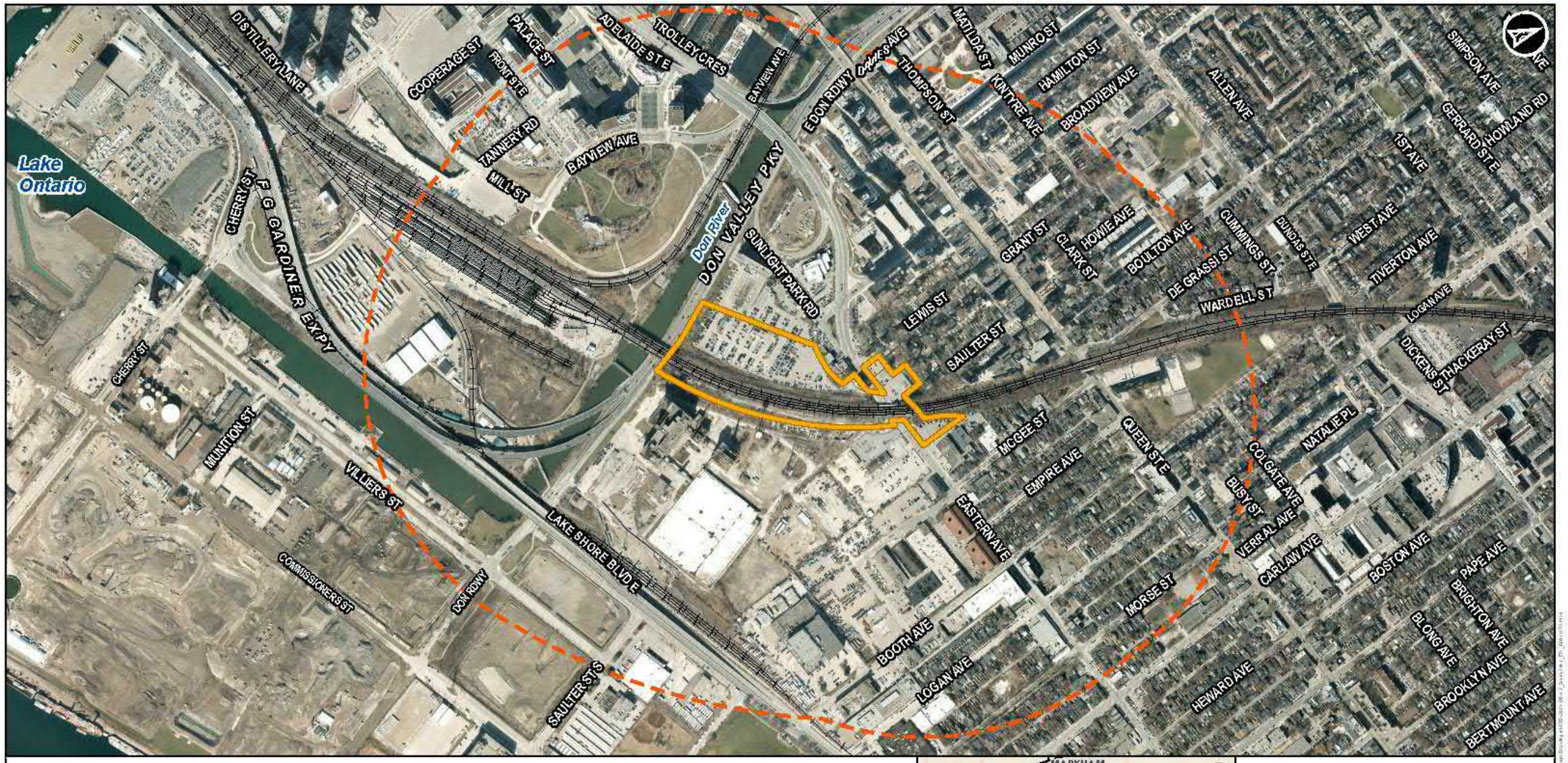
Data Sources:
Contains Information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

METROLINX | AECOM

Sep, 2021	1:1,500
P#: 60611173	REV: 04

Figure 3-1

Figure 3-2: East Harbour Station Early Works Project Footprint and Study Area



Legend

- Existing GO Track
- East Harbour Station Study Area
- East Harbour Station Early Works Project Footprint

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

East Harbour Station Early Works
Project Footprint and Study Area

0 50 100 200 300 400 500
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

METROLINX	AECOM
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Figure 3-2

4. Methodology

This Report documents the potential impacts, mitigation measures and monitoring activities associated with East Harbour Station early works construction. Potential impacts, mitigation measures, and monitoring activities associated with Project operations[8] and construction of other Project components, except those components that may be advanced as early works, will be documented in the Ontario Line Environmental Impact Assessment Report in accordance with Section 15 of Ontario Regulation 341/20: Ontario Line Project. Note that the assessment of the Lakeshore East Joint Corridor operational noise and vibration impacts is documented in the Lakeshore East Joint Corridor Noise and Vibration Operations Report found in **Appendix C** of this report.

As noted in **Section 3.2**, the East Harbour Station Early Works Project Footprint represents the area of primary disturbance which may result from any anticipated early works construction activities. Discipline-specific study areas were developed for some environmental disciplines to account for potential impacts from the early works construction. The East Harbour Station study areas for each discipline are defined in **Table 4-1**. Methodology used to define the local environmental conditions and complete the impact assessment for each discipline is described in **Section 4.1** to **Section 4.10**.

Table 4-1: East Harbour Station Study Area Definition by Discipline

Discipline	Study Area Definition Approach
Natural Environment	The East Harbour Station Natural Environment Study Area includes the East Harbour Station Early Works Project Footprint and a 120-metre buffer. This buffer has been applied in accordance with the Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, Second Edition (Ministry of Natural Resources and Forestry, 2010).
Soil and Groundwater	The East Harbour Station Soil and Groundwater Study Area includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer. This buffer has been applied in accordance with the Hydrogeological Assessment Submissions Conservation Authority Guidelines for Development Applications (Toronto and Region Conservation Authority, 2013a), which recommends well data for private wells within 500 metres be used for impact assessment.

8. With the exception of the Lakeshore East Joint Corridor operational noise and vibration impacts which have been assessed in the Lakeshore East Joint Corridor Noise and Vibration Operations Report, found in **Appendix C**.

Discipline	Study Area Definition Approach
Hydrology and Surface Water	The East Harbour Station Hydrology and Surface Water Study Area includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer. Based on the Toronto and Region Conservation Authority's Stormwater Management Criteria (Toronto and Region Conservation Authority, 2012), the zone of potential impacts is defined by presence of waterbodies. The Lower Don River is located within the East Harbour Station Hydrology and Surface Water Study Area. This buffer has been applied to include the Toronto and Region Conservation Authority Regulation Limit and Don River Floodplain based scale and significance of the Don River, and to consider surrounding flood protection initiatives.
Air Quality	The East Harbour Station Air Quality Study Area includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer. This buffer has been applied in accordance with the Ministry of Transportation's Environmental Guide for Assessing and Mitigating the Air Quality Impact and Greenhouse Gases of Provincial Transportation Projects (Ministry of Transportation, 2020), which states that for major roads, a distance of 500 metres is expected to capture the maximum pollutant concentrations.
Noise and Vibration	The East Harbour Station Noise and Vibration Study Area includes the East Harbour Station Early Works Project Footprint and an approximately 250 metre buffer. This buffer was developed using noise and vibration screening areas, which were determined by calculating the distances where the applicable criteria are predicted to be met, using a conservative approach where it was assumed that all construction equipment listed in **Table 3-1** would be simultaneously active. The approximately 250 metre night-time noise screening area was the largest and was thus used to define the East Harbour Station Noise and Vibration Study Area. This buffer distance is also in accordance with the United States Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (2018), and City of Toronto By-law 514 (2008).
Socio-Economic and Land Use Characteristics	The East Harbour Station Socio-Economic and Land Use Characteristics Study Area includes the East Harbour Station Early Works Project Footprint and a 500-metre buffer. This buffer has been applied in socio-economic studies for approved transit project environmental assessments of similar scope (e.g., Lawrence-Kennedy SmartTrack Station – Socio-Economic and Land Use Study (4Transit, 2018) and Barrie Rail Corridor Expansion Volume 2: Spadina-Front GO Station Design and Technical Studies – Socio-Economic and Land Use Study (4Transit, 2018)).

Discipline	Study Area Definition Approach
Built Heritage Resources and Cultural Heritage Landscapes	The East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area includes the East Harbour Station Early Works Project Footprint, adjacent properties[9] to account for potential indirect impacts, and properties within 11.1 metres of the East Harbour Station Early Works Project Footprint to account for potential structural impacts to built heritage resources and cultural heritage landscapes that may result from vibration. The distance of 11.1 metres from the East Harbour Station Early Works Project Footprint was included in the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area to account for potential vibration impacts to buildings extremely susceptible to vibration damage (including heritage buildings and their foundations) in accordance with the Ontario Line East Harbour Station Early Works – Final Noise and Vibration Report (AECOM, 2020).
Archaeological Resources	Review of archaeological resources was limited to the East Harbour Station Early Works Project Footprint. Based on the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism and Culture, 2011), only areas of direct construction impacts are subject to further archaeological assessment.
Traffic and Transportation	The East Harbour Station Traffic and Transportation Study Area includes the East Harbour Station Early Works Project Footprint and adjacent road segments and intersections which meet either of the following criteria: ■ Provide connection to the East Harbour Station Early Works Project Footprint (i.e., Eastern Avenue, Broadview Avenue, Lewis Street, Sunlight Park Road, and Dibble Street) and are thus potentially considered a part of the construction vehicles routes, where heavy vehicles are permitted; or, ■ Impacted directly by the early works activities within the East Harbour Station Early Works Project Footprint (e.g., replacement of the Eastern Avenue rail bridge is anticipated to result in potential lane closures along Eastern Avenue).
Utilities	Review of utilities was limited to the East Harbour Station Early Works Project Footprint. This approach captures potential direct impacts to private and public utilities as a result of the early works construction activities.

- Background information and documentation relevant to the East Harbour Station Study Areas are contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) prepared for the Project.

9. Adjacent is defined in Section 3.1.5 (Heritage Conservation) of the City of Toronto's Official Plan as "those lands adjoining a property of the heritage register or lands that are directly across from and near to a property on the heritage register and separated by land used as a private or public road, highway, street, lane, trail, right-of-way, walkway, green space, park and/or easement, or an intersection of any of these; whose location has the potential to have an impact on a property on the heritage register; or as otherwise defined in a Heritage Conservation District Plan adopted by by-law" (City of Toronto, 2019).

Information sourced from the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) was used to establish local environmental conditions within the East Harbour Station Study Area for each environmental discipline within this Report. Where necessary, review of additional desktop and field information was undertaken.

- Preliminary potential impacts and mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the following:
- Early works components as described in **Section 3.1**;
- East Harbour Station Early Works Project Footprint as described in **Section 3.2**;
- Construction activities as described in **Section 3.3**; and
- Local environmental conditions within the East Harbour Station study areas as described in **Section 5**.

Mitigation measures and monitoring activities for each environmental discipline have been recommended to mitigate the identified potential impacts.

4.1 Natural Environment

4.1.1 Local Environmental Conditions

A review of available background information was conducted to establish local natural environment conditions within the East Harbour Station Natural Environment Study Area. The following aspects of the natural environment were examined:

- Designated Natural Areas and Planning Policy Areas;
- Vegetation Community and Plant Inventory;
- Fish and Fish Habitat;
- Wildlife and Wildlife Habitat; and
- Significant Wildlife Habitat and Species at Risk.

For the purpose of this background information review, terrestrial and aquatic features and functions were identified within the boundaries of the East Harbour Station Natural Environment Study Area through a desktop review of available secondary sources. The natural environment background information review included information from the

following sources contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a):

- Ontario Ministry of Natural Resources and Forestry Ontario GeoHub base mapping data (Ministry of Natural Resources and Forestry, 2020; Land Information Ontario, 2017; Ministry of Natural Resources and Forestry, 2017a; Ministry of Natural Resources and Forestry, 2017b);
- Wildlife atlases;
- Planning documents and guidelines;
- Open Data Portals;
- Reports; and
- Aerial photography.

Other background information was collected through correspondence with the following agencies:

- Toronto and Region Conservation Authority; and
- Ontario Nature.

In addition to the secondary sources listed above, the following previously completed studies relevant to the East Harbour Station Natural Environment Study Area, contained in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a), were also reviewed in support of the background review:

- Union Station Rail Corridor East Enhancements Transit Project Assessment Process Natural Environment Report (AECOM, 2018);
- Natural Environment Existing Conditions – Relief Line South, Toronto, Ontario (Golder Associates, 2018);
- Lakeshore East Rail Corridor Expansion (Don River to Scarborough GO Station) Project – Natural Environment Effects Assessment Report (AECOM, 2017); and
- East Harbour Station SmartTrack Station – Natural Environment Report (4Transit, 2018a).

Field investigations were not completed for the East Harbour Station Natural Environment Study Area as lands within the East Harbour Station Natural Environment Study Area were recently investigated in 2016 to support other Metrolinx projects (e.g., Union Station Rail Corridor East Enhancements and Lakeshore East Rail Corridor Expansion [Don River to Scarborough GO Station]). The survey results were reviewed and summarized to supplement the established existing conditions within the East

Harbour Station Natural Environment Study Area and were deemed to be sufficient to support an impact assessment.

Detailed methodology for establishing local natural environment conditions is provided in **Appendix A1**. Local natural environment environmental conditions are described in **Section 5.1**.

4.1.2 Impact Assessment

As noted in **Table 4-1**, potential natural environment impacts within 120 metres of the East Harbour Station Early Works Project Footprint were assessed. The natural environment preliminary potential impacts, mitigation measures, and monitoring activities to verify the effectiveness of mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.2**) and anticipated construction activities (outlined in **Table 3-1**).

For the purpose of the natural environment impact assessment, as a conservative approach, all vegetation communities and buildings overlapping with the East Harbour Station Early Works Project Footprint were assumed to be permanently removed during the construction phase.

Detailed methodology for the natural environment impact assessment is provided in **Appendix A1**. The results of the natural environment impact assessment are provided in **Section 6.1**.

4.2 Soil and Groundwater

4.2.1 Local Environmental Conditions

A review of available information was conducted to establish soil and groundwater existing conditions within the East Harbour Station Soil and Groundwater Study Area. The following aspects of soil and groundwater were examined:

- Geological setting, including physiography and topography, surficial geology, quaternary geology, and bedrock geology;
- Hydrogeological setting, including regional groundwater flow; and
- Groundwater resources, including source water protection features and Ministry of the Environment, Conservation and Parks' water well records.

The soil and groundwater background information review included information from the following sources contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a):

- Ministry of the Environment, Conservation and Parks open data catalogue resources, including the Water Well Records database and Source Water Protection Information Atlas;
- Toronto and Region Conservation Authority reports and plans, including the Source Water Protection Conceptual Understanding of the Water Budget Report (2007), Don River Watershed Plan: Geology and Groundwater Resources (2009), and Toronto and Region Source Protection Area, Approved Updated Assessment Report (2015); and
- Ontario Geological Survey resources, including The Physiography of Southern Ontario, Third Edition (1984), Paleozoic Geology of Southern Ontario (2007), and Metropolitan Toronto Bedrock Contours (1961).

Local soil and groundwater conditions are described in **Section 5.2**.

4.2.2 Impact Assessment

As noted in **Table 4-1**, potential soil and groundwater impacts within 500 metres of the East Harbour Station Early Works Project Footprint were assessed. The soil and groundwater preliminary potential impacts and mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.1**), and anticipated construction activities (outlined in **Table 3-1**).

The results of the soil and groundwater impact assessment are provided in **Section 6.2**.

4.3 Hydrology and Surface Water

4.3.1 Local Environmental Conditions

A review of available background information was conducted to establish existing hydrology and surface water conditions within the East Harbour Station Hydrology and Surface Water Study Area, including:

- Toronto and Region Conservation Authority's Regulated Area online mapping (Toronto and Region Conservation Authority, 2020a);

- Toronto and Region Conservation Authority's Flood Plain online mapping (Toronto and Region Conservation Authority, 2020b); and
- Toronto and Region Conservation Authority's Watersheds online mapping (Toronto and Region Conservation Authority, 2020c).

Local hydrology and surface water conditions are described in **Section 5.3**.

4.3.2 Impact Assessment

As noted in **Table 4-1**, potential hydrology and surface water impacts within 500 metres of the East Harbour Station Early Works Project Footprint were assessed. The hydrology and surface water impact assessment considered the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.2**), and anticipated construction activities (outlined in **Table 3-1**).

The results of the hydrology and surface water impact assessment are provided in **Section 6.3**.

4.4 Air Quality

4.4.1 Local Environmental Conditions

Local environmental conditions within East Harbour Station Air Quality Study Area were established through a review of relevant background information, a definition of appropriate air quality contaminants, and determining existing concentrations of the air quality contaminants from local monitoring stations. Existing air quality is also defined by volume of traffic within the East Harbour Station Air Quality Study Area. Higher levels of traffic result in higher local air quality concentrations. The existing levels of air quality contaminant concentrations were compared to federal and provincial standards for acceptable levels of air quality concentration to determine which contaminants exceed standard thresholds within the East Harbour Station Air Quality Study Area.

Background information and documentation relevant to East Harbour Station Air Quality Study Area is contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a), which includes:

- Identification of air quality representative receptors within the East Harbour Station Air Quality Study Area;
- Determination of representative background air quality monitoring stations within the National Air Pollution Surveillance network for the East Harbour

Station Air Quality Study Area. Appropriate representation was based on proximity to the East Harbour Station Air Quality Study Area, availability of contaminant monitoring data, and proximity to similar nearby air quality sources as those existing within the East Harbour Station Air Quality Study Area;

- Traffic peak levels and/or annual averaged daily traffic volumes along primary routes of travel within the East Harbour Station Air Quality Study Area were reviewed, where available; and
- Review of existing meteorological data representative of the East Harbour Station Air Quality Study Area.

Emissions from diesel trains traversing the East Harbour Station Air Quality Study Area were not assessed due to the relatively low contribution of air contaminants. For example, the Air Quality Assessment Report prepared for the Union Station Rail Corridor East Enhancements Transit Project Assessment Process (AECOM, 2018) included a quantitative assessment of downtown Toronto air quality sources and project source impacts where it was shown that hourly road air contaminant contributions were exponentially higher than those of both GO Train emission contributions and VIA/Canadian National contributions (e.g., 23.9 g/hour of carbon monoxide from roads, compared with 2.0 g/hour from GO rail and 0.05 g/hour from VIA/Canadian National Rail). Certain contaminants had a higher contribution from the Metrolinx GO network within the Union Station Rail Corridor East Enhancements study area, such as NO_X and fine particulate matter ($PM_{2.5}$). These emissions were not specifically quantified in the East Harbour Station early works air quality assessment; however, it should be noted that diesel rail traffic can present as a minor source of air quality contamination for these two specific contaminants.

Based on recommendations within the Ministry of Transportation's Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects (Ministry of Transportation, 2020), the following criteria air contaminants from vehicle emissions were considered:

1. Nitrogen dioxide, NO_2 (assessed over 1-hour, 24-hour, and annual averaging periods);
2. Carbon monoxide, CO (assessed over 1-hour and 8-hour averaging periods);
3. Sulphur Dioxide, SO_2 (assessed over 1-hour, 24-hour, and annual averaging period);
4. Particulate matter (<10 microns), PM_{10} (assessed over 24-hour and annual averaging periods);

5. Particulate matter (<2.5 microns), $PM_{2.5}$ (assessed over 24-hour and annual averaging periods);
6. Acetaldehyde (assessed over 30-minute and 24-hour averaging period);
7. Acrolein (assessed over 1-hour and 24-hour averaging periods);
8. Benzene (assessed over 24-hour and annual averaging periods);
9. Benzo(a)pyrene, B(a)P (assessed over 24-hour and annual averaging periods);
10. Formaldehyde (assessed over 24-hour averaging period); and
11. 1,3-butadiene (assessed over 24-hour and annual averaging periods).

The applicable standards for the criteria air contaminants are established by the Ministry of the Environment, Conservation and Parks and Canadian Council of Ministers of the Environment as the Ambient Air Quality Criteria (Ministry of the Environment, Conservation, and Parks, 2020) and Canadian Ambient Air Quality Standards (Canadian Council of Ministers of the Environment, 2012), respectively, as shown in **Table 4-2**.

Table 4-2: Summary of Applicable Guidelines and Standards

Criteria Air Contaminant	Source of Standard	Averaging Period	Air Quality Threshold Value (µg/m^3)
NO_2	Ambient Air Quality Criteria	One hour	400
NO_2	Ambient Air Quality Criteria	24 hours	200
NO_2 (1)	Canadian Ambient Air Quality Standards	One hour (2020)	113
NO_2 (1)	Canadian Ambient Air Quality Standards	Annual (2020)	32
NO_2 (1)	Canadian Ambient Air Quality Standards	One hour (2025)	78
NO_2 (1)	Canadian Ambient Air Quality Standards	Annual (2025)	22
CO	Ambient Air Quality Criteria	One hour	36,200
CO	Ambient Air Quality Criteria	Eight hours	15,700
SO_2 (2)	Ambient Air Quality Criteria	10-minute	178
SO_2 (2)	Ambient Air Quality Criteria	One hour	106
SO_2 (2)	Ambient Air Quality Criteria	Annual	11
SO_2 (3)	Canadian Ambient Air Quality Standards	One hour (2020)	183
SO_2 (3)	Canadian Ambient Air Quality Standards	Annual (2020)	13
SO_2 (3)	Canadian Ambient Air Quality Standards	One hour (2025)	170
SO_2 (3)	Canadian Ambient Air Quality Standards	Annual (2025)	10
PM_{10} (4)	Ambient Air Quality Criteria	24 hours	50
$PM_{2.5}$ (5)	Canadian Ambient Air Quality Standards	24 hours (2020)	27
$PM_{2.5}$ (5)	Canadian Ambient Air Quality Standards	Annual	8.8
Acetaldehyde	Ambient Air Quality Criteria	30-minute	500
Acetaldehyde	Ambient Air Quality Criteria	24 hours	500
Acrolein	Ambient Air Quality Criteria	One hour	4.5

Criteria Air Contaminant	Source of Standard	Averaging Period	Air Quality Threshold Value (µg/m^3)
Acrolein	Ambient Air Quality Criteria	24 hours	0.4
Benzene	Ambient Air Quality Criteria	24 hours	2.3
Benzene	Ambient Air Quality Criteria	Annual	0.45
Benzo(a)pyrene	Ambient Air Quality Criteria	24 hours	0.00005
Benzo(a)pyrene	Ambient Air Quality Criteria	Annual	0.00001
1,3-Butadiene	Ambient Air Quality Criteria	24 hours	10
1,3-Butadiene	Ambient Air Quality Criteria	Annual	2
Formaldehyde	Ambient Air Quality Criteria	24 hours	65

Notes: (1) The Canadian Ambient Air Quality Standards Air Quality threshold for nitrogen dioxide is based on the three-year average of the annual 98th percentile of the daily maximum one-hour average concentrations.
(2) The Ambient Air Quality Standards for SO_2 are reported in parts per billion and converted using the factor 2.66 µg/m^3 of SO_2 per 1 ppb of SO_2 (at 20.0°C and 1 atmosphere, rounded).
(3) The Canadian Ambient Air Quality Standards Air Quality threshold for sulphur dioxide is based on the three-year average of the annual 99th percentile of the daily maximum one-hour average concentrations.
(4) The value of 50 µg/m^3 (24 hr) is an interim Ambient Air Quality Criteria and is provided as a guide for decision making.
(5) The Air Quality threshold for fine particulate ($PM_{2.5}$) is based on the 98th percentile ambient measurement (24-hour), annually averaged over three years.

The existing ambient air quality levels were quantified using publicly available historical data from ambient air quality monitoring stations from the National Air Pollution Survey network within Toronto. Data utilized were the most recent and complete data available at the time of the preparation of this Report[10] (**Appendix A2**). The following National Air Pollution Surveillance Air Quality monitoring stations were selected as representative of the ambient air quality of the East Harbour Station Air Quality Study Area:

- Toronto West (National Air Pollution Surveillance ID 60430);
- Toronto Downtown (National Air Pollution Surveillance ID 60433);
- Gage Institute Station (National Air Pollution Surveillance ID 60427); and
- Roadside Wallberg (University of Toronto) Station (National Air Pollution Surveillance ID 60439).

These stations are located nearest to the East Harbour Station Air Quality Study Area and monitored (in combination) all relevant contaminants for the assessment, since a single station is unable to monitor all contaminants. Where multiple stations were found to monitor a common contaminant, the closest representative station was selected for the assessment.

10. National Air Pollution Surveillance data used was from 2017. Traffic data used to estimate existing conditions was determined from traffic counts from 2017, 2018, and 2019. An annual growth rate of 1% was applied to 2017 and 2018 data to produce comparable 2019 annual average daily traffic.

One-hour, eight-hour, and 24-hour ambient concentrations for the contaminants were obtained from the 90th percentile of hourly measurements from the representative air quality monitoring stations (the average value was calculated from the available years). The 90th percentile of available background data was used following the methodology outlined in the Ministry of Transportation's Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects (Ministry of Transportation, 2020).

Land use within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area was reviewed to identify existing and planned future developments that are considered sensitive or critical receptors.

Detailed methodology for establishing local air quality conditions is provided in **Appendix A2**. Local air quality conditions are described in **Section 5.4**.

4.4.2 Impact Assessment

As noted in **Table 4-1**, potential air quality impacts within 500 metres of the East Harbour Station Early Works Project Footprint were assessed. The air quality preliminary potential impacts and mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.1**), and anticipated construction activities (outlined in **Table 3-1**).

Land use within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area was reviewed to identify existing and planned future developments that are considered sensitive or critical receptors. The Ministry of Transportation's Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects defines a sensitive receptor as a "residential dwelling" and a critical receptor as a "retirement home, hospital, childcare centre, school, or similar institutional building" (Ministry of Transportation, 2020).

Representative receptors within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area were selected based on proximity to the East Harbour Station Early Works Project Footprint and surrounding emission sources to account for variability in wind directions based on guidance from the Ministry of Transportation's Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects (Ministry of Transportation, 2020).

Detailed methodology for the air quality impact assessment is provided in **Appendix A2**. The results of the air quality impact assessment are provided in **Section 6.4**.

4.5 Noise and Vibration

4.5.1 Local Environmental Conditions

Baseline noise and vibration measurements were collected, as described in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a), to characterize the existing noise and vibration levels within the Ontario Line Study Area. Data relevant to the East Harbour Station early works construction have been excerpted from the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) and provided in **Section 5**.

Baseline conditions methodology specific to noise and vibration are described in **Section 4.5.1.1** and **Section 4.5.1.2** below, respectively. Detailed methodology for establishing local noise and vibration conditions is provided in **Appendix A3**. Local noise and vibration conditions are described in **Section 5.5**.

4.5.1.1 Noise

Continuous noise measurements were collected over several days at locations representative of noise sensitive receivers. Noise sensitive receivers are defined as properties that accommodate a dwelling unit(s), are used for noise sensitive commercial purposes, as sleeping facilities, or for noise sensitive institutional purposes such as educational facilities. Noise measurements were conducted using Quest SoundPro Type 1 and 2 sound level meters. Data collected during inclement weather conditions were discounted from statistical analysis.

4.5.1.2 Vibration

Baseline vibration measurements were not required, as the construction vibration assessment in this Report uses absolute limits that do not change based upon the existing vibration levels. The local environment does not have any normally occurring sources of perceptible vibration; the most significant source of vibration near the early works locations are the existing rail lines. Thus, for the majority of the East Harbour Station Noise and Vibration Study Area, existing vibration levels are expected to be below human perceptibility, except in close proximity to the existing rail lines.

4.5.2 Impact Assessment

As noted in **Table 4-1**, potential noise and vibration impacts within 250 metres of the East Harbour Station Early Works Project Footprint were assessed. The noise and vibration preliminary potential impacts and mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.2**), and anticipated construction activities (outlined in **Table 3-1**).

Impact assessment methodology specific to noise and vibration are described in **Section 4.5.2.1** and **Section 4.5.2.2** below, respectively. Detailed methodology for the noise and vibration impact assessment is provided in **Appendix A3**. The results of the noise and vibration impact assessment are provided in **Section 6.5**.

Noise and vibration criteria from various sources – City of Toronto, the Ministry of the Environment, Conservation and Parks, and the United States Federal Transit Administration – were reviewed for applicability to the Project.

4.5.2.1 Noise

A noise screening was conducted to determine if receptor-specific noise predictions were required. The noise screening was completed by determining the distances where the day or night time criteria are predicted to be met, assuming all construction equipment in **Table 3-1** was active, using a conservative approach to determine the screening distance, which assumed flat ground and no shielding or other noise attenuation effects. The screening distances were then used to create screening areas on maps to determine if any possible sensitive receivers were located within the screening areas.

Noise predictions at selected representative receptors included the modelling of various scenarios, using detailed noise calculation algorithms which account for building and geometric noise shielding effects, ground effects, and air attenuation. The receptor-specific noise predictions were conducted for the nearest (to the East Harbour Station Early Works Project Footprint) noise sensitive receivers (closest and with highest noise exposures).

An acoustic model using the International Organization for Standardization 9613 (International Organization for Standardization, 1996) prediction algorithms was prepared. As the construction equipment cannot all operate in the same physical position, the equipment was modelled as operating over an area closest to the

assessed representative receiver. Activities that can only occur at certain locations, for example rail works and bridge construction, was modeled at those specific locations.

The predicted construction noise levels are estimates based on conservative assumptions, reference equipment noise levels and the East Harbour Station early works information (East Harbour Station Early Works Project Footprint and construction activities) available to date. Results were compared to guideline limits and mitigation recommendations were made to reduce the noise impacts. Mitigation recommendations are included in **Table 6-5**. The impact assessment will be updated prior to the commencement of construction using the most up-to-date information on construction methods and techniques, equipment, and refined construction areas, as required. If project specific noise levels limits are exceeded during construction, the noise prediction model can be used to determine which noise sources are causing the greatest impacts, and mitigation can be investigated for those specific noise sources.

4.5.2.2 Vibration

The assessment of construction vibration was based on the City of Toronto's definition of Zone of Influence – the area (zone) in which vibration levels are predicted to be at or above a screening threshold. Zone of Influence mapping determines which locations may be above the applicable criteria and where vibration controls may need to be implemented.

The East Harbour Station early works vibration Zone of Influence was calculated using the Federal Transit Administration Guide's construction vibration propagation equations to calculate the distances where the screening threshold is met. These distances define the Zone of Influence.

A conservative approach was used, where construction equipment operations within the construction areas were assumed to be unrestricted to specific areas, and the equipment with the maximum vibration levels was used as the basis of assessment. As a result, East Harbour Station early works vibration Zone of Influence is based upon the equipment with the highest vibration levels operating at the edge of the East Harbour Station Early Works Project Footprint.

Screening distances for the other applicable vibration criteria (City of Toronto By-law prohibited limit, Federal Transit Administration Guide limit for buildings extremely susceptible to building damage, and human perceptibility) were also mapped. Structures within the East Harbour Station Early Works Project Footprint were assumed to be the responsibility of Metrolinx and have not been included as receivers in the analysis.

4.6 Socio-Economic and Land Use Characteristics

4.6.1 Local Environmental Conditions

A review of available background information was conducted to establish socio-economic environment existing conditions within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area. The following aspects of the socio-economic environment were examined:

- Land use designations and applicable Secondary Plans under the City of Toronto Official Plan;
- Physical neighbourhood composition, including existing land use and built form patterns, transit and transportation network, and public realm characteristics;
- Community amenities, including institutional uses, parks and recreational uses, community groups and resources, and planned services and facilities;
- Neighbourhood demographics; and
- Future development.

The background information review of socio-economic and land use characteristics included information contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) from the following sources:

- Provincial planning and policy documents, including the Provincial Policy Statement (Ontario Ministry of Municipal Affairs and Housing, 2020), Growth Plan (Province of Ontario, 2019), 2041 Regional Transportation Plan (Metrolinx, 2018), Greenbelt Plan (Province of Ontario, 2017), and Conservation Authorities Act (Province of Ontario, 1998);
- Municipal land use and development planning and policy documents, including the City of Toronto Official Plan and secondary plans (City of Toronto, 2019), Waterfront Transit Reset (City of Toronto, 2020e), Don Mouth Naturalization and Port Lands Flood Protection Project (Toronto and Region Conservation Authority, 2014a), East Harbour Station SmartTrack Station Environmental Project Report (4Transit, 2018), Port Lands and South of Eastern Master Plan Class Environmental Assessment (City of Toronto, 2017b), Gardiner Expressway Environmental Assessment (City of Toronto, 2017c);Lower Don River West Remedial Flood Protection Project (Toronto and Region Conservation Authority, 2005), Lower Don Trail Master Plan (City of Toronto, 2013), Gardiner Expressway Strategic Rehabilitation Plan (City of Toronto, n.d.b), Broadview and Eastern Flood Protection Municipal Class

Environmental Assessment (Toronto and Region Conservation Authority, 2021b), Improving The Esplanade and Mill Street Project (City of Toronto, n.d.d.), GO Rail Network Electrification and Union Station Rail Corridor Enhancement (Metrolinx, 2017), and Leslieville Traffic Management and Mitigation Study (City of Toronto, n.d.e);

- City of Toronto Open Data Portal (City of Toronto, 2021a);
- Statistics Canada, 2016 Census of Population (City of Toronto, 2018a);
- City of Toronto Application Information Centre (City of Toronto, 2020a); and
- Future development includes recent, ongoing, and proposed development within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area based on active development applications available in the City of Toronto's Application Information Centre online database (City of Toronto, 2021b) as of July 7, 2021.

Local socio-economic and land use characteristics are described in **Section 5.6**.

4.6.2 Impact Assessment

As noted in **Table 4-1**, potential socio-economic and land use characteristics impacts within 500 metres of the East Harbour Station Early Works Project Footprint were assessed. The socio-economic and land use characteristics preliminary potential impacts and mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.1**), and anticipated construction activities (outlined in **Table 3-1**).

The results of the socio-economic and land use characteristics impact assessment are provided in **Section 6.6**.

4.7 Built Heritage Resources and Cultural Heritage Landscapes

4.7.1 Local Environmental Conditions

Background information and documentation relevant to the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area is contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) prepared for

the Project and was reviewed prior to commencing the assessment of built heritage resources and cultural heritage landscapes potentially contained in the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area.

The Ontario Line Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (hereafter the 'Ontario Line Cultural Heritage Report'), completed as part of The Ontario Line Final Environmental Conditions Report (AECOM, 2020a), was used as a primary source of background information for the following:

- Existing cultural heritage conditions within the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area, including a historical summary of the development of neighbourhoods, and provides the locations of known, previously identified and potential built heritage resources/cultural heritage landscapes within the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area.

Following background research and utilizing the 40-year old threshold[11], Criteria Checklist for Evaluating Potential for built heritage resources and cultural heritage landscapes (hereafter Criteria Checklist) (Ministry of Heritage, Sport, Tourism and Culture Industries, 2016), and professional judgement, a field review was conducted of the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area in order to identify any additional potential built heritage resources/cultural heritage landscapes and interpretive and commemorative features such as plaques, that were not identified in the Ontario Line Cultural Heritage Report (AECOM, 2020b). The field review for the East Harbour Station early works was conducted on June 24, 2021 from the public right-of-way.

4.7.2 Impact Assessment

Since there are no built heritage resources/cultural heritage landscapes identified within the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area, an impact assessment was not warranted.

11. The 40-year-old threshold may be used an indicator that a property may be of cultural heritage value or interest. While identification of a built heritage resources/cultural heritage landscapes that is 40 years old or older does not confer outright heritage significance, the 40-year-old threshold provides a means to collect information about resources that may retain cultural heritage value or interest. Similarly, if a built heritage resource/cultural heritage landscape is less than 40 years old, this does not preclude the resource from retaining cultural heritage value or interest.

4.8 Archaeological Resources

4.8.1 Local Environmental Conditions

The Ontario Line South Stage 1 Archaeological Assessment Addendum Report (AECOM, 2021a) includes the East Harbour Station Early Works Project Footprint and was entered into the Ontario Public Register of Archaeological Reports on July 5, 2021, in support of the Ontario Line Final Environmental Conditions Report.

The East Harbour Station Early Works Project Footprint was overlaid with the archaeological mapping prepared for the Ontario Line South Stage 1 Archaeological Assessment Addendum Report (AECOM, 2021a) to determine the areas retaining archaeological potential within the East Harbour Station Early Works Project Footprint.

Local archaeological resources are described in **Section 5.8**.

4.8.2 Impact Assessment

As noted in **Table 4-1**, the archaeological resources impact assessment was limited to East Harbour Station Early Works Project Footprint. The archaeological resources preliminary potential impacts and mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.2**), and anticipated construction activities (outlined in **Table 3-1**). In addition, recommended methods of completing further archaeological assessment were outlined.

The results of the archaeological resources impact assessment are provided in **Section 6.8**.

4.9 Traffic and Transportation

4.9.1 Local Environmental Conditions

Most recent available Turning Movement Count data at the studied intersection of Eastern Avenue and Broadview Avenue within the East Harbour Station Study Area was provided by the City of Toronto, consisting of eight-hour counts of vehicles (cars, trucks, and buses), pedestrians, and bicycles and collected at 15-minute intervals during the weekday peak periods.

- AECOM completed a desktop background review of secondary source information to complement the data provided by the City of Toronto and

establish local traffic and transportation conditions within the East Harbour Station Traffic and Transportation Study Area. The desktop resources included the following: City of Toronto's Open Data Portal (City of Toronto, 2021) to obtain mapping data related to roads, pedestrian and cyclist routes related to the East Harbour Station Traffic and Transportation Study Area;

- City of Toronto's Road Classification System Update (City of Toronto, 2018) and Vision Zero Mapping Tool (City of Toronto, 2020a) to obtain road classification and speed information related to roads within the East Harbour Station Traffic and Transportation Study Area; and
- GO Transit website (GO Transit, 2020), VIA Rail website (VIA Rail, 2020), and Toronto Transit Commission website (Toronto Transit Commission, 2020) to obtain transit schedule and route data related to the East Harbour Station Traffic and Transportation Study Area.

The Ontario Line Final Environmental Conditions Report (AECOM, 2020a) notes that turning movement counts and signal timing plans were not available at some intersections within the Ontario Line Study Area, and were not collected through new traffic surveys considering the uncharacteristic traffic conditions as a result of the COVID-19 pandemic. As a result of the data limitations related to the identified road network within the East Harbour Station Traffic and Transportation Study Area, a quantitative traffic assessment of some intersections could not be undertaken. Detailed methodology for establishing local traffic and transportation conditions is provided in **Appendix A4**. Local traffic and transportation conditions are described in **Section 5.9**.

The measure of effectiveness used to assess the operations of the existing transportation network is through a multi-modal level of service assessment. The level of service is an indicator describing the performance of individual transportation network elements from the perspective of motorists, pedestrians, cyclists, and transit users. The level of service designation for all the noted modes ranges from level of service 'A' to level of service 'F', where level of service 'A' through 'D' typically indicate acceptable operations (e.g., low average delays, high level of comfort, safety and convenience for active transportation users, etc.) while level of service 'E' and 'F' typically indicate unacceptable operations (e.g., increasing traffic congestion and at capacity operations, etc.). Additional details on the multi-modal level of service criteria as well as the level of service targets (i.e., the minimum desirable level of service) for each mode are discussed in **Appendix B5**.

4.9.2 Impact Assessment

As noted in **Table 4-1**, potential traffic and transportation impacts within the East Harbour Station Early Works Project Footprint and adjacent road segments and

intersections to capture the transportation and transit network elements were assessed. Refer to **Section 5.9.1.1** for a list of studies road segments. The traffic and transportation potential impacts and mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.2**) and anticipated construction activities (outlined in **Table 3-1**).

A quantitative impact assessment was not completed at this stage as the detailed construction staging schemes that describe the potential modifications to the existing transportation network were not available. Quantitative impact assessment will be completed as planning progresses and this information becomes available. The quantitative impact assessment may include larger study area. Prior to construction, transit and traffic management plan (s) shall be developed to provide more specific mitigation measures and monitoring activities. Traffic Control and Management Plan(s) will outline the potential haul routes, staging and laydown areas, construction access, and road closures and potential detour routes.

Detailed methodology for the traffic and transportation impact assessment is provided in **Appendix A4**. The results of the traffic and transportation impact assessment are provided in **Section 6.9**.

4.10 Utilities

4.10.1 Existing Conditions

Private and public utilities within the East Harbour Station Early Works Project Footprint were identified in **Section 5.10**. This list will be confirmed and refined as planning progresses.

4.10.2 Impact Assessment

As noted in **Table 4-1**, the utilities impact assessment was limited to the East Harbour Station Early Works Project Footprint. The utilities preliminary potential impacts and mitigation measures identified in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) were reviewed and expanded upon in further detail specific to the East Harbour Station early works by considering the early works components (described in **Section 3.1**), East Harbour Station Early Works Project Footprint (described in **Section 3.2**) and anticipated construction activities (outlined in **Table 3-1**).

The results of the utilities impact assessment are provided in **Section 6.10**.

5. Local Environmental Conditions

This section describes the existing natural, technical, socio-economic and cultural aspects of the existing environment in the context of the East Harbour Station early works. Information on the following environmental components is provided in the sections below and where applicable, is supplemented with supporting detailed technical reports:

- Natural Environment.....**Section 5.1** and **Appendix A1**
- Soil and Groundwater.....**Section 5.2**
- Hydrology and Surface Water.....**Section 5.3**
- Air Quality.....**Section 5.4** and **Appendix A2**
- Noise and Vibration .....**Section 5.5** and **Appendix A3**
- Socio-Economic and Land Use Characteristics .....**Section 5.6**
- Built Heritage Resources and Cultural Heritage Landscapes .....**Section 5.7**
- Archaeological Resources.....**Section 5.8**
- Traffic and Transportation .....**Section 5.9** and **Appendix A4**
- Utilities.....**Section 5.10**

5.1 Natural Environment

5.1.1 Designated Natural Areas/Planning Policy Areas

According to the Ministry of Natural Resources and Forestry's GeoHub Mapping (2020), there are no Provincially Significant Wetlands, Locally Significant Wetlands, significant valleylands or provincially significant Areas of Natural and Scientific Interest within the East Harbour Station Natural Environment Study Area. In addition, there are no woodlands or unevaluated wetlands within the East Harbour Station Natural Environment Study Area.

According to the City of Toronto's Interactive Map (City of Toronto, 2020a), there are no Environmentally Significant Areas within the East Harbour Station Natural Environment Study Area. In addition, the Toronto and Region Conservation Authority Terrestrial Natural Heritage System is located outside of the East Harbour Station Natural

Environment Study Area. The East Harbour Station Early Works Project Footprint falls within the City of Toronto's Natural Heritage System (1.43 hectares) and Toronto and Region Conservation Authority's regulation limits (5.16 hectares). The Urban River Valley designation under the Greenbelt Plan occurs along the Lower Don River to its mouth at Lake Ontario and partially within the footprint (0.43 hectares). Although the City of Toronto Ravine and Natural Feature Protection By-Law (City of Toronto, 2017a) falls within the East Harbour Station Natural Environment Study Area, it is located outside of the East Harbour Station Early Works Project Footprint. Further details on the planning policy areas are included in **Appendix A1**.

5.1.2 Ecological Land Classification and Plant Inventory

Ecological Land Classification is the provincially accepted standard for classifying vegetation communities in Ontario. This protocol uses a series of six nested levels (i.e., Site Region, System, Community Class, Community Series, Ecosite, and Vegetation Type) to describe the ecological form and function of a vegetation community in a spatial context, from largest to smallest scale.

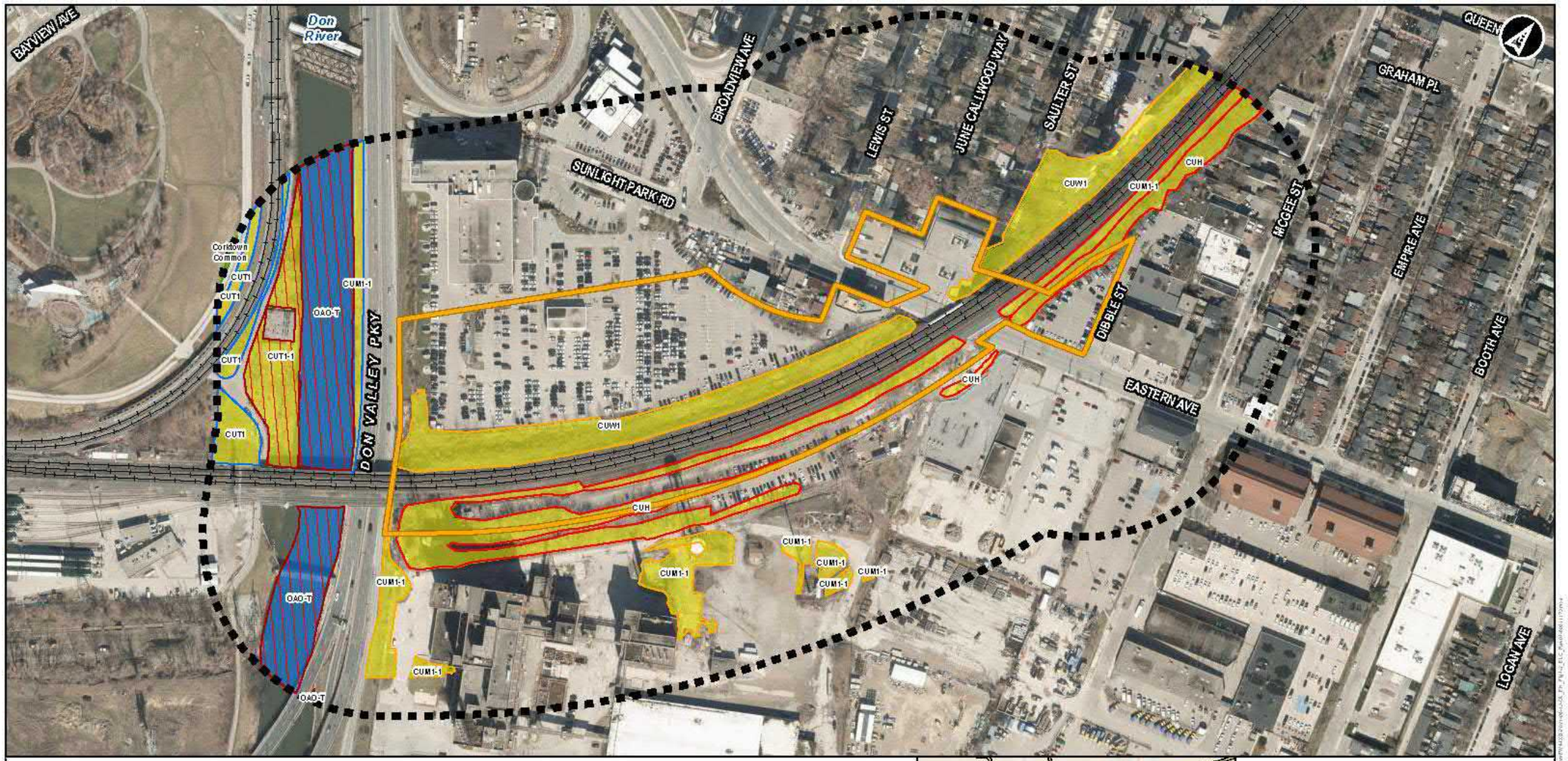
All of the vegetation communities in the East Harbour Station Natural Environment Study Area are generally disturbed as a result of anthropogenic activities and are largely limited to narrow vegetation strips within the existing rail corridor and along the Lower Don River, which are surrounded by heavily developed commercial, industrial and residential areas, as shown in **Figure 5-1**. These vegetation communities contained large proportions of non-native and invasive plant species and none were identified as being provincially significant (AECOM, 2017; AECOM, 2018; 4Transit, 2018b). Descriptions of vegetation communities and their structural compositions within the East Harbour Station Natural Environment Study Area are summarized in **Table 5-1.**

There were no butternuts (Junglans cinereal) or any other plant Species at Risk, provincially significant or Regional Species of Conservation Concern plants identified in the East Harbour Station Natural Environment Study Area (AECOM, 2018).

5.1.3 Fish and Fish Habitat

A portion of the Lower Don River is located within the East Harbour Station Natural Environment Study Area. Based on the background information review, it was found that the portion of the Lower Don River within the East Harbour Station Natural Environment Study Area provides direct fish habitat important for migration, feeding and refuge. However, conditions are generally non-limiting throughout with no specialized (critically limiting spawning) habitat identified (AECOM, 2017; 4Transit, 2018b). Migratory species (e.g., Chinook Salmon) use the Lower Don River as a seasonal migratory corridor to and from Lake Ontario as no barriers to fish use were identified (AECOM, 2017).

Figure 5-1: Ecological Land Classification Within the East Harbour Station Natural Environment Study Area



Legend

- Existing GO Track
- East Harbour Station Early Works Natural Environment Study Area
- East Harbour Station Early Works Project Footprint

ELC Collection Method

- ELC Previously Reported (AECOM 2016, Lakeshore Segment 1)
- ELC Field Verified (AECOM 2016, Lakeshore Segment 1)
- ELC Field Verified (AECOM 2019 - 2020)
- ELC (TRCA 2003-2017)
- ELC Field Verified or by Roadside (AECOM 2016, USRC); ELC Field Verified (AECOM 2016, USRC)

ELC Communities

- Cultural (CU)
- Open Aquatic (OA)

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Ecological Land Classification Within the East Harbour Station Natural Environment Study Area

0 50 100
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

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Figure 5-1

Table 5-1: ELC Vegetation Communities Identified within the East Harbour Station Natural Environment Study Area

Ecological Land Classification Code – Cultural Communities	Ecological Land Classification Name	Tree Canopy	Shrub Layer	Ground Layer	General Location	Source
Cultural Meadow (CUM) CUM1-1	■ Dry-moist Old Field Cultural Meadow	■ No tree canopy layer identified in this community.	■ No shrub layer identified in this community.	■ Herbaceous and graminoid species covered 60% or more of the cultural meadow communities which were dominated by invasive species such as dog strangling vine (Cynanchum rossicum), garlic mustard (Alliaria petiolata), and white sweet clover (Melilotus alba).	■ East of the Lower Don River	■ Lakeshore East Rail Corridor Expansion (Don River to Scarborough GO Station) Environmental Project Report (AECOM, 2017)
Cultural Thicket (CUT) CUT1	■ Mineral Cultural Thicket	■ Less than 25% tree cover dominated by tree species such as Manitoba maple (Acer negundo), Norway maple (Acer platanoides) and tree-of-heaven (Ailanthus altissima). Less common trees noted in the canopy included green ash (Fraxinus pennsylvanica), white mulberry (Morus alba), Carolina poplar (Populus X canadensis) and wych elm (Ulmus glabra).	■ Between 25 and 60% shrub cover dominated by staghorn sumac (Rhus typhina), common buckthorn (Rhamnus cathartica), gray dogwood (Cornus racemosa), Russian olive and Oriental bittersweet (Celastrus orbiculatus).	■ Ground species made up more than 60% of this community, including tall goldenrod (Solidago altissima), dog strangling vine and mugwort (Artemisia vulgaris).	■ West of the Lower Don River	■ Union Station Rail Corridor East Enhancements Transit Project Assessment Process Environmental Project Report (AECOM, 2018)
Cultural Thicket (CUT) CUT1-1	■ Sumac Deciduous Thicket	■ Less than 10% tree cover consisting of tree-of-heaven, Russian olive, Manitoba maple and eastern cottonwood (Populus deltoides).	■ Greater than 60% shrub cover dominated by staghorn sumac with lesser of white mulberry, choke cherry (Prunus virginiana), red-osier dogwood (Cornus sericea), common buckthorn and narrow-leaf willow (Salix exigua)	■ Greater than 60% ground cover dominated by grasses, stinging nettle (Urtica dioica), common milkweed, Canada thistle and bouncing bet (Saponaria offinaliz)	■ West of the Lower Don River	■ Toronto and Region Conservation Authority (2003-2017)
Cultural Woodland (CUW) CUW1	■ Mineral Cultural Woodland	■ Less than 60% tree canopy was dominated by Manitoba maple, Siberian elm (Ulmus pumila) or black walnut (Juglans nigra). Less dominant trees included tree-of-heaven, Norway maple, green ash and black locust (Robinia pseudoacacia). Red oak (Quercus rubra) was sometimes noted on the edge of city parks but was generally outside of the existing rail corridor.	■ The shrub cover generally consisted of choke cherry, Manitoba maple, honeysuckles, staghorn sumac and common buckthorn.	■ Ground species were largely either dominated by dog strangling vine or garlic mustard, both highly invasive species. Other ground species consisted of thicket creeper, wild carrot, riverbank grape, field horsetail (Equisetum arvense), goldenrods, bracken fern (Pteridium aquilinum), common St. John's wort (Hypericum perforatum) and sometimes to a lesser extent, false Solomon's seal (Maianthemum racemosum).	■ East of the Lower Don River	■ Lakeshore East Rail Corridor Expansion (Don River to Scarborough GO Station) Environmental Project Report (AECOM, 2017)
Cultural Hedgerows (CUH)[12]	■ Cultural Hedgerows	■ The tree canopy was dominated by Siberian elm, Manitoba maple, tree-of-heaven or black walnut depending on the location. Other less dominant tree species noted included poplar (Populus sp.), Norway maple and black locust.	■ The shrub layer was dominated by thicket creeper. Japanese knotweed was also noted at certain locations.	■ Ground cover consisted of the same herbaceous and grass species described above for cultural meadows.	■ East of the Lower Don River Bridge	■ Lakeshore East Rail Corridor Expansion (Don River to Scarborough GO Station) Environmental Project Report (AECOM, 2017)

12. For the purpose of this investigation, cultural hedgerows were defined as narrow strips or rows of trees, either planted or natural growing as remnants of old vegetation communities that were removed in the past, with minimal vegetative cover underneath

There are 33 species of fish known to occur within the Lower Don River (Toronto and Region Conservation Authority, 2020a; HDR, 2018; AECOM, 2017). The fish community is composed of mainly tolerant warmwater fish species (HDR, 2018). Pollution tolerant generalists are the most common species sampled in the watershed. Refer to **Appendix A1** for a list of fish species.

5.1.4 Wildlife and Wildlife Habitat

Forested ravines, City parks and open spaces that make up the City of Toronto's Natural Heritage System provide important habitats for wildlife in an urban setting (City of Toronto, 2012). The forested ravines of the Lower Don River act as important wildlife corridors and allow for the movement of mammals, herpetofauna, birds and insects including butterflies between different areas to seek food, shelter and mates within the City of Toronto's Natural Heritage System (City of Toronto, 2012). The Lower Don River also provides connectivity from Lake Ontario and the Greenbelt. In addition, the forested river valleys and ravines associated with the Lower Don River Valley support the movement of migratory breeding birds and provide shelter and food for migrant water-dependent birds such as Black-crowned Night-Herons (Nycticorax nycticorax), Spotted Sandpipers (Actitis macularius) and Belted Kingfishers (Megaceryle alcyon) among other bird species (Dougan & Associates and North-South Environmental Inc., 2009). In addition, City parks and open spaces, utility corridors and existing rail corridors may act as stepping stones that provide connectivity to major natural systems (e.g., forested ravines of the Lower Don River) and support wildlife movement (City of Toronto, 2018).

There is limited natural cover providing wildlife habitat within the East Harbour Station Natural Environment Study Area in the form of narrow strips of riparian vegetation along the Lower Don River and within the existing rail corridor (HDR, 2018; Golder Associates, 2018). The remaining area consists of an existing parking lot.

Areas that could potentially support herpetofauna tolerant of urban conditions, for example American Toad (Anaxyrus americanus), Dekay's Brownsnake (Storeria dekayi), and Eastern Gartersnake (Thamnophis sirtalis) were also identified close to the Lower Don River (4Transit, 2018a); however, small pockets of low-quality vegetation west of the Lower Don River supporting urban wildlife were documented but generally lacked in amphibian breeding habitat (AECOM, 2018). There is limited wildlife habitat within the existing rail corridor as vegetation communities are largely disturbed, containing a high proportion of non-native and invasive plant species, and highly fragmented with low connectivity to other significant natural features (AECOM, 2017). Although the Lower Don River may function as a movement corridor for small to medium sized urban wildlife, there is low connectivity to other significant natural features with many barriers to animal movement (i.e., railways, roads, construction

areas and fences). The existing rail corridor provides a low-quality movement corridor for some small mammals, birds and insects.

Most of the bird species recorded in the East Harbour Station Natural Environment Study Area consist of common species in Ontario that are tolerant to urban disturbances except for Barn Swallow and Chimney Swift, both Species at Risk birds protected under the Endangered Species Act, noted flying over the existing rail corridor (AECOM, 2017). Other bird species recorded included Turkey Vulture (Cathartes aura), Rock Pigeon (Columba livia), Golden-crowned Kinglet (Regulus satrapa), House Sparrow (Passer domesticus), and European Starling (Sturnus vulgaris) (4Transit, 2018a). It is important to note that isolated trees and shrubs, vegetation communities and anthropogenic structures (e.g., buildings, bridges) can provide nesting habitat for many migratory birds, which are protected under the Migratory Birds Convention Act.

No observations or signs of any mammal species were recorded in the East Harbour Station Natural Environment Study Area during the site investigations; however, the general area likely supports a range of mammals often found in urban environments, including: Common Raccoon (Procyon lotor), Eastern Cottontail (Sylvilagus floridanus), Eastern Grey Squirrel (Sciurus carolinensis), Striped Skunk (Mephitis mephitis), and a number of small mammals that often go undetected (e.g., shrews, voles, mice) (Dobbyn, 1994).

Refer to **Appendix A1** for comprehensive species lists.

5.1.5 Significant Wildlife Habitat

Significant Wildlife Habitat, including habitats for Species of Conservation Concern, receive protection under the Provincial Policy Statement and should thus be considered when corridors and right-of-way for significant transportation are being planned according to Section 1.6.8.6 of the Provincial Policy Statement. Species of Conservation Concern may also be afforded protection under the Migratory Birds Convention Act or Ontario Fish and Wildlife Conservation Act, 1997.

Significant Wildlife Habitat screening and habitat screening for Species of Conservation Concern were completed for the East Harbour Station Natural Environment Study Area. Species with historical records were deemed unlikely to persist in the general area given the vast urbanization within the City of Toronto and for this reason were not included in the Species of Conservation Concern screening. Refer to **Appendix A1** for the complete Significant Wildlife Habitat screening and Species of Conservation Concern habitat screening.

Based on review of the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015a), the following Significant Wildlife Habitat types may occur within the East Harbour Station Natural Environment Study Area. Refer to **Appendix A1** for the complete Significant Wildlife Habitat screening in the East Harbour Station Natural Environment Study Area.

- Habitats of Species of Conservation Concern (refer to **Appendix A1** for the complete Species of Conservation Concern habitat screening):
  - **Confirmed Habitat for Species of Conservation Concern**:
    - **Northern Map Turtle (Graptemys geographica)** – The Lower Don River may serve as a movement corridor for this species due to its moderate flow and less than 1 metre depth. The species may use the Lower Don River as a movement corridor. A single record of this species within the East Harbour Station Natural Environment Study Area was reported by Ontario Nature in 2016; however, his species is considered unlikely to be nesting or moving within or in vicinity of the East Harbour Station Early Works Project Footprint due to the lack of suitable habitat present, and barriers to movement (e.g., Don Valley Parkway) from the Lower Don River. The species may instead use the Lower Don River as a movement corridor.
  - **Candidate Habitat for Species of Conservation Concern** (refer to **Appendix A1** for the complete Species of Conservation Concern habitat screening)**:**
    - **Common Nighthawk** – This species may nest on the flat, gravel rooftops of buildings in urban areas (Brigham et al., 2011). There are flat roofed buildings within the East Harbour Station Early Works Project Footprint, and others within the East Harbour Station Natural Environment Study Area. This species is protected by the federal Migratory Birds Convention Act.
    - **Eastern Wood-pewee (Contopus virens)** – Treed areas (e.g., cultural woodlands) may provide suitable nesting habitat for this species. This species is protected by the federal Migratory Birds Convention Act.
    - **Monarch (Danaus plexippus)** – Cultural meadows may provide suitable foraging and rearing habitat for this species.
    - **Snapping Turtle (Chelydra serpentina)** – The Lower Don River may serve as a movement corridor for this species due to its moderate flow and less than 1 metre depth but is unlikely to provide suitable hibernation habitat within the East Harbour Station Early

Works Project Footprint. This species is not anticipated to be nesting or moving through the rail corridor within the East Harbour Station Early Works Project Footprint due to lack of suitable habitat and barriers to movement (e.g., Don Valley Parkway) from the Lower Don River.

There were no candidate or confirmed seasonal concentration areas, rare vegetation communities, specialized habitat for wildlife or animal movement corridors identified within the East Harbour Station Natural Environment Study Area (refer to **Appendix A1** for the complete Significant Wildlife Habitat screening). Although the Lower Don River within the East Harbour Station Natural Environment Study Area acts as a movement corridor for some urban wildlife, it does not qualify as a candidate animal movement (amphibian or deer) corridor based on the criteria described in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (Ministry of Natural Resources and Forestry, 2015a) due to high levels of urbanization, fragmentation and barriers to animal movements (i.e., railways, roads, construction areas, fences).

5.1.6 Species at Risk Habitat Screening

A habitat screening for Species at Risk was completed for the East Harbour Station Natural Environment Study Area. Species with historical records were deemed unlikely to persist in the general area given the vast urbanization within the City of Toronto and for this reason were not included in the Species at Risk screenings.

The following Species at Risk have a high probability of occurring within the East Harbour Station Natural Environment Study Area:

- **Barn Swallow** – This species is listed as Threatened and receives protection under the provincial Endangered Species Act, as well as the federal Migratory Birds Convention Act. According to 4Transit (2018b), Barn Swallows were observed foraging in the vicinity of the rail bridge crossing the Lower Don River suggesting that active nests may be present under this bridge. The buildings within East Harbour Station Early Works Project Footprint have limited potential to support nesting Barn Swallows; however, field surveys will be required to determine if Barn Swallow nests are present on any buildings that may be removed or on the existing rail bridge.
- **Chimney Swift** – This species is listed as Threatened and receives protection under the provincial Endangered Species Act, as well as the federal Migratory Birds Convention Act. There is one confirmed Chimney Swift site within the East Harbour Station Natural Environment Study Area. Chimney Swift nests were confirmed in 2017 inside the chimney located at 21

Don Roadway, which is situated on the east bank of the Lower Don River, south of the existing rail corridor, within 120 metres of the East Harbour Station Natural Environment Study Area, but outside of the East Harbour Station Early Works Project Footprint (4Transit, 2018b). No chimneys or smokestacks are visibly present in the East Harbour Station Early Works Project Footprint based on background review sources.

The following Species at Risk have a medium probability of occurring within the East Harbour Station Natural Environment Study Area:

- **Bat Species at Risk, including Eastern Small-footed Myotis (Myotis leibii), Little Brown Myotis (Myotis lucifugus), Northern Long-eared Myotis (Myotis septentrionalis) and Tri-colored Bat (Perimyotis subflavus)** – Bat Species at Risk are listed as Endangered and receive protection under the Endangered Species Act. There were no hibernacula identified within the East Harbour Station Natural Environment Study Area; however, maternity roosting habitats may be present. Treed areas including cultural woodlands within the existing rail corridor may provide suitable maternity roosting habitats for these species.
- **Butternut** – This species is listed as Endangered and receives protection under the provincial Endangered Species Act. This species may occur within the cultural hedgerows within the existing rail corridor.

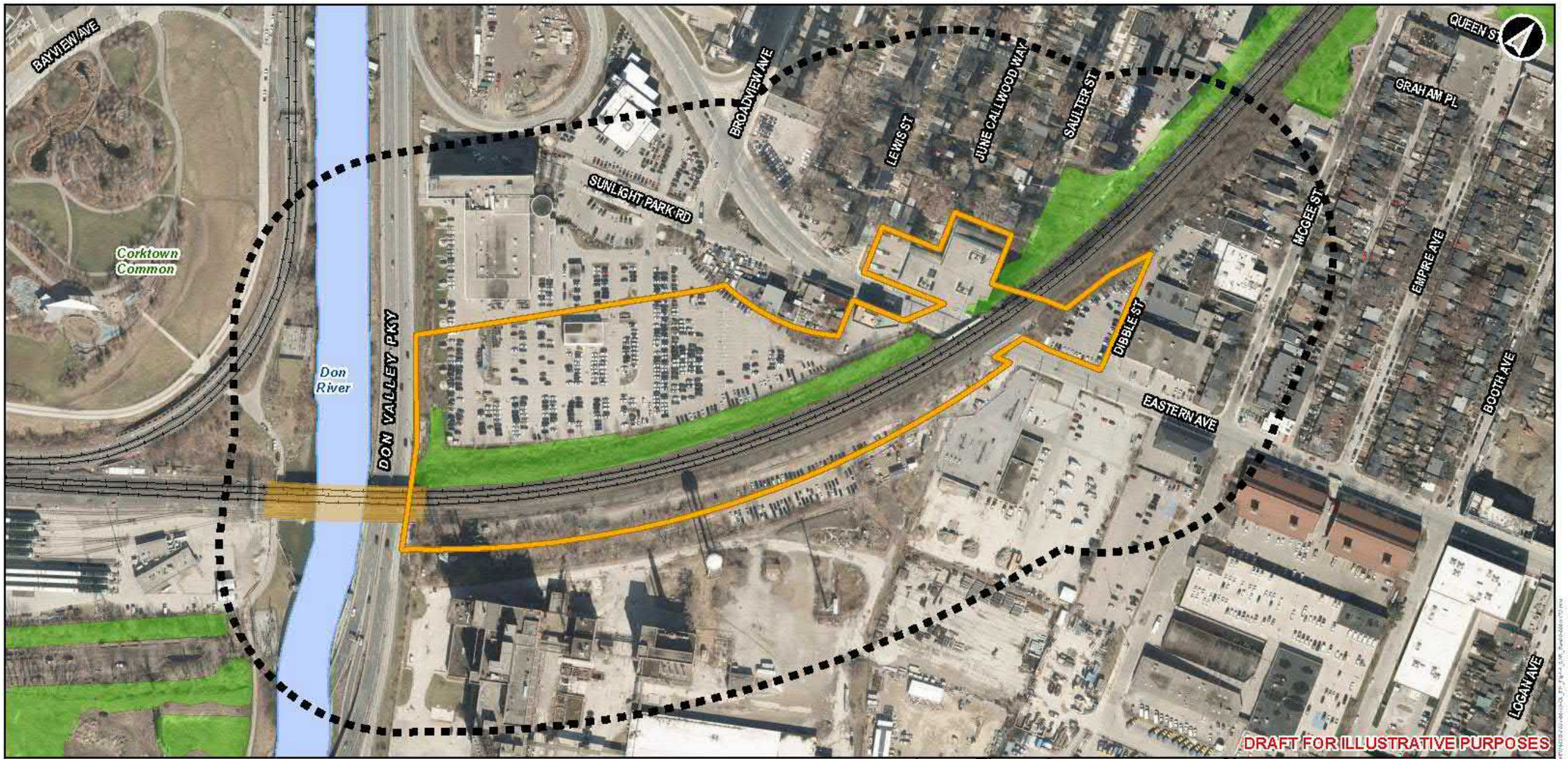
The following Species at Risk had low probability of occurrence due to lack of habitat identified within the East Harbour Station Natural Environment Study Area

- Bank Swallow (Riparia riparia);
- Bobolink (Dolichonyx oryzivorus);
- Eastern Meadowlark (Sturnella magna); and
- Blanding’s Turtle (Emydoidea blandingii).

Refer to **Figure 5-2** for the potential Species at Risk habitats within the East Harbour Station Natural Environment Study Area.

Refer to **Appendix A1** for the full Species at Risk habitat screening.

Figure 5-2: Potential Species at Risk Habitat Within the East Harbour Station Natural Environment Study Area



Legend

- Existing GO Track
- East Harbour Station Early Works Study Area
- East Harbour Station Early Works Project Footprint*

Species at Risk (SAR)

- Potential Bat SAR Natural Roosting Habitat
- Potential Habitat for Barn Swallow

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Potential Species at Risk Habitat Within the East Harbour Station Natural Environment Study Area

0 50 100
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

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Figure 5-2

5.2 Soil and Groundwater

5.2.1 Geological Setting

5.2.1.1 Physiography and Topography

The East Harbour Station Soil and Groundwater Study Area is situated within the Iroquois Plain physiographic region, as mapped by Chapman and Putnam (1984). A physiographic map of the area is provided in **Figure 5-3**.

According to the Physiography of Southern Ontario (Chapman and Putnam, 1984), the Iroquois Plain occurs as a lowland bordering the western component of Lake Ontario, extending from the Niagara River to the Trent River over a distance of approximately 305 kilometres. The Iroquois Plain represents the historic bottom of glacial Lake Iroquois and stands in striking contrast to the shoreline areas (and their identifiable features) of the former glacial lake situated farther inland (Chapman and Putnam, 1984). Across its length, the width of the Iroquois plain varies from only a few hundred metres up to about 13 kilometres. In the vicinity of the City of Toronto, the Iroquois Plain is approximately 3 kilometres wide and is cut into previously deposited clay and till; being partly floored with glaciolacustrine sand deposits.

The ground surface topography within the East Harbour Station Soil and Groundwater Study Area is shown in **Figure 5-4**. The elevations within the East Harbour Station Soil and Groundwater Study Area range from approximately 80 to 90 metres above sea level. The topography in the vicinity of the East Harbour Station Soil and Groundwater Study Area is highly affected by the extensive local development and is relatively flat to slightly undulating in nature, with a general downward slope in the direction of the Lower Don River and Lake Ontario.

5.2.1.2 Surficial Geology

The surficial geology within the East Harbour Station Soil and Groundwater Study Area is shown in **Figure 5-5**. Identified surficial soils consist of:

i) Till Deposits (undifferentiated older tills, may include stratified sediments);

ii) Coarse-textured Glaciolacustrine Deposits (sand, gravel, minor silt and clay derived from foreshore-basinal deposits);

iii) Coarse-textured Lacustrine Deposits (sand, gravel, minor silt and clay derived from littoral deposits); and

iv) Modern Alluvial Deposits (clay, silt, sand, gravel, may contain organic remains).

Figure 5-3: Physiography Within the East Harbour Station Soil and Groundwater Study Area

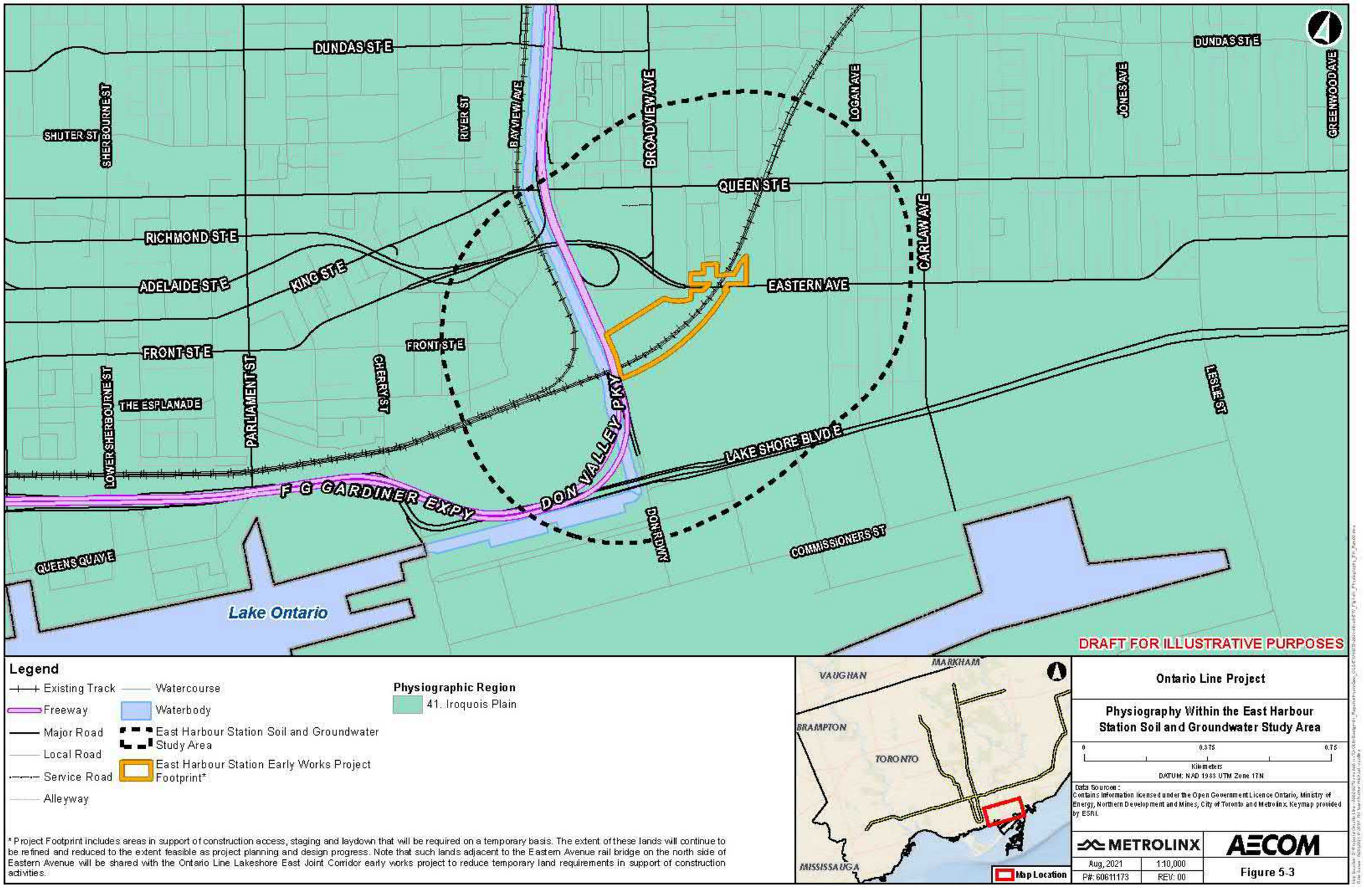


Figure 5-4: Topography and Drainage Within the East Harbour Station Soil and Groundwater Study Area

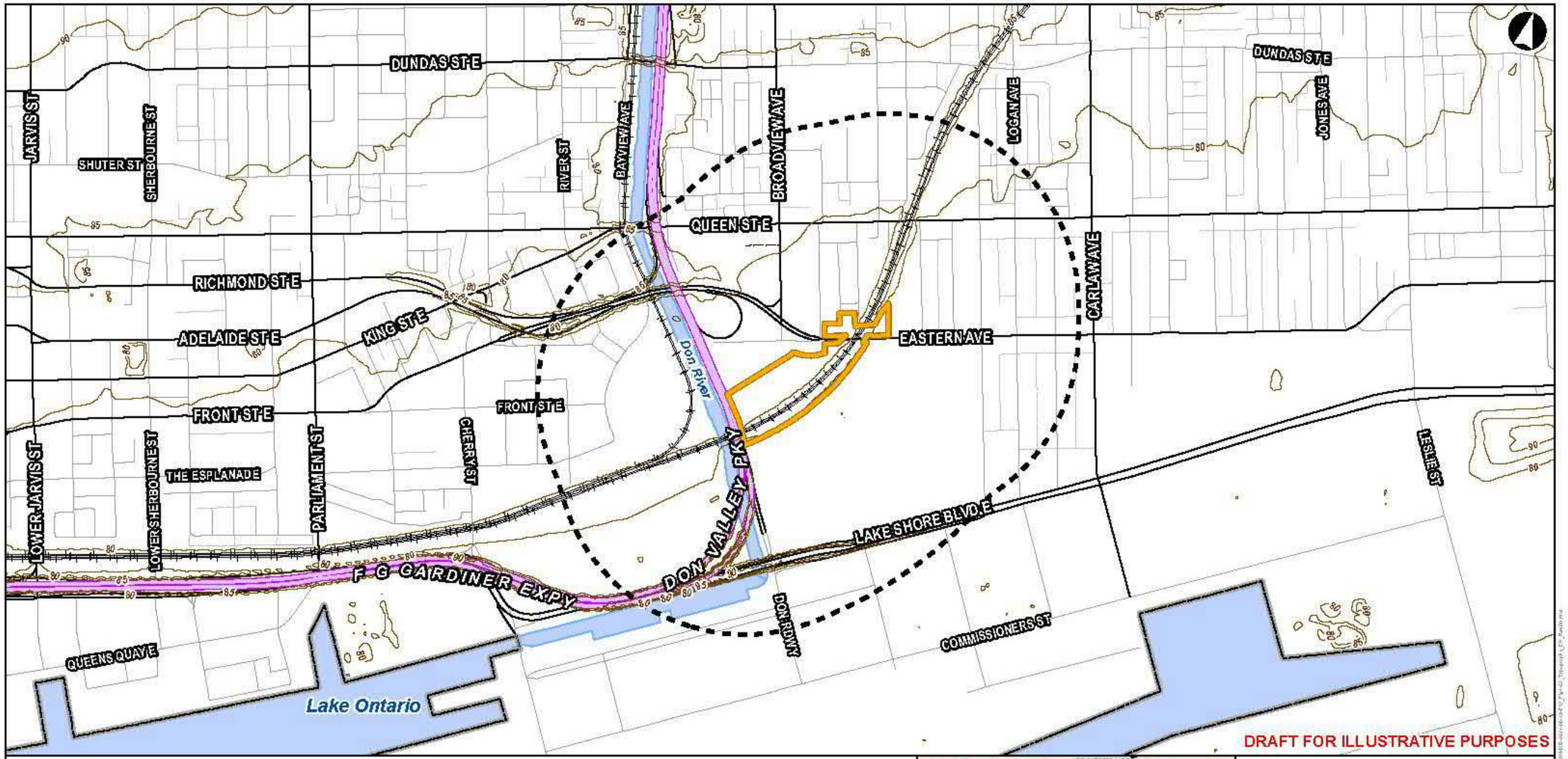
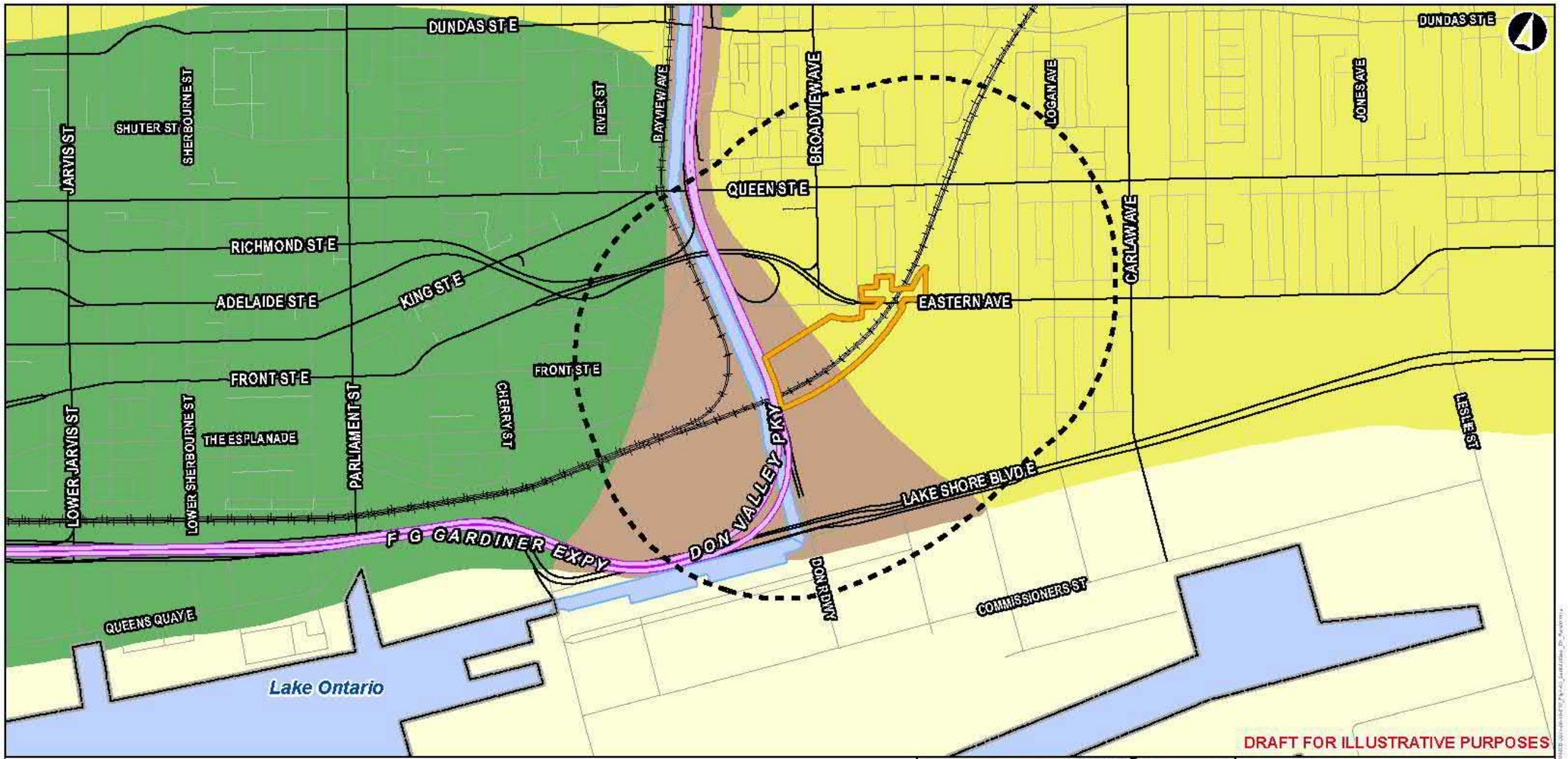


Figure 5-5: Surficial Geology Within the East Harbour Station Soil and Groundwater Study Area



5.2.1.3 Quaternary Geology

The Quaternary geology within the East Harbour Station Soil and Groundwater Study Area is shown in **Figure 5-6**. A review of Quaternary geology mapping, available at a smaller scale than the Surficial Geology mapping, indicates that the primary surficial deposits within the East Harbour Station Soil and Groundwater Study Area are Till Deposits with sandy silt to silt matrices.

5.2.1.4 Bedrock Geology

Bedrock geology within the East Harbour Station Soil and Groundwater Study Area is shown in **Figure 5-7**. Based on this Ontario Geological Survey regional mapping, the uppermost bedrock is composed of shale and limestone of the Georgian Bay Formation from the Upper Ordovician period (Armstrong, D.K. and Dodge, J.E.P. 2007).

Based on the Metropolitan Toronto Bedrock Contours map (Rogers et al. 1961), the bedrock surface elevation ranges from approximately 46 to 67 metres above sea level within the East Harbour Station Soil and Groundwater Study Area.

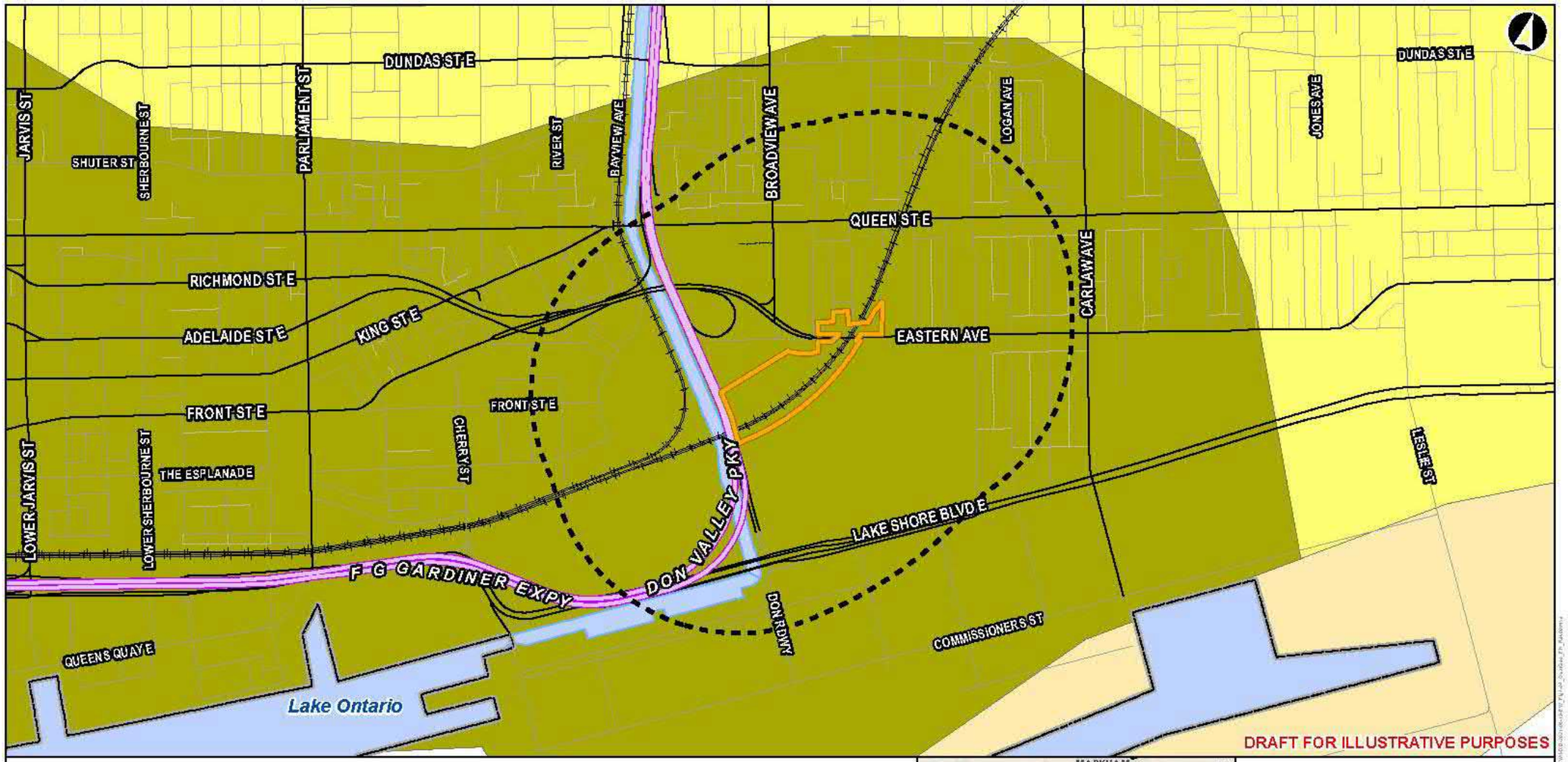
5.2.2 Hydrogeological Setting

Hydrostratigraphy is the classification of major stratigraphic units into aquifers and aquitards, with some simplification or combination of units with similar properties. An aquifer is classically defined as a geological unit that is sufficiently permeable to permit the extraction of a useable supply of water.

Where present, surficial aquifer units within the East Harbour Station Soil and Groundwater Study Area are typically comprised of coarse-textured unconsolidated (overburden) sand and gravelly sediments, as described in the previous section.

A review of the Ministry of the Environment, Conservation and Parks water well records database indicates that the overburden geologic materials within the East Harbour Station Soil and Groundwater Study Area consist primarily of clayey silt, silty clay, sandy silt, and silty sand. Bedrock was encountered in some of the reviewed Ministry of the Environment, Conservation and Parks well records, at depths ranging from approximately 11 to 35 metres below ground surface within the East Harbour Station Soil and Groundwater Study Area.

Figure 5-6: Quaternary Geology Within the East Harbour Station Soil and Groundwater Study Area



Legend

- Existing Track
- Freeway
- Major Road
- Local Road
- Service Road
- Alleyway
- Watercourse
- Waterbody
- East Harbour Station Early Works Project Footprint*
- East Harbour Station Soil and Groundwater Study Area

Quaternary Geology

- 25. Glaciolacustrine deposits: sand, gravelly sand and gravel, nearshore and beach deposits
- 30. Lacustrine deposits: sand, gravelly sand and gravel, nearshore and beach deposits
- 19. Till: undifferentiated, predominantly sandy silt to silt matrix, commonly rich in clasts, often high in total matrix carbonate content

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Quaternary Geology Within the East Harbour Station Soil and Groundwater Study Area

0 0.375 0.75
Kilometers
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
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Figure 5-6

Figure 5-7: Bedrock Geology Within the East Harbour Station Soil and Groundwater Study Area

Legend

- Existing Track
- Freeway
- Major Road
- Local Road
- Service Road
- Alleyway
- Watercourse
- Waterbody
- East Harbour Station Early Works Project Footprint*
- East Harbour Station Soil and Groundwater Study Area

Bedrock Geology

55b: Georgian Bay Formation; Collingwood Member; Eastview Member: interbedded grey-green to dark grey shale and fossiliferous calcareous siltstone to bioclastic limestone

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Bedrock Geology Within the East Harbour Station Soil and Groundwater Study Area

0 0.375 0.75
Kilometers
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains information licensed under the Open Government Licence Ontario, Ministry of Energy, Northern Development and Mines, City of Toronto and Metrolinx. Keymap provided by ESRI.

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Figure 5-7

The well-established hydrostratigraphic framework for the Greater Toronto Area is summarized in **Table 5-2** (TRSPA, 2015).

Table 5-2: Hydrostratigraphic Units of the Greater Toronto Area

Age	Geological Units	Hydrostratigraphic Units (Aquifer)	Hydrostratigraphic Units (Aquitard)
Late Wisconsin Glacial Complex	Glaciolacustrine Deposits and Recent Sediments	Surficial Aquifer	N/A
Late Wisconsin Glacial Complex	Halton Till	N/A	Halton Aquitard
Late Wisconsin Glacial Complex	Oak Ridges Moraine/ Mackinaw Interstadial Deposits	Oak Ridges Aquifer Complex	N/A
Late Wisconsin Glacial Complex	Newmarket (Northern) Till	N/A	Newmarket Aquitard
Early-Mid Wisconsin Glacial Lake Deposits	Thorncliffe Formation	Thorncliffe Aquifer Complex	N/A
Early-Mid Wisconsin Glacial Lake Deposits	Sunnybrook Drift	N/A	Sunnybrook Aquitard
Early Wisconsin Delta	Scarborough Formation	Scarborough Aquifer Complex	N/A
Sangamon Interglacial Illinoian Glaciation	Don Formation	N/A	N/A
Sangamon Interglacial Illinoian Glaciation	York Till	N/A	N/A
Late Ordovician Bedrock	Georgian Bay Formation	N/A	Bedrock Aquitard

Based on the Toronto and Region Conservation Authority (2009) cross-section along the Don River Watershed (West Don River), the following two (2) Hydrostratigraphic Units are potentially present within the East Harbour Station Soil and Groundwater Study Area: Surficial Aquifer (Recent Sediments – associated with the former Lake Iroquois shoreline deposits) and Scarborough Aquifer Complex (organic-rich sands over silts and clays).

5.2.2.1 Regional Groundwater Flow

In general, the dynamics of shallow groundwater flow within overburden deposits is related to the surface topography with flow directed to topographic lows, wetlands, and surface watercourses. Deeper aquifer systems, including bedrock aquifer(s), tend to be more uniform and are less influenced by topographic variations. Groundwater flow in shallow aquifer(s) will be primarily horizontal with a minor vertical component (flow rate depends on the hydraulic conductivity and gradient of the unit). Flow within aquitard units tends to be primarily downward towards deeper units. Variations in flow direction will change depending on proximity to surface watercourses/water bodies and subsurface geology.

The surficial/shallow groundwater system within the East Harbour Station Soil and Groundwater Study Area is influenced by surface topography and likely flows towards the Don River valley and Lake Ontario.

5.2.3 Groundwater Resources

5.2.3.1 Source Water Protection

The East Harbour Station Soil and Groundwater Study Area is located within the Credit Valley, Toronto and Region, and Central Lake Ontario Source Protection Region. The Credit Valley, Toronto and Region, and Central Lake Ontario Source Protection Region is responsible for undertaking a technical assessment of municipal water sources to identify potential vulnerabilities and for developing a Source Protection Plan. The Ministry of the Environment Conservation and Parks defines several source water areas/features that are of relevance to the East Harbour Station Soil and Groundwater Study Area. These include:

- Intake Protection Zones;
- Highly Vulnerable Aquifers; and
- Event Based Areas.

These areas are further described below, summarized in **Table 5-3**, and are shown in **Figure 5-8**.

5.2.3.1.1 Intake Protection Zone

Intake Protection Zone applies to those areas of land and water that contribute source water to a surface water drinking water system intake within a specified distance, period of flow time, and/or watershed area and within which it is desirable to regulate or monitor drinking water threats. The East Harbour Station Soil and Groundwater Study Area is located within an Intake Protection Zone 3 (Intake Protection Zone-3), as shown in **Figure 5-8**. Intake Protection Zone-3 is an area where modelling has shown that contaminants could be transported to a surface water intake following an extreme event.

5.2.3.1.2 Highly Vulnerable Aquifer

The East Harbour Station Soil and Groundwater Study Area overlaps with a regional Highly Vulnerable Aquifer feature, as defined in **Section 5.2.3.1** and shown in **Figure 5-9**. A Highly Vulnerable Aquifer is an aquifer that is susceptible to contamination due to its location near the ground surface, or the type of material found in the ground around the aquifer provides little barrier to contamination.

Table 5-3: Source Water Protection Details for the East Harbour Station Soil and Groundwater Study Area

Source Water Protection Feature	Present	Source Protection Plan Policies[1]	Legal Effect of Policy
Intake Protection Zone	Yes, Zone 3	No policies related to Intake Protection Zone-3 are specified in the Source Protection Plan	None identified
Highly Vulnerable Aquifer	Yes, Highly Vulnerable Aquifer Score of 6	Related Source Protection Plan policies[1]: SAL-10, SAL-11, SAL-12, SAL-13, DNAP-3, OS-3	Listed policies include both legally binding and non-binding examples
Event Based Area	Yes	Related Source Protection Plan policies[1]: LO-G-1, LO-G-2, LO-G-3, LO-NGS-1, LO-SEW-1, LO-SEW-2, LO-PIPE-1, LO-FUEL-1, LO-FUEL-2	Listed policies include both legally binding and non-binding examples

Source: Source Water Protection Information Atlas (Ministry of the Environment, Conservation, and Parks, January 2020).

Notes: 1. Due to the location of the East Harbour Station Soil and Groundwater Study Area within source water areas/features, these are several SPP policies that may be relevant to the Early Works construction.

2 – SAL-10: Threat – Application of Road Salt; Implementing Body – Planning Approval Authority; Source Water Protection Area: Highly Vulnerable Aquifer
SAL-11: Threat – Application of Road Salt; Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area: Highly Vulnerable Aquifer
SAL-12: Threat – Application of Road Salt; Implementing Body – Municipality; Source Water Protection Area: Highly Vulnerable Aquifer
SAL-13: Threat – Application of Road Salt, and Handling and Storage of Road Salt; Implementing Body – Source Protection Authority and Municipality; Source Water Protection Area: Highly Vulnerable Aquifer
DNAP-3: Threat – Handling and Storage of a Dense Non-Aqueous Phase Liquid; Implementing Body – Municipality; Source Water Protection Area: Highly Vulnerable Aquifer
OS-3: Threat – Handling and Storage of an Organic Solvent; Implementing Body – Municipality; Source Water Protection Area: Highly Vulnerable Aquifer
LO-G-1: Threat – All Lake Ontario Threats; Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area: Event Based Area
LO-G-2: Threat – All Lake Ontario Threats; Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area: Event Based Area
LO-G-3: Threat – All Lake Ontario Threats; Implementing Body – Municipality (Peel, Toronto, Durham); Source Water Protection Area: Event Based Area
LO-NGS-1: Threat – Spill of Tritium From NGS; Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area: Event Based Area
LO-SEW-1: Threat – The Establishment, Operation or Maintenance of a System That Collects, Stores, Transmits, Treats or Disposes of Sewage; Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area: Event Based Area
LO-SEW-2: Threat – Spill from a Sanitary Trunk Sewer Break; Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area: Event Based Area
LO-PIPE-1: Threat – Pipelines Transporting Petroleum Product (Containing Benzene) Crossing Tributaries of Lake Ontario; Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area - Event Based Area
LO-FUEL-1: Threat – Handling and Storage of Fuel (Petroleum Tank Farm Spill); Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area – Event Based Area
LO-FUEL-2: Threat – Handling and Storage of Fuel (Spill from Petroleum Storage Tanks); Implementing Body – Ministry of the Environment, Conservation and Parks; Source Water Protection Area – Event Based Area

Figure 5-8: Intake Protection Zone and Event Based Areas Within the East Harbour Station Soil and Groundwater Study Area

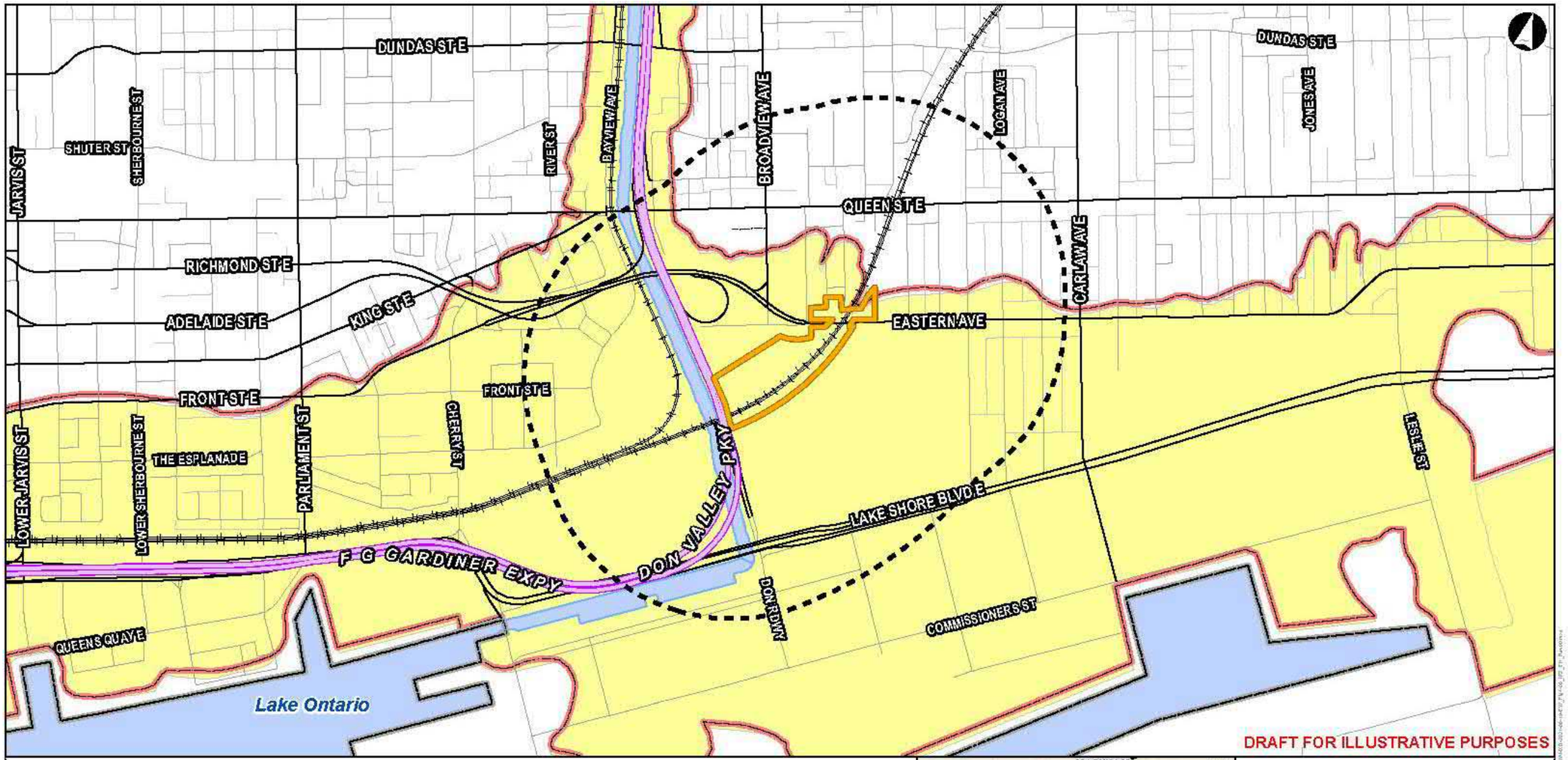


Figure 5-9: Highly Vulnerable Aquifer Within the East Harbour Station Soil and Groundwater Study Area

5.2.3.1.3 Event Based Area

An Event Based Area is an area within a watershed where a spill could pollute the surface water drinking supply. The East Harbour Station Soil and Groundwater Study Area is located within an Event Based Area for Stored/Transported Fuel/Oil Spill; Pipeline Fuel/Oil Spill; Wastewater Treatment Plant/Sanitary Sewer.

5.2.3.2 Ministry of the Environment, Conservation and Parks Water Well Records

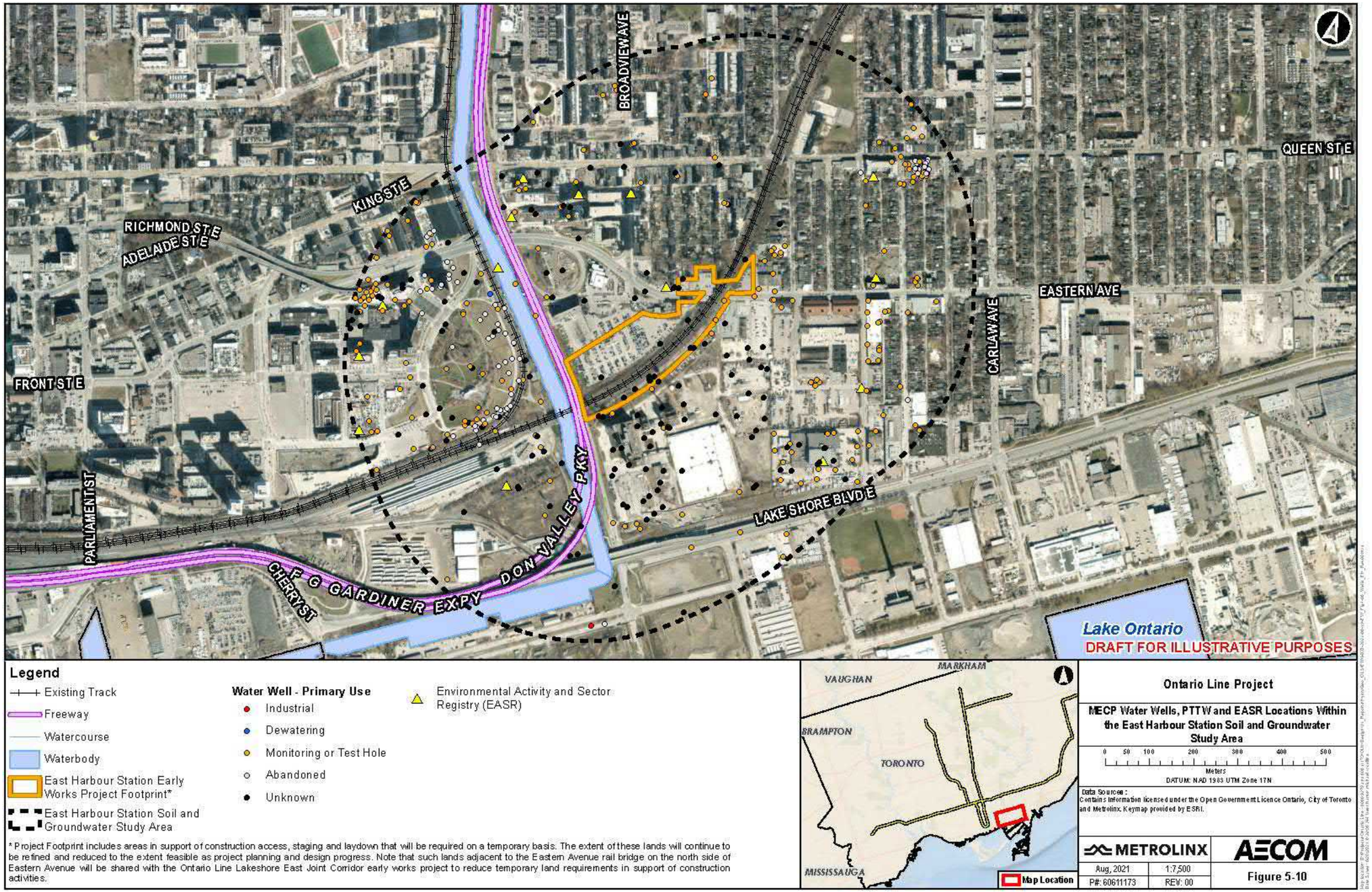
An inventory of local private water wells (i.e., domestic, commercial, industrial, etc.) was prepared within the East Harbour Station Soil and Groundwater Study Area by searching the Ministry of the Environment, Conservation and Parks Well Water Information Systems database. Results are shown in **Figure 5-10**, along with the primary use of each well. A total of 859 water well records were found located within the East Harbour Station Soil and Groundwater Study Area.

As shown in **Table 5-4**, available well records indicate that approximately 45% of the wells within the East Harbour Station Soil and Groundwater Study Area are dewatering, monitoring and test holes. One hundred thirty-six (136) abandonment records (approximately 16%) fall within the East Harbour Station Soil and Groundwater Study Area, two wells (<1%) are identified in the 'Other' category, and two wells (<1%) are identified as industrial. Approximately 39% of Ministry of the Environment Conservation and Parks water well records did not specify the well use and therefore are classified as 'Unknown'. Within the East Harbour Station Soil and Groundwater Study Area, water supply is obtained from both overburden and bedrock sources. The dataset is inconclusive in terms of whether one water supply source is utilized more frequently than the other.

Table 5-4: Summary of Ministry of the Environment, Conservation and Parks Water Well Record Information for the East Harbour Station Soil and Groundwater Study Area

Primary Water Use	Number of Well Records	Well Depth (metres)	Primary Well Type
Dewatering/Monitoring and Test Hole	385	2 – 66	7 Bedrock, 8 Overburden, 370 Unknown
Abandoned	136	-	2 Bedrock, 134 Unknown
Industrial	2	11	2 Overburden
Unknown	334	3 – 49	2 Overburden, 332 Unknown
Other	2	7	Unknown

Figure 5-10: Ministry of the Environment Conservation and Parks Water Wells, Permit to Take Water and Environmental Activity and Sector Registry Locations Within the East Harbour Station Soil and Groundwater Study Area



5.2.3.3 Ministry of the Environment Conservation and Parks Permit to Take-Water and Environmental Activity and Sector Registry Summary

A search of Ministry of the Environment, Conservation and Parks Permit to Take Water database returned 14 permit results within the East Harbour Station Soil and Groundwater Study Area, all of which were expired with the exception of two active records for construction dewatering purposes.

A search of the Ministry of the Environment, Conservation and Parks Environmental Activity and Sector Registry database returned 14 results within the East Harbour Station Soil and Groundwater Study Area. Nine Environmental Activity and Sector Registry records were identified for construction dewatering purposes.

The location of each Permit to Take Water and Environmental Activity and Sector Registry is shown in **Figure 5-10**.

5.2.3.4 Water Level Data

The Ministry of the Environment, Conservation and Parks water well records included a static water level. These reported water levels represent either the water table position or the potentiometric surface depending on whether a given well is installed within an unconfined or confined aquifer. Ministry of the Environment Conservation and Parks water well records do not provide sufficient information to confirm aquifer conditions. The reported static water levels range between approximately 0.61 metres and 2.44 metres below ground surface.

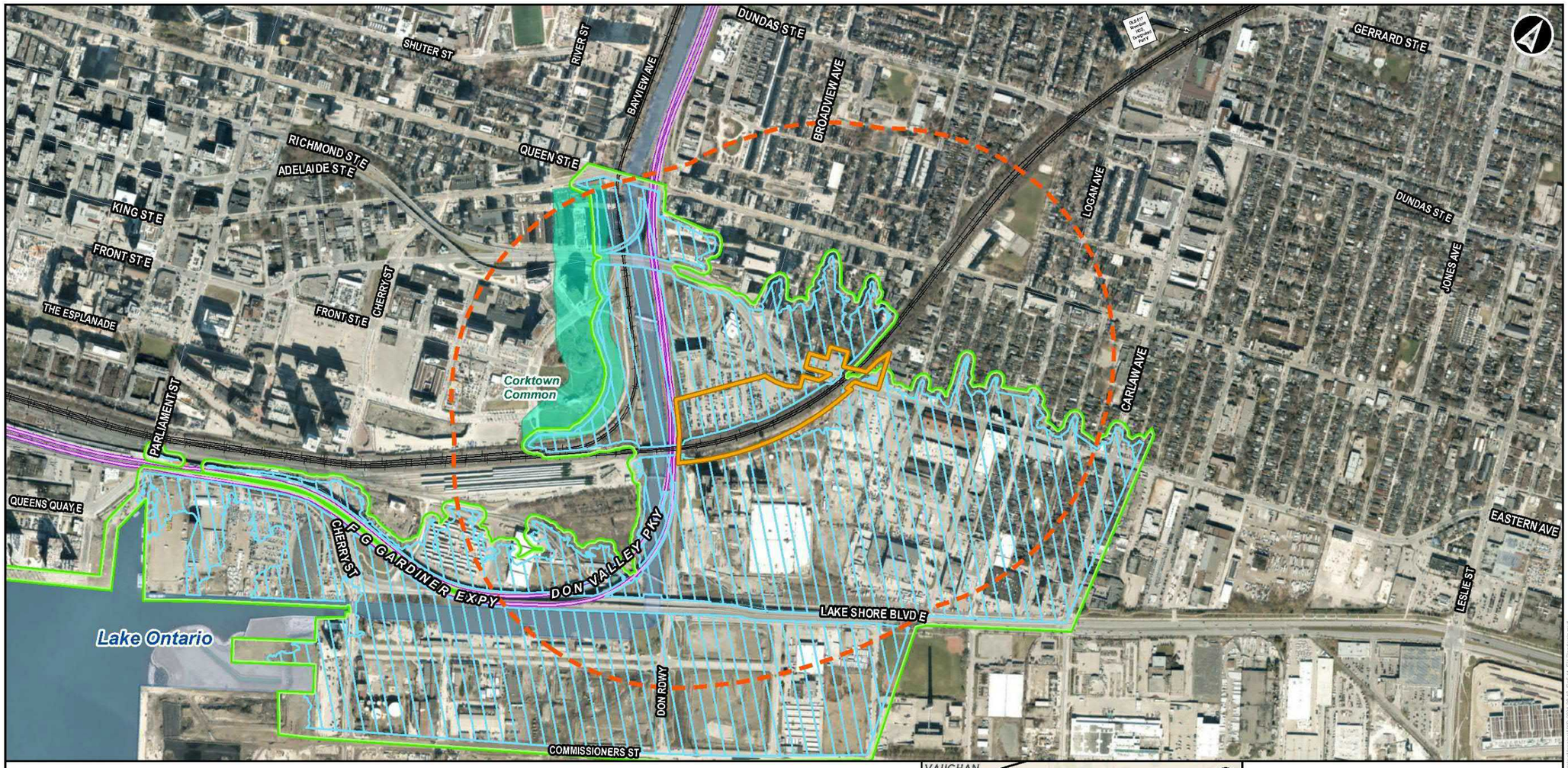
Static water levels may fluctuate considerably in response to changes in precipitation patterns, seasonal fluctuations and temporal variability.

5.3 Hydrology and Surface Water

The East Harbour Station Hydrology and Surface Water Study Area is within the Toronto and Region Conservation Authority's Regulation Area (Toronto and Region Conservation Authority, 2020a) and the Don River Floodplain (Toronto and Region Conservation Authority, 2020b).

The West Don Lands Flood Protection Landform (shown in **Figure 5-11**), extending from Queen Street East in the north to the Lakeshore East/Stouffville rail corridor in the south, was constructed in 2012 to protect approximately 500 acres of eastern downtown Toronto, including the Financial District, from flooding in the event of a major storm (Waterfront Toronto, 2016). This flood protection landform was constructed following the approved Lower Don River West Remedial Flood Protection Project Class Environmental Assessment (described in **Section 2.2.3.3**).

Figure 5-11: Floodplain Within the East Harbour Station Hydrology and Surface Water Study Area



Legend

- Freeway
- Major Road
- Waterbody
- Regulation Limit (TRCA)
- Don River Floodplain (TRCA)
- Approximate Boundary of West Don Lands Flood Protection Landform
- East Harbour Station Early Works Project Footprint
- East Harbour Station Hydrology and Surface Water Study Area

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Floodplain within the East Harbour Station Hydrology and Surface Water Study Area

0 50 100 200 300 400 500 600
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

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Figure 5-11

The West Don Lands Flood Protection Landform contains a 1.5-metre deep clay core, which varies in height to prevent water from penetrating through it (Waterfront Toronto, 2016). It also includes an armoured slope, comprised of varying stone sizes that prevent the clay core from eroding and protects against the Don River's rapid waters (Waterfront Toronto, 2016).

5.4 Air Quality

5.4.1 Existing Ambient Air Quality

Representative data for all criteria air contaminants within the East Harbour Station Air Quality Study Area were identified as follows for the averaging period combinations listed in **Table 5-5**:

- 1-hour, 8-hour, and 24-hour ambient concentrations for the contaminants were obtained from the 90th percentile of hourly measurements from the representative air quality monitoring stations (the average value was calculated from the available years). The 90th percentile of available background data was used following the methodology outlined in the Ministry of Transportation's Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects (Ministry of Transportation, 2020).
- Annual ambient concentrations for the contaminants were obtained from the mean measurements from the representative air quality monitoring station (the average value was calculated from the available years).

The averaged background concentrations for each contaminant were compared to the applicable federal and provincial standards for all of the applicable time averaging periods and percentile concentrations. The approach to calculating the overall 90th percentile for the data set was to calculate the individual year's 90th percentile data, provided in a 1-year format from the National Air Pollution Surveillance Monitoring online data portal, then to determine the average of a selection of the most recent and complete five years' 90th percentile data.

As shown in **Table 5-5** there are several air quality threshold exceedances within the monitored existing ambient air quality data. Benzene has elevated annual contributions which exceed the threshold guideline from the Ambient Air Quality Criteria. Benzo(a)pyrene, the representative polycyclic aromatic hydrocarbon, shows extremely elevated levels of concentration for both annual and daily provincial air quality thresholds. This is due mainly to high presence of regional air quality contributions, high traffic volumes within the Greater Toronto Area, and industrial contributions from Toronto, the Greater Toronto Area, and Hamilton.

Table 5-5: Comparison of Existing Ambient Air Quality Data to Standards

Criteria Air Contaminant	Station ID	Averaging Period	Years	Average of Background Data (µg/m³)[3]	Statistical Measure	Standard Threshold (µg/m³)	Standard Source	% of Standard Threshold
NO_2	60433	One hour	2013-2017	49.50	90th Percentile	400	Ambient Air Quality Criteria	12%
NO_2	60433	One hour	2013-2017	49.50	90th Percentile	113	Canadian Ambient Air Quality Standards	44%
NO_2	60433	24 hours	2013-2017	41.75	90th Percentile	200	Ambient Air Quality Criteria	21%
NO_2	60433	Annual	2013-2017	26.68	Mean	32	Canadian Ambient Air Quality Standards	83%
CO	60430	One hour	2013-2017	446	90th Percentile	36,200	Ambient Air Quality Criteria	1%
CO	60430	8 hours	2013-2017	419	90th Percentile	15,700	Ambient Air Quality Criteria	3%
SO_2 [(2)]	60430	10-min.	2013-2017	9.11	90th Percentile	178	Ambient Air Quality Criteria	5%
SO_2	60430	One hour	2013-2017	5.51	90th Percentile	106	Ambient Air Quality Criteria	5%
SO_2	60430	Annual	2013-2017	1.84	Mean	11	Ambient Air Quality Criteria	17%
PM_{10} [(3)]	60433	24 hours	2013-2017	25.78	90th Percentile	50	Ambient Air Quality Criteria	51%
$PM_{2.5}$	60433	24 hours	2013-2017	13.89	90th Percentile	27	Canadian Ambient Air Quality Standards	51%
$PM_{2.5}$	60433	Annual	2013-2017	7.94	Mean	8.8	Canadian Ambient Air Quality Standards	90%
Acetaldehyde [(4)]	60439	30-min.	2014-2017	5.00	90th Percentile	500	Ambient Air Quality Criteria	1%
Acetaldehyde	60439	24 hours	2014-2017	1.69	90th Percentile	500	Ambient Air Quality Criteria	0%
Acrolein [(5)]	60439	One hour	2014-2017	0.17	90th Percentile	4.5	Ambient Air Quality Criteria	4%
Acrolein	60439	24 hours	2014-2017	0.07	90th Percentile	0.4	Ambient Air Quality Criteria	17%
Benzene	60435	24 hours	2011-2014	0.92	90th Percentile	2.3	Ambient Air Quality Criteria	40%
Benzene	**60435**	**Annual**	**2011-2014**	**0.61**	**Mean**	**0.45**	**Ambient Air Quality Criteria**	**134%**
Benzo(a)-pyrene	**60427 60439**	**24 hours**	**2011-2015**	**1.21E-04**	**90th Percentile**	**0.00005**	**Ambient Air Quality Criteria**	**242%**
Benzo(a)-pyrene	**60427 60439**	**Annual**	**2011-2015**	**6.72E-05**	**Mean**	**0.00001**	**Ambient Air Quality Criteria**	**672%**
1,3-Butadiene	60435	24 hours	2011-2014	0.10	90th Percentile	10	Ambient Air Quality Criteria	1%
1,3-Butadiene	60435	Annual	2011-2014	0.06	Mean	2	Ambient Air Quality Criteria	3%
Formaldehyde	60439	24 hours	2014-2017	3.16	90th Percentile	65	Ambient Air Quality Criteria	5%

Notes: (1) Exceedances of the Ambient Air Quality Criteria and Canadian Ambient Air Quality Standards are shown in red.

(2) Concentrations of sulphur dioxide (SO2) are measured on an hourly basis, background concentrations for the 10-minute averaging period have been converted using the Ministry of the Environment, Conservation and Parks' conversion factor where $C_{10min.} = C_{1hr} \times (60 \text{ min.}/10 \text{ min.})^{0.28}$.

(3) PM_{10} was not included in National Air Pollution Surveillance air quality monitoring station measurements, and therefore was estimated using PM2.5 measurements, assuming a ratio of 1 µg/m3 PM10 per 0.54 µg/m3 of PM2.5 as per Lall et al. publication in Atmospheric Environment, Estimation of historical annual $PM_{2.5}$ exposures for health effects assessment (Lall et al., 2004).

(4) Concentrations of acetaldehyde are measured on a 24 hour basis, background concentrations for the 30-minute averaging period have been converted using the Ministry of the Environment, Conservation and Parks' conversion factor where $C_{0.5hr} = C_{24hr} \times (24hr/0.5hr)^{0.28}$.

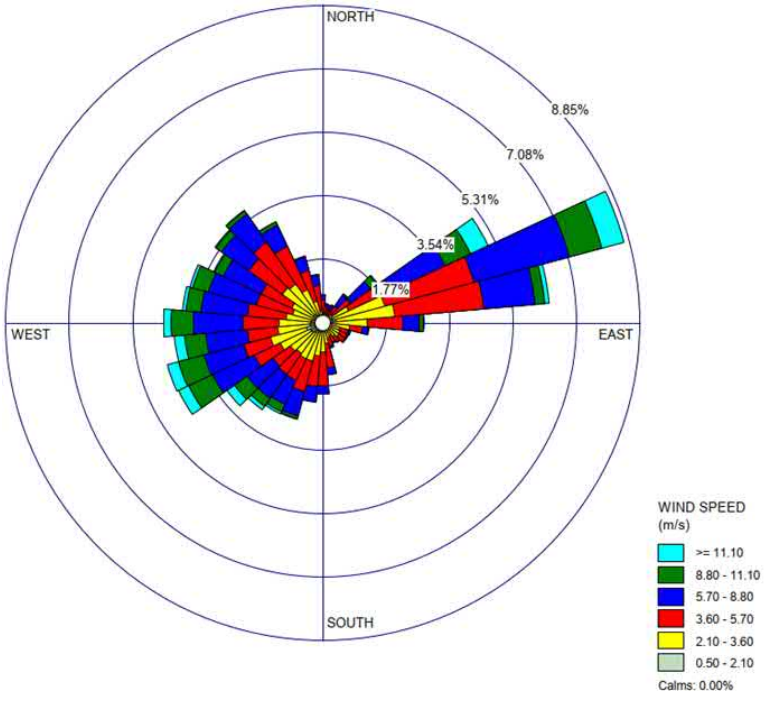
(5) Concentrations of acrolein are measured on a 24 hour basis, background concentrations for the hourly averaging period have been converted using the Ministry of the Environment, Conservation and Parks' conversion factor where $C_{1hr} = C_{24hr} \times (1hr/24hr)^{0.28}$.

5.4.2 Meteorological Conditions

The local air quality is influenced by both ambient conditions and contributions from traffic and construction activities and is affected by the local and regional meteorological conditions. Predominant wind speeds and wind directions within the East Harbour Station Air Quality Study Area will determine the likely areas of most common impacts, and the potential areas of greatest impact. High impact conditions from construction and traffic emissions are created from low speed surface air movement towards a nearby receptor. High impact conditions may also form as a result of high speed surface air movement which has a greater potential to disturb and disperse dust particles from unpaved surfaces, stockpiles, and material handling. Local surface station meteorological data was used to anticipate areas of high probability impact downwind from predominant wind directions.

The closest representative meteorological station for the East Harbour Station Air Quality Study Area was identified as the Toronto City Centre station located on Toronto Island (Station ID 71265). This station captures the meteorological effects from Lake Ontario which impact the air quality conditions of the East Harbour Station Air Quality Study Area. The wind rose for the five-year meteorological period (2015 to 2019) showing the wind direction and wind speed is presented in **Figure 5-12**. The wind rose shows that the predominant wind direction is from the northeast towards the southwest. Secondary predominant winds blow from the west, northwest and southwest.

Figure 5-12: Wind Rose Representative of Meteorological Conditions in the East Harbour Station Air Quality Study Area



5.4.3 Traffic Assessment

Major traffic sources within the East Harbour Station Air Quality Study Area include the following:

- Gardiner Expressway;
- Don Valley Parkway;
- Lakeshore Boulevard East;
- Eastern Avenue;
- Broadview Avenue;
- Queen Street East; and
- Bayview Avenue.

Table 5-6 shows the summary of annual averaged daily traffic for cars, trucks, and buses (where available) along the major roads within the East Harbour Station Air Quality Study Area. Raw turning movement counts of traffic representative of the East Harbour Station Air Quality Study Area are included in **Appendix A2**. The purpose of providing representative annual averaged daily traffic data is to demonstrate the relative contribution from each major roadway within the East Harbour Station Air Quality Study Area. This data presented in **Table 5-6** indicates that the Gardiner Expressway and Don Valley Parkway are likely to have the greatest impact on the existing local air quality.

Table 5-6: Representative Traffic Data Within the East Harbour Station Air Quality Study Area

Road Segment	2019 AADT: Cars	2019 AADT: Trucks	2019 AADT: Bus
Gardiner Expressway	107,512	6,862	--
Don Valley Parkway	88,935	5,677	--
Lakeshore Blvd. East	20,157	884	--
Eastern Avenue, west of Broadview Avenue	10,768	120	28
Eastern Avenue, east of Broadview Avenue	12,025	1,536	28
Broadview Avenue	7,432	120	--
Queen Street East	12,025	1,536	--
Bayview Avenue, south of Eastern Avenue	6,356	636	--

5.4.4 Representative Receptors

There is a diverse range of land uses within the East Harbour Station Air Quality Study Area. Residential apartment complexes, green space, and industrial space are located west of the Lower Don River. Industrial land uses are primarily east of the Lower Don River, south of Eastern Avenue, and a mix of residential and commercial land uses are located north of Eastern Avenue.

In total, one critical receptor was identified within the East Harbour Station Air Quality Study Area; a daycare facility. A total of 16 sensitive receptors were identified within the East Harbour Station Air Quality Study Area. All of the sensitive receptors are residences. Among these, two receptors, 495 Front Street East (SR2), and 77-79 East Don Roadway (SR6) are under development in the planning/construction stages.

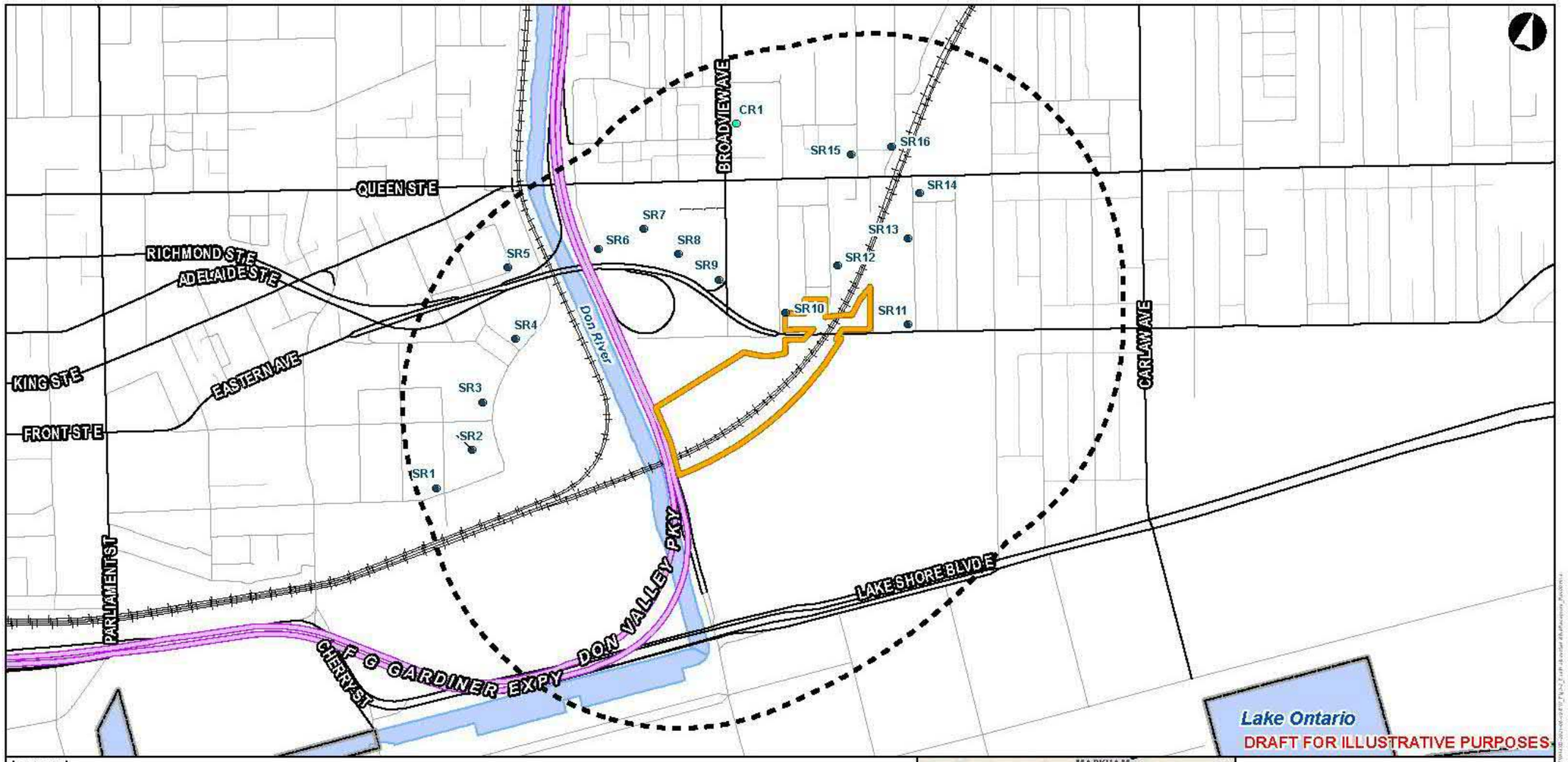
A list of critical and sensitive receptors within the East Harbour Station Air Quality Study Area is provided in **Table 5-7** and shown in **Figure 5-13**.

Critical and sensitive receptors are defined in **Appendix A2**.

Table 5-7: Critical and Sensitive Receptors Within the East Harbour Station Air Quality Study Area

Receptor ID	Receptor Type	Address	Description	UTM Easting (m)	UTM Northing (m)
CR1	Critical	131 Broadview Ave	Boulton Ave Childcare	633051.48	4835414.95
SR1	Sensitive	180-190 Mill Street	Apartment/condo building window/balcony second floor	632688.83	4834561.72
SR2	Sensitive	495 Front Street East	Apartment/condo building under development (future), window/balcony second floor	632734.60	4834654.71
SR3	Sensitive	500 Front Street East	Apartment/condo building, window/ balcony second floor	632726.75	4834750.79
SR4	Sensitive	170 Bayview Avenue	Apartment/condo building, window/ balcony second floor	632752.50	4834889.78
SR5	Sensitive	20 Trolley Crescent	Apartment/condo building, window/ balcony second floor	632695.58	4835019.00
SR6	Sensitive	77-79 East Don Roadway	Apartment/condo building under development (future), window/balcony second floor	632856.98	4835107.70
SR7	Sensitive	15 Baseball Place	Apartment/condo building, window/ balcony second floor	632925.27	4835157.56
SR8	Sensitive	130 Eastern Avenue	Apartment/condo building, window/balcony second floor	632984.98	4835118.88
SR9	Sensitive	68 Broadview Avenue	Apartment/condo building, window/balcony second floor	633102.00	4835118.57
SR10	Sensitive	9 Lewis Street	Semi-detached housing, window first floor	633248.92	4835094.11
SR11	Sensitive	2 McGee Street	Semi-detached housing, window first floor	633486.45	4835143.07
SR12	Sensitive	33 Saulter Street	Semi-detached housing, window first floor	633318.86	4835213.05
SR13	Sensitive	66 McGee Street	Semi-detached housing, window first floor	633435.48	4835306.25
SR14	Sensitive	89 McGee Street	Semi-detached housing, window first floor	633431.47	4835397.80
SR15	Sensitive	8 Boulton Avenue	Semi-detached housing, window first floor	633280.88	4835432.64
SR16	Sensitive	12 Degrassi Street	Semi-detached housing, window first floor	633350.98	4835469.16

Figure 5-13: Sensitive and Critical Receptors Within the East Harbour Station Air Quality Study Area



5.5 Noise and Vibration

5.5.1 Noise

Baseline noise measurements were conducted as part of the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) to characterize the existing noise levels throughout the Ontario Line Study Area. **Table 5-8** presents the baseline noise measurements relevant to the East Harbour Station early works. The monitoring locations are shown in **Figure 5-14**.

Note that the Wardell Street monitoring location is conservatively representative of the area surrounding Lewis Street, June Callwood Way, and Saulter Street – residential area north-east of the early works location.

5.5.2 Vibration

Baseline vibration measurements were not required, as the construction vibration assessment in this Report uses absolute limits that do not change based upon the existing vibration levels.

Table 5-8: Relevant Baseline Noise Measurements for the East Harbour Station Noise and Vibration Study Area

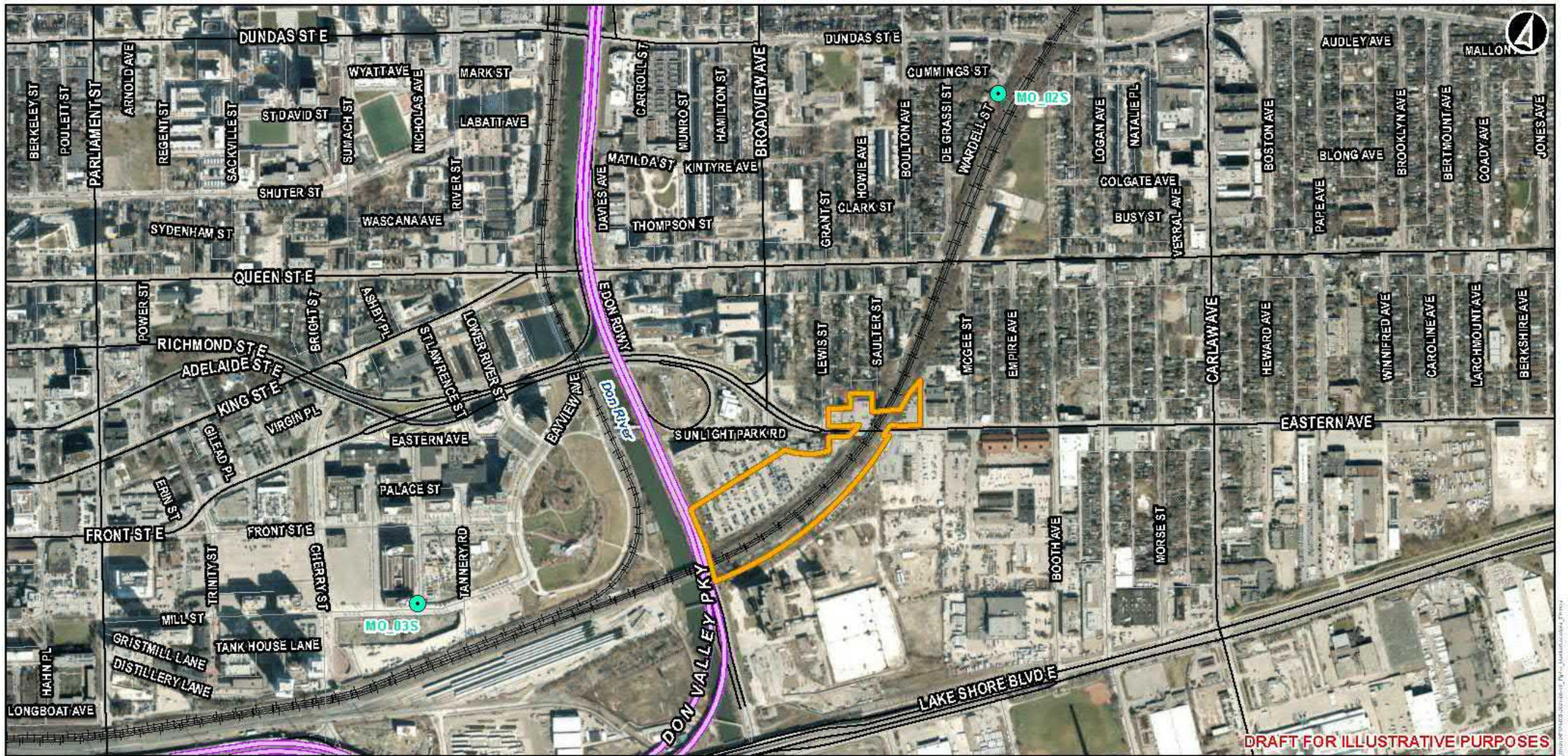
Monitoring Location	Associated Study Area	Daytime (07:00-19:00) Average $L_{eq, 1hr}$ (dBA)	Daytime (07:00-19:00) Min $L_{eq, 1hr}$ (dBA)	Daytime (07:00-19:00) Max $L_{eq, 1hr}$ (dBA)	Evening (19:00-23:00) Average $L_{eq, 1hr}$ (dBA)	Evening (19:00-23:00) Min $L_{eq, 1hr}$ (dBA)	Evening (19:00-23:00) Max $L_{eq, 1hr}$ (dBA)	Night (23:00-07:00) Average $L_{eq, 1hr}$ (dBA)	Night (23:00-07:00) Min $L_{eq, 1hr}$ (dBA)	Night (23:00-07:00) Max $L_{eq, 1hr}$ (dBA)
MO_02S Wardell Street	East Harbour Station (east)	64	61	66	62	59	63	52	43	63
MO_03S Mill Street	East Harbour Station (west)	64	63	65	64	65	63	58	50	66

Note: 1.Leq is the value of a constant sound pressure level which would result in the same total sound energy as the measured time-varying sound pressure level over equivalent time duration. The Leq,1hr, for example, describes the equivalent continuous sound level over a 1-hour period.

dBA represents A-weighted decibels. The A-weighting Network is a frequency weighting network intended to represent the variation in the ear's ability to hear different frequencies. Overall sound levels calculated or measured using the A-weighting network are indicated by dBA rather than dB.

2.MO_02S Wardell Street monitoring location was included to represent the side streets (Lewis Street, June Callwood Way, and Saulter Street) east of the East Harbour Station Early Works Project Footprint.

Figure 5-14: Noise Monitoring Locations Within the East Harbour Station Noise and Vibration Study Area



Legend

- Noise Measurement Location
- East Harbour Station Early Works Project Footprint *
- Freeway
- Major Road
- Local Road
- Service Road
- Alleyway
- Existing Rail

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Noise Monitoring Locations Within the East Harbour Station Noise and Vibration Study Area

0 0.275 0.55
Kilometers
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains information licensed under the Open Government Licence Ontario, Ministry of Energy, Northern Development and Mines, City of Toronto and Metrolinx. Keymap provided by ESRI.

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Figure 5-14

5.6 Socio-Economic and Land Use Characteristics

5.6.1 Physical Neighbourhood Composition

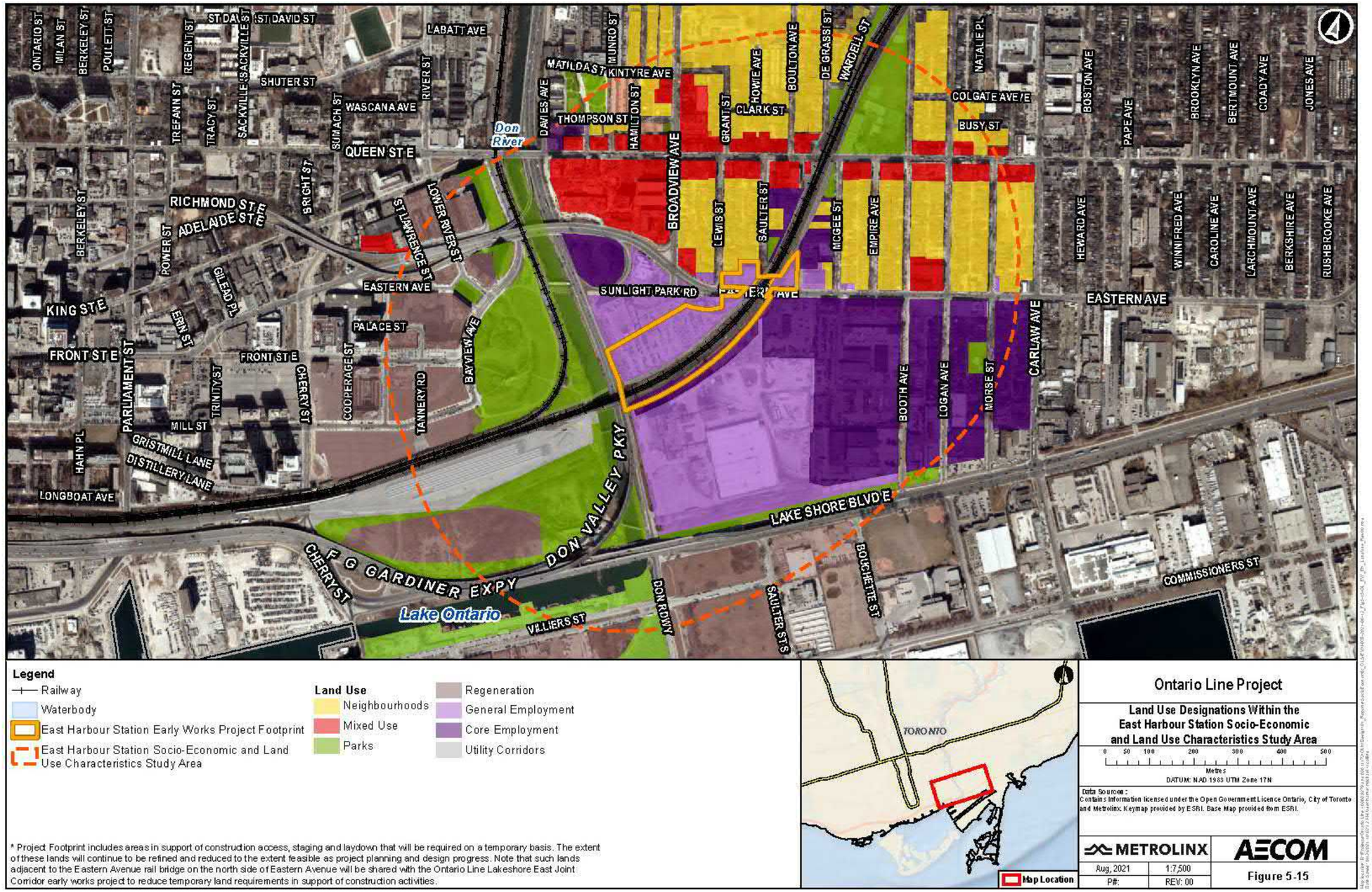
5.6.1.1 Land Use and Built Form Patterns

The lands within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area are designated as Employment Areas, Parks, Neighbourhoods and Mixed Use Areas, with pockets of Apartment Neighbourhoods, Open Space and Regeneration Areas in the Official Plan (see **Figure 5-15**). General and Core Employment Areas are places for business and economic activities. A wide variety of uses are permitted in both General and Core Employment Areas. including all types of manufacturing, processing, warehousing, wholesaling, distribution, storage, transportation facilities, vehicle and repair services, offices, research and development facilities, utilities, and waste management systems. Parks are elements of the City's green open space network. Development is generally prohibited in these areas except for recreational and cultural facilities, conservation projects, cemetery facilities, public transit and essential public works and some utilities (City of Toronto, 2019). Neighbourhoods are intended to support and maintain areas with low-scale (one to four storeys) residential uses. Neighbourhoods may also contain other uses such as parks, local institutions, cultural and recreational facilities and small-scale retail, service and office use (City of Toronto, 2019). Mixed Use Areas are intended to have a broad range of commercial, residential and institutional uses, in single use or mixed-use buildings, as well as parks and open spaces, and utilities (City of Toronto, 2019). Development in Mixed-Use Areas should create a high-quality balance of uses that reduces automobile dependency; provide for new jobs and homes on underutilized lands; provide an attractive, comfortable and safe pedestrian environment and access to local amenities; and take advantage of nearby transit (City of Toronto, 2019).

Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area, there are multiple low-density industrial properties to the east between Eastern Avenue and Lakeshore Boulevard, Mixed Use Areas to the east of the Don Valley Parkway along Queen Street East, as well as Neighbourhoods to the north of Eastern Avenue, between Carlaw Avenue and the Don Valley Parkway. Parks and Open Space Areas make up the properties along the Don Valley Parkway to just south of Lake Shore Boulevard East as well on the west side of the Lower Don River.

The East Harbour Station Early Works Project Footprint overlaps with two low density buildings along Eastern Avenue as well as a commercial building and associated parking lot along Sunlight Park Road.

Figure 5-15: Land Use Designations Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area[13]



13. Source of land use designations: City of Toronto, 2019. Official Plan - Map 18 Land Use Plan. Available: http://www.toronto.ca/wp-content/uploads/2017/11/97fe-cp-official-plan-Map-18_LandUse_AODA.pdf

The East Harbour Station Socio-Economic and Land Use Characteristics Study Area is within the King-Parliament Secondary Plan, Central Waterfront Secondary Plan, Downtown Plan, and Unilever Precinct Secondary Plan development policy areas.

5.6.1.1.1 Unilever Precinct Secondary Plan

The Unilever Precinct Secondary Plan area is bounded by the Don River in the west, Lake Shore Boulevard East in the south, Booth Avenue in the east and Eastern Avenue and the Lakeshore East rail corridor in the north. (City of Toronto, 2018b).

The main objectives of the Unilever Precinct Secondary Plan include:

- Offer an opportunity to contribute to the City's long-term economic growth and cultural objectives;
- Create an attractive place for businesses to invest and create jobs; and
- Provide direct access to the City's Downtown and Central Waterfront, while enhancing the vitality and vibrancy of Toronto.

This plan includes policies for minimum sidewalk widths, public realm improvements, connections to higher order transit, and complete streets.

5.6.1.1.2 Central Waterfront Secondary Plan

The Central Waterfront Secondary Plan, the guiding policy document for the ongoing revitalization of Toronto's waterfront, has two precincts undergoing zoning changes: East Bayfront and North Keating (City of Toronto, 2006). These precincts extend east from the foot of Lower Jarvis Street to Cherry Street and south from approximately Lakeshore Boulevard East to Lake Ontario. They contain private and public lands. The City and Waterfront Toronto have been working closely with private landowners/developers within the two precincts.

The Central Waterfront Secondary Plan includes policies that promote waterfront renewal. The development of this area focuses mainly on lands categorized as commercial, residential, industrial, park and open space, and institutional uses (City of Toronto, 2006). The four core principles of the Central Waterfront Secondary Plan include:

- Removing Barriers/Making Connections;
- Building a Network of Spectacular Waterfront Parks and Public Spaces;
- Promoting a Clean and Green Environment; and
- Creating Dynamic and Diverse New Communities.

The Central Waterfront Secondary Plan was adopted by City Council in 2003 as Official Plan Amendment 257 and has since been under appeal.

5.6.1.1.3 King-Parliament Secondary Plan

The King-Parliament Secondary Plan area is roughly bounded by Queen Street East to the north, Jarvis, Sherbourne and Parliament Streets to the west, the Don River to the east and rail corridor to the south.

Some of the key Plan objectives include:

- New investment will be attracted to King-Parliament;
- King-Parliament is an area targeted for growth of a variety of land uses to complement existing built form character and scale of the area;
- King-Parliament's role as a major employment area will be promoted and enhanced by encouraging retention and expansion of commercial and light industrial activities;
- Creation of good quality working and living environment will be encouraged and the area's physical character will be retained and where possible enhanced;
- New development will contribute to the achievement of inviting, attractive, pleasant and safe streets and open spaces which meet high urban design standards; and
- Heritage buildings will be retained, restored and re-used.

5.6.1.1.4 Downtown Plan

The Downtown Plan area is roughly bounded by Dupont Street, Bloor Street, and the Don River Valley to the north, the Don River to the east, the Bathurst Street to the west and the Toronto waterfront to the south.

The main objectives of the Downtown Plan include:

- Create a diverse community with easy access to local amenities;
- Enhance the strong employment base, and make Downtown Toronto an economic driver for the City, Region, Province and Country;
- Access to a varied and extensive network of parks and public spaces;
- Conserve heritage buildings, and creating new buildings that are built and scaled to fit within their setting;

- Provision of a range of housing options, including shelters, affordable housing and program and facilities to support the vulnerable population;
- A reliable surface transit network and an expanded subway system;
- Reliable and cost-effective networks of water, wastewater and stormwater infrastructure; and
- Varied streetscapes featuring iconic architecture, layered on centuries of development, that promote public life.

5.6.1.2 Transit and Transportation Network

Refer to **Section 5.9** for a description of local environmental conditions related to transit and active transportation networks.

5.6.1.3 Public Realm Characteristics

Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area, the following notable public realm elements exist: the Riverside and Leslieville communities, Lower Don Trail, and Corktown Common.

As noted in **Section 2.2.2.2**, The City of Toronto initiated the Unilever Planning Framework to guide the transformation of the Unilever Precinct from former industrial lands to a thriving employment node supported by new transit, flood protection, open space, servicing and transportation infrastructure. The planned future development associated with the Unilever Precinct Plan Planning Framework (City of Toronto, 2018c) will include an all-season public realm network with plazas and parks, pedestrian pathways, public art, and bright lighting designed to create human-scaled spaces to support commercial density and animate the area beyond traditional office hours.

5.6.1.3.1 Riverside and Leslieville Communities

The public realm in this area is characterized as reminiscent of traditional urban retail main streets with a strong sense of place. The communities east of the Don River – Riverside and Leslieville – are known to Torontonians as towns within the city. (See **Image 1** and **Image 2**). The Leslieville community is located east of the Don River, bound by the Canadian National Railway tracks in the north, Eastern Avenue in the south, Carlaw Avenue in the west, and Coxwell Avenue in the east (Leslieville, n.d.). The Riverside community is located directly west of Leslieville, from Carlaw Avenue to the Lower Don River (Leslieville, n.d.).

Image 1: Queen Street East Streetscape, looking West from Lewis Street [14]

Image 2: Row houses in Riverdale Neighbourhood, Lewis Street looking North[15]

14. Image source: AECOM, 2021
15. Image source: AECOM, 2021

5.6.1.3.2 Lower Don Trail

The Lower Don Trail (see **Image 3** below) is an important pedestrian and cyclist path within the city that rungs alongside the Lower Don River, connecting Toronto's urban neighbourhoods and their communities to valuable greenspace. A portion of the Lower Don Trail is located within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area and connects to Corktown Common and Martin Goodman Trail.

Image 3: Lower Don Trail under the Don Valley Parkway ramps[16]

5.6.1.3.3 Corktown Common

Corktown Common is an 18-acre park located at Lower River Street and Bayview Avenue (see **Image 4** below). Corktown Common was built on remediated industrial lands in 2013 and provides a community meeting space featuring playground areas, a splash pad, and specialized organic landscape. Corktown Common connects to the Lower Don Trail through the Bala Underpass (see **Image 5** below).

Corktown Common also features the "No Shoes" sculpture (see **Image 6** below) by one of the City of Toronto's most significant sculptors, Mark di Suvero (City of Toronto, n.d.c). The sculpture was originally created in 1967 and restored and installed in Corktown Common in June 2013 (City of Toronto, n.d.c).

16. Image Source: Sumi, 2020. Pandemic walk: Lower Don River. NOW Toronto. Available: https://nowtoronto.com/lifestyle/health/pandemic-walk-lower-don-river

Image 4: View of Corktown Common within Toronto's downtown[17]

Image 5: Bala Underpass connection between Corktown Common and the Lower Don River Trail[18]

17. Image source: Blanthorn, 2016. Parks and Regeneration: Corktown Common Park and Pavilion, West Don Lands, Toronto, Ontario. Canadian Architect. Available: https://www.canadianarchitect.com/parks-and-regeneration/
18. Image source: Mitanis, 2015. Bala Underpass Mural Adds Colour to Lower Don River Trail. Urban Toronto. Available: https://urbantoronto.ca/news/2015/10/bala-underpass-mural-adds-colour-lower-don-river-trail

Image 6: "No Shoes" Sculpture by Mark di Suvero in Corktown Common[19]

5.6.2 Community Amenities

5.6.2.1 Existing Services and Facilities

5.6.2.1.1 Institutional Uses

According to relevant datasets from the City of Toronto's Open Data Portal (City of Toronto, 2021a), there are three institutional uses located within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area. The amenities are listed in **Table 5-9** and shown in **Figure 5-16**.

Table 5-9: Institutional Uses Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area

Map ID	Feature Name	Address
16	Toronto Public Library – Queen/Saulter Branch	765 Queen Street East
21	Queen Alexandra Middle School	181 Broadview Avenue
22	Debre Selam St. Michael Church	125 Broadview Avenue

19. Image source: City of Toronto, n.d. Public Art. Available: https://waterfrontoronto.ca/nbe/wcm/connect/waterfront/waterfront_content_library/waterfront+home/our+vision/design+excellence/public+art

5.6.2.1.2 Recreational Uses, Parks and Open Space

According to relevant datasets from the City of Toronto's Open Data Portal (City of Toronto, 2021a), there are 19 recreational uses, parks or open spaces within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area. These amenities are listed in **Table 5-10** and shown in **Figure 5-16**.

Table 5-10: Recreational Uses, Parks and Open Spaces Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area

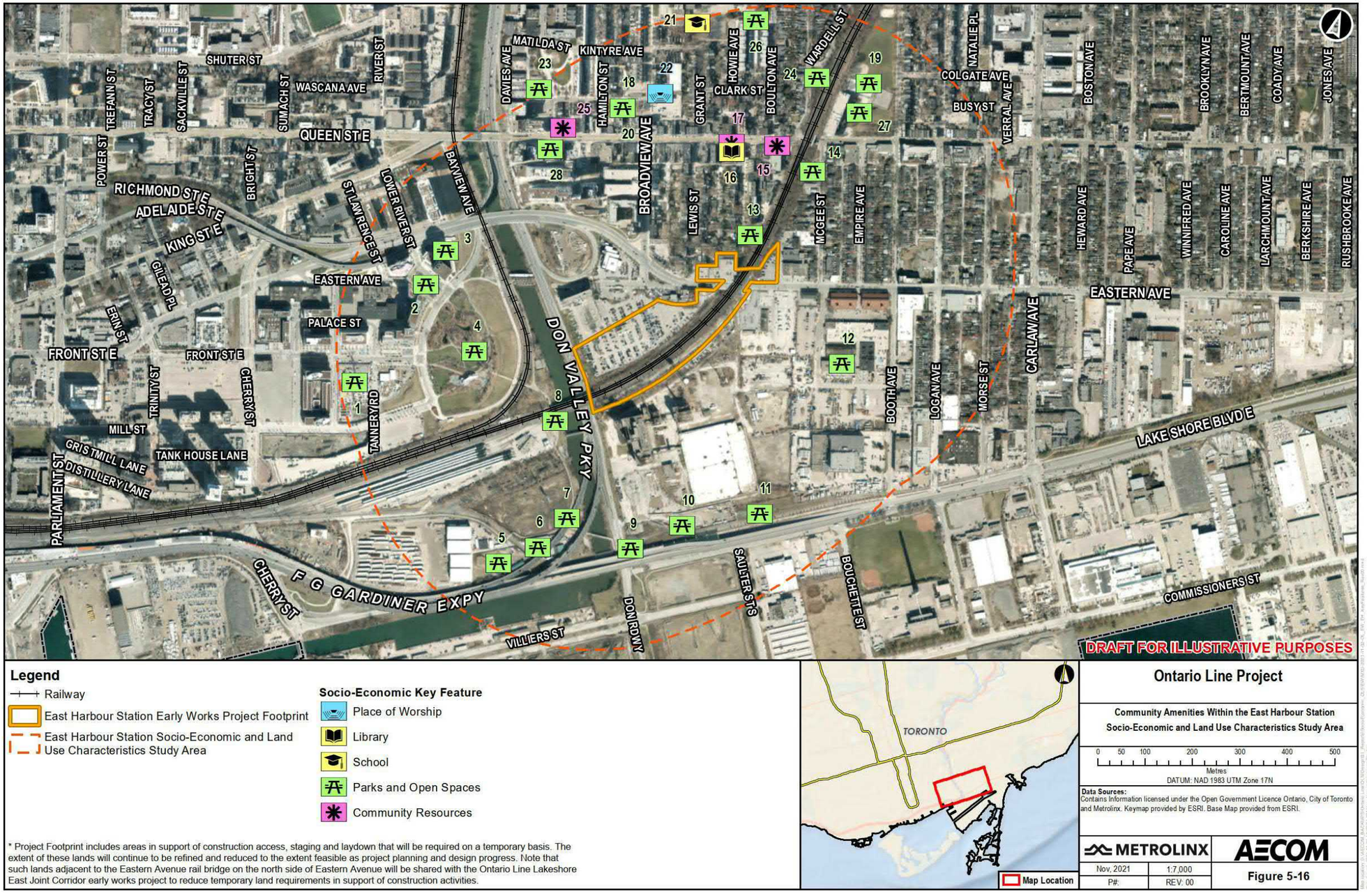
Map ID	Feature Name	Address
1	Canary Commons	475 Front Street East
2	Lawren Harris Square	No address
3	Underpass Park	29 Lower River Street
4	Corktown Common	155 Bayview Avenue
5	Open Space (Lower Don Recreation Trail)	1 Don Valley Parkway
6	Open Space (Lower Don Recreation Trail)	1 Don Valley Parkway
7	Toronto and Region Conservation Authority Lands	No address
8	Open Space (Lower Don Recreation Trail)	1 Don Valley Parkway
9	Open Space (Lower Don River Trail)	No address
10	Open Space	No address
11	Open Space (Lower Don River Trail)	No address
12	Booth Yard	No address
13	Saulter Street Parkette	25 Saulter Street
14	McCleary Playground	75 McGee Street
18	Thompson Street Parkette	120 Broadview Avenue
19	Jimmie Simpson Park	872 Queen Street East
20	Thompson Street Parkette	120 Broadview Avenue
23	Joel Weeks Park	10 Thompson Street
24	Bruce Mackey Park	55 Wardell Street
27	Jimmy Simpson Recreation Centre	870 Queen Street East
28	Riverside Common Park	658 Queen Street East

Note: Data retrieved from City of Toronto Open Data Portal 2021: Open Data Portal. Accessed in July 2021 from: https://open.toronto.ca/

5.6.2.1.3 Community Groups and Resources

According to relevant datasets from the City of Toronto's Open Data Portal (City of Toronto, 2021a), there are three community groups and resources within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area. These amenities are listed in **Table 5-11** and shown in **Figure 5-16**.

Figure 5-16: Community Amenities Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area[20]



20. Source of community amenities: City of Toronto, 2021a: Open Data Portal. Accessed in January 2020 from: https://open.toronto.ca/

Table 5-11: Community Groups and Resources Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area

Map ID	Feature Name	Address
15	Mustard Seed	791 Queen Street East
17	Ralph Thornton Community Centre	765 Queen Street East
25	WoodGreen Community Services	650 Queen Street East

Note: Data retrieved from City of Toronto Open Data Portal 2021: Open Data Portal. Accessed in July 2021 from: https://open.toronto.ca/

5.6.2.2 Planned Services and Facilities

Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area there are plans for new or expanded public spaces, community service facilities and parks and open spaces as part of the Unilever Planning Framework, Don Mouth Naturalization and Port Lands Flood Protection Project, the Lower Don River West Remedial Flood Protection Project, Improving the Esplanade and Mill Street Project, and the Broadview and Eastern Flood Protection Municipal Class Environmental Assessment; and improvements to existing public spaces through the Lower Don Trail Master Plan and Lower Don Trail Phase 2 Improvements (City of Toronto, et al., 2021). Refer to **Section 2.2.3** for further details on applicable environmental assessments and planning studies within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area.

5.6.3 Neighbourhood Demographics

The East Harbour Station Early Works Project Footprint is located within Ward 14 – Toronto-Danforth in the City of Toronto and the South Riverdale Neighbourhood Profile. See **Table 5-12** for an overview of the population, immigration rate, and household size and income information.

The South Riverdale Neighbourhood, according to 2016 Census data (Statistics Canada, 2018), has a population density of 3,186 people per square kilometre. 66% of the population in this neighbourhood is working age (between 25 and 64), which is higher than the City overall (57% for this age group). Based on the Neighbourhood Profile compared with the City as a whole, the South Riverdale Neighbourhood has a higher median household income than the average for the rest of the City.

Table 5-12: South Riverdale Neighbourhood Profiles

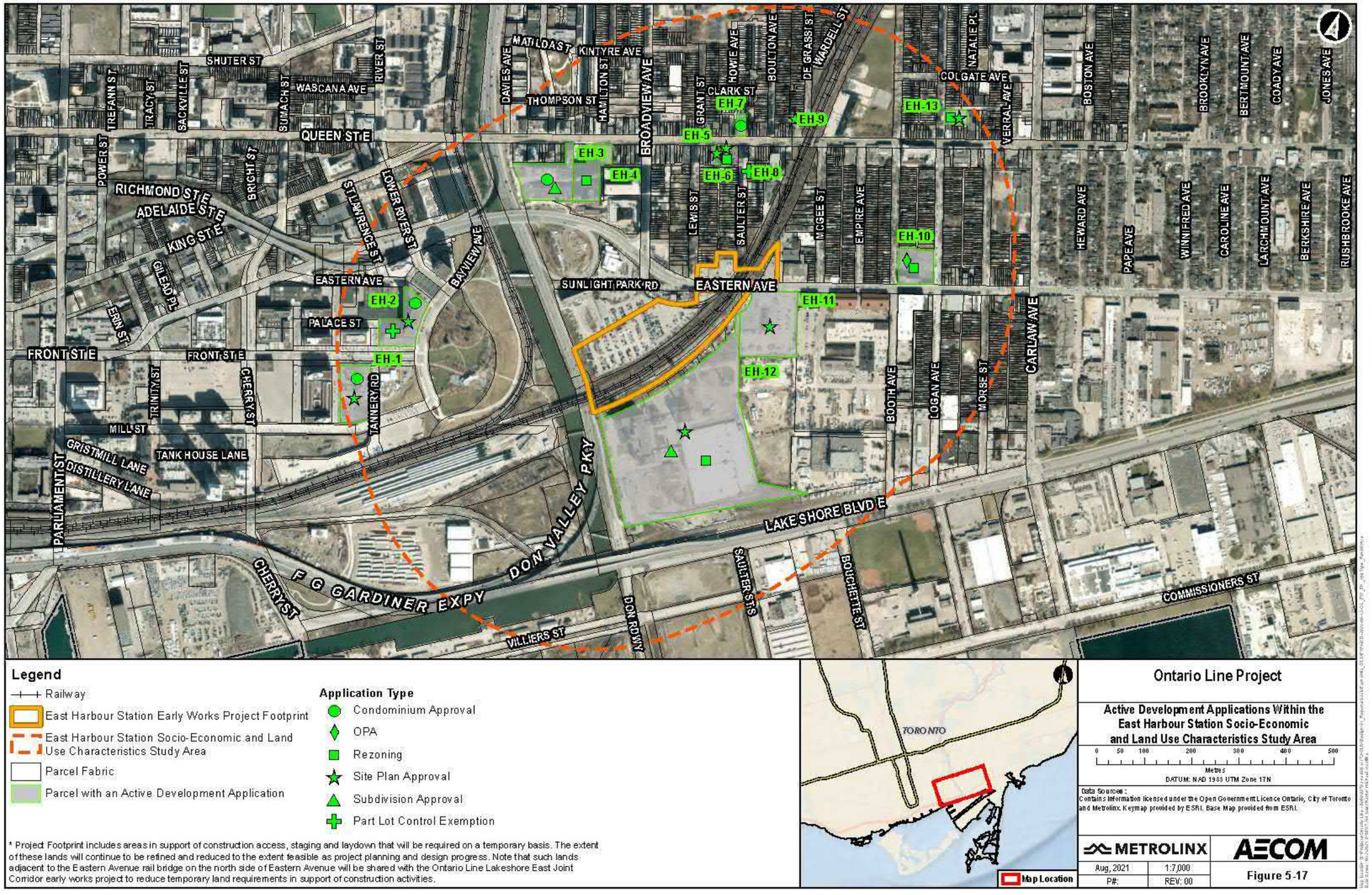
Profiles	South Riverdale Neighbourhood	City of Toronto
Population Change 2011 to 2016	+8.7%	+4.5%
Population Density (people/square kilometre)	3, 186	4,334
Children (Age 0-14)	14.4%	14.6%
Youth (Age 15-24)	8.9%	12.5%
Working (Age 25-64)	66.0%	57.3%
Seniors (Age 65+)	10.7%	15.6%
Immigrants	30.3%	51.2%
Household Size	2.24	2.42
Median Household Income	$76,172	$65,829

Note: Data retrieved from City of Toronto, 2018c: Statistics Canada, 2016 Census of Population. Available: https://www.toronto.ca/city-government/data-research-maps/neighbourhoods-communities/neighbourhood-profiles/

5.6.4 Future Development

The City of Toronto's online database for Development Applications (City of Toronto, 2021b) was reviewed and it was found that there were 13 properties with active development applications within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area, as of July 7, 2021. These properties are mapped in **Figure 5-17**. See **Table 5-13** for the status of each application.

Figure 5-17: Active Development Applications Within the East Harbour Station Socio-Economic and Land Use Characteristics Study Area[21]



21. Source of active development applications: City of Toronto, 2021: Development Applications. Available: http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init

Table 5-13: Active Development Applications as of July 7, 2021 for the East Harbour Station Socio-Economic and Land Use Characteristics Study Area

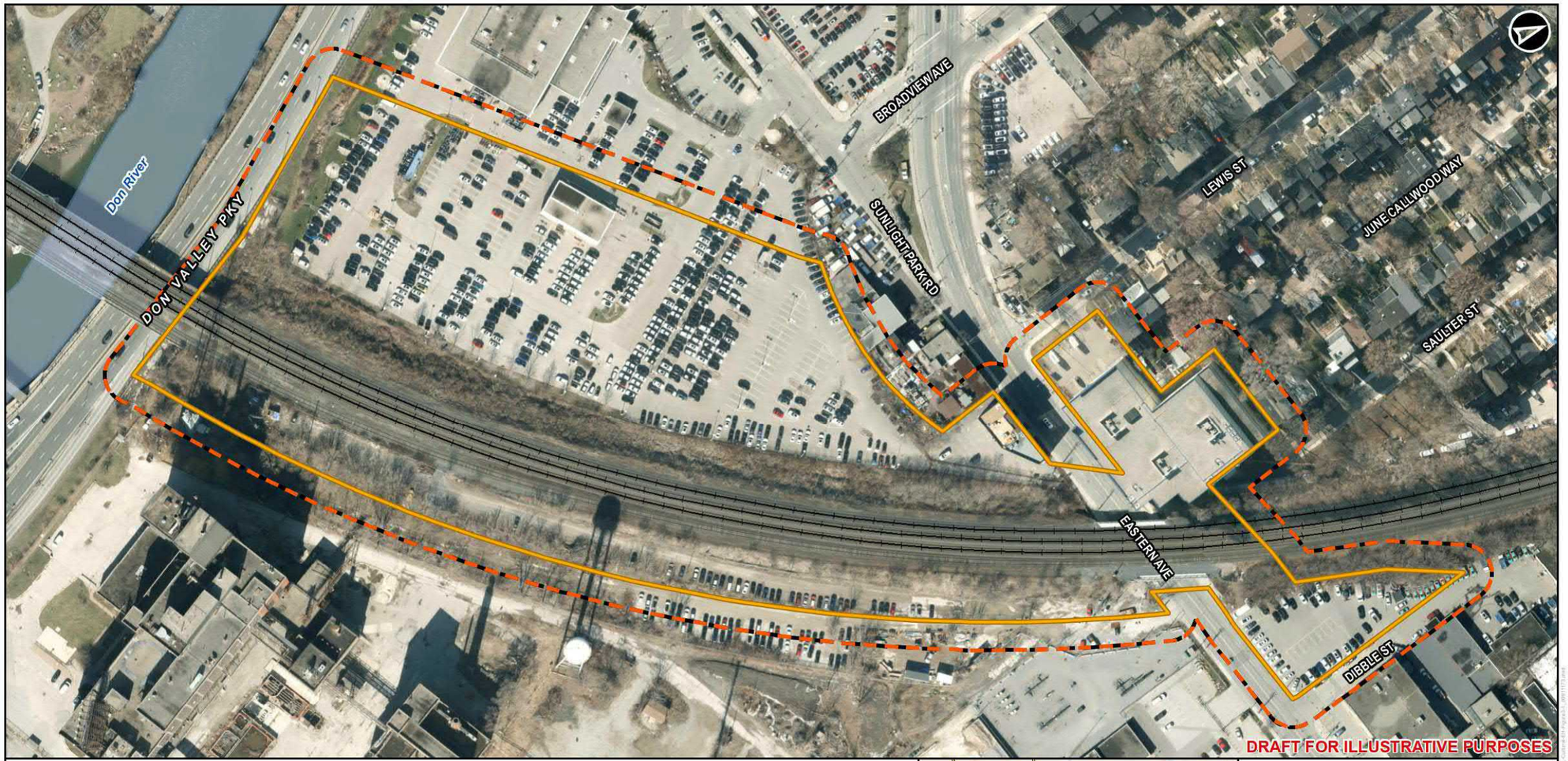
Map ID #	Address and File Number	Application Type	Application Details	Status
EH-1	475 Front Street East 19 216972 STE 13 CD 19 215798 STE 13 SA 18 251580 STE 28 SA 17 270052 STE 28 SA	■ Condominium Approval ■ Site Plan Approval ■ Site Plan Approval ■ Site Plan Approval	■ Draft Plan of Condominium for a recently constructed 12-storey mixed-use building containing 187 residential units	■ Draft Plan Approved Jan 26, 2020 ■ Under Review ■ Notice of Approval Conditions Issued Oct 31, 2019 ■ Final Approval Completed Sep 19, 2019
EH-2	460 Front Street East 20 112399 STE 13 PL 19 216972 STE 13 CD 19 215798 STE 13 SA 18 251580 STE 28 SA	■ Part Lot Control Exemption ■ Condominium Approval ■ Site Plan Approval ■ Site Plan Approval	■ Draft Plan of Condominium for a recently constructed 12-storey mixed-use building containing 187 residential units	■ Approved Feb 5, 2020 ■ Draft Plan Approved Sept 6, 2019 ■ Final Approval Completed Sept 4, 2019 ■ Notice of Approval Conditions Issued Nov 2, 2018
EH-3	79 East Don Roadway 19 239061 STE 14 CD 19 104850 STE 14 CD 16 106006 STE 30 SA	■ Condominium Approval ■ Condominium Approval ■ Site Plan Approval	■ Proposal for site plan approval related to 5 new mixed use buildings which are connected via 4 levels of below grade parking, fronting Queen St E is a 6 storey mixed use building containing commercial space, on the east side of the laneway are 14 and 12 storey mixed use buildings, fronting onto the east Don Roadway are 14 and 20 storey mixed use buildings, each building will contain residential	■ Under Review ■ Final Approval Completed Jan 15, 2019 ■ Final Approval Completed Jan 19, 2016
EH-4	677 Queen Street East 14 176212 STE OZ	■ Rezoning	■ Zoning By-law Amendment to permit a mixed-use development with a 4 and 5 storey podium and a height that ranges from 7 storeys along Queen St E to 13 storeys mid-block. A total of 216 residential units are proposed. The existing automotive building would be demolished.	■ Under Review
EH-5	751 Queen Street East 20 233021 STE 14 SA	■ Site Plan Approval	■ Proposal for a 5-storey mixed-use building and a non-residential. A total of 9 residential dwelling units are proposed.	■ Under Review
EH-6	761 Queen Street East 14 223583 STE 30 OZ 14 223587 STE 30 SA	■ Site Plan Approval ■ Site Plan Approval	■ 6-storey (19.5 metre) mixed-use building containing commercial uses on the ground floor and 29 residential units above.	■ Under Review ■ Under Review
EH-7	772 Queen Street East 19 151768 STE 14 CD	■ Condominium Approval	■ Draft Plan of Condominium which will be comprised of 11 residential units, there is a commercial component of the site which will be a part of a future development application submission.	■ Under Review
EH-8	73 Saulter Street 19 237491 STE 14 PL 15 115050 STE 30 CD	■ Part Lot Control Exemption ■ Condominium Approval	■ Site plan approval to construct five single family dwellings (townhouse) located on the lands of 71-73 Saulter Street.	■ Approved Oct 17, 2019 ■ Draft Plan Approved Feb 12, 2015
EH-9	18 De Grassi Street 17 279888 STE 30 SA	■ Site Plan Approval	■ Site Plan Control application for a proposed 5-storey rental apartment building containing 17 units	■ Under Review
EH-10	462 Eastern Avenue 12 148473 STE 30 OZ	■ OPA & Rezoning	■ 9-storey mixed use building with 308 units proposed	■ Under Review
EH-11	405 Eastern Avenue 19 262835 STE 14 SA	■ Site Plan Approval	■ Proposal to demolish the existing Enbridge operations building and construct a new three-storey office space facility fronting onto Eastern Avenue.	■ Under Review
EH-12	21 Don Valley Parkway 21 172637 STE 14 OZ 18 270302 STE 14 SA 16 270078 STE 30 SB	■ Rezoning ■ Site Plan Approval ■ Subdivision Approval	■ Site Plan Approval Application for the redevelopment and adaptive re-use of the Soap Factory Building at East Harbour. The Soap Factory Building is the first phase of a comprehensive, master planned commercial redevelopment in the Unilever Precinct, encompassing a broad variety of non-residential uses.	■ Under Review ■ Under Review ■ Under Review
EH-13	263 Logan Avenue 18 104539 STE 30 OZ 18 104543 STE 30 SA	■ Rezoning ■ Site Plan Approval	■ Zoning By-law amendment to allow the redevelopment of a parking lot with a 6-unit townhouse block (1828.0 sq. m.). The future townhouse lots will be parcels of tied land to a common element drive aisle.	■ Council Approved July 18, 2019 ■ Under Review

Note: Data retrieved from City of Toronto Development Applications, 2021: Development Applications. Available: http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init

5.7 Built Heritage Resources and Cultural Heritage Landscapes

Based on data collection, including a review of the Ontario Line Cultural Heritage Report (AECOM, 2020b), the 40-year threshold, the Criteria Checklist (Ministry of Heritage, Sport, Tourism and Culture Industries, 2016), and the field review conducted for early works by a qualified cultural heritage professional on June 24, 2021 no known, previously identified or potential built heritage resources/cultural heritage landscapes were identified in the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area, as shown on **Figure 5-18** below.

Figure 5-18: Known, Previously Identified and Potential Built Heritage Resources/Cultural Heritage Landscapes Within the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area



Legend

- Existing GO Track
- Watercourse
- Waterbody
- East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area
- East Harbour Station Early Works Project Footprint
- 11.1m Vibration Buffer

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Known, Previously Identified and Potential BHR/CHL Within the East Harbour Station Built Heritage Resources and Cultural Heritage Landscapes Study Area

0 50 100
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains Information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

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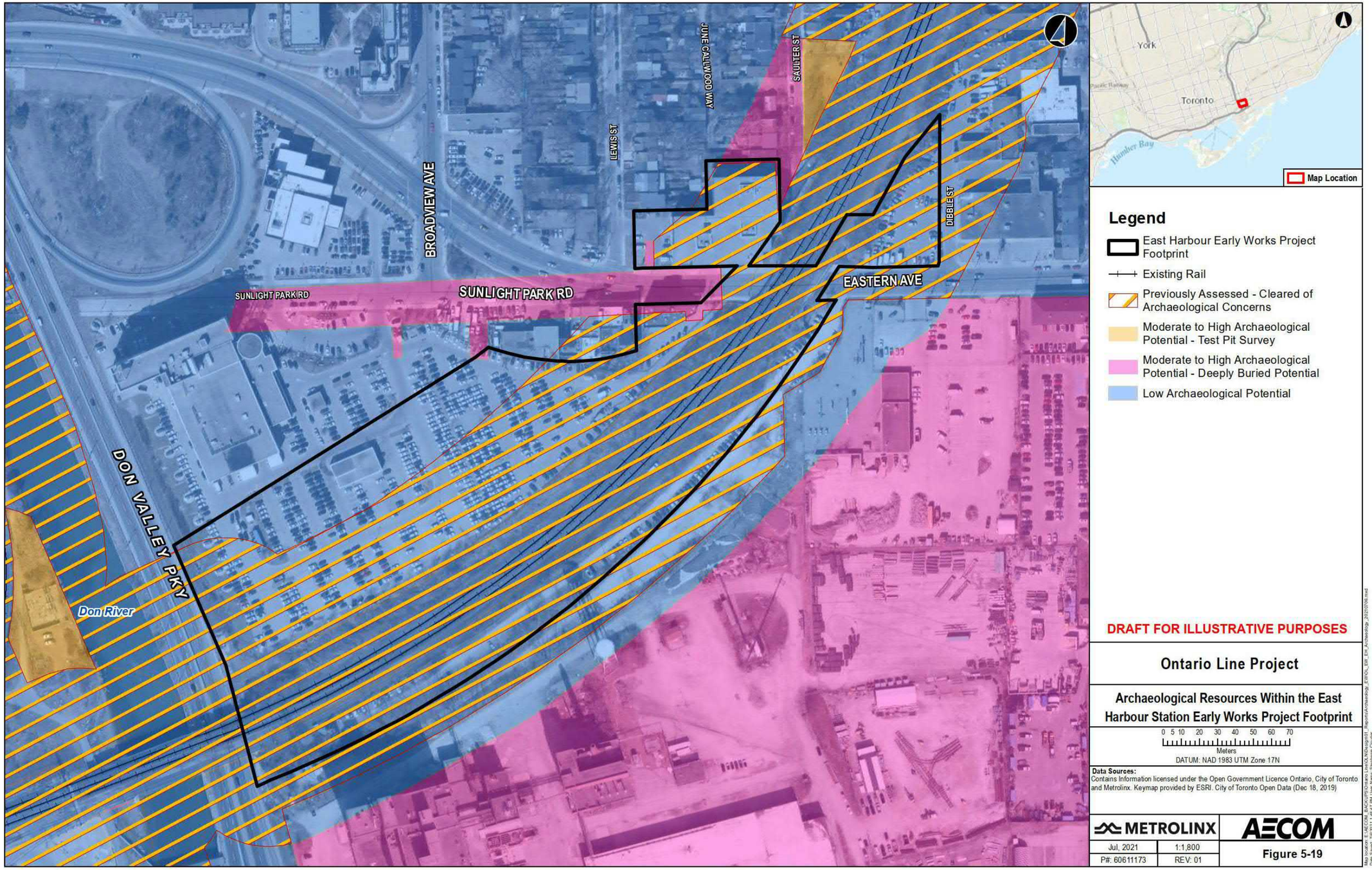
Figure 5-18

5.8 Archaeological Resources

As per the results of the Stage 1 archaeological assessment developed for the Project, the majority of the East Harbour Station Early Works Project Footprint has been cleared of archaeological concerns by previous archaeological assessments completed by multiple consultants, including AECOM (2016; 2020c; 2021) and ASI (2017). However, there are small areas retaining high to moderate archaeological potential within the East Harbour Station Early Works Project Footprint for the recovery of Indigenous artifacts and 19th century sites related to the City of Toronto expansion.

The archaeological resources present within the East Harbour Station Early Works Project Footprint are shown in **Figure 5-19**.

Figure 5-19: Archaeological Resources Within the East Harbour Station Early Works Project Footprint



5.9 Traffic and Transportation

5.9.1 Road Network and Intersection Operations

5.9.1.1 Road Network

An overview of the roads located within the East Harbour Station Traffic and Transportation Study Area is described below. All the described roads are under the jurisdiction of the City of Toronto and are classified according to the City of Toronto's Road Classification System Update (City of Toronto, 2018). As part of the City of Toronto's Vision Zero strategy, the City has been implementing speed reductions for several streets within the City (City of Toronto, 2020). Posted speed reductions that have already been implemented on the roads located within the East Harbour Station Traffic and Transportation Study Area, if any, are reflected in the description below.

Eastern Avenue is a major east-west arterial road with a four-lane cross-section. Within the East Harbour Station Traffic and Transportation Study Area, Eastern Avenue has a posted speed of 50 km/h west of Broadview Avenue which becomes 30 km/h immediately downstream. On-street parking is prohibited on both sides of the street.

Broadview Avenue is a minor north-south arterial road with a four-lane cross-section. It has a posted speed of 30 km/h between Sunlight Park Road and Eastern Avenue, and 40 km/h north of Eastern Avenue. On-street parking is prohibited south of Eastern Avenue and prohibited north of Eastern Avenue on the east side between 3 AM and 7 AM, except to permit holders, and in the afternoon peak period (4:00 PM to 6:00 PM). On the west side of the street north of Eastern Avenue, parking is prohibited between 3 AM and 7 AM, except to permit holders, and in the morning peak period (7:00 AM to 9:00 AM).

Lewis Street is a one-way local street with a two-lane cross-section. It has a posted speed of 30 km/h and on-street parking is permitted for a maximum of one hour on the east side of the road from 8:00 AM to 6:00 PM during the weekdays of the period extending from December 1st of one year to March 31st of the following year and from 8:00 AM to 6:00 PM from Monday to Saturday of the period extending from the first day to the fifteenth (15th) day of the remaining months of the year. On-street parking is shifted to the west side of the street during the period extending from the sixteenth (16th) day to the last day of each month from April 1st to November 30th.

Sunlight Park Road is an east-west local road with a two-lane cross-section. It has a posted speed of 30 km/h and on-street parking is permitted only on the south side of the road between the BMW dealership entrance and Broadview Avenue.

Dibble Street is a north-south local road with a two-lane cross-section. It provides access to businesses located immediately east of the rail bridge and north of Eastern

Avenue. Dibble Street has a posted speed of 30 kilometres per hour and on-street parking is permitted on both sides of the road.

5.9.1.2 Intersection Operations

The analysis findings on traffic operations at the intersection of Eastern Avenue and Broadview Avenue in the Existing Conditions (2020) are summarized in **Table 5-14**. The detailed Highway Capacity Manual (Transportation Research Board, 2000) reports from Synchro pertaining to the existing conditions analysis are presented in Appendix E of **Appendix A4**.

As shown in **Table 5-14**, the intersection of Eastern Avenue and Broadview Avenue operates within capacity at acceptable level of service ‘B’ in the AM peak hour and excellent level of service ‘A’ in the PM peak hour. In addition, all individual movements at the studied intersection operate at acceptable level of service ‘D’ or better.

5.9.2 Pedestrian Network and Operations

5.9.2.1 Pedestrian Network

Within the East Harbour Station Traffic and Transportation Study Area, pedestrians are accommodated through sidewalks that are present on the following streets:

- Eastern Avenue;
- Broadview Avenue;
- Lewis Street;
- Sunlight Park Road; and,
- Dibble Street

In addition, painted crosswalks are provided across all legs of the signalized intersection of Eastern Avenue and Broadview Avenue located within the East Harbour Station Traffic and Transportation Study Area. **Figure 5-20** illustrate the location and type of pedestrian facilities provided within the East Harbour Station Traffic and Transportation Study Area.

5.9.2.2 Pedestrian Operations

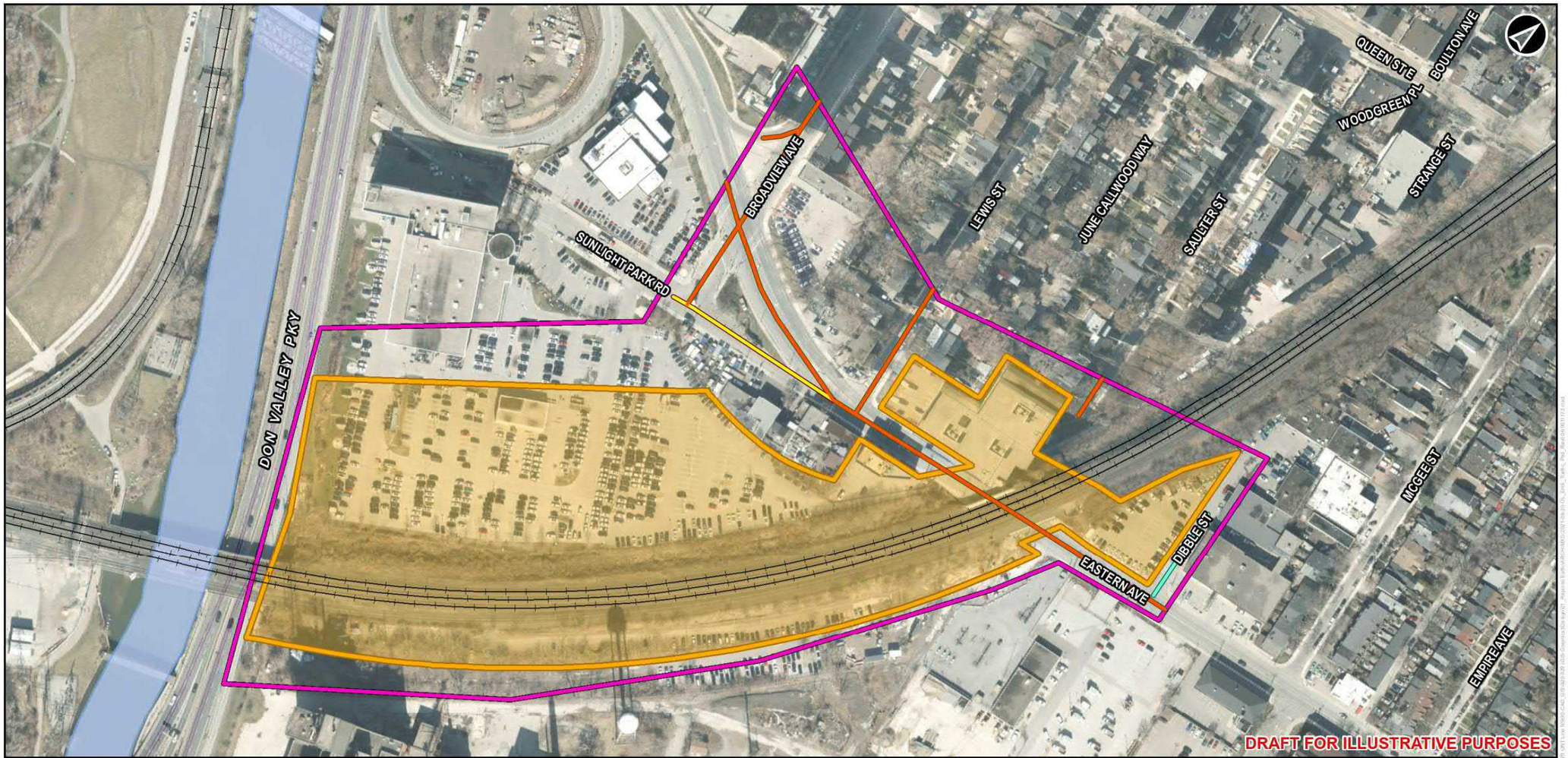
The findings of the Pedestrian Level of Service analysis at the intersection of Eastern Avenue and Broadview Avenue and the studied segment of Eastern Avenue within the East Harbour Station Traffic and Transportation Study Area in the Existing Conditions (2020) are summarized in **Table 5-15** and **Table 5-16**, respectively, and illustrated in **Figure 5-21**. The detailed Pedestrian Level of Service analysis results at the individual intersection approach level under the Existing Conditions (2020) are presented in Appendix F of **Appendix A4**.

Table 5-14: Traffic Operations at the East Harbour Station Traffic and Transportation Study Area Intersection under Existing Conditions (2020) during the AM and PM Peak Hours

Synchro ID: Intersection	Movement	AM Peak Hour Volume to capacity Ratio	AM Peak Hour Delay (sec)	AM Peak Hour Level of service	AM Peak Hour 95th Percentile Queue (metres)	PM Peak Hour Volume to capacity Ratio	PM Peak Hour Delay (sec)	PM Peak Hour Level of service	PM Peak Hour 95th Percentile Queue (metres)
325: Eastern Avenue and Broadview Avenue (Signalized)	EBL	0.46	11.0	B	26.8	0.70	12.9	B	#99.6
325: Eastern Avenue and Broadview Avenue (Signalized)	EBTR	0.26	4.7	A	29.8	0.43	4.5	A	49.5
325: Eastern Avenue and Broadview Avenue (Signalized)	WBL	0.05	4.0	A	4.5	0.03	2.9	A	1.8
325: Eastern Avenue and Broadview Avenue (Signalized)	WBTR	0.49	6.3	A	67.5	0.26	3.6	A	25.0
325: Eastern Avenue and Broadview Avenue (Signalized)	NBLTR	0.14	34.3	C	8.2	0.30	38.4	D	13.6
325: Eastern Avenue and Broadview Avenue (Signalized)	SBLT	0.36	35.9	D	16.2	0.38	39.0	D	14.2
325: Eastern Avenue and Broadview Avenue (Signalized)	SBR	0.46	37.2	D	30.9	0.04	36.9	D	11.1
325: Eastern Avenue and Broadview Avenue (Signalized)	**Overall**	**0.48**	**10.1**	**B**	**-**	**0.66**	**8.8**	**A**	**-**

Note: #: 95th percentile cycle volume exceeds capacity, queue may be longer

Figure 5-20: Existing Pedestrian Network Within the East Harbour Station Traffic and Transportation Study Area



Legend

- Existing GO Track
- Waterbody
- East Harbour Station Early Works Project Footprint*
- East Harbour Station Traffic and Transportation Study Area

Facility Type

- Sidewalk on both sides
- Sidewalk on east side only and/or partially on other side
- Sidewalk on south side only and/or partially on other side

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Existing Pedestrian Network Within the East Harbour Station Traffic and Transportation Study Area

0 50 100
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains Information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

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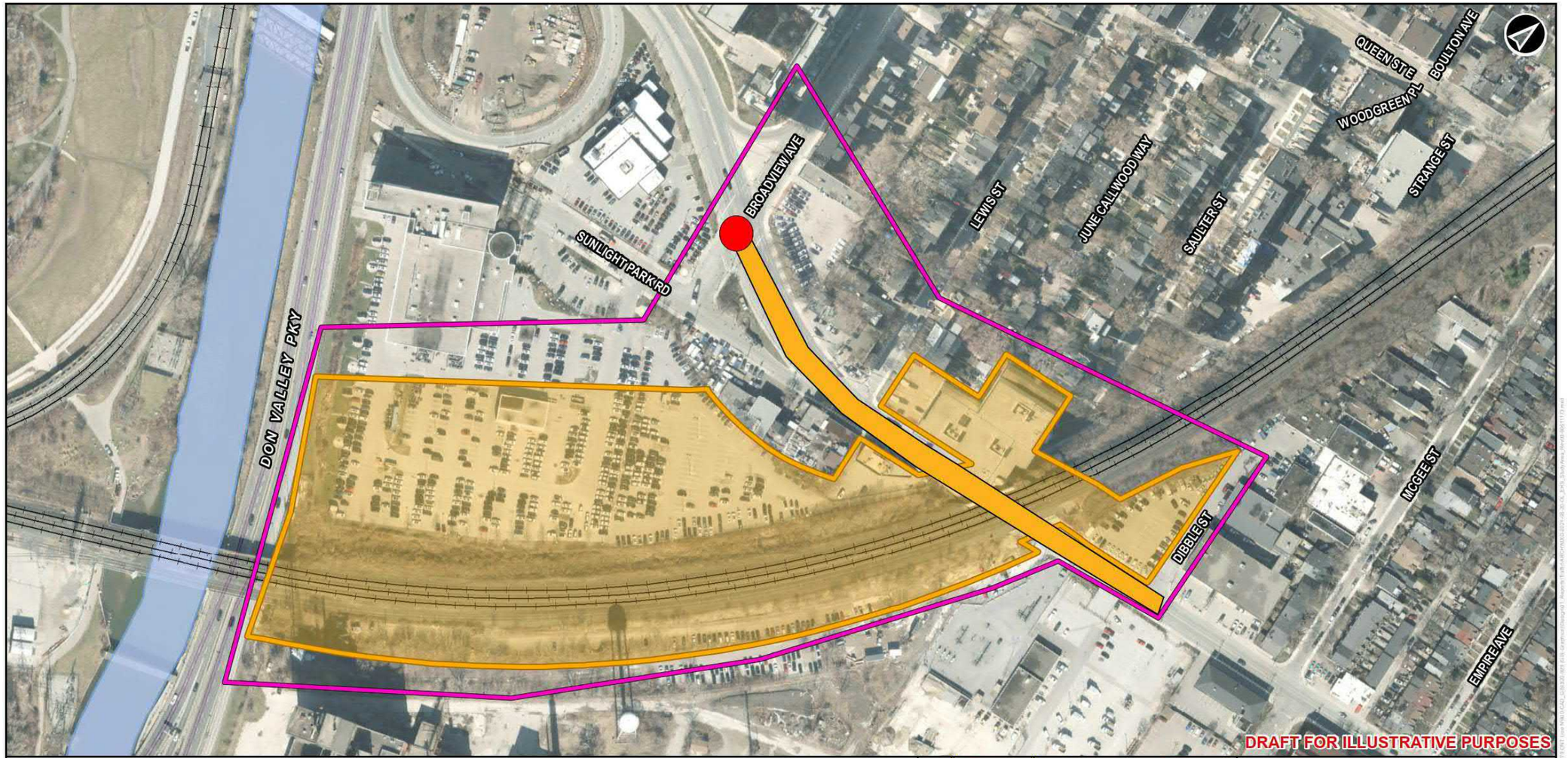
Figure 5-20

Figure 5-21: Pedestrian Level of Service Within the East Harbour Station Traffic and Transportation Study Area



As shown in **Table 5-15**, pedestrians experience critical Pedestrian Level of Service 'F' at the intersection of Eastern Avenue and Broadview Avenue. This is mainly attributed to the long average delays/waiting times that pedestrians experience before they receive Walk Time and start crossing Eastern Avenue. In addition, as they start crossing Eastern Avenue, they experience significant "exposure to traffic" due to the wide crossing distances across the east and west legs (i.e., number of lanes to be crossed, the potential conflicts with left-turning and right-turning vehicular traffic, and the absence of right-turn-on-red restrictions or pedestrian signal leading intervals).

Table 5-15: Pedestrian Level of Service at the East Harbour Station Traffic and Transportation Study Area Intersection under Existing Conditions (2020)

Signalized Intersection	Pedestrian Level of Service
Eastern Avenue and Broadview Avenue	F

Note: The studied intersection is highlighted in grey as it operates below the Pedestrian Level of Service target 'C'.

As shown in **Table 5-16**, the pedestrian facilities along the studied section of Broadview Avenue operates at critical Pedestrian Level of Service 'E'. This is mainly attributed to the narrow sidewalks along the noted section.

Table 5-16: Pedestrian Level of Service at the East Harbour Station Traffic and Transportation Study Area Road Segment under Existing Conditions (2020)

Road Segment	Pedestrian Level of Service
Eastern Avenue between Broadview Avenue and Dibble Street	E

Note: The studied road segment is highlighted in grey as it operates below the Pedestrian Level of Service target 'C'.

5.9.3 Cycling Network and Operations

5.9.3.1 Cycling Network

There are no cycling facilities within the East Harbour Station Traffic and Transportation Study Area, so cyclists share the roads with other modes of travel.

5.9.3.2 Cycling Operations

The findings of the Bicycle Level of Service analysis at the intersection of Eastern Avenue and Broadview Avenue and the studied segment of Eastern Avenue under Existing Conditions (2020) are summarized in **Table 5-17** and **Table 5-18**, respectively, and illustrated in **Figure 5-22**. The detailed Bicycle Level of Service analysis results for the Existing Conditions (2020) are presented in Appendix F of **Appendix A4**.

As shown in **Table 5-17**, cyclists experience critical Bicycle Level of Service 'D' at the intersection of Eastern Avenue and Broadview Avenue. This is mainly attributed to the lack of designated cycling facilities on all the individual approaches to the studied intersection (e.g., bicycle left-turn box, pocket bike lanes, cross-rides, etc.) which requires a left-turning cyclist in mixed traffic to either dismount their bicycle and walk across two perpendicular intersection legs as a pedestrian or weave through and cross general-purpose traffic lanes(s) before making a left turn.

Table 5-17: Bicycle Level of Service at the East Harbour Station Traffic and Transportation Study Area Intersection under Existing Conditions (2020)

Signalized Intersection	Bicycle Level of Service
Eastern Avenue and Broadview Avenue	D

Note: The studied road segment is highlighted in grey as it operates below the Cyclist Level of Service target 'C'

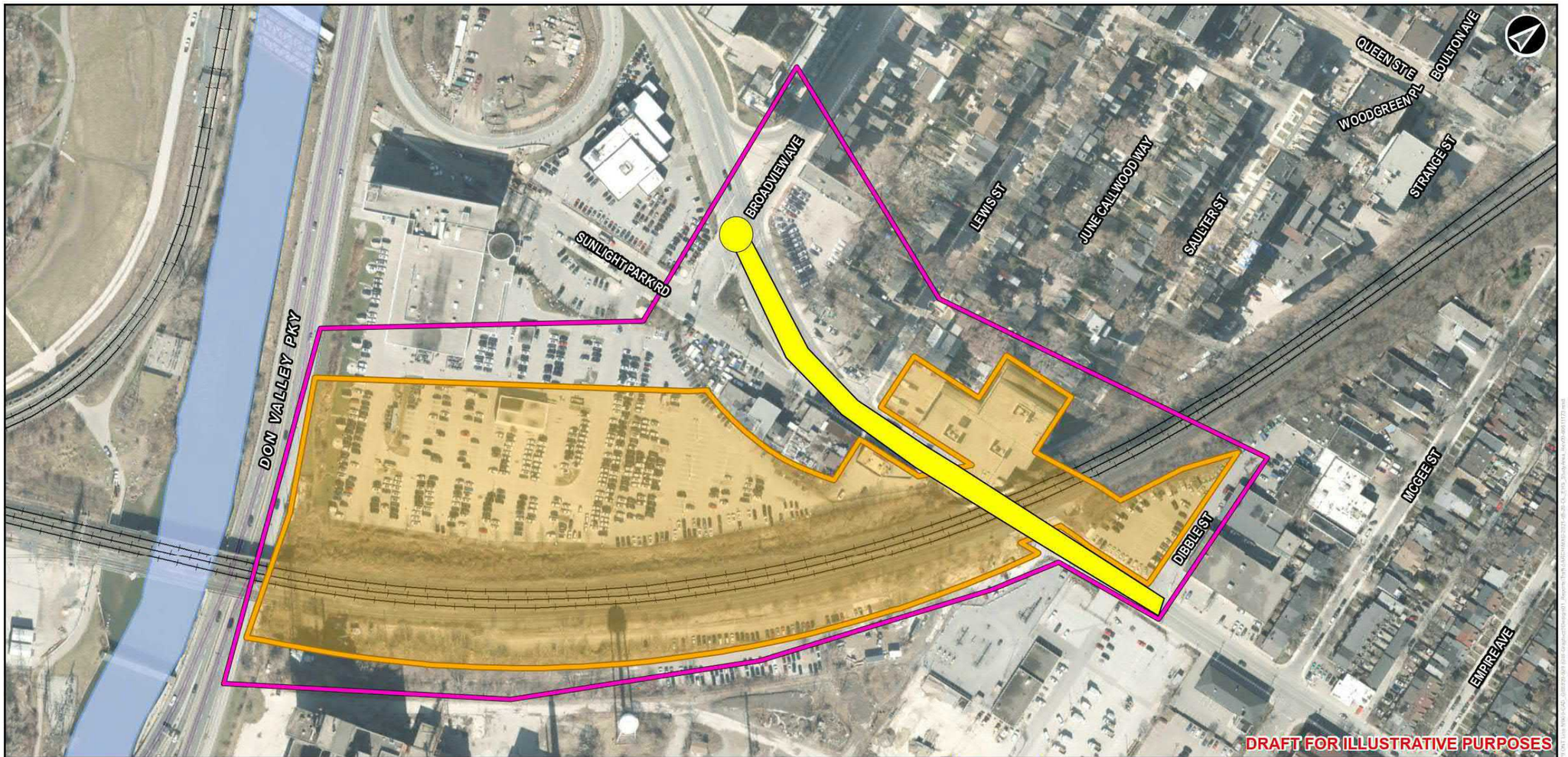
As shown in **Table 5-18**, cyclists experience critical Bicycle Level of Service 'D' along the studied segment of Broadview Avenue as cyclists travel on a total of four (two in each direction) mixed traffic lanes.

Table 5-18: Bicycle Level of Service at the East Harbour Station Traffic and Transportation Study Area Road Segment under Existing Conditions (2020)

Road Segment	Bicycle Level of Service
Eastern Avenue between Broadview Avenue and Dibble Street	D

Note: The studied road segment is highlighted in grey as it operates below the Cyclist Level of Service target 'C'.

Figure 5-22: Bicycle Level of Service Within the East Harbour Station Traffic and Transportation Study Area



Legend

- Existing GO Track
- Watercourse
- Waterbody
- East Harbour Station Early Works Project Footprint*
- East Harbour Station Traffic and Transportation Study Area

Intersection LOS

- D

Segment LOS

- D

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Bicycle Level of Service Within the East Harbour Station Traffic and Transportation Study Area

0 50 100
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains Information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

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Figure 5-22

5.9.4 Rail Network

There are multiple existing rail tracks within the East Harbour Station Traffic and Transportation Study Area. These rail tracks are owned by Metrolinx and currently service the following commuter train lines:

- Lakeshore East and Stouffville GO lines; and
- VIA Rail Toronto-Ottawa and Toronto-Montreal lines.

The identified commuter train routes are further described in **Section 5.9.2**. Canadian National Railway and Canadian Pacific Railway freight trains also operate on these rail tracks.

5.9.5 Transit Network and Operations

5.9.5.1 Transit Network

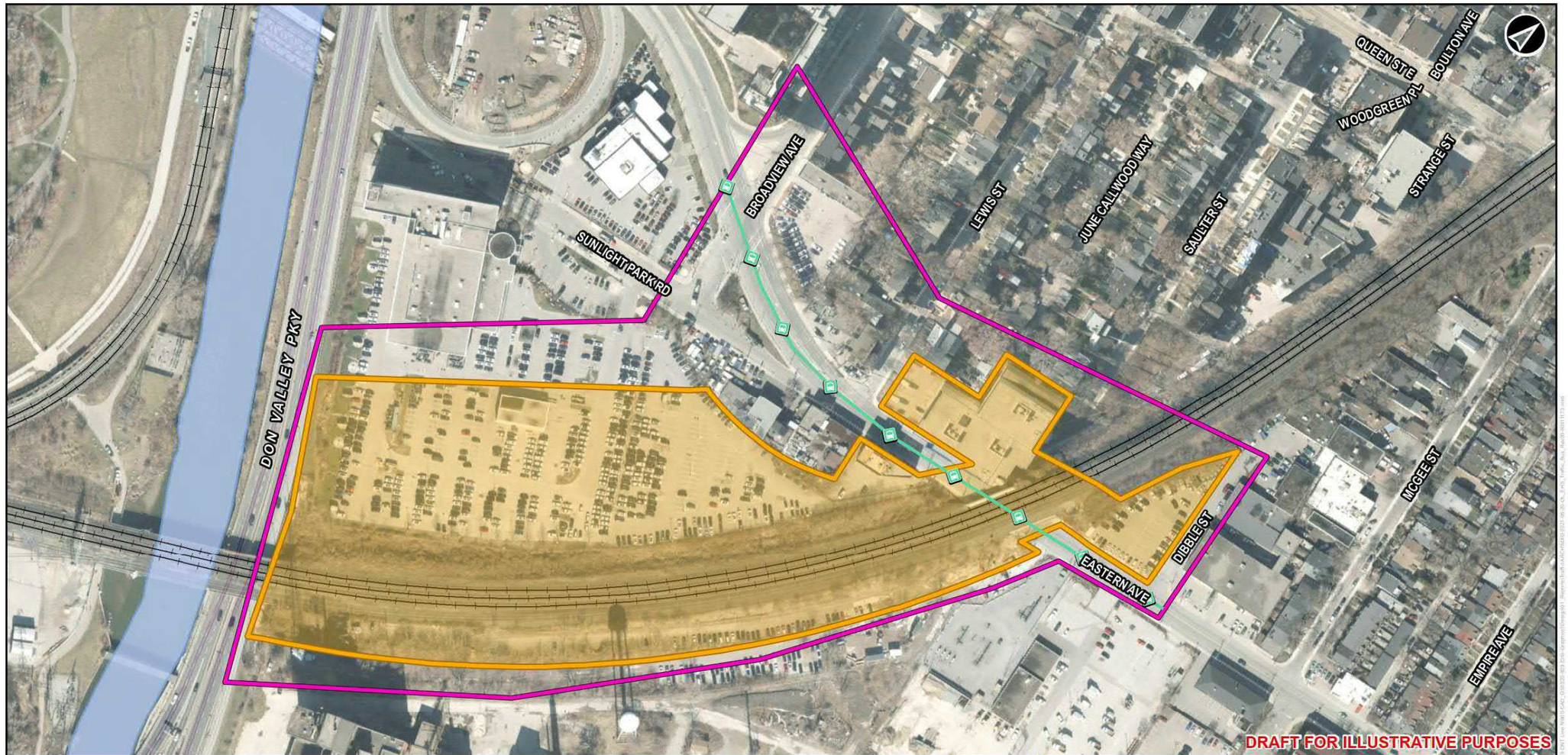
The existing transit routes that operate within the East Harbour Station Traffic and Transportation Study Area are summarized in **Table 5-19** and illustrated in **Figure 5-23**. All transit routes described in **Table 5-19** are operated by the Toronto Transit Commission, with the exception of the Lakeshore East and Stouffville GO lines operated by Metrolinx and the Toronto-Ottawa and Toronto-Montreal lines operated by VIA Rail.

The service headways provided in **Table 5-19** represent the hours of peak transit service within the AM peak period (6:00 AM to 9:00 AM) and PM peak period (4:00 AM to 7:00 PM). Off-peak transit services are generally less frequent than AM and PM peak period services; therefore, only AM and PM peak period service headways are provided in **Table 5-19** to represent the maximum transit service that could be impacted by construction to form the transit impact assessment.

5.9.5.2 Transit Operations

The findings of the Transit Level of Service analysis at the intersection of Eastern Avenue and Broadview Avenue and the studied segment of Eastern Avenue under Existing Conditions (2020) are summarized in **Table 5-20** and **Table 5-21**, respectively, and illustrated in **Figure 5-24**. The detailed Transit Level of Service analysis results are presented in Appendix F of **Appendix A4**.

Figure 5-23: Existing Transit Network Within the East Harbour Station Traffic and Transportation Study Area



Legend

- Existing GO Track
- Watercourse
- Waterbody
- East Harbour Station Early Works Project Footprint*
- East Harbour Station Traffic and Transportation Study Area

Bus Route

- Bus Route 143 - Downtown/Beach Express

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Existing Transit Network Within the East Harbour Station Traffic and Transportation Study Area

0 50 100
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains Information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

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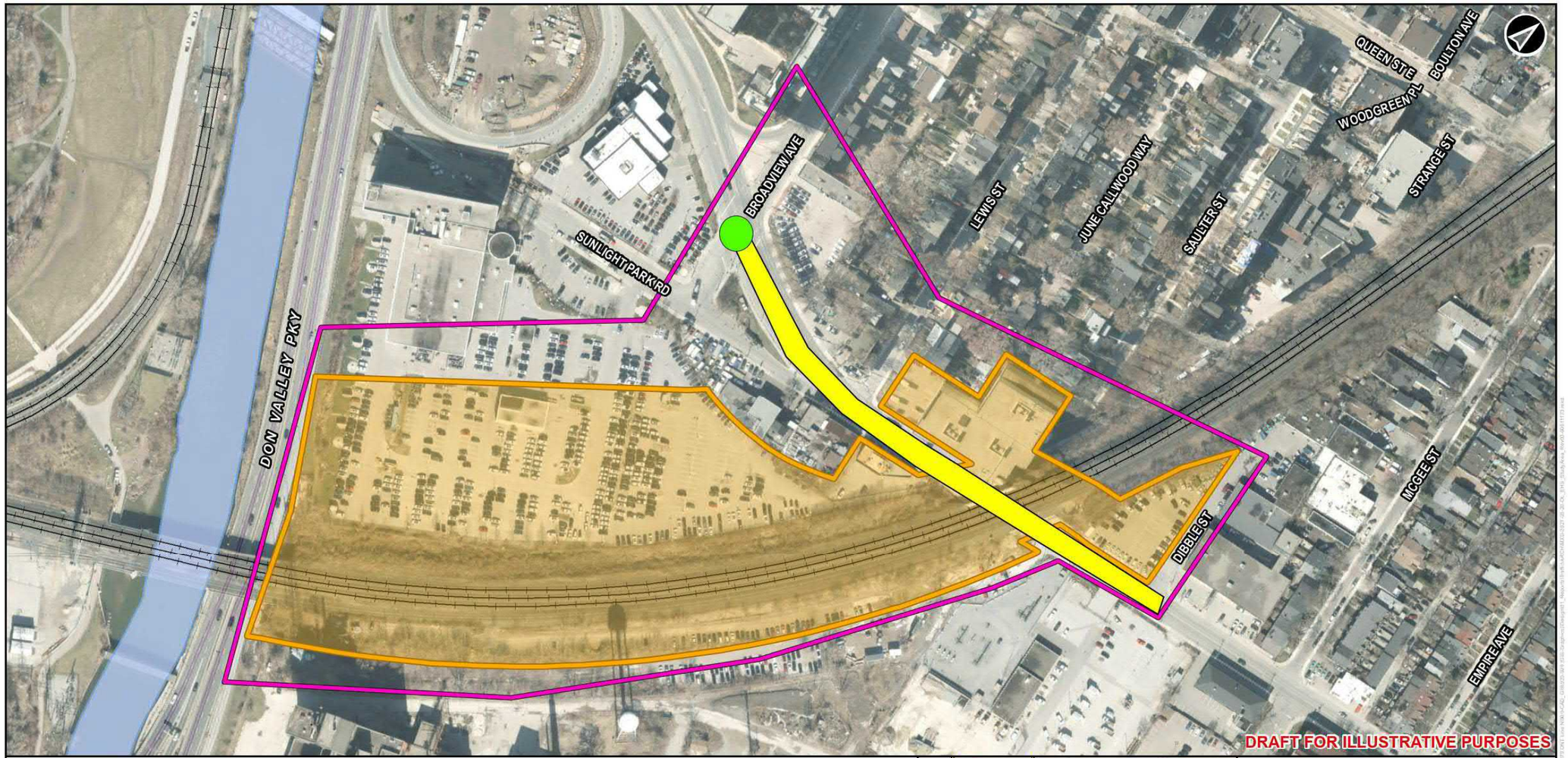
Figure 5-23

Figure 5-24: Transit Level of Service Within the East Harbour Station Traffic and Transportation Study Area



Legend

- Existing GO Track
- Watercourse
- Waterbody
- East Harbour Station Early Works Project Footprint*
- East Harbour Station Traffic and Transportation Study Area

Intersection LOS

- B

Segment LOS

- D

* Project Footprint includes areas in support of construction access, staging and laydown that will be required on a temporary basis. The extent of these lands will continue to be refined and reduced to the extent feasible as project planning and design progress. Note that such lands adjacent to the Eastern Avenue rail bridge on the north side of Eastern Avenue will be shared with the Ontario Line Lakeshore East Joint Corridor early works project to reduce temporary land requirements in support of construction activities.

Ontario Line Project

Transit Level of Service Within the East Harbour Station Traffic and Transportation Study Area

0 50 100
Meters
DATUM: NAD 1983 UTM Zone 17N

Data Sources:
Contains Information licensed under the Open Government Licence Ontario, City of Toronto and Metrolinx. Keymap and Basemap provided by ESRI.

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Figure 5-24

Table 5-19: Existing Transit Routes Within the East Harbour Station Traffic and Transportation Study Area

Route Number – Name and Description	Service Headway during Peak Periods
Lakeshore East GO line operates between Union Station in Toronto and Oshawa GO Station in Oshawa, generally in an east-west direction. The train service operates seven days a week between 5 AM and 2 AM. The line does not have any designated stops at the rail tracks section within the East Harbour Station Traffic and Transportation Study Area, but the eastbound and westbound trains pass through the noted rail tracks section shortly after each scheduled departure from Union Station and shortly before each scheduled arrival at Union Station.	15-minute for the peak direction (i.e., westbound in the AM peak hour and eastbound in the PM peak hour) 30-minute for the non-peak direction
Stouffville GO line operates between Union Station in Toronto and Lincolnville GO Station in Whitchurch-Stouffville, generally in a north-south direction. The train service operates seven days a week between 9 AM and 7 PM. A bus service complements the train service by operating from 5 AM to 9 AM and from 7 PM to 2 AM. The Line does not have any designated stops at the rail tracks section within the East Harbour Station Traffic and Transportation Study Area, but the eastbound and westbound trains pass through the noted rail tracks section shortly after each scheduled departure from Union Station and shortly before each scheduled arrival at Union Station.	30-minute for the peak direction (i.e., southbound in the AM peak hour and northbound in the PM peak hour) 60-minute for the non-peak direction
Toronto-Ottawa VIA Rail line operates between Union Station in Toronto and Ottawa Station in Ottawa, generally in an east-west direction. The train service operates seven days a week. The line does not have any designated stops at the rail tracks section within the East Harbour Station Traffic and Transportation Study Area, but the eastbound and westbound trains pass through the noted rail tracks section shortly after each scheduled departure from Union Station and shortly before each scheduled arrival at Union Station.	60-minute for the peak direction (i.e., westbound in the AM and PM peak periods and eastbound in the PM peak period) 180-minute for the non-peak direction
Toronto-Montreal VIA Rail line operates between Union Station in Toronto and Gare Centrale in Montreal, generally in an east-west direction. The train service operates seven days a week. The line does not have any designated stops at the rail tracks section within the East Harbour Station Traffic and Transportation Study Area, but the eastbound and westbound trains pass through the noted rail tracks section shortly after each scheduled departure from Union Station and shortly before each scheduled arrival at Union Station.	60-minute for the peak direction (i.e., westbound in the AM and PM peak periods and eastbound in the PM peak period) 180-minute for the non-peak direction
#143 – Downtown/Beach Express bus route operates between the intersection of Charlotte Street and King Street and the Neville Park Loop, generally in an east-west direction. Within the East Harbour Station Traffic and Transportation Study Area, the bus route operates along Eastern Avenue. The closest eastbound and westbound stops to the East Harbour Station Project Footprint are located nearside at the intersection of Eastern Avenue and Carlaw Avenue.	15-minute in the AM peak hour 25-minute in the PM peak hour

Sources: GO Transit, 2020; VIA Rail, 2020; and Toronto Transit Commission, 2019. Accessed in July 2021.

As shown in **Table 5-20**, the intersection of Eastern Avenue and Broadview Avenue operates at acceptable Transit Level of Service 'B' as buses along route #143 – Downtown/Beach Express experience minimal delay when travelling through the noted intersection during both the AM and PM peak hours.

Table 5-20: Transit Level of Service at the East Harbour Station Traffic and Transportation Study Area Intersection under Existing Conditions (2020)

Signalized Intersection	Transit Level of Service
Eastern Avenue and Broadview Avenue	B

As shown in **Table 5-21**, all transit vehicles travelling along the studied segment of Broadview Avenue experience an acceptable Transit Level of Service 'D', meeting the minimum desirable Transit Level of Service for the studied sections.

Table 5-21: Transit Level of Service at the East Harbour Station Traffic and Transportation Study Area Road Segment under Existing Conditions (2020)

Road Segment	Transit Level of Service
Eastern Avenue between Broadview Avenue and Dibble Street	D

5.10 Utilities

5.10.1 Private Utilities

Table 5-22 lists the privately-owned utility providers with infrastructure within the East Harbour Station Early Works Project Footprint. A refined list will be confirmed as planning progresses.

Table 5-22: Private Utilities Within the East Harbour Station Early Works Project Footprint

Utility Provider	Utility Category
Bell Canada	Telecommunications
Rogers Communications Partnership	Telecommunications
Zayo Group	Telecommunications
Enbridge Gas Distribution	Energy transportation/pipeline
Hydro One Networks Incorporated (HONI)	Electricity
Group Telecom	Telecommunications
Imperial Oil	Energy transportation/pipeline

5.10.2 Public Utilities and Municipal Servicing

Table 5-23 lists the public utility providers with infrastructure within the East Harbour Station Early Works Project Footprint.

Table 5-23: Public Utilities Within the East Harbour Station Early Works Project Footprint

Utility Provider	Utility Category
Toronto Hydro	Electricity
Toronto Water	Water and wastewater treatment

6. Potential Impacts, Mitigation Measures and Monitoring Activities

In accordance with Sections 8(2)6, 8(2)7 and 8(2)8 of Ontario Regulation 341/20: Ontario Line Project, this section describes the potential impacts, mitigation measures, and monitoring activities to verify the effectiveness of mitigation measures associated with the East Harbour Station early works.

6.1 Natural Environment

Table 6-1 outlines mitigation measures and monitoring activities to address the potential natural environment impacts that may result from the East Harbour Station early works.

Table 6-1: Potential Impacts, Mitigation Measures and Monitoring Activities – Natural Environment

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Designated Natural Areas	■ No potential impacts as there are no Designated Natural Areas within 120 metres of the East Harbour Station Early Works Project Footprint	■ None Required	■ None Required
Policy Area – City of Toronto Natural Heritage System	■ Vegetation removal within the City of Toronto Natural Heritage System	■ Refer below to mitigation measures described for Vegetation Communities. ■ Consultation with City of Toronto.	■ Refer below to monitoring described for Vegetation Communities.
Policy Area – City of Toronto Ravine and Natural Feature Protection	■ No potential impacts as the East Harbour Station Early Works Project Footprint is located outside of the City of Toronto Ravine and Natural Feature Protection By-Law Area.	■ None Required.	■ None Required.
Policy Area – Toronto and Region Conservation Authority Regulation Areas	■ Vegetation removal within Toronto and Region Conservation Authority Regulated Areas	■ Refer below to mitigation measures described for Vegetation Communities, Wildlife and Wildlife Habitat, Migratory Breeding Birds and Nests, Significant Wildlife Habitat, Species at Risk and Aquatic Environment. ■ Further consideration to reduce potential impacts within the Toronto and Region Conservation Authority Regulated Areas to the extent feasible will be undertaken during detailed design.	■ Refer below to monitoring described for Vegetation Communities. ■ Recommendations for additional monitoring related to vegetation removal within regulated areas may be determined through consultation with Toronto and Region Conservation Authority.
Policy Area – Urban River Valley under the Greenbelt Plan	■ Vegetation removal within the Urban River Valley	■ Refer below to mitigation measures described for Vegetation Communities, Wildlife and Wildlife Habitat, Significant Wildlife Habitats, Migratory Breeding Birds and Nests, Species at Risk and Aquatic Environment. ■ Compensation for the removal of vegetation in accordance with Metrolinx's Vegetation Guideline (2020) approach will consider maintaining or enhancing connectivity along the Lower Don River to the extent feasible.	■ Refer below to monitoring described for Vegetation Communities, Wildlife and Wildlife Habitat and Aquatic Environment.
Vegetation Communities	■ Removal of vegetation communities ■ Damage to adjacent vegetation or Ecological Land Classification communities as a result of accidental intrusion	■ Vegetation removal will be reduced and limited to within the East Harbour Station early works construction areas. ■ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the East Harbour Station early works construction areas and prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ■ Compensation for the removal of vegetation will be provided in accordance with Metrolinx's Vegetation Guideline (2020). ■ Temporarily disturbed areas will be re-vegetated using non-invasive, preferably native plantings and/or seed mix appropriate to the site conditions and adjacent vegetation communities. Seed mixes will be used in conjunction with an appropriate non-invasive cover crop as needed. ■ Vegetation removals will also consider and mitigate potential impacts to sensitive species (e.g., migratory birds) and features (e.g., Significant Wildlife Habitat). Refer to the wildlife and wildlife habitat and Species at Risk mitigation measures described below.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Monitoring will include inspection of construction fencing/silt fencing to confirm appropriate installation, maintenance and rehabilitation to prevent accidental damage to vegetation or Ecological Land Classification communities outside of the work construction area. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. ■ If required, the approach to compensation monitoring will be developed in accordance with Metrolinx's Vegetation Guideline (2020).

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Vegetation Communities	■ City and private tree removal	■ An Arborist Report by an International Society of Arboriculture Certified Arborist will be prepared in accordance with the Ontario Forestry Act R.S.O. 1990, and other regulations and best management practices as applicable. ■ The Arborist Report will include, but not be limited to the individual identification of all trees within the East Harbour Station early works construction areas including those that require removal or preservation, or trees that may be injured. Trees to be identified may include those on Metrolinx property, trees on public and private lands, and boundary trees. City of Toronto by-laws dictate the minimum area buffers to be inventoried and Diameter at Breast Height which requires inventory. ■ Prior to the undertaking of tree removals, a Tree Removal Strategy/Tree Preservation Plan will be developed during detailed design to document tree protection and mitigation measures that follow the City of Toronto Tree Protection Policy and Specifications for Construction Near Trees Guidelines (2016) and adherence with best practices, standards and regulations on safety, environmental and wildlife protections. ■ Compensation for tree removals will be undertaken in accordance with provisions outlined in the Metrolinx Vegetation Guideline (2020). ■ Pruning of branches will be conducted through the implementation of proper arboricultural techniques by an International Society of Arborists certified Arborist. ■ Tree Protection Zone fencing will be established to protect and prevent tree injuries. Tree Protection Zones will be clearly staked prior to construction using barriers in accordance with local by-law requirements.	■ Regular inspection in areas of vegetation removal will be undertaken as required during construction to ensure that fencing is intact, only specified trees are removed and no damage is caused to the remaining trees and adjacent vegetation communities. ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. ■ If required, the approach to compensation monitoring will be developed in accordance with Metrolinx's Vegetation Guideline (2020).
Vegetation Communities	■ Potential for the spread of emerald ash borer, associated with removal, handing and transport of ash trees	■ Removal of ash trees, or portions of ash trees, will be carried out in compliance with the Canada Food and Inspection Agency Directive 'D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the emerald ash borer. To comply with this Directive, all Ash trees requiring removal, including any wood, bark or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts.
Vegetation Communities	■ Increased soil erosion and sedimentation	■ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the East Harbour Station early works construction areas and prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ■ An Erosion and Sediment Control Plan, in accordance with the Erosion and Sediment Control Guide for Urban Construction (Toronto and Region Conservation Authority, 2019), will be prepared prior to and implemented during construction to reduce the risk of sedimentation to the vegetation communities.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. ■ All erosion and sediment control measures should be inspected weekly, after every rainfall and significant snow melt event, and daily during periods of extended rain or snow melt. ■ All damaged erosion and sediment control measures will be repaired and/or replaced within 48 hours of the inspection.
Vegetation Communities	■ Soil or water contamination as a result of spills (e.g., grease and/or fuel) from equipment use ■ Introduction or spread of invasive species	■ A Spill Prevention and Contingency Plan will be developed and adhered to. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. ■ Refuelling of equipment will occur at least 30 metres away from any watercourse. ■ Refuelling shall be done within refuelling stations lined with appropriate material to prevent seepage and fuel discharge. ■ All machinery, construction equipment and vehicles arriving on-site should be in clean condition (e.g., free of fluid leaks, soils containing seeds of plant material from invasive species) and be inspected and washed in accordance with the Clean Equipment Protocol for Industry (Halloran et al., 2013).	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts.

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Wildlife and Wildlife Habitat – General	■ Disturbance, displacement or mortality of wildlife	■ Prior to construction, investigation of the East Harbour Station early works construction areas for wildlife and wildlife habitat that may have established following the completion of previous surveys will be undertaken, as appropriate. ■ If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat. For example, construction activities will cease or be reduced, and wildlife will be encouraged to move off-site and away from the construction area on its own.	■ Regular on-site inspection by on-site environmental workers or construction staff should occur within the construction area to ensure that no wildlife is trapped within the construction area. ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts.
Significant Wildlife Habitat - Eastern Wood-pewee	■ Removal of up to 1.5 hectares of candidate habitat for Eastern Wood-pewee	■ Refer below to mitigation measures described for Migratory Breeding Birds and Nests.	■ Refer below for monitoring requirements described for Migratory Breeding Birds and Nests.
Significant Wildlife Habitat - Monarch	■ Removal of up to 0.32 hectares of candidate habitat for Monarchs	■ Identify opportunities to promote pollinator species and habitat in accordance with the Metrolinx Vegetation Guideline (2020). This may include planting or seeding native flowering plants in temporarily disturbed areas.	■ Regular monitoring (site inspections) will be undertaken during construction to prevent unauthorized impacts to habitat used by Monarch.
Significant Wildlife Habitat - Common Nighthawk	■ Removal of candidate nesting habitat for Common Nighthawk	■ Refer below to mitigation measures described for Migratory Breeding Birds and Nests. ■ Demolition of buildings should be scheduled outside of the breeding bird season of April 1 to August 31. If this is not possible and buildings must be demolished during this period, the following will be completed: ■ The roofs will be checked for presence of gravel. If gravel is not present, then the building is unlikely to provide suitable nesting habitat for Common Nighthawk. If gravel is present, a search for eggs and nesting activity for Common Nighthawk on the roof will be conducted. If nests or nesting activity of Common Nighthawk are confirmed, the building cannot be demolished until it is confirmed by a Qualified Biologist that young have fully fledged and left the nest.	■ Refer below for monitoring requirements described for Migratory Breeding Birds and Nests.
Migratory Breeding Birds and Nests	■ Disturbance or destruction of migratory bird nests	■ All works must comply with the Migratory Birds Convention Act, including timing windows for the nesting period (April 1 to August 31 in Ontario). ■ If activities (i.e., vegetation clearing and building demolition) are proposed to occur during the general nesting period, a breeding bird and nest survey will be undertaken prior to required activities. Nest searches by an experienced searcher are required and will be completed by a qualified Biologist no more than 48 hours prior to vegetation removal. ■ If a nest of a migratory bird is found outside of this nesting period (including a ground nest) it still receives protection.	■ Regular monitoring will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
Wildlife Habitat Connectivity	■ Decrease of habitat connectivity for wildlife	■ Refer to the mitigation measures described above for Urban River Valley under the Greenbelt Plan, Vegetation Communities, Wildlife and Wildlife Habitat, Significant Wildlife Habitats, Migratory Breeding Birds and Nests, Species at Risk and Aquatic Environment. ■ During detailed design, considerations for maintaining or enhancing connectivity opportunities will be explored to the extent feasible.	■ Refer to monitoring described for Vegetation Communities.

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Species at Risk – General	■ Habitat loss, disturbance and/or mortality to Species at Risk	■ All requirements of the Endangered Species Act will be met. Species-specific mitigation measures will be implemented, as required, in consultation with Ministry of the Environment, Conservation and Parks.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. ■ Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the Endangered Species Act.
Species at Risk – Barn Swallow	■ Habitat loss, disturbance and/or mortality to Barn Swallow	■ Field surveys will be undertaken prior to construction to confirm presence of any Barn Swallow nests on buildings that will be demolished ■ Where loss or disturbance cannot be avoided (e.g., building demolition), all requirements under the Endangered Species Act will be met, including any registration, compensation, replacement structures and/or permitting requirements. ■ If disturbance to structures confirmed to provide Barn Swallow habitat is scheduled during the nesting season for Barn Swallow (April 1 to August 31), a nest search will be undertaken to confirm that no Barn Swallow are nesting on structures that may be affected by construction activities on or near these areas. Exclusion measures will be implemented prior to nesting season to dissuade use of these areas for nesting.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. Additional monitoring measures will be developed with the Ministry of the Environment, Conservation and Parks, if required.
Species at Risk – Bats	■ Habitat loss, disturbance and/or mortality to Species at Risk Bats	■ All requirements of the Endangered Species Act will be met. Additional monitoring, mitigation and compensation for removal of suitable treed or anthropogenic roosting habitat may be required based on the results of additional surveys and consultation with the Ministry of the Environment, Conservation and Parks.	■ If mitigation is required, on-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to reduce impacts. Additional monitoring measures will be developed in consultation with Ministry of the Environment, Conservation and Parks, if required.
Aquatic Environment – ■ **Wetlands and Waterbodies** ■ **Fish and Fish Habitat**	■ The East Harbour Station Early Works Project Footprint is located 30 metres away from the Lower Don River and east of the Don Valley Parkway and no in-water works are proposed in the Lower Don River. Potential effects on fish and fish habitat are not anticipated, provided that best management practices are implemented.	■ Construction activities will maintain the buffers established during the design phase to reduce potential negative impacts to the Lower Don River. ■ An Erosion and Sediment Control Plan, in accordance with the Erosion and Sediment Control Guide for Urban Construction (Toronto and Region Conservation Authority, 2019), as amended from time to time, will be prepared prior to and implemented during construction to reduce the risk of sedimentation to the waterbody. ■ A Spill Prevention and Response Plan will be developed before work commences to ensure procedures and policies are in place during construction to reduce impacts to watercourses. ■ Any temporary mitigation measures will be installed prior to the commencement of any site clearing, grubbing, excavation, filling or grading works and will be inspected and maintained on a regular basis. ■ To the extent feasible, schedule work to avoid wet, windy and rainy periods that may result in high flow volumes and/or increase erosion and sedimentation. ■ Stockpiled materials or equipment will be stored within the East Harbour Station early works construction areas but shall be kept at least 30 metres away from any watercourse to the extent possible. ■ All equipment fuelling and maintenance will be done at a safe distance from the water (i.e., 30 metres or more) to ensure that no deleterious substances enter the waterway.	■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions, if required. Corrective actions may include alteration of activities to reduce impacts and enhance mitigation measures. ■ All erosion and sediment control measures should be inspected weekly, after every rainfall and significant snow melt event, and daily during periods of extended rain or snow melt. ■ All damaged erosion and sediment control measures will be repaired and/or replaced within 48 hours of the inspection.

Notes: Regulations, standards and guidance documents referenced herein are current as of the time of writing and may be amended from time to time.
If clarification is required regarding regulatory requirements, the appropriate regulatory agencies will be consulted.

6.2 Soil and Groundwater

Table 6-2 outlines mitigation measures and monitoring activities to address the potential soil and groundwater impacts that may result from the East Harbour Station early works.

Table 6-2: Potential Impacts, Mitigation Measures and Monitoring Activities – Soil and Groundwater

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Soil Stability and Quality	■ Construction activities will cause displacement of the soils and potentially bedrock. This may result in ground movement and settlement (e.g., through excavation/ grading, demolition and/or dewatering activities). ■ Dewatering activities can cause soil subsidence/ settlement and impacts on surface/subsurface structures within the zone of influence. ■ Potential heaving of the excavation base caused by groundwater pressures below the depth of excavation. ■ If required, use of pressurized fluids subsurface could result in fluid migration to surface. ■ Construction activities (e.g., excavation) could expose contaminated materials and/or result in the spreading of contaminated materials.	■ Complete detailed soil investigations, as project planning progresses; ■ Complete pre-construction inspections of structures within the dewatering zone of influence, as required. ■ Potential heave of an excavation base is mitigated through a groundwater depressurization program completed in advance of excavation that sufficiently lowers the potentiometric head in the confined groundwater system and stabilizes the soils being excavated. ■ Excavation support systems will be employed, as required. ■ Conduct dewatering such that ground loss is controlled/minimized. ■ Use excavation/grading equipment designed to reduce the potential for ground loss and the associated potential for ground settlement; ■ If required, conduct ground treatment such as jet grouting to reduce the risk of ground loss. ■ Develop management plan(s) for the handling, management and disposal of all excavated material (i.e., soil, rock and waste) that is generated or encountered during the work. ■ Development and implementation of remedial action plans, risk assessment and risk mitigation plans for encountering contamination, as necessary. ■ Requirements of Ontario Regulation 406/19: On-Site and Excess Soil Management will be met.	■ If required, develop and conduct a settlement monitoring program that includes all infrastructure and structures within the dewatering zone of influence to identify construction effects, adverse trends and the need for additional mitigation measures. ■ Soil sampling and monitoring plans shall be implemented as required prior to, during, and post construction. Soil will be tracked in registry, as required by Ontario Regulation 406/19.
Groundwater Quantity	■ Construction dewatering may include impacts to groundwater-dependent natural features (i.e., Lower Don River) as a result of decreases in groundwater discharge to these features and impacts to private groundwater supply wells (if present) caused by a reduction in local groundwater levels. ■ In the case of discharge to the natural environment, the discharge rate and total volume must be considered within the context of the capacity of the conveyance route (e.g., drainage ditch, etc.) and receiving waterbody. Introducing a quantity of effluent above the capacity of these features can result in impacts such as erosion, scour, and flooding.	■ Potential impacts to groundwater-dependent natural features and/or private groundwater supply wells (if present) can be mitigated with measures such as avoidance of dewatering requirements, minimizing dewatering, and/or utilizing groundwater cut-off techniques to physically exclude groundwater from flowing into excavations advanced for construction. ■ Example contingency measures for impacts to groundwater-dependent natural features and/or private groundwater supply wells (if present) include supplementation of flow within the natural features, minimizing dewatering volume requirements, avoidance of dewatering during low-flow conditions, and provision of temporary water supply during the period of supply well impact. ■ Determination of water taking quantities, quality, and resultant dewatering zone of influence will be completed as project planning progresses, for example through completion of a site-specific hydrogeological investigation, construction dewatering assessment and a plan to manage groundwater. ■ The construction dewatering assessment will be completed as required to: – Provide an estimate of groundwater and/or surface water taking rates and quantities; – Estimate a zone of influence for each dewatering area; – Characterize groundwater and/or surface water quality; – Recommend appropriate dewatering methodologies; and – Provide an assessment of potential impacts related to the dewatering. ■ Dewatering should be assessed in accordance with the Toronto and Region Conservation Authority Technical Guidelines for the Development and Environmental Management Plans for Dewatering (Toronto and Region Conservation Authority, 2013b) and Ontario Regulations 64/16 and 387/04, as amended under the Ontario Water Resources Act, as required. ■ The plan to manage groundwater and dewatering will be completed as required to: – Evaluate potential groundwater discharge options (i.e., sanitary and/or storm sewer, natural environment, off-site disposal, etc.); – Identify effluent treatment requirements; – Outline monitoring, mitigation, and contingency program (if required); – Determine the potential need for regulatory approvals; and – Identify notification and reporting requirements. ■ Identification of site-specific mitigation measures inclusive of monitoring programs relating to groundwater-dependent natural features, private supply wells (if present), and geotechnical heave/settlement within the anticipated dewatering zone of influence will be determined prior to works commencement.	■ Regular site inspections and monitoring activities such as monitoring of water levels in adjacent groundwater and/or surface water features, if required, will be completed by qualified members of the construction team to ensure that mitigation measures are fulfilled and that all regulatory requirements are met.

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Groundwater Quality	■ Previous land use may have resulted in local contamination of groundwater which may be encountered during construction excavation and/or dewatering activities. ■ General construction activities such as vehicle and machinery operation have the potential to affect groundwater and/or surface water quality through minor contaminant releases. Spills may affect the surrounding groundwater quality and nearby supply wells (if present). ■ Improperly managed construction dewatering activities can result in accidental releases of contaminated groundwater to the environment and/or result in the migration of existing impacted groundwater. ■ The following materials may impact groundwater quality within the highly vulnerable aquifer and Event Based Area: – Application of road salt; – Storage/use of organic solvents and/or dense non-aqueous phase liquids; and, – Storage and handling of fuel.	■ The existing groundwater within each potential construction dewatering area will be characterized prior to construction activities, during a site-specific hydrogeological investigation, as required. ■ On-site treatment of dewatering effluent, if required, such that parameters in excess of the established discharge criteria are removed/reduced and discharge can proceed. ■ Dewatering should be assessed in accordance with the Toronto and Region Conservation Authority Technical Guidelines for the Development and Environmental Management Plans for Dewatering (Toronto and Region Conservation Authority, 2013b). ■ Measures such as avoidance of dewatering requirements, minimizing dewatering, and/or utilizing groundwater cut-off techniques to physically exclude groundwater from flowing into excavations advanced for construction could be considered, when on-site treatment is not technically and/or financially feasible. The removal of water to an off-site disposal facility could also be considered. ■ A Spill Prevention and Response Plan, outlining the steps required to prevent and contain any contaminant releases and/or to avoid impacts to groundwater/surface water is required to be developed prior to initiation of construction activities. This Spill Prevention and Response Plan should include a requirement for spill kits to be maintained on-site at all times during construction. ■ Pre-construction (baseline) groundwater quality testing should be performed at all construction dewatering locations before the outset of any discharge activities and compared to appropriate regulatory guidelines (i.e., Provincial Water Quality Objectives for discharge to the natural environment, storm and sanitary by-laws for discharge to municipal sewers). Appropriate water quality management (i.e., filtration systems and/or water treatment systems) will be required to be designed and implemented in the event that exceedances of regulatory guidelines or limits are detected in the influent groundwater quality. Discharge of dewatering effluent will be governed by the discharge approval(s) obtained for the project, which could include one or a combination of Municipal Discharge Permits, Conservation Authority Approval, and/or Ministry of the Environment, Conservation and Parks Environmental Compliance Approval. ■ Ensuring that machinery is maintained and free of leaks to reduce the possibility of fluid release and storing any potential contaminants (e.g., oils, fuels, and chemicals) in designated areas using appropriate secondary containment, where necessary. ■ Education of workers regarding appropriate chemical use, handling, storage and transportation procedures, including spill response and reporting requirements. ■ Conduct a review of Source Protection Plan (SPP) policies and implement the following measures: – A Salt Management Plan that incorporates best management practices where the storage and application of road salt is required; – Best management practices if the handling and storage of dense non-aqueous phase liquids is required; – Best management practices if the storage of organic solvent is required; and, – Best management practices if the storage and handling of fuel is required in an Event Based Area.	■ Monitoring activities such as groundwater and dewatering effluent sample collection and measurement of groundwater parameters (e.g., pH) in the field will be completed as required by qualified members of the construction contractor, and in accordance to the discharge requirements of the approval and/or permit, as applicable. ■ Regular inspections of equipment for fuel/fluid leaks, dewatering equipment and containment tanks for leakage, and installed erosion and sediment control measures.

6.3 Hydrology and Surface Water

Table 6-3 outlines mitigation measures and monitoring activities to address the potential hydrology and surface water impacts that may result from the East Harbour Station early works.

Table 6-3: Potential Impacts, Mitigation Measures and Monitoring Activities – Hydrology and Surface Water

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Floodplain	■ Potential to impact flooding conditions within the Don River Floodplain	■ Floodplain impact assessment will be conducted during detailed design following Toronto and Region Conservation Authority guidelines once relevant design information is available. ■ Toronto and Region Conservation Authority, Waterfront Toronto and City of Toronto will be consulted during detailed design to avoid potential infrastructure conflicts and impacts to flood protection measures/initiatives within the East Harbour Station Hydrology and Surface Water Study Area and beyond, as required, with consideration of, but not limited to, the following: – West Don Lands Flood Protection Landform (Toronto and Region Conservation Authority, 2005); – Broadview and Eastern Flood Protection Municipal Class Environmental Assessment (Toronto and Region Conservation Authority, 2021b); – Flood protection measures and tie-in with the existing railway embankment at Don Roadway and Eastern Avenue underpass as identified in the Don Mouth Naturalization and Port Lands Flood Protection Project Environmental Assessment (Toronto and Region Conservation Authority, 2014a); – New Broadview underpass with expanded flood protection tie-ins and drainage with the railway embankment as identified in the Port Lands and South of Eastern Transportation and Servicing Master Plan Class Environmental Assessment (Waterfront Toronto and City of Toronto, 2016); and, – Opening of bridge crossing on east side of Don River through railway embankment to accommodate Hybrid 3 as identified in the Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment (Waterfront Toronto and City of Toronto, 2017). ■ Continue to consult with the Toronto and Region Conservation Authority to align the East Harbour Station early works to the Lower Don Special Policy Area requirements, including the approach to floodproofing and flood modelling. Should a station entrance or public space within the proposed station be located within the floodplain, a comprehensive public safety protocol for egress and ingress, emergency preparedness and service access for evacuation purposes in case of a flood will be developed.	■ None identified.
Floodplain	■ Potential for flooding impacts on-site during construction	■ Prior to construction, develop a Flood Contingency Plan, which considers policies related to the Lower Don Special Policy Area, with specific mitigation measures for any proposed works or temporary laydown and staging areas that are located within the Don River Floodplain. The Flood Contingency Plan may include risk mapping and a monitoring strategy. ■ Include construction site on Toronto and Region Conservation Authority flood warning system to prepare site in advance of possible flood events.	■ Include a monitoring strategy in the Flood Contingency Plan to monitor surface water levels during construction activities.
Surface Water/ Stormwater and Drainage	■ Change in stormwater quality and quantity, including: – Erosion of exposed soil and increased sediment loading which may impact receiving waterbodies and/or municipal stormwater drainage system; and, – Increased surface water/stormwater runoff.	■ The overall stormwater quality and quantity control strategy will be developed in accordance with all relevant municipal, provincial, and federal requirements, as amended, and outlined in a Stormwater Management Report. Stormwater management design will consider guidance provided by the Ministry of the Environment, Conservation and Parks, formerly the Ministry of the Environment and Climate Change Stormwater Management Planning and Design Manual (2003) and Ontario Ministry of Transportation Drainage Management Manual (2008), Toronto and Region Conservation Authority Stormwater Management Criteria (2012), and the Low Impact Development Stormwater Management Planning and Design Guide (Toronto and Region Conservation Authority/Credit Valley Conservation, 2010), as required. ■ The following stormwater management best management practices will be considered and implemented, as required: – Minimize clearing and amount of exposed soil; – Install key sediment control before grading/land alterations begin; – Sequence construction activities so that the soil is not exposed for long periods of times; – Protect storm drain inlets to filter out debris; and – Stabilize all exposed soil areas as soon as land alterations have been completed. ■ Prior to construction, a Stormwater Management Plan that will outline stormwater discharge management associated with construction activities, and an Erosion and Sediment Control plan will be developed. ■ The applicable Toronto and Region Conservation Authority's Living City Policies (Toronto and Region Conservation Authority, 2014b) will be followed during detailed design. ■ The Toronto and Region Conservation Authority's Stormwater Management Criteria (Toronto and Region Conservation Authority, 2012) will be considered during detail design, including those policies related to impervious areas. If required, obtain a Municipal Discharge Permit (City of Toronto Private Water Discharge Permit/Agreement) to manage excess surface water/stormwater.	■ Monitoring activities will be implemented as outlined in the Stormwater Management Plan and/or Erosion and Sediment Control Plan and may include regular inspections and reporting on the performance of implemented erosion and sediment control measures, best management practices, and other monitoring activities, as required. ■ All monitoring procedures should stay in place throughout East Harbour Station early works construction.

6.4 Air Quality

Table 6-4 outlines mitigation measures and monitoring activities to address the potential air quality impacts that may result from the East Harbour Station early works.

The following federal and provincial guidelines for construction mitigation were utilized in the development of mitigation measures:

- Environment Canada's Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc., 2005);
- Ministry of the Environment, Conservation and Parks' Management Approaches for Industrial Fugitive Dust Sources Technical Bulletin (Ministry of the Environment, Conservation and Parks, 2017);
- Ontario Hot Mix Producers Association's Environmental Practices Guide: Ontario Hot Mix Asphalt Plants, Fifth Edition (Ontario Hot Mix Producers Association, 2015); and
- Operations Manual for Air Quality Monitoring in Ontario (Ministry of the Environment, 2018).

Table 6-4: Potential Impacts, Mitigation Measures and Monitoring Activities – Air Quality

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Construction Air Quality	■ Potential air quality impacts could include effects from diesel combustion and particulate emissions. Odour and visible dust may also cause public annoyance. ■ Exhaust emissions from construction vehicles may contribute to increased levels of nitrogen oxides, and volatiles such as benzene and benzo(a)pyrene, which given their existing background concentrations can contribute to existing levels of provincial criteria exceedance. ■ Certain construction activities are likely to emit particulates in higher quantities, which include site preparation and earth works activities, demolition activities, unpaved surfaces with heavy equipment travel, and uncovered soil storage piles. ■ Disruption of contaminated soils may release contaminants.	■ On-site construction vehicle activity shall be managed to control emissions of odourous contaminants and diesel exhaust, including benzene and benzo(a)pyrene emissions from exhaust. A plan to manage air quality will be developed to ensure consistent attention to mitigation of dust and particulates, including silica, from the construction site. The following mitigation measures should be considered in the plan to manage air quality: – All equipment complies with Canadian engine emissions standards. – All equipment visually inspected prior to use and properly maintained. – Implement a no idling policy on site (unless necessary for equipment operation). – Use of electricity from the grid over diesel generators wherever possible. – Retrofitting of combustion engines with specific exhaust emission control measures such as particulate traps. – If applicable, follow guidelines on hot mix asphalt outlined in the Ontario Hot Mix Producers Association's Environmental Practices Guide: Ontario Hot Mix Asphalt Plants, Fifth Edition (Ontario Hot Mix Producers Association, 2015). ■ Applicable mitigation measures from Environment Canada's Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc., 2005), the Ministry of the Environment, Conservation and Parks' Technical Bulletin Management Approaches for Industrial Fugitive Dust Sources, shall be followed. The following mitigation measures should be considered in the plan to manage air quality: – Complete earthwork grading within 10 days of ceased active construction. – Temporary seeding or mulching of bare soil and storage piles. – Compression or clodding of soil surfaces and storage piles to reduce erosion. – Confine storage pile activity to downwind side of piles. – Reduction of activities during high wind conditions. – Full or partial enclosure of demolition activities. – Wind screens or barriers where possible or necessary. – Off-site construction of certain structures or parts of structures to minimize air emission due to interference with the normal flow of traffic. – Scheduling certain construction activities (i.e., site preparation and earth works activities, demolition activities, unpaved surfaces with heavy equipment travel, and uncovered soil storage piles) to periods of time when exposure to dust is expected to be limited (e.g., avoid scheduling activities during dry, windy weather conditions). – Landscaping materials ordered close to time of use to reduce on-site storage. – Application of non-chloride soil stabilizers or dust control polymers where feasible. – Daily removal of accumulated mud, dirt and debris deposits on-site, and regular truck washing – Paved and unpaved roadway cleaning, watering or application of a non-chloride dust suppressant. – Minimize drop height of materials on-site. – Covering surface area of hauled bulk material. – Methods and equipment for cleanup of accidental spill of dusty materials. – Limit travel speeds on-site to a maximum of 16 to 24 kilometres per hour. ■ If disruption of contaminated soils is anticipated at any time, **Section 6.2** of this Report includes remedial action plans, risk assessment and risk mitigation plans for encountering contamination and minimizing the release of contaminants. ■ Develop a communications protocol which includes timely resolution of complaints.	■ The following monitoring activities should be considered in the development of the plan to manage air quality: – Baseline conditions should be established prior to construction for longer than one week to capture representative concentrations under varying meteorological conditions. – On-site air quality monitoring including real-time particulate monitoring representative of receptor impacts. – Place monitors both upwind and downwind of construction activities, where possible. – Application of threshold "Action Level" triggers for implementation of specific and increasing intensity mitigation activities linked to specific construction activities. – Reporting detailing results of ongoing monitoring and mitigation activities. – Monitoring at locations where there are persistent complaints, as required. ■ In addition, relevant construction monitoring activities from the following recommended guidelines will be implemented during construction: – Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc., 2005); and – Operations Manual for Air Quality Monitoring in Ontario (Ministry of the Environment, Conservation and Parks, 2018).

6.5 Noise and Vibration

The Final Noise and Vibration Early Works Report, found in **Appendix B3**, documents the assessment of Lakeshore East Joint Corridor early works construction impacts related to noise and vibration. Impacts associated with Project operations will be addressed as part of the Environmental Impact Assessment Report, under separate cover and are not part of the Lakeshore East Joint Corridor early works. Note that the assessment of the Lakeshore East Joint Corridor operational noise and vibration impacts is documented in the Lakeshore East Joint Corridor Noise and Vibration Operations Report found in **Appendix C** of this report. Noise and vibration impacts due to the construction of the early works are temporary and will cease once construction has been completed.

Table 6-5 outlines mitigation measures and monitoring activities to address the potential noise and vibration impacts that may result from the East Harbour Station early works.

Table 6-5: Potential Impacts, Mitigation Measures and Monitoring Activities – Noise and Vibration

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Construction Noise **Note: Details of the operational noise impacts and planned mitigation are included in the Lakeshore East Joint Corridor Noise and Vibration Operations Report, found in Appendix C.**	■ Environmental noise may cause annoyance and disturb sleep and other activities. ■ The severity of the noise effects resulting from construction projects varies, depending on: – Scale, location and complexity of the project – Construction methods, processes and equipment deployed – Total duration of construction near sensitive noise receivers – Construction activity periods (days, hours, time period) – Number and proximity of noise-sensitive sites to construction area(s)	Establish and apply project-specific noise criteria/limits. Construction noise impact mitigation measures to be considered to meet project-specific noise criteria/exposure limits include but are not limited to the following: ■ Siting construction staging and laydown areas to avoid/reduce adverse impacts to sensitive receivers where feasible. ■ Use construction equipment compliant with noise level specifications in Ministry of Environment, Conservation, and Parks guidelines NPC-115 and NPC-118. ■ Keep equipment in good working order and operate with effective muffling devices. ■ Equipment enclosures for equipment such as generators and compressors. ■ Additional equipment silencers/mufflers. ■ Use of upgraded construction hoarding (considering requirements from Canadian Standards Association Z107.9 for noise barriers) between construction equipment and noise sensitive receivers. ■ Use of localized movable noise barriers/screens for specific equipment and operations. ■ Minimize simultaneous operation of equipment where feasible. ■ Implement a no idling policy on site (unless necessary for equipment operation). ■ Restrict construction hours where feasible: – Perform construction during daytime hours where feasible. If night time construction is necessary, the activities with the highest noise levels should be conducted during day time periods where feasible. – If construction will occur outside of normal daytime hours, inform local residents before construction of type of construction and expected duration outside of daytime hours. – Consider construction duration limits for construction near 68 Broadview Avenue (night), 9 Lewis Street, 2 McGee Street (night), and 20 Saulter Street. ■ Limit the number of heavy trucks on site to the minimum required. ■ Stage construction vehicles away from noise sensitive locations, if feasible. ■ Undertake noise monitoring and regular reporting throughout the construction phase. Where noise level limits are exceeded, additional noise mitigation measures shall be implemented. ■ Review construction and occupation timelines for new noise sensitive development in West Don Lands. As the completion date of these new noise sensitive receivers relative to the early works construction period is not yet determined, mitigation may be adjusted based upon the new developments (unoccupied as of June 2021) construction/occupation schedule. ■ Develop a communications protocol which includes timely resolution of complaints. ■ Additional mitigation measures not listed above may be considered.	■ Noise levels will be monitored where the impact assessment indicates that noise limits may be exceeded, to identify if any additional mitigation is required and verify mitigation measures(s) effectiveness. ■ Continuous noise monitoring should be completed at each geographically distinct active construction site associated with the Project with monitor(s) located strategically to capture the worst-case construction related noise levels at receiver locations based on planned construction activities, their locations, and the number, geographic distribution and proximity of noise sensitive receivers. ■ Monitoring at locations where there are persistent complaints, as required.

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Construction Vibration **Note: Details of the operational vibration impacts and planned mitigation are included in the Lakeshore East Joint Corridor Noise and Vibration Operations Report, found in Appendix C.**	▪ Exposure to vibration may result in public annoyance and complaints. Vibration may also cause damage to buildings and other structures.	Construction vibration impact mitigation measures to be considered include but are not limited to the following to meet applicable vibration criteria: ▪ Siting construction staging and laydown areas to avoid/reduce adverse impacts to sensitive receivers where possible. ▪ Utilize equipment with low vibration emissions where possible. ▪ Off-site construction of components away from sensitive areas. ▪ Restrict construction hours where feasible: – Perform construction during daytime hours where feasible. If night time construction is necessary, the activities with the highest vibration levels should be conducted during the daytime periods where feasible. ▪ Review vibration assessment based upon refined site staging, construction areas/equipment, and building locations prior to the commencement of construction, and update if necessary. ▪ Review and refine the construction activities to avoid potential impacts to the car dealership at 11 Sunlight Park Road, 341 and 353 Eastern Avenue, 9/11 Lewis Street, and 20 Saulter Street. ▪ Review other applicable vibration limits that may apply, such as the City of Toronto Specification GN117SS. ▪ Conduct monitoring and pre-construction inspections in accordance with City of Toronto By-law 514-2008. Monitoring and preconstruction requirements can be determined by calculation of Zone of Influence of construction equipment. ▪ Provide smooth surfaces for trucks to travel and route heavily loaded trucks away from vibration sensitives sites where possible. ▪ Operate construction equipment on lower vibration settings where available. ▪ Maximize distance between equipment and sensitive receivers while receivers where feasible. ▪ Establish and apply project-specific construction vibration criteria limits. ▪ Do not operate equipment where the City of Toronto By-law 514-2008 prohibited limits are predicted to be exceeded. Alternative construction methods and/or equipment with lower vibration emissions or power settings can be used if they do not exceed the City of Toronto's prohibited vibration limits. ▪ As Project planning and design progress, conduct a review to identify any sensitive structures/operations that require more stringent vibration limits than the limits in City of Toronto By-law 514-2008; assess requirements, review/revise vibration limits for these locations and, if necessary, develop mitigation measures. US Federal Transit Administration Report No. 0123, Transit Noise and Vibration Impact Assessment Manual (2018) could be used as a source of additional criteria. ▪ Develop communications protocol which includes timely resolution of complaints. ▪ Additional mitigation measures not listed above may be considered.	▪ Monitoring will be undertaken at locations within the Zone of Influence to ensure compliance with the City of Toronto By-law 514-2008 and to identify the need for additional mitigation if required. ▪ Monitoring will be undertaken to ensure compliance with other applicable vibration level limits identified, as required. ▪ Monitoring will be undertaken to verify mitigation measure(s) effectiveness. ▪ Pre-construction building inspection of the potentially impacted buildings adjacent to the early works construction sites are to be undertaken in accordance with City of Toronto By-law 514-2008. Continuous vibration monitoring along the construction site property lines closest to these structures will be initiated as warranted. ▪ Monitoring at locations where there are persistent complaints, if required.

6.6 Socio-Economic and Land Use Characteristics

Table 6-6 outlines mitigation measures and monitoring activities to address the potential socio-economic and land use impacts that may result from the East Harbour Station early works.

Table 6-6: Potential Impacts, Mitigation Measures and Monitoring Activities – Socio-Economic and Land Use Characteristics

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Property	■ Property acquisition – permanent and temporary	■ Specific permanent property requirements associated with the early works infrastructure components and temporary property requirements associated with construction laydown and access will be minimized to the extent feasible as planning and design progress.	■ None identified.
All Land Uses and Adjacent Lands	■ Nuisance effects from construction activities	■ Mitigation measures related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration potential impacts, mitigation measures, and monitoring activities tables. ■ An Erosion and Sediment Control Plan will be developed in accordance with the Erosion and Sediment Control Guide for Urban Construction (Toronto and Region Conservation Authority, 2019), as amended from time to time, that addresses sediment release to adjacent properties and roadways.	■ Monitoring activities related to potential nuisance effects are outlined in the Air Quality and Noise and Vibration potential impacts, mitigation measures, and monitoring activities tables. ■ Erosion and sediment control monitoring to be conducted (e.g., on-site inspection of erosion and sediment control measures).
All Land Uses and Adjacent Lands	■ Land use and access disruption	■ Provide well connected, clearly delineated, and appropriately signed temporary walkways and cycling route options, with clearly marked detours where required. ■ Provide temporary walkways with a pedestrian clearway of 2.1 metres, where possible. Temporary walkways required during construction will also meet Accessibility for Ontarians with Disabilities Act requirements for universal accessibility. ■ Provide temporary lighting, as required, and wayfinding signs and cues for navigation around the construction site. ■ Regular (existing) access to businesses during working hours will be maintained, where feasible. Where regular access cannot be maintained, alternative access and signage will be provided.	■ Regular monitoring (e.g., on-site inspection) of temporary access paths, walkways, cycling routes and fencing to ensure effectiveness.
Visual Characteristics	■ Visual effects from permanent public-facing structures and construction activities/areas	■ Consult with the City of Toronto as planning progresses. ■ Minimize the visual effects of station structures and the Eastern Avenue bridge by selecting appropriate building materials and architectural design. ■ A fence/screened enclosure for the construction area(s) will be provided, as required.	■ Regular monitoring (e.g., on-site inspection) of construction visual effects mitigation measures to ensure effectiveness.
Light Pollution	■ Light trespass, glare and light pollution effects	■ Comply with all local applicable municipal by-laws and Ministry of Transportation practices for lighting in areas near or adjacent to highways and roadways regarding outdoor lighting for both permanent and temporary construction activities, and incorporate industry best practices provided in ANSI/IES RP-8-18 – Recommended Practice for Design and Maintenance of Roadway and Parking Facility Lighting. Obtrusive light with respect to adjoining residents, communities, and/or businesses will be limited. ■ Perform the work in such a way that any adverse effects of construction lighting are controlled or mitigated to avoid unnecessary and obtrusive light with respect to adjoining residents, communities and/or businesses.	■ Regular monitoring (e.g., on-site inspection) of light pollution mitigation measures to ensure effectiveness.
Public Realm	■ Potential permanent or temporary relocation or removal of streetscaping materials, furniture, and landscaping in the public realm	■ Relocation or removal of streetscaping materials, furniture, and landscaping in the public realm will be minimized to the extent feasible. Wherever feasible, lands impacted by construction will be restored to the current City of Toronto standard following construction completion. ■ Consult with the City of Toronto and Business Improvement Areas, as necessary, for restoration of assets owned by the City or Toronto and local Business Improvement Areas.	■ There are no monitoring activities associated with the public realm.

6.7 Built Heritage Resources and Cultural Heritage Landscapes

No impacts to built heritage resources or cultural heritage landscapes are anticipated as a result of the East Harbour Station early works.

6.8 Archaeological Resources

Early works are anticipated to result in a combination of surface/above grade and below grade impacts. Areas with determined impacts requiring further archaeological assessment will dictate the type of archaeological assessment strategy that should be employed. Further archaeological assessment that could be required for early works include standard surface level testing, a combination of mechanical and hand excavation for deeply buried contexts, and a requirement for archaeological monitoring during construction. The type of impact could also remove the requirement for certain types of archaeological assessment. Recommendations from the Stage 1 archaeological assessment reports and any subsequent archaeological assessments will be followed. Additionally, all archaeological assessment reports will be submitted to and reviewed by Ministry of Heritage, Sport, Tourism and Culture Industries and a letter will be issued confirming that the report(s) has been entered into the Register, prior to any ground disturbing activities.

Table 6-7 outlines mitigation measures and monitoring activities to address the potential impacts to archaeological resources that may result from the East Harbour Station early works.

It should be noted that the East Harbour Station Early Works Project Footprint may include lands that will not require ground disturbing activities during early works construction. As planning progresses and specific areas of ground disturbing activities are confirmed, only those areas will require further archaeological assessment.

Table 6-7: Potential Impacts, Mitigation Measures and Monitoring Activities - Archaeological Resources

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Archaeological Potential	■ Potential for the disturbance of unassessed or documented archaeological resources.	■ Areas identified as retaining archaeological potential in the East Harbour Station Early Works Project Footprint, as per the Ontario Line South Stage 1 Archaeological Assessment Report (AECOM, 20204), are shown on **Figure 5-19**. Should ground disturbing activities be planned within these areas, further archaeological assessment must be completed prior to any ground disturbing activities. ■ Any additional Archaeological Assessments (e.g., Stage 2, Stage 3 if recommended by the Stage 2) shall be completed as early as possible, and prior to the ground disturbing activities. This work shall be done in accordance with the Ministry of Heritage, Sport, Tourism and Culture Industries' Standards and Guidelines for Consultant Archaeologists (2011) to identify any archaeological resources that may be present. Recommendations from the Stage 1 archaeological assessment reports and any subsequent archaeological assessments will be followed. The report will be submitted to and reviewed by Ministry of Heritage, Sport, Tourism and Culture Industries and a letter will be issued confirming that the report(s) has been entered into the Register, prior to any ground disturbing activities. ■ Indigenous Nations will be invited to participate in any subsequent archaeological work. All future archaeological assessment findings will be shared with the Indigenous Nations that were engaged during the Stage 1 archaeological assessment.	■ None identified.
Archaeological Resources	■ Potential recovery of archaeological resources during construction.	■ Should previously unknown or unassessed deeply buried archaeological resources be uncovered during construction activities, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological field work, in compliance with Section 48 (1) of the Ontario Heritage Act. Any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Government Services. In addition, consultation with relevant Indigenous Nations will be initiated in the event that archaeological resources or human remains are discovered.	■ None identified.

6.9 Traffic and Transportation

Table 6-8 outlines mitigation measures and monitoring activities to address the potential traffic and transportation impacts that may result from the East Harbour Station early works.

Table 6-8: Potential Impacts, Mitigation Measures and Monitoring Activities - Traffic and Transportation

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Transportation Network – Roads	■ If required, temporary lane closures along Eastern Avenue and Broadview Avenue may result in impeding traffic flow and increased average delay of vehicles, including emergency vehicles. ■ Construction vehicle traffic may impact traffic operations resulting in increased vehicular delays and queue lengths, especially at intersections where construction traffic is required to make left-turning movements. ■ Potential overlapping construction timelines with other planned projects (e.g., capital projects and local developments) nearby may result in impacts to the transportation network and its road users. ■ Potential sightline deficiencies might develop near construction egress locations for the eastbound traffic along Eastern Avenue due to the road's curvature upstream of the rail bridge.	■ A quantitative traffic impact assessment will be completed, if required, as project planning progresses to consider vehicular traffic impacts as a result of the East Harbour Station early works. ■ Develop and implement a transit and traffic management plan(s), which could include temporary changes to intersection lane configurations, traffic signal timing optimization, modifications to existing signal timing plans, etc. The transit and traffic management plan(s) will also address specific emergency services requirements in consultation with the City of Toronto. ■ Traffic signal timing optimization may be assessed/implemented to increase capacity of affected intersections and to aid in the movement of traffic. Traffic signal timing adjustments would require coordination between Metrolinx and City of Toronto, and will be undertaken if required, to determine appropriate changes to traffic signal timings. ■ Consider scheduling construction activities during off-peak periods and weekends to minimize disruptions to road users during the critical peak periods. ■ Co-ordinate with the City of Toronto regarding other ongoing construction projects when scheduling the early works activities to maintain the mobility of road users. ■ Implement flagging at locations with potential sightline deficiencies to ensure general traffic are aware of the construction vehicles operation within the construction area.	■ The effectiveness of the transit and traffic management plan(s) will be monitored throughout the construction period and adjustments will be made based on actual field observations, as needed.
Transportation Network – Active Transportation	■ Potential traffic congestion along the East Harbour Station Traffic and Transportation Study Area roads, as a result of the increase in heavy vehicle traffic, could increase pedestrians' and cyclists' exposure to traffic. ■ If required, temporary realignment of the existing sidewalks along some of the East Harbour Station Study Area roads (i.e., Eastern Avenue, Lewis Street, Broadview Avenue, Sunlight Park Road, and Dibble Street) may increase walking distances and impact the convenience of pedestrians.	■ Reduce interference with pedestrians and cyclists. This may include fencing, hoarding (minimum 2 meters high, solid, and secured), shared-lane markings, signals, wayfinding signs, and lighting as required to provide pedestrians and cyclists with safe, accessible, and continuous routes. ■ If required, co-ordinate with the City of Toronto to ensure any modifications to pedestrian crossing distances at signalized intersections are reflected in revised pedestrian clearance timings. ■ Any temporary pedestrian facilities including temporary or relocated Toronto Transit Commission transit stops will be designed to meet Toronto Transit Commission accessibility standards. ■ Implement flagging where construction vehicles are present to ensure construction vehicle operators are aware of pedestrian and vehicular traffic within the construction area.	■ The effectiveness of the transit and traffic management plan(s) will be monitored throughout the construction period and adjustments will be made based on actual field observations, as needed.
Transportation Network – Rail	■ Early works construction may require temporary full or partial closure of existing rail tracks, which may disrupt existing commuter and freight rail operations.	■ Consult with rail operators with current service along the rail corridor (i.e., VIA Rail, Canadian National Railway, and Canadian Pacific Railway) to assess how track closures would impact their service and co-ordinate temporary schedules to accommodate all rail services on the open tracks.	■ The effectiveness of the transit and traffic management plan(s) will be monitored throughout the construction period. Adjustments to the construction staging plans and transit and traffic management plan(s) will be made based on actual field observations, as needed.
Transit Network	■ Potential increase of construction vehicles traffic could result in travel time delays to existing surface transit routes (i.e., Toronto Transit Commission bus route #143 Downtown/Beach Express) that travel within the East Harbour Station Traffic and Transportation Study Area. ■ Potential temporary lane restrictions on Eastern Avenue and Broadview Avenue could result in travel time delays to Toronto Transit Commission bus #143 Downtown/Beach Express travelling within the East Harbour Station Traffic and Transportation Study Area.	■ Co-ordinate with the Toronto Transit Commission and notify transit users regarding travel delays to the bus services in advance, if required. ■ Consider scheduling some construction activities during off-peak periods and weekends to minimize delays to bus services during the critical peak periods.	■ Transit services will be monitored through actual field observations throughout the construction period and additional mitigation measures will be considered, as needed.

6.10 Utilities

Table 6-9 outlines mitigation measures and monitoring activities to address the potential utilities impacts that may result from the East Harbour Station early works.

Table 6-9: Potential Impacts, Mitigation Measures and Monitoring Activities - Utilities

Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Private Utilities	■ Utilities modification and relocation. ■ It is anticipated that there will be temporary impacts to existing utilities during the construction of early works, with potential relocations and associated disruptions to be determined. ■ Potential impacts to utilities are under review and will be confirmed as project planning progresses.	■ In-depth utility investigations will be undertaken during detailed design to confirm impacts. Any potential conflicts and association relocation requirements or mitigation measures will be identified in consultation with utility providers. ■ During detailed design, the potential impacts to utilities, relocations and mitigation measures will be further refined and confirmed through a subsurface utility engineering investigation. ■ Appropriate mitigation measures including next steps related to consultation with utility companies and stakeholders, and phasing plans will be determined once the impacts are confirmed. Utility relocations will consider potential impacts to the natural environment and comply with mitigation measures outlined in **Table 6-1**.	■ None identified.
Public Utilities and Municipal Servicing	■ Utilities modification and relocation. ■ It is anticipated that there will be temporary impacts to existing utilities during the construction of early works, with potential relocations to be determined. ■ Potential impacts to utilities are under review and will be confirmed as project planning progresses.	■ In-depth utility-related investigations such as subsurface utility engineering investigation will be completed during detailed design. Metrolinx will consult with the City of Toronto during the development of these studies to ensure concerns are addressed. ■ Metrolinx will also consult with the City of Toronto and Toronto Hydro, as required, during detailed design regarding potential impacts to municipal infrastructure and servicing and ensure that applicable City standards, guidelines, and criteria are met. ■ Utility relocations will consider potential impacts to the natural environment and comply with mitigation measures outlined in **Table 6-1**.	■ None identified.

7. Permits and Approvals

The following sections provide a description of the federal, provincial, conservation authority and/or municipal permits that may be required for the East Harbour Station early works. Permit and approval requirements will be confirmed as early works detailed design progresses.

7.1 Federal

No federal permits are anticipated to be required for the East Harbour Station early works.

7.2 Provincial

7.2.1 Ontario Water Resources Act, 1990

As prescribed under Ontario Regulation 63/16, water taking for construction or for highways and transit projects may fall within low-risk short-term water taking activities if they meet the following criteria:

- Surface water takings that are more than 50,000 Litres per day and are for highway projects and/or transit projects;
- Construction site dewatering that takes more than 50,000 Litres per day and less than or equal to 400,000 Litres per day of groundwater, where the daily taking limits are applicable to:
  - Each area of influence in the construction site if the areas of influence do not overlap with each other; and
  - The combined area of influence in the construction site if the area of influences overlaps with each other.

The above water taking limits are subject to registration through the Environmental Activity and Sector Registry (Ministry of the Environment, Conservation and Parks 2021).

Approvals for the discharge of pumped water may also be required, and could be a combination of Municipal Discharge Permits (City of Toronto Private Water Discharge Permit/Agreement) and/or Ministry of the Environment, Conservation and Parks Environmental Compliance Approvals in accordance with Section 53 of the Ontario

Water Resources Act. Any discharge of water would be subject to the terms and conditions of required permits and approvals based on the expected site conditions. Permitting requirements shall be confirmed during detailed design, when specific details such as construction timing and methods are known.

7.2.2 Environmental Protection Act, 1990

Environmental Compliance Approval(s) may be required from the Ministry of the Environment, Conservation and Parks for equipment held by contractors, owners and operators of that equipment in advance of construction, as required.

7.2.3 Endangered Species Act, 2007

Metrolinx will comply with the conditions of the Permit CR-D-002-19 issued on August 7, 2020 under Section 17 (1) in accordance with clause 17(2)(d) of the Endangered Species Act, 2007 for Species at Risk that may be affected by the East Harbour Station early works including Barn Swallow and bat Species at Risk.

Individual permits and approvals for construction activities are not required specifically for air quality prior to early works construction, with the exception of Environmental Compliance Approval(s) for equipment held by contractors, owners and operators of that equipment, which will be obtained in advance of construction, as necessary.

7.3 Conservation Authority

Metrolinx will consult with Toronto and Region Conservation Authority with respect to construction activities in regulated areas for the East Harbour Station early works in relation to Ontario Regulation 166/06: Toronto and Region Conservation Authority Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

7.4 Municipal

A range of municipal permits and approvals (e.g., Permit to Injure or Remove Trees and/or Street Occupation Permit) may be required for East Harbour Station early works, particularly as pertaining to municipally owned lands and infrastructure.

Water, sanitary, and storm servicing will be reviewed during detailed design. Metrolinx will consult with the City of Toronto during detailed design to address impacts to municipal water, sanitary, and storm sewer systems.

A construction vibration control form is typically required to accompany a building permit as per the City of Toronto By-law 514-2008. This will be confirmed during the design and implementation phases of the East Harbour Station early works. Should a building permit be required, Metrolinx will consult with the City of Toronto.

Metrolinx, as a Crown Agency of the Province of Ontario, is exempt from certain municipal processes and requirements. In these instances, Metrolinx will engage with the City of Toronto to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals.

Metrolinx shall continue to communicate and engage with the City of Toronto during detailed design and construction planning to address municipal concerns.

8. Consultation Process

8.1 Overview of the Consultation Process

In accordance with Section 11 of Ontario Regulation 341/20: Ontario Line Project, this section summarizes the East Harbour Station early works consultation activities carried out with members of the public, technical stakeholders, community stakeholders and groups, Elected Officials, Indigenous Nations, and other interested parties, including a summary of feedback and comments received. The overall Project record of consultation and summary of correspondence with the public, community stakeholders and groups, government review agencies and other technical stakeholders, Elected Officials and Indigenous Nations between November 2019 and October 17, 2020 is provided in Section 7 and Appendix C of the Ontario Line Final Environmental Conditions Report.

On September 23, 2021, the Notice of Publication of Draft East Harbour Station Early Works Report was issued to commence the review period, effective until October 24, 2021. The Notice was published on the engagement webpage of the Project website (www.metrolinx.com/ontarioline) and distributed to:

- The individuals on the Project Distribution List, including community stakeholders and groups, government review agencies and other technical stakeholders, Elected Officials and Indigenous Nations;
- Approximately 12,380[22] properties (i.e., apartments, houses and businesses) within and surrounding the East Harbour Station Study Area; and
- 73 property owners within 30 metres of the East Harbour Station Early Works Project Footprint.

The Notice was advertised in three major newspapers (Toronto Star, Le Metropolitan, Toronto L'Express) in English and French, and three community newspapers (Beach Metro, The Greek Press and Ming Pao) in English, French, Greek and Traditional Chinese.

On November 17, 2021, the Notice of Publication of Final East Harbour Station Early Works Report was issued. The Notice was published in the same major and community newspapers that the Notice of Publication of Draft East Harbour Station Early Works

22. The property list has been updated since publishing the Draft East Harbour Station Early Works Report from 12,112 to 12,380 to accommodate the most recent Canada Post mail routes, which are updated on a monthly basis.

Report was advertised in. The Notice was also distributed to all individuals, 12,380[23] properties within and surrounding the study area, 73 property owners within 30 metres of the East Harbour Station Early Works Project Footprint, community stakeholders and groups, government review agencies and other technical stakeholders, Elected Officials and Indigenous Nations that received the Notice of Publication of Draft East Harbour Station Early Works Report. The Final East Harbour Station Early Works Report (this Report) includes updates based on feedback received during the review period of the Draft East Harbour Station Early Works Report and is summarized in **Section 8.2.2**.

Consultation records related specifically to East Harbour Station early works are documented in **Appendix B3** of this Report. **Appendix B3** has been updated as part of this Final East Harbour Station Early Works Report to include all correspondence with the public, community stakeholders and groups, government review agencies and other technical stakeholders, Elected Officials and Indigenous Nations.

8.1.1 Approach to Consultation

The overall approach to consultation for the Project is outlined in Section 7.1.1 of the Ontario Line Final Environmental Conditions Report (AECOM, 2020a)[24], with further details provided in Appendices C1 to C6 of that report.

To share information and collect feedback related to East Harbour Station early works, Metrolinx has undertaken the following communication and engagement activities prior to and following the publication of the Draft East Harbour Station Early Works Report and during the 31-day review period:

- Early works specific updates on the Engagement webpage (Project website) (www.metrolinx.com/ontarioline) including:
  - East segment neighbourhood updates (East Harbour Station is within the East segment) – published on September 17, 2020 and updated on November 30, 2020, April 6, 2021, April 23, 2021 and September 23, 2021;
  - East segment virtual presentation and live question and answer session hosted on April 22, 2021 (https://www.metrolinxengage.com/en/OLliveApril22), June 24, 2021 (https://www.metrolinxengage.com/en/OLLiveEJune24), September 23,

23. The property list has been updated since publishing the Draft East Harbour Station Early Works Report from 12, 112 to 12,380 to accommodate the most recent Canada Post mail routes, which are updated on a monthly basis.
24. The Ontario Line Final Environmental Conditions Report (AECOM, 2020) was posted on the Engagement webpage (Project website) on November 30, 2020 in accordance with Ontario Regulation 341/20: Ontario Line Project.

2021 (https://www.metrolinxengage.com/en/olLIVEsept23) and October 5, 2021 (https://www.metrolinxengage.com/en/OLLIVEOct5); and
  - The Ontario Line - Environment webpage (https://www.metrolinxengage.com/en/content/ontario-line-environment) that includes the Ontario Line environmental reporting timeline, early works scope overview and locations and provides an option to learn more about each early works location – published on September 17, 2020 and updated on August 9, 2021, September 23, 2021 and November 17, 2021 to include East Harbour Station early works.
- Mailings/notifications;
- Emails via the Project email address (ontarioline@metrolinx.com);
- E-newsletters to the Project Distribution List (see **Section 8.1.3** for more details);
- Newspaper advertisements;
- Elected Officials Briefings (see **Section 8.5** for list of Elected Officials and associated electoral districts and Ward numbers);
- Outreach to Indigenous Nations, government review agencies and other technical stakeholders;
- Online consultation via the Engagement webpage (Project website); and
- Meetings with community stakeholders and groups.

Further details regarding the consultation process are included in the subsections below and **Appendices B1** to **B3**.

8.1.2 Record of Consultation

Metrolinx maintained a record of consultation related to East Harbour Station early works through November 17, 2021. The record of consultation has been divided into three separate appendices:

- **Appendix B1** provides the Project Distribution List used to facilitate notifications to stakeholders and interested parties.
- **Appendix B2** provides a record of all East Harbour Station early works consultation materials made available through the Engagement webpage (Project website).

- **Appendix B3** contains a record of consultation and correspondence, including newspaper advertisements and notices, and meetings with the public, community stakeholders and groups, government review agencies and other technical stakeholders, Elected Officials and Indigenous Nations through November 17, 2021.

All comments received from the public have been redacted to protect personal information.

8.1.3 Identification of Interested Parties

At the outset of the Project, an initial Project Distribution List was developed to facilitate notifications to stakeholders and interested parties. Additional email contacts were collected through the Engagement webpage (Project website) (where individuals could submit their email addresses and select “subscribe”), and through in-person and online consultation activities that took place through November 2021. Individuals have the opportunity to subscribe or unsubscribe to the Project Distribution List at any time.

The Project Distribution List is a live document that is continuously updated in response to Project feedback (e.g., requests to be added) and is used to inform stakeholders and the public of Project milestones (e.g., Notice of Publication of Draft East Harbour Station Early Works Report and Notice of Publication of Final East Harbour Station Early Works Report).

The Project Distribution List is available in **Appendix B1** of this Report. To protect personal information, individuals and members of the public are not included on the Project Distribution List.

All parties on the Project Distribution List have been notified of the publication of the Draft East Harbour Station Early Works Report, including opportunities to review and provide comments, and have been notified of the Final East Harbour Station Early Works Report.

8.2 Public Engagement and Feedback

8.2.1 Public Engagement Opportunities

Through October 24, 2021, early works-specific public engagement efforts included posting early works updates to the Engagement webpage (Project website) and providing online engagement opportunities for interested persons (as mentioned in **Section 8.1.1** and described in detail in **Section 8.2.1.1** below).

8.2.1.1 Engagement Website

On August 9, 2021 and September 23, 2021, information related to East Harbour Station early works was published on the Engagement webpage (Project website) (www.metrolinx.com/ontarioline). This information is presented in **Appendix B2** of this Report. Information posted on September 23, 2021 included: the Notice of Publication of Draft East Harbour Station Early Works Report; the Draft East Harbour Station Early Works Report and associated appendices; details regarding East Harbour Station early works components; updates on the Environmental Assessment process; and key findings, potential effects and proposed mitigation measures for each of the environmental study reports.

Between September 23, 2021 and October 24, 2021, individuals had the opportunity to review the Draft East Harbour Station Early Works Report and associated discipline-specific environmental study reports outlining key study findings and provide feedback.

Through October 24, 2021, individuals have been able to provide feedback related to East Harbour Station early works using two different formats, 'Contact Us' and 'Ask-A-Question' (in addition to writing directly to the Ontario Line email address). 'Contact Us' is a fillable form where participants provide their name, e-mail address, subject and message. The messages submitted using this form are sent to the Ontario Line email address. 'Ask-A-Question' is a public forum where participants provide their name, topic and question in a fillable form. The questions submitted by participants and the responses from Metrolinx are shared publicly on the Metrolinx Engage website. Participants also have the option to vote for their favourite questions or responses.

From September 23, 2021 to October 24, 2021, individuals have also been able to provide feedback related to East Harbour Station early works through the 'Provide Your Feedback' function on the Engagement webpage (Project website). 'Provide Your Feedback' is a fillable anonymous form where participants can provide their feedback on the Draft East Harbour Station Early Works Report by answering the following questions:

- What are your thoughts on the results of the East Harbour Station early works environmental studies?
- Which East Harbour Station early works environmental study is most important to you and why?
- Is there anything else we missed? Please let us know if you have any additional thoughts or concerns about the Draft East Harbour Station Early Works Report.

To provide feedback on individual environmental studies, fillable anonymous environmental discipline-specific feedback forms with the following questions were located at the end of each environmental discipline webpage:

- What are your thoughts on the Air Quality study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Archaeological Resources study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Built Heritage Resources and Cultural Heritage Landscapes study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Hydrology and Surface Water study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Natural Environment study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Noise and Vibration study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Socio-Economic and Land Use Characteristics study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Soil and Groundwater study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Traffic and Transportation study key findings and identified potential impacts and mitigation measures?

All ‘Provide Your Feedback’, environmental discipline-specific feedback form submissions, ‘Contact Us’ and ‘Ask-A-Question’ submissions related to East Harbour Station early works received through to October 24, 2021 are available in **Appendix B3**. This appendix includes a summary of public email correspondence and a detailed correspondence record captured through to October 24, 2021.

The following online statistics were collected during the public engagement period for the Draft East Harbour Station Early Works Report from September 23, 2021 to October 24, 2021:

- Approximately 731 people visited the early works engagement webpages on the Project website to learn more about early works planned for East Harbour Station and share feedback;

- Four comments related to East Harbour Station early works were received by email;
- Four comments or questions related to East Harbour Station early works were received through the ‘Contact Us’ and ‘Ask-A-Question’ features; and
- 11 feedback form submissions were received in response to the Draft East Harbour Station Early Works Report.

8.2.2 Public Feedback

Public feedback received by Metrolinx prior to and during the review period for the Draft East Harbour Early Works Report between September 23, 2021 and October 24, 2021 is included in **Appendix B3**. All comments received from the public have been redacted to protect personal information.

A detailed summary of public feedback received up to October 24, 2021 is provided below.

8.2.2.1 Summary of Public Feedback – Email and Contact Us

The following section highlights the key findings identified through public feedback gathered during the review period for the Draft East Harbour Station Early Works Report (September 23, 2021 to October 24, 2021). Complete correspondence records related to this feedback can be found in **Appendix B3**.

Input received via email submissions and the ‘Contact Us’ and ‘Ask-A-Question’ features of the Engagement webpage (Project website) fell into the following general themes:

- Project alignment, operations and operational impacts;
- Station design; and
- Public engagement process.

Project Alignment, Operations and Operational Impacts

- One individual expressed concern about noise levels and inquired about how many seconds per minute on average will not have train noise.
- One individual suggested creating useable green space above and around the above ground alignment instead of building a noise wall.

- One individual noted that drawings do not include crash barrier walls between the rail corridor and Ontario Line corridor, and stated that it is required by regulations for the corridors to be separated by crash walls.
- One individual inquired about track and platform design and boarding at East Harbour Station. They also requested to know if the present embankment west of Gerrard Street can accommodate three additional tracks, if Ontario Line vehicles will meet all track standards and loading requirements, and if light rail vehicles share main line tracks on other projects in North America. They also inquired about Metrolinx's electrification system and noise modelling results.
- One individual requested that the underground portion of the Ontario Line be expanded to include the route from Pape Avenue and Danforth Avenue to south of Eastern Avenue. The individual requested that transit development within the City of Toronto occur without delay and remain a public entity. They requested that a flat transit rate be developed for the Toronto Transit Commission and the Ontario Line and that concerns of residents are taken into consideration when developing transit in the City of Toronto.

Station Design

- One individual inquired about the types of elevators that will be used at Ontario Line stations and if they will be similar to elevators used for other projects around the city.

Public Engagement Process

- One individual noted that they have not received a letter from the Metrolinx Property Team.
- One individual noted that they were unable to access the Early Works Reports and feedback form on the Engagement webpage.
- One individual inquired about registering for the October 5, 2021 virtual open house, and noted they were unable to locate information regarding registration on the Engagement webpage.

All public correspondence related to East Harbour Station early works is provided in **Appendix B3**.

8.2.2.2 Summary of Public Feedback – 'Provide Your Feedback' and Draft East Harbour Station Early Works Report Environmental Discipline-Specific Forms

The following themes emerged through the online 'Provide Your Feedback' and environmental discipline-specific feedback forms submitted through the Engagement webpage (Project website) from September 23, 2021 to October 24, 2021:

- Project alignment and operational impacts;
- Environmental study results;
- Public engagement process;
- Pedestrian and cyclist connectivity;
- East Harbour development; and
- COVID-19 ridership impacts.

What are your thoughts on the results of the East Harbour Station Early Works environmental studies?

- **Project alignment and operational impacts**
  - Two individuals expressed opposition to the above ground portion of the Ontario Line between East Harbour Station and Gerrard Street.
  - One individual expressed opposition regarding East Harbour Station and development within the surrounding area.

Which East Harbour Station Early Works environmental study is most important to you and why?

- **Project alignment and operational impacts**
  - One individual suggested the Ontario Line be a subway.
- **Environmental study results**
  - One individual stated that the Natural Environment Report is most important due to increased environmental degradation in the area. They stated that naturalization work on the Don River will be reversed as a result of East Harbour Station construction.
  - One individual noted that the Traffic and Transportation Report is most important. The individual noted that the rush hour traffic estimates are not accurate due to more people working flexible hours and from home.

- **East Harbour development**
  - One individual stated that the East Harbour development plan will change drastically before the station is built. The individual also requested that more greenspace and bike access should be included in the plan.

Is there anything we missed? Please let us know if you have any additional thoughts or concerns about the Draft East Harbour Station Early Works Report.

- **Project alignment and operational impacts**
  - One individual expressed opposition to the above ground portion through the Leslieville neighbourhood.
- **Environmental study results**
  - One individual requested to know why the immersive sound demonstrations only show noise levels from a single train, and noted that they should reflect multiple trains traveling at the same time.
- **Pedestrian and cyclist connectivity**
  - One individual noted that the station drawings do not show the bike and pedestrian bridge over the Don River and should be included in the report.
- **East Harbour development**
  - One individual noted that the plans for East Harbour Station should consider impacts to new businesses and residences that are also being planned.
- **COVID-19 ridership impacts**
  - One individual noted that ridership has decreased due to the COVID-19 pandemic, and the number of Ontario Line trains needed is no longer accurate. They suggested reverting to the original Downtown Relief Line plan.

What are your thoughts on the Air Quality study key findings and identified potential impacts and mitigation measures?

- **Environmental study results and public engagement process**
  - One individual suggested making the air quality testing results accessible to the public.

What are your thoughts on the Archaeological Resources study key findings and identified potential impacts and mitigation measures?

- **Public engagement process**
  - One individual noted that the public should be made fully aware of any potential significant archaeological discoveries and resulting construction delays.

What are your thoughts on the Natural Environment study key findings and identified potential impacts and mitigation measures?

- **Project alignment and operational impacts**
  - One individual expressed opposition to the above-ground portion between the Don River and Gerrard Street.
- **East Harbour development**
  - One individual expressed concern about the East Harbour Station impacts on the natural environment, and expressed opposition to the scale of development in the area.

What are your thoughts on the Noise & Vibration study key findings and identified potential impacts and mitigation measures?

- **Environmental study results**
  - One individual asked for clarification on the definition of noise level criteria exceedances. The individual noted that the suggested mitigation measures are too simple and suggested that no work should be done during evening hours. The individual requested the installation of sound barriers between construction and affected areas.

What are your thoughts on the Traffic & Transportation study key findings and identified potential impacts and mitigation measures?

- **Environmental study results**
  - One individual noted that this area of the city already suffers from traffic congestion and expressed concern that Ontario Line construction will worsen traffic issues.
- **Pedestrian and cyclist connectivity**
  - One individual inquired about bike and pedestrian bridge over the Don River, and noted that this is not included in the Early Works Report. They expressed concern that the bridge will be dropped from the design.

- One individual noted that bicycle connections are restricted to a few busy roads. They requested a pedestrian and cyclist bridge be built across the Don River to connect the east end of the City and downtown.

- **COVID-19 ridership impacts**
  - One individual noted that they do not think the Ontario Line project is needed as transit use has changed because of the COVID-19 pandemic. They expressed concern about the project getting canceled midway, resulting in disruption to surrounding communities.

No public feedback was received regarding the key findings, potential impacts and mitigation measures for the Built Heritage Resources and Cultural Heritage Landscapes, Hydrology and Surface Water, Socio-Economic and Land Use Characteristics, and Soil and Groundwater studies.

All public correspondence related to the Draft East Harbour Station Early Works Report is provided in **Appendix B3**.

8.3 Engagement with Community Stakeholders and Groups

Ninety-four community stakeholders and groups have been engaged through November 17, 2021, as listed below. Each of these community stakeholders and groups were notified of the publication of the Draft East Harbour Station Early Works Report via email on September 23, 2021 and were advised to provide feedback no later than October 24, 2021. GreekTown on the Danforth Business Improvement Area was provided notice via phone. They were also notified of the publication of the Final East Harbour Station Early Works Report (this Report) via email on November 17, 2021.

- Aboriginal Labour Force Development Circle;
- Aboriginal Legal Services;
- Amazing Moss Park;
- Anishnawbe Health Toronto;
- Association for Native Development in the Performing and Visual Arts;
- Beaconsfield Village Residents Association;
- Building Roots;
- Campbell House Museum;
- Canadian Council for Aboriginal Business;
- CF Toronto Eaton Centre;
- Chinatown Business Improvement Area;
- CityPlace Fort York Business Improvement Area;
- CityPlace Residents' Association;

- Community Living Toronto;
- Corktown Residents and Business Association;
- Danforth Business Improvement Area;
- Danforth Residents Association;
- Distillery Historic District;
- Don Mills Residents Inc.;
- Don Valley Community Legal Services;
- Downtown Yonge Business Improvement Area;
- East End Transit Alliance;
- Flemingdon Health Centre;
- Fontbonne Ministries;
- Fort York Neighbourhood Association;
- Friends of Corktown Common;
- Friends of Flemingdon Park;
- Friends of Moss Park;
- Friends of Trinity Bellwoods Park;
- Gabriel Dumont Institute;
- Garden District Residents Association;
- Garment District Neighbourhood Association;
- Gooderham and Worts Neighbourhood Association;
- Grange Community Association;
- GreekTown on the Danforth Business Improvement Area;
- Green Communities Canada;
- Lakeshore East Community Advisory Committee;
- Leadership of Downtown Toronto Business Improvement Areas;
- Leaside Green and Leaside Park Terrace Condos;
- Leaside Residents Association;
- Leslieville Business Improvement Area;
- Leslieville Historical Society;
- Liberty Village Business Improvement Area;
- Liberty Village Residents Association;
- LUX 9 Inc;
- March of Dimes Canada;
- Miziwe Biik Aboriginal Employment & Training;
- Native Canadian Centre of Toronto;
- Native Men's Residence;
- Native Women's Resource Centre;
- Nishnawbe Homes;
- Ontario Aboriginal HIV/AIDS Strategy;
- Pape Area Concerned Citizens for Transit;
- Pape Avenue Junior Public School Parent Council;
- Pape Village Business Improvement Area;
- Parkdale Residents Association;

- Parkdale Village Business Improvement Area;
- Queen Street West Business Improvement Area;
- Regent Park Neighbourhood Association;
- Riverside Business Improvement Area;
- Saulter Street Brewery;
- Save Jimmie Simpson!;
- Sisters of St. Joseph Toronto;
- St. Lawrence Market Neighbourhood Business Improvement Area;
- St. Lawrence Neighbourhood Association;
- Tabule Restaurant Group;
- The 519;
- The Bentway Conservancy;
- The Danny Business Improvement Area;
- The Friends of Fort York and Garrison Common;
- The Neighbourhood Organization;
- The Ontario Federation of Indigenous Friendship Centres;
- Thorncliffe Park Community Association;
- Thorncliffe Park Women's Committee;
- Thorncliffe Soccer Club;
- Toronto Aboriginal Support Services Council;
- Toronto Community Housing;
- Toronto Council Fire Native Cultu ral Centre;
- Toronto Entertainment District Business Improvement Area;
- Toronto Entertainment District Residents Association;
- Toronto Financial District Business Improvement Area;
- Toronto Inuit Association;
- Toronto and York Region Métis Council;
- Trinity Bellwoods Business Improvement Area;
- Two-Spirited People of the First Nations;
- United Way of Greater Toronto;
- Wandering Spirit School;
- Waterfront Business Improvement Area;
- West Don Lands Committee;
- West Queen West Business Improvement Area;
- Wigwamen;
- WoodGreen Community Services;
- Wynford-Concord Residents Association; and
- Young Men's Christian Association of Greater Toronto.

The following meetings focused on the Lakeshore East Joint Corridor Project segment.

On September 28, 2020, Metrolinx met with the West Don Lands Committee to provide updates on the Ontario Line Project and downtown segment. Items that were discussed included the procurement model, construction of stations and tunnels, station location and design, impacts to heritage buildings, flood impacts and mitigation, and operations of the Ontario Line.

Metrolinx met with the Lakeshore East Community Advisory Committee on May 13, 2020, October 13, 2020, March 25, 2021, June 11, 2021 and June 18, 2021.

Items that were discussed on May 13, 2020 with the Lakeshore East Community Advisory Committee included improvement of noise and vibration mitigation measures along the Lakeshore East Joint Corridor, environmental assessment process and timelines, impacts to the Jimmie Simpson Recreation Centre, plans for the bridges along the joint corridor, support for the Ontario Line being underground, impacts to nearby schools and impacts of COVID-19 on planning of the Ontario Line.

Items discussed during the meeting on October 13, 2020 with the Lakeshore East Community Advisory Committee included changes to community relations as a result of COVID-19, property impacts, noise mitigation plans such as noise walls and landscaping, cost comparison of having the Ontario Line underground, benefits of the Ontario Line for the community, air quality and noise and vibration assessment methodology and tree and park impacts. The Lakeshore East Community Advisory Committee also expressed their concerns with the Ontario Line being above ground in the Lakeshore East Joint Corridor segment and their support for an underground alignment in this segment.

Items that were discussed during the March 25, 2021 meeting with the Lakeshore East Community Advisory Committee included a status update on the Ontario Line Project with a focus on the Lakeshore East Joint Corridor, noise walls, alignment considerations, the north shift of the Ontario Line tracks in the corridor, construction timelines, noise and vibration assessment methodology and mitigation measures, community and train safety, property and surface transit impacts and staging areas. The Lakeshore East Community Advisory Committee also expressed their concerns with the Ontario Line being above ground in the Lakeshore East Joint Corridor segment and their support for an underground alignment in this segment.

During the June 11, 2021 with the Lakeshore East Community Advisory Committee, Metrolinx provided details about the June 24, 2021 virtual open house, clarified past answers to Save Jimmie Simpson!, and reviewed the Community Advisory Committee’s terms of reference and future cadence of meetings.

On the June 18, 2021 meeting with Lakeshore East Community Advisory Committee, items that were discussed included transit corridor lands, location and safety of the overhead catenary system poles, and raising of the track beds and rail bridges.

Metrolinx met with Save Jimmie Simpson! on May 7, 2021 to discuss Save Jimmie Simpson!'s concerns regarding the Ontario Line Project. Items that were discussed included evaluation criteria used for key project decisions, staging and laydown requirements, construction timelines, park impacts, cost of having the Ontario Line underground in the Lakeshore East Joint Corridor segment, decision making process for the Ontario Line alignment, increase in diesel trains, noise and vibration impacts, and safety impacts to nearby schools.

LURA Consulting, an independent third-party facilitator, met with the Lakeshore East Community Advisory Committee on September 15, 2021 on Metrolinx's behalf. LURA Consulting solicited feedback on the project, public engagement, and suggestions for future engagement. Feedback received included outstanding questions on project rationale and costing, timing of release of materials, meaningful engagement and noting that the Community Advisory Committee remains pro-transit.

LURA Consulting, an independent third-party facilitator, met with Riverside and Leslieville Business Improvement Areas on September 15, 2021 on Metrolinx's behalf. LURA Consulting solicited feedback on the project, public engagement, and suggestions for future engagement. Topics discussed included local business impacts, collaboration on mitigation options, the Queen Street East community office and the community consultation process. In addition, LURA Consulting held a community walk through with the Executive Director of the Riverside Business Improvement Area.

Metrolinx met with Fontbonne Ministries on September 24, 2021 to provide an update on the project, construction timelines and answer questions on proposed mitigation strategies during construction and beyond. Staff from Fontbonne Ministries conveyed to Metrolinx the specific needs of the residents who live in the building and community programming which takes place on site.

Metrolinx met with Lakeshore East Community Advisory Committee, Member of Provincial Parliament Tabuns and Councillor Fletcher to answer their questions about the Draft East Harbour Station Early Works Report and Draft Lakeshore East Joint Corridor Early Works Report on October 14, 2021. Topics discussed included noise and vibration modelling, construction noise monitoring, noise barriers, vibration, natural environment, rail safety, heritage properties and air quality.

Metrolinx met with the Riverside Business Improvement Area on September 30, 2021 to answer their questions and discuss findings of the Draft East Harbour Station Early

Works Report and Draft Lakeshore East Joint Corridor Early Works Report. Topics discussed included consultation with the Business Improvement Area, recognizing Riverside as a community and understanding traffic impacts associated with early works.

Metrolinx met with the Riverside Business Improvement Area on October 14, 2021 to answer their questions and discuss findings of the Draft East Harbour Station Early Works Report and Draft Lakeshore East Joint Corridor Early Works Report. Riverside Business Improvement Area indicated they will formally send a submission based on issues they identified with the Draft East Harbour Station Early Works Report and Draft Lakeshore East Joint Corridor Early Works Report.

Metrolinx met with the Leslieville Business Improvement Area on October 21, 2021 to answer their preliminary questions and provide clarification on the Draft East Harbour Station Early Works Report and Draft Lakeshore East Joint Corridor Early Works Report. Topics discussed included business compensation framework, look and feel of new infrastructure and understanding traffic impacts on Queen Street East.

Metrolinx will continue to engage with community stakeholders and groups as East Harbour Station early works planning progresses.

Correspondence records with community stakeholders and groups related to East Harbour Station early works are provided in **Appendix B3** of this Report.

8.4 Engagement with Technical Stakeholders

Technical stakeholders engaged throughout the Project to-date, including federal, provincial and municipal agencies, conservation authorities and other technical stakeholders (e.g., utility companies) are listed below.

- **Federal Agencies**
  - Fisheries and Oceans Canada; and
  - Transport Canada.
- **Provincial Agencies**
  - Infrastructure Ontario;
  - Ministry of Economic Development, Job Creation and Trade;
  - Ministry of Education, Capital Programs Branch;
  - Ministry of the Environment, Conservation and Parks;
  - Ministry of Heritage, Sport, Tourism and Culture Industries;
  - Ministry of Municipal Affairs and Housing;
  - Ministry of Natural Resources and Forestry;

  - Ministry of the Solicitor General (formerly Ministry of Community Safety and Correctional Services);
  - Ministry of Transportation; and
  - Ontario Provincial Police.
- **Municipal Agencies**
  - City of Toronto;
  - Toronto Catholic District School Board; and
  - Toronto District School Board.
- **Conservation Authorities**
  - Toronto and Region Conservation Authority.
- **Other Technical Stakeholders**
  - Canadian National Rail;
  - Exhibition Place
  - George Brown College;
  - Hydro One Networks Incorporated;
  - La Cité;
  - Law Society of Ontario;
  - Ontario Heritage Trust; and
  - Ontario College of Art & Design University.

Federal, provincial and municipal agencies, Toronto and Region Conservation Authority and other technical stakeholders, including Canadian National Rail, George Brown College, Hydro One Networks Incorporated, La Cité and Ontario College of Art & Design University were provided with the opportunity to review a draft of the Draft Early Works Report in June 2020. Exhibition Place, Law Society of Ontario and Ontario Heritage Trust did not conduct a review as they were added to the Project Distribution List at a later date. Technical stakeholders were provided with the opportunity to review the draft of the Draft Lakeshore East Joint Corridor Noise and Vibration Operations Report in June and July 2021.

All technical stakeholders listed above also received a copy of the Notice of Publication of Draft East Harbour Station Early Works Report and the Notice of Publication of Final East Harbour Station Early Works Report and a link to review the report via email on September 23, 2021 and November 17, 2021 respectively.

Metrolinx will continue to engage with technical stakeholders as East Harbour Station early works planning progresses.

Correspondence records with technical stakeholders related to East Harbour Station early works are provided in **Appendix B3** of this Report.

8.5 Engagement with Elected Officials

Elected Officials who were informed of the release of the Draft East Harbour Station Early Works Report and Final East Harbour Station Early Works Report, and invited to respond or be briefed through November 17, 2021 are listed below.

- Councillor Brad Bradford – Ward 19, Beaches-East York;
- Councillor Denzil Minnan-Wong – Ward 16, Don Valley East;
- Councillor Jaye Robinson – Ward 15, Don Valley West;
- Councillor Joe Cressy – Ward 10, Spadina – Fort York;
- Councillor Kristyn Wong-Tam – Ward 13, Toronto Centre;
- Councillor Paula Fletcher – Ward 30, Toronto – Danforth;
- Member of Parliament Julie Dabrusin – Toronto – Danforth;
- Member of Provincial Parliament Chris Glover – Spadina – Fort York;
- Member of Provincial Parliament Kathleen Wynne – Don Valley West;
- Member of Provincial Parliament Michael Coteau – Don Valley East;
- Member of Provincial Parliament Peter Tabuns – Toronto – Danforth; and
- Member of Provincial Parliament Suze Morrison – Toronto Centre.

The following Elected Officials participated in meetings between September 28 and October 14, 2021 in which East Harbour Station and Lakeshore East Joint Corridor early works were discussed:

- Member of Provincial Parliament Peter Tabuns – February 4, 2020, September 29, 2020, October 6, 2020, June 7, 2021, September 29 ,2021, and October 14, 2021;
- Member of Provincial Parliament Chris Glover – September 28, 2020;
- Member of Provincial Parliament Kathleen Wynne – October 6, 2020;
- Member of Provincial Parliament Suze Morrison – October 8, 2020;
- Councillor Kristyn Wong-Tam – October 29, 2020;
- Councillor Paula Fletcher – November 1, 2020, February 12, 2020, March 25, 2021, and October 14, 2021; and
- Member of Parliament Julie Dabrusin – March 15, 2021, June 7, 2021, June 24, 2021 and July 7, 2021.

Metrolinx met with Member of Provincial Parliament Peter Tabuns on February 4, 2020, September 29, 2020, October 6, 2020, June 7, 2021 and September 29, 2021. On February 4, 2020 items that were discussed included alternative alignment options,

property impacts, procurement and project details. On September 29, 2020 updates on the Ontario Line Project and the East segment alignment were provided. Items that were discussed included environmental reporting, early works, project timelines, community engagement activities, rail safety, property requirements, transit-oriented communities, project costs and ridership projections. On October 6, 2020, items that were discussed included environmental assessment process, procurement and property impacts. On June 7, 2021, the *Building Transit Faster Act*, Transit Corridor Lands and upcoming engagement opportunities were discussed. On September 29, 2021, Metrolinx discussed Ontario Line and GO Expansion plans with Member of Provincial Parliament Peter Tabuns by visiting each of the neighbourhood parks along the Lakeshore East Joint Corridor in Riverside and Leslieville.

Metrolinx met with Lakeshore East Community Advisory Committee, Member of Provincial Parliament Peter Tabuns and Councillor Paula Fletcher to answer their questions about the Draft East Harbour Station Early Works Report and Draft Lakeshore East Joint Corridor Report on October 14, 2021. Topics discussed included noise and vibration modelling, construction noise monitoring, noise barriers, vibration, natural environment, rail safety, heritage properties, and air quality.

Metrolinx met with Member of Provincial Parliament Chris Glover on September 28, 2020 to provide updates on the Ontario Line Project. Items that were discussed included project timelines, the Ontario Line Don River crossings, train frequency, flooding impacts and tunneling.

Metrolinx met with Member of Provincial Parliament Kathleen Wynne on October 6, 2020 to provide updates on the Ontario Line and north segment. Items that were discussed included environmental assessment reporting, early works, procurement, staging along the Don Valley and public communications.

Metrolinx met with Member of Provincial Parliament Suze Morrison on October 8, 2020 to provide updates on the Ontario Line downtown segment, the environmental assessment process including early works reports, timelines for the Project and community engagement.

Metrolinx met with Councillor Kristyn Wong-Tam on October 29, 2020 to provide updates on the Ontario Line and downtown segment. Items that were discussed included community engagement, the plan for the use of the First Parliament site, community needs in the Moss Park area and potential impacts of a new bridge over the Don River.

Metrolinx met with Councillor Paula Fletcher on November 1, 2020, February 12, 2020, and March 25, 2021. On November 1, 2020, items that were discussed included

alternative alignment options, noise and vibration impacts, safety, business impacts, property impacts and the environmental assessment process. On February 12, 2021, items that were discussed included alternative alignment options, noise and vibration impacts, safety, business impacts, property impacts and the environmental assessment process. On March 25, 2021, items that were discussed included alternative alignment options, noise and vibration impacts, safety, business impacts, property impacts and the environmental assessment process.

Metrolinx met with Member of Parliament Julie Dabrusin on March 15, 2021, June 7, 2021, June 24, 2021 and July 7, 2021. On March 15, 2021, items that were discussed included the environmental assessment process, public consultation process, project impacts to ravine system, alternative alignment options and rail safety information. On June 7, 2021 the environmental assessment process, Building Transit Faster Act, Transit Corridor Lands, Transit Oriented Communities, property impacts and cumulative impacts across projects were discussed. On June 24, 2021, items that were discussed include the environmental assessment process, impacts to trees, Building Transit Faster Act, Transit Corridor Lands, property impacts, cumulative impacts across projects and upcoming consultation opportunities. On July 7, 2021, the difference between Ontario Line and GO Expansion, impact to trees, environmental assessment process, noise and vibration impacts, Building Transit Faster Act, property impacts and upcoming engagement opportunities for the community were discussed.

Copies of the Notice of Publication of Draft East Harbour Early Works Report and the Notice of Publication of Final East Harbour Early Works Report, with a link to review the reports, were provided to Elected Officials via email on September 23, 2021 and November 17, 2021 respectively.

Metrolinx will continue to engage with Elected Officials as East Harbour Station early works planning progresses. Correspondence records with Elected Officials related to East Harbour Station early works are provided in **Appendix B3** of this Report.

8.6 Engagement with Indigenous Nations

Indigenous Nations that have been provided information on the Ontario Line Project to-date are listed below.

- Haudenosaunee Confederacy Chiefs Council;
- Huron-Wendat Nation;
- Kawartha Nishnawbe First Nation;
- Métis Nation of Ontario;
- Mississaugas of the Credit First Nation;

- Six Nations of the Grand River;
- Williams Treaties First Nations:
  - Alderville First Nation;
  - Beausoleil First Nation;
  - Chippewas of Georgina Island;
  - Chippewas of Rama First Nation;
  - Curve Lake First Nation;
  - Hiawatha First Nation; and
  - Mississaugas of Scugog Island First Nation.

In March 2020, Kawartha Nishnawbe First Nation indicated that the Nation holds Aboriginal and Treaty rights within the Project's study area. They noted that they do not have the capacity to participate in reviewing reports and asked whether Metrolinx will be providing assistance. Metrolinx offered to meet to discuss possible opportunities to support the review process but a response from Kawartha Nishnawbe First Nation was not received. Metrolinx continues to welcome a conversation with Kawartha Nishnawbe First Nation in the future.

From April to June 2020, Metrolinx shared draft reports for environmental conditions and early works.

In June 2020, a meeting was held with the Mississaugas of the Credit First Nation and in July 2020, with Curve Lake First Nation to discuss the Subways Program, upcoming Metrolinx projects, ongoing needs and future plans for meaningful engagement with Indigenous Nations, and to review the Project and associated preliminary plans for early works.

In July 2020, Metrolinx provided Haudenosaunee Confederacy Chiefs Council and Six Nations of the Grand River with a letter that introduced the Project and invited participation in the study process.

In September 2020, Six Nations of the Grand River noted they did not have the resources or capacity to review large reports and meet requested deadlines, with the exception of archaeological assessment reports. Metrolinx held a meeting with the Nation on November 25, 2020 to better understand the issues and concerns of the Six Nations of the Grand River and identify opportunities to support meaningful engagement with Six Nations of the Grand River. It was noted during this meeting that the Nation identified that specific Aboriginal and Treaty rights information was not included in the

archaeological assessments that supports the Ontario Line[25]. The draft meeting minutes from the November 25, 2020 meeting reflecting this concern were submitted to the Six Nations of the Grand River in early January 2021 for further input. Recognizing that the ongoing COVID-19 pandemic may have impacted the operations of the Six Nations of the Grand River office, Metrolinx reached out to the Six Nations of the Grand River for further input from the Nation on how to best address this concern.

On July 28, 2021, Metrolinx sent a letter to Indigenous Nations including an overview of and update on the Draft East Harbour Station and Draft Lakeshore East Joint Corridor Early Works Reports. The draft Lakeshore East Joint Corridor Noise and Vibration Operations Report was also shared with the Nations for review.

On October 4, 2021, Metrolinx met with the Mississaugas of the Credit First Nation to provide an update on the Lower Don Bridge early works and works in the Don River Valley, and provide an update on the Ontario Line environmental assessment milestones including the timelines of the Lakeshore East Joint Corridor and East Harbour Station Early Works Reports review period.

No comments related to East Harbour Station early works or the draft Lakeshore East Joint Corridor Noise and Vibration Operations Report have been received to-date from Indigenous Nations, though, as discussed above, Metrolinx did receive concerns related to capacity to review.

Consultation with Indigenous Nations will continue as East Harbour Station early works progress. Correspondence records with Indigenous Nations related to East Harbour Station early works are provided in **Appendix B3** of this Report. A copy of the Draft East Harbour Station Early Works Report along with the Notice of Publication of Draft East Harbour Station Early Works Report was provided to Indigenous Nations via email on September 23, 2021. A copy of this Final East Harbour Station Early Works Report along with the Notice of Publication of Final East Harbour Early Works Report was provided to Indigenous Nations via email on November 17, 2021.

25. From the perspective of Six Nations of the Grand River, information regarding Treaty 13, Nanfan Treaty, and the Fort Albany Treaty of 1701, which may be relevant to the Ontario Line Study Area, were not included in the Ontario Line Stage 1 Archaeological Assessment Reports as the reports were prepared early on in the Project and prior to engagement with Six Nations of the Grand River. Metrolinx continues to reach out to the Six Nations of the Grand River for further input on how to best address this concern, such as by including relevant treaty information in forthcoming archaeological assessment reports.

8.7 Issues Resolution Process and Final Early Works Report

The Draft East Harbour Station Early Works Report was made available to the public, technical stakeholders, Elected Officials, Indigenous Nations and other interested persons for review from September 23, 2021 to October 24, 2021. During this time, interested parties had the opportunity to submit written comments to Metrolinx. In accordance with Section 10 of Ontario Regulation 341/20: Ontario Line Project, Metrolinx established an issues resolution process to attempt to resolve any concerns raised by interested persons and Indigenous Nations, in a way that does not cause unreasonable delay to the implementation of East Harbour Station early works. The issues resolution process involved review of comments, and engagement of subject matter experts to support the development of responses to comments, as required. Based on comments received, no further studies beyond what Metrolinx has already committed to complete have been identified as required.

In accordance with Section 11(1)(b) of Ontario Regulation 341/20: Ontario Line Project, **Section 8.7.1** of this Report includes:

- A description of the issues resolution process in respect of any concerns raised by Indigenous Nations and interested persons;
- A description of the concerns raised by Indigenous Nations and interested persons in the issues resolution process and of the outcome of the process, including what, if anything, Metrolinx did or will do in respect of the concerns raised; and
- A description of any impacts to the timeline for implementation of the East Harbour Station early works.

As the Draft East Harbour Station Early Works Report has been updated, Metrolinx has issued a Notice of Publication of Final East Harbour Station Early Works Report and posted the Report to the Engagement webpage (Project website) (www.metrolinx.com/ontarioline) within 65 days of the issuance of the Notice of Publication of Draft East Harbour Station Early Works Report.

The Minister of the Environment, Conservation and Parks may issue a notice to Metrolinx imposing conditions related to the early works within 35 days after receipt of the Notice of Publication of Final East Harbour Station Early Works Report. The Minister may also choose to inform Metrolinx that no notice will be issued.

In accordance with Ontario Regulation 341/20: Ontario Line Project, the Minister may issue a notice only if:

- The Minister is of the opinion that the way in which Metrolinx addressed a concern raised during the issues resolution process would cause unreasonable delay to the implementation of East Harbour Station early works, and the conditions in the Minister's notice modify the way in which the concern is addressed in the Final East Harbour Station Early Works Report without causing reasonable delay to the implementation of East Harbour Station early works; or
- The Minister is of the opinion that the early works may have an adverse impact on the existing Aboriginal or treaty rights of the Aboriginal Peoples of Canada, and the conditions may prevent, mitigate or remedy the adverse impact.

The implementation of East Harbour Station early works may proceed if no notice is received within the 35-day period, the Minister informs Metrolinx that no notice will be issued, or if the requirements of the Minister's notice have been satisfied.

8.7.1 Description of Metrolinx Response to Concerns Expressed by Indigenous Nations and Interested Persons

In accordance with Section 11(1)(b) of the Ontario Regulation 341/20: Ontario Line Project, the following section provides a description of what Metrolinx did to respond to concerns expressed by Indigenous Nations and interested persons, including government review agencies and other technical stakeholders.

Prior to publication of the Draft East Harbour Station Early Works Report, Indigenous Nations, government review agencies and other technical stakeholders were provided with the opportunity to review the report draft. During this time, Metrolinx received comments from government agencies and other technical stakeholders which were addressed throughout the report prior to the Draft East Harbour Station Early Works Report publication, and documented in **Appendix B3** of the Draft East Harbour Station Early Works Report. No comments were received from Indigenous Nations during this time.

During the 31-day public review period for the Draft East Harbour Station Early Works Report (September 23, 2021 to October 24, 2021), Metrolinx received 19 public comments (four email, 11 Provide Your Feedback, one Contact Us and three Ask-A-Question submissions) and comments from two community stakeholders and groups (Lakeshore East Community Advisory Committee and Save Jimmie Simpson!) and four technical stakeholders (City of Toronto, Ministry of the Environment, Conservation and Parks, Infrastructure Ontario and Toronto and Region Conservation Authority).

A summary of key themes of comments, questions and concerns received during the review period, what Metrolinx has done in response to the feedback received, and any potential timeline implications is provided in **Table 8-1**. In response to feedback and concerns received by interested persons, Metrolinx revised the Draft East Harbour Station Early Works Report as outlined in **Table 8-1** and captured in this Final East Harbour Station Early Works Report. Responses to comments received did not result in impacts to the timeline for implementation of East Harbour Station early works.

Table 8-1: Summary of Key Themes of Feedback Received, Metrolinx Actions in Response to the Feedback and Implications to the East Harbour Station Early Works Timeline

Comment From	Key Themes of Feedback Received	Key Feedback	Metrolinx Actions in Response to Feedback	East Harbour Station Early Works Timeline Implications
Public	Project Alignment, Operations and Operational Impacts	■ Comment noting that drawings do not include crash barrier walls between the rail corridor and Ontario Line corridor, and noting that it is required by regulations for the corridors to be separated by crash walls. ■ Inquiries regarding the Ontario Line track and platform design and noise modelling results. ■ Comments expressing opposition to the above ground portion of the Ontario Line between East Harbour Station and Gerrard Street, and suggestions for the Ontario Line to be built completely underground.	■ Confirmation that risk assessments will be carried out throughout the design, construction and operation phases and are based on the Canadian method for risk evaluation and assessment for railway systems, and will address a wide spectrum of potential risks. ■ Confirmation that Ontario Line track designs will consider alignments, curves, geometry and fleet parameters, and will be located within the existing rail corridor right-of-way, and meet all applicable standards and regulations. Confirmation that noise barriers will be installed on both sides of the Lakeshore East Joint Corridor, and sharing of a link to the Draft Lakeshore East Joint Corridor Noise and Vibration Operations Report and the Ontario Line sound demonstration. ■ Confirmation that Metrolinx explored alignment options through the Initial Business Case and decided that an underground alignment through the Leslieville area would not be advantageous to the alignment that utilizes the existing rail corridor. ■ Development and provision of comment responses, including sharing of information (**Appendix B3**). ■ Inclusion of comments and concerns in the Consultation section of the East Harbour Station Early Works Report and **Appendix B3** as part of the consultation record.	■ None
Public	Station Design	■ Inquiry about the types of elevators that will be used at Ontario Line stations and if they will be similar to elevators used for other projects around the city.	■ Confirmation that Metrolinx's standard is to provide a minimum of two elevators at stations, however detailed design for stations is ongoing and more information will be shared as it is available. ■ Development and provision of comment responses, including sharing of information (**Appendix B3**). ■ Inclusion of comments and concerns in the Consultation section of the Final East Harbour Early Works Report and **Appendix B3** as part of the consultation record.	■ None
Public	Public Engagement Process	■ Comment that the Early Works Reports were not available on the Project webpage and no online form was available. ■ Inquiries about information available on the Project webpage and how to register for the October 5, 2021 virtual open house. ■ Comment noting that the public should be notified of archaeological discoveries during construction.	■ Sharing of a link to review and provide feedback on the Draft East Harbour Station Early Works Report and Draft Lakeshore East Joint Corridor Early Works. ■ Sharing of information and a link to register for the October 5, 2021 virtual open house. ■ Sharing of information that if any previously unknown or unassessed deeply buried archaeological resources are uncovered during construction activities, any alteration of the site will be paused, and a licensed archaeologist will carry out the archaeological field work. In addition, consultation with the relevant Indigenous Nations will be initiated if archaeological resources are discovered. ■ Development and provision of comment responses, including sharing of information (**Appendix B3**). ■ Inclusion of comments and concerns in the Consultation section of the Final East Harbour Station Early Works Report and **Appendix B3** as part of the consultation record.	■ None
Public	Pedestrian and Cyclist Connectivity	■ Concern that the pedestrian and cyclist bridge will be removed from the design of the project. ■ Comment noting that the conceptual design drawings do not show the bike and pedestrian bridge over the Don River and should be included in the report. ■ Comment noting that bicycle connections are restricted to a few busy roads.	■ Confirmation that a dedicated bridge for pedestrians, cyclists and other forms of active transportation will be built as part of the East Harbour Station scope of work and will be assessed in the forthcoming Environmental Impact Assessment Report, planned to be released in January 2022. ■ Development and provision of comment responses, including sharing of information (**Appendix B3**). ■ Inclusion of comments and concerns in the Consultation section of the Final East Harbour Station Early Works Report and **Appendix B3** as part of the consultation record.	■ None

Comment From	Key Themes of Feedback Received	Key Feedback	Metrolinx Actions in Response to Feedback	East Harbour Station Early Works Timeline Implications
Public	Environmental Study Results	■ Comments noting that there has been substantial environmental degradation in this area of the city. Statement that naturalization work on the Don River will be reversed as a result of the construction of East Harbour Station. ■ Inquiries about the immersive sound demonstration showing noise and vibration levels from one train only, and suggestions for modelling to reflect multiple trains. ■ Suggestion to make the air quality testing results available to the public. ■ Requests for clarification on noise level exceedances. ■ Requests for the installation of sound barriers between construction zones and affected areas. ■ Concerns that the Ontario Line construction will worsen traffic congestion in the Leslieville neighbourhood. ■ Comment noting that rush hour traffic and ridership has decreased due to the COVID-19 pandemic, and the number of Ontario Line trains needed is no longer accurate.	■ Confirmation that vegetation communities within the rail corridor and east of the Don River are generally disturbed and provide low quality habitats for urban wildlife. Confirmation that Metrolinx will apply appropriate mitigation measures (described in **Table 6-1**) to avoid impacts to the urban wildlife that are abundant and have secure populations in the City of Toronto. ■ Confirmation that the demonstration videos were prepared to enable comparison of the simulated noise characteristics of the Ontario Line vehicles and GO trains, and to create an audio representation of the predicted effects of noise barrier and retaining walls at the demonstration locations. ■ Confirmation that Metrolinx will inform community residents on how air quality complaints can be submitted, and the process to handle such complaints. Confirmation that Metrolinx will review air quality monitoring results for the specific time period and location of the complaint in order to address any concerns. ■ Sharing of information on establishment of project specific noise criteria/limits for early works construction, and mitigation measures to ensure construction activities do not exceed those limits. ■ Confirmation that Metrolinx will apply construction noise mitigation measures (described in **Table 6-5**) where possible to help ensure construction noise levels are not exceeded. ■ Confirmation that Metrolinx is working with the City of Toronto closely to complete a comprehensive traffic analysis and traffic and transit management plan. ■ Confirmation that traffic counts and data were collected before the start of the pandemic, and traffic volumes are anticipated to slowly return to pre-pandemic levels. ■ Development and provision of comment responses, including sharing of information (**Appendix B3**). ■ Inclusion of comments and concerns in the Consultation section of the Final East Harbour Station Early Works Report and **Appendix B3** as part of the consultation record.	■ None
Public	East Harbour Development	■ Opposition and concerns regarding East Harbour Station and development within the surrounding area.	■ Confirmation that Metrolinx is working closely with Infrastructure Ontario, who is coordinating the delivery of the East Harbour Transit Oriented Community development. Statement noting that as planning continues on the East Harbour development, there will be ongoing consultation with communities, municipalities and developers to create Transit Oriented Communities for the benefit of all individuals, families and businesses in the Greater Toronto Area. ■ Development and provision of comment responses, including sharing of information (**Appendix B3**). ■ Inclusion of comments and concerns in the Consultation section of the Final East Harbour Station Early Works Report and **Appendix B3** as part of the consultation record.	■ None
Public	COVID-19 Ridership Impacts	■ Suggestion for Metrolinx to revert to the original Downtown Relief Line plan. ■ Comment noting that they do not think the Ontario Line project is needed as transit use has changed because of the COVID-19 pandemic. They expressed concern about the project getting canceled midway and resulting in disruption to surrounding communities.	■ Confirmation that Metrolinx is proceeding with the Ontario Line project based on projections outlined in the Ontario Line Initial Business Case and the Ontario Line Preliminary Business Case. ■ Confirmation that Metrolinx is working to complete a comprehensive traffic analysis and a transit and traffic management plan for the construction of East Harbour Station, in consultation with the City of Toronto. ■ Development and provision of comment responses, including sharing of information (**Appendix B3**). ■ Inclusion of comments and concerns in the Consultation section of the Final East Harbour Station Early Works Report and **Appendix B3** as part of the consultation record.	■ None

Comment From	Key Themes of Feedback Received	Key Feedback	Metrolinx Actions in Response to Feedback	East Harbour Station Early Works Timeline Implications
Community Groups and Stakeholders	Local Environmental Conditions and Impact Assessment	▪ Save Jimmie Simpson! provided comments relating to noise and vibration study results, impacts and mitigation measures, and health impact assessment.	▪ Development and provision of comment responses, including sharing of information to Save Jimmie Simpson! (**Appendix B3**). ▪ Inclusion of comments and concerns in the Consultation section of the Final East Harbour Station Early Works Report and **Appendix B3** as part of the consultation record.	▪ None
Technical Stakeholders – Provincial and Municipal Agencies	Local Environmental Conditions and Impact Assessment	▪ The Ministry of Heritage, Sport, Tourism and Culture Industries provided comments relating to archaeological resources maps and recommendations from and submissions of Archaeological Assessment reports. ▪ The Ministry of the Environment, Conservation and Parks provided comments relating to soil and groundwater; surface water; existing ambient air quality; reference vibration levels; idling policies; requirements for laydown yards; Ontario's On-Site and Excess Soil Management Regulation; and local source water protection policies. ▪ The City of Toronto provided comments relating to previous planning studies and applicable policies; station and track design; active transportation connections; Built Heritage Resources and Cultural Heritage landscapes assessment; references to the Stage 1 Archaeological Assessment; general mitigation and monitoring language; rail safety; Traffic and Transportation assessment, impacts and mitigation measures; and utility impacts/relocations. ▪ Infrastructure Ontario identified properties within the study area that may be owned by the Minister of Government and Consumer Service.	▪ Updates were made to the following sections of the Ontario Line Final East Harbour Station Early Works Report to address feedback received from the Ministry of Heritage, Sport, Tourism and Culture Industries: – **Table ES-2**; – **Figure 5-19**; – **Section 6.8**; and – **Table 6-8**. ▪ Updates were made to the following sections of the Ontario Line Final East Harbour Station Early Works Report to address feedback received from the Ministry of the Environment, Conservation and Parks: – **Table 3-2 in Appendix A3**; – **Table 5-5**; – **Table 6-4**; and – **Appendix B of Appendix A3**. ▪ Updates were made to the following section of the Ontario Line Final East Harbour Station Early Works Report, **Appendix A1** and **Appendix A4** to address feedback received from the City of Toronto: – **Section ES.4**; – **Figure 1-3**; – **Section 2.2.3.7**; – **Section 3.1.1**; – **Section 3.1.2**; – **Section 3.1.3**; – **Section 5.6.1.1.1**; – **Section 5.8**; – **Section 5.9**; – **Figure 5-20;** and, – **Section 6.8**. ▪ Development and provision of comment responses to the Ministry of Heritage, Sport, Tourism and Culture Industries, Ministry of the Environment, Conservation and Parks, the City of Toronto and Infrastructure Ontario (**Appendix B3**).	▪ None

8.8 Commitment to Future Consultation

Metrolinx is committed to continuing stakeholder and public engagement and consultation beyond the regulatory requirements set out in Section 10 of Ontario Regulation 341/20. Specifically, Metrolinx will:

- Maintain the Engagement webpage (Project website) (www.metrolinx.com/ontarioline) so interested parties can access updated Project information;
- Maintain the Project Distribution List to help ensure all interested parties receive Project updates; and
- Continue discussions with members of the public, local stakeholders and Indigenous Nations with respect to potential impacts and mitigation throughout East Harbour Station early works planning and construction, as appropriate.

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