Metrolinx

Final Early Works Report

Ontario Line Exhibition Station Early Works

Prepared by:

AECOM Canada Ltd.
105 Commerce Valley Drive West, 7th Floor
Markham, ON L3T 7W3
Canada

T: 905.886.7022
F: 905.886.9494
www.aecom.com

Date: February 2021

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("AECOM") for the benefit of the Client ("Client") in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represents AECOM's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

AECOM shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. AECOM accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

AECOM agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but AECOM makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Without in any way limiting the generality of the foregoing, any estimates or opinions regarding probable construction costs or construction schedule provided by AECOM represent AECOM's professional judgement in light of its experience and the knowledge and information available to it at the time of preparation. Since AECOM has no control over market or economic conditions, prices for construction labour, equipment or materials or bidding procedures, AECOM, its directors, officers and employees are not able to, nor do they, make any representations, warranties or guarantees whatsoever, whether express or implied, with respect to such estimates or opinions, or their variance from actual construction costs or schedules, and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Persons relying on such estimates or opinions do so at their own risk.

Except (1) as agreed to in writing by AECOM and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

AECOM accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information ("improper use of the Report"), except to the extent those parties have obtained the prior written consent of AECOM to use and rely upon the Report and the Information. Any injury, loss or damages arising from improper use of the Report shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.

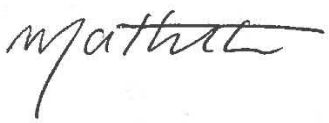
AECOM: 2015-04-13

Authors

Report Prepared By:

Madelin Blacha
Environmental Planner

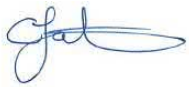
Jarrid Radoslav
Environmental Planner



Madeleine Atherton
Environmental Planner

Report Reviewed By:

Nicole Cooke, MES
Senior Environmental Planner



Corinne Latimer
Senior Environmental Planner

Report Approved By:

Wendy Ott
Senior Environmental Scientist, Project Manager

Executive Summary

ES.1 Ontario Line Exhibition 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."

Exhibition Station early works are considered to be of strategic importance in enabling the timely implementation of the Project. These early works are being advanced 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 Exhibition Station Early Works Report (this Report) to document the assessment of Exhibition Station early works (**Figure ES-1**).

The Exhibition Station early works components and construction activities are further described in **Section 1.3**.

ES.2 Study Process

This Early Works 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: Early Works 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**
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 communities and interested persons, ii. a list of the Indigenous communities and interested persons who participated in the consultations, iii. summaries of the comments submitted by Indigenous communities and interested persons, and iv. a summary of discussions that Metrolinx had with Indigenous communities, and copies of all written comments submitted by Indigenous communities.	**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 Exhibition Station early works. The locations and components of these early works are shown in **Figure ES-1**.

The Exhibition Station early works will include modifications and improvements to the existing Exhibition GO Station, including expansion of the existing passenger tunnel, construction of vertical accesses, construction of a new north platform, shifting of the two northern-most GO tracks, and relocating utilities.

ES.4 Local Environmental Conditions

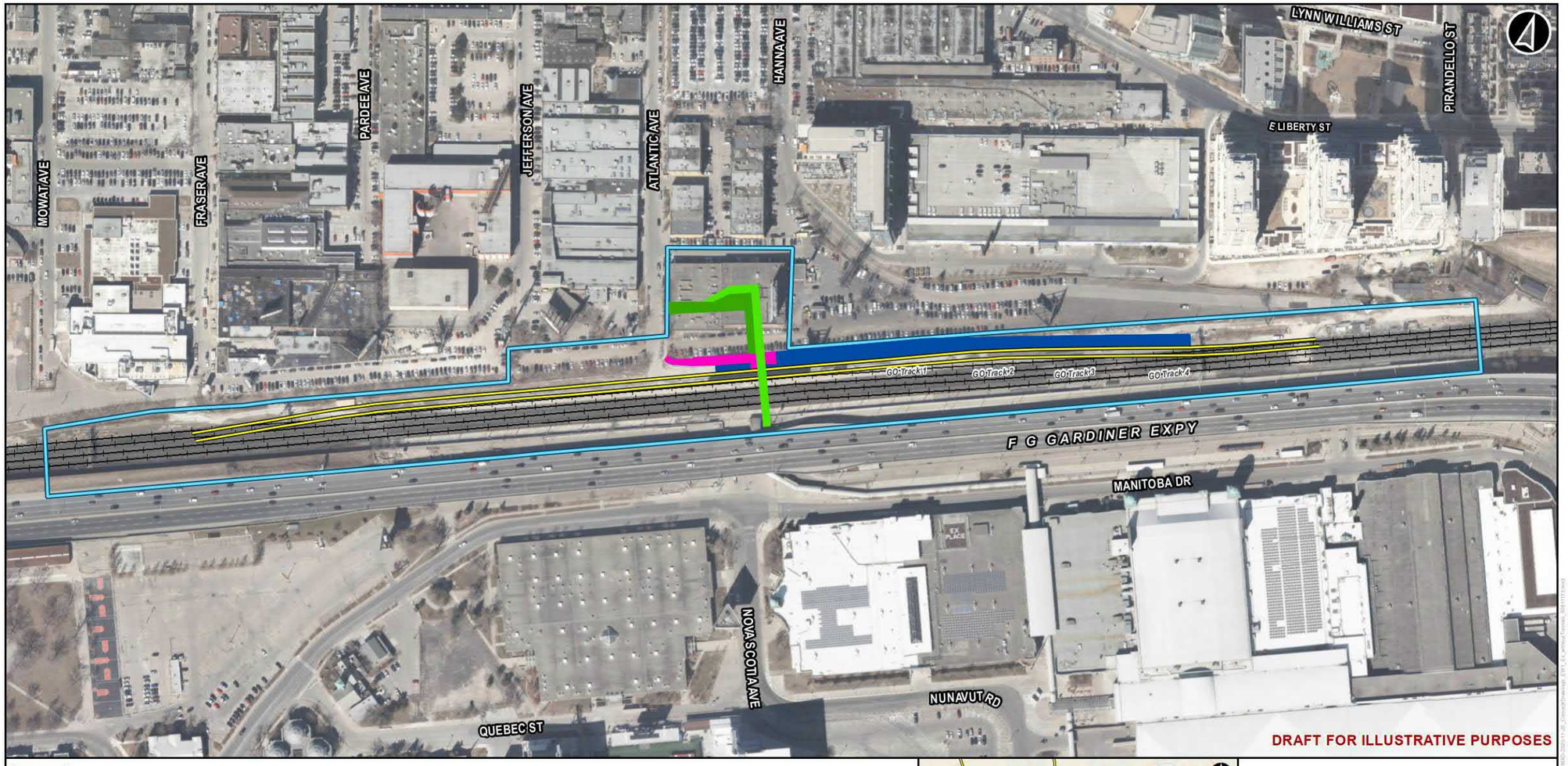
This section provides a summary of the existing natural, technical, socio-economic and cultural aspects of the existing environment in the context of Exhibition Station early works. Information on the following environmental components is provided in the sections below, and where applicable, is supplemented 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** and **Appendix A4**
- Archaeological Resources — **Section 5.8**
- Traffic and Transportation — **Section 5.9** and **Appendix A5**
- 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 Exhibition Station early works. Where necessary, review of additional desktop and field information was undertaken. The local environmental conditions for the Exhibition Station early works are summarized below.

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.

Figure ES-1: Exhibition Station Early Works Conceptual Design



Natural Environment

The Exhibition Station Natural Environment Study Area is heavily urbanized with very limited naturalized areas providing low-quality habitat for urban wildlife due to fragmentation, lack of connectivity to significant natural areas, presence of non-native and invasive plants, and noise and vibration from surrounding vehicle, train and pedestrian traffic.

There are no Provincially or Locally Significant Wetlands, Significant Valleylands, Provincially Significant Areas of Natural and Scientific Interest, Environmentally Significant Areas, woodlands, or unevaluated wetlands located within the Exhibition Station Natural Environment Study Area.

Candidate habitat for a Species of Conservation Concern, Common Nighthawk, may occur within the Exhibition Station Natural Environment Study Area.

Bat Species at Risk including Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis and Tri-coloured Bat have a medium probability to occur within the Exhibition Station Natural Environment Study Area.

The following Species at Risk have low probability to occur within the Exhibition Station Natural Environment Study Area: Bank Swallow, Barn Swallow, Bobolink, Eastern Meadowlark, Butternut, Blanding's Turtle, and Chimney Swift.

There are no aquatic Species at Risk present given that there are no water features identified within the Exhibition Station Natural Environment Study Area.

Soil and Groundwater

The Exhibition 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 km from the shoreline of Lake Ontario. The South Slope extends from the base of the Niagara Escarpment to the Iroquois Plain. It is characterized by low-lying moraine (mass of rocks and sediment deposited by glacier) and knolls (hills and mounds).

A review of the Ministry of the Environment, Conservation and Parks water well records database indicates that bedrock depths range from approximately 4.2 to 6.1 metres Below Ground Surface within the Exhibition Station Soil and Groundwater Study Area. Overburden (above bedrock) geologic materials within the Exhibition Station Soil and Groundwater Study Area consist primarily of clayey silt, silt sand, 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 Exhibition Station Soil and Groundwater Study Area overlaps with a Highly Vulnerable Aquifer, an aquifer that is susceptible to contamination due to its location near the ground surface or the surrounding soils.

Hydrology and Surface Water

The Exhibition Station Early Works Project Footprint is not located within the Toronto and Region Conservation Authority's Regulation Area (Toronto and Region Conservation Authority, 2020a) and, according to the Toronto and Region Conservation Authority's Floodplain Map Viewer, is not within an existing floodplain (Toronto and Region Conservation Authority, 2020b).

Air Quality

Air quality measurements indicate there are existing exceedances of benzene and benzo(a)pyrene according to the Ambient Air Quality Criteria (Ministry of the Environment, Conservation and Parks, 2020) relevant to the Exhibition Station Study Area. Benzene has elevated annual contributions that 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.

The predominant wind direction, as taken from the Toronto City Centre meteorological station located on Toronto Island, shows wind direction from the northeast towards the southwest within the Exhibition Station Air Quality Study Area. Impacts from Exhibition Station early works construction activities would therefore potentially be directed towards receptors along Dufferin Street and Springhurst Avenue. Secondary predominant winds blow from the west, northwest and southwest, which would have an impact on receptors located along Liberty Street and Hanna Avenue.

Noise and Vibration

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

- Daytime (7 AM to 7 PM) $L_{eq,1hr}$: 62 dBA to 64 dBA;
- Evening (7 PM to 11 PM) $L_{eq,1hr}$: 62 dBA to 64 dBA; and
- Night-time (11 PM to 7 AM) $L_{eq,1hr}$: 59 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 Exhibition Station early works is the existing rail line. Therefore, for the majority of the Exhibition 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 lands within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area are designated as Employment Areas, Utility Corridors, and Parks and Open Space, with pockets of Mixed Use Areas and Neighbourhoods in the Official Plan. Provincial and municipal policies applicable to the Exhibition 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.

The Exhibition Station Socio-Economic and Land Use Characteristics Study Area is characterized by four notable public realm elements: Liberty Village, Exhibition Place, Exhibition GO Station, and Fort York Garrison Common.

There are several parks and open spaces and one community group located within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area, of which one open space is within the Exhibition Station Early Works Project Footprint. There are no institutional uses or community groups within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area.

The Exhibition Station Socio-Economic and Land Use Characteristics Study Area overlaps with the Niagara neighbourhood in the City of Toronto. According to 2016 Census data, the Niagara neighbourhood experienced a population increase from 2011 of approximately 47%.

Applications for proposed future development were reviewed to understand the scope of future development within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area. There were eight active development applications identified within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area, as of October 23, 2020.

Built Heritage Resources and Cultural Heritage Landscapes

During the development of the Heritage Detailed Design Report, 11 built heritage resources and cultural heritage landscapes were identified within the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area, consisting of:

- One previously identified Provincial Heritage Property of Provincial Significance (2 Strachan Avenue cultural heritage landscape)
    - Two buildings within that Provincial Heritage Property of Provincial Significance (one Listed [10 Nova Scotia Avenue] and one Designated Part IV [45 Manitoba Drive]);
- One National Historic Site/Heritage Conservation District (250 Fort York Boulevard);
- One Designated Part IV property and City of Toronto Heritage Easement (75 East Liberty Street);
- One Listed property (7-19 Fraser Avenue);
- Three potential built heritage resources/cultural heritage landscapes (1 Atlantic Avenue, 153 Dufferin Street, 3 Mowat Avenue) included in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a); and
- Two additional potential built heritage resources/cultural heritage landscapes (South Liberty Trail from Dufferin Street to the Exhibition GO Station at the south end of Atlantic Avenue and 2-20 Atlantic Avenue) identified during the field review that were not included in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a).

Archaeological Resources

As per the results of the Stage 1 archaeological assessment developed for the Project, the majority of the Exhibition Station Early Works Project Footprint has been cleared of archaeological concerns by previous archaeological assessments. However, there is one portion of the Exhibition Station Early Works Project Footprint retaining moderate to high archaeological potential, where deeply buried archaeological potential remains, such as for discovering pre-contact Indigenous materials and/or materials related to the early development and expansion of the City of Toronto.

Traffic and Transportation

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

- Two north-south collector roads (i.e., Atlantic Avenue and Jefferson Avenue), a north-south park road (i.e., Nova Scotia Avenue), and an east-west collector road (i.e., Manitoba Drive)
- Sidewalks along Atlantic Avenue, Manitoba Drive, Nova Scotia Avenue, and Jefferson Avenue as well as bicycle parking racks and Bike Share Toronto stations along Atlantic Avenue and Manitoba Drive;
- Four Metrolinx-owned rail tracks that service commuter trains operated by Metrolinx (i.e., Lakeshore West GO line) and VIA Rail (i.e., Toronto-Niagara Falls and Toronto-Windsor lines) and freight trains operated by Canadian National Railway and Canadian Pacific Railway; and
- Several bus and streetcar routes operated by Toronto Transit Commission that service Exhibition Loop (i.e., bus routes #29, #63, #307, #329, and #363 and streetcar routes #509 and #511).

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 Exhibition Station Traffic and Transportation Study Area, a quantitative level of service assessment is not included in this Report.

Utilities

Existing private and public utilities were reviewed within the Exhibition Station Early Works Project Footprint. Private utilities include Aptum, Bell Canada, Bell 360, Rogers Communications Partnership, Cogeco Data Services, Zayo Group, Telus Communications Company, Enbridge, EnWave, and CN Fibre. Public utilities within the Exhibition Station Early Works Project Footprint include Toronto Hydro and Toronto Water.

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 Exhibition Station early works.

Table ES-2: Potential Impacts, Mitigation Measures and Monitoring Activities for the Exhibition 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 Exhibition Station Early Works Project Footprint	▪ None required.	▪ None required.
Natural Environment	▪ Policy Areas - City of Toronto Natural Heritage System and Ravine and Natural Feature Protection By-law Area	▪ No potential impacts as there are no City of Toronto policy areas within the Exhibition Station Early Works Project Footprint	▪ None required.	▪ None required.
Natural Environment	▪ Policy Areas – Toronto and Region Conservation Authority Regulated Areas	▪ No potential impacts as there are no Toronto and Region Conservation Authority regulated areas within the Exhibition Station Early Works Project Footprint	▪ None required.	▪ None required.
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 kept to a minimum and limited to within the construction areas. ▪ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the construction areas and prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ▪ Provide compensation for the removal of vegetation 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. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. ▪ If required, the approach to compensation monitoring will be developed in accordance with Metrolinx's Vegetation Guideline (2020).
Natural Environment	▪ Vegetation Communities	▪ City and private tree removal	▪ An Arborist Report prepared 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 Exhibition 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 (DBH) 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	▪ 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 minimize impacts.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
			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. ▪ 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.	▪ If required, the approach to compensation monitoring will be developed in accordance with Metrolinx's Vegetation Guideline (2020).
Natural Environment	▪ Vegetation Communities	▪ Soil 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 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) prior to arriving and leaving the construction site in order to prevent the spread of invasive species to other locations.	▪ 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 minimize impacts. ▪ Ensure precautions are being taken to minimize the spread of invasive species by implementing the Clean Equipment Protocol for Industry (Halloran et al., 2013) on equipment and machinery prior to moving sites.
Natural Environment	▪ Wildlife and Wildlife Habitat - General	▪ Disturbance, displacement or mortality of wildlife	▪ Prior to construction, investigation of the Exhibition 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. A qualified Biologist will be contacted to define the appropriate buffer required from wildlife.	▪ On-site inspection by on-site environmental workers or construction staff should occur daily 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 minimize impacts.
Natural Environment	▪ Wildlife and Wildlife Habitat – 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.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Natural Environment	▪ Wildlife and Wildlife Habitat - Migratory Breeding Birds and Nests	▪ Disturbance or destruction of migratory bird nests	▪ All works must comply with the Migratory Bird Convention Act, including timing windows for the nesting period (April 1 to August 31 in Ontario). ▪ If activities 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 (field observations, on-site inspections) will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
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 developed in accordance with any registration and/or permitting requirements under the Endangered Species Act, recommended surveys undertaken prior to construction, and 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 minimize impacts. ▪ Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the Endangered Species Act.
Natural Environment	▪ Aquatic Environment - Wetlands and Waterbodies	▪ No potential impacts as there are no wetlands or waterbodies present	▪ None required.	▪ None required.
Natural Environment	▪ Aquatic Environment - Fish and Fish Habitat	▪ No potential impacts as there is no fish or fish habitat present	▪ None required.	▪ None required.
Soil and Groundwater	▪ Soil Stability and Quality	▪ Construction activities will cause displacement of the soils and bedrock. Without mitigation, this may result in ground movement and settlement (e.g., during excavation/grading and/or dewatering activities). ▪ Dewatering activities can cause soil subsidence/settlement and impacts on surface/subsurface structures within the zone of influence. ▪ Construction activities (e.g., excavation) could expose contaminated materials and/or result in the spreading of contaminated materials.	▪ Complete detailed soil investigations, including settlement analysis, during the detailed design phase. ▪ Excavation support systems will be employed, as required. ▪ Use excavation/grading equipment designed to reduce the potential for ground loss and the associated potential for settlements at the ground surface. ▪ Conduct ground treatment such as jet grouting to reduce the risk of ground loss. ▪ Potential subsidence/settlement impacts to existing structures can be mitigated with measures such as completion of pre-construction inspections of structures within the dewatering Zone of Influence and implementation of a detailed settlement monitoring program complete with settlement triggers that result in changes to the dewatering program if surpassed. ▪ Remedial action plans, risk assessment and risk mitigation plans for encountering contamination, as necessary. ▪ Develop a Soil and Excavated Materials Management Plan for the handling, management and disposal of all excavated material (i.e., soil, rock and waste) that is generated or encountered during the work.	▪ Develop and conduct a settlement monitoring program to document construction effects, identify adverse trends and identify additional mitigation measures. ▪ Soil and groundwater sampling and monitoring plans shall be implemented as required prior to, during, and post construction. Track soil in 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 private groundwater supply wells caused by a reduction in local groundwater levels. ▪ Heaving of the excavation base caused by groundwater pressures below the depth of excavation.	▪ Potential impacts to private groundwater supply well(s) 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. ▪ The 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. ▪ Determination of water taking quantities, quality, and resultant dewatering Zone of Influence will be completed as part of detailed design, for example through completion of a site-specific Hydrogeological Investigation, Construction Dewatering Assessment and Groundwater Management Plan. ▪ Prior to the outset of construction, the preparation of a Construction Dewatering Assessment and Groundwater Management Plan should be completed as required. ▪ 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. ▪ The Groundwater Management Plan 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. ▪ Approvals for the discharge of dewatering effluent, such as Municipal Discharge Permits and/or Ministry of the Environment, Conservation and Parks Environmental Compliance Approval, may be required based on the anticipated dewatering volumes, groundwater quality, and relative location of dewatering activities with respect to potential receiving infrastructure (i.e., sanitary and/or storm sewer). ▪ Identification of site-specific mitigation measures inclusive of monitoring programs relating to private supply wells, and geotechnical heave/settlement within the anticipated dewatering Zone of Influence will be determined during the detailed design phase.	▪ Regular site inspections and monitoring activities such as monitoring of water level in private groundwater supply wells, if required, will be completed by qualified members of the construction team to ensure that the 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 quality through minor contaminant releases. ▪ Spills consisting of materials that constitute a contaminant may affect the surrounding groundwater quality and potential water quality in 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: - Application of road salt; and ▪ Storage/use of organic solvents and/or dense non-aqueous phase liquids.	▪ The existing groundwater conditions within each potential construction dewatering area will be characterized prior to construction activities, during the development of the Groundwater Management Plan 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. ▪ 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 a spill kit 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., 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, 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 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; and ▪ Best management practices if the storage of organic solvent is required.	▪ 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 team. ▪ 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	▪ 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 and Climate Change Stormwater Management Planning and Design Manual (2003) and 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 discharges management associated with construction activities, and an Erosion and Sediment Control plan will be developed. ▪ 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 Exhibition Station early works construction.
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 harmful and/or volatile 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. It is recommended that an Air Quality Management Plan 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 Air Quality Management Plan: – 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. – 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).	▪ On-site meteorological monitoring in conjunction with 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. ▪ 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

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
			▪ Mitigation measures from Environment Canada's Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc., 2005) and 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 Air Quality Management Plan: ▪ 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 emissions 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 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 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 16-24 kilometres per hour. ▪ If disruption of contaminated soils is anticipated at any time, consult with the construction manager to ensure that harmful and/or volatile contaminants are not released. ▪ Develop a communications protocol which includes timely resolution of complaints.	– Operations Manual for Air Quality Monitoring in Ontario (Ministry of the Environment, Conservation and Parks, 2018). ▪ Monitoring at locations where there are persistent complaints, as required.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Noise and Vibration	▪ Construction Noise	▪ 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).	Construction noise impact mitigation measures to be considered include but are not limited to the following to meet applicable noise criteria: ▪ Siting construction staging and laydown areas to avoid/reduce adverse impacts to sensitive receptors where possible. ▪ Use construction equipment compliant with noise level specifications in MECP 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 CSA Z107.9 for noise barriers) between construction equipment and noise sensitive receivers. ▪ Use of localized movable noise barriers/screens for specific equipment and operations; including on corridor construction works. ▪ Minimize simultaneous operation of equipment where possible. ▪ Implement a no idling policy on site (unless necessary for equipment operation). ▪ Restrict construction hours where possible: - Perform construction during daytime hours where possible. If night time construction is necessary, the activities with the highest noise levels should be conducted during day time periods where possible. - 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 operational duration limits for construction on the portion of the Exhibition Station Early Works Project Footprint near 5 Hanna Avenue and 6 Pirandello Street (and the attached 65, 75 and 85 East Liberty Street). ▪ Establish and apply project-specific construction noise criteria/exposure limits. ▪ 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. ▪ Noise levels will be monitored to verify mitigation measure(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 receptor locations based on planned construction activities, their locations, and the number, geographic distribution and proximity of noise sensitive receptors. ▪ 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	▪ 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 receptors where possible. ▪ Utilize equipment with low vibration emissions where possible. ▪ Off-site construction of components away from sensitive areas. ▪ Restrict construction hours: ▪ Perform construction during daytime hours where possible. If night-time construction is necessary, the activities with the highest vibration levels should be conducted during the daytime periods where possible. ▪ Update ZOI mapping and predictions based upon refined site staging, equipment, construction areas, and building locations prior to the commencement of construction. ▪ Specific to the commercial complex at 15 Atlantic Avenue: Use alternative means of construction within 5.8 metres of structures so that the City of Toronto's prohibited vibration level limits are not exceeded. ▪ Specific to the chimney and accessory building at 1 Atlantic Avenue, use alternatives means of construction within 11.1 metres of structures so that the vibration level limits for susceptible buildings are not exceeded. ▪ Review and refine construction activities in proximity to the Gardiner Expressway and, if required, conduct a more detailed construction vibration analysis with respect to the Gardiner Expressway footings and 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 ZOI of construction equipment. ▪ Provide smooth surfaces for trucks to travel and route heavily loaded trucks away from vibration sensitive sites where possible. ▪ Operate construction equipment on lower vibration settings where available. ▪ Maximize distance between equipment and sensitive receivers where possible. ▪ Establish and apply project-specific construction vibration criteria. ▪ 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 additional mitigation measures. US FTA Report #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 ZOI 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 site 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, as required.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Socio-Economic and Land Use Characteristics	▪ Property	▪ Property acquisition – permanent and temporary	▪ Specific permanent property requirements associated with the early works infrastructure components will be minimized to the extent possible during detailed design. ▪ Likewise, temporary property requirements associated with construction laydown and access will be minimized as detailed design progresses.	▪ None identified.
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 Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction (December 2006), as amended from time to time, that addresses sediment release to adjacent properties and roadways.	▪ When applicable, monitoring 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 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 AODA 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. ▪ Continue to engage with the City of Toronto and local school board(s) to confirm mitigation measures.	▪ 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 public-facing structures and construction activities/areas from construction areas/activities	▪ Consult with the City of Toronto throughout detailed design. ▪ Minimize the visual effects of structures by selecting appropriate building materials and architectural design; ▪ A screened enclosure for the development site will be provided, as required, with particular attention to material storage areas. ▪ Consideration will be given to providing temporary landscaping along the borders of the construction site between site fencing/enclosure and walkways, where space allows, and where necessary.	▪ 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.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Socio-Economic and Land Use Characteristics	▪ Public Realm	▪ Potential temporary relocation or removal of streetscaping materials, furniture, and landscaping in the public realm	▪ During detailed design, impacts which may result in the temporary relocation or removal of streetscaping materials, furniture, and landscaping in the public realm will be minimized, to the extent possible. Wherever possible, lands impacted by construction will be restored to the current City of Toronto standard following construction completion.	▪ None identified.
Built Heritage Resources and Cultural Heritage Landscapes	▪ Direct Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Encroachment onto properties not anticipated.	▪ Continued avoidance of properties.	▪ Exhibition Station early works will have no impact that requires monitoring prior, during or post-construction.
Built Heritage Resources and Cultural Heritage Landscapes	▪ Direct Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Introduction of new elements and/or alterations to buildings without impacting heritage attributes not anticipated	▪ Continued avoidance of properties.	▪ Exhibition Station early works will have no impact that requires monitoring prior, during or post-construction.
Built Heritage Resources and Cultural Heritage Landscapes	▪ Direct Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Modification of buildings to fit a new use not anticipated	▪ Continued avoidance of properties.	▪ Exhibition Station early works will have no impact that requires monitoring prior, during or post-construction.
Built Heritage Resources and Cultural Heritage Landscapes	▪ Direct Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Potential for introduction of new elements and/or alterations that result in the removal or demolition of all or part of a heritage attribute at 1 Atlantic Avenue (OLW-011). Refer to **Table 6-7** for further detail. ▪ Introduction of new elements and/or alterations that result in the removal or demolition of all or part of a heritage attribute not anticipated for all other properties.	▪ Heritage attributes of the property, identified in **Table 5-13**, that are within the Exhibition Station Study Area, should be retained/conserved where possible, including the chimney and accessory building which may experience direct impacts from early works since they are directly adjacent to the Exhibition Station Early Works Project Footprint and at the rear of two-storey commercial building which has been proposed for demolition as a result of early works. Therefore, given the proximity of early works construction to the chimney and accessory building they will require protection during construction in order to safeguard against these heritage attributes of the property from direct adverse impacts. ▪ Consult with City of Toronto's Heritage Preservation Services as part of the detailed design phase and prior to issuance of the draft Environmental Impact Assessment Report, regarding any physical impact to the property in order to determine and obtain any approval or permits that may be required. ▪ Apply the following steps during the early works construction to ensure the protection of the chimney and accessory building during early works construction: – Mark a feature on the Detailed Design as "To be retained: Implement protection measures prior to construction". – Install protection measures, such as box or fence hoarding, prior to construction. ▪ Continued avoidance of all other properties.	▪ During construction, monitor the protection of the feature(s). ▪ Post-construction, remove hoarding and confirm the condition of the feature(s) meet pre-construction conditions.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Built Heritage Resources and Cultural Heritage Landscapes	▪ Direct Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Relocation of all or part of any buildings not anticipated	▪ Continued avoidance of properties.	▪ Exhibition Station early works will have no impact that requires monitoring prior, during or post-construction.
Built Heritage Resources and Cultural Heritage Landscapes	▪ Direct Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Demolition of primary building at 1 Atlantic Avenue (OLW-011) is anticipated. Refer to **Table 6-7** for further details. ▪ Demolition of buildings not anticipated for all other properties.	▪ Consult with City of Toronto's Heritage Preservation Services as part of the detailed design phase and prior to issuance of the draft Environmental Impact Assessment Report, regarding any physical impact to the property in order to determine and obtain any approval or permits that may be required. ▪ Complete detailed documentation of the property prior to construction that includes the identification of salvageable materials and/or heritage attributes, prior to demolition. Documentation should include a photographic record, drawings, floor plans etc. ▪ Complete an Interpretation/Commemoration Strategy Framework in consultation the City of Toronto Heritage Preservation Services. Incorporate commemoration signage to communicate the cultural heritage value of the demolished structure on the property to the public. ▪ Continued avoidance of all other properties.	▪ Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
Built Heritage Resources and Cultural Heritage Landscapes	▪ Direct Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Impacts to properties that meet or have the potential to meet Ontario Regulation 10/06 under the Ontario Heritage Act not anticipated.	▪ Continued avoidance of properties.	▪ Exhibition Station early works will have no impact that requires monitoring prior, during or post-construction.
Built Heritage Resources and Cultural Heritage Landscapes	▪ Direct Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Encroachment into a Heritage Conservation District, causing a physical impact to the Heritage Conservation District, while avoiding physical impact to contributing buildings located within the proposed boundary of the Heritage Conservation District	▪ Continued avoidance of properties.	▪ Exhibition Station early works will have no impact that requires monitoring prior, during or post-construction.
Built Heritage Resources and Cultural Heritage Landscapes	▪ Indirect Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Potential for vibration impacts to chimney and accessory building within OLW-011 (1 Atlantic Avenue) due to Exhibition Station early works. ▪ Vibration impacts to buildings not anticipated for all remaining properties.	▪ Documentation (Review and establish) of the structural condition of the chimney and accessory building to determine if they are vulnerable to vibration impacts from early works. ▪ Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration. ▪ Implement vibration mitigating measures on the construction site and/or at the building. ▪ Continued maintenance of sufficient buffer distance of 11.1 metres between the early works and remaining buildings.	▪ Exhibition Station early works is anticipated to directly impact this two-storey commercial building on the property. If the chimney and/or accessory building are retained, construction and post-construction monitoring may be required of those structures. If feasible, the following monitoring activities are recommended for vibration impacts: ▪ Monitor vibration during construction using seismographs, with notification by audible and/or visual alarms when limits are approached or exceeded; and ▪ Conduct regular condition surveys and reviews during construction to evaluate efficacy of protective measures. Implement additional mitigation as required.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Built Heritage Resources and Cultural Heritage Landscapes	▪ Indirect Impacts to Built Heritage Resources and Cultural Heritage Landscapes	▪ Obstruction/alteration of significant viewsheds to, from, and within cultural heritage landscapes not anticipated.	▪ Continued avoidance of properties and continued conservation of significant viewsheds.	▪ Exhibition Station early works will have no impact that requires monitoring prior, during or post-construction.
Archaeological Resources	▪ Archaeological Potential	▪ Potential for the disturbance of unassessed or undocumented archaeological resources not previously identified.	▪ Areas identified as retaining archaeological potential in the Exhibition Station Early Works Project Footprint, as per the Ontario Line West Stage 1 Archaeological Assessment Report (AECOM, 2020d), are shown in **Figure 5-16**, and include the following. Should ground disturbing activities be planned within these areas, a Stage 2 archaeological assessment must be completed prior to any ground disturbing activities. ▪ A portion of the Exhibition Station Early Works Project Footprint between the rail corridor and Gardiner Expressway retains moderate to high archaeological potential where deeply buried archaeological potential remains, such as for discovering pre-contact Indigenous materials and/or materials related to the early development and expansion of the City of Toronto. ▪ 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 any 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. ▪ The goal is to endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. However, where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts where further archaeological work is required within the Exhibition Station Early Works Project Footprint. ▪ An invitation for Indigenous communities to participate in monitoring requirements for any subsequent archaeological work is recommended. All future Stage 2 archaeological assessment findings will be shared with the Indigenous communities that were engaged during the Stage 1 archaeological assessment.	▪ None identified.
Archaeological Resources	▪ Archaeological Resources	▪ Potential recovery of unexpected 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 communities will be initiated in the event that archaeological resources or human remains are discovered.	▪ None identified.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Traffic and Transportation	▪ Transportation Network – Roads	▪ Impeding traffic flow and increased average delay of vehicles, including emergency vehicles due to temporary lane restrictions of nearby roads (e.g., Manitoba Drive, Atlantic Avenue, and Jefferson Avenue). ▪ Heavy 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., local development) nearby may result in impacts to the transportation network and its road users. ▪ Potential impacts to on-/off-street parking along Atlantic Avenue.	▪ A quantitative traffic impact assessment will be completed, as required, as detailed design progresses to consider vehicular traffic impacts as a result of the Exhibition Station early works, and develop and implement a Transit and Traffic Management Plan(s), which could include temporary changes to intersection lane configurations, traffic signal timing optimizations, 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 signal timings. ▪ Develop communication plans, including media and online notifications and advisory signage through portable variable message signs, to alert local traffic of any upcoming closures. ▪ 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 appropriate proponent (i.e., City of Toronto, public agency, and/or private developer) regarding other ongoing construction projects when scheduling the early works activities to maintain the mobility of all road users (e.g., avoid closure of parallel corridors). ▪ Consult with the City of Toronto, local school board(s), and Exhibition Place during construction planning including consideration of route detours. ▪ Minimize the duration and extent of disruptions to roads, property accesses and on/off-street parking to the extent possible. ▪ Consult with the City of Toronto and the Toronto Parking Authority/private parking lot owner(s) should on-/off-street, public and/or private parking be affected	▪ The effectiveness of the construction 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
Traffic and Transportation	▪ Transportation Network – Active Transportation	▪ Potential increased walking distances may result in compromising pedestrians' convenience. ▪ Traffic congestion along Atlantic Avenue and other adjacent roads, as a result of the potential lane closures, could increase pedestrians' exposure to traffic. ▪ Potential removal/relocation of the existing bicycle parking racks along Atlantic Avenue may impact the convenience of cyclists in accessing the station. ▪ Disruptions to access through the existing pedestrian tunnel are not anticipated.	▪ Co-ordinate with the City of Toronto to minimize impacts to pedestrians and cyclists. This may include fencing, hoarding, shared-lane markings, signals, wayfinding signs, and lighting as required to provide pedestrians and cyclists with safe, accessible, and continuous routes. ▪ Include safety precautions for nearby schools (e.g., having school crossing guards at nearby intersections) in the Transit and Traffic Management Plan(s) in consultation with the City of Toronto, local school board(s), and Exhibition Place. ▪ If required, 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 TTC transit stops will be designed to meet TTC 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. ▪ If required, existing bicycle parking racks along Atlantic Avenue will be relocated to the nearest feasible location to the northern entrance of Exhibition Station. ▪ Minimize the duration and extent of disruptions to roads and property accesses to the extent possible. ▪ Consult the National Association of City Transportation Officials' Bike Share Toronto Siting Guide (National Association of City Transportation Officials, 2016) for location and design considerations if relocation of any Bike Share Toronto stations is required as part of the Exhibition Station early works. Where possible, Bike Share Toronto stations will remain at their current location.	▪ 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	▪ Short-term track closures, if implemented, may disrupt existing commuter and freight rail operations. ▪ No interruptions to GO Transit service are anticipated.	▪ Consult with rail operators with current service along the rail corridor (e.g., 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 and 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	▪ Impacts to surface transit routes (i.e., bus and streetcar) within the Exhibition Station Traffic and Transportation Study Area are not anticipated.	▪ No mitigation measures are recommended.	▪ Transit services will be monitored through actual field observations throughout the construction period and mitigation measures will be considered, as needed.

Discipline	Environmental Component	Potential Impact	Mitigation Measure(s)	Monitoring Activities
Utilities	▪ 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. Temporary traffic detours are also anticipated during utility relocations. ▪ Potential impacts to utilities are under review and will be confirmed during detailed design.	▪ 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. ▪ Utilities such as sewers, water, electrical, communications and gas located within the rail corridor as well as other parts of Exhibition Station will be relocated to facilitate the completion of the early works. ▪ 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.	▪ None identified.
Utilities	▪ 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. Temporary traffic detours are also anticipated during utility relocations. ▪ Potential impacts to utilities are under review and will be confirmed during detailed design.	▪ In-depth utility-related investigations such as subsurface utility engineering investigation, master servicing, Stormwater Management Report, and hydrogeological studies 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 and Toronto Water during detailed design regarding potential impacts to municipal infrastructure and servicing and ensure that applicable City standards, guidelines, and criteria are met.	▪ None identified.

ES.6 Permits and Approvals

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

Federal

No federal permits are anticipated to be required for the Exhibition 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:

- Under the Ontario Water Resources Act, 1990:
  - Registration through the Environmental Activity and Sector Registry in accordance with Ontario Regulation 63/16;
  - Category 3 Permit to Take Water from the Ministry of the Environment, Conservation and Parks for the taking of more than 400,000 L/day for construction dewatering; and
  - Environmental Compliance Approval(s) for water discharge from the Ministry of the Environment, Conservation and Parks in accordance with the Ontario Water Resources Act, 1990.
- Under the Environmental Protection 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

No authorization under Ontario Regulation 166/06 is required for the Exhibition Station early works.

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 Exhibition Station early works, particularly as pertaining to municipally owned 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 City of Toronto to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals.

Metrolinx will consult with the City of Toronto Heritage Preservation Services regarding any physical impact to the property located at 1 Atlantic Avenue (OLW-011), a previously identified built heritage resource/cultural heritage landscape with no municipal heritage designation. Metrolinx will consult with the City of Toronto Heritage Preservation Services regarding any physical impact to this property.

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.

Metrolinx will co-ordinate with the City of Toronto and Exhibition Place for transportation-related permits and approvals (e.g., street occupation permit) prior to construction, as required.

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 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 Final Exhibition Station Early Works Report:

- Early Works specific updates on the Engagement webpage (Project website) (www.metrolinx.com/ontarioline) including:
  - West segment neighbourhood updates (Exhibition Station is within the West segment) – published on September 17, 2020; and
  - Early works webpage (https://www.metrolinxengage.com/en/content/ontario-line-early-works-exhibition-station) that includes overall early works timelines, scope overview and location and specific information related to plans for Exhibition Station early works, including environmental studies – published on September 17, 2020 and updated on November 30, 2020.
- 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;
- Outreach to Indigenous communities;
- Meetings with technical stakeholders and community stakeholders and groups; and
- Online consultation via the Project Engagement website.

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 Exhibition Station early works consultation activities carried out with members of the public, government review agencies and other technical stakeholders, property owners, community stakeholders and groups, elected officials, Indigenous communities, and other interested parties, including a summary of feedback and comments received.

On November 30, 2020, the Notice of Publication of the Draft Early Works Report was issued through a variety of media to commence the public review period, effective until January 5, 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 and one community newspaper in English, French and Portuguese;
- Email to individuals on the Project Distribution List, including community stakeholders and groups, government review agencies and other technical stakeholders, and Indigenous communities; and
- Mailed to property owners within 30 metres of the Exhibition Station Early Works Project Footprint and approximately 22,710 addresses (i.e., apartments, houses, businesses) within and surrounding the Exhibition Station Study Area.

Following the consultation program described in **Section 8**, Notice of Publication of the Final Early Works Report was issued to the public on February 1, 2021 through a variety of media (Project website, registered mail, newspapers, and mail drop to nearby addresses). All parties notified of the Draft Early Works Report were notified of the publication of the Final Early Works Report and provided with access to a copy of it. Input/ feedback received during the 36-day public review period of the Draft Early Works Report was incorporated into the Final Early Works Report.

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.

Table of Contents

page

1. Introduction 1
1.1 Purpose of the Ontario Line Exhibition Station Early Works 1
1.2 Ontario Line Project Overview 2
1.3 Early Works Overview 2
1.3.1 Rationale for Proceeding with the Exhibition Station Early Works 2
1.3.2 Summary of Background Information related to the Exhibition Station Early Works 4
1.3.3 Description of the Alternatives Considered 4

2. Study Process 5
2.1 Ontario Regulation 341/20: Ontario Line Project 5
2.1.1 Early Works Report 5
2.1.1.1 Draft Early Works Report 5
2.1.1.2 Consultation on Early Works Report 6
2.1.1.3 Final Early Works Report 8
2.1.2 Contents of the Early Works Report 8
2.2 Planning Context 9
2.2.1 Provincial 10
2.2.1.1 Provincial Policy Statement, 2020 10
2.2.1.2 A Place to Grow: Growth Plan for the Greater Golden Horseshoe 11
2.2.1.3 2041 Regional Transportation Plan 12
2.2.1.4 The Greenbelt Plan, 2017 13
2.2.1.5 Conservation Authorities Act, 1998 13
2.2.2 Municipal 14
2.2.2.1 City of Toronto Official Plan 14
2.2.3 Applicable Environmental Assessments and Planning Studies 14
2.2.3.1 Dufferin Street Bridges Rehabilitation Class Environmental Assessment Study 14
2.2.3.2 Waterfront Transit Reset – Waterfront West Light Rail Transit 15
2.2.3.3 Liberty Village New Street Environmental Assessment 15
2.2.3.4 Exhibition Place Master Plan 16
2.2.3.5 Gardiner Expressway Strategic Rehabilitation Plan 17

3. Early Works Description 18
3.1 Project Description 18
3.1.1 Passenger Access: Tunnels and Vertical Accesses 18
3.1.1.1 Existing Passenger Tunnel Extension 18
3.1.1.2 Temporary Pedestrian Bridge 19

3.1.2 New North Platform and Track 1 and Track 2 Shift 19
3.1.3 Utilities 19
3.2 Early Works Project Footprint and Study Area 20
3.3 Construction Activities 20
4. Methodology 27
4.1 Natural Environment 30
4.1.1 Local Environmental Conditions 30
4.1.2 Impact Assessment 31
4.2 Soil and Groundwater 32
4.2.1 Local Environmental Conditions 32
4.2.2 Impact Assessment 32
4.3 Hydrology and Surface Water 33
4.3.1 Local Environmental Conditions 33
4.3.2 Impact Assessment 33
4.4 Air Quality 33
4.4.1 Local Environmental Conditions 33
4.4.2 Impact Assessment 37
4.5 Noise and Vibration 38
4.5.1 Local Environmental Conditions 38
4.5.1.1 Noise 38
4.5.1.2 Vibration 39
4.5.2 Impact Assessment 39
4.5.2.1 Noise 39
4.5.2.2 Vibration 40
4.6 Socio-Economic and Land Use Characteristics 41
4.6.1 Local Environmental Conditions 41
4.6.2 Impact Assessment 42
4.7 Built Heritage Resources and Cultural Heritage Landscapes 42
4.7.1 Local Environmental Conditions 42
4.7.2 Impact Assessment 43
4.8 Archaeological Resources 44
4.8.1 Local Environmental Conditions 44
4.8.2 Impact Assessment 44
4.9 Traffic and Transportation 45
4.9.1 Local Environmental Conditions 45
4.9.2 Impact Assessment 45
4.10 Utilities 46
4.10.1 Existing Conditions 46
4.10.2 Impact Assessment 46
5. Local Environmental Conditions 47
5.1 Natural Environment 47
5.1.1 Designated Natural Areas/Planning Policy Areas 47

5.1.2 Ecological Land Classification and Plant Inventory 48
5.1.3 Fish and Fish Habitat 48
5.1.4 Wildlife and Wildlife Habitat 48
5.1.5 Significant Wildlife Habitat 51
5.1.6 Species at Risk Habitat Screening 52
5.2 Soil and Groundwater 53
5.2.1 Geological Setting 53
5.2.1.1 Physiography and Topography 53
5.2.1.2 Surficial Geology 56
5.2.1.3 Quaternary Geology 56
5.2.1.4 Bedrock Geology 56
5.2.2 Hydrogeological Setting 56
5.2.2.1 Regional Groundwater Flow 61
5.2.3 Groundwater Resources 61
5.2.3.1 Source Water Protection 61
5.2.3.2 Ministry of the Environment, Conservation and Parks Water Well Records 62
5.2.3.3 Ministry of the Environment, Conservation and Parks Permit to Take-Water and Environmental Activity and Sector Registry Summary 64
5.2.3.4 Water Level Data 64
5.3 Hydrology and Surface Water 66
5.4 Air Quality 66
5.4.1 Existing Ambient Air Quality 66
5.4.2 Meteorological Conditions 68
5.4.3 Traffic Assessment 69
5.4.4 Representative Receptors 70
5.5 Noise and Vibration 72
5.5.1 Noise 72
5.5.2 Vibration 72
5.6 Socio-Economic and Land Use Characteristics 75
5.6.1 Physical Neighbourhood Composition 75
5.6.1.1 Land Use and Built Form Patterns 75
5.6.1.2 Transit and Transportation Network 78
5.6.1.3 Public Realm Characteristics 79
5.6.2 Community Amenities 84
5.6.2.1 Existing Services and Facilities 84
5.6.2.2 Planned Services and Facilities 85
5.6.3 Neighbourhood Demographics 87
5.6.4 Future Development 87
5.7 Built Heritage Resources and Cultural Heritage Landscapes 90
5.8 Archaeological Resources 103
5.9 Traffic and Transportation 105
5.9.1 Transportation Network 105

5.9.1.1 Roads 105
5.9.1.2 Active Transportation 106
5.9.1.3 Rail 109
5.9.2 Transit Network 109
5.10 Utilities 114
5.10.1 Private Utilities 114
5.10.2 Public Utilities and Municipal Servicing 114

6. Potential Impacts, Mitigation Measures and Monitoring Activities 115

6.1 Natural Environment 115
6.2 Soil and Groundwater 119
6.3 Hydrology and Surface Water 122
6.4 Air Quality 124
6.5 Noise and Vibration 126
6.6 Socio-Economic and Land Use Characteristics 129
6.7 Built Heritage Resources and Cultural Heritage Landscapes 131
6.8 Archaeological Resources 138
6.9 Traffic and Transportation 140
6.10 Utilities 143

7. Permits and Approvals 145

7.1 Federal 145
7.2 Provincial 145
7.2.1 Ontario Water Resources Act, 1990 145
7.2.2 Environmental Protection Act, 1990 145
7.2.3 Endangered Species Act, 2007 146
7.3 Conservation Authority 146
7.4 Municipal 146

8. Consultation Process 147

8.1 Overview of the Consultation Process 147
8.1.1 Approach to Consultation 148
8.1.2 Record of Consultation 149
8.1.3 Identification of Interested Parties 149
8.2 Public Engagement and Feedback 150
8.2.1 Public Engagement Opportunities 150
8.2.1.1 Public Engagement Webpage 150
8.2.2 Public Feedback 152
8.2.2.1 Summary of Public Feedback – Email, Contact Us and Ask-A-Question 152
8.2.2.2 Summary of Public Feedback – 'Provide Your Feedback' and Draft Exhibition Station Early Works Report Discipline-Specific Forms 153
8.3 Engagement with Community Stakeholders and Groups 155

8.4 Engagement with Technical Stakeholders 158
8.5 Engagement with Elected Officials 159
8.6 Engagement with Indigenous Communities 160
8.7 Issues Resolution Process and Final Early Works Report 162
8.7.1 Description of Metrolinx Response to Concerns Expressed by Indigenous Communities and Interested Persons 164
8.8 Commitment to Future Consultation 167

9. References 168

List of Figures

Figure 1-1: Ontario Line Project and Exhibition Station Early Works Location 3
Figure 3-1: Exhibition Station Early Works Conceptual Design 21
Figure 3-2: Exhibition Station Early Works Project Footprint and Study Area 22
Figure 5-1: Ecological Land Classification Within the Exhibition Station Natural Environment Study Area 49
Figure 5-2: Physiography Within the Exhibition Station Soil and Groundwater Study Area 54
Figure 5-3: Topography and Drainage Within the Exhibition Station Soil and Groundwater Study Area 55
Figure 5-4: Surficial Geology Within the Exhibition Station Soil and Groundwater Study Area 57
Figure 5-5: Quaternary Geology Within the Exhibition Station Soil and Groundwater Study Area 58
Figure 5-6: Bedrock Geology Within the Exhibition Station Soil and Groundwater Study Area 59
Figure 5-7: Highly Vulnerable Aquifer Within the Exhibition Station Soil and Groundwater Study Area 63
Figure 5-8: Ministry of the Environment, Conservation and Parks Water Wells, Permit to Take Water and Environmental Activity and Sector Registry Locations Within the Exhibition Station Soil and Groundwater Study Area 65
Figure 5-9: Wind Rose Representative of Meteorological Conditions in the Exhibition Station Air Quality Study Area 69
Figure 5-10: Sensitive Receptors within the Exhibition Station Air Quality Study Area 71

Figure 5-11: Noise Monitoring Locations Within the Exhibition Station Noise and Vibration Study Area 74
Figure 5-12: Land Use Designations within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area 76
Figure 5-13: Community Amenities Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area 86
Figure 5-14: Active Development Applications Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area 88
Figure 5-15: Known, Previously Identified, and Potential Built Heritage Resources/Cultural Heritage Landscapes Within the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area 101
Figure 5-16: Archaeological Resources within the Exhibition Station Early Works Project Footprint 104
Figure 5-17: Existing Pedestrian Network within the Exhibition Station Traffic and Transportation Study Area 107
Figure 5-18: Existing Cycling Network Within the Exhibition Station Traffic and Transportation Study Area 108
Figure 5-19: Existing Transit Network Within the Exhibition Station Traffic and Transportation Study Area 113

List of Tables

Table 2-1: Early Works Report Contents in Accordance with Ontario Regulation 341/20: Ontario Line Project 9
Table 3-1: Anticipated Construction Activities for the Ontario Line Exhibition Station Early Works 23
Table 4-1: Exhibition Station Study Area Definition by Discipline 27
Table 4-2: Summary of Applicable Guidelines and Standards 35
Table 5-1: Ecological Land Classification Vegetation Communities Identified Within the Exhibition Station Natural Environment Study Area 50
Table 5-2: Hydrostratigraphic Units of the GTA (TRSPA, 2015) 60
Table 5-3: Source Water Protection Details for the Exhibition Station Soil and Groundwater Study Area 62
Table 5-4: Summary of Ministry of the Environment, Conservation and Parks Water Well Record Information for the Exhibition Station Soil and Groundwater Study Area 64

Table 5-5: Comparison of Existing Air Quality to Standards 67
Table 5-6: Representative Traffic Data Within the Exhibition Station Air Quality Study Area 70
Table 5-7: Sensitive Receptors Within the Exhibition Station Air Quality Study Area 72
Table 5-8: Relevant Baseline Noise Measurement Data 73
Table 5-9: Recreational Uses, Parks and Open Spaces Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area 85
Table 5-10: Community Groups and Resources Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area 85
Table 5-11: Niagara Neighbourhood Profile..... 87
Table 5-12: Active Development Applications as of October 23, 2020 for the Exhibition Station Socio-Economic and Land Use Characteristics Study Area 89
Table 5-13: Description of Known, Previously Identified and Potential Built Heritage Resources/Cultural Heritage Landscapes Within the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area..... 91
Table 5-14: Existing Transit Routes Within the Exhibition Station Traffic and Transportation Study Area 110
Table 5-15: Private Utilities Within the Exhibition Station Early Works Project Footprint..... 114
Table 5-16: Public Utilities Within the Exhibition Station Early Works Project Footprint..... 114
Table 6-1: Potential Impacts, Mitigation Measures and Monitoring Activities – Natural Environment 116
Table 6-2: Potential Impacts, Mitigation Measures and Monitoring Activities – Soil and Groundwater 120
Table 6-3: Potential Impacts, Mitigation Measures and Monitoring Activities – Hydrology and Surface Water 123
Table 6-4: Potential Impacts, Mitigation Measures and Monitoring Activities – Air Quality 125
Table 6-5: Potential Impacts, Mitigation Measures and Monitoring Activities – Noise and Vibration 127
Table 6-6: Potential Impacts, Mitigation Measures and Monitoring Activities – Socio-Economic and Land Use Characteristics 130
Table 6-7: Potential Impacts, Mitigation Measures and Monitoring Activities – Built Heritage Resources and Cultural Heritage Landscapes 132

Table 6-8: Potential Impacts, Mitigation Measures and Monitoring Activities – Archaeological Resources 139
Table 6-9: Potential Impacts, Mitigation Measures and Monitoring Activities – Traffic and Transportation 141
Table 6-10: Potential Impacts, Mitigation Measures and Monitoring Activities – Utilities 144
Table 8-1: Summary of Key Themes of Feedback Received, Metrolinx Actions in Response to the Feedback, and Implications to the Exhibition Station Early Works Timeline 165

Appendices

Appendix A. Technical Reports

Appendix A1. Natural Environment Early Works Report
Appendix A2. Air Quality Early Works Report
Appendix A3. Noise and Vibration Early Works Report
Appendix A4. Heritage Detailed Design Report
Appendix A5. Traffic and Transportation Early Works Report

Appendix B. Consultation Materials

Appendix B1. Project Distribution List
Appendix B2. Project Webpage
Appendix B3. Consultation and Correspondence Record

1. Introduction

1.1 Purpose of the Ontario Line Exhibition 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**. AECOM Canada Limited (AECOM) was retained by Metrolinx and Infrastructure Ontario to complete this Ontario Line Exhibition Station 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 Exhibition Station early works. The rationale for proceeding with the Exhibition Station early works is provided in **Section 1.3.1**. Exhibition Station early works are described in detail in **Section 3**.

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 16-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 Exhibition Station early works location within the context of the Project is shown in **Figure 1-1**.

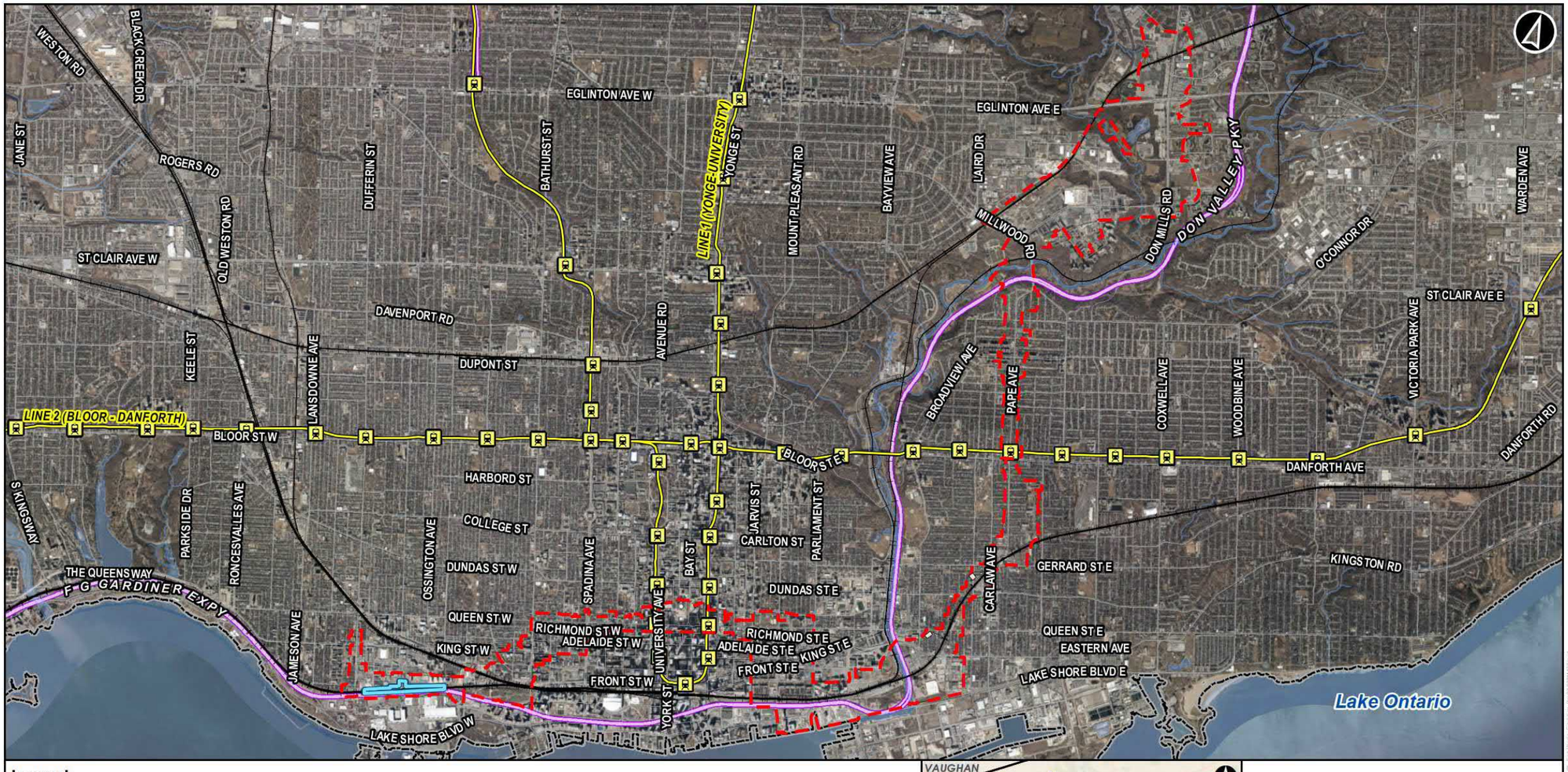
1.3 Early Works Overview

1.3.1 Rationale for Proceeding with the Exhibition Station Early Works

Ontario Line trains will be above ground at Exhibition Station, which currently accommodates GO Train and VIA rail services as well as freight rail operations. GO Expansion plans call for more GO train services and, as a result, supporting infrastructure (e.g., electrification) and system upgrades at Exhibition Station. Therefore, Metrolinx is carrying out early works for the Ontario Line in this area to ensure both of these important transit expansion projects are properly co-ordinated and completed in a timely manner.

These early works will set the groundwork for other major construction on the Project, reducing risk of construction delays to the main P3 contracts by completing the joint corridor work in advance of the main contracts.

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



1.3.2 Summary of Background Information related to the Exhibition Station Early Works

In November 2017, Metrolinx developed a Background and Needs Assessment Report for Exhibition GO Station, which documented background information and identified a number of issues and opportunities related to safety, accessibility and user experience. This Report was then used to inform the recommendations documented in the 2018 Functional Site Plan for the Exhibition GO Station Area. Recommendations included extension of the existing pedestrian tunnel, construction of new pedestrian tunnel(s) and enhancement of station facilities and the public realm surrounding the station. These recommendations were intended to be implemented as part of the GO Expansion project.

The Functional Site Plan goals and recommendations (e.g., ease crowding issues and improve connectivity) have been incorporated into the Ontario Line Exhibition Station early works (e.g., expansion of the existing passenger tunnel and construction of new passenger tunnels). Having these components proceed to implementation as part of early works benefits both Ontario Line and GO Expansion.

1.3.3 Description of the Alternatives Considered

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 Exhibition Station early works before the completion of the Ontario Line assessment process – is beneficial for Project planning and design and facilitates timely implementation of both Ontario Line and GO Expansion. Prior to finalizing Exhibition Station early works conceptual design, other conceptual design alternatives were considered and subsequently eliminated due to incompatibility with the Ontario Line Exhibition Station design development.

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 communities 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

The Draft Early Works Report was prepared to satisfy the requirements of Section 8 of Ontario Regulation 341/20: Ontario Line Project. The Draft Early Works Report summarized the local environmental conditions within the discipline-specific study areas developed for the Exhibition 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)[2], prepared under a separate cover in accordance with Section 4 of Ontario Regulation 341/20: Ontario Line Project. The Draft Early Works Report also provided an assessment and evaluation of the impacts that the Exhibition Station early works might have on the environment. Based on the potential impacts, a description of mitigation measures and monitoring activities were outlined. A list of any municipal, provincial, federal or other permits and approvals that may be required for the early works were also provided.

2. 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, the Draft Early Works Report provided a consultation record including a description of the consultations carried out with Indigenous communities and interested persons.

2.1.1.2 Consultation on 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 communities, elected officials, regulatory agencies, community stakeholders and groups and other interested persons. The Exhibition 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 Early Works Report:

- Early Works specific updates on the Engagement webpage (Project website) (www.metrolinx.com/ontarioline) including:
    - West segment neighbourhood updates (Exhibition Station is within the West segment) – published on September 17, 2020; and
    - Early works webpage (https://www.metrolinxengage.com/en/content/ontario-line-early-works-exhibition-station) that includes overall early works

timelines, scope overview and location and specific information related to plans for Exhibition Station early works, including environmental studies – published on September 17, 2020 and updated on November 30, 2020.

- 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;
- Outreach to Indigenous communities;
- Meetings with technical stakeholders and community stakeholders and groups; and
- Online consultation via the Project Engagement website.

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 Exhibition Station early works consultation activities carried out with members of the public, government review agencies and other technical stakeholders, community stakeholders and groups, elected officials, Indigenous communities, and other interested parties, including a summary of feedback and comments received.

On November 30, 2020, the Notice of Publication of the Draft Early Works Report was issued through a variety of media to commence the 36-day public review period, effective until January 5, 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 and one community newspaper in English, French and Portuguese;
- Email to individuals on the Project Distribution List, including community stakeholders and groups, review agencies and other technical stakeholders, and Indigenous communities; and
- Mailed to property owners within 30 metres of the Exhibition Station Early Works Project Footprint and approximately 22,710 addresses (i.e., apartments, houses, businesses) within and surrounding the Exhibition 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.

2.1.1.2.1 Issues Resolution Process

In accordance with Section 10(6) of Ontario Regulation 341/20: Ontario Line Project, Metrolinx established an issues resolution process for the Exhibition Station early works. Any concerns raised by Indigenous communities and interested persons during the 36-day public review period of the Draft Early Works Report have been documented in **Section 8.7.1** of this Report, as required by Section 11(1)(b) of Ontario Regulation 341/20: Ontario Line Project. Concerns received after the 36-day review period will be addressed outside of the issues resolution process.

2.1.1.3 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 Early Works Report was issued to the public on February 1, 2021 through a variety of media (Project website, registered mail, social media, newspapers, and mail drop to nearby addresses). All parties notified of the Draft Early Works Report were notified of the publication of the Final Early Works Report and provided with access to a copy of it. Input/feedback received during the 36-day public review period was incorporated into this Report.

Within 35 days after receipt of the Notice of Publication of the Final Early Works Report, the Minister may issue a notice to Metrolinx imposing conditions related to the early works, in accordance with Section 12 of Ontario Regulation 341/20: Ontario Line Project.

After the Minister's 35-day review period, Metrolinx shall 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 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 11 of Ontario Regulation 341/20: Ontario Line Project and contains the information outlined in **Table 2-1**.

Table 2-1: Early Works 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**
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 communities and interested persons, ii. a list of the Indigenous communities and interested persons who participated in the consultations, iii. summaries of the comments submitted by Indigenous communities and interested persons, and iv. a summary of discussions that Metrolinx had with Indigenous communities, and copies of all written comments submitted by Indigenous communities.	**Section 8 and Appendix B**

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 Exhibition Station Study Area are policies that relate to transportation systems and infrastructure, long-term economic prosperity, and the protection of natural, cultural, and built heritage. 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);
- Conserving heritage and significant cultural heritage landscapes; and
- Restricting development and site alteration on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved (Provincial Policy Statement, 2020, Sections 2.6.1 and 2.6.2).

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 Exhibition 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, 2019 (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 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” (Ministry of Municipal Affairs and Housing, 2019). 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 Exhibition 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 RTP 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 RTP 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 Exhibition Station early works support 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[3]. 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).

A portion of the Project is located within the Greenbelt Area (i.e., the Don River); however, the Exhibition Station Early Works Project Footprint is located within the "Settlement Areas Outside of the Greenbelt" (Province of Ontario, 2017).

2.2.1.5 Conservation Authorities Act, 1998

The Exhibition 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

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

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 Exhibition Station Early Works Project Footprint is not located within the Toronto and Region Conservation Authority Regulation Limit.

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 two City of Toronto secondary plans are applicable to the Exhibition Station Study Area:

- Garrison Common North Secondary Plan; and
- Central Waterfront Secondary Plan.

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

2.2.3 Applicable Environmental Assessments and Planning Studies

2.2.3.1 Dufferin Street Bridges Rehabilitation Class Environmental Assessment Study

In 2011, the City of Toronto completed a Class Environmental Assessment to address the deteriorated condition of the Dufferin Street bridge over the Lakeshore West rail corridor and the Dufferin Street bridge over the Gardiner Expressway (City of Toronto, 2011). Both bridges are located within the Exhibition Station Study Area (defined in **Section 3.2** and shown in **Figure 3-2**).

The approved Environmental Study Report resulted in the following recommended design:

- The replacement of the Dufferin Street bridge over the Lakeshore West rail corridor with a precast concrete box girder structure along its existing alignment that would comply with Metrolinx/GO Transit's clearance requirements, both vertically (to protect for electrification) and horizontally (to protect for additional tracks; and
- The replacement of the Gardiner Expressway bridge with a welded steel box girder structure.

The bridge structures were closed to traffic and demolished in 2013 (Hatfield, 2013) and temporary bridges were established and opened in 2014 (Perks, 2014).

2.2.3.2 Waterfront Transit Reset – Waterfront West Light Rail Transit

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 to enhance transit connections along Toronto's waterfront. 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, 2019a).

As part of the Waterfront Transit Reset, the Waterfront West Light Rail Transit is proposed from Union Station to Long Branch Loop at Long Branch GO Station in Etobicoke (City of Toronto, 2019a). This line would service the Exhibition Station Study Area via a new right of way parallel to King Street West east of Roncesvalles Avenue and follow the rail corridor through the Exhibition Loop area, continuing to Union Station via the existing 509 Harbourfront streetcar route (City of Toronto, 2019a). In April 2019, the City of Toronto identified the "Exhibition Loop-Dufferin Loop streetcar connection" as a "priority segment of the Waterfront Transit Network Plan" (City of Toronto, 2019a).

2.2.3.3 Liberty Village New Street Environmental Assessment

The City of Toronto completed a Municipal Class Environmental Assessment that has recommended the construction of a new east-west road extending between Dufferin Street and Strachan Avenue (City of Toronto, n.d.a). The new road would be located on the north side of the existing rail tracks. The Environmental Study Report was completed in 2016.

City Council has endorsed the preferred design identified in the EA, which consists of the following:

- A new road with two traffic lanes (one in each direction);
- A multi-use path for cyclists and pedestrians on the south side of the road;
- A sidewalk on the north side of the road;
- Landscaping and civic improvements, including south-facing lookouts, where possible; and
- Two-way connections at all intersecting north-south streets, except for Strachan Avenue, which would be restricted to right-in right-out movements.

Construction of the new road is subject to available funding. Potential implementation of the new road could follow a phased approach. Currently, there is no schedule for construction (City of Toronto, n.d.a).

2.2.3.4 Exhibition Place Master Plan

The City of Toronto is developing a Master Plan for Exhibition Place, under the guidance of the Cultural Heritage Landscape Assessment (City of Toronto, 2019b) completed in 2019, to provide an overall vision and planning framework to guide physical change and usage of the Exhibition Place grounds. The Exhibition Place Master Plan will include direction on public realm enhancements, parks and open spaces, transportation upgrades, built form, heritage conservation, and connectivity to the surrounding neighbourhoods (City of Toronto, n.d.b).

Objectives of the study include:

- Supporting Exhibition Place’s economic benefit to the City;
- Introduce public realm improvements that enhance the visitor experience;
- Rehabilitate heritage buildings and landscapes as a key component of the Exhibition Place identity/sense of place;
- Leveraging external initiatives that will greatly improve local and regional transit accessibility and connectivity; and
- Establishing City priorities and opportunities for mutually beneficial collaboration with the revitalization of Ontario Place.

The first phase of the study, launched in 2019, culminated in a Master Plan Strategy presented to the Board of Governors in 2020. The Master Plan Strategy findings and proposals will be studied in future phases, with consideration of surrounding projects such as the Ontario Line and the revitalization of Ontario Place (City of Toronto, 2020a).

2.2.3.5 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.c). The rehabilitation is being completed in seven sections, two of which are within the Exhibition Station Study Area:

- Segment 2 between Fraser Avenue and Pirandello Street with a projected timeline of planned construction between 2021 and 2023 (City of Toronto, n.d.c); and
- Segment 7 between Humber River and Fraser Avenue with a projected timeline of planned construction between 2025 and 2027 (City of Toronto, n.d.c).

The City of Toronto's website notes that the planned construction timelines are subject to change (City of Toronto, n.d.c).

3. Early Works Description

3.1 Project Description

The Exhibition Station early works will include modifications and improvements to the existing Exhibition GO Station, including extension of the existing passenger tunnel, construction of vertical accesses, construction of new north platform, shifting of the two northern-most GO tracks, construction of a temporary pedestrian bridge, and relocating utilities.

The Exhibition Station early works will support the future Ontario Line terminus station which will create a connection with the GO network. Exhibition Station early works components are shown in **Figure 3-1** and described in sections below.

3.1.1 Passenger Access: Tunnels and Vertical Accesses

3.1.1.1 Existing Passenger Tunnel Extension

There is currently an existing and operating passenger tunnel at Exhibition Station that runs below the GO tracks and provides access between the north and south sides of the rail corridor. This existing tunnel was previously extended north of the north platform with a new head house (enclosed building above tunnel entrance) connected to Atlantic Avenue through a covered pathway, though these structures have not been commissioned. These structures will be commissioned, along with associated infrastructure such as Closed Circuit Television (CCTV), lighting, and communication systems, as part of the Exhibition Station early works. This activated access point will be in service until the new passenger tunnel extension and north entrance (see details below) are completed. At that time, the covered pathway to Atlantic Avenue will be closed, but the tunnel extension and vertical access will continue facilitating passenger access.

The existing passenger tunnel is also proposed to be extended approximately 40 metres further to the north from the currently un-commissioned head house, with a new head house constructed at the new terminus. Vertical accesses will be constructed as well. This tunnel extension and new north entrance will provide continuous access to the station throughout Ontario Line construction.

3.1.1.2 Temporary Pedestrian Bridge

A temporary pedestrian bridge spanning the rail corridor will be installed, providing additional access and egress capacity for the station platforms and augmenting cross-corridor capacity to serve trips to and from Liberty Village. In addition, the bridge will reduce the potential congestion in the existing tunnel during special events at Exhibition Place and/or Ontario Place. The bridge will be aligned with the existing tunnel and its extension (described above). A temporary structure, this bridge will not be accessible, while the existing tunnel will continue to provide barrier-free access to the westbound platform and across the corridor. The bridge will be complete with all required associated infrastructure such as lighting, CCTV and communication system. The temporary pedestrian bridge is anticipated to be in place until Ontario Line is in operation.

3.1.2 New North Platform and Track 1 and Track 2 Shift

A new north platform for westbound GO trains will be constructed that will include all required amenities such as platform edge tiles and curbs, lighting, signage, and platform shelters.

Track 1 and Track 2 (northern-most GO tracks) will be relocated approximately 10 metres to the north of their current locations and run south of the new north platform described above. Once the new north platform is constructed and Track 1 and Track 2 are shifted north, the existing north platform, including the existing headhouse, will be removed.

The new north platform will service GO trains temporarily. Once the Ontario Line station is constructed, the western portion of the new north platform will form part of the joint GO-Ontario Line platform, and the eastern portion will be removed. GO trains will continue to run on Track 1, and stop at the new joint GO-Ontario Line platform. The joint platform will allow people transferring from the Ontario Line to the GO Train to walk straight from one to the other without having to go up or down a level.

3.1.3 Utilities

Utilities such as sewers, water, electrical, communications and gas located within the rail corridor as well as other parts of the Exhibition Station Early Works Project Footprint will be relocated to facilitate completion of the work described above, as required.

3.2 Early Works Project Footprint and Study Area

The Exhibition Station Early Works Project Footprint, shown in **Figure 3-1**, is defined as the area of direct disturbance associated with the early works construction activities, including anticipated required construction staging and laydown areas[4]. The Exhibition Station Early Works Project Footprint largely overlaps with the existing Lakeshore West rail corridor and Exhibition GO Station from Mowat Avenue in the west to Pirandello Street in the east and extends approximately 150 metres north of the rail corridor between Atlantic Avenue in the west to Hanna Avenue in the east. The Exhibition Station Early Works Project Footprint also overlaps with an existing building and part of a parking lot on the east side of Atlantic Avenue and immediately north of the existing Exhibition GO Station access.

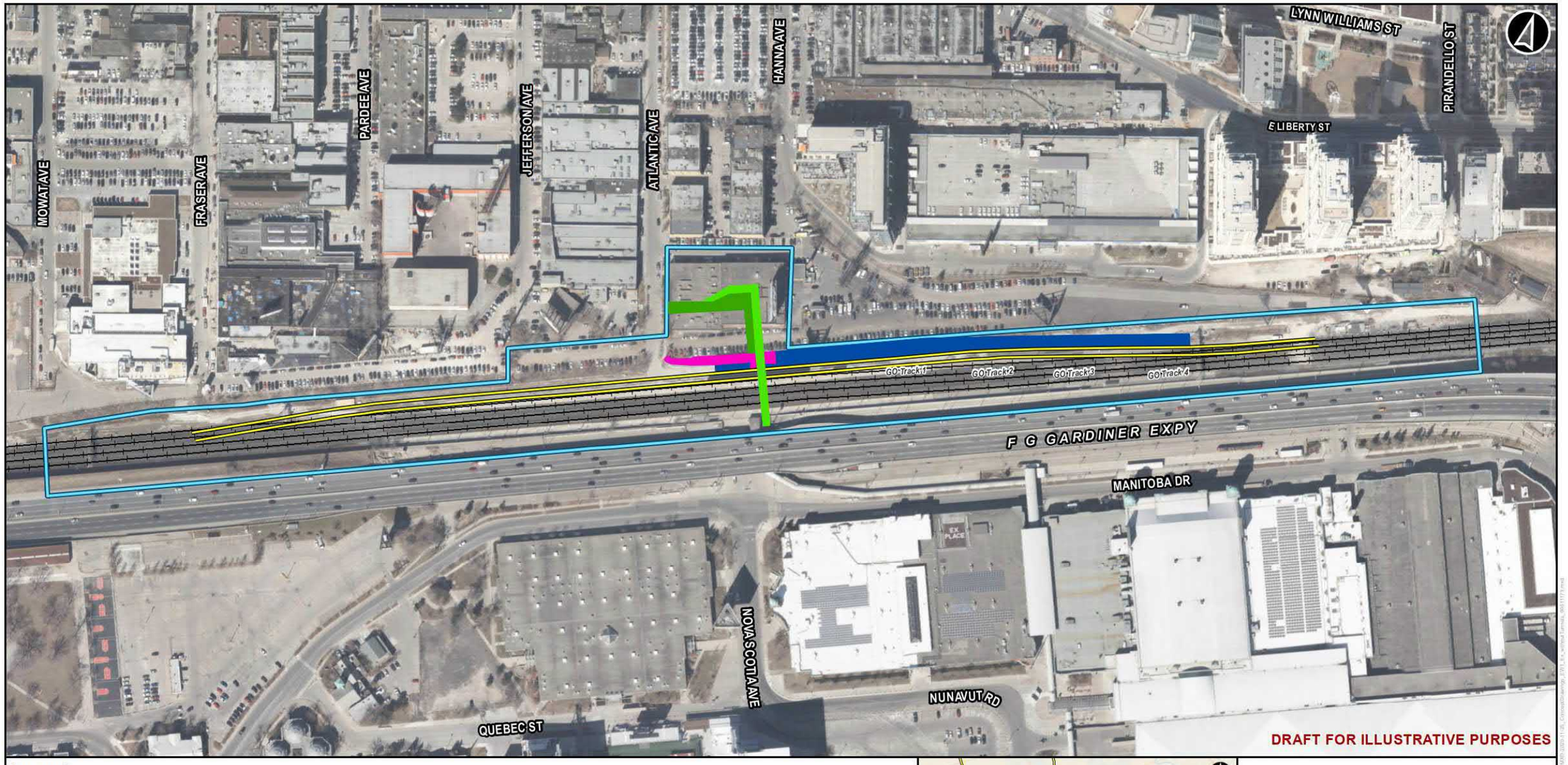
The Exhibition Station Study Area, shown in **Figure 3-2**, includes the Exhibition Station Early Works Project Footprint and a 500 metre buffer. An overall study area was identified for assessment of potential impacts of the Exhibition Station early works. As shown in **Table 4-1**, select discipline-specific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

3.3 Construction Activities

Table 3-1 provides a description of the anticipated construction activities for the Exhibition 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.

4. Staging and laydown areas are areas for the temporary storage of construction equipment and materials.

Figure 3-1: Exhibition Station Early Works Conceptual Design



Legend

- Existing Rail
- Exhibition Station Early Works Project Footprint

Early Works Components:

- New North Entrance and Tunnel Extension
- Temporary Pedestrian Bridge
- Existing Non-commissioned Tunnel Head House
- New North Platform
- Shifted GO Track 1 and 2

Ontario Line Project

Exhibition 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

Nov, 2020	1:2,500
P#: 60611173	REV: 04

Figure 3-1

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

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

Anticipated Construction Activity	Description	Associated Equipment
Site Preparation	♦ Mobilization of equipment and temporary facilities to the site. ♦ Clearing and grubbing of vegetation, tree removal and protection. ♦ Erection of temporary and permanent fences. ♦ Installation of environmental management features (e.g., erosion and sediment controls). ♦ Dewatering works. ♦ Demobilization. ♦ Temporary railway crossing. ♦ Temporary signs. ♦ Locates and surveys. ♦ Notices. ♦ Site specific documents (safety, approvals, permit etc.). ♦ Mobilization of construction materials currently located on site north of train tracks.	♦ Site compaction equipment and grading equipment. ♦ Vegetation removal equipment. ♦ Excavation equipment. ♦ Haulage/dump trucks. ♦ Dewatering equipment (pumps etc.). ♦ Hand tools. ♦ Surveying equipment. ♦ Flatbed truck. ♦ Forklift.
Site Servicing/ Removals/ Demolition	♦ 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. Includes utilities on the rail corridor and off the rail corridor. ♦ Demolition and removal of main building at 1 Atlantic Avenue. ♦ Week-end pedestrian tunnel installation. ♦ Removal and reinstatement of railway track. ♦ Tree removal.	♦ Excavation equipment including backhoe, dump trucks, spoils removal equipment, jackhammers. ♦ Hand tools. ♦ Mobile crane. ♦ Flatbed trucks. ♦ Track stabilizer. ♦ Boom truck. ♦ Spreader for track work.

Anticipated Construction Activity	Description	Associated Equipment
Excavating 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 at an approved facility. ♦ Any off-site disposal shall be done in compliance with applicable regulations, including as it relates to contaminated material that may be encountered. ♦ Implement support of the existing infrastructure by way of caissons and other temporary supporting structure. ♦ Any groundwater encountered will be managed and disposed of in accordance with applicable regulations.	♦ 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 and Rehabilitation / Upgrade of Structures	♦ All structures will be constructed using standard civil construction techniques. ♦ Rehabilitation and upgrade of GO platforms (Exhibition GO), including mini-platform, platform curbs, etc. ♦ Construction of Ontario Line-GO pedestrian tunnel and vertical access to GO platforms (including elevators and stairwells). ♦ Relocate existing platform amenities (i.e., lighting poles, fencing, Closed Circuit Television, etc.).	♦ Foundation placement equipment. ♦ Augured piles or rammed aggregate piers. ♦ Drill rigs. ♦ Mobile cranes and hoists. ♦ Concrete trucks, pumps and vibrators, skid steer.

Anticipated Construction Activity	Description	Associated Equipment
Construction and/or Alteration of Bridges	♦ Includes grounding and bonding. ♦ Pile installation, foundations, abutments, retaining walls, bridge girders, decking, backfilling, and concrete demolition.	♦ Mobile cranes and hoists. ♦ Flatbed trucks, cranes. ♦ Augured piles or rammed aggregate piers. ♦ Drill rigs. ♦ Bulldozer and excavator. ♦ Jackhammer.
Construction of Ancillary Facilities	♦ Ancillary facilities may include electrical transformer/supply equipment, parking areas, exterior yard facilities including lighting, electrification enabling facilities, platform shelters, platform canopies, utility buildings, entrance plazas/head houses.	♦ Flatbed trucks, cranes, concrete trucks. ♦ Backhoe, pavement excavation equipment. ♦ Mobile cranes and hoists. ♦ Concrete trucks, pumps and vibrators.
Installation of Trackwork	♦ Assembly of track, ties and fastenings.	♦ Thermal welding. ♦ Tie placement (cranes, lifting equipment). ♦ Ballast placement equipment. ♦ Concrete pouring equipment.
Temporary Track Diversion	♦ Grading. ♦ Temporary drainage. ♦ Relocation/Installation of tracks. ♦ Temporary relocation of signals, if any. ♦ Clear delineation and protection between active rail service and construction work zones. ♦ Provision of GO signal overhead bridge support/protection and temporary GO ballast track protection (i.e., sheet piling).	♦ Site compaction equipment and general grading equipment, dump trucks, spoil removal equipment. ♦ Thermal welding. ♦ Tie placement (cranes, lifting equipment). ♦ Ballast placement equipment. ♦ Temporary concrete barriers.
Temporary Road Closures	♦ All road closures will follow standard traffic control management guidelines.	♦ Temporary traffic control devices such as signs, signals, barriers, traffic barrels, plate tampers.

Anticipated Construction Activity	Description	Associated Equipment
Management of Stormwater	♦ All precipitation falling within the site will be managed as stormwater within a designed system of collection, conveyance, retention and discharge features. The system will be designed and operated in compliance with applicable standards and regulatory requirements. Surface flows within the site will be managed within the site to ensure discharge to off-site receivers (i.e., municipal storm sewers) is appropriate in terms of water quantity and quality.	♦ Site compaction equipment and general grading equipment. ♦ Groundwater pumping.
Mechanical Work	♦ Installation of snow melt systems, heating and ventilation systems, plumbing work, gas lines, elevators and associated machinery, fire sprinklers and associated infrastructure, and other components associated with the early works Project structures.	♦ Hoists and cranes, trucks, hand tools, backhoe, small excavator, skid steer, welding units, compaction equipment, vibrators, concrete trucks, tampers.
Electrical Work	♦ Installation of electrical upgrades, fare equipment, CCTV, communication system, lighting poles and fixtures, and other electrical components associated with the Exhibition Station early works.	♦ Hoists and cranes, trucks, hand tools, backhoe, small excavator, skid steer, welding units, compaction equipment, vibrators, concrete trucks, tampers.

4. Methodology

This Report documents the potential impacts, mitigation measures, and monitoring activities associated with Exhibition Station early works construction. Potential impacts, mitigation measures, and monitoring activities associated with Project operations 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.

As noted in **Section 3.2**, the Exhibition 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 Exhibition 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: Exhibition Station Study Area Definition by Discipline

Discipline	Study Area Definition Approach
Natural Environment	The Exhibition Station Natural Environment Study Area includes the Exhibition 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 Exhibition Station Soil and Groundwater Study Area includes the Exhibition 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, 2013), which recommends well data for private wells within 500 metres be used for impact assessment.
Hydrology and Surface Water	Review of hydrology and surface water was limited to the Exhibition Station Early Works Project Footprint. 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, of which there are none within or in proximity to the Exhibition Station Early Works Project Footprint (**Figure 3-2**).

Discipline	Study Area Definition Approach
Air Quality	The Exhibition Station Air Quality Study Area includes the Exhibition 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 Exhibition Station Noise and Vibration Study Area includes the Exhibition 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 Exhibition Station Noise and Vibration Study Area. This buffer distance is also in accordance with the United States Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018), and City of Toronto By-law 514 (2008).
Socio-Economic and Land Use Characteristics	The Exhibition Station Socio-Economic and Land Use Characteristics Study Area includes the Exhibition 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)).
Built Heritage Resources and Cultural Heritage Landscapes	The Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area includes the Exhibition Station Early Works Project Footprint, adjacent properties[5] to account for potential indirect impacts, and properties within 11.1 metres of the Exhibition 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 Exhibition Station Early Works Project Footprint was included in the Exhibition 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 Exhibition Station Early Works – Noise and Vibration Report (AECOM, 2020b).

5. 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, 2019d).

Discipline	Study Area Definition Approach
Archaeological Resources	Review of archaeological resources was limited to the Exhibition 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 Stage 2 archaeological assessment.
Traffic and Transportation	The Exhibition Station Traffic and Transportation Study Area includes the Exhibition Station Early Works Project Footprint and adjacent road segments and intersections which meet either of the following criteria: ▪ Provide direct connection to Exhibition Station (i.e., Atlantic Avenue, Manitoba Drive, and Nova Scotia Avenue) and are thus potentially considered a part of the heavy construction vehicles' routes; or ▪ Impacted directly by the early works activities within the Exhibition Station Early Works Project Footprint (i.e., the construction of the new western passenger tunnels is anticipated to impact small southern-most segments of Atlantic Avenue and Jefferson Avenue).
Utilities	Review of utilities was limited to the Exhibition 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 Exhibition Station study areas is contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) prepared for the Project. Information sourced from the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) was used to establish local environmental conditions within the Exhibition 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 Exhibition Station early works by considering the following:

- Early works components as described in Section 3.1;
- Exhibition 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 Exhibition 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 negative 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 Exhibition 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 the background information review, terrestrial and aquatic features and functions were identified within the boundaries of the Exhibition 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 study relevant to the Exhibition Station Natural Environment Study Area, contained in the Ontario Line Final Environmental Conditions Report (AECOM, 2020a), was also reviewed in support of the background review:

- Natural Environment Screening Memorandum Exhibition GO Station Revision 1 (4Transit, 2020).

Field investigations were not completed in 2020 for the Exhibition Station Natural Environment Study Area as this area was recently investigated, the results of which were deemed to be sufficient to support an impact assessment. Field work completed in 2020 as part of the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) that overlapped with the Exhibition Station Natural Environment Study Area was also used to supplement and confirm existing conditions reported in previously completed documentation.

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 Exhibition 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 Exhibition Station early works by considering the early works components (described in **Section 3.1**), Exhibition 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 Exhibition 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 Exhibition 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 contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) from the following sources:

- 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) 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 Exhibition 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 Exhibition Station early works by considering the early works components (described in **Section 3.1**), Exhibition Station

Early Works Project Footprint (described in **Section 3.2**), 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 Exhibition Station Early Works Project Footprint, including:

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

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

4.3.2 Impact Assessment

As noted in **Table 4-1**, the hydrology and surface water impact assessment was limited to the Exhibition Station Early Works Project Footprint. The hydrology and surface water impact assessment considered the early works components (described in **Section 3.1**), Exhibition 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 the Exhibition 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 Exhibition 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 Exhibition Station Air Quality Study Area.

Background information and documentation relevant to the Exhibition Station Air Quality Study Area is contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a)[6], which includes:

- Identification of air quality representative receptors within the Exhibition Station Air Quality Study Area;
- Determination of representative background air quality monitoring stations within the National Air Pollution Surveillance network for the Exhibition Station Air Quality Study Area. Appropriate representation was based on proximity to the Exhibition Station Air Quality Study Area, availability of contaminant monitoring data, and proximity to similar nearby air quality sources as those existing within the Exhibition Station Air Quality Study Area;
- Traffic peak levels and/or annual average daily traffic volumes along primary routes of travel within the Exhibition Station Air Quality Study Area were reviewed, where available; and
- Review of existing meteorological data representative of the Exhibition Station Air Quality Study Area.

Emissions from diesel trains traversing the Exhibition 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 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.

[6] 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.

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 (less than 10 microns), PM_{10} (assessed over 24-hour and annual averaging periods);
5. Particulate matter (less than 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

Criteria Air Contaminant	Source of Standard	Averaging Period	Air Quality Threshold Value (µg/m^3)
CO	Ambient Air Quality Criteria	Eight hours	15,700
SO_2 (2)	Ambient Air Quality Criteria	10-minute	180
SO_2 (2)	Ambient Air Quality Criteria	One hour	100
SO_2 (2)	Ambient Air Quality Criteria	Annual	10
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
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 was updated by the Ministry of the Environment and Climate Change in March 2018 in the document Ontario Air Standards for Sulphur Dioxide (SO_2) published by the Technical Assessment and Standards Development Branch (Ministry of the Environment and Climate Change, 2018).

(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 preparation of the Ontario Line Final Exhibition Station Early Works Report[7] (**Appendix A2**). The following National Air Pollution Surveillance Air Quality

7. National Air Pollution Survey 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 AADTs.

monitoring stations were selected as representative of the ambient air quality of the Exhibition 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 Exhibition 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.

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 Exhibition 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 Exhibition 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 Exhibition Station early works by considering the early works components (described in **Section 3.1**), Exhibition Station Early Works Project Footprint (described in **Section 3.2**), and anticipated construction activities (outlined in **Table 3-1**).

Land use within the Exhibition 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 Exhibition Station Socio-Economic and Land Use Characteristics Study Area were selected based on proximity to the Exhibition 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 conducted, 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 Exhibition 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 measurements were collected 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 Exhibition Station Early Works Project Footprint is the existing rail line. Thus, for the majority of the Exhibition 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 Exhibition 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 Exhibition Station early works by considering the early works components (described in **Section 3.1**), Exhibition 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 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 (MECP), and the United States Federal Transit Administration (FTA) – were reviewed for applicability to the Project.

4.5.2.1 Noise

The construction noise assessment evaluated the potential impacts to the nearby noise sensitive receivers. Noise sensitive receivers are defined as properties that accommodate a dwelling unit(s), used for noise sensitive commercial purposes, sleeping facilities, or noise sensitive institutional purposes such as educational facilities.

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 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 Exhibition Station Early Works Project Footprint) noise sensitive (closest and with highest noise exposures) receivers.

An acoustic model using the ISO 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.

The predicted construction noise levels are estimates based on conservative assumptions, reference equipment noise levels and the Exhibition Station early works information (Exhibition 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. 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 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

Vibration receptors are defined as any structures where applicable vibration criteria could be exceeded. 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 the screening threshold. ZOI mapping determines which locations may be above the applicable vibration criteria and where vibration controls may need to be implemented.

The Exhibition Station early works vibration Zone Of Influence was calculated using the FTA 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, Exhibition Station early works vibration Zone Of Influence is based upon the equipment with the highest vibration levels operating at the edge of the Exhibition Station Early Works Project Footprint.

Screening distances for the other applicable vibration criteria (City of Toronto By-law prohibited limit, FTA Guide limit for buildings extremely susceptible to building damage, and human perceptibility) were also mapped. Structures within the Exhibition 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 local socio-economic and land use characteristics within the Exhibition 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, 2019d), Exhibition Place Master Plan (City of Toronto, 2019c), and Waterfront Transit Reset (City of Toronto, 2019a);
- City of Toronto open data portal (City of Toronto, 2020b);

- Statistics Canada, 2016 Census of Population (City of Toronto, 2018a); and
- City of Toronto Application Information Centre (City of Toronto, 2020c).

Future development includes recent, ongoing, and proposed development within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area based on active development applications listed in the City of Toronto's Application Information Centre online database (City of Toronto, 2020c) as of October 23, 2020.

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 Exhibition 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 Exhibition Station early works by considering the early works components (described in **Section 3.1**), Exhibition Station Early Works Project Footprint (described in **Section 3.2**), 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 Exhibition 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 contained in this Report.

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 Exhibition 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 Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area.

Following the background information review, utilizing the 40-year-old threshold[8], 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 to document the existing conditions of the properties within the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area in order to confirm the presence and/or changes to any known and previously identified built heritage resources/cultural heritage landscapes that were documented in the Ontario Line Cultural Heritage Report (AECOM, 2020c), and to identify 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, 2020c).

Detailed methodology for establishing local environmental conditions for built heritage resources and cultural heritage landscapes is provided in **Appendix A4**. Local built heritage resources and cultural heritage landscapes are described in **Section 5.7**.

4.7.2 Impact Assessment

As noted in **Table 4-1**, the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area includes the Exhibition Station Early Works Project Footprint, adjacent properties[9] to account for potential indirect impacts, and properties within 11.1 metres of the Exhibition 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 built heritage resources and cultural heritage landscapes 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 Exhibition Station early works by

8 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.

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, 2019d).

considering the early works components (described in **Section 3.1**), Exhibition Station Early Works Project Footprint (described in **Section 3.2**), and anticipated construction activities (outlined in **Table 3-1**).

The proposed impacts of early works have been evaluated according to the Ministry of Heritage, Sport, Tourism and Culture Industries *Information Bulletin 3: Heritage Impact Assessments for Provincial Heritage Properties*.

Detailed methodology for the built heritage resource and cultural heritage landscape impact assessment is provided in **Appendix A4**. The results of the built heritage resources and cultural heritage landscapes impact assessment are provided in **Section 6.7**.

4.8 Archaeological Resources

4.8.1 Local Environmental Conditions

The Ontario Line West Stage 1 Archaeological Assessment Report (AECOM, 2020d) includes the Exhibition Station Early Works Project Footprint and was entered into the Ontario Public Register of Archaeological Reports on July 30, 2020, in support of the Ontario Line Final Environmental Conditions Report.

The Exhibition Station Early Works Project Footprint was overlaid with the archaeological mapping prepared for the Ontario Line West Stage 1 Archaeological Assessment Report (AECOM, 2020d) to determine the areas retaining archaeological potential within the Exhibition 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 the Exhibition 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 Exhibition Station early works by considering the early works components (described in **Section 3.1**), Exhibition 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 Stage 2 archaeological assessment were outlined.

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

4.9 Traffic and Transportation

4.9.1 Local Environmental Conditions

A review of available background information included information contained within the Ontario Line Final Environmental Conditions Report (AECOM, 2020a) from the following sources to establish local traffic and transportation conditions within the Exhibition Station Traffic and Transportation Study Area:

- City of Toronto's Open Data Portal (City of Toronto, 2020b) to obtain mapping data related to roads, pedestrian and cyclist routes related to the Exhibition 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, 2020d) to obtain road classification and speed information related to roads within the Exhibition 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 Exhibition 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 Exhibition Station Traffic and Transportation Study Area, a quantitative level of service assessment is not included in this Report.

Detailed methodology for establishing local traffic and transportation conditions is provided in **Appendix A5**. Local traffic and transportation conditions are described in **Section 5.9**.

4.9.2 Impact Assessment

As noted in **Table 4-1**, potential traffic and transportation impacts within the Exhibition 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 studied 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 Exhibition Station early works by considering the early works components (described in **Section 3.1**), Exhibition 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 required, as detailed design progresses and this information becomes available. The quantitative impact assessment may include a larger study area. Prior to construction, Transit and Traffic Management Plan(s) shall be developed to provide more specific mitigation measures and monitoring activities. Transit and Traffic 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 A5**. 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 Exhibition Station Early Works Project Footprint were identified in **Section 5.10**. This list will be confirmed and refined as design progresses.

4.10.2 Impact Assessment

As noted in **Table 4-1**, the utilities impact assessment was limited to the Exhibition 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 Exhibition Station early works by considering the early works components (described in **Section 3.1**), Exhibition 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 Exhibition 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** and **Appendix A4**
- Archaeological Resources — **Section 5.8**
- Traffic and Transportation — **Section 5.9** and **Appendix A5**
- 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 Exhibition Station Natural Environment Study Area. In addition, there are no woodlands or unevaluated wetlands within the Exhibition Station Natural Environment Study Area.

According to the City of Toronto Interactive Map (City of Toronto, 2020e), there are no Environmentally Significant Areas within the Exhibition Station Natural Environment Study Area, nor does the Exhibition Station Early Works Project Footprint overlap with the City's Natural Heritage System or Ravine and Natural Feature Protection By-law Area, or Toronto and Region Conservation Authority's Terrestrial Natural Heritage System and Regulation Limits.

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.

The majority of the Exhibition Station Natural Environment Study Area is urbanised and the limited amount of vegetation that is present consists of streetscapes (e.g., street trees, treed fence lines, manicured lawns) and minimal naturalized hedgerows. A narrow cultural hedgerow (CUH) dominated by Manitoba maple (*Acer negundo*) is present within the right-of-way of the existing rail corridor (4Transit, 2020), a small portion of which falls within the Exhibition Station Natural Environment Study Area as shown in **Figure 5-1**. Descriptions of vegetation communities and their structural compositions within the Exhibition Station Natural Environment Study Area are summarized in **Table 5-1**.

There were no butternuts (*Juglans cinerea*) or any other plant Species at Risk, provincially significant or Regional Species of Conservation Concern plants identified in the Exhibition Station Natural Environment Study Area (AECOM, 2020a).

5.1.3 Fish and Fish Habitat

There were no watercourses identified within the Exhibition Station Natural Environment Study Area; therefore, fish and fish habitat assessments were not required.

5.1.4 Wildlife and Wildlife Habitat

The Exhibition Station Natural Environment Study Area is heavily urbanized with very limited naturalized areas providing low-quality habitat for urban wildlife due to fragmentation, lack of connectivity to significant natural areas, presence of non-native and invasive plants, and noise and vibration from surrounding vehicle, train and pedestrian traffic. However, 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. The existing rail corridor may support movement of small mammals, birds and insects but overall is considered to be a poor wildlife linkage due to limited connectivity to significant natural areas, which are absent in the Exhibition Station Natural Environment Study Area.

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

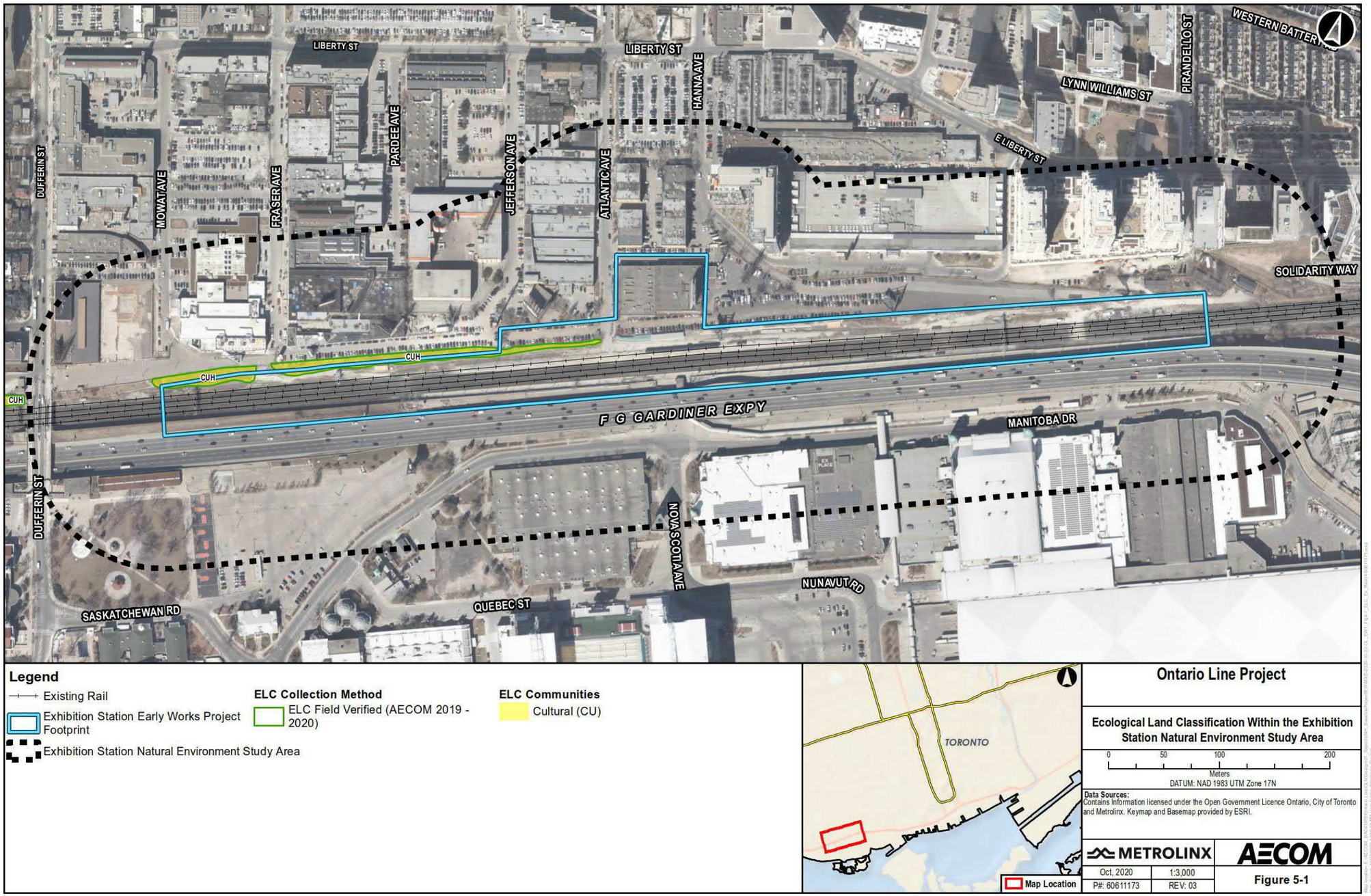


Table 5-1: Ecological Land Classification Vegetation Communities Identified Within the Exhibition Station Natural Environment Study Area

Ecological Land Classification Code	Ecological Land Classification Name	Tree Canopy	Shrub Layer	Ground Layer	General Location	Source
Cultural Communities Cultural Hedgerows[10] CUH	Cultural Hedgerows with MAS2 inclusion.	The hedgerow along the north side of the existing rail corridor, west of Atlantic Avenue was dominated by Manitoba maple along with Siberian elm (*Ulmus pumila*) and tree-of-heaven (*Ailanthus altissima*).	The shrub layer was dominated by Manitoba maple and Scotch elm (*Ulmus glabra*).	The following species were found in the ground layer: garlic mustard (*Alliaria petiolata*), goldenrod species (*Solidago spp*.), yellow avens (*Geum aleppicum*), Philadelphia fleabane (*Erigeron philadelphicus ssp. Philadelphicus)* and thicket creeper (*Parthenocissus inserta*).	North side of existing rail corridor	Natural Environment Screening Memorandum Exhibition GO Station – Revision 1 (4Transit, 2020)

10. 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

Incidental wildlife species encountered during site investigations in 2018 and 2019 conducted by 4Transit included: Red-winged Blackbird, Baltimore Oriole (*Icterus galbula*), Killdeer (*Charadrius vociferous*), House Wren (*Troglodytes aedon*), European Starling, Tree Swallow (*Tachycineta bicolor*), Rock Pigeon (*Columba livia*), Northern Mockingbird (*Mimus polyglottos*) and Warbling Vireo (*Vireo gilvus*). No observations or signs of mammal species were recorded in the Exhibition 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). In addition, AECOM (2020) reported observing six Chimney Swift (*Chaetura pelagica*) fly-overs within the Exhibition Station Natural Environment Study Area during June 2020 field investigations. 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 Exhibition 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, 2015), the following Significant Wildlife Habitat types may occur within the Exhibition Station Natural Environment Study Area. Refer to **Appendix A1** for the complete Significant Wildlife Habitat Screening in the Exhibition Station Natural Environment Study Area.

- Habitats of Species of Conservation Concern (refer to **Appendix A1** for the complete Species of Conservation Concern habitat screening):
    - **Candidate Habitat for Species of Conservation Concern:** There is candidate habitat for Common Nighthawk (Chordeiles minor), which is a protected species under the federal Migratory Birds Convention Act. This species may nest on the flat, gravel rooftops of buildings in urban areas (Brigham *et al.,* 2011). There is one flat roofed building located at 1 Atlantic Avenue within the Exhibition Station Early Works Project Footprint and many others within the 120 metres Exhibition Station Natural Environment Study Area.

There were no candidate or confirmed seasonal concentration areas, rare vegetation communities, specialized habitat for wildlife or animal movement corridors identified within the Exhibition Station Natural Environment Study Area (refer to **Appendix A1** for the complete Significant Wildlife Habitat screening). No suitable cavity trees were observed during leaf-off surveys to search for potential bat maternity roosting habitat in trees areas within the existing rail corridor (4Transit, 2020). In addition, there were no confirmed Species of Conservation Concern habitats identified within the Exhibition Station Natural Environment Study Area.

5.1.6 Species at Risk Habitat Screening

A habitat screening for Species at Risk was completed for the Exhibition 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 screening. There were no Species at Risk identified to have a high probability of occurrence or confirmed sites. The following Species at Risk have a medium probability of occurring within the Exhibition 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). These species are listed as Endangered and receive protection under the Endangered Species Act. Buildings with potential entry/exit points may be used by bat Species at Risk for roosting within the Exhibition Station Natural Environment Study Area. The buildings at 1 Atlantic Avenue were deemed to have low probability to support habitat for roosting bat Species at Risk as the building appears to be intact (i.e., well maintained and in good form) based on field observations.

The remaining Species at Risk (listed below) identified had low probability of occurrence within the Exhibition Station Natural Environment Study Area are as follows:

- Bank Swallow (Riparia riparia);
- Barn Swallow;
- Bobolink (Dolichonyx oryzivorus);
- Eastern Meadowlark (Sturnella magna);
- Butternut; and
- Chimney Swift.

In addition, there are no aquatic Species at Risk and no potential Blanding's Turtles to occur given that there are no water features identified within the Exhibition Station Natural Environment Study Area. Please refer to **Appendix A1** for the full Species at Risk habitat screening.

5.2 Soil and Groundwater

5.2.1 Geological Setting

5.2.1.1 Physiography and Topography

The Exhibition Station 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 5-2**.

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 three km wide and is cut into previously deposited clay and till; being partly floored with glaciolacustrine sand deposits.

The ground surface topography within the Exhibition Station Soil and Groundwater Study Area is shown in **Figure 5-3**. Elevation within the Exhibition Station Soil and Groundwater Study Area ranges from approximately 80 to 90 metres above sea level. The topography in the vicinity of the Exhibition Station Soil and Groundwater Study Area is highly affected by the extensive local development and is generally undulating in nature, with a general downward slope in the direction of Lake Ontario.

Figure 5-2: Physiography Within the Exhibition Station Soil and Groundwater Study Area

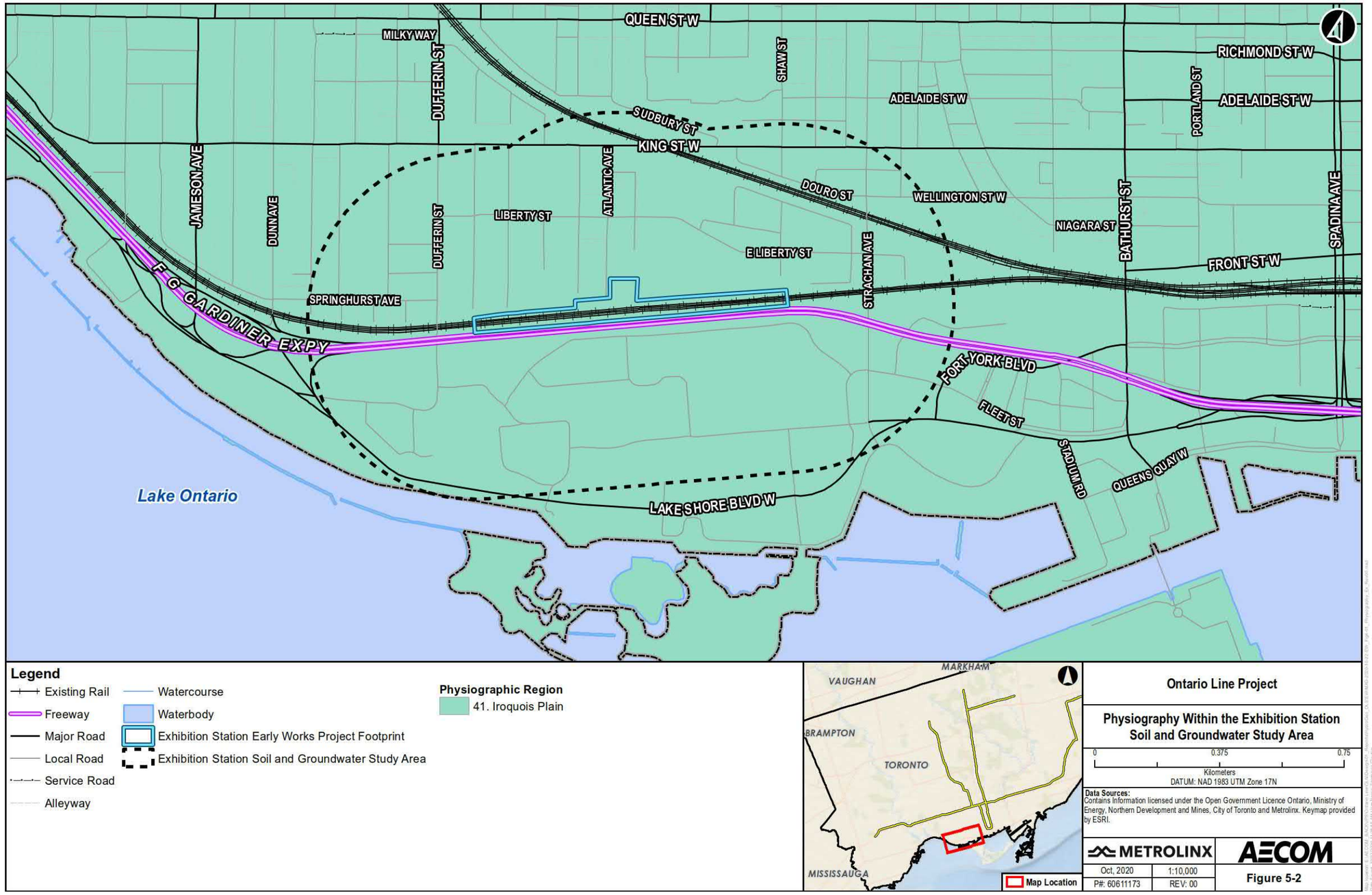
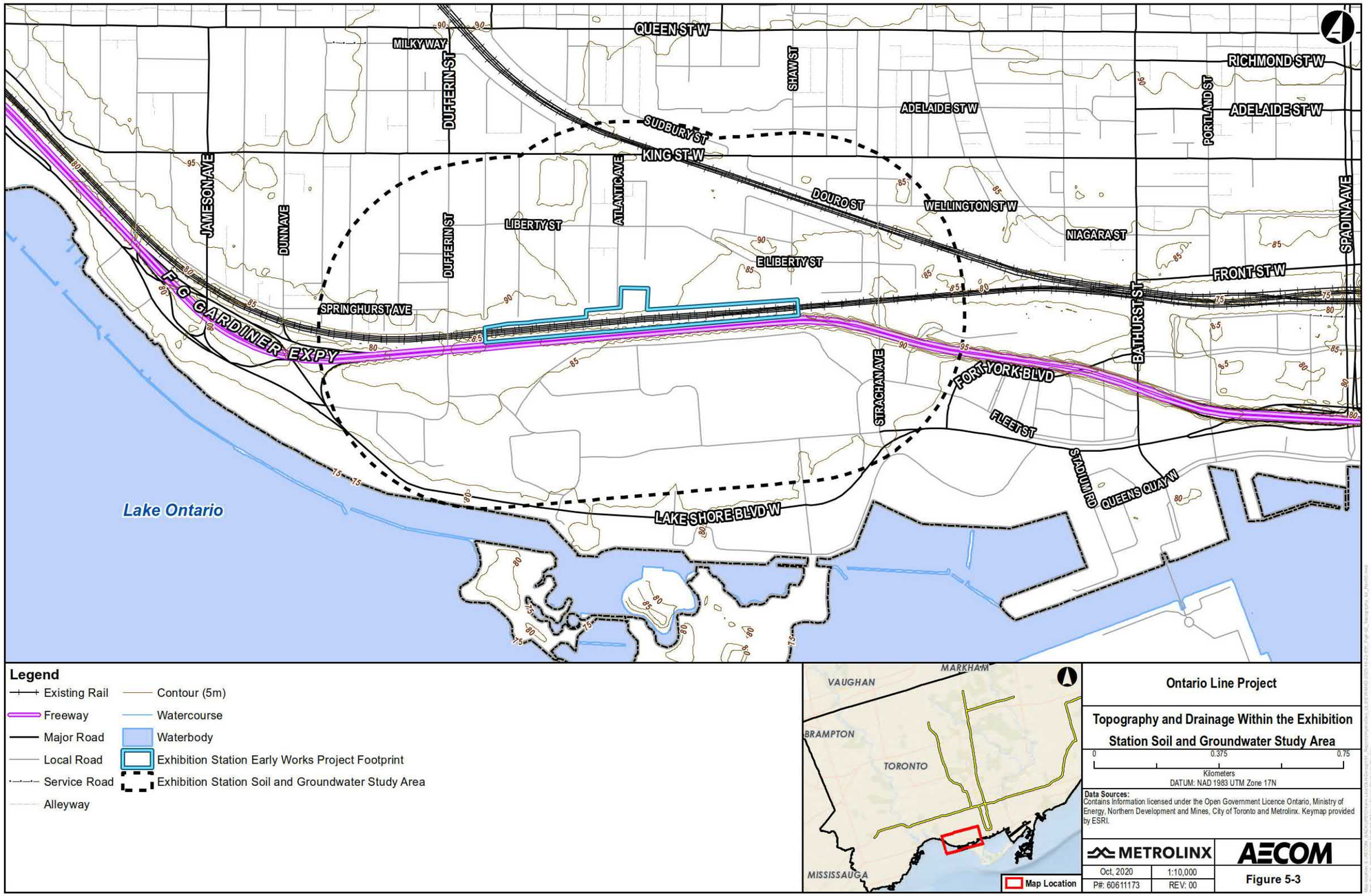


Figure 5-3: Topography and Drainage Within the Exhibition Station Soil and Groundwater Study Area



5.2.1.2 Surficial Geology

The surficial geology within the Exhibition Station Soil and Groundwater Study Area is shown in **Figure 5-4**. Identified surficial soils consist of *Till Deposits* (undifferentiated older tills, may include stratified deposits) and *Coarse-textured Lacustrine Deposits* (sand, gravel, minor silt and clay derived from littoral deposits).

5.2.1.3 Quaternary Geology

The Quaternary geology within the Exhibition Station Soil and Groundwater Study Area is shown in **Figure 5-5**. A review of Quaternary geology mapping, available at a smaller scale than the Surficial Geology mapping, indicates that the primary surficial deposits within the Exhibition Station Soil and Groundwater Study Area are Till Deposits with sandy silt to silt matrix, commonly rich in clast and often high in total matrix carbonate content and Glaciolacustrine Deposits consisting of sand, gravelly sand, and gravel, derived from nearshore and beach deposits.

5.2.1.4 Bedrock Geology

Bedrock geology within the Exhibition Station Soil and Groundwater Study Area is shown in **Figure 5-6**. 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 73 to 84 metres above sea level within the Exhibition 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. Based on the Overburden Thickness map (Toronto and Region Source Protection Area, 2015) and typical north-south cross-sections along Yonge Street provided by Toronto and Region Conservation Authority as part of the Conceptual Understanding Water Budget Report (Puopolo, J. and Usher, S., 2007), and the Humber River State of the Watershed Report (Toronto and Region Conservation Authority, 2008), the overburden thickness within the Exhibition Station Soil and Groundwater Study Area is approximately 8 metres to 15 metres, with thinner overburden deposits observed along the southern portion of the Exhibition Station Soil and Groundwater Study Area.

Figure 5-4: Surficial Geology Within the Exhibition Station Soil and Groundwater Study Area

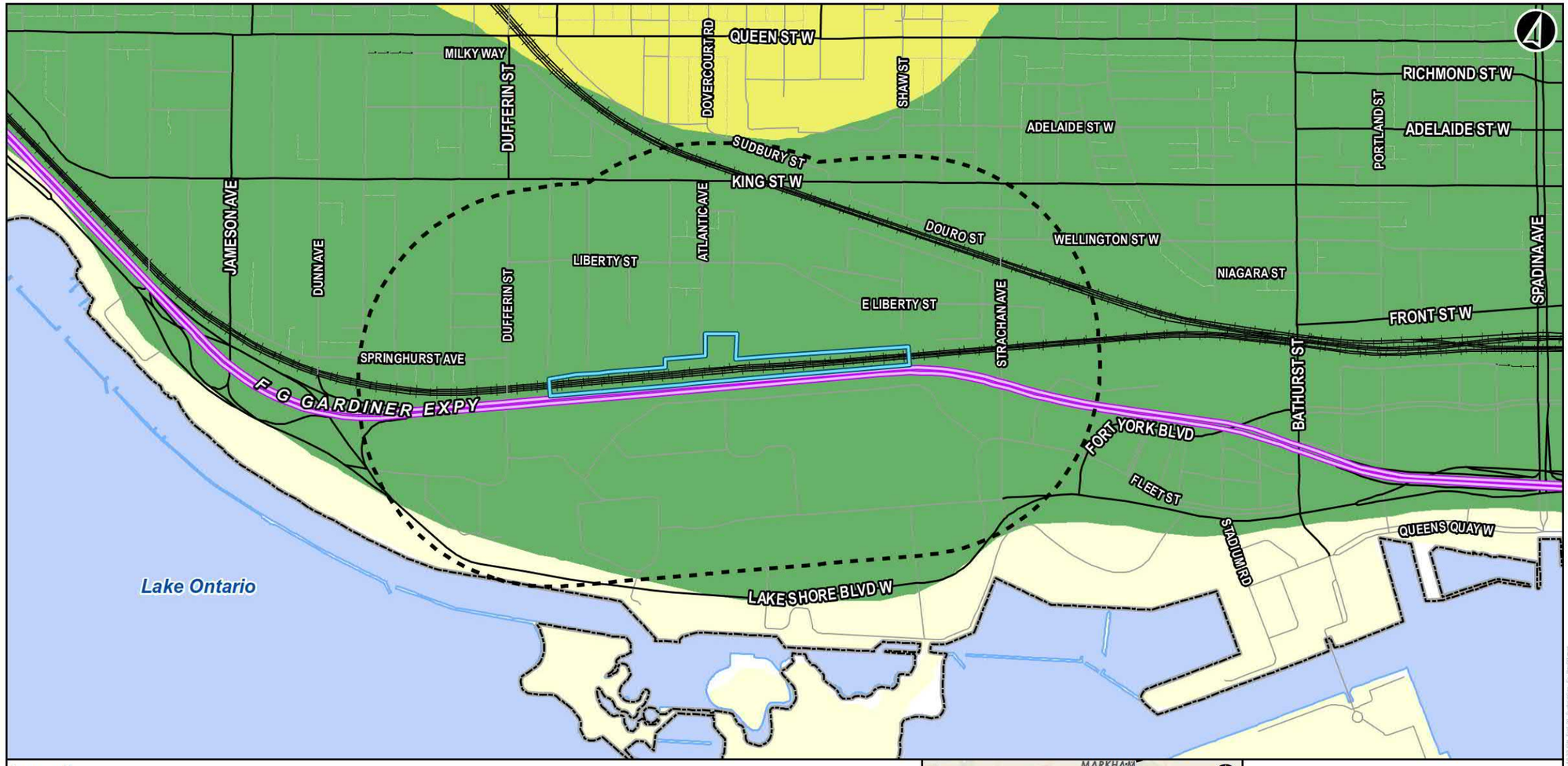


Figure 5-5: Quaternary Geology Within the Exhibition Station Soil and Groundwater Study Area

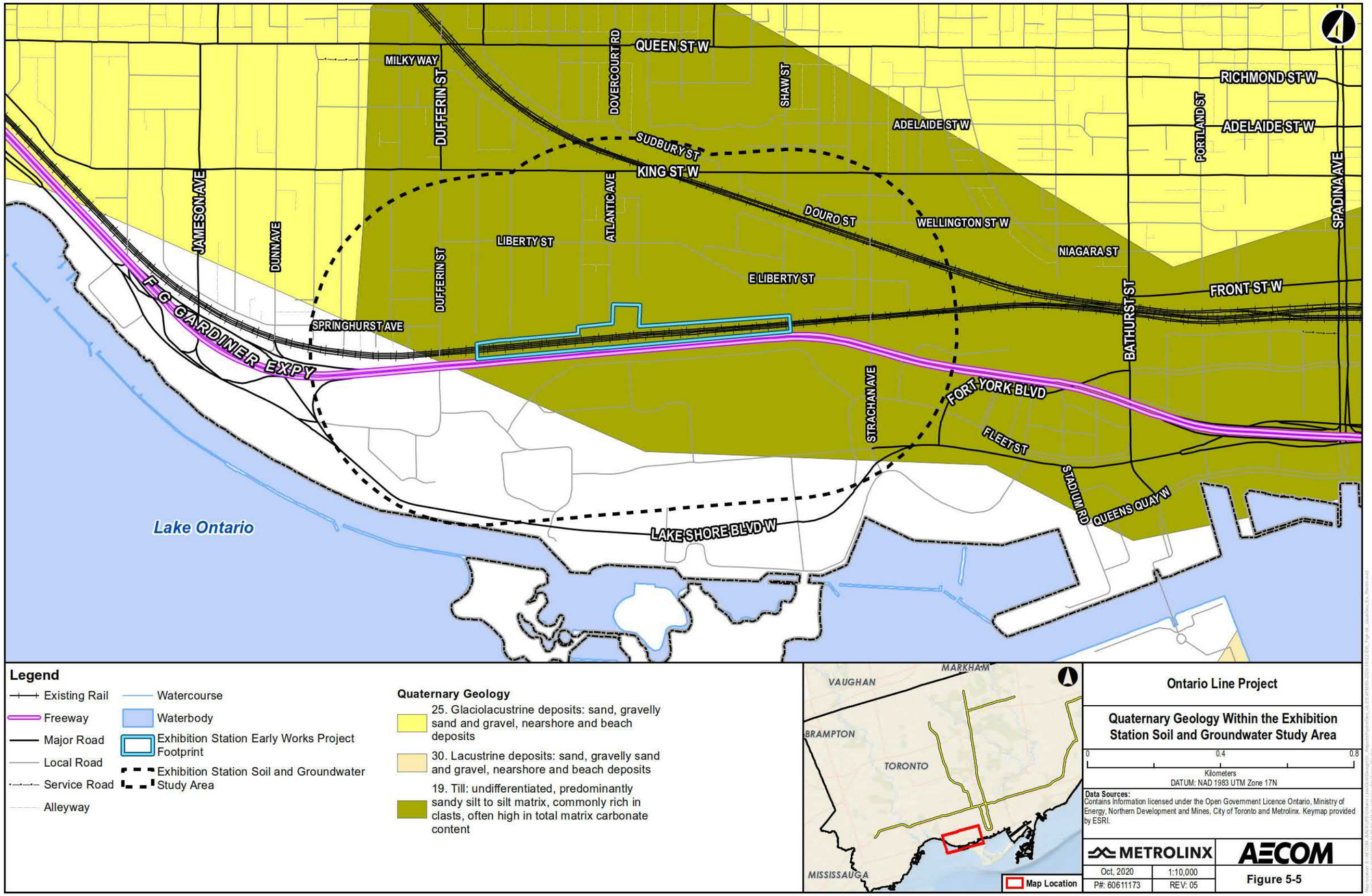
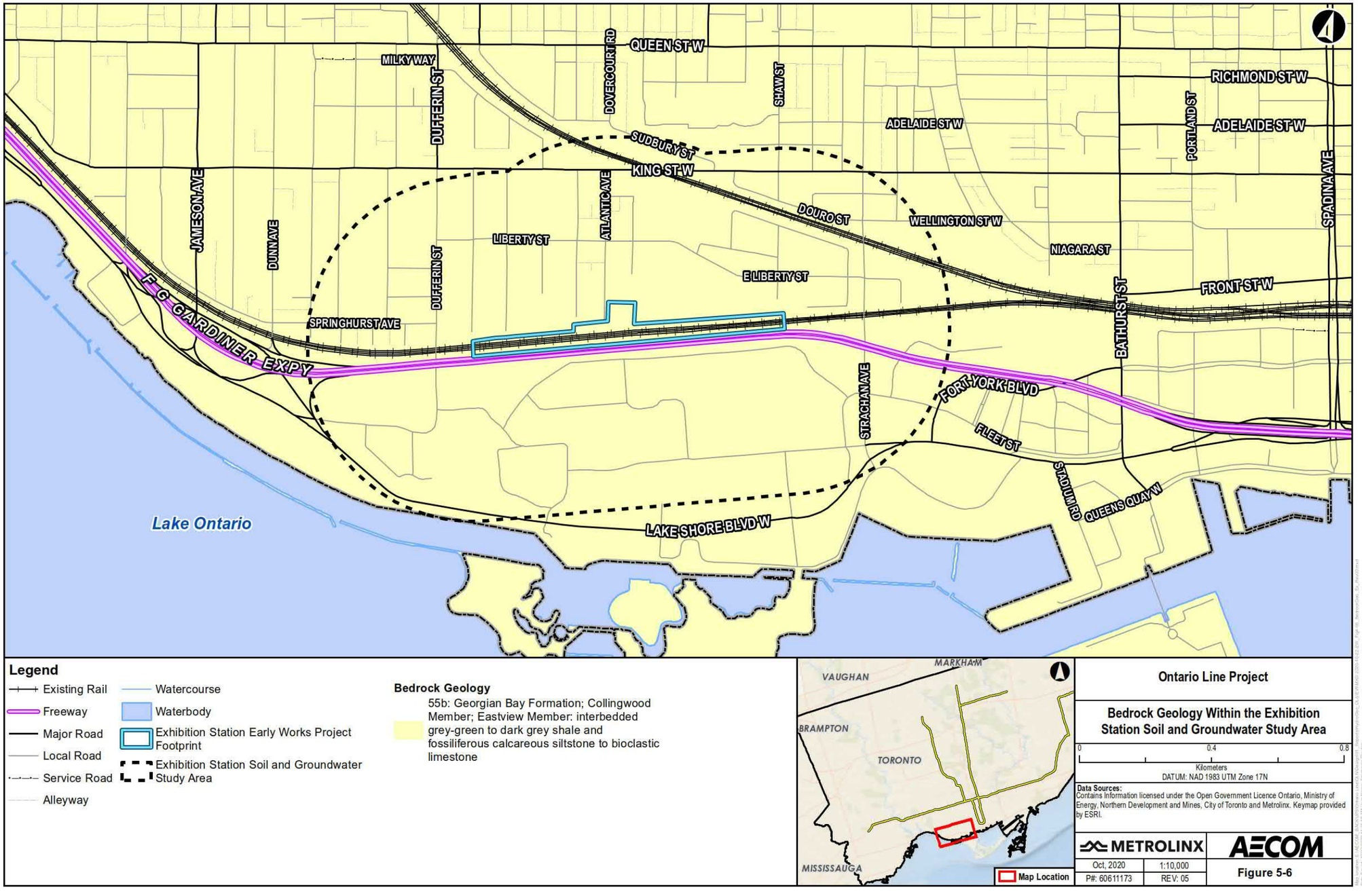


Figure 5-6: Bedrock Geology Within the Exhibition Station Soil and Groundwater Study Area



A review of the Ministry of the Environment, Conservation and Parks water well records database indicates that the overburden geologic materials within the Exhibition Station Soil and Groundwater Study Area consist primarily of clayey silt, sand, 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 4.2 to 6.1 metres below ground surface within the Exhibition Station Soil and Groundwater Study Area.

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 GTA (TRSPA, 2015)

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 north-south cross-sections in the vicinity of the Exhibition Station Soil and Groundwater Study Area, (Puopolo, J. and Usher, S., 2007; Toronto and Region Conservation Authority, 2008), the Scarborough Aquifer Complex (organic-rich sands over silts and clays) Hydrostratigraphic Unit is present within the Exhibition Station Soil

and Groundwater Study Area. Other units that may be present include the Sunnybrook Aquitard and a Surficial Aquifer (depending on the composition of Recent Deposits).

5.2.2.1 Regional Groundwater Flow

In general, the dynamics of shallow groundwater flow within the overburden deposits is related to the surface topography with flow directed to topographic lows, wetlands, and surface watercourses. The 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 to the flow direction will change depending on proximity to surface watercourses/water bodies and subsurface geology.

The surficial/shallow groundwater system within the Exhibition Station Soil and Groundwater Study Area is influenced by surface topography and likely flows to the creek valleys and waterbody. Regionally, the groundwater flow is expected to be to the south towards Lake Ontario.

5.2.3 Groundwater Resources

5.2.3.1 Source Water Protection

The Exhibition Station Soil and Groundwater Study Area is located within the CTC (Credit Valley, Toronto and Region, and Central Lake Ontario) Source Protection Region. The CTC 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 MECP defines several source water areas/features that are of relevance to the Exhibition Station Soil and Groundwater Study Area, which are described below.

5.2.3.1.1 Highly Vulnerable Aquifer

The Exhibition Station Soil and Groundwater Study Area overlaps with a regional Highly Vulnerable Aquifer feature, shown in **Figure 5-7**. 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. A summary of source water protection details for the Exhibition Station Soil and Groundwater Study Area is included in **Table 5-3**.

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

Source Water Protection Feature	Present	Source Protection Plan Policies[11]	Legal Effect of Policy
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

Notes: 1 – 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; SWP 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

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 Exhibition Station Soil and Groundwater Study Area by searching the Ministry of the Environment, Conservation and Parks Water Well Information System database. Results are shown in **Figure 5-8**, along with the primary use of each well. A total of 352 water well records were found located within the Exhibition Station Soil and Groundwater Study Area.

As shown in **Table 5-4**, available well records indicate that approximately 59% of groundwater use within the Exhibition Station Soil and Groundwater Study Area is for dewatering, monitoring and test hole purposes. One well (less than 1%) is identified as a domestic well and one well is identified as an irrigation well, although this record reports a 0 metre depth, suggesting that the well may have been abandoned. Sixteen abandonment records (approximately 5%) are within the Study Area and one well is identified as 'Not Used' (less than 1%), suggesting that it may also have been abandoned. Approximately 36% (or 126 wells) of the Ministry of the Environment, Conservation and Parks water well records did not specify the well use and therefore are classified as 'Unknown'. The dataset is inconclusive in terms of the primary water supply source(s) within the Exhibition Station Soil and Groundwater Study Area, with both overburden and bedrock sources identified.

11. With the location of the Exhibition Station Soil and Groundwater Study Area within a Highly Vulnerable Aquifer, there are several Source Protection Plan policies that may be relevant to the early works construction.

Figure 5-7: Highly Vulnerable Aquifer Within the Exhibition Station Soil and Groundwater Study Area

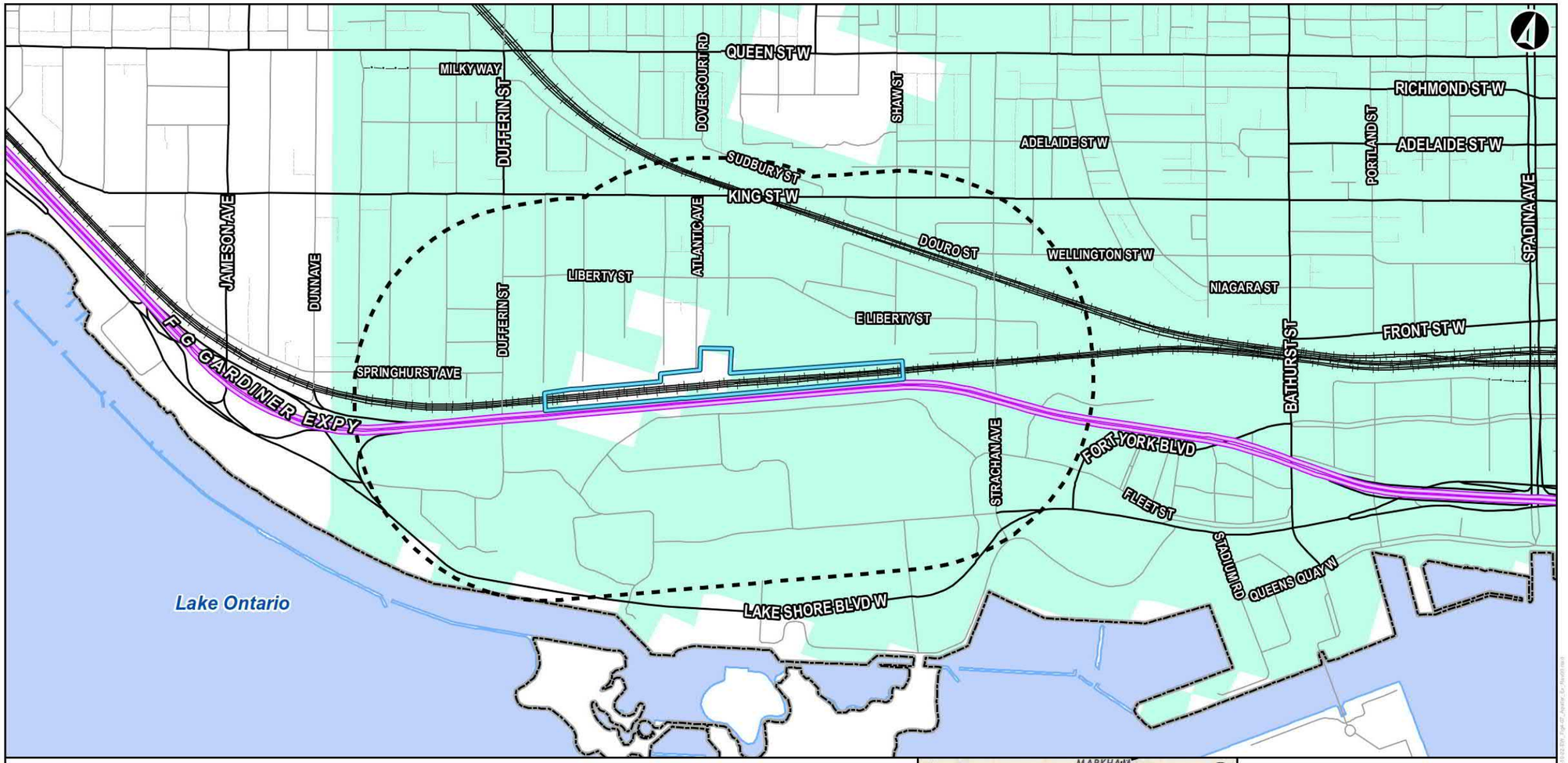


Table 5-4: Summary of Ministry of the Environment, Conservation and Parks Water Well Record Information for the Exhibition Station Soil and Groundwater Study Area

Primary Water Use	Number of Well Records	Well Depth(s) (m)	Primary Well Type
Not Used	1	13	Unknown
Dewatering/Monitoring and Test Hole	207	2 – 50	4 bedrock, 5 overburden, 198 unknown
Unknown	126	3 – 21	1 overburden, 125 unknown
Irrigation	1	0*	Unknown
Domestic	1	8	Unknown
Abandoned	16	Information is not available	Unknown

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 the Ministry of the Environment, Conservation and Parks Permit to Take Water database returned 12 results within the Exhibition Station Soil and Groundwater Study Area, all of which have expired.

A search of Ministry of the Environment, Conservation and Parks Environmental Activity and Sector Registry database returned six results within the Exhibition Station Soil and Groundwater Study Area. Five EASR records were identified for construction dewatering purposes.

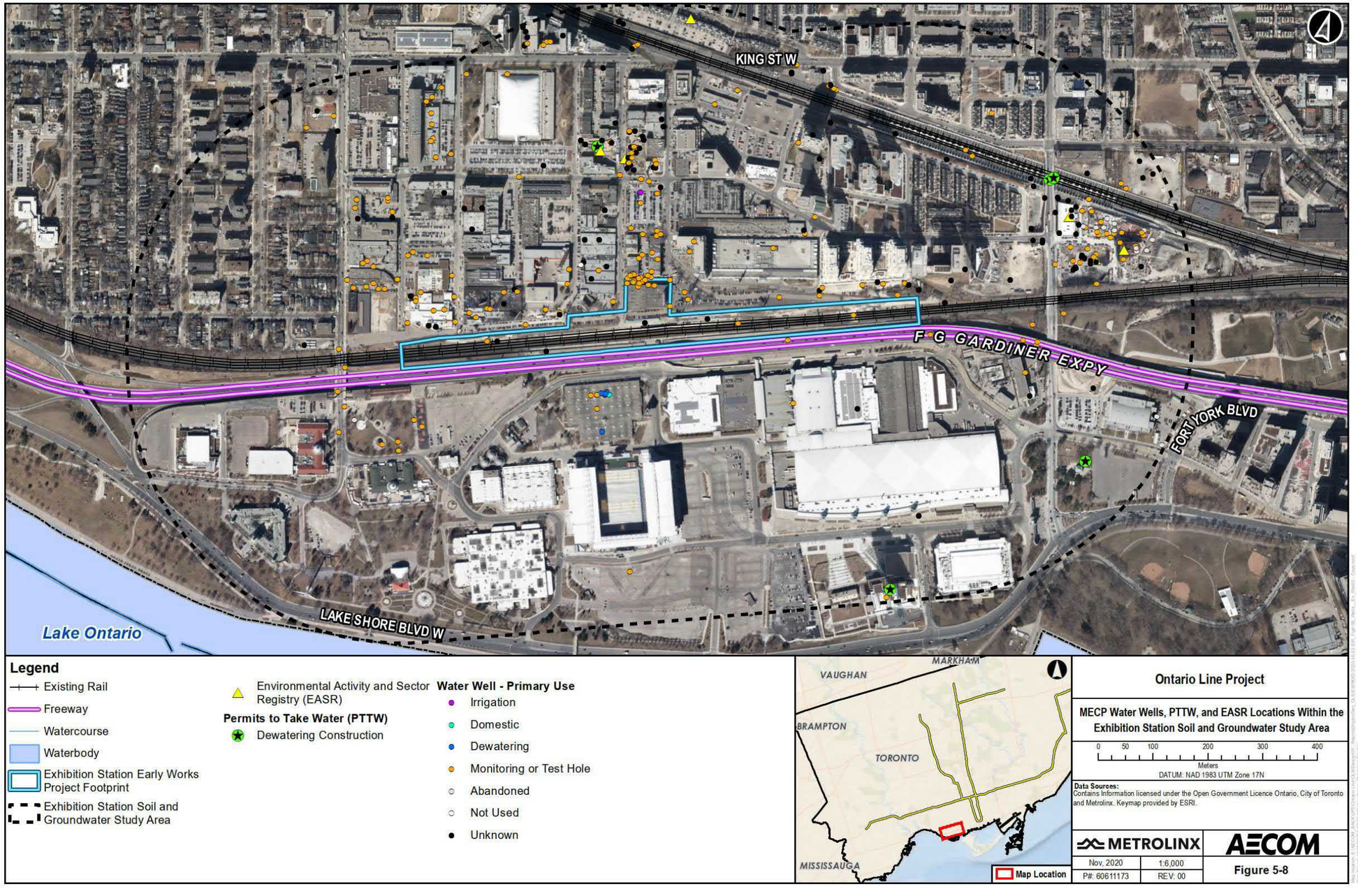
The referenced location for each Permit to Take Water and Environmental Activity and Sector Registry within the Exhibition Station Soil and Groundwater Study Area is shown in **Figure 5-8**.

5.2.3.4 Water Level Data

A total of 12 Ministry of the Environment, Conservation and Parks water well records were identified that report 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. Static water levels reported on the identified well records range between 1.8 metres and 6.0 metres below ground surface.

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

Figure 5-8: Ministry of the Environment, Conservation and Parks Water Wells, Permit to Take Water and Environmental Activity and Sector Registry Locations Within the Exhibition Station Soil and Groundwater Study Area



5.3 Hydrology and Surface Water

The Exhibition Station Early Works Project Footprint is not located within the Toronto and Region Conservation Authority's Regulation Area (Toronto and Region Conservation Authority, 2020a) and, according to the Toronto and Region Conservation Authority's Floodplain Map Viewer, is not within an existing floodplain (Toronto and Region Conservation Authority, 2020b).

5.4 Air Quality

5.4.1 Existing Ambient Air Quality

Representative data for all criteria air contaminants within the Exhibition 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.

Table 5-5: Comparison of Existing Air Quality 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	30-min.	2013-2017	6.70	90th Percentile	180	Ambient Air Quality Criteria	4%
SO_2	60430	One hour	2013-2017	5.51	90th Percentile	100	Ambient Air Quality Criteria	6%
SO_2	60430	Annual	2013-2017	1.84	Mean	10	Canadian Ambient Air Quality Standards	18%
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**	90th Percentile	**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**	90th Percentile	**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	90th Percentile	2	Ambient Air Quality Criteria	3%
Formaldehyde	60439	24 hours	2014-2017	2.58	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 (SO_2) are measured on an hourly basis, background concentrations for the 30-minute averaging period have been converted using the Ministry of the Environment, Conservation and Parks' conversion factor where $C_{0.5hr} = C_{1hr} \times (1hr/0.5hr)^{0.28}$
(3) PM_{10} was not included in National Air Pollution Surveillance air quality monitoring station measurements, and therefore was estimated using $PM_{2.5}$ measurements, assuming a ratio of 1 µg/m³ PM_{10} per 0.54 µg/m³ of $PM_{2.5}$ 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 $C_{1hr} = C_{24hr} \times (1hr/24hr)^{0.28}$.

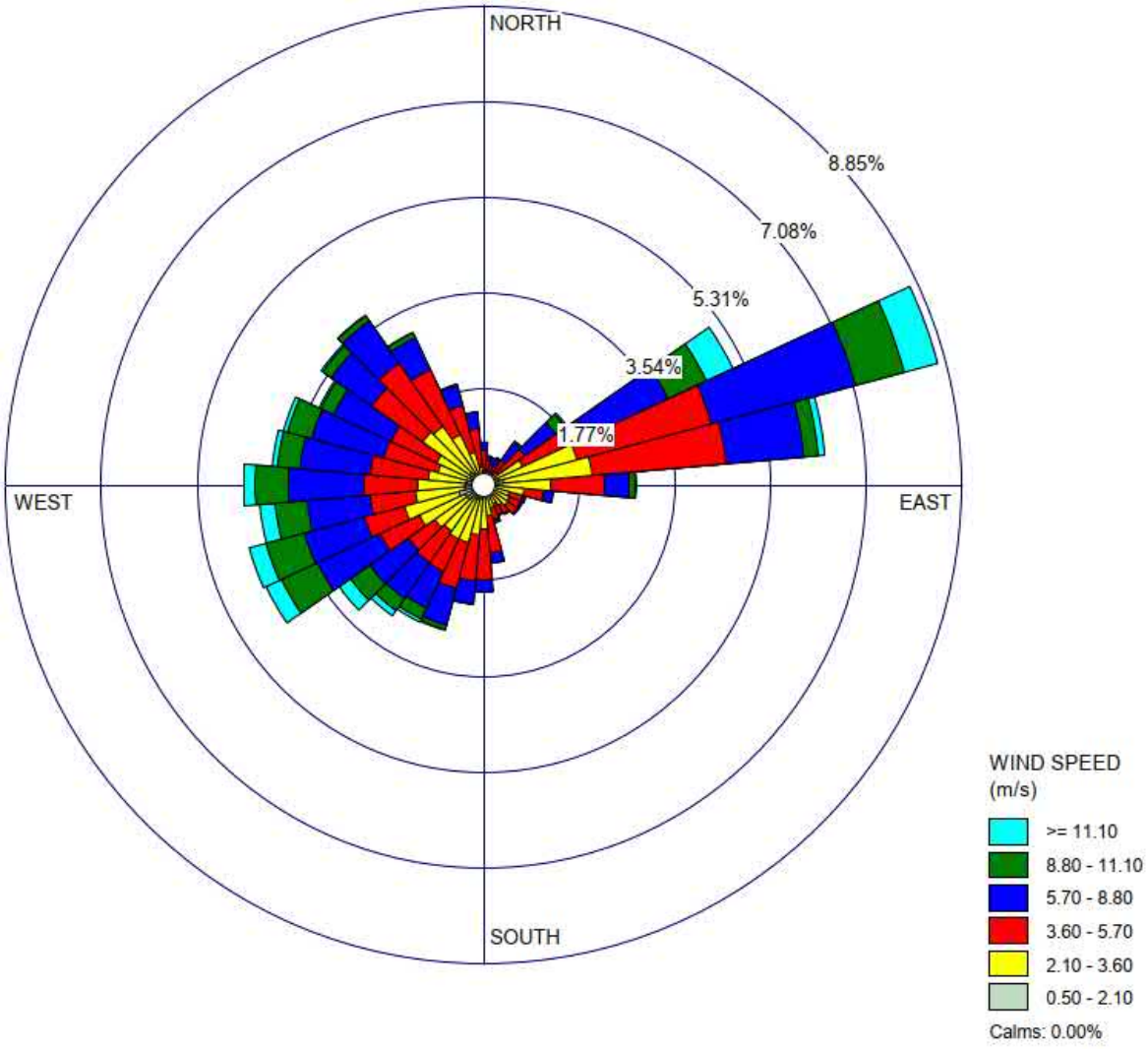
As shown in **Table 5-5**, there are several recorded levels of air quality threshold exceedance within the monitored existing ambient air quality data. Benzene has elevated annual contributions which exceed the threshold guideline from the Ambient Air Quality Criteria. Benzo(a)pyrene, the representative polycyclic aromatic hydrocarbon (PAH), 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.

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 Exhibition 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. Additionally, high impact conditions may also form by high-speed surface air movement due to an increase in fugitive dust emissions from unpaved surfaces, stockpiles, and material handling.

Local surface station meteorological data was used to anticipate areas of high probability impact. The closest representative meteorological station for the Exhibition 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 Exhibition Station Air Quality Study Area. The wind rose for the five-year meteorological period (2015-2019) showing the wind direction and wind speed is presented in **Figure 5-9**. The wind rose shows that the predominant wind direction is from the northeast.

Figure 5-9: Wind Rose Representative of Meteorological Conditions in the Exhibition Station Air Quality Study Area



5.4.3 Traffic Assessment

Major traffic sources within the Exhibition Station Air Quality Study Area include the Gardiner Expressway, as well as King Street West, Dufferin Street, and the local traffic within Liberty Village. **Table 5-6** shows the summary of annual averaged daily traffic for cars, trucks, and buses (where available) along the major roads within the Exhibition Station Air Quality Study Area. Raw turning movement counts of traffic representative of the Exhibition Station Air Quality Study Area are included in **Appendix A2**. The purpose of providing representative annual averaged daily traffic data are to demonstrate the relative contribution from each major roadway within the Exhibition Station Air Quality Study Area. These data presented in **Table 5-6** indicates that the Gardiner Expressway is likely to have the greatest impact on the existing local air quality.

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

Road Segment	2019 AADT: Cars	2019 AADT: Trucks	2019 AADT: Bus
King Street West	5,952	60	184
Dufferin Street, north of Liberty Street West	6,322	166	303
Dufferin Street, south of Liberty Street West	7,244	166	287
Liberty Street West	2,775	24	168
Gardiner Expressway	78,457	5,008	--

5.4.4 Representative Receptors

There is a diverse range of land uses within the Exhibition Station Air Quality Study Area. Residential apartment complexes, commercial buildings, and mixed-use land uses are located north of the Gardiner Expressway. A mix of commercial and industrial land uses are located to the south of the Gardiner Expressway. There is one hotel south of the Gardiner Expressway (i.e., Hotel X), however, this was not included as a representative receptor within the air quality assessment, as several sensitive receptors were identified. Hotels are not defined as sensitive or critical receptors 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). Although hotels may see prolonged residential capacity, most visitors are short-term and transient. Hotels may be used as representative receptors if there is a lack of sensitive receptors. There are multiple residential receptors in close proximity to the Exhibition Station Early Works Project Footprint, therefore Hotel X was not considered as a representative receptor for the Exhibition Station early works.

There are future residential developments (i.e., planned or under construction) within the Exhibition Station Air Quality Study Area (e.g., the residential building under construction at Strachan Avenue and Ordnance Street). These future developments were not identified as representative receptors based on their proximity to the Exhibition Station Early Works Project Footprint. While future developments are located within the Exhibition Station Air Quality Study Area, other receptors were determined to be more representative than these future developments. Representative receptors are listed in **Table 5-7**.

All representative receptors identified in this assessment are sensitive (i.e., residential dwelling). There were no identified critical receptors (i.e., retirement home, hospital, childcare centre, school, or similar institutional building) within the Exhibition Station Air Quality Study Area. Sensitive and critical receptors are defined in **Appendix A2**.

A list of sensitive receptors within the Exhibition Station Air Quality Study Area is shown in **Figure 5-10 and** provided in **Table 5-7**.

Figure 5-10: Sensitive Receptors within the Exhibition Station Air Quality Study Area

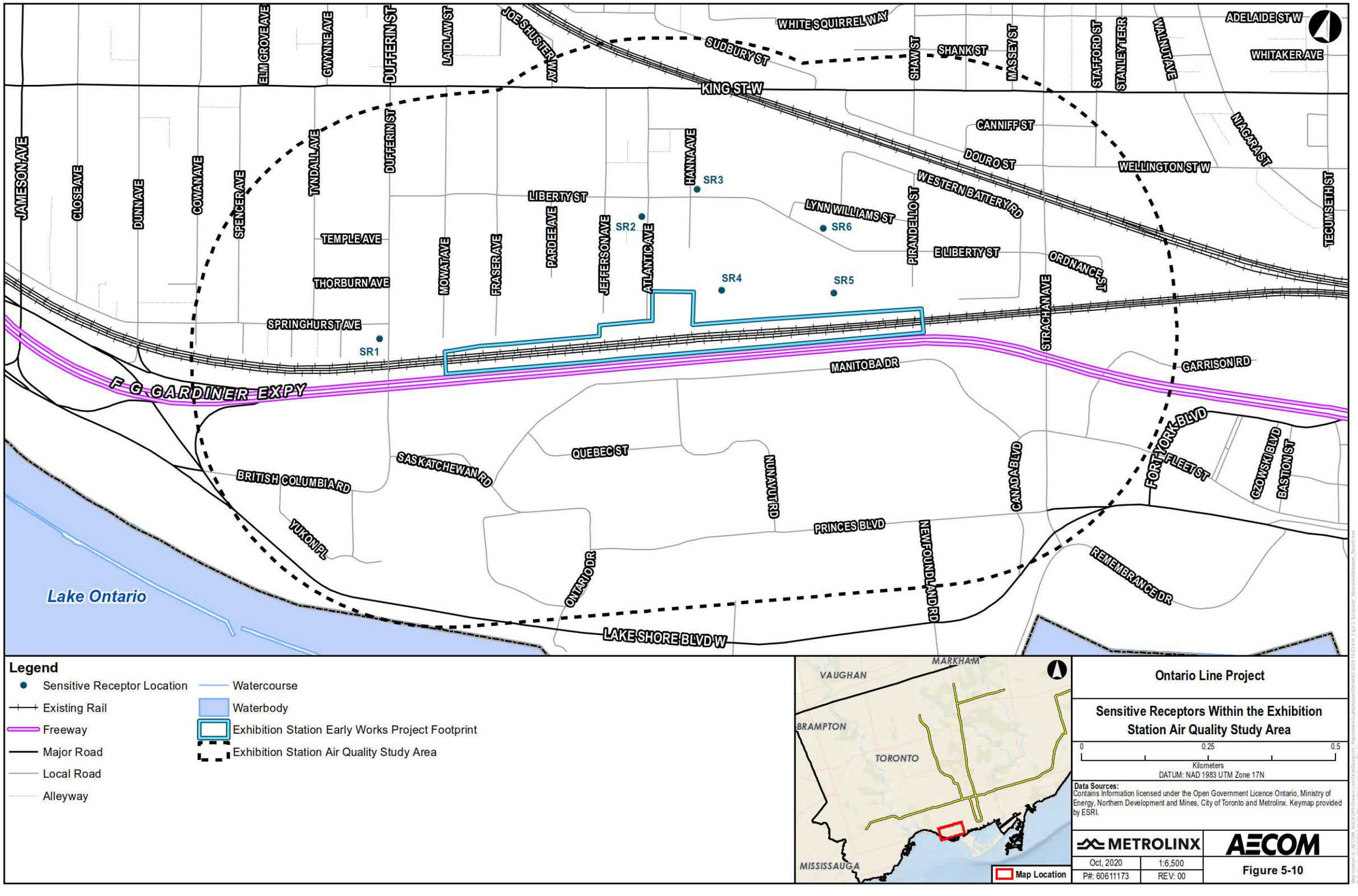


Table 5-7: Sensitive Receptors Within the Exhibition Station Air Quality Study Area

Receptor ID	Receptor Type	Address	Description	UTM Easting (m)	UTM Northing (m)
SR1	Sensitive	1 Springhurst Avenue	Apartment / condo building, window / balcony second floor	626974.05	4832491.73
SR2	Sensitive	25 Liberty Street	Live/work apartment, window second floor	627398.19	4832873.87
SR3	Sensitive	43 Hanna Avenue	Live/work apartment, window/balcony second floor	627486.54	4832956.28
SR4	Sensitive	5 Hanna Avenue	Apartment / condo building, window / balcony second floor	627591.66	4832780.74
SR5	Sensitive	85 King West	Apartment / condo building, window / balcony second floor	627804.34	4832840.45
SR6	Sensitive	150 East Liberty Street	Apartment / condo building, window / balcony second floor	627747.29	4832956.56

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 measurement relevant to the Exhibition Station early works. The monitoring location is shown in **Figure 5-11**.

5.5.2 Vibration

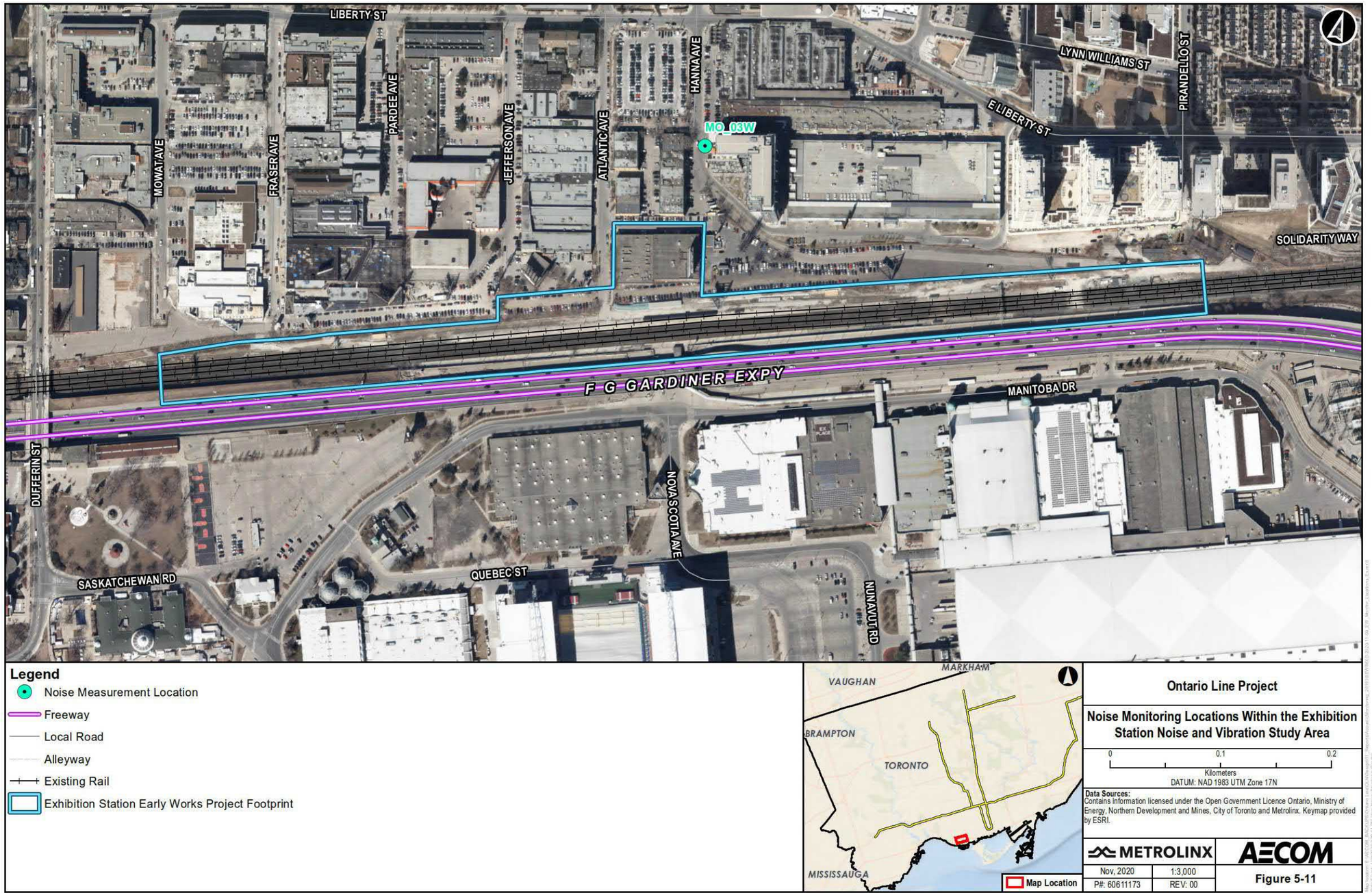
Baseline vibration measurements were not required, as the construction vibration assessment in this Report uses absolute limits that do not change based upon the existing vibration levels.

Table 5-8: Relevant Baseline Noise Measurement Data

Monitoring Location	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_03W Hanna Avenue	62	58	67	62	61	63	59	54	64

Note: 1. L_{eq} 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 $L_{eq,1hr}$, 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.

Figure 5-11: Noise Monitoring Locations Within the Exhibition Station Noise and Vibration Study Area



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 Exhibition Station Socio-Economic and Land Use Characteristics Study Area are designated by the Toronto Official Plan as Employment Areas, Utility Corridors, and Parks and Open Space, with pockets of Mixed Use Areas and Neighbourhoods (see **Figure 5-12**). Employment Areas are intended to accommodate business activities and job growth and are critical to the City's economic competitiveness (City of Toronto, 2019d). To ensure these areas are economically competitive, they are to be supported by investments in transit facilities, infrastructure, community facilities, and park spaces. A fast, convenient and high-quality transit system is anticipated to connect Employment Areas with residential neighbourhoods (City of Toronto, 2019d).

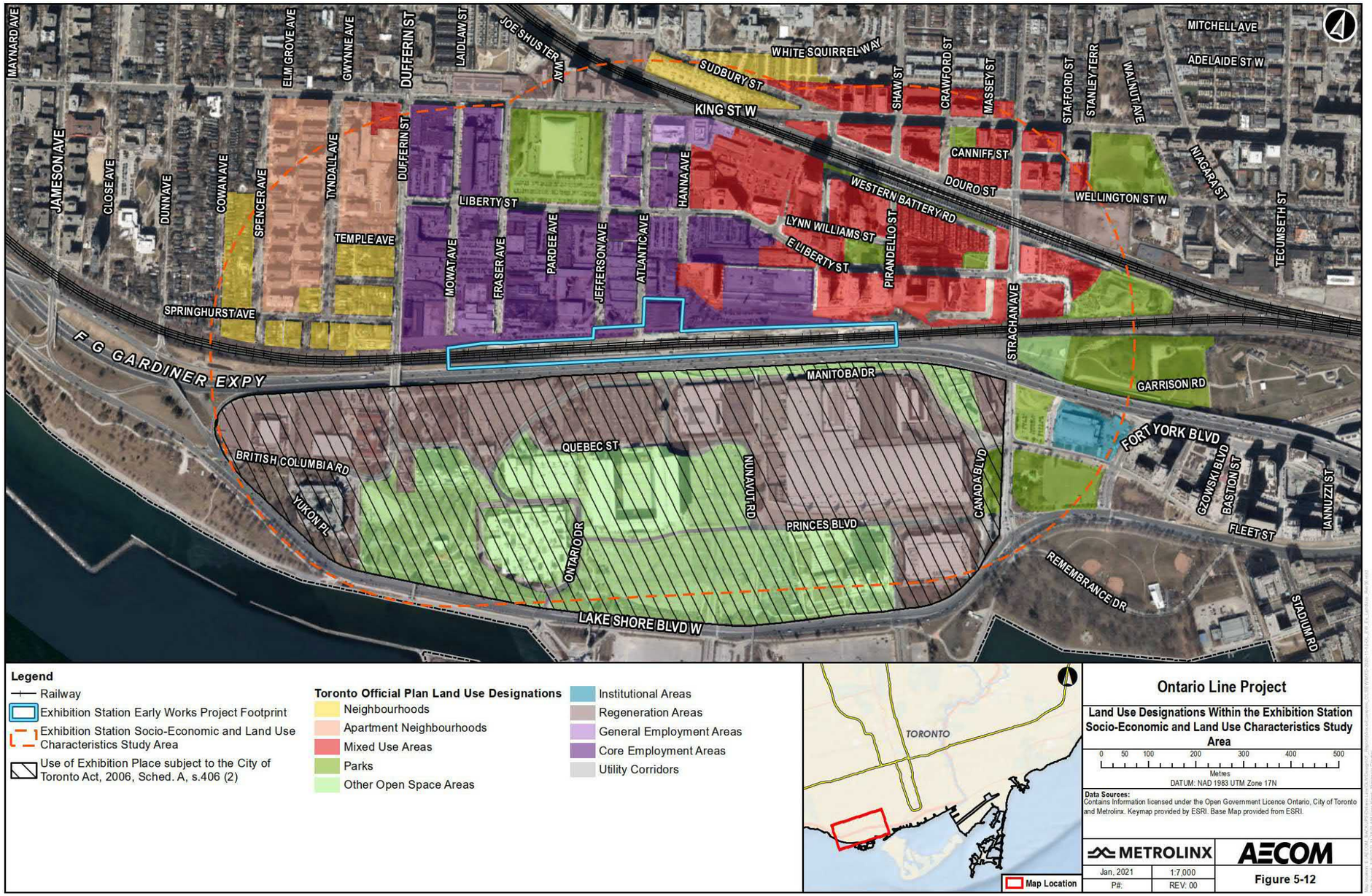
In addition to the Official Plan's land use designations, the City of Toronto Act, 2006 (Province of Ontario, 2006) notes that Exhibition Place shall be used,

a) for parks and exhibition purposes;
b) for the purposes of trade centres and trade and agricultural fairs such as, but not limited to, the annual Canadian National Exhibition and Royal Agricultural Winter Fair;
c) for displays, agricultural activities, sporting events, athletic contests, public entertainments and meetings;
d) for highway, electrical transmission or public utility purposes;
e) for any other purpose that the City may approve.

The area subject to the Exhibition Place land use outlined in the City of Toronto Act, 2006 is shown in **Figure 5-12**.

Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area, there are multiple commercial office buildings and parking lots to the north of the Lakeshore West rail corridor, south of King Street West, between Dufferin Street and Strachan Avenue. West of Dufferin Street are residential and apartment neighbourhoods and mixed use properties. Located to the south of the Gardiner Expressway are multiple entertainment venues such as BMO Field, Coca-Cola Coliseum, and the Exhibition Grounds. The rest of the Exhibition Station Socio-Economic and Land Use Characteristics Study Area is occupied by the existing Exhibition GO Station and Lakeshore West rail corridor.

Figure 5-12: Land Use Designations within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area[12]



12. Source of land use designations: City of Toronto, 2019d. 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

As mentioned in **Section 2.2.2.1**, the Exhibition Station Socio-Economic and Land Use Characteristics Study Area is within the Garrison Common North Secondary Plan (City of Toronto, 2017b) and the Central Waterfront Secondary Plan development policy areas.

The Exhibition Station Socio-Economic and Land Use Characteristics Study Area overlaps with Liberty Village, a neighbourhood that is bounded by Dufferin Street in the west, King Street West in the north, Strachan Avenue in the east, and the Metrolinx Lakeshore West Rail Corridor in the south. The neighbourhood has century-old structures and heritage buildings that have been re-purposed into homes, offices, restaurants, retail stores, and banks. The brownfield redevelopment efforts in the past decade have transformed this area into a desirable place to live, work, and play. Development in Liberty Village is underway, with many new high-rise condominium buildings recently built and occupied, under construction, or proposed.

5.6.1.1.1 Garrison Common North Secondary Plan

The Garrison Common North Secondary Plan area is bounded by Dufferin Street to the west, Queen Street to the north, Bathurst Street to the east, and Lakeshore West rail corridor/Gardiner Expressway to the south.

Some of the key Plan objectives for new developments include:

- Be integrated into the established city fabric in terms of streets and blocks, uses and density patterns;
- Enhance the public open space system;
- Include a variety of land use and densities including community services and facilities;
- Provide a range of housing types; and
- Be sensitive to and protect industrial, communications and media operations.

Section 3 of the Garrison Common North Secondary Plan outlines the urban structure and built form of the lands affected by the Plan, including:

- Promote future flexibility by designing new buildings to easily adapt to changes in service and activity markets;
- Design new developments with a range of dwelling types, emphasizing units suitable for households with children;

- Shared parking, open space, and servicing areas for developments within the same block; and
- Improve pedestrian circulation by providing pedestrian links within the lands affected by the Plan.

5.6.1.1.2 Central Waterfront Secondary Plan

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. 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.

5.6.1.2 Transit and Transportation Network

The existing pedestrian tunnel beneath the Lakeshore West rail corridor provides access to the Exhibition GO Station (see **Image 1** below) platforms and connects the lands north and south of the rail corridor, making connections from Liberty Village in the north to the entertainment venues associated with Exhibition Place and Ontario Place in the south. On the south side of the Exhibition GO Station, pedestrians travel under the Gardiner Expressway and can connect to the Exhibition Bus Loop and Exhibition Place via Nova Scotia Avenue, and the pedestrian bridge crossing Lakeshore Boulevard West to Ontario Place (including Cinesphere Theatre, Budweiser Stage, and Echo Beach) and Martin Goodman Trail along the waterfront.

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

Image 1: Exhibition GO Station[13]

5.6.1.3 Public Realm Characteristics

The Exhibition Station Socio-Economic and Land Use Characteristics Study Area is characterized by four notable public realm elements: Liberty Village, Exhibition Place, Exhibition GO Station, and Fort York Garrison Common.

5.6.1.3.1 Liberty Village

Liberty Village is a former brownfield site that was redeveloped into a fast-growing, mixed-use community located between Dufferin Street and Strachan Avenue, with King Street West to the north and Exhibition Place to the south (see **Image 2** below). Liberty Village has a unique public realm that is reflecting of the mixed-use neighbourhood with former industrial buildings repurposed into housing, retail, and studio and event spaces.

13. Image source: Farooq, R., 2015. The Toronto Star. Available: https://www.thestar.com/news/gta/2015/09/09/go-trains-on-lakeshore-west-line-suspended-due-to-suspicious-package-at-exhibition-station.html

Image 2: Liberty Village[14]

The South Liberty Trail is located within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area and extends from Dufferin Street to the existing Exhibition GO Station at the south side of Atlantic Avenue. Four repurposed silos and two hoppers line the South Liberty Trail displaying art from local professional mural artists, displaying the history and culture of Liberty Village.

5.6.1.3.2 Exhibition Place

Exhibition Place is a 192-acre property owned by the City of Toronto, located between the Metrolinx-owned Lakeshore West rail corridor and Lake Shore Boulevard, west of Strachan Avenue (see **Image 3**). Exhibition Place is an iconic City of Toronto landmark serving as Canada's largest entertainment venue; an urban parkland enjoyed by Toronto's residents and visitors; a multi-faceted professional sports destination; and a cultural centre with significant heritage properties and public art collections (Exhibition Place, 2017).

14. Image source: Liberty Village Condominium, n.d. Available: https://www.libertyvillagecondo.com/liberty-village-parks

Image 3: View of Exhibition Place and Ontario Place within Toronto's Downtown[15]

Exhibition Place is a major cultural landmark with a historical reference that encompasses First Nations communities, Fort Rouille, and New Fort York. (Exhibition Place, 2017). Princes' Gates connecting to Exhibition Place are also a historic monumental gateway to commemorate the 60th anniversary of confederation (see **Image 4**).

The Exhibition Place Strategic Plan 2017-2019 notes that transit access is a key component to growth at Exhibition Place and enhancements to Exhibition GO Station will improve the service experience (Exhibition Place, 2017). A key theme of the Exhibition Place Strategic Plan 2017-2019 is improving access to and within Exhibition Place via increased transit service (Exhibition Place, 2017).

The City of Toronto is undertaking a master plan exercise for Exhibition Place, under the guidance of the Cultural Heritage Landscape Assessment completed in 2019 (see **Section 2.2.3.4** for details).

15. Image source: City of Toronto, n.d.b. Next Place – Exhibition Place. Available: https://www.toronto.ca/city-government/planning-development/planning-studies-initiatives/exhibition-place/

Image 4: Princes' Gates Entrance to Exhibition Place[16]

5.6.1.3.3 Fort York and Garrison Common

A portion of Fort York National Historic Site (Fort York) and Garrison Common is located within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area. Fort York (see **Image 5**) is a 43-acre national historic site and is designated as a Heritage Conservation District, a registered archaeological site, and home to Canada's largest collection of original War of 1812 buildings. Garrison Common (see **Image 6**), the park to the west of Fort York and part of Fort York National Historic Site, is a historic landscape that was recently transformed into a usable public open space with the addition of wayfinding and informational installations about the historic lands. Notable Toronto music festivals have been hosted at Garrison Common, including Field Trip Music & Arts Festival and Toronto Urban Roots Festival.

16. Image source: Teena in Toronto, 2019. Canadian National Exhibition (CNE), Toronto, ON. Available: http://www.teenaintoronto.com/2019/08/canadian-national-exhibition-cne.html

Image 5: Fort York National Historic Site[17]

Image 6: Field Trip Music & Arts Festival at Garrison Common[18]

17. Image source: TimeOut Toronto, 2016. Fort York National Historic Site. Available: https://www.timeout.com/toronto/attractions/fort-york-national-historic-site
18. Image source: Thirty Four Flavours, 2015. Review: Field Trip Music & Arts Festival (June 6th and 7th 2015) at Fort York & Garrison Common. Available: https://thirtyfourflavours.wordpress.com/2015/06/07/review-field-trip-music-arts-festival-june-6th-and-7th-2015-at-fort-york-garrison-common/

The Garrison Crossing (see **Image 7**) is also located within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area and is an important new multi-use trail that connects Wellington Street in the north with Fort York's Garrison Common in the south. The crossing includes two stainless steel bridges over the rail corridor. The bridges were constructed of stainless steel as the primary structural and architectural material, with traditional durable materials with natural finishes, such as weathering steel, wood, and stone to help ground the new crossing in its important railway and heritage context (CreateTO, n.d.).

Image 7: Garrison Crossing[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, 2020b), there are no institutional uses located within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area.

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, 2020b), there are a number of recreational uses, parks or open spaces within

19. Image source: Cressy, J., 2019. Garrison Crossing Bridges – Now open! Available: http://www.joecressy.com/garrison_crossing_bridges_now_open

the Exhibition Station Socio-Economic and Land Use Characteristics Study Area. These amenities are listed in **Table 5-9** and shown in **Figure 5-13**.

Table 5-9: Recreational Uses, Parks and Open Spaces Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area

Feature Type	Map ID	Feature Name	Address
Recreational Uses, Parks and Open Space	1	Centennial Park	14 Saskatchewan Road
	3	Allan Lamport Stadium	1155 King Street West
	4	Open Space	No address
	5	Liberty Village Park	70 East Liberty Street
	6	Bill Johnston Park	165 Western Battery Road
	7	Exhibition Place Grounds	100 Princes' Boulevard
	8	Massey Harris Park	945 King Street West
	9	Open Space	12 Strachan Avenue
	10	Military Cemetery	No address
	11	Ordnance Park	10 Ordnance Street

Note: Data retrieved from City of Toronto Open Data Portal 2020c: Open Data Portal. Accessed in January 2020 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, 2020b), the Liberty Village BIA office is located within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area. This community group is listed in **Table 5-10** and shown in **Figure 5-13**.

Table 5-10: Community Groups and Resources Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area

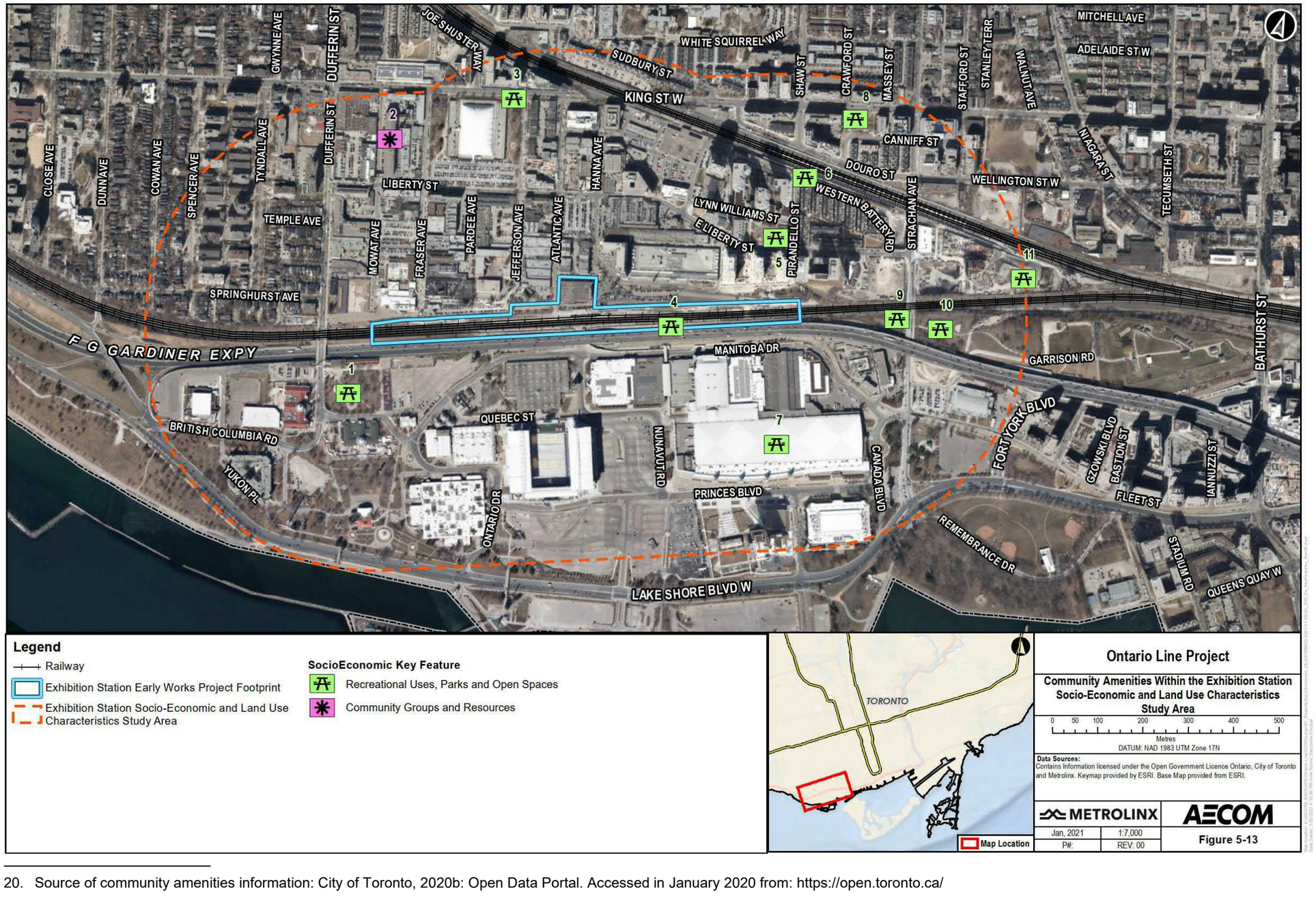
Feature Type	Map ID	Feature Name	Address
Community Groups and Resources	2	Liberty Village Business Improvement Area	67 Mowat Avenue

Note: Data retrieved from City of Toronto Open Data Portal 2020c: Open Data Portal. Accessed in January 2020 from: https://open.toronto.ca/

5.6.2.2 Planned Services and Facilities

According to relevant datasets from the City of Toronto's Open Data Portal (City of Toronto, 2020b), there are no planned community services or facilities in the Exhibition Station Socio-Economic and Land Use Characteristics Study Area.

Figure 5-13: Community Amenities Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area[20]



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

5.6.3 Neighbourhood Demographics

The Exhibition Station Early Works Project Footprint is located within Ward 10 Spadina-Fort York in the City of Toronto and the Niagara Neighbourhood. See **Table 5-11** for an overview of population, immigration rate, and household size and income information. The Niagara Neighbourhood, according to 2016 Census data (Statistics Canada, 2018), has a population density of 10,156 people per square km. Almost 81% 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 Niagara Neighbourhood has a higher median household income than the average for the rest of the City. The Niagara Neighbourhood also has a younger population with more Canadian-born residents.

Table 5-11: Niagara Neighbourhood Profile

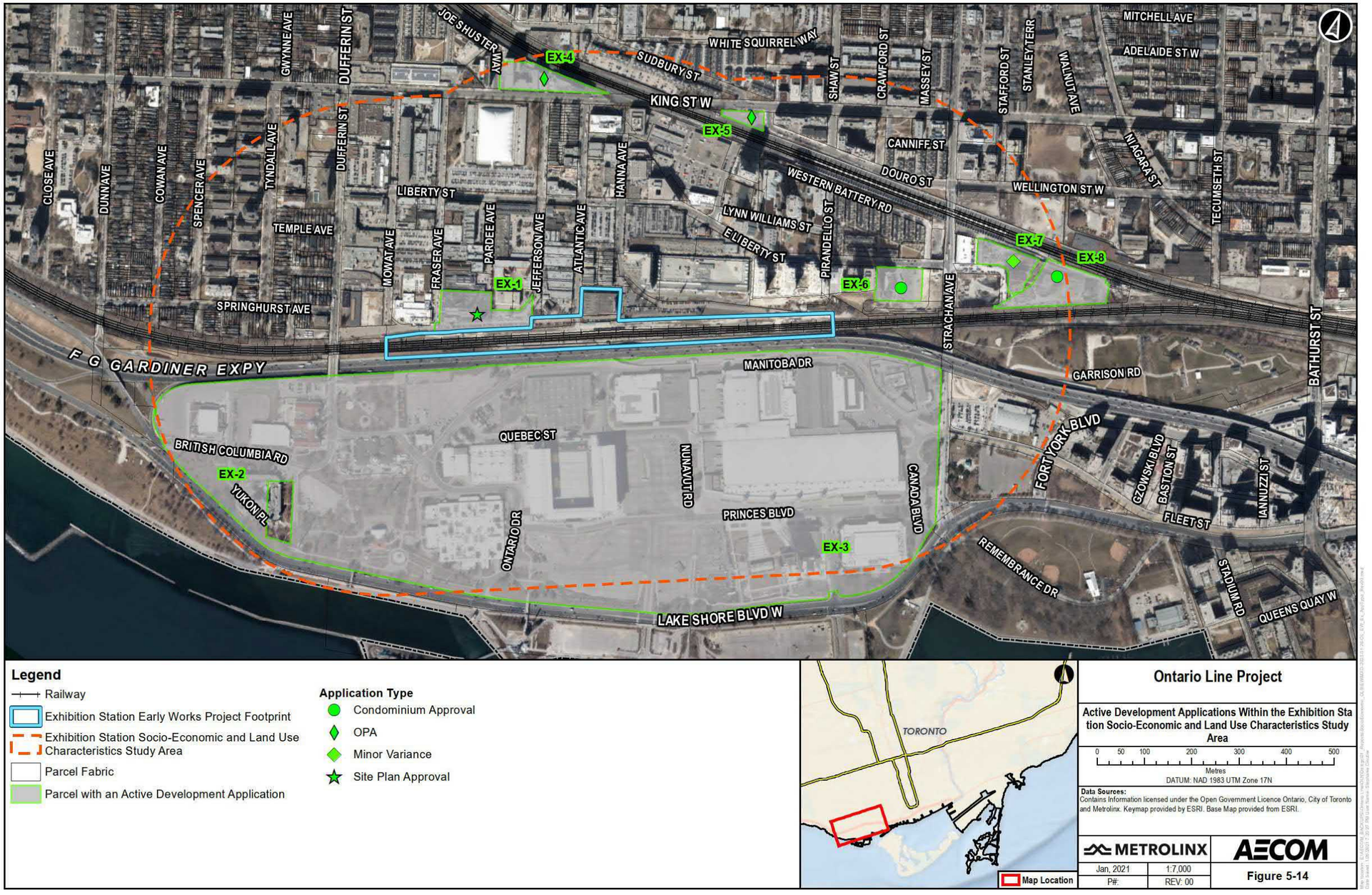
Profile	Niagara Neighbourhood	City of Toronto
Population Change 2011-2016	+46.0%	+4.5%
Population Density (people per square kilometres)	10,156	4,334
Children (Age 0 to 14)	6.7%	14.6%
Youth (Age 15 to 24)	7.7%	12.5%
Working (Age 25 to 64)	80.9%	57.3%
Seniors (Age 65+)	4.7%	15.6%
Immigrants	29.5%	51.2%
Household Size	1.62	2.42
Median Household Income	$79,441	$65,829

Note: Data retrieved from City of Toronto, 2018a: 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, 2020c) was reviewed and it was found that there are eight development applications within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area, as of October 23, 2020. These properties are shown in **Figure 5-14**. See **Table 5-12** for the status of each application.

Figure 5-14: Active Development Applications Within the Exhibition Station Socio-Economic and Land Use Characteristics Study Area[21]



21. Source of active development applications information: City of Toronto, 2020c: Development Applications. Available: http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init

Table 5-12: Active Development Applications as of October 23, 2020 for the Exhibition Station Socio-Economic and Land Use Characteristics Study Area

Map ID #	Address and File Number	Application Type	Application Details	Status
EX-1	7 Fraser Avenue 16 246189 STE 14 SA	▪ Site Plan Approval	▪ Site Plan Application for a 7-storey office building containing 16,221 square metres of gross floor area fronting Jefferson Avenue with a new private lane and below grade parking garage containing 223 parking spaces. The proposed building is to be located on the southeastern portion of the property including the partial demolition of the eastern portion of the building known as 7 Fraser Avenue. The western portion of the building containing live-work units will be maintained while the eastern portion of the building currently occupied by a warehouse is proposed to be demolished. The property is listed on the City's Heritage Register.	▪ Under Review
EX-2	2 Strachan Avenue 14 223125 STE 19 SA	▪ Site Plan Approval	▪ Site Plan Control application for a new Basketball Training Centre and Practice Facility to be located near the intersection of British Columbia Drive and Yukon Place at Exhibition Place.	▪ Final Approval Completed Feb 3, 2016
EX-3	2 Strachan Avenue 19 120853 STE 10 SA	▪ Site Plan Approval	▪ Site Plan Control application for a new enclosed elevated pedestrian walkway over Newfoundland Road connecting Hotel X and the Beanfield Centre.	▪ Notice of Approval Conditions issued Dec 5, 2019 ▪ Construction 95% complete
EX-4	1100 King Street West 02 035227 STE 14 OZ	▪ Official Plan Amendment	▪ Construct 3 towers with 545 residential condominiums, 13 blocks of townhouses totalling 340 dwelling units. Two of the 3 towers include grade related commercial components.	▪ Circulated
EX-5	1071 King Street West 11 251394 STE 19 OZ	▪ Official Plan Amendment	▪ Proposal to construct a 14-storey mixed use building with 3 levels of underground parking, 1 floor (approximately the height of two storeys) of retail/commercial space and 205 residential units in the project. Application appealed on the basis of municipal non-decision on October 2, 2017	▪ OMB Appeal
EX-6	51 East Liberty Street 19 187236 STE 10 CD	▪ Condominium Approval	▪ 27 Storey building with 303 residential units, 180 Parking Units.	▪ Under Review
EX-7	30 Ordnance Street 20 116993 STE 10 MV	▪ Minor Variance	▪ To alter the redevelopment plan for the 29-storey mixed-use building by reducing the total required number of parking spaces for the exclusive use of visitors to the residential units.	▪ Hearing scheduled
EX-8	10 Ordnance Street 19 263260 STE 10 CD 19 238204 STE 10 CD	▪ Condominium Approval ▪ Condominium Approval	▪ Draft Plan of Condominium for 432 units for the mixed-use building currently under construction.	▪ Under Review ▪ Under Review

Note: Data retrieved from City of Toronto Development Applications, 2020d: 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 the review of the Ontario Line Cultural Heritage Report (AECOM, 2020a), the 40-year-old threshold, the Criteria Checklist (Ministry of Heritage, Sport, Tourism and Culture Industries, 2016), and the field reviews conducted for early works by a qualified cultural heritage professional on May 12, 2020 and November 10, 2020, a list of known, previously identified and potential built heritage resources/cultural heritage landscapes in the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area was compiled, as documented in **Table 5-13**. The built heritage resources/cultural heritage landscapes are mapped in **Figure 5-15**.

In summary, a total of 11 built heritage resources/cultural heritage landscapes are within the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area consisting of:

- One previously identified Provincial Heritage Property of Provincial Significance (cultural heritage landscape)
    - Includes two buildings within that Provincial Heritage Property of Provincial Significance (one Listed and one Designated Part IV);
- One National Historic Site/Heritage Conservation District;
- One Designated Part IV property and City of Toronto Heritage Easement;
- One Listed property;
- Three potential built heritage resources/cultural heritage landscapes identified in the Ontario Line Cultural Heritage Report field review (AECOM, 2020a); and
- Two additional potential built heritage resources/cultural heritage landscapes identified during the field review that were not included in the Ontario Line Cultural Heritage Report (AECOM, 2020c).

Table 5-13: Description of Known, Previously Identified and Potential Built Heritage Resources/Cultural Heritage Landscapes Within the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLW-007	Commercial	153 Dufferin Street	Potential built heritage resource/cultural heritage landscape – identified during Ontario Line Cultural Heritage Report field review (AECOM, 2020a)	153 Dufferin Street **Design or Physical Value:** ▪ Two-storey commercial/industrial building with single-storey south wing. Classical-inspired design including arched entranceways with crossheads and Roman Doric pilasters and cornice moulding above first storey. **Historical or Associative Value:** ▪ Rear part of building constructed between 1903 and 1913. ▪ Formerly the Universal Tool and Steel Company. **Contextual Value:** ▪ One of several repurposed commercial and industrial buildings in the Liberty Village area. **Potential to Meet Ontario Regulation 10/06:** No **Potential Heritage Attributes:** ▪ Flat roof with parapet, arched entranceways with stone surrounds with crossheads and flattened Roman Doric pilasters, cornice moulding above first storey, paired windows with brick voussoirs and concrete sills.	 Photograph taken by AECOM in 2020.
OLW-008	Industrial	7-19 Fraser Avenue	Listed on Municipal Heritage Register (July 19, 2005)	Expanded Metal and Fireproofing Company Factory- 7-19 Fraser Avenue **Design or Physical Value:** ▪ An example of two-storey industrial building that marked an early use of reinforced concrete construction in Toronto. ▪ Includes a flat roof with parapets and a penthouse extension on the west end Buttresses extend above the cornice dividing the floors. The first storey contains a mixture of entrances with oversized industrial windows, while the upper floor displays flat-headed window openings. **Historical or Associative Value:** ▪ The single-storey factory building built in 1908 and 1909, designed by architect Frederick H. Herbert. Two-storey workers' residence and garage built to the south. ▪ Main factory/adjoining powerhouse were completed in 1908 for the Sunbeam Incandescent Lamp Company of Canada according to the designs of Toronto architect F. H. Herbert. ▪ A second storey designed by architect F.S. Mallory (who took over Herbert's practice), was added in 1930 ▪ Became home of Warren K. Cook Ltd., one of Canada's successful garment companies. ▪ In 2014, property purchased by companies under aegis of York Heritage Properties and Adgar Investments and Development Ltd. **Contextual Value:** ▪ Located on the east side of Fraser Avenue near the south end of the street, the Expanded Metal and Fireproofing Company Factory contributes contextually to the Liberty Street neighbourhood in Garrison Common North. ▪ South Liberty Trail is to the south of the property which contains a cultural interpretative sign for 7-15 Fraser Avenue (see ES-001). **Potential to Meet Ontario Regulation 10/06:** No **Potential Heritage Attributes:** ▪ Early use of reinforced concrete, two-storey building with flat roof with parapets and a penthouse extension on the west end, use of buttresses above the cornice dividing the floors and organizing the long, principal façade, first storey has a mixture of oversized industrial windows, while the upper story has flat-headed windows.	 Photograph taken by AECOM in 2020.

22. For consistency and ease, the built heritage resource/cultural heritage landscape reference numbers were retained from those resources excerpted from the Existing Conditions tables in the Ontario Line Cultural Heritage Report (AECOM, 2020a).

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLW-011	Commercial	1 Atlantic Avenue	Potential built heritage resource/cultural heritage landscape – identified during Ontario Line Cultural Heritage Report field review (AECOM, 2020a)	1 Atlantic Avenue **Design or Physical Value:** ▪ Two-storey commercial building, clad in red brick, with a flat roof, and horizontal massing with continuous bands of windows suggest influences of Mid-Century Modern style. ▪ Rear of property, east side of two-storey commercial building, includes a tall brick chimney and small one-storey brick accessory building with a large multi-paned window. ▪ Includes urban landscaping, including trees, at the front (west) of the building contributing to the character of Atlantic Avenue, acting as a screen between the building and street. **Historical or Associative Value:** ▪ Constructed between 1950-1953. ▪ Originally Westeel Company Ltd., metal fabricators. ▪ Later example of a Liberty Village manufacturing plant. **Contextual Value:** ▪ Located on the east side of Atlantic Street, south of Liberty Street, directly north of Lakeshore West Rail Corridor. ▪ One of several commercial/industrial buildings in Liberty Village area. **Potential to meet Ontario Regulation 10/06:** No **Potential Heritage Attributes:** ▪ Low, horizontal massing, two-storey commercial building, clad in red brick, with a flat roof and horizontal bands of windows with aluminum frames, tall brick chimney and brick accessory building at rear of property, urban landscaping including trees.	 Photograph taken by AECOM in 2020.  Photograph taken by AECOM in 2020.  Photograph taken by AECOM in 2020.

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLW-012	Commercial	3 Mowat Avenue/2 Fraser Avenue	Potential built heritage resource/cultural heritage landscape – identified during Ontario Line Cultural Heritage Report field review (AECOM, 2020a)	Former Canada Bread factory- 3 Mowat Avenue/2 Fraser Avenue **Design or Physical Value:** ▪ Repurposed one/two-storey commercial/industrial brick building that forms an entire block with entrances on Fraser and Mowat Avenues. ▪ South section of building has stepped cornice, paired windows, brick pilasters. ▪ Northern extension has flat roof, continues brick pilasters of south section. ▪ Concrete silo with art mural at the western end of the building. ▪ Five other silos and hoppers with art murals related to the property have been relocated as way finders along the South Liberty Trail (see **ES-001**). ▪ South Liberty Trail passes through the interior and connects GO train passengers to Dufferin Street. **Historic or Associative Value:** ▪ South section completed between 1903-1913. ▪ Extended north between 1913-1924. ▪ Originally part of the Grand Trunk Railway lands, the site was home to Henry Disston & Sons, an American supplier of hand and industrial saw blades, 1910-1955. Bought by Canada Bread Company in 1960. ▪ In 2012, the building was decommissioned and retrofitted by York Heritage Properties. **Contextual Value:** ▪ Located between Mowat Avenue and Fraser Avenue, directly north of the Lakeshore West railway corridor. ▪ Silos are considered local landmarks within Liberty Village. ▪ One of several repurposed commercial and industrial buildings in the Liberty Village area. **Potential to Meet Ontario Regulation 10/06:** No **Potential Heritage Attributes:** ▪ Stepped cornice, paired windows with voussoir arched lintels, parapet, brick façade, silo with art mural within the property a part of the “Liberty Village Trail”.	 Photograph taken by AECOM in 2020.
OLW-013A	Cultural Heritage Landscape- Exhibition Place	2 Strachan Avenue	Previously Identified built heritage resources/cultural heritage landscape Provincial Heritage Property of Provincial Significance (21 buildings and structures on the City of Toronto Heritage Register within this property, 5 buildings commemorated as a National Historic Site in 1985)	Exhibition Place- 2 Strachan Avenue NOTE, OLW-013 and OLW-014 are within OLW-013A (the Exhibition Place complex) **Design or Physical Value:** ▪ Valued as a unique surviving and active organically evolved landscape originally sited on the Lake Ontario Shoreline and comprised of building and landscape complexes that together form a rare example of the finest and largest exhibition complex from the 20th century in Ontario. ▪ Development phases between 1902 and 1960s. ▪ Includes four designed landscapes which include a range of purpose built and designed features that were developed for exhibition purposes. **Historical or Associative Value:** ▪ A unique landscape that expresses significant administrative, economic and social imperatives and themes that were instrumental in shaping Ontario’s post-contact land uses, governmental and administrative regimes, cultural settlement patterns, and social life. **Contextual Value:** ▪ Part of the cultural heritage landscape which extends from Strachan Avenue to the east, Lake Shore Boulevard. ▪ West to the south and west, and the Gardiner Expressway to the north.	 See Appendix A for the Heritage Register map (ASI 2019:4)

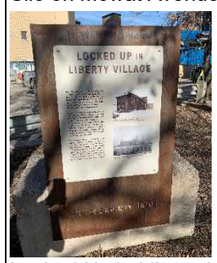
Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
				▪ Contains buildings included on the City of Toronto's Heritage Register; numerous commemorative plaques; works of art; landscaped areas and open spaces; iconic entrances and known archaeological resources and areas of archaeological potential. ▪ A visually important landmark within the city and Ontario, defining a well-known point of reference within the urban landscape of the municipality. ▪ Iconic and visually important entrances. ▪ Maintains the character of the area. **Meets Ontario Regulation 10/06: Yes (Criteria 1-4)** ▪ The property was evaluated in the Exhibition Place Cultural Heritage Landscape Assessment (ASI 2019) and was determined to meet the at least or more of the criteria in Ontario Regulation 9/06 and Ontario Regulation 10/06. ▪ Exhibition Place represents or demonstrates a theme or pattern in Ontario's history, as it represents themes of military defence and territorial expansion in the early- to mid-19th century and mid-19th century development of agricultural economies and communities in the Province of Ontario. The property yields, or has the potential to yield, information that contributes to an understanding of Ontario's history. The property demonstrates an uncommon, rare or unique aspect of Ontario's cultural heritage because of its large-scale agricultural and industrial exhibition design which is a unique aspect of Ontario's cultural heritage and not found elsewhere in the Province. The property has a strong association with the Canadian National Exhibition and the Royal, the British and Canadian military and demonstrates the work of many architects, artists, builders, designers and planners who are of importance to the Province with nearly all buildings and structures on the site being architect or artist designed. **Heritage Attributes (Summarized from the Exhibition Station Cultural Heritage Landscape Assessment, page 147-148):** ▪ Potential precontact Indigenous archaeological resources. ▪ Features that represent the site's association with themes of military defence and territorial expansion of the Province of Ontario. ▪ Features that represent the theme of developing agricultural economies and communities in the Province of Ontario and the site's association with the Toronto Industrial Exhibition, the Provincial Agricultural Fair, and the continued use as an exhibition complex. ▪ Features expressing the site's design value as a unique and rare surviving example of an Exhibition complex. ▪ Strong expressions of the Beaux-Arts style which provided a template for the site's ongoing development. ▪ The modernists architecture, structures integrated starting in 1954. ▪ Features that express the sites contextual value as a visually prominent landmark and site that contributes to its surroundings. ▪ Lakefront edge. ▪ View within, to and from the Exhibition grounds.	

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLW-013	Public	45 Manitoba Drive	Designated Part IV of the Ontario Heritage Act (By-Law #254-96 and By-Law #821-88) By-Law #254-96: https://www.heritagetrust.on.ca/en/oha/details/file?id=1877 By-Law #821-88: https://www.heritagetrust.on.ca/en/oha/details/file?id=1882	Exhibition Place, Coliseum Complex- 45 Manitoba Drive NOTE, OLW-013 and OLW-014 are within OLW-013A (the Exhibition Place complex) **Design or Physical Value:** ▪ Designed in the restrained Beaux Arts style. ▪ Buildings feature vast, symmetrical, masonry façades; extensive classical brick detailing; unusual sculptural ornamentation in stone; and hundreds of large, finely framed windows. **Historical or Associative Value:** ▪ Coliseum Complex is a part of the Exhibition Place grounds which opened in 1878. In 1918, the CNEA agreed to construct a new arena, approved by City's Board of Control in 1920. Built in 1922 and designed by G.F.W. Price, City Architect and W.H. Yates Construction Company Limited. When it opened it was the largest single exhibition space under one roof in the world. ▪ Annex/Livestock building added in 1926, designed by J.J. Woolnough, City Architect; Dominion Bridge Company, general contractors; McGregor and McIntyre, steel contractors. ▪ 1948, West Annex, upper storey altered. ▪ 1955, Cattlemen's Dormitory added near northeast corner of Coliseum complex. ▪ 1961 Sheep and Swine building added, Earle C. Morgan with J.B. Parkin Associates, Architects. ▪ 1961 Swine Pavilion converted for North Extension, Ball Draig, Short and Strong, Architects. ▪ 1961, interior of Coliseum altered, and electrical substation and extra exits added, W. S. Atkins and Associates, consulting engineers. ▪ 1962, south facade of Coliseum rebuilt: wall and twin towers removed, and new wall with metal cladding. projecting entrance pavilion, and cantilevered canopies added, Fleury, Arthur and Barclay, Architects, stained glass windows for Agricultural Hall of Fame, A. A. Macdonald; fountain for foyer, Dora de Pedery Hunt; contemporary sculpture, Arthur Price; 1962, interior of Coliseum altered: new corridors linking East and West Annexes at second storey level; exits added; doors replaced; stairways enclosed; stadium seating added to Arena, Canadian Seating Company. ▪ 1963, interior of Coliseum altered: glass and metal partitions added, Roneo Company of Canada; porcelain enamel panels installed, P. Graham Bell Associates. ▪ 1975, restaurant interior altered. ▪ 1984, doors replaced at southwest corner of Coliseum complex; interior alterations. ▪ 1985-1986, brick altered and doors replaced on south facade of Coliseum; interior retrofitted. ▪ 1987, interior of Coliseum altered: small judging ring retrofitted; food concessions added to first floor. ▪ 1989, interior of Coliseum altered: band shell and press box added. ▪ 1995, portions of Cattle Pavilion (Industry Building) removed, and all of Judging Pavilion (Fraser Pavilion) and Sheep and Swine Building (Southern Extension) removed. **Contextual Value:** ▪ Part of the cultural heritage landscape which extends from Strachan Avenue to the east, Lake Shore Boulevard. ▪ West to the south and west, and the Gardiner Expressway to the north. **Meets Ontario Regulation 10/06: Yes (see OLW-013A)** **Heritage Attributes:** ▪ 1922 building with steel, yellow brick, stone and metal detailing with two storey rectangular plan, centre block with round-arched parapets flanked by flat-roofed pavilions, principal (north) façade with pair of tall towers with elaborate roofs with Classical detailing and copper domes, main entrance with four-column stone portico with Doric capitals, an entablature and modillion blocks, flat headed and thermal-shaped windows. ▪ Use of restrained Beaux Arts design with vast symmetrical, masonry façades; extensive classical brick detailing (brick corbelling, panels, band courses and quoins); unusual sculptural ornamentation in stone; and hundreds of large, finely framed windows. ▪ Part of the cultural heritage landscape which extends from Strachan Avenue to the east, Lake Shore Boulevard. ▪ West to the south and west, and the Gardiner Expressway to the north.	 Photograph taken by AECOM in 2020.

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLW-014	Public	10 Nova Scotia Avenue	Listed on Municipal Heritage Register (May 3, 4, 1993)	Exhibition Place, Food Products Building- 10 Nova Scotia Avenue NOTE, OLW-013 and OLW-014 are within OLW-013A (the Exhibition Place complex) **Design or Physical Value:** ▪ Modernist style building constructed of red brick and concrete. ▪ Building has an irregular plan and a flat roof. **Historical or Associative Value:** ▪ Built in 1954. ▪ Designed by architect Richard A. Fisher. ▪ Built as part of a new phase of building construction to replace buildings destroyed by fire, demolished for the construction of the Gardiner Expressway, or needed expansions. **Contextual Value:** ▪ Part of the Exhibition Place cultural heritage landscape which extends from Strachan Avenue to the east, Lake Shore Boulevard. ▪ West to the south and west, and the Gardiner Expressway to the north. **Meets Ontario Regulation 10/06: Yes (see OLW-013A)** **Potential Heritage Attributes:** ▪ Use of Modernist building style. ▪ West to the south and west, and the Gardiner Expressway to the north. ▪ Mid-century lighting design and signage.	 Photograph taken by AECOM in 2020.
OLW-017	Institutional	70, 75, 0 East Liberty Street (formerly 20 Strachan Avenue)	Designated Part IV of the *Ontario Heritage Act* (By-Law #378-96) City of Toronto Heritage Easement Agreement: CCA681470	Remnants of Central Prison Chapel- 70, 75, 0 East Liberty Street **Design or Physical Value:** ▪ Two-storey brick Central Prison Chapel is designed with Classical features associated with the Renaissance Revival including stone detailing, and rectangular plan with a hipped roof. **Historical or Associative Value:** ▪ Built in 1877. ▪ Designed or built by Jacob P. Wagner. ▪ Design attributed to architect Kivas Tully and is one of only two known extant buildings in Toronto which he designed. ▪ The Chapel is significant as the only surviving member of the group of buildings forming the Central Prison complex. **Contextual Value:** ▪ The City of Toronto Heritage Register includes addresses associated with the designation by-law on the south and north side of East Liberty Street. ▪ Central Prison Chapel is located on the north side of East Liberty Street, west of Pirandello Street. Located in Garrison Common, the former military reserve, the Chapel is significant as the only surviving member of the group of buildings forming the Central Prison complex. ▪ The south side of East Liberty Street includes a recent condo development. **Potential to Meet Ontario Regulation 10/06:** No **Heritage Attributes:** ▪ Central Prison Chapel: Rectangular plan, hip roof with brackets, brick surfaces, round-headed window openings, and stone and brick details complemented the Classical features of the centre block and wings of the Central Prison (now demolished).	 Photograph taken by AECOM in 2020.

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
OLW-018	Fort York- Cultural Heritage Landscape (HCD) And Fort York National Historic Site	250 Fort York Boulevard	National Historic Site Designated Part V, Heritage Conservation District (By-Laws #420-85 and 541-2004) Listed on Canadian Register	Fort York/Garrison Common Heritage Conservation District and Fort York National Historic Site – 250 Fort York Blvd. (100 Garrison Road) **Design or Physical Value:** ▪ A late 18th and early 19th century military complex- 16.6 parcel of land. ▪ Includes seven buildings erected between 1813 and 1815 which are important surviving examples of British military architecture. ▪ The fort an irregular polygon shape enclosing all structures and archaeological resources. ▪ Military Burying Ground. **Historical or Associative Value:** ▪ Architect: Royal Engineers. ▪ Its association with the establishment of the Town of York (City of Toronto) – constituted the primary defensive position of early York. ▪ Military action during the war of 1812. ▪ The sacking of York and the retaliatory raid on Washington. ▪ Associations with significant historical organisations and persons including The Queen's Rangers, Lt. Governor John Graves Simcoe, Major General Isaac Brock, American Brigadier General Zebulon Pike. ▪ Role in the 1838 Fenian Raids and Anglo-American tensions of the 1860s. ▪ Restoration by City of Toronto in 1930s as a Great Depression "make work" project. ▪ Efforts to save the Fort from destruction during construction of the Gardiner Expressway were a catalyst for the historic preservation movement in Toronto and Ontario. **Contextual Value:** ▪ Location at the western entrance to Toronto Harbour adjacent to Garrison Creek on the former shoreline of Lake Ontario. On the north limit is the rail corridor. ▪ Strategic location to protect the harbour and the town of York. **Potential to meet Ontario Regulation 10/06: Yes (Criteria 1, 2, 3, 4)** ▪ Fort York represents or demonstrates a theme or pattern in Ontario's history - it represents themes of military defence and territorial expansion in the early- to mid-19th century in the Province of Ontario. The property yields, or has the potential to yield, information that contributes to an understanding of Ontario's history. There are remains of 1813 battlefield, military cemeteries, and archaeological resources. Fort York is of aesthetic, visual or contextual importance to the province of Ontario – it constituted the primary defensive position of early York (Toronto); and the seven buildings erected between 1813 and 1815 are important surviving examples of British military architecture. The property demonstrates an uncommon, rare or unique aspect of Ontario's cultural heritage as it serves as a museum of the largest collection of War of 1812 buildings in Canada. The property has a strong association with the Canadian National Exhibition and the Royal, the British and Canadian military. **Heritage Attribute Categories:** From Section 3: Commemorative Integrity Statement, 2004 https://www.fortyork.ca/images/management-docs/fort-york-commemorative-integ-stmt-2004.pdf ▪ The Designated Place ▪ Landscape and Landscape Features ▪ Built Heritage ▪ Moveable Objects **Heritage Attribute Categories (UP Express Electrification EA):** ▪ Garrison Creek and Garrison Creek Ravine ▪ Darkness/No light ▪ Viewpoints **Fort York National Historic Site Heritage Attributes (historicplaces.ca):** ▪ The strategic location of the fort near the original shore of Lake Ontario. ▪ The cultural landscape comprising the bastioned fort, Garrison Common, and the cemetery, Victoria Memorial Square, with its natural setting including those portions of the ravine bank on the north and east sides which have not been modified and the western earth work, moat and those portions of other earthworks which align with the original trace and that contain significant amounts of original fabric.	 Photograph taken by AECOM in 2020.

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
ES-001	Cultural Interpretative Signs and Silos/Hoppers along the South Liberty Trail	South Liberty Trail from Dufferin Street to the Exhibition GO station at the south end of Atlantic Avenue	Potential built heritage resource/cultural heritage landscape-identified during Heritage Detailed Design Report field review	**Design or Physical Value:** ▪ Segments of the South Liberty Trail, a pedestrian pathway, from Dufferin Street to the Exhibition GO station at the south end of Atlantic Avenue demarcated by silos and cultural interpretative signs. ▪ Four industrial silos and two grain hoppers, industrial artifacts, associated with the Canada Bread Company and the South Liberty Trail Silos Mural Project, have been repurposed and painted by artists to function as way finders along the trail (see **OLW-012**). ▪ Six cultural interpretative signs with photographs along the trail providing history of buildings that reflect the industrial history of the Liberty Village area. **Historic or Associative Value:** ▪ The cultural interpretative signs provide historical context-specific information along the South Liberty Trail which commemorates the industrial history of the area. ▪ Silos and hoppers were salvaged and relocated from the Canada Bread factory (OLW-012). **Contextual Value:** ▪ South Liberty Trail from Dufferin Street to the Exhibition GO station at the south end of Atlantic Avenue located on the southern most edge of Liberty Village neighbourhood. **Potential to Meet Ontario Regulation 10/06:** No **Potential Heritage Attributes:** ▪ Context-specific cultural interpretative signs and silos and hoppers along the route of the South Liberty Trail. ▪ Views of the silos along the public trail.	 Photograph taken by AECOM in 2020.  2 Atlantic Avenue Cultural Interpretive Sign  Silo on Atlantic Avenue  5-15 Fraser Avenue Cultural Interpretive Sign  Hopper on Fraser Avenue

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
					 Dufferin Street and Mowat Avenue Cultural Interpretive Sign  Hopper on Dufferin Street  Fort Rouillé Cultural Interpretive Sign, Fraser Avenue  Silo on Fraser Avenue  Silo on Mowat Avenue  Silo on Jefferson Avenue  Locked Up in Liberty Village Cultural Interpretive Sign, Jefferson Avenue  Jefferson Avenue Cultural Interpretive Sign

Cultural Heritage Report Reference #[22]	Type of Property	Location /Address	Heritage Recognition	Description of Known or Potential Cultural Heritage Value or Interest and Heritage Attributes	Photographs/Digital Image
ES-002	Industrial/ Commercial	2-20 Atlantic Avenue	Potential built heritage resource/cultural heritage landscape-identified during Heritage Detailed Design Report field review	Former Winnipeg Ceiling and Roofing Company- 2-20 Atlantic Avenue **Design or Physical Value:** ▪ Repurposed one/two-storey commercial/industrial brick buildings that forms roughly half of the commercial streetscape on the west side of Atlantic Avenue. ▪ Front façade, on Atlantic Avenue, is clad in brick, with brick parapets, brick pilasters dividing large multi-paned windows and brick corbelling beneath the roofline. **Historic or Associative Value:** ▪ Built between 1913 and 1924. ▪ Factory supported Canada's agricultural sector. ▪ Former Winnipeg Ceiling and Roofing Company, which manufactured steel ceilings and roofing panels. In 1928, the company designed and produced the first corrugated steel grain silos. ▪ In 1985, Upper Canada Brewing bought the buildings and adapted them for brewing. In 1988 bought by Sleeman Breweries, then eventually bought by Iron Mountain Canada Corporation then sold in 2005 to a company under aegis of York Heritage Properties which adapted the building for Joe Fresh, the retail chain. In 2014, 20 Atlantic Avenue was acquired by York Heritage. **Contextual Value:** ▪ Located between Atlantic Avenue and Jefferson Avenue, directly north of the Lakeshore West railway corridor ▪ South Liberty Trail is to the south of the property and contains a cultural interpretative sign for 2 Atlantic Avenue (see ES-001). ▪ One of several repurposed commercial and industrial buildings in the Liberty Village area. **Potential to Meet Ontario Regulation 10/06:** No **Potential Heritage Attributes:** ▪ Front façade on Atlantic Avenue clad in brick with large multi-paned windows with decorative brickwork including; brick parapets, brick pilasters, and brick corbelling beneath the roofline.	 Photograph taken by AECOM in 2020.

Figure 5-15: Known, Previously Identified, and Potential Built Heritage Resources/Cultural Heritage Landscapes Within the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area

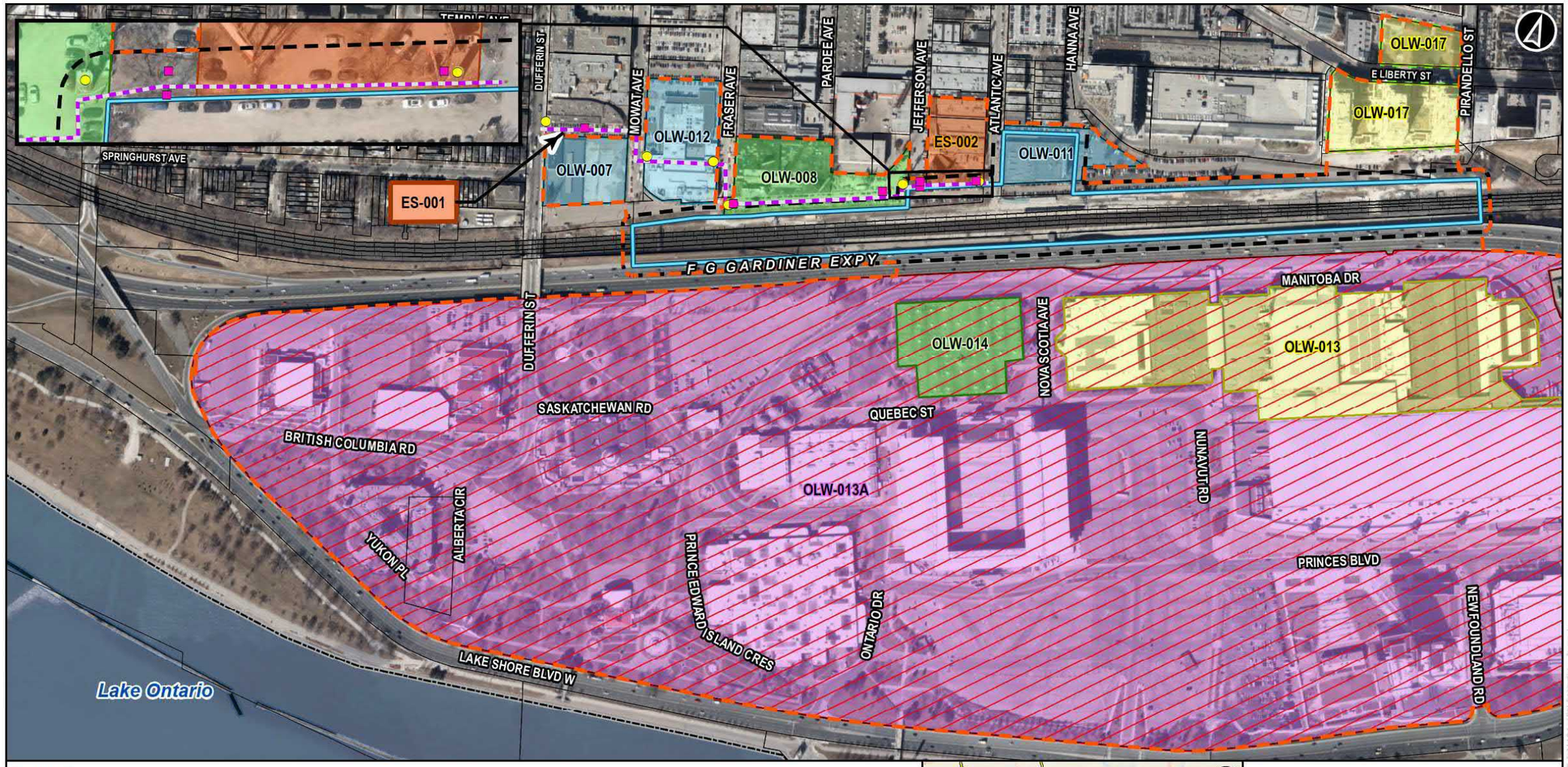
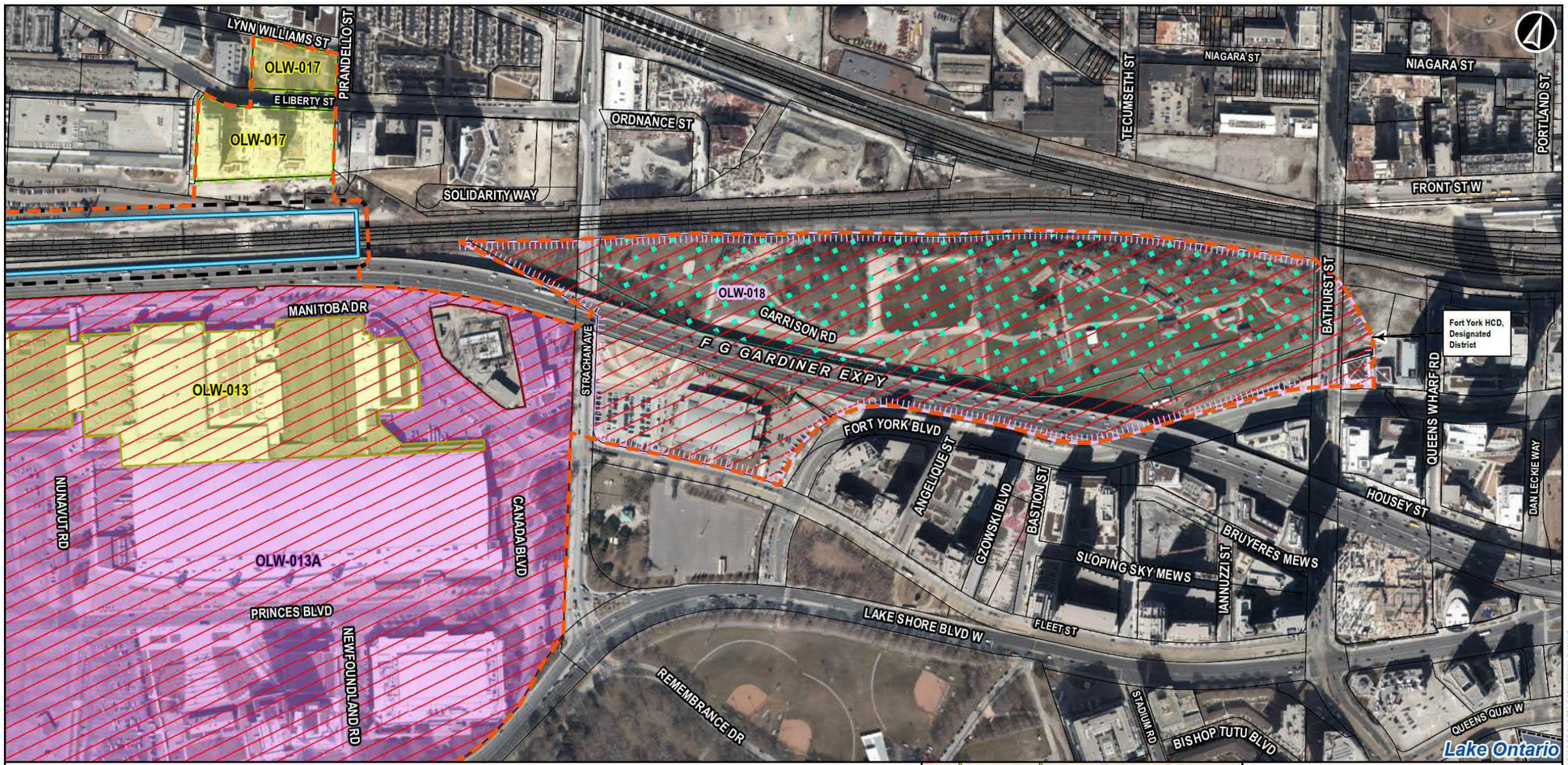


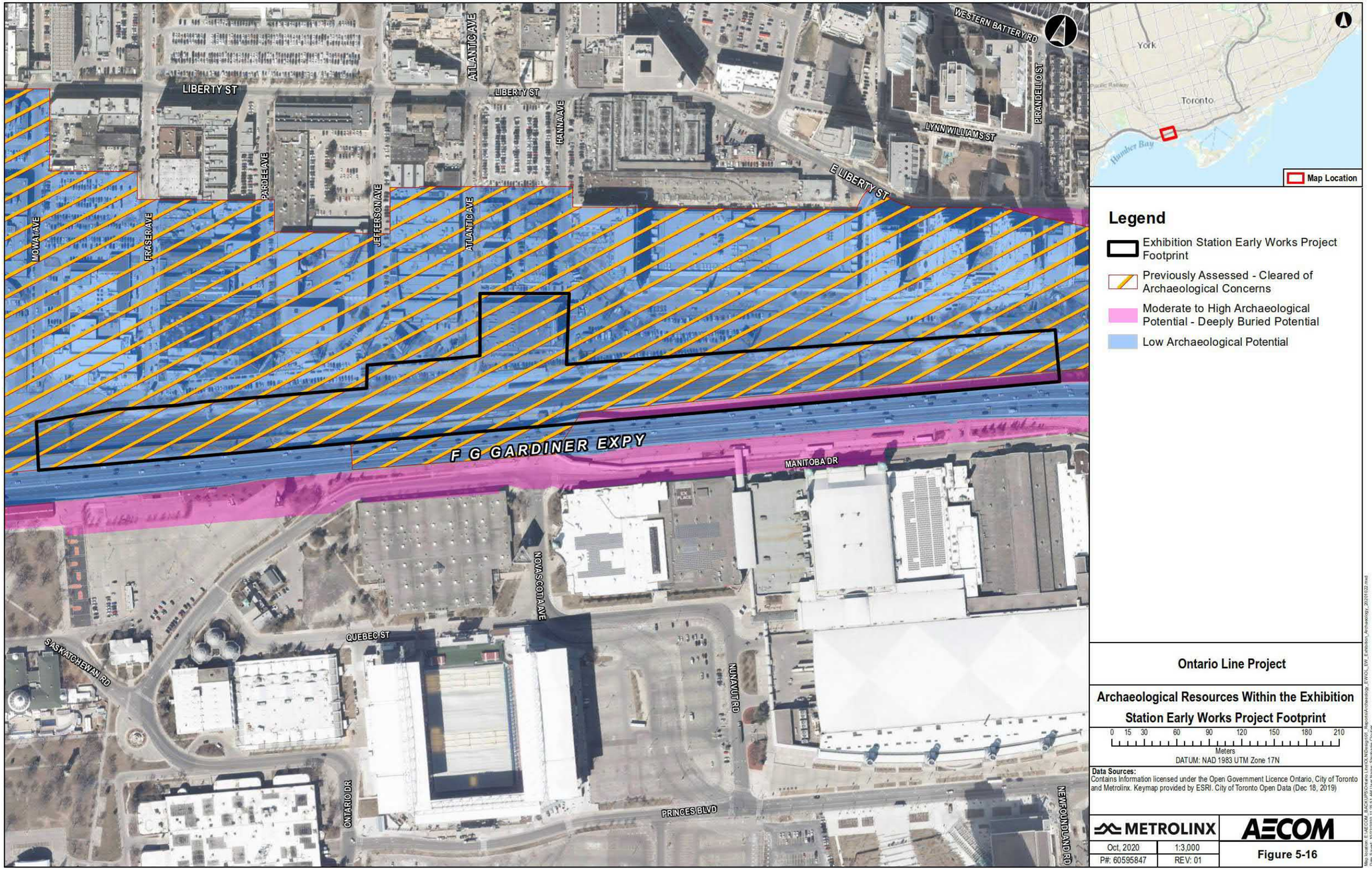
Figure 5-15: Known, Previously Identified, and Potential Built Heritage Resources/Cultural Heritage Landscapes Within the Exhibition Station Built Heritage Resources and Cultural Heritage Landscapes Study Area



5.8 Archaeological Resources

The majority of the Exhibition Station Early Works Project Footprint has been cleared of archaeological concerns by previous archaeological assessments completed by AECOM (AECOM, 2020d), Archeoworks Inc., (Archeoworks Inc., 2014), ASI (ASI, 2017), and 4Transit (4Transit, 2018). There is one portion within the Exhibition Station Early Works Project Footprint that retains moderate to high archaeological potential (i.e., deeply buried potential), such as potential for discovering pre-contact Indigenous materials and/or materials related to the early development and expansion of the City of Toronto. This area is located within the southeast portion of the Exhibition Station Early Works Project Footprint between the Lakeshore West rail corridor in the north and Gardiner Expressway in the south, as shown in **Figure 5-16**.

Figure 5-16: Archaeological Resources within the Exhibition Station Early Works Project Footprint



5.9 Traffic and Transportation

5.9.1 Transportation Network

5.9.1.1 Roads

An overview of the roads located within the Exhibition 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).

Gardiner Expressway is an east-west expressway running immediately south of the rail tracks with a six-lane cross-section and a posted speed of 90 km per hour.

Jefferson Avenue is a north-south local road with a two-lane cross-section. Between the south end of Jefferson Avenue and King Street, Jefferson Avenue has a posted speed of 30 kilometres per hour and on-street parking is prohibited on the east side of the street. On the west side of the street, on-street parking is permitted from Monday to Saturday (between 8:00 AM and 9:00 PM) and on Sundays (between 1:00 PM and 9:00 PM) and is controlled and regulated by parking machine (By-law 536-2014).

Atlantic Avenue is a north-south collector road, between King Street and Liberty Street, with a two-lane cross-section and a regulatory speed limit of 50 kilometers per hour. Between the south end of Atlantic Avenue and Liberty Street, Atlantic Avenue is a local road and has a posted speed of 30 kilometres per hour. On-street parking is prohibited on the west side of the street. On the east side, on-street parking is permitted from Monday to Saturday (between 8:00 AM and 9:00 PM) and on Sundays (between 1:00 PM and 9:00 PM) and is controlled and regulated by parking machine (By-law 536-2014).

Nova Scotia Avenue is a north-south park road with a two-lane cross-section and a posted speed of 20 kilometres per hour. Nova Scotia Avenue is a designated park road under the direct responsibility of Exhibition Place.

Manitoba Drive is an east-west park road with a two-lane cross-section and a dedicated streetcar facility running in both directions and looping around the Gardiner Expressway through the Exhibition Loop. Manitoba Drive has a posted speed of 30 kilometres per hour. Manitoba Drive is a designated park road under the direct responsibility of Exhibition Place.

In addition to the existing roads listed above, the City of Toronto completed a Municipal Class Environmental Assessment that has recommended the construction of a new

east-west road extending between Dufferin Street and Strachan Avenue (City of Toronto, n.d.c). The new road would be located on the north side of the existing rail tracks. The Environmental Study Report was completed in 2016. Currently, there is no schedule for construction (City of Toronto, n.d.c). Refer to **Section 2.2.3.3** for details.

5.9.1.2 Active Transportation

Pedestrians are accommodated through sidewalks along the following streets located within the Exhibition Station Traffic and Transportation Study Area:

- Manitoba Drive (sidewalk on the north side and partial sidewalk on the south side to the east of Nova Scotia Avenue. To the west of Nova Scotia Avenue, sidewalks are provided on both north and south sides);
- Atlantic Avenue (sidewalk on east side and partial sidewalk on west side);
- Jefferson Avenue (partial sidewalk on the west side only); and
- Nova Scotia Avenue (sidewalk on the east and west sides).

In addition, painted crosswalks are provided across all legs of the intersection of Manitoba Drive and Nova Scotia Avenue, located within the Exhibition Station Traffic and Transportation Study Area.

Pedestrians along Manitoba Drive, Nova Scotia Avenue, and Atlantic Avenue, as well as transit riders that alight transit vehicles at the Exhibition Loop, have direct access to the station platforms. The South Liberty Trail extends from Dufferin Street to the existing Exhibition GO Station at the south side of Atlantic Avenue. Exhibition Station provides an accessible tunnel which connects pedestrians between either side of the platforms. Exhibition Station plays a major role as a north-south active transportation connection linking the growing Liberty Village neighbourhood to amenities and destinations south of the railway corridor.

Cyclists are not well accommodated within the Exhibition Station Traffic and Transportation Study Area given the lack of dedicated cycling facilities. The only cycling provisions within the Exhibition Station Traffic and Transportation Study Area are the existing bicycle parking racks and the Bike Share Toronto station on Atlantic Avenue and along Manitoba Drive at the southern entrance to Exhibition Station.

Figure 5-17 and **Figure 5-18** illustrate the location and type of pedestrian and cycling facilities provided within the Exhibition Station Traffic and Transportation Study Area, respectively.

Figure 5-17: Existing Pedestrian Network within the Exhibition Station Traffic and Transportation Study Area

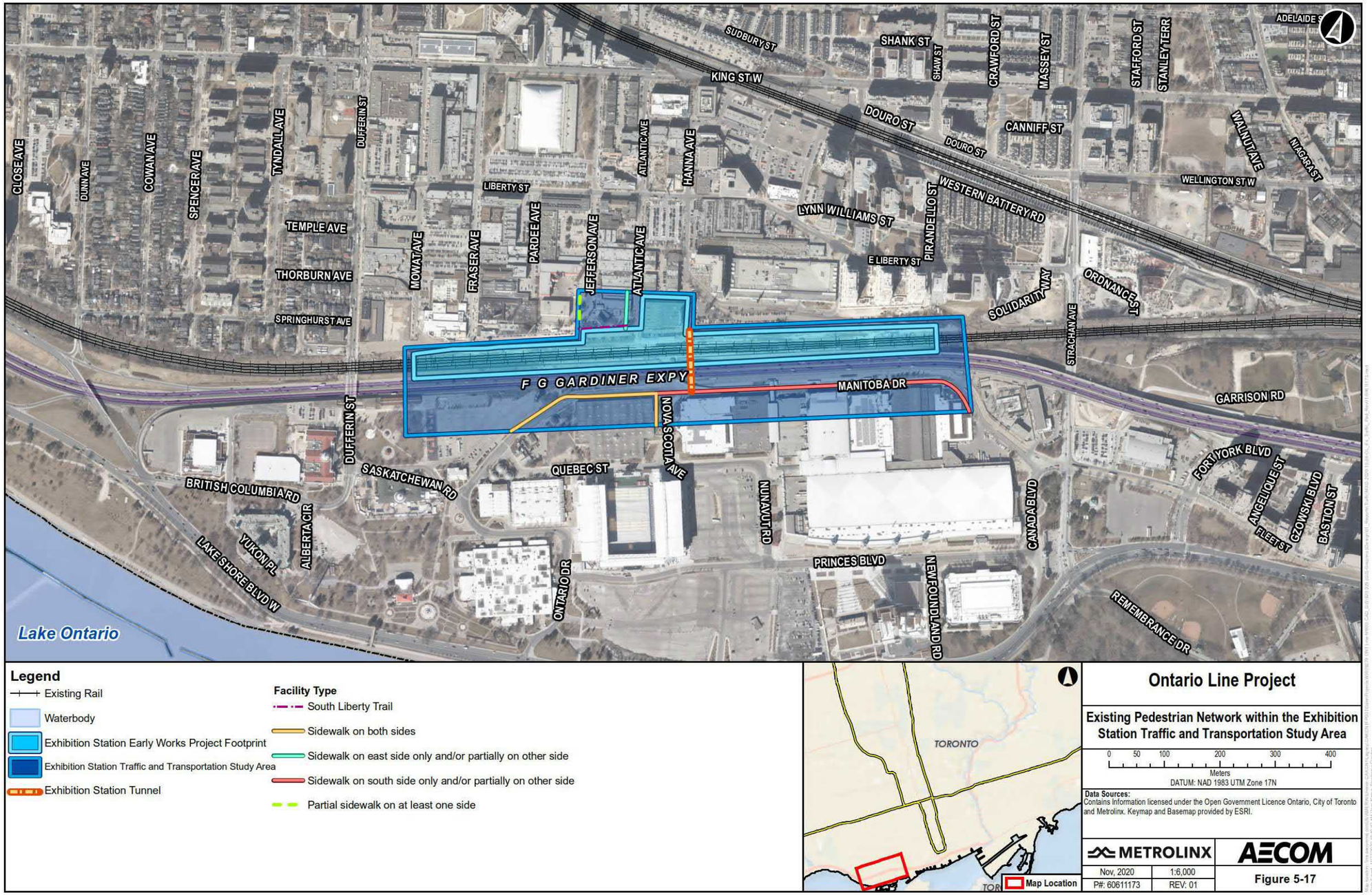
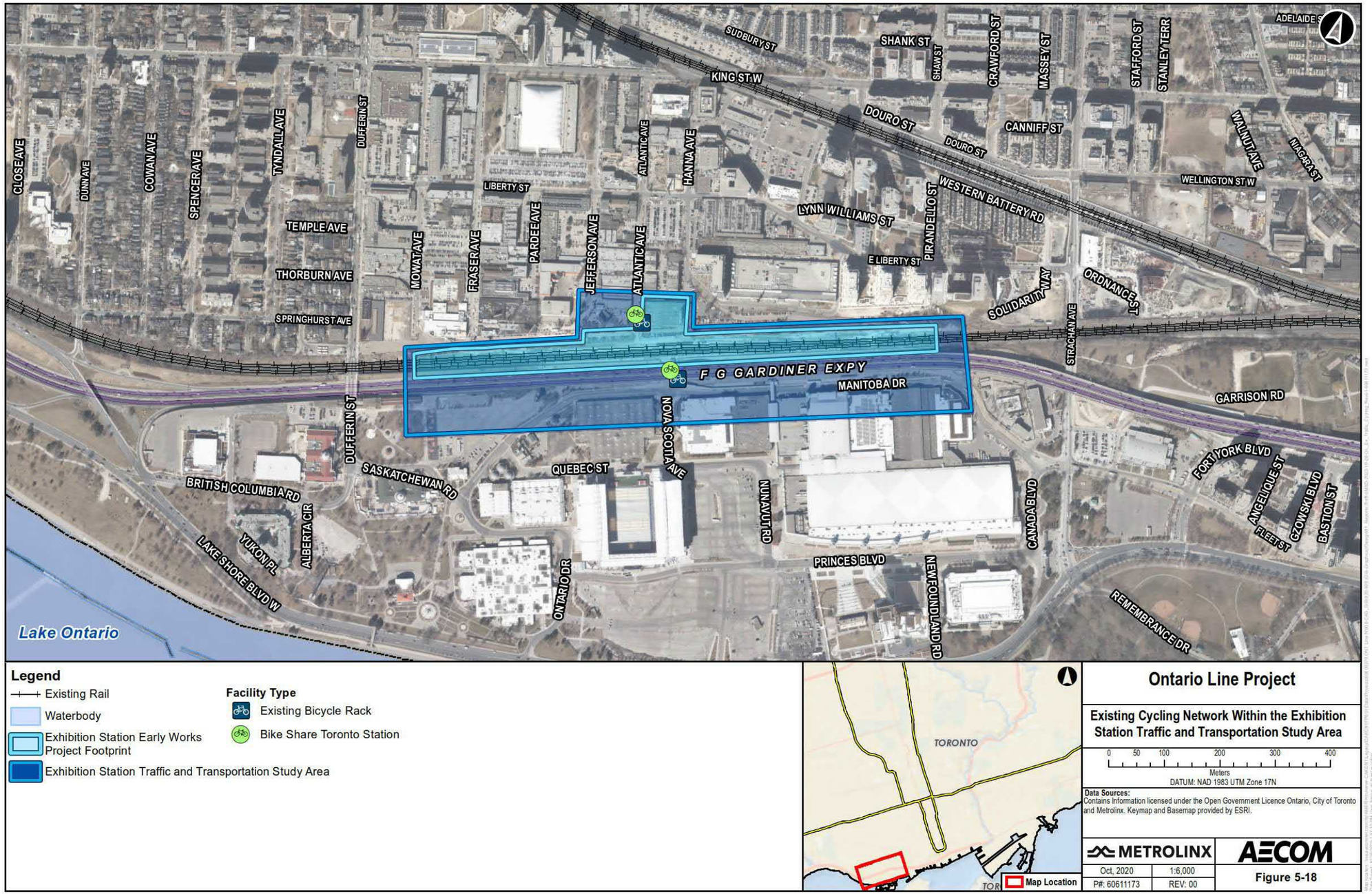


Figure 5-18: Existing Cycling Network Within the Exhibition Station Traffic and Transportation Study Area



5.9.1.3 Rail

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

- Metrolinx Lakeshore West GO line; and
- VIA Rail Toronto-Niagara Falls and Toronto-Windsor 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.

5.9.2 Transit Network

The existing transit routes that operate within the Exhibition Station Traffic and Transportation Study Area are summarized in **Table 5-14** and illustrated in **Figure 5-19**. All transit routes described in **Table 5-14** are operated by the Toronto Transit Commission, with the exception of the Lakeshore West GO line operated by Metrolinx and the Toronto-Niagara Falls and Toronto-Ottawa lines operated by VIA Rail.

The service headways provided in **Table 3-1** 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 3-1** to represent the maximum transit service that could be impacted by construction to form the transit impact assessment.

Table 5-14: Existing Transit Routes Within the Exhibition Station Traffic and Transportation Study Area

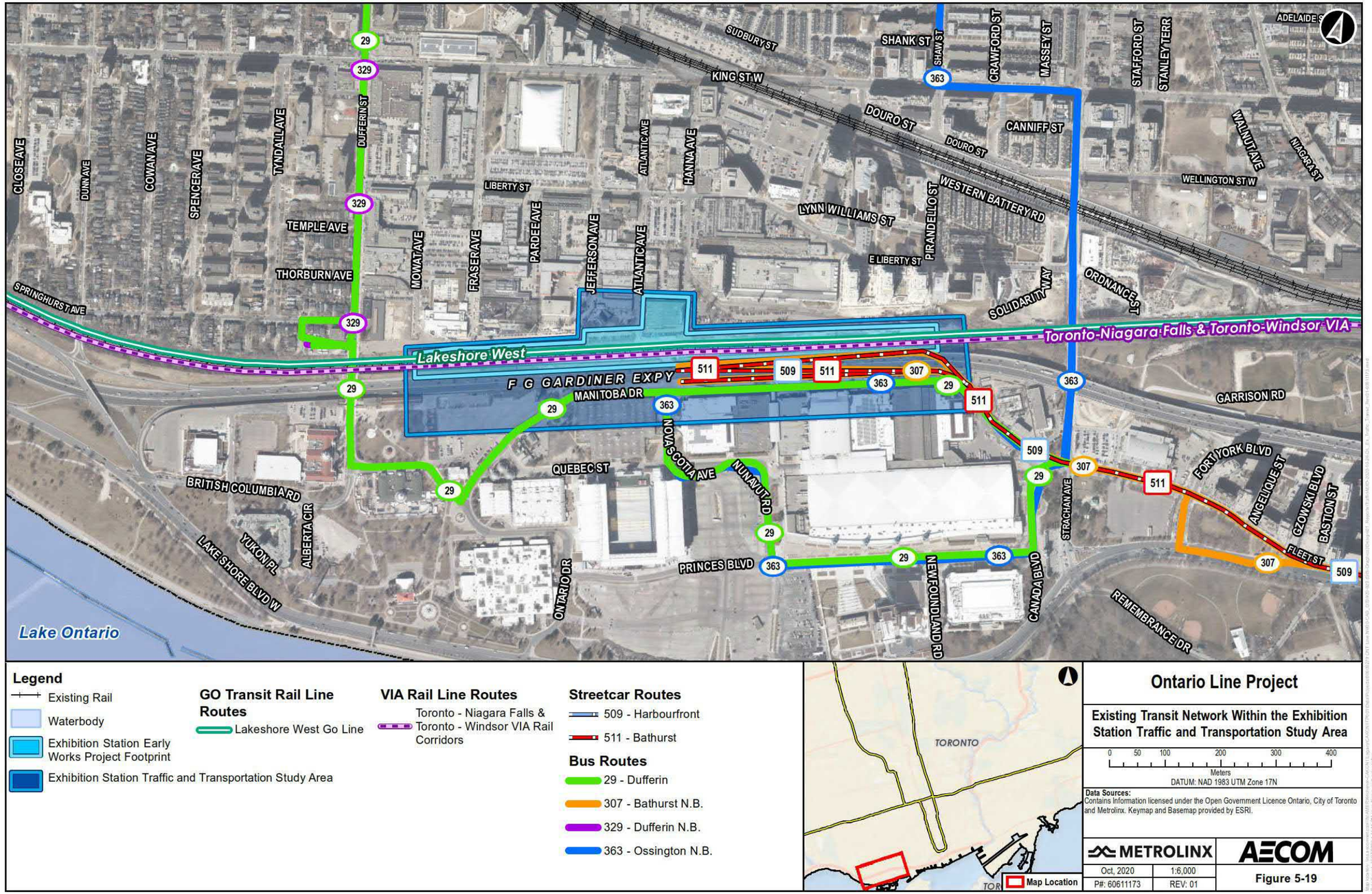
Route Number – Name and Description	Service Headway during Peak Periods
Lakeshore West GO line operates generally in an east-west direction between Union Station in Toronto and Burlington GO Station in Burlington, with some trips extending to Hamilton (Hamilton GO Centre Station and West Harbour GO Station) and Niagara Falls GO (VIA Station). The train service operates seven days a week with eastbound and westbound trains generally operating between 5:00 AM and 1:00 AM. The line has designated eastbound and westbound stops at Exhibition GO Station. GO service along Lakeshore West has recently increased its service to daily trips to Hamilton during morning and afternoon peak times. Weekend train service and daily bus connections are available to Niagara Falls. Lakeshore West GO Expansion is underway with new stations being constructed between Hamilton and Niagara Falls to eventually provide daily train service to Niagara Falls.	15-minute for the peak direction (i.e., eastbound in the AM peak hour and westbound in the PM peak hour) 30-minute for the non-peak direction
Toronto-Niagara Falls VIA Rail line operates between Union Station in Toronto and Niagara Falls Station in Niagara Falls, generally in a north-south direction. The train service operates seven days a week with a single scheduled trip in each direction. The line does not have any designated stops at Exhibition GO Station, but the southbound and northbound trains pass through Exhibition GO Station shortly after the morning departure (scheduled at 8:20 AM) from Union Station and shortly before the evening arrival (scheduled at 7:40 PM) at Union Station.	Single southbound trip each day with a scheduled departure at 8:20 AM Single northbound trip each day with a scheduled arrival at 7:40 PM
Toronto-Windsor VIA Rail line operates between Union Station in Toronto and Windsor Station in Windsor, generally in an east-west direction. The train service operates seven days a week with a single scheduled departure and arrival in each peak period. The line does not have any designated stops at Exhibition GO Station, but the eastbound and westbound trains pass through Exhibition GO Station shortly after each scheduled departure from Union Station and shortly before each scheduled arrival at Union Station.	Single departure from and arrival to Union Station during each peak period
#29C – Wilson Station-Exhibition/Princes' Gate bus route operates between Wilson Station on Line 1 Yonge-University and Exhibition Place, generally in a north-south direction. It also serves Dufferin Station on Line 2 Bloor-Danforth. The branch operates during the peak periods from Monday to Friday, and during the daytime on Saturdays, Sundays, and holidays during the Fall and Winter. The bus service operates mainly along Manitoba Drive, Saskatchewan Road, and Dufferin Street. The closest northbound and southbound stops to Exhibition Station are located far side and nearside at the intersection of Manitoba Drive and Nova Scotia Avenue, respectively.	8-minute

Route Number – Name and Description	Service Headway during Peak Periods
#63 – Ossington bus route operates between Eglinton Station on Line 1 (Yonge-University) and King Street West and the Liberty Village, generally in a north-south direction. It also serves Ossington Station on Line 2 (Bloor-Danforth). Two services are operated: the 63A (Eglinton West-Liberty Village) branch which operates at all times, seven days a week, and the 63B (St Clair-Liberty Village) short-turn branch which operates during the peak periods, from Monday to Friday only. Service between Liberty Village and St. Clair Avenue is part of the 10-minute network, and operates 10 minutes or better, all day, every day. The two services operate mainly along Liberty Street, Shaw Street, and Ossington Avenue. The closest northbound stop to Exhibition Station is located nearside at the intersection of Atlantic Avenue and King Street. The closest southbound stop is located nearside at the intersection of Atlantic Avenue and Liberty Street.	4-minute in the AM peak hour 5-minute in the PM peak hour
#307 – Bathurst Blue Night bus route operates between Exhibition Loop and the area of Bathurst Street and Steeles Avenue West, generally in a north-south direction. One single service is operated: the 307 (Exhibition-Steeles) branch which operates during the overnight period, seven days a week. The bus route operates mainly along Bathurst Street, Fleet Street, and Manitoba Drive where the Exhibition Loop is the terminal and the closest stop to Exhibition Station. Bathurst Street will be closed to vehicular traffic between Front Street West and Fort York Boulevard to the end of 2020 for bridge rehabilitation. This will result in route diversion for the Route 307 buses where they would get on Front Street, Spadina Avenue, and Fort York Boulevard before getting back to Fleet Street.	30-minute
#329 – Dufferin Blue Night bus route operates between Steeles Avenue and Exhibition Loop, generally in a north-south direction. The route serves Downsview Station on Line 1 Yonge-University. One single service is operated: the 329 (Steeles-Exhibition) branch which operates during the overnight period, seven days a week. The bus route operates mainly along Dufferin Street and Manitoba Drive where the Exhibition Loop is the terminal and the closest stop to Exhibition Station.	30-minute
#363 – Ossington Blue Night bus route operates between Eglinton West Station on Line 1 Yonge-University and Exhibition Loop, generally in a north-south direction. One single service is operated: the 363 (Eglinton West Station-Exhibition) branch which operates during the overnight period, seven days a week. The bus route operates mainly along Ossington Avenue, Strachan Avenue, and Manitoba Drive where the Exhibition Loop is the terminal and the closest stop to Exhibition Station.	30-minute

Route Number – Name and Description	Service Headway during Peak Periods
#509 – Harbourfront streetcar route operates between Union Station on Line 1 (Yonge-University) and Exhibition Loop, generally in an east-west direction. One single service is operated: the 509 (Union Station-Exhibition) which operates at all times, seven days a week. The route is part of the 10-minute network, providing 10 minutes or better service, all day, every day. The streetcar route operates mainly along Queens Quay West, Fleet Street, and Manitoba Drive. The Exhibition Loop is the terminal and the closest stop to Exhibition Station.	6-minute in the AM peak hour 8-minute in the PM peak hour
#511 – Bathurst streetcar operates between Bathurst Station on Line 2 (Bloor-Danforth) and Exhibition Loop, generally in a north-south direction. One single service is operated: the 511 (Bathurst Station-Exhibition) branch which operates at all times, seven days a week. The route is part of the 10-minute network, providing 10 minutes or better service all day, every day. The streetcar route operates along Bathurst Street, Fleet Street, and Manitoba Drive where the Exhibition Loop is the terminal and the closest stop to Exhibition Station. Streetcars have been replaced by buses between Bathurst Station and Exhibition Loop until the end of 2020 to accommodate several TTC and City of Toronto construction projects. This will also result in route diversions for the Route 511 buses where they would get on Front Street, Spadina Avenue, and Fort York Boulevard before getting back to Fleet Street.	3-minute

Sources: GO Transit, 2020; VIA Rail, 2020; and Toronto Transit Commission, 2020. Accessed September 2020.

Figure 5-19: Existing Transit Network Within the Exhibition Station Traffic and Transportation Study Area



Legend

- Existing Rail
- Waterbody
- Exhibition Station Early Works Project Footprint
- Exhibition Station Traffic and Transportation Study Area

GO Transit Rail Line Routes

- Lakeshore West Go Line

VIA Rail Line Routes

- Toronto - Niagara Falls & Toronto - Windsor VIA Rail Corridors

Streetcar Routes

- 509 - Harbourfront
- 511 - Bathurst

Bus Routes

- 29 - Dufferin
- 307 - Bathurst N.B.
- 329 - Dufferin N.B.
- 363 - Ossington N.B.

Ontario Line Project

Existing Transit Network Within the Exhibition Station Traffic and Transportation Study Area

0 50 100 200 300 400
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
Oct, 2020	1:6,000
P#: 60611173	REV: 01

Figure 5-19

5.10 Utilities

5.10.1 Private Utilities

Table 5-15 lists the privately-owned utility providers with infrastructure within the Exhibition Station Early Works Project Footprint. A refined list will be confirmed as design progresses.

Table 5-15: Private Utilities Within the Exhibition Station Early Works Project Footprint

Utility Provider	Utility Category
Aptum	Telecommunications
Bell Canada	Telecommunications
Bell 360	Telecommunications
Rogers Communications Partnership	Telecommunications
Cogeco Data Services	Telecommunications
Zayo Group	Telecommunications
Telus Communications Company	Telecommunications
Enbridge	Energy transportation/pipeline
EnWave	Energy services provider
CN Fibre	Fibre Optics

5.10.2 Public Utilities and Municipal Servicing

Table 5-16 lists the public utility providers with infrastructure within the Exhibition Station Early Works Project Footprint.

Table 5-16: Public Utilities Within the Exhibition 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 Exhibition 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 Exhibition 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 Exhibition Station Early Works Project Footprint	▪ None required.	▪ None required.
Policy Areas – City of Toronto Natural Heritage System and Ravine and Natural Feature Protection By-law Area	▪ No potential impacts as there are no City of Toronto policy areas within the Exhibition Station Early Works Project Footprint	▪ None required.	▪ None required.
Policy Areas – Toronto and Region Conservation Authority Regulated Areas	▪ No potential impacts as there are no Toronto and Region Conservation Authority regulated areas within the Exhibition Station Early Works Project Footprint	▪ None required.	▪ None required.
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 kept to a minimum and limited to within the construction areas. ▪ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the construction areas and prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ▪ Provide compensation for the removal of vegetation 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. Corrective actions may include additional site maintenance and alteration of activities to minimize 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 prepared 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 Exhibition 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. ▪ 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 minimize impacts. ▪ If required, the approach to compensation monitoring will be developed in accordance with Metrolinx's Vegetation Guideline (2020).
Vegetation Communities	▪ Soil 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 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) prior to arriving and leaving the construction site in order to prevent the spread of invasive species to other locations.	▪ 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 minimize impacts. ▪ Ensure precautions are being taken to minimize the spread of invasive species by implementing the Clean Equipment Protocol for Industry (Halloran et al., 2013) on equipment and machinery prior to moving sites.
Wildlife and Wildlife Habitat – General	▪ Disturbance, displacement or mortality of wildlife	▪ Prior to construction, investigation of the Exhibition 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. A qualified Biologist will be contacted to define the appropriate buffer required from wildlife.	▪ On-site inspection by on-site environmental workers or construction staff should occur daily 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 minimize impacts.

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
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 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 (field observations, on-site inspections) will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
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 developed in accordance with any registration and/or permitting requirements under the Endangered Species Act, recommended surveys undertaken prior to construction, and 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 minimize impacts. ▪ Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the Endangered Species Act.
Aquatic Environment – Wetlands and Waterbodies	▪ No potential impacts as there are no wetlands or waterbodies present	▪ None required.	▪ None required.
Aquatic Environment – Fish and Fish Habitat	▪ No potential impacts as there is no fish or fish habitat present	▪ None required.	▪ None required.

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 Exhibition Station early works.

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

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Soil Stability and Quality	▪ Construction activities will cause displacement of the soils and bedrock. Without mitigation, this may result in ground movement and settlement (e.g., during excavation/grading and/or dewatering activities). ▪ Dewatering activities can cause soil subsidence/settlement and impacts on surface/subsurface structures within the zone of influence. ▪ Construction activities (e.g., excavation) could expose contaminated materials and/or result in the spreading of contaminated materials.	▪ Complete detailed soil investigations, including settlement analysis, during the detailed design phase. ▪ Excavation support systems will be employed, as required. ▪ Use excavation/grading equipment designed to reduce the potential for ground loss and the associated potential for settlements at the ground surface. ▪ Conduct ground treatment such as jet grouting to reduce the risk of ground loss. ▪ Potential subsidence/settlement impacts to existing structures can be mitigated with measures such as completion of pre-construction inspections of structures within the dewatering Zone of Influence and implementation of a detailed settlement monitoring program complete with settlement triggers that result in changes to the dewatering program if surpassed. ▪ Remedial action plans, risk assessment and risk mitigation plans for encountering contamination, as necessary. ▪ Develop a Soil and Excavated Materials Management Plan for the handling, management and disposal of all excavated material (i.e., soil, rock and waste) that is generated or encountered during the work.	▪ Develop and conduct a settlement monitoring program to document construction effects, identify adverse trends and identify additional mitigation measures. ▪ Soil and groundwater sampling and monitoring plans shall be implemented as required prior to, during, and post construction. Track soil in registry as required by Ontario Regulation 406/19.
Groundwater Quantity	▪ Construction dewatering may include impacts to private groundwater supply wells caused by a reduction in local groundwater levels. ▪ Heaving of the excavation base caused by groundwater pressures below the depth of excavation.	▪ Potential impacts to private groundwater supply well(s) 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. ▪ The 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. ▪ Determination of water taking quantities, quality, and resultant dewatering Zone of Influence will be completed as part of detailed design, for example through completion of a site-specific Hydrogeological Investigation, Construction Dewatering Assessment and Groundwater Management Plan. ▪ Prior to the outset of construction, the preparation of a Construction Dewatering Assessment and Groundwater Management Plan should be completed as required. ▪ 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. ▪ The Groundwater Management Plan 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.	▪ Regular site inspections and monitoring activities such as monitoring of water level in private groundwater supply wells, if required, will be completed by qualified members of the construction team to ensure that the mitigation measures are fulfilled and that all regulatory requirements are met.

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
		▪ Approvals for the discharge of dewatering effluent, such as Municipal Discharge Permits and/or Ministry of the Environment, Conservation and Parks Environmental Compliance Approval, may be required based on the anticipated dewatering volumes, groundwater quality, and relative location of dewatering activities with respect to potential receiving infrastructure (i.e., sanitary and/or storm sewer). ▪ Identification of site-specific mitigation measures inclusive of monitoring programs relating to private supply wells, and geotechnical heave/settlement within the anticipated dewatering Zone of Influence will be determined during the detailed design phase.	
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 quality through minor contaminant releases. ▪ Spills consisting of materials that constitute a contaminant may affect the surrounding groundwater quality and potential water quality in 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: - Application of road salt; and - Storage/use of organic solvents and/or dense non-aqueous phase liquids.	▪ The existing groundwater conditions within each potential construction dewatering area will be characterized prior to construction activities, during the development of the Groundwater Management Plan 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. ▪ 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 a spill kit 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., 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, 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 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; and - Best management practices if the storage of organic solvent is required.	▪ 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 team. ▪ 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 Exhibition Station early works.

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

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring 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. Stormwater management design will consider guidance provided by the MOECC Stormwater Management Planning and Design Manual (2003) and 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. ▪ 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 ESC measures, best management practices, and other monitoring activities, as required. ▪ All monitoring procedures should stay in place throughout Exhibition 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 Exhibition 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 Impacts	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 harmful and/or volatile.	▪ 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. It is recommended that an Air Quality Management Plan 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 Air Quality Management Plan: – 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. – 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). ▪ Mitigation measures from Environment Canada's Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities (Cheminfo Services Inc., 2005) and 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 Air Quality Management Plan: - 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 emissions 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 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 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 16-24 kilometres per hour. ▪ If disruption of contaminated soils is anticipated at any time, consult with the construction manager to ensure that harmful and/or volatile contaminants are not released. ▪ Develop a communications protocol which includes timely resolution of complaints.	▪ On-site meteorological monitoring in conjunction with real-time particulate monitoring representative of receptor impacts. ▪ Place monitoring both upwind and downward 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. ▪ 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). ▪ Monitoring at locations where there are persistent complaints, as required.

6.5 Noise and Vibration

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

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

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Construction Noise	▪ 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)	Construction noise impact mitigation measures to be considered include but are not limited to the following to meet applicable noise criteria: ▪ Siting construction staging and laydown areas to avoid/reduce adverse impacts to sensitive receptors where possible. ▪ Use construction equipment compliant with noise level specifications in MECP 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 CSA Z107.9 for noise barriers) between construction equipment and noise sensitive receivers. ▪ Use of localized movable noise barriers/screens for specific equipment and operations; including on corridor construction works. ▪ Minimize simultaneous operation of equipment where possible. ▪ Implement a no idling policy on site (unless necessary for equipment operation). ▪ Restrict construction hours where possible: - Perform construction during daytime hours where possible. If night time construction is necessary, the activities with the highest noise levels should be conducted during day time periods where possible. - 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 operational duration limits for construction on the portion of the Exhibition Station Early Works Project Footprint near 5 Hanna Avenue and 6 Pirandello Street (and the attached 65, 75 and 85 East Liberty Street). ▪ Establish and apply project-specific construction noise criteria/exposure limits. ▪ 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. ▪ Noise levels will be monitored to verify mitigation measure(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 receptor locations based on planned construction activities, their locations, and the number, geographic distribution and proximity of noise sensitive receptors. ▪ Monitoring at locations where there are persistent complaints, as required.
Construction Vibration	▪ 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 receptors where possible. ▪ Utilize equipment with low vibration emissions where possible. ▪ Off-site construction of components away from sensitive areas. ▪ Restrict construction hours: - Perform construction during daytime hours where possible. If night time construction is necessary, the activities with the highest vibration levels should be conducted during the daytime periods where possible. ▪ Update ZOI mapping and predictions based upon refined site staging, equipment, construction areas, and building locations prior to the commencement of construction. ▪ Specific to the commercial complex at 15 Atlantic Avenue: Use alternative means of construction within 5.8 metres of structures so that the City of Toronto's prohibited vibration level limits are not exceeded.	▪ Monitoring will be undertaken at locations within the ZOI 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 site are to be undertaken in accordance with City of Toronto

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
		▪ Specific to the chimney and accessory building at 1 Atlantic Avenue, use alternatives means of construction within 11.1 metres of structures so that the vibration level limits for susceptible buildings are not exceeded. ▪ Review and refine construction activities in proximity to the Gardiner Expressway and, if required, conduct a more detailed construction vibration analysis with respect to the Gardiner Expressway footings and 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 ZOI of construction equipment. ▪ Provide smooth surfaces for trucks to travel and route heavily loaded trucks away from vibration sensitive sites where possible. ▪ Operate construction equipment on lower vibration settings where available. ▪ Maximize distance between equipment and sensitive receivers where possible. ▪ Establish and apply project-specific construction vibration criteria. ▪ 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 additional mitigation measures. US FTA Report #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.	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, as 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 Exhibition Station early works.

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

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Property	▪ Property acquisition – permanent and temporary	▪ Specific permanent property requirements associated with the early works infrastructure components will be minimized to the extent possible during detailed design. Likewise, temporary property requirements associated with construction laydown and access will be minimized as detailed design progresses.	▪ 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 Greater Golden Horseshoe Area Conservation Authorities' Erosion and Sediment Control Guideline for Urban Construction (December 2006), as amended from time to time, that addresses sediment release to adjacent properties and roadways.	▪ When applicable, monitoring 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 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 AODA 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. ▪ Continue to engage with the City of Toronto and local school board(s) to confirm mitigation measures.	▪ Regular monitoring (e.g., on-site inspection) of temporary access paths, walkways, cycling routes and fencing to ensure effectiveness.
Visual Characteristics	▪ Visual effects from public-facing structures and construction activities/areas from construction areas/activities	▪ Consult with the City of Toronto throughout detailed design. ▪ Minimize the visual effects of structures by selecting appropriate building materials and architectural design. ▪ A screened enclosure for the development site will be provided, as required, with particular attention to material storage areas. ▪ Consideration will be given to providing temporary landscaping along the borders of the construction site between site fencing/enclosure and walkways, where space allows, and where necessary.	▪ 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 temporary relocation or removal of streetscaping materials, furniture, and landscaping in the public realm	▪ During detailed design, impacts which may result in the temporary relocation or removal of streetscaping materials, furniture, and landscaping in the public realm will be minimized, to the extent possible. Wherever possible, lands impacted by construction will be restored to the current City of Toronto standard following construction completion.	▪ There are no monitoring activities associated with the public realm.

6.7 Built Heritage Resources and Cultural Heritage Landscapes

Table 6-7 outlines mitigation measures and monitoring activities to address the potential impacts to built heritage resources and cultural heritage landscapes that may result from the Exhibition Station early works.

Table 6-7: Potential Impacts, Mitigation Measures and Monitoring Activities – Built Heritage Resources and Cultural Heritage Landscapes

Ontario Line Cultural Heritage Report Reference #	Location / Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLW-007	153 Dufferin Street	Previously Identified built heritage resource/cultural heritage landscape – Ontario Line Cultural Heritage Report (AECOM, 2020a)	**No**	1. **No direct or indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No direct physical impacts are anticipated. OLW-007, the property, is adjacent to the Exhibition Station Early Works Project Footprint and north of the shifted GO Track 1 and 2 shown in **Figure 3-1**.	No mitigation measures required. Continue to avoid the property (OLW-007).	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLW-007	153 Dufferin Street	Previously Identified built heritage resource/cultural heritage landscape – Ontario Line Cultural Heritage Report (AECOM, 2020a)	**No**	2. **No indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No indirect impacts due to vibration are anticipated. The building within OLW-007 is approximately 61.3 metres northwest of the Exhibition Station Early Works Project Footprint, beyond the 11.1 metres vibration buffer.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLW-008	7-19 Fraser Avenue Expanded Metal and Fireproofing Company Factory	Listed on Municipal Heritage Register (July 19, 2005)	**No**	1. **No direct adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No direct physical impacts are anticipated. OLW-008, the property, is adjacent to the Exhibition Station Early Works Project Footprint and is north of the shifted GO Track 1 and 2, and west of the new north entrance shown in **Figure 3-1**.	No mitigation measures required. Continue to avoid the property (OLW-008).	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLW-008	7-19 Fraser Avenue Expanded Metal and Fireproofing Company Factory	Listed on Municipal Heritage Register (July 19, 2005)	**No**	2. **No indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No indirect impacts due to vibration are anticipated. The building within OLW-008 is approximately 22.9 metres north the Exhibition Station Early Works Project Footprint, beyond the 11.1 metres vibration buffer.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.

Ontario Line Cultural Heritage Report Reference #	Location / Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLW-011	1 Atlantic Avenue	Previously Identified built heritage resource/cultural heritage landscape – Ontario Line Cultural Heritage Report (AECOM, 2020a)	**No**	**1. Direct adverse impact from Exhibition Station early works** (Impact Type 2F – Demolition of all or part of the building, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) A portion of OLW-011 is within the Exhibition Station Early Works Project Footprint. The two-storey commercial building overlaps with the location of the new north entrance as shown in **Figure 3-1**. 1 Atlantic Avenue, the two-storey commercial building, has been proposed for demolition to accommodate the new north entrance to the station. Prior to reaching Impact Type 2F from the range of potential impacts in Appendix I: Ontario Line Cultural Heritage Report – Demolition of all or part of the building, in consultation with Metrolinx, the mitigation options presented in the Appendix I, Type A-E, of the Ontario Line Cultural Heritage Report were considered and were eliminated. Demolition of the two-storey commercial building for early works is the only viable option.	Mitigation measures documented in Appendix I of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures should be implemented regarding the demolition of the two-storey commercial building on the property: ▪ Consult with City of Toronto's Heritage Preservation Services as part of the detailed design phase, regarding any physical impact to the property in order to determine and obtain any approval or permits that may be required. ▪ Complete detailed documentation of the property prior to construction that includes the identification of salvageable materials and/or heritage attributes, prior to demolition. Documentation should include a photographic record, drawings, floor plans etc. ▪ Complete an Interpretation/Commemoration Strategy Framework in consultation the City of Toronto Heritage Preservation Services. Incorporate commemoration signage to communicate the cultural heritage value of the demolished structure on the property to the public.	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLW-011	1 Atlantic Avenue	Previously Identified built heritage resource/cultural heritage landscape – Ontario Line Cultural Heritage Report (AECOM, 2020a)	**No**	**2. Potential direct adverse impact from Exhibition Station early works** (Impact Type 2D – Introduction of new elements and/or alterations that results in a physical impact to a heritage attribute, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) Heritage attributes of the property, identified in **Table 5-13**, that are within the Exhibition Station Study Area, should be retained/conserved where possible, including the chimney and accessory building which may experience direct impacts from early works since they are directly adjacent to the Exhibition Station Early Works Project Footprint and at the rear of two-storey commercial building which has been proposed for demolition as a result of early works. Therefore, given the proximity of early works construction to the chimney and accessory building they will require protection during construction in order to safeguard against these heritage attributes of the property from direct adverse impacts.	Mitigation measures documented in Appendix I of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures are recommended to ensure the chimney and accessory building are retained and protected during early works: ▪ Consult with City of Toronto's Heritage Preservation Services as part of the detailed design phase, regarding any physical impact to the property in order to determine and obtain any approval or permits that may be required. ▪ Apply the following steps during the early works construction to ensure the protection of the chimney and accessory building during early works construction: – Mark a feature on the Detailed Design as "To be retained: Implement protection measures prior to construction" – Install protection measures, such as box or fence hoarding, prior to construction.	The following monitoring activities are recommended for the retention of the chimney and/or accessory building during construction: ▪ During construction, monitor the protection of the feature(s). ▪ Post-construction, remove hoarding and confirm the condition of the feature(s) meet pre-construction conditions.

Ontario Line Cultural Heritage Report Reference #	Location / Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLW-011	1 Atlantic Avenue	Previously Identified built heritage resource/cultural heritage landscape – Ontario Line Cultural Heritage Report (AECOM, 2020a)	**No**	**3. Potential indirect adverse impact from Exhibition Station early works** (Impact Type 3A – Vibration impacts to the building related to the Project on or adjacent to the property, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) The chimney and accessory building within OLW-011 are adjacent to the Exhibition Station Early Works Project Footprint. Given the proximity of the chimney and accessory building to the proposed new north entrance, the structures may be subject to vibration impacts.	Mitigation measures documented in Appendix I of the Ontario Line Cultural Heritage Report have been refined based on the early works impact assessment. The following mitigation measures for vibration impacts should be implemented, if the chimney and/or accessory building are retained: ▪ Documentation (Review and establish) of the structural condition of the chimney and accessory building to determine if they are vulnerable to vibration impacts from early works ▪ Establish vibration limits based on structural conditions, founding soil conditions and type of construction vibration ▪ Implement vibration mitigating measures on the construction site and/or at the building	Exhibition Station early works is anticipated to directly impact this two-storey commercial building on the property. If the chimney and/or accessory building are retained, construction and post-construction monitoring may be required of those structures. If feasible, the following monitoring activities are recommended for vibration impacts: ▪ Monitor vibration during construction using seismographs, with notification by audible and/or visual alarms when limits are approached or exceeded; and ▪ Conduct regular condition surveys and reviews during construction to evaluate efficacy of protective measures. Implement additional mitigation as required
OLW-012	3 Mowat Avenue/2 Fraser Avenue	Previously Identified built heritage resource/cultural heritage landscape (Ontario Line Cultural Heritage Report)	**No**	**1. No direct adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No direct physical impacts are anticipated. OLW-012, the property, is adjacent to the Exhibition Station Early Works Project Footprint and is north of the shifted GO Track 1 and 2 shown in **Figure 3-1**.	No mitigation measures required. Continue to avoid the property (OLW-012).	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLW-012	3 Mowat Avenue/2 Fraser Avenue	Previously Identified built heritage resource/cultural heritage landscape (Ontario Line Cultural Heritage Report)	**No**	**2. No indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No indirect impacts due to vibration are anticipated. The building within OLW-012 is approximately 17.2 metres north of the Exhibition Station Early Works Project Footprint, beyond the 11.1 metres vibration buffer.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.

Ontario Line Cultural Heritage Report Reference #	Location / Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLW-013A	2 Strachan Avenue - Exhibition Place Cultural Heritage Landscape	Previously Identified built heritage resource/cultural heritage landscape Provincial Heritage Property of Provincial Significance	**Yes (includes OLW-013, OLW-014)** (Met Ontario Regulation 10/06 in Cultural Heritage Landscape Assessment, ASI 2019)	**1. No direct adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No direct physical impacts are anticipated. OLW-013A property is separated from the Exhibition Station Early Works Project Footprint by the Gardiner Expressway.	No mitigation measures required. Continue to avoid the cultural heritage landscape (OLW-013A).	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLW-013A	2 Strachan Avenue - Exhibition Place Cultural Heritage Landscape	Previously Identified built heritage resource/cultural heritage landscape Provincial Heritage Property of Provincial Significance	**Yes (includes OLW-013, OLW-014)** (Met Ontario Regulation 10/06 in Cultural Heritage Landscape Assessment, ASI 2019)	**2. No indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No indirect impacts due to vibration are anticipated. The property is 27.1 metres south of the Exhibition Station Early Works Project Footprint, with the building on the property being 180.79 metres south of the Exhibition Station Early Works Project Footprint, and thus beyond the 11.1 metres vibration buffer and separated by the Gardiner Expressway. In addition, there will be no impact to significant viewsheds associated with the Exhibition Place Cultural Heritage Landscape.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building. Continue to conserve significant viewsheds.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLW-013	45 Manitoba Drive Coliseum Complex- Exhibition Place	Designated Part IV of the Ontario Heritage Act (By-law 254-96 and By-law 821-88) Coliseum Complex- Exhibition Place	**Yes (within OLW-013A)**	**1. No direct adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No direct physical impacts are anticipated. OLW-013 is within OLW-013A property which is separated from the Exhibition Station Early Works Project Footprint by the Gardiner Expressway.	No mitigation measures required. Continue to avoid OLW-013 and the cultural heritage landscape (OLW-013A).	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLW-013	45 Manitoba Drive Coliseum Complex- Exhibition Place	Designated Part IV of the Ontario Heritage Act (By-law 254-96 and By-law 821-88) Coliseum Complex- Exhibition Place	**Yes (within OLW-013A)**	**2. No indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No indirect impacts due to vibration are anticipated. OLW-013 is within OLW-013A and is 59.95 metres south of the Exhibition Station Early Works Project Footprint, beyond the 11.1 metres vibration buffer, and separated by the Gardiner Expressway.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.

Ontario Line Cultural Heritage Report Reference #	Location / Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLW-014	10 Nova Scotia Avenue Food Products Building-Exhibition Place	Listed on Municipal Heritage Register (May 3, 4, 1993)	**Yes (within OLW-013A)**	**1. No direct adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No direct physical impacts are anticipated. OLW-014 is within OLW-013A property which is separated from the Exhibition Station Early Works Project Footprint by the Gardiner Expressway.	No mitigation measures required. Continue to avoid OLW-014 and the cultural heritage landscape (OLW-013A).	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLW-014	10 Nova Scotia Avenue Food Products Building-Exhibition Place	Listed on Municipal Heritage Register (May 3, 4, 1993)	**Yes (within OLW-013A)**	**2. No indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No indirect impacts due to vibration are anticipated. OLW-014 is within OLW-013A and is 56.42 metres south of the Exhibition Station Early Works Project Footprint, beyond the 11.1 metres vibration buffer, and separated by the Gardiner Expressway.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLW-017	75 East Liberty Street (formerly 20 Strachan Avenue)	Designated Part IV of the Ontario Heritage Act (By-Law #378-96) City of Toronto Heritage Easement Agreement: CCA681470	**No**	**1. No direct adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No direct physical impacts are anticipated based on the location of early works components in **Figure 3-1**. OLW-017, the property, is adjacent to the Exhibition Station Early Works Project Footprint. The property is separated from the Exhibition Station Early Works Project Footprint by a private laneway and is north of the shifted GO Track 1 and 2 shown in **Figure 3-1**.	No mitigation measures required. Continue to avoid OLW-017 and the cultural heritage landscape (OLW-013A).	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
OLW-017	75 East Liberty Street (formerly 20 Strachan Avenue)	Designated Part IV of the Ontario Heritage Act (By-Law #378-96) City of Toronto Heritage Easement Agreement: CCA681470	**No**	**2. No indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, from Appendix I: Preliminary Potential Project-Specific Impacts and Proposed Mitigation Measures – Ontario Line West Study Area, in the Ontario Line Cultural Heritage Report) No indirect impacts due to vibration are anticipated. OLW-017 is 37.34 metres north of the Exhibition Station Early Works Project Footprint, beyond the 11.1 metres vibration buffer and separated from the footprint by a private laneway.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
OLW-018	250 Fort York Boulevard – Fort York HCD and National Historic Site	National Historic Site, Designated Part V, Heritage Conservation District (By-Laws #420-85 and 541-2004) Listed on the Canadian Register	**Yes**	**1. No direct adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, Appendix I: Ontario Line Cultural Heritage Report) No direct physical impacts are anticipated based on the location of early works components in **Figure 3-1**. OLW-018, the property, is adjacent to the Exhibition Station Early Works Project Footprint, and is east of the shifted GO Track 1 and 2 shown in **Figure 3-1**.	No mitigation measures required. Continue to avoid OLW-018.	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.

Ontario Line Cultural Heritage Report Reference #	Location / Address and Property Name	Heritage Recognition	Known or Potential Provincial Heritage Property of Provincial Significance	Type and Description of Potential Impact	Mitigation Measures	Monitoring Activities
OLW-018	250 Fort York Boulevard – Fort York HCD and National Historic Site	National Historic Site, Designated Part V, Heritage Conservation District (By-Laws #420-85 and 541-2004) Listed on the Canadian Register	**Yes**	**2. No indirect adverse impacts from Exhibition Station early works** (Impact Type 1 – no anticipated impact, Appendix I: Ontario Line Cultural Heritage Report) No indirect impacts due to vibration are anticipated. The property boundary of OLW-018 is 107.35 metres from the Exhibition Station Early Works Project Footprint and a building within OLW-018 is 374.72 metres southeast of the Exhibition Station Early Works Project Footprint, beyond the 11.1 metres vibration buffer.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
ES-001	Cultural Interpretative Signs and Silos/ Hoppers along the South Liberty Trail	Potential built heritage resources/cultural heritage landscape	**No**	**1. No direct adverse impact from Exhibition Station early works** No direct physical impacts are anticipated. The South Liberty Trail and its heritage attributes listed in **Table 5-13** are located north of Exhibition Station Early Works Project Footprint shown in **Figure 3-1**.	No mitigation measures required. Continue to avoid ES-001.	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
ES-001	Cultural Interpretative Signs and Silos/Hoppers along the South Liberty Trail	Potential built heritage resources/cultural heritage landscape	**No**	**2. No indirect adverse impact from Exhibition Station early works** Impacts due to vibration on LDB-001 are not applicable. This resource is a group of commemorative features on the surface along a public trail, but does not contain buildings or structures that would be subject to vibration impacts. Therefore, impacts due to vibration on LDB-001 are not applicable.	No mitigation measures required. Continue to avoid ES-001.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of early works.
ES-002	2-20 Atlantic Avenue	Potential built heritage resource/cultural heritage landscape	**No**	**1. No direct adverse impact from Exhibition Station early works** No direct physical impacts are anticipated. ES-002, the property, is adjacent to the Exhibition Station Early Works Project Footprint and north of the shifted GO Track 1 and 2 as shown in **Figure 3-1**.	No mitigation measures required. Continue to avoid the property (ES-002).	Exhibition Station early works will have no direct impacts that require monitoring prior, during or post-construction of early works.
ES-002	2-20 Atlantic Avenue	Potential built heritage resource/cultural heritage landscape	**No**	**2. No indirect adverse impacts from Exhibition Station early works** No indirect impacts due to vibration are anticipated. The building within ES-002 is approximately 33.5 metres northwest of the Exhibition Station Early Works Project Footprint, beyond the 11.1 metres vibration buffer.	No mitigation measures required. Continue to maintain a sufficient buffer distance of 11.1 metres between the early works and the building.	Exhibition Station early works will have no indirect impacts that require monitoring prior, during or post-construction of 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 Stage 2 archaeological assessment will dictate the type of Stage 2 archaeological assessment strategy that should be employed. The types of Stage 2 archaeological assessment that could be required for Exhibition Station early works include a combination of mechanical and hand excavation for deeply buried contexts, and/or a requirement for archaeological monitoring during construction. The type of impact could also remove the requirement for certain types of Stage 2 archaeological assessment.

Table 6-8 outlines mitigation measures and monitoring activities to address potential impacts to archaeological resources that may result from the Exhibition Station early works.

It should be noted that the Exhibition Station Early Works Project Footprint may include lands that will not require ground disturbing activities during early works construction. As detailed design progresses and specific areas of ground disturbing activities are confirmed, only those areas with anticipated ground disturbing activities will require further Stage 2 archaeological assessment.

Table 6-8: 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 undocumented archaeological resources not previously identified.	▪ Areas identified as retaining archaeological potential in the Exhibition Station Early Works Project Footprint, as per the Ontario Line West Stage 1 Archaeological Assessment Report (AECOM, 2020d), are shown in **Figure 5-16**, and include the following. Should ground disturbing activities be planned within these areas, a Stage 2 archaeological assessment must be completed prior to any ground disturbing activities. – A portion of the Exhibition Station Early Works Project Footprint between the rail corridor and Gardiner Expressway retains moderate to high archaeological potential where deeply buried archaeological potential remains, such as for discovering pre-contact Indigenous materials and/or materials related to the early development and expansion of the City of Toronto. ▪ 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 any 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. ▪ The goal is to endeavour to conserve significant archaeological resources in their original location through documentation, protection, and avoidance of impacts. However, where activities could disturb significant archaeological resources or areas of archaeological potential, Metrolinx will take appropriate measures to mitigate impacts where further archaeological work is required within the Exhibition Station Early Works Project Footprint. ▪ An invitation for Indigenous communities to participate in monitoring requirements for any subsequent archaeological work is recommended. All future Stage 2 archaeological assessment findings will be shared with the Indigenous communities that were engaged during the Stage 1 archaeological assessment.	▪ None identified.
Archaeological Resources	▪ Potential recovery of unexpected 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 communities will be initiated in the event that archaeological resources or human remains are discovered.	▪ None identified.

6.9 Traffic and Transportation

Table 6-9 outlines mitigation measures and monitoring activities to address potential traffic and transportation impacts that may result from the Exhibition Station early works.

Table 6-9: Potential Impacts, Mitigation Measures and Monitoring Activities – Traffic and Transportation

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Transportation Network – Roads	▪ Impeding traffic flow and increased average delay of vehicles, including emergency vehicles due to temporary lane restrictions of nearby roads (e.g., Manitoba Drive, Atlantic Avenue, and Jefferson Avenue). ▪ Heavy 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., local development) nearby may result in impacts to the transportation network and its road users. ▪ Potential impacts to on- and/or off-street parking along Atlantic Avenue.	▪ A quantitative traffic impact assessment will be completed, as required, as detailed design progresses to consider vehicular traffic impacts as a result of the Exhibition Station early works, and develop and implement a Transit and Traffic Management Plan(s), which could include temporary changes to intersection lane configurations, traffic signal timing optimizations, 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 signal timings. ▪ Develop communication plans, including media and online notifications and advisory signage through portable variable message signs, to alert local traffic of any upcoming closures. ▪ 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 appropriate proponent (i.e., City of Toronto, public agency, and/or private developer) regarding other ongoing construction projects when scheduling the early works activities to maintain the mobility of all road users (i.e., avoid closure of parallel corridors). ▪ Consult with the City of Toronto, local school board(s), and Exhibition Place during construction planning including consideration of route detours. ▪ Minimize the duration and extent of disruptions to roads, property accesses and on-/off-street parking to the extent possible. ▪ Consult with the City of Toronto and the Toronto Parking Authority/private parking lot owner(s) should on-/off-street, public and/or private parking be affected.	▪ 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 increased walking distances may result in compromising pedestrians' convenience. ▪ Traffic congestion along Atlantic Avenue and other adjacent roads, as a result of the potential lane closures, could increase pedestrians' exposure to traffic. ▪ Potential removal/relocation of the existing bicycle parking racks along Atlantic Avenue may impact the convenience of cyclists in accessing the station. ▪ Disruptions to access through the existing pedestrian tunnel are not anticipated.	▪ Co-ordinate with the City of Toronto to minimize the interference with pedestrians and cyclists. This may include fencing, hoarding, shared-lane markings, signals, wayfinding signs, and lighting as required to provide pedestrians and cyclists with safe, accessible, and continuous routes. ▪ Include safety precautions for nearby schools (e.g., having school crossing guards at nearby intersections) in the Transit and Traffic Management Plan(s) in consultation with the City of Toronto, local school board(s), and Exhibition Place. ▪ If required, 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. ▪ If required, existing bicycle parking racks along Atlantic Avenue will be relocated to the nearest feasible location to the northern entrance of Exhibition Station. ▪ Minimize the duration and extent of disruptions to roads and property accesses to the extent possible. ▪ Consult the National Association of City Transportation Officials' Bike Share Toronto Siting Guide (National Association of City Transportation Officials, 2016) for location and design considerations if relocation of any Bike Share Toronto stations is required as part of the Exhibition Station early works. Where possible, Bike Share Toronto stations will remain at their current location.	▪ 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.

Environmental Component	Potential Impacts	Mitigation Measure(s)	Monitoring Activities
Transportation Network – Rail	▪ Short-term track closures, if implemented, may disrupt existing commuter and freight rail operations. ▪ No interruptions to GO Transit service are anticipated.	▪ Consult with rail operators with current service along the rail corridor (e.g., 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 and adjustments to the construction staging plans and traffic management plan will be made based on actual field observations, as needed.
Transit Network	▪ Impacts to surface transit routes (i.e., bus and streetcar) within the Exhibition Station Traffic and Transportation Study Area are not anticipated.	▪ No mitigation measures are recommended.	▪ Transit services will be monitored through actual field observations throughout the construction period and mitigation measures will be considered, as needed.

6.10 Utilities

Table 6-10 outlines mitigation measures and monitoring activities to address potential utilities impacts that may result from the Exhibition Station early works.

Table 6-10: Potential Impacts, Mitigation Measures and Monitoring Activities – Utilities

Environmental Component	Potential Impacts	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. Temporary traffic detours are also anticipated during utility relocations. ▪ Potential impacts to utilities are under review and will be confirmed during detailed design.	▪ 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. ▪ Utilities such as sewers, water, electrical, communications and gas located within the rail corridor as well as other parts of Exhibition Station will be relocated to facilitate the completion of the early works. ▪ 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.	▪ 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. Temporary traffic detours are also anticipated during utility relocations. ▪ Potential impacts to utilities are under review and will be confirmed during detailed design.	▪ In-depth utility-related investigations such as subsurface utility engineering investigation, master servicing, Stormwater Management Report, and hydrogeological studies 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 and Toronto Water during detailed design regarding potential impacts to municipal infrastructure and servicing and ensure that applicable City standards, guidelines, and criteria are met.	▪ 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 Exhibition 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 Exhibition 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 site dewatering in excess of 50,000 L/day and under 400,000 L/day is subject to registration through the Environmental Activity and Sector Registry. In accordance with Section 34 of the Ontario Water Resources Act, a Category 3 Permit to Take Water from Ministry of the Environment, Conservation and Parks must be obtained for the taking of more than 400,000 L/day of groundwater for the purposes of construction dewatering from any given source. 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; however, Species at Risk are not anticipated to be affected by the Exhibition Station early works.

7.3 Conservation Authority

No authorization under Ontario Regulation 166/06 is required for the Exhibition Station early works.

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 Exhibition Station early works, particularly as pertaining to municipally owned 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.

Metrolinx will consult with the City of Toronto Heritage Preservation Services regarding any physical impact to 1 Atlantic Avenue (OLW-011), a previously identified built heritage resource/cultural heritage landscape with no municipal heritage designation. Metrolinx will co-ordinate with the City of Toronto for transportation-related permits and approvals (e.g., street occupation permit) prior to construction, as required.

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.

Metrolinx will co-ordinate with the City of Toronto and Exhibition Place for transportation related permits and approvals (e.g., street occupation permit) prior to construction, as required.

8. Consultation Process

8.1 Overview of the Consultation Process

In accordance with Ontario Regulation 341/20: Ontario Line Project, this section summarizes the Exhibition Station early works consultation activities carried out with members of the public, technical stakeholders, community stakeholders and groups, elected officials, Indigenous communities, and other interested parties. It includes a record of stakeholder and public engagement, detailed correspondence records and feedback and comments received up to and including January 5, 2021. 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 communities between November 2019 and October 17, 2020 is provided in Section 7 and Appendix C of the Ontario Line Final Environmental Conditions Report.

On November 30, 2020, the Notice of Publication of the Draft Exhibition Station Early Works Report was issued to commence the 36-day public review period, effective until January 5, 2021. The Notice was distributed to all individuals on the Project Distribution List, approximately 22,710 properties (i.e., apartments, houses and businesses) within and surrounding the Exhibition Station Study Area as shown in this Report, 334 property owners within 30 metres of the Exhibition Station Early Works Project Footprint, community stakeholders and groups within the Exhibition Station Study Area, government review agencies and other technical stakeholders, elected officials, and Indigenous communities. The Notice was advertised in three major newspapers (Toronto Star, Le Metropolitan, Toronto L'Express) and one community newspaper (Sol Portugues) in English (Toronto Star), French (Le Metropolitain, Toronto L'Express) and Portuguese (Sol Portugues).

On February 1, 2021, the Notice of Publication of the Final Exhibition Station Early Works Report was issued. The Notice was published in the same major and community newspapers that the Notice of Publication of the Draft Exhibition Station Early Works Report was advertised in. The Notice was also distributed to all individuals and property owners, community stakeholders and groups, government review agencies and other technical stakeholders, elected officials and Indigenous communities that received the Notice of Publication of the Draft Exhibition Station Early Works Report. The Final Exhibition Station Early Works Report (this Report) includes updates based on feedback received during the review period of the Draft Exhibition Station Early Works Report and is summarized in **Section 8.2.2**.

The Exhibition Station early works consultation strategy implemented by Metrolinx to-date is described in the following subsections.

8.1.1 Approach to Consultation

Metrolinx offered a wide range of communication and consultation activities and outlets to reach all interested members of the public, property owners, review agencies, elected officials, Indigenous communities and other stakeholders to solicit comments and feedback related to the Exhibition Station early works including:

- Early works specific updates on the Project Engagement webpage (Project website) (www.metrolinx.com/ontarioline) including:
  - West segment neighbourhood updates (Exhibition Station is within the West segment) – published on September 17, 2020; and
  - Early works webpage (https://www.metrolinxengage.com/en/content/ontario-line-early-works-exhibition-station) that includes overall early works timelines, scope overview and location and specific information related to plans for Exhibition Station early works, including environmental studies – published on September 17, 2020 and updated on November 30, 2020.
- 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;
- Outreach to Indigenous communities;
- Meetings with technical stakeholders and other local community stakeholders and groups; and
- Online consultation via the Project Engagement webpage.
- Further details regarding the consultation process are included in the subsections below and in **Appendices B1** to **B3**.

8.1.2 Record of Consultation

Metrolinx maintained a record of all consultation related to Exhibition Station early works through January 5, 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 Exhibition Station early works consultation materials made available through the Project Engagement webpage.
- **Appendix B3** contains the complete 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 communities through January 5, 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 (**Appendix B1**) was developed to facilitate notifications to stakeholders and interested parties. Additional email contacts were collected through the Project webpage (where individuals could submit their email addresses and select “subscribe”), and through in-person and online consultation activities that took place between January 2020 and January 5, 2021. Individuals have the opportunity to subscribe or unsubscribe to the Project Distribution List at any time.

Appropriate contacts at review agencies (i.e., federal, provincial, municipal and conservation authorities) were confirmed through outreach during initial consultation activities. Elected officials (i.e., City of Toronto Councillors and Members of Provincial Parliament) with jurisdiction in the Ontario Line Study Area were confirmed through online resources. Indigenous communities were identified through consultation with the Ministry of Transportation and the Ministry of Environment, Conservation and Parks in accordance with Section 3 of Ontario Regulation 341/20: Ontario Line Project.

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 the Draft Exhibition

Station Early Works Report and Notice of Publication of the Final Exhibition Station Early Works Report).

All public contacts in the Project Distribution List have been removed from **Appendix B1** to protect personal information.

8.2 Public Engagement and Feedback

8.2.1 Public Engagement Opportunities

Through January 5, 2021, early works-specific public engagement efforts included posting early works updates to the Project website and providing various 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 Public Engagement Webpage

Information related to Exhibition Station early works was published on the Project Engagement webpage (www.metrolinx.com/ontarioline) on September 17 and November 30, 2020. Information posted on September 17 included updates to the Environmental Assessment process reporting timeline, neighbourhood updates including preliminary information related to Exhibition Station early works, and introductory information related to proposed early works plans. Information posted on November 30 included: the Notice of Publication of Draft Exhibition Station Early Works Report; the full Draft Exhibition Station Early Works Report and associated appendices; details regarding Exhibition 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. This information is presented in **Appendix B2** of this Report.

Between November 30, 2020 and January 5, 2021, individuals had the opportunity to review the Draft Exhibition Station Early Works Report and associated discipline-specific environmental study reports outlining key study findings and provide feedback.

Through January 5, 2021, individuals have been able to provide feedback related to Exhibition Station early works (or any other Project component) using two different formats, ‘Contact Us’ and ‘Ask-A-Question’. ‘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 November 30, 2020 to January 5, 2021, individuals have also been able to provide feedback related to Exhibition Station early works through the 'Provide Your Feedback' function on the Project webpage. 'Provide Your Feedback' is a fillable anonymous form where participants can provide their feedback on the Draft Exhibition Station Early Works Report by answering the following questions:

- What are your thoughts on the results of the Exhibition Station early works environmental studies?
- Which Exhibition 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 Exhibition 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 Cultural Heritage Report key findings and identified potential impacts and mitigation measures?
- What are your thoughts on the Surface Water and Hydrology 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 Environment study key findings and identified potential impacts and mitigation measures?
- What are your thoughts on 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 Exhibition Station early works gathered through to January 5, 2021 are available in **Appendix B3**. This appendix also includes a summary of public email correspondence and a detailed correspondence record captured through to January 5, 2021.

The following online statistics were collected during the public engagement period for the Draft Exhibition Station Early Works Report from November 30, 2020 to January 5, 2021:

- More than 1,700 people visited the early works engagement webpages on the Project website to learn more about early works planned for Exhibition Station and share feedback;
- Five questions and comments related to Exhibition Station early works were received by email and through the Ask-A-Question feature; and
- Three feedback form submissions were received in response to the Draft Exhibition Station Early Works Report.

8.2.2 Public Feedback

Public feedback received by the Project Team during the review period for the Draft Exhibition Station Early Works Report, between November 30, 2020 and January 5, 2021 is included in **Appendix B3**. All comments received from the public have been redacted to protect personal information.

Detailed summaries of public feedback received between November 30, 2020 and January 5, 2021 are provided in the subsections below.

8.2.2.1 Summary of Public Feedback – Email, Contact Us and Ask-A-Question

The following section highlights the key findings and level of public interest identified through online engagement activities during the Draft Exhibition Station Early Works Report review period between November 30, 2020 and January 5, 2021.

Input received via email and from ‘Contact Us’ and ‘Ask-A-Question’ submissions from this round of public engagement fell into the following general themes:

- Construction Timelines and Scope;
- Alignment, Stations and Access/ Connectivity; and
- Environmental Study Results.

Construction Timelines and Scope

- A few participants questioned the construction process and timelines and requested to know if the Project was still on track to begin construction in the spring of 2021. One individual also requested to confirm whether rail corridor expansion will be occurring at Exhibition Station.

Alignment, Stations and Access/ Connectivity

- A few participants had questions about the current alignment and station locations and proposed potential alternatives. Two participants suggested that a permanent tunnel or bridge should be constructed from eastern Liberty or between Atlantic and Strachan to Exhibition Place to support the increasing growth in population.

Environmental Study Results

- Two participants requested further details regarding the Exhibition Station early works environmental study results. One participant requested copies of environmental study results be provided to them, including a copy of the Ontario Line Final Environmental Conditions Report, Draft Exhibition Station Early Works Report and any studies or plans related to Exhibition Station.

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

The following themes emerged through the online 'Provide Your Feedback' and discipline-specific feedback forms submitted through the Project Engagement webpage from November 30, 2020 to January 5, 2021.

- Alignment, Stations and Access/ Connectivity; and
- Environmental Study Results.

What are your thoughts on the results of the Exhibition Station early works environmental studies?

- **Alignment, Stations and Access/ Connectivity**
  - One individual expressed concern regarding the gap between King/ Bathurst Station and Exhibition Station, noting that a station should be built at King/ Strachan or Douro/ Strachan along the Kitchener GO Line. The individual requested that Metrolinx utilize the new pedestrian/ cycling bridge at King and Douro to provide residents with a connection to the Ontario Line.

Which Exhibition Station early works environmental study is most important to you and why?

- **Environmental Study Results**
  - Feedback gathered through online feedback forms indicated that the Air Quality Study, Archaeological Resources Study, and Noise and Vibration Study are most important to participants.

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

- No responses related to additional thoughts or concerns about the Draft Exhibition Station Early Works Report were submitted.

What are your thoughts on the Air Quality study key findings and identified potential impacts and mitigation measures?

- **Environmental Study Results**
  - One individual expressed that it appears no significant increase of contaminants would result from Ontario Line operation.

What are your thoughts on the Archaeological Resources study key findings and identified potential impacts and mitigation measures?

- **Environmental Study Results**
  - One individual expressed concern regarding the accuracy of previously completed environmental studies and the potential for stopping work if archaeological resources are found within zones, specifically within zones that have already been cleared of archaeological potential, such as Liberty Village. This individual expressed hope for no delays to the project schedule.

No public feedback was received regarding the key findings, potential impacts and mitigation measures for the following studies:

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

All public correspondence related to the Draft Exhibition Station Early Works Report is provided in **Appendix B3**.

8.3 Engagement with Community Stakeholders and Groups

Eighty-five community stakeholders and groups have been engaged through January 5, 2021, as listed below. Thirteen of these community stakeholders and groups participated in meetings with Metrolinx between September 28 and October 28, 2020, in which early works were discussed, and are identified in **bold** text. The 65 community stakeholders and groups listed below with an asterisk (*) beside their name were notified of the publication of the Draft Exhibition Station Early Works Report via email on December 1, 2020 and were advised to provide feedback by January 5, 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*;
- **CF Toronto Eaton Centre*;**
- Chinatown Business Improvement Area (BIA)*;
- CityPlace Fort York BIA*;
- CityPlace Residents' Association*;
- Community Living Toronto*;
- Corktown Residents and Business Association*;
- Danforth BIA*;
- Danforth Residents Association*;
- Distillery Historic District*;
- Don Mills Residents Inc.*;
- Downtown Yonge BIA*;
- East End Transit Alliance*;
- Flemingdon Health Centre;
- **Fontbonne Ministries*;**

- Fort York Neighbourhood Association*;
- 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*;
- Green Communities Canada*;
- **Lakeshore East Community Advisory Committee (CAC)*;**
- Leadership of Downtown Toronto BIAs;
- Leaside Green and Leaside Park Terrace Condos;
- Leaside Residents Association*;
- Leslieville BIA*;
- **Liberty Village BIA*;**
- Liberty Village Residents Association*;
- **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;
- Ontario Place for All*;
- **Pape Area Concerned Citizens for Transit (PACCT)*;**
- Pape Avenue Junior Public School Parent Council;
- Pape Village BIA*;
- Parkdale Residents Association*;
- Parkdale Village BIA*;
- Queen Street West BIA*;
- Regent Park Neighbourhood Association*;
- **Riverside BIA*;**
- Sisters of St. Joseph Toronto*;

- St. Lawrence Market Neighbourhood BIA*;
- **St. Lawrence Neighbourhood Association*;**
- The 519*;
- **The Bentway Conservancy*;**
- The Danny BIA*;
- The Friends of Fort York and Garrison Common;
- **The Neighbourhood Organization (TNO)*;**
- Thorncliffe Park Community Association*;
- Thorncliffe Park Women's Committee*;
- Thorncliffe Soccer Club*;
- Toronto Aboriginal Support Services Council;
- Toronto and York Region Métis Council;
- Toronto Community Housing*;
- Toronto Council Fire Native Cultural Centre;
- **Toronto Entertainment District BIA*;**
- Toronto Entertainment District Residents Association*;
- **Toronto Financial District BIA;**
- Toronto Inuit Association;
- Trinity Bellwoods BIA*;
- United Way of Greater Toronto*;
- Waterfront for All*;
- Waterfront BIA*;
- **West Don Lands Committee*;**
- West Queen West BIA*;
- Wigwamen;
- WoodGreen Community Services*;
- Wynford-Concord Residents Association*;
- YMCA of Greater Toronto*; and
- 2-Spirited People of the 1st Nations.

Metrolinx will continue to engage with community stakeholders and groups as Exhibition Station early works planning progresses.

Correspondence records with community stakeholders and groups related to 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**
  - Conservation Ontario;
  - 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;
  - Ontario Power Generation; 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 Cite;
  - Law Society of Ontario; and
  - Ontario College of Art & Design University.

Federal, provincial and municipal agencies, TRCA and other technical stakeholders, including CN Rail, George Brown College, Hydro One Networks Incorporated, La Cite and OCAD were provided with the opportunity to review a draft of the Draft Early Works Report. All technical stakeholders listed above were provided with the opportunity to review the Draft Exhibition Station Early Works Report (November 30, 2020) and were provided with the Notice of Publication of the Final Exhibition Station Early Works Report (February 1, 2021).

Metrolinx held meetings with Exhibition Place on December 7 and 21, 2020 to discuss planned early works and seek and receive feedback on the Draft Early Works Report.

Metrolinx will continue to engage with technical stakeholders as Exhibition Station early works planning progresses.

Correspondence records with technical stakeholders related to Exhibition 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 Exhibition Station Early Works Report and invited to respond or be briefed through January 5, 2021 are listed below.

- Councillor Denzil Minnan-Wong;
- Councillor Jaye Robinson;
- Councillor Joe Cressy[23];
- Councillor Kristyn Wong-Tam;
- Councillor Paula Fletcher;
- Member of Provincial Parliament Chris Glover;
- Member of Provincial Parliament Kathleen Wynne;
- Member of Provincial Parliament Michael Coteau;
- Member of Provincial Parliament Peter Tabuns; and
- Member of Provincial Parliament Suze Morrison.

23 Councillor Joe Cressy is a member of the Exhibition Place Board of Governors, which currently includes four members of Toronto City Council. Metrolinx will be presenting the Ontario Line plans, including details of planned early works at Exhibition Station, at the February 19, 2021 Board of Governors meeting. As Exhibition Station early works planning progresses, Metrolinx will continue to engage Exhibition Place and contact relevant elected officials.

The following elected officials participated in meetings between September 28 and October 14, 2020 in which early works were discussed:

- MPP Chris Glover – September 28, 2020;
- MPP Peter Tabuns – September 29, 2020;
- MPP Kathleen Wynne – October 6, 2020;
- MPP Suze Morrison – October 8, 2020;
- Councillor Kristyn Wong-Tam – September 29, 2020;
- Councillor Denzil Minnan-Wong – October 9, 2020; and
- Councillor Jaye Robinson – October 14, 2020.

Copies of the Notice of Publication of Draft Exhibition Station Early Works Report and the Notice of Publication of Final Exhibition Station Early Works Report, with link to review the reports, were provided to elected officials via email on November 30, 2020 and February 1, 2021 respectively.

Metrolinx will continue to engage with elected officials as Exhibition Station early works planning progresses. Minutes of elected officials briefings related directly to early works are provided in **Appendix B3** of this Report.

8.6 Engagement with Indigenous Communities

Between February 2020 and February 1, 2021, Metrolinx reached out to Indigenous communities to: introduce the Project; share drafts of the Ontario Line Draft Environmental Conditions Report and Draft Exhibition Station Early Works Report; provide notification of online consultation activities taking place during the review periods for the Ontario Line Draft Environmental Conditions Report and Draft Exhibition Station Early Works Report; request feedback; and share the Ontario Line Final Environmental Conditions Report and Final Exhibition Station Early Works Report.

Indigenous communities that have been provided information on the Project to-date are listed below. A record of consultation and correspondence with Indigenous communities related to Exhibition Station early works is included in **Appendix B3** of this Report. The complete record of consultation and summary of correspondence with Indigenous communities through October 17, 2020 is provided in Section 7.7 and Appendix C6 of the Ontario Line Final Environmental Conditions Report.

- Indigenous communities notified of Ontario Line activities include:
- 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 February 2020, Metrolinx provided Indigenous communities with a letter that introduced the Project. In response to this letter, Kawartha Nishnawbe First Nation noted it did not have capacity to review reports. 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 technical reports prepared in support of the Ontario Line Draft Environmental Conditions Report and Draft Exhibition Station Early Works Report.

In June 2020, a meeting was held with 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 meaningfully engaging with these Nations, and to review the Project and associated preliminary plans for early works.

On September 17, 2020, Metrolinx provided all Indigenous Nations with the Notice of Publication of the Draft Environmental Conditions Report and links to the Draft Environmental Conditions Report via email. In response to this email, 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 the archaeological assessment reports. Metrolinx held a meeting with the Nation on November 25, 2020 to better understand the issues and concerns of Six Nations of the Grand River and identify opportunities to support meaningful engagement and partnership with Six Nations of the Grand River. It was noted during this meeting that the Nation identified that specific treaty information was not included in the archaeological assessments that support the

Ontario Line[24]. 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 be impacting the operations of the Six Nations of the Grand River office, Metrolinx continues to reach out to the Six Nations of the Grand River for further input from the Nation on how to best address this concern.

On December 4, 2020, Metrolinx held a meeting with Chippewas of Rama First Nation to provide an overview of the Subway Program, including environmental assessments completed and underway for the four Subway projects. Highlights of the Draft Early Works Report, including natural environment and archaeological resources impact assessment results, were shared. As some meeting material intended to be covered was not due to scheduling constraints, a follow-up meeting was requested by Chippewas of Rama First Nation. The follow-up meeting is anticipated to take place in early 2021.

No comments on the Exhibition Station Early Works Report have been received to-date from Indigenous communities, though, as discussed above, Metrolinx did receive concerns related to capacity to review.

Consultation with Indigenous communities will continue as Exhibition Station early works progress. Correspondence records with Indigenous communities related to Exhibition Station early works are provided in **Appendix B3**. A copy of the Draft Exhibition Station Early Works Report along with the Notice of Publication was provided to Indigenous communities on November 30, 2020. A copy of the Final Exhibition Station Early Works Report along with the Notice of Publication was provided to Indigenous communities on February 1, 2021.

8.7 Issues Resolution Process and Final Early Works Report

The Draft Exhibition Station Early Works Report was made available to the public, regulatory agencies, Members of Provincial Parliament, Indigenous communities and other interested persons for review from November 30, 2020 to January 5, 2021. During this time, interested parties had the opportunity to submit written comments to Metrolinx.

24. 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, was not included in the Ontario Line Stage 1 Archaeological Assessment reports, as these 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.

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 communities, in a way that does not cause unreasonable delay to the implementation of Exhibition Station early works. The issues resolution process involved review of comments provided during the review period, development of responses to comments, and engagement of subject matter experts to support the development of responses, 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 communities and interested persons;
- A description of the concerns raised by Indigenous communities 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 early works.

As the Draft Early Works Report has been updated, Metrolinx has issued a Notice of Publication of the Final Early Works Report and posted the Report to the Project webpage (www.metrolinx.com/ontarioline) within 65 days of the issuance of the Notice of Publication of the Draft 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 the Final Early Works Report. The Minister may also choose to inform Metrolinx that no notice will be issued.

The Minister may issue a notice only if:

a) The Minister is of the opinion that,

   i. the way in which Metrolinx addressed a concern raised during the issues resolution process would cause unreasonable delay to the implementation of the early works, and

   ii. the conditions in the Minister's notice modify the way in which the concern is addressed in the Final Early Works Report without causing reasonable delay to the implementation of the early works; or,

b) The Minister is of the opinion that,

   i. the early works may have an adverse impact on the existing aboriginal or treaty rights of the aboriginal peoples of Canada, and

   ii. the conditions may prevent, mitigate or remedy the adverse impact.

The implementation of Exhibition 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 Communities 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 communities and interested persons, including government review agencies and other technical stakeholders.

No comments were received from Indigenous communities during the review period.

Prior to publication of the Draft Exhibition Station Early Works Report, Indigenous communities, elected officials, 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 Exhibition Station Early Works Report publication and documented in **Appendix B3** of the Draft Exhibition Station Early Works Report.

During the public review period for the Draft Exhibition Station Early Works Report (November 30, 2020 to January 5, 2021), Metrolinx received eight public comments (four emails, one Ask-A-Question and three Provide Your Feedback submissions) and comments from four government review agencies (City of Toronto, Toronto and Region Conservation Authority, Ministry of Heritage, Sport, Tourism and Culture Industries and Ministry of Environment, Conservation and Parks) and two other technical stakeholders (Exhibition Place and Hydro One Networks Incorporated).

A summary of key themes of comments, questions and concerns received during the public review period, what Metrolinx has done in response to the feedback received, and implementation timeline implications is provided in **Table 8-1**. In response to feedback and concerns received by interested persons, Metrolinx revised the Draft Exhibition Station Early Works Report as outlined in **Table 8-1** for inclusion in the Final Exhibition Station Early Works Report. No comments resulted in responses impacting the timeline for implementation of Exhibition Station early works.

Table 8-1: Summary of Key Themes of Feedback Received, Metrolinx Actions in Response to the Feedback, and Implications to the Exhibition Station Early Works Timeline

Response From	Key Themes of Feedback Received	Key Feedback	Metrolinx Actions in Response to Feedback	Exhibition Station Early Works Timeline Implications
Public	Alignment, Stations, Access/Connectivity and Construction Timeline	▪ Requests for consideration of bridge/tunnel between Atlantic Avenue and Exhibition Place to support population growth. ▪ Concern regarding the gap between King/ Bathurst Station and Exhibition Station, noting that a station should be built at King Street West/ Strachan Avenue or Douro Street/Strachan Avenue along the Kitchener GO Line. Request for Metrolinx to utilize the new pedestrian/ cycling bridge at King Street West/Douro Street to provide residents with a connection to the Ontario Line. ▪ Request to confirm whether rail corridor expansion would be undertaken as part of early works at Exhibition Station. ▪ Request to confirm early works construction timing.	▪ Confirmation that plans will improve pedestrian connectivity across the rail corridor and at Exhibition Station. ▪ Confirmation that a temporary pedestrian bridge spanning the rail corridor will be installed as part of Exhibition Station early works construction. ▪ Confirmation that Exhibition Station early works scope, along with anticipated impacts and mitigation measures, is described in the Exhibition Station Early Works Report. ▪ Confirmation that early works construction is anticipated to commence in Summer 2021, with the major construction from Exhibition Station to Don Yard commencing in mid-2023. ▪ Development and provision of comment responses, including sharing of information (**Appendix B3**).	▪ None
Public	Environmental Studies	▪ Concern regarding the accuracy of previously completed environmental studies and the potential for stopping work if archaeological resources are found within zones, specifically within zones that have already been cleared of archaeological potential, such as Liberty Village.	▪ Inclusion of concern in the Consultation section of the Final Exhibition Station Early Works Report and **Appendix B3** as part of the consultation record.	▪ None
Technical Stakeholders – Provincial Agencies, Municipal Agencies, and Conservation Authorities	Technical Content – Description of Alternatives Considered, Local Environmental Conditions, Impact Assessment, and Permits and Approvals	▪ Ministry of the Environment, Conservation and Parks provided comments related to the description of alternatives considered, clarification of laydown areas, and permits and approvals. The Ministry of the Environment, Conservation and Parks also provided technical comments related to noise, soil and excavated materials, groundwater, sediment and erosion control measures, and air quality. ▪ Ministry of Heritage, Sport, Tourism and Culture Industries provided comments regarding clarification of potential impacts and mitigation details related to built heritage resources and cultural heritage landscapes, and specific comments related to the OLW-011 (1 Atlantic Avenue) potential impacts and mitigation measures. The Ministry of Heritage, Sport, Tourism and Culture Industries also provided editorial comments regarding archaeological resources. ▪ City of Toronto provided comments related to noise and vibration and air quality assessment methodology, tree removal compensation, cultural heritage impacts, restoration of City lands impacted by construction, land use designations mapping, adjacent transit projects, and clarifications regarding roads and intersections. The City of Toronto also provided additional mitigation measures for public realm and traffic and transportation impacts.	▪ Updates were made to the following sections of the Ontario Line Final Exhibition Station Early Works Report and **Appendix A2** to address feedback received from the Ministry of the Environment, Conservation and Parks: – **Table ES-2** – **Section 1.3.3** – **Section 3.2** – **Table 6-4** – **Table 6-6** – **Table ES-1 and Table 4-1 of Appendix A2** ▪ Updates were made to the following sections of the Ontario Line Final Exhibition Station Early Works Report and **Appendix A4** to address feedback received from the Ministry of Heritage, Sport, Tourism and Culture Industries: – **Table ES-2** – **Section 5.8** – **Table 6-7** – **Table 6-8** – **Table ES-1 and Table 5-1 of Appendix A4** ▪ Updates were made to the following sections of the Ontario Line Final Exhibition Station Early Works Report and **Appendix A5** to address feedback received from the City of Toronto:	▪ None

Response From	Key Themes of Feedback Received	Key Feedback	Metrolinx Actions in Response to Feedback	Exhibition Station Early Works Timeline Implications
		▪ Toronto and Region Conservation Authority provided comments recommending the design include mechanisms for water conservation, energy conservation, and waste management. The Toronto and Region Conservation Authority also recommended incorporation of Low Impact Development design measures and outlined general geotechnical requirements for consideration in the design.	– **Table ES-2** – **Section 2.2.3** – **Section 5.7** – **Section 5.9.1.1** – **Section 5.9.1.2** – **Figure 5-12** – **Table 5-8** – **Table 6-6** – **Table 6-9** – **Section 3.1.1 of Appendix A5** – **Section 3.1.2 of Appendix A5** – **Table 4-1 of Appendix A5** ▪ Development and provision of comment responses (**Appendix B3**).	
Other Technical Stakeholders	Technical Content – Local Environmental Conditions, Permits and Approvals, and Consultation Process	▪ Exhibition Place provided technical feedback clarifying information regarding their assets and engagement with elected officials. ▪ Hydro One Networks Incorporated provided technical feedback confirming their assets are present within the Exhibition Station Study Area but not within the Exhibition Station Early Works Project Footprint.	▪ Updates were made to the following sections of the Ontario Line Final Exhibition Station Early Works Report and Appendix A5 to address feedback received from Exhibition Place: – **ES.6** – **Section 2.2.3** – **Section 5.6.1.1** – **Section 5.6.1.2** – **Section 5.6.1.3.2** – **Section 5.9.1.1** – **Section 5.9.1.2** – **Section 7.4** – **Section 8.4** – **Figure 5-12** – **Figure 5-13** – **Figure 5-14** – **Table 5-9** – **Section 5 of Appendix A5** ▪ Updates were made to the following sections of the Ontario Line Final Exhibition Station Early Works Report to address feedback received from Hydro One Networks Incorporated: – **ES.4** – **Section 5.10.1** ▪ Development and provision of comment responses (**Appendix B3**).	▪ None

Comments and concerns from members of the public are summarized in **Section 8.2.2**. Detailed feedback and correspondence records from the public, community stakeholders and groups, elected officials, technical stakeholders and Indigenous Communities are included in **Appendix B3**.

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: Ontario Line Project. Specifically, Metrolinx will:

- Maintain the Project Engagement Webpage (Project website) (www.metrolinx.com/ontarioline) so interested individuals can access updated Project information;
- Maintain the Project Distribution List to help ensure all interested individuals receive Project updates; and
- Continue discussions with members of the public, local stakeholders and Indigenous communities with respect to potential impacts and mitigation throughout Exhibition Station early works planning and construction, as appropriate.

9. References

4Transit, 2018:

Stage 1 Archaeological Assessment, Exhibition GO Station, Metrolinx, Part of the Garrison Reserve Concession in the Historic Township of York, Former County of York, now the City of Toronto, in the Province of Ontario. P394-0064-2018.

4Transit, 2020:

Natural Environment Screening Memorandum Exhibition GO Station. January 2020. Prepared for Metrolinx.

AECOM, 2020a:

Ontario Line Final Environmental Conditions Report. Prepared for Metrolinx.

AECOM, 2020b:

Ontario Line Exhibition Station Early Works – Noise and Vibration Report. Prepared for Metrolinx.

AECOM, 2020c:

Ontario Line Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment. Prepared for Metrolinx.

AECOM, 2020d:

Ontario Line West Stage 1 Archaeological Assessment Report. P438-0195-2019. Prepared for Metrolinx. Revised in July 2020.

Archeoworks Inc., 2014:

Stage 1 Archaeological Assessment for: Liberty Village New Street Municipal Class Environmental Assessment, Within Blocks 7 through 11, Military Reserve, Geographic Township of York, Historic County of York, Now City of Toronto, Ontario. P334-037-2011.

Armstrong, D.K. and J.E.P. Dodge, 2007:

Paleozoic geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 219.

ASI, 2017:

Stage 1 Archaeological Assessment GO Rail Network Electrification Transit Project Assessment Process, City of Toronto, Regional Municipalities of Peel, Halton, York and Durham, County of Simcoe, Ontario. P057-0834-2016.

Brigham, R.M., J. Ng, R.G. Poulin and S.D. Grindal, 2011:
Common Nighthawk (Chordeiles minor), version 2.0. In The Birds of North America (A. F. Poole, Editor). Cornell Laboratory of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bna.213

Canadian Council of Ministers of the Environment, 2012:
Canadian Ambient Air Quality Standards. Available: https://www.alberta.ca/canadian-ambient-air-quality-standards.aspx

Chapman, L.J. and D.F. Putnam, 1984:
The Physiography of Southern Ontario, Third Edition, Ontario Geological Survey, Special Volume 2.

Cheminfo Services Inc., 2005:
Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities. Prepared for Environment Canada. Available: http://www.bv.transports.gouv.qc.ca/mono/1173259.pdf

City of Toronto, n.d.a:
Infrastructure & Construction Projects. Liberty Village New Street Environmental Assessment. Available: https://www.toronto.ca/community-people/get-involved/public-consultations/infrastructure-projects/libertynewst/

City of Toronto, n.d.b:
Next Place – Exhibition Place. Available: https://www.toronto.ca/city-government/planning-development/planning-studies-initiatives/exhibition-place/

City of Toronto, n.d.c:
Gardiner Expressway Rehabilitation Strategy. Available: https://www.toronto.ca/services-payments/streets-parking-transportation/road-maintenance/bridges-and-expressways/expressways/gardiner-expressway/gardiner-expressway-rehabilitation-strategy/

City of Toronto, 2008:
By-law 514-2008 (Construction Vibration) – Municipal Code 363.

City of Toronto, 2006:
Central Waterfront Secondary Plan. Available: https://www.toronto.ca/wp-content/uploads/2019/02/8e22-CityPlanning_2006-OP_CWSP_Final.pdf

City of Toronto, 2011:
Dufferin Street Bridges Rehabilitation Class Environmental Assessment Study.

City of Toronto, 2012:
Mammals of Toronto – A Guide to Their Remarkable Word. City of Toronto Biodiversity Series.

City of Toronto, 2016b:
Tree Protection Policy and Specifications for Construction Near Trees. Accessed in November 2019 from: https://www.toronto.ca/data/parks/pdf/trees/tree-protection-specs.pdf.

City of Toronto, 2017a:
Ravine and Natural Feature Protection By-Law. Accessed in February 2020 from: https://www.toronto.ca/wp-content/uploads/2017/08/96f6-Ravine-and-Natural-Feature-Protection-By-Law-Brocure-Division-Planning-And-Development.pdf

City of Toronto, 2017b:
Garrison Common North Secondary Plan. Available: https://www.toronto.ca/wp-content/uploads/2017/11/97df-cp-official-plan-SP-14-Garrison.pdf

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

City of Toronto, 2018b:
City of Toronto Road Classification System Update. Available: https://www.toronto.ca/services-payments/streets-parking-transportation/traffic-management/road-classification-system/2012-update-to-the-road-classification-system/

City of Toronto, 2019a:
Report for Action: Toronto's Transit Expansion Program – Update and Next Steps. April 3, 2019. Available: https://www.toronto.ca/legdocs/mmis/2019/ex/bgrd/backgroundfile-131545.pdf

City of Toronto, 2019b:
Exhibition Place Cultural Heritage Landscape Assessment.

City of Toronto, 2019c:
Exhibition Place Master Plan. Available: https://www.toronto.ca/city-government/planning-development/planning-studies-initiatives/exhibition-place/exhibition-place-master-plan/

City of Toronto, 2019d:
Toronto Official Plan – Office Consolidation February 2019. Accessed in January 2020 from: https://www.toronto.ca/wp-content/uploads/2019/06/8f06-OfficialPlanAODA_Compiled-3.0.pdf

City of Toronto, 2020a:
Next Place Plan. Stage 1 Proposals Report for Exhibition Place. May 2020. Available: https://www.toronto.ca/ext/digital_comm/pdfs/city-planning/next-place-plan-exhibition-place-proposals-report-may-2020.pdf

City of Toronto, 2020b:
Open Data Portal. Accessed in January 2020 from: https://open.toronto.ca/

City of Toronto, 2020c:
Application Information Centre. Available: http://app.toronto.ca/DevelopmentApplications/mapSearchSetup.do?action=init

City of Toronto, 2020d:
Vision Zero Mapping Tool. Available: www.toronto.ca/services-payments/streets-parking-transportation/road-safety/vision-zero/safety-measures-and-mapping

City of Toronto, 2020e:
Toronto Maps V2. Accessed in February 2020 from: http://map.toronto.ca/maps/map.jsp?app=TorontoMaps_v2.

CreateTO, n.d.:
Garrison Crossing: Project History. Available: https://createto.ca/project/garrison-crossing/

Dougan & Associates and North-South Environmental Inc., 2009:
Migratory Birds in the City of Toronto – A Literature Review and Data Assessment Final Report. Prepared for the City of Toronto Planning.

Environment and Climate Change Canada, 2019:
National Air Pollution Surveillance Program. Available: https://www.canada.ca/en/environment-climate-change/services/air-pollution/monitoring-networks-data/national-air-pollution-program.html

Exhibition Place, 2017:
Exhibition Place Strategic Plan 2017-2019. Available: https://www.explace.on.ca/wp-content/uploads/2020/12/Exhibition-Place-Strategic-Plan-2017-2019.pdf

Golder Associates, 2018:
Natural Environment Existing Conditions – Relief Line South, Toronto, Ontario. March 2018.

GO Transit, 2020:
Trip Planning. See Schedules. Available: https://www.gotransit.com/en/trip-planning/seeschedules

Halloran, J., H. Anderson and D. Tassie, 2013:
Clean Equipment Protocol for Industry. Prepared for the Peterborough Stewardship Council and Ontario Invasive Plant Council. Peterborough, ON. Printed April 2013. Updated May 2016.

Hatfield, E., 2013:
De-constructing the Dufferin Bridge. Toronto.com. Available: https://www.toronto.com/news-story/4251891-de-constructing-the-dufferin-bridge/

HDR, 2018:
Environmental Project Report, Prepared for City of Toronto, Toronto Transit Commission and Metrolinx.

Lall, R., M. Kendall, K. Ito and G.D. Thurston, 2004:
Estimation of historical annual $PM_{2.5}$ exposures for health effects assessment. Atmospheric Environment 38. Available: https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.files/fileID/13226

Land Information Ontario, 2017:
Metadata Tool. Accessed in February 2018 from: https://www.ontario.ca/page/land-information-ontario

Metrolinx, 2018:
2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area. Available: http://www.metrolinx.com/en/regionalplanning/rtp/Metrolinx%20-%202041%20Regional%20Transportation%20Plan%20%E2%80%93%20Final.pdf

Ministry of Heritage, Sport, Tourism and Culture Industries, 2016:
Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes, A Checklist for the Non-Specialist. http://www.mtc.gov.on.ca/en/heritage/tools.shtml.

Ministry of Tourism and Culture Industries, 2011:
Standards and Guidelines for Consultant Archaeologists.

Ministry of the Environment and Energy and GO Transit, 1994:
Ministry of the Environment and Energy/Go Transit Noise and Vibration Protocol.

Morrison-Hershfield, 2017:
GO Transit Rail Network Electrification EA Natural Environment Baseline Conditions Report Rev. # 3.0. Accessed July 2020 from http://www.metrolinx.com/en/electrification/appendix/A1%20-%20Natural%20Environmental%20Baseline%20Conditions%20Report.pdf

National Association of City Transportation Officials, 2016:
Bike Share Station Siting Guide. Available: https://nacto.org/wp-content/uploads/2016/04/NACTO-Bike-Share-Siting-Guide_FINAL.pdf

NatureServe, 2019:
National and Subnational Conservation Status Definitions. Accessed January 2020 from: http://explorer.natureserve.org/nsranks.htm.

North-South Environmental Inc. & Dougan & Associates, 2009:
Review of Provincially Significant Wetlands in the City of Toronto. Prepared for City of Toronto and City Planning.

North-South Environmental Inc., Dougan & Associates and Beacon Environmental Ltd., 2012:
Environmentally Significant Areas in the City of Toronto. Prepared for Toronto City Planning.

Ontario Geological Survey, 1961:
Metropolitan Toronto Bedrock Contours.

Ontario Geological Survey, 1984:
Physiography of Southern Ontario. Available: https://open.canada.ca/data/en/dataset/d22354e8-cb01-5262-aed5-1de48d1ffb0a

Ontario Geological Survey, 2007:
Paleozoic Geology of Southern Ontario.

Ontario Hot Mix Producers Association, 2015:
Ontario Hot Mix Producers Association Environmental Practices Guide, Ontario Hot Mix Asphalt Plants, Fifth Edition. Available: http://www.onasphalt.org/files/Publications/OHMPA%20EPG%20Document%20Single%20Pages%20-%20Website.pdf

Ontario Ministry of the Environment, Conservation and Parks, 2018:
Operations Manual for Air Quality Monitoring in Ontario. Available: https://dr6j45jk9xcmk.cloudfront.net/documents/1466/3-7-32-manual-for-air-quality-monitoring-en.pdf

Ontario Ministry of the Environment, Conservation and Parks, 2020:
Ontario's Ambient Air Quality Criteria. Available: https://files.ontario.ca/mecp-ambient-air-quality-criteria-list-en-2020-05-01.pdf

Ontario Ministry of the Environment and Climate Change, 2018:
Ontario Air Standards for Sulphur Dioxide (SO_2). Available: https://prod-environmental-registry.s3.amazonaws.com/2018-03/SO2%20Decision%20Document%20%28March%202018%29_0.pdf

Ontario Ministry of Municipal Affairs and Housing, 2020:
Provincial Policy Statement. Accessed in February 2020 from: https://www.ontario.ca/page/provincial-policy-statement-2020

Ontario Ministry of Natural Resources and Forestry, 2010:
Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp.

Ontario Ministry of Natural Resources and Forestry, 2017a:
Make-a-Map: Natural Heritage Areas. Accessed in February 2018 from: http://www.giscoeapp.lrc.gov.on.ca/Mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US

Ontario Ministry of Natural Resources and Forestry, 2017b:
Natural Heritage Information Centre Rare Species Database. Accessed in February 2018 from: http://www.giscoeapp.lrc.gov.on.ca/Mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US

Ontario Ministry of Natural Resources and Forestry, 2020:
Ontario GeoHub. Accessed in January 2020 from: https://geohub.lio.gov.on.ca/. Powered by Land Information Ontario. Accessed January 2020.

Ontario Ministry of Transportation, 2020:
Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects. Available: https://prod-environmental-registry.s3.amazonaws.com/2020-07/AQGHG%20Guide%20%28May%202020%29.pdf

Perks, G., 2014:
Dufferin Street Bridge Re-Opened. GordPerks.ca. Available: https://gordperks.ca/dufferin-street-bridge-re-opened/

Province of Ontario, 1990a:
Ontario Water Resources Act. Available: https://www.ontario.ca/laws/statute/90o40

Province of Ontario, 1990b:
The Planning Act. Available: https://www.ontario.ca/document/citizens-guide-land use-planning/planning-act

Province of Ontario, 1998:
Conservation Authorities Act. Available: https://www.ontario.ca/laws/statute/90c27

Province of Ontario, 2006:
City of Toronto Act. Chapter 11. Schedule A. As amended (2020). Available: https://www.ontario.ca/laws/statute/06c11

Province of Ontario, 2017:
Greenbelt Plan. Available: https://files.ontario.ca/greenbelt-plan-2017-en.pdf

Province of Ontario, 2019:
A Place to Grow: Growth Plan for the Greater Golden Horseshoe. Available: https://files.ontario.ca/mmah-greater-golden-horseshoe-place-to-grow-english-15may2019.pdf

Province of Ontario, 2020:
Ontario Regulation 341/20: Ontario Line Project. Available: https://www.ontario.ca/laws/regulation/r20341

Puopolo, J. and Usher, S., 2007:
Conceptual Understanding of the Watersheds, Toronto and Region Conservation Authority.

Rogers, D.P., R.C. Ostry and P.F. Karrow, 1961:
Metropolitan Toronto Bedrock Contours, Ontario Department of Mines, Preliminary Map 102.

Statistics Canada, 2016:
2016 Census Profile. Available: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E

Toronto and Region Conservation Authority, 2008:
Humber River – State of the Watershed Report – Surface Water Quality. Available: http://www.trca.on.ca/dotAsset/50155.pdf

Toronto and Region Conservation Authority, 2012:
Stormwater Management Criteria. Available: file:///C:/Users/blacham.NA/Downloads/SWM-Criteria-2012%20(3).pdf

Toronto and Region Conservation Authority, 2013:
Hydrogeological Assessment Submissions: Conservation Authority Guidelines for Development Applications. Available: https://www.lsrca.on.ca/Shared%20Documents/permits/hydrogeological%20_guidelines.pdf?pdf=Hydrogeological-Guidelines

Toronto and Region Conservation Authority, 2014b:
The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority.

Toronto and Region Conservation Authority, 2015:
Toronto and Region Source Protection Area, Approved Updated Assessment Report. Available: https://ctcswp.ca/the-science/toronto-and-region-spa-assessment-report/

Toronto and Region Conservation Authority, 2020a:
Regulated Area Search. Available: https://trca.ca/planning-permits/regulated-area-search-v3/

Toronto and Region Conservation Authority, 2020b:
Floodplain Map. Available: https://trca.ca/conservation/flood-risk-management/flood-plain-map-viewer/#map

Toronto and Region Conservation Authority, 2020c:
TRCA Open Data & Information. Accessed in January 2020 from: https://data.trca.ca/

Toronto Region Conservation Authority, Conservation Halton, Credit Valley Conservation, Nottawasaga Valley Conservation Authority, Lake Simcoe Region Conservation Authority, Central Lake Ontario Conservation, Grand River Conservation Authority, Niagara Peninsula Conservation Authority, Hamilton Conservation Authority, 2006:
Greater Golden Horseshoe Area Erosion and Sediment Control Guideline for Urban Construction, December 2006.

Toronto Transit Commission, 2020:
TTC Schedules and Maps. Available: https://ttc.ca/Routes/index.jsp

United States Federal Transit Administration, 2018:
Transit Noise and Vibration Impact Assessment Manual, September.

VIA Rail, 2020:
Explore our destinations. Ontario and Quebec. Available: https://www.viarail.ca/en/explore-our-destinations/trains/ontario-and-quebec