POWER DOWNTOWN TORONTO – CLASS ENVIRONMENTAL ASSESSMENT

Draft Environmental Study Report

April 15, 2020

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Environmental Services
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Executive Summary

Hydro One Networks Inc. (Hydro One) has prepared this draft Environmental Study Report (ESR) for the proposed replacement of the existing 115-kilovolt (kV) underground transmission cables (circuits C5E and C7E) between Terauley Transformer Station (TS), near Bay Street and Dundas Street, and Esplanade TS, near Lower Sherbourne Street and The Esplanade, located in the downtown core of the City of Toronto. This cable replacement project is referred to as the Power Downtown Toronto Project (herein referred to as "the proposed Project"). The proposed Project is required to replace aging underground cables that were installed in the 1950s and are reaching their end of life. The proposed Project involves the installation of an underground tunnel at approximately 25 metres (m) below grade in the bedrock within existing road allowances to house the replacement cables. Three associated shafts will be constructed to provide access to the tunnel for operation and maintenance of the cables. The proposed Project also includes de-energizing, disconnecting and capping the existing 115 kV cables that run along York Street and Queens Quay.

The proposed Project is subject to the Class Environmental Assessment (EA) for Minor Transmission Facilities (Hydro One, 2016), an approved planning process under the Ontario *Environmental Assessment Act* (*EAA*). This draft ESR has been prepared in accordance with the requirements of the *EAA* and describes the Class EA process that has been undertaken for the proposed Project. The proposed Project is also subject to the Leave to Construct approval under Section 92 of the *Ontario Energy Board Act*.

At the onset of the proposed Project, a study area was defined based on the technical specifications and system requirements for the underground cable replacement, along with considerations of the potential for environmental effects. The Class EA process for the proposed Project included an assessment of the existing natural environmental and socioeconomic features within the study area. Resources were identified from literature reviews, reports and technical memos commissioned by Hydro One, databases, mapping, consultation and field surveys. The study area was expanded in late-2018 based on stakeholder feedback and consideration of an additional alternative route.

Since the Class EA initiation in May 2018, Hydro One has conducted extensive consultation with Mississaugas of the Credit First Nation (MCFN), federal, provincial and municipal government representatives and agencies including the City of Toronto Infrastructure Coordination Unit (ICU), Toronto Public Utility Coordination Committee (TPUCC), potentially affected and interested persons, businesses, and interest groups including business improvement associations and community

associations. The consultation plan was developed to include proactive outreach and identify potential issues early on for resolution; the plan included:

- Project notifications;
- Two project websites including an online engagement platform;
- Two rounds of Community Open Houses;
- In-person meetings with project stakeholders; and,
- Ongoing correspondence with key stakeholders (e.g., City of Toronto ICU, Toronto Hydro Electrical System Limited, Toronto Transit Commission, Enwave Energy Ltd., Metrolinx, etc.).

Potential environmental effects resulting from the proposed Project have been identified and avoidance and/or mitigation measures have been identified accordingly. Based on information collected to date, no net adverse environmental effects (i.e., considering mitigation) were identified.

A Notice of Completion of the draft ESR was distributed to over 60,000 residents and businesses in the study area as well as stakeholders on the project contact list identifying the opportunity to review the draft ESR. The draft ESR will be available for a 45-day public review and comment period from April 15 to May 29, 2020. In light of recent public health developments, the draft ESR can be viewed electronically on Hydro One's website at www.HydroOne.com/PowerDowntownToronto. Should libraries re-open during the review period, hard copies will made available at the following locations:

Toronto Public Library
St. Lawrence Branch
171 Front Street East, Toronto

Toronto Public Library
City Hall Branch
100 Queen Street West, Toronto

Written comments or questions on the draft ESR can be received by Hydro One no later than 4:30 p.m. on May 29, 2020 to:

Yu San Ong
Environmental Planner, Hydro One Networks Inc.
Community.Relations@HydroOne.com
1-877-345-6799

Comments received will be addressed and documented in the final ESR as required by the Class EA process.

Hydro One will make best efforts to respond and resolve issues raised by concerned parties during the public review period. If no issues or concerns are expressed, Hydro One will finalize the ESR and file it with the Ministry of the Environment, Conservation and Parks (MECP).

The *EAA* has provisions for interested parties to request for a higher level of assessment if they feel that outstanding issues have not been adequately addressed. This higher level of assessment is referred to as a Part II Order request and must be addressed in writing to the MECP using the MECP form which is available online at the following link: https://www.ontario.ca/page/class-environmental-assessments-part-ii-order. Part II Order request forms must be received no later than 4:30 p.m. on May 29, 2020, at the following addresses:

Minister of the Environment, Conservation and Parks
Ferguson Block, 77 Wellesley St. W., 11th Floor
Toronto, ON M7A 2T5
Fax: 416-314-8452
Email: Minister.mecp@ontario.ca

Director, Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Ave. W., 1st Floor
Toronto, ON M4V 1P5
Email: enviropermissions@ontario.ca

Please note that a duplicate copy of a Part II Order request must also be sent to Hydro One at the address noted above.

Upon filing of the final ESR with the MECP, the proposed Project will be implemented in full compliance with the requirements of the Class EA process as outlined in the final ESR, incorporating input obtained throughout the planning process. In addition, Hydro One will obtain the necessary permits, licences and approvals required for the proposed Project.

Table of Contents

Executive Summary ..... **i**

Table of Contents ..... **v**

List of Acronyms & Abbreviations ..... **xiii**

1 Introduction **1-1**

1.1 Need for the Undertaking 1-5
1.2 Description of the Undertaking 1-5
1.3 Alternatives to the Undertaking 1-11
1.4 Approval Process and Regulatory Requirements 1-12
1.4.1 Class Environmental Assessment Process 1-12
1.4.2 Other Permits, Licences and Approvals 1-15

2 Study Area **2-1**

2.1 Removal of Open Cut Route 1 and Open Cut Route 3 and Refined Study Area 2-1
2.2 Addition of Open Cut Route 4 2-1

3 Consultation **3-1**

3.1 Initial Notification and Other Project Notices 3-3
3.2 First Nation and Métis Communities 3-4
3.2.1 Mississaugas of the Credit First Nation (MCFN) 3-5
3.3 Federal Government & Agencies 3-6
3.4 Provincial Government & Agencies 3-7
3.4.1 Infrastructure Ontario (IO) 3-8
3.4.2 Metrolinx 3-9
3.4.3 Ministry of the Environment, Conservation and Parks (MECP) 3-9
3.4.4 Members of Provincial Parliament 3-10
3.4.4.1 Former MPP Han Dong (Former Trinity-Spadina) 3-10
3.4.4.2 MPP Jessica Bell (University-Rosedale) 3-10
3.4.4.3 MPP Suze Morrison (Toronto Centre) 3-11
3.5 Municipal Government and Agencies 3-11
3.5.1 Municipal Agency Workshop 3-13
3.5.2 CreateTO 3-14
3.5.3 City of Toronto 3-14
3.5.3.1 City of Toronto – Infrastructure Coordination Unit (ICU) 3-15
3.5.3.2 City of Toronto – Northwest PATH Project Team 3-18
3.5.3.3 City of Toronto – Parks, Forestry and Recreation (PF&R) 3-18
3.5.3.4 City of Toronto – Sherbourne Watermain Replacement Project Team 3-19
3.5.4 Toronto and Region Conservation Authority (TRCA) 3-20
3.5.5 Toronto Public Utility Coordination Committee (TPUCC) 3-20

3.5.5.1 Enwave Energy Ltd. (Enwave) ... 3-22
3.5.5.2 Toronto Hydro Electric System Ltd. (THESL) ... 3-23
3.5.5.3 Toronto Transit Commission (TTC) ... 3-24
3.5.6 Waterfront Toronto ... 3-24
3.5.7 City Councillors ... 3-25
3.5.7.1 Former Ward 28 ... 3-25
3.5.7.2 Ward 10, formerly Ward 20 ... 3-25
3.5.7.3 Ward 11, formerly Ward 19 ... 3-25
3.5.7.4 Ward 13, formerly Ward 27 ... 3-26
3.6 Potentially Affected and Interested Persons, Businesses and Interest Groups ... 3-26
3.6.1 Community & Business Associations and Interest Groups ... 3-27
3.6.1.1 York Quay Neighbourhood Association ... 3-28
3.6.1.2 Downtown Yonge BIA ... 3-28
3.6.1.3 St. Lawrence Market Neighbourhood BIA ... 3-29
3.6.1.4 Toronto Entertainment District BIA ... 3-30
3.6.1.5 Toronto Financial District BIA ... 3-30
3.6.2 Other Interest Groups ... 3-30
3.6.2.1 Ryerson University ... 3-30
3.6.2.2 Cycle Toronto ... 3-31
3.6.2.3 Neighbourhood Information Post ... 3-31
3.6.3 Community Open Houses ... 3-32
3.6.3.1 Community Open House #1 - February 2019 ... 3-32
3.6.3.2 Community Open House #2 - February 2020 ... 3-33
3.6.4 Project Websites ... 3-35
3.7 Summary of Key Comments and Concerns ... 3-35
3.8 Final Notification and Draft ESR Review Period ... 3-46

4 Environmental Inventory ... 4-1

4.1 Agricultural Resources ... 4-1
4.2 Forestry Resources ... 4-1
4.3 Cultural Heritage Resources ... 4-2
4.3.1 Heritage Properties and Districts ... 4-2
4.3.2 Archaeological Resources ... 4-3
4.4 Land Use and Communities ... 4-3
4.4.1 Land Use Planning and Communities ... 4-3
4.4.1.1 City of Toronto Official Plan ... 4-4
4.4.1.2 TOcore ... 4-6
4.4.1.3 City of Toronto Zoning By-law ... 4-7
4.4.2 Transportation ... 4-7
4.4.2.1 Vehicular Traffic ... 4-7
4.4.2.2 Transit ... 4-8
4.4.2.3 Cycling ... 4-9
4.4.3 Other Planned and Future Projects ... 4-9

4.4.4 Existing Utilities 4-11
4.4.5 First Nations Lands and Territory 4-12
4.5 Mineral Resources 4-12
4.6 Natural Environment Resources 4-12
4.6.1 Physical Environment 4-13
4.6.1.1 Physiography 4-13
4.6.2 Atmospheric Environment 4-15
4.6.2.1 Climate Change 4-15
4.6.2.2 Existing Air Quality 4-16
4.6.2.3 Ambient Noise 4-17
4.6.3 Surface Water Resources 4-18
4.6.3.1 Water Quality 4-19
4.6.3.2 Municipal Water Supply 4-20
4.6.3.3 Lost Rivers 4-20
4.6.4 Groundwater Resources 4-20
4.6.4.1 The Water Table 4-21
4.6.4.2 Well Records 4-21
4.6.5 Designated or Special Natural Areas 4-21
4.6.6 Natural Heritage Features 4-21
4.7 Recreational Resources 4-22
4.7.1.1 Public Parks 4-22
4.7.1.2 Recreation Centres and Attractions 4-23
4.8 Visual and Aesthetic Resources 4-23

5 Alternative Methods 5-1

5.1 Development and Identification of Alternative Methods 5-1
5.2 Description of Alternative Methods 5-4
5.2.1 Open Cut Alternative Routes 5-4
5.2.1.1 Open Cut Route 1 – removed from consideration 5-4
5.2.1.2 Open Cut Route 2 5-4
5.2.1.3 Open Cut Route 3 - removed from consideration 5-5
5.2.1.4 Open Cut Route 4 5-5
5.2.2 Tunnel Alternative Routes 5-5
5.2.2.1 Tunnel Route 1 5-7
5.2.2.2 Tunnel Route 2 5-7
5.3 Evaluation of Alternative Methods 5-8
5.4 Preferred Alternative (Tunnel Route 1) 5-12

6 Project Description 6-1

6.1 Design Phase 6-3
6.2 Construction Phase 6-4
6.2.1 Tunnel and Shaft 6-4
6.2.2 Transformer Stations 6-6

6.2.3 Decommissioning of Existing Underground Cables 6-6
6.3 Maintenance, Operation and Retirement 6-6
6.4 Project Schedule 6-7

7 Potential Environmental Effects and Mitigation Measures 7-1

7.1 Agricultural Resources 7-2
7.2 Forestry Resources 7-2
7.3 Cultural Heritage Resources 7-2
7.4 Land Use and Communities 7-3
7.4.1 Land Use Planning and Communities 7-3
7.4.1.1 Local Residents and Businesses 7-3
7.4.1.2 Health and Safety 7-4
7.4.1.3 Property Rights 7-5
7.4.1.4 Electric and Magnetic Fields (EMF) 7-6
7.4.2 Transportation 7-6
7.4.2.1 Vehicular Traffic 7-6
7.4.2.2 Transit 7-7
7.4.2.3 Cyclists and Pedestrians 7-8
7.4.3 Planned and Future Projects 7-9
7.4.4 Existing Utilities 7-9
7.4.5 First Nations Lands and Territory 7-11
7.5 Mineral Resources 7-11
7.6 Natural Environment Resources 7-11
7.6.1 Physical Environment 7-11
7.6.1.1 Waste Generation 7-12
7.6.1.2 Contaminated Soil and Groundwater 7-12
7.6.2 Atmospheric Environment 7-13
7.6.2.1 Climate 7-13
7.6.2.2 Air Quality 7-14
7.6.2.3 Noise 7-15
7.6.2.4 Vibration 7-16
7.6.2.5 Mud 7-16
7.6.3 Surface Water Resources 7-16
7.6.3.1 Spills 7-16
7.6.4 Groundwater Resources 7-17
7.6.4.1 Excavation and Dewatering 7-18
7.6.4.2 Groundwater Quality 7-19
7.6.5 Designated or Special Natural Areas 7-19
7.6.6 Natural Heritage Features 7-19
7.7 Recreational Resources 7-19
7.8 Visual and Aesthetic Resources 7-20
7.9 Summary of Potential Environmental Effects, Mitigation Measures, and Residual Effects 7-21

8 Effects Monitoring 8-1
9 Conclusion 9-1
10 References 10-1

List of Tables

Table 1-1: Potentially Required Permits, Licences and Approvals 1-16
Table 3-1: Summary of Comments and Concerns Raised during the Class EA Process 3-36
Table 5-1: Summary of Evaluation of Alternative Routes 5-9
Table 6-1: Project Schedule 6-7
Table 7-1: Summary of Potential Effects, Mitigation Measures and Residual Effects 7-22

List of Exhibits

Exhibit 1-1: Proposed Tunnel Route and Shaft Locations (Preferred Route) 1-3
Exhibit 1-2: Proposed Tunnel Entry Shaft Location 1-7
Exhibit 1-3: Proposed Tunnel Mid Shaft Location 1-8
Exhibit 1-4: Proposed Tunnel Exit Shaft Location 1-9
Exhibit 1-5: Class Environmental Assessment Process Diagram 1-13
Exhibit 2-1: Refined Study Area with Existing Underground Cable to be Replaced 2-3
Exhibit 2-2: Refined Study Area with Alternative Routes 2-4
Exhibit 5-1: Alternative Open Cut and Tunnel Routes 5-3
Exhibit 5-2: Examples of Tunnel Boring Machines 5-6
Exhibit 5-3: Preferred Route (Tunnel Route 1) and Shaft Locations 5-14
Exhibit 6-1: Example of a Cross Section of Tunnel Installation 6-2
Exhibit 6-2: Cross Linked Polyethylene (XLPE) Transmission Cable 6-3

List of Appendices

Appendix A Past Study Area Maps
Appendix A1 Original Study Area in May 2018
Appendix A2 Refined Study Area in November 2018
Appendix B Duty to Consult
Appendix B1 Hydro One's Duty to Consult Inquiry
Appendix B2 Crown's Duty to Consult Delegation

Appendix C Consultation

Appendix C1 Project Contact Lists

First Nations and Métis Communities
Federal Government Representatives and Agencies
Provincial Government Representatives and Agencies
Municipal Government Representatives and Agencies
Potentially Affected and Interested Persons and Interest Groups

Appendix C2 Project Notices

Notice of Commencement
Project Update #1
Community Open House #1 Invitation
Project Update #2
Community Open House #2 Invitation
Notice of Completion of Draft Environmental Study Report

Appendix C3 Municipal Agency – Workshop and Meetings

Municipal Agency Workshop (June 2018)
City of Toronto – Infrastructure Coordination Unit (October 2018)
City of Toronto – Infrastructure Coordination Unit (June 2019)
City of Toronto – Infrastructure Coordination Unit (February 2020)

Appendix C4 Community Open House Summary Reports

Community Open House #1
Community Open House #2

Appendix C5 Consultation Log

First Nations and Métis Communities
Federal Government Representatives and Agencies
Provincial Government Representatives and Agencies
Municipal Government Representatives and Agencies
Potentially Affected and Interested Persons and Interest Groups

Appendix D Environmental Inventory Figures and Tables

Appendix E Supporting Environmental Reports and Information

Appendix E1 Cultural Heritage Existing Condition

Appendix E2 Stage 1 Archaeological Assessment

Appendix F Alternative Routes Evaluation Table

Appendix G City of Toronto InView Database

List of Acronyms & Abbreviations

°C	Degrees Celsius
AA	Archaeological Assessment
AAQC	Ambient Air Quality Criteria
BIA	Business Improvement Association
CAAQ	Canadian Ambient Air Quality
CHER	Cultural Heritage Evaluation Report
CHVI	Cultural Heritage Value or Interest
City	City of Toronto
cm	centimetre
CN Railway	Canadian National Railway
CO	Carbon Monoxide
CRC	Community Recreation Centre
CTC	Credit Valley, Toronto and Region and Central Lake Ontario
DMOG	Digital Map Owners Group
EA	Environmental Assessment
EAA	*Environmental Assessment Act*
EAB	Environmental Assessment Branch (Ministry of the Environment, Conservation and Parks)
EASR	Environmental Activity and Sector Registry

ECCC	Environment and Climate Change Canada
EBA	Event based area
EMF	Electric and magnetic fields
EMP	Environmental Management Plan
ENDM	Ministry of Energy, Northern Development and Mines
ESR	Environmental Study Report
FLR	Field Liaison Representative
FN&M	First Nations and Métis
GPS	Global Positioning System
ha	hectare
HIA	Heritage Impact Assessment
HVA	Highly Vulnerable Aquifer
Hydro One	Hydro One Networks Inc.
ICU	Infrastructure Coordination Unit (City of Toronto), formerly MCIC
IESO	Independent Electricity System Operator
IPZ	Intake Protection Zone
km	kilometre
km^2	square kilometre
kV	kilovolt
l	litre

LPOF	Low pressure oil filled
m	metre
m^3	cubic metre
masl	metres above sea level
mbgs	metres below ground surface
MCIC	(Formerly) Major Capital Infrastructure Coordination (City of Toronto), as of December 2019 referred to as Infrastructure Coordination Unit (ICU)
MCFN	Mississaugas of the Credit First Nation
MECP	Ministry of the Environment, Conservation and Parks
mm	millimetre
MMAH	Ministry of Municipal Affairs and Housing
MNRF	Ministry of Natural Resources and Forestry
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MOU	Memorandum of Understanding
MPP	Member of Provincial Parliament
MSCS	Ministry of Safety and Correctional Services
MTO	Ministry of Transportation
NAPS	National Air Pollution Surveillance
NO_X	Oxides of Nitrogen
NO_2	Nitrogen Dioxide

OEB	Ontario Energy Board
OHSA	*Occupational Health and Safety Act*
OP	Official Plan
O. Reg.	Ontario Regulation
ORMGP	Oak Ridges Moraine Groundwater Program
OWRA	*Ontario Water Resources Act*
PCB	Polychlorinated biphenyl
PF&R	Parks, Forestry and Recreation (City of Toronto)
PM10	Particulate matter 10 micrometres or less in diameter
PM2.5	Particulate matter 2.5 micrometres or less in diameter
PPS	Provincial Policy Statement, 2020
Proposed Project	Power Downtown Toronto Project
Province	Province of Ontario
PTTW	Permit to Take Water
SAC	Spills Action Centre
SO_2	Sulphur Dioxide
TBM	Tunnel Boring Machine
THESL	Toronto Hydro Electric System Ltd.
TPUCC	Toronto Public Utility Coordination Committee
TRCA	Toronto and Region Conservation Authority

TS	Transformer Station
TSP	Total suspended particulate matter
TTC	Toronto Transit Commission
XLPE	Cross linked polyethylene
$\mu g/m^3$	microgram per cubic metre
WMO	World Meteorological Organization
WWIS	Water Well Information System

1 Introduction

Hydro One Networks Inc. (Hydro One) is planning to replace the existing 115 kilovolt (kV) underground transmission cables (circuits C5E and C7E) between Terauley Transformer Station (TS), near Bay Street and Dundas Street, and Esplanade TS, near Lower Sherbourne Street and The Esplanade, located in the downtown core of the City of Toronto.

The underground cables were installed in the 1950s and are approaching their end of life. The proposed Project involves the installation of an underground tunnel at approximately 25 metres (m) below grade in the bedrock to house the replacement cables. Three associated shafts will be constructed to provide access to the tunnel for operation and maintenance of the cables. The proposed tunnel route and the three proposed shaft locations are shown in **Exhibit 1-1**.

The proposed Project is subject to the Class Environmental Assessment (EA) for Minor Transmission Facilities (Hydro One, 2016), an approved planning process under the Ontario *Environmental Assessment Act (EAA)*. The Class EA was developed as a streamlined process to ensure that minor transmission projects that have a predictable range of effects are planned and carried out in an environmentally acceptable manner. The proposed Project is also subject to the Leave to Construct approval under Section 92 of the *Ontario Energy Board Act, 1998*.

A Class EA has been carried out to identify and evaluate the alternatives, consult on and select the preferred route and construction method, as well as to assess the potential environmental effects of the proposed Project. This Environmental Study Report (ESR) has been prepared in accordance with the requirements of the *EAA*.

Exhibit 1-1: Proposed Tunnel Route and Shaft Locations (Preferred Route)

1.1 Need for the Undertaking

The existing circuits C5E and C7E running between Esplanade TS and Terauley TS are direct-buried 115 kV low pressure oil filled underground transmission cables that provide a critical supply to Toronto's downtown core (see **Exhibit 1-1**). These circuits require replacement as they were put into service in the 1950s and are approaching the end of life.

The proposed replacement of the aging underground cables will provide for continued reliable electrical supply to the city's residents and critical institution and services such as TTC, hospitals, entertainment complexes, commercial and residential building, as well as universities and colleges located within Toronto's downtown core.

1.2 Description of the Undertaking

The proposed Project involves the installation of an underground tunnel in bed rock to house the replacement cables. Three associated shafts will be needed to provide access to the tunnel for operation and maintenance of the cables. The proposed Project also includes the decommissioning of the existing underground cable shown in **Exhibit 1-1**.

The proposed underground tunnel would run between Terauley TS and Esplanade TS at a depth of approximately 25 m below ground within City's existing road allowances. The tunnel will be approximately 3 m in diameter and 2.5 km in length.

The proposed locations for the three tunnel shafts are:

- **Entry Shaft (Location A)** – The entry shaft is to be located on Hydro One's property at Esplanade TS. This shaft will be approximately 12 m in diameter and will be the entry point for the tunnel boring machine (TBM). It will remain open for the duration of construction (approximately 24 to 28 months) to allow for the removal of excavated materials and installation of the new cables. Upon completion of construction, the entry shaft will be used periodically for inspection and maintenance access, as required.

- **Mid Shaft (Location B)** – The mid shaft is to be located within existing road allowance near the intersection of Sherbourne Street and Shuter Street. The construction of this shaft will take approximately three months (in addition to time for utility relocation, if required) to complete and temporary lane restrictions will be required. This location is proposed as it would minimize conflict with other existing underground utilities and infrastructure, as well

as minimize disruption to the public. The exact location of the mid shaft is to be determined through detailed design and consultation with the City of Toronto. Upon completion of construction, the mid shaft will appear as a grate within the road allowance which may be used periodically for inspection and maintenance access, as required.

- **Exit Shaft (Location C1 or C2)** – The exit shaft is to be located either inside or near Terauley TS. The shaft will be approximately 8 m in diameter and will be the exit point for the TBM. It will remain open for approximately 24 to 28 months during the construction and cable installation. The exit shaft location is to be determined through detailed design and consultation with Toronto Hydro Electrical System Ltd., the City of Toronto and CreateTO. Upon completion of construction, the exit shaft will be used periodically for inspection and maintenance access, as required.

The proposed shaft locations are shown in **Exhibits1-2, 1-3 and 1-4**. The final locations of the tunnel shafts will be determined through detailed design.

Associated station work will be completed at Terauley TS and Esplanade TS to establish the new connections of the replacement cables as well as to decommission the existing cables.

Tunnel ventilation equipment and/or building to be installed at Esplanade TS, if required. The tunnel ventilation requirement will be determined through detailed design.

Detailed design will be completed following the filing of the final ESR. Upon the successful completion of the Class EA and the Ontario Energy Board (OEB) Section 92 processes, construction may begin as early as May 2021 and be completed by December 2024. More information about the different phases of the proposed Project can be found in **Section 6**.

Exhibit 1-2: Proposed Tunnel Entry Shaft Location

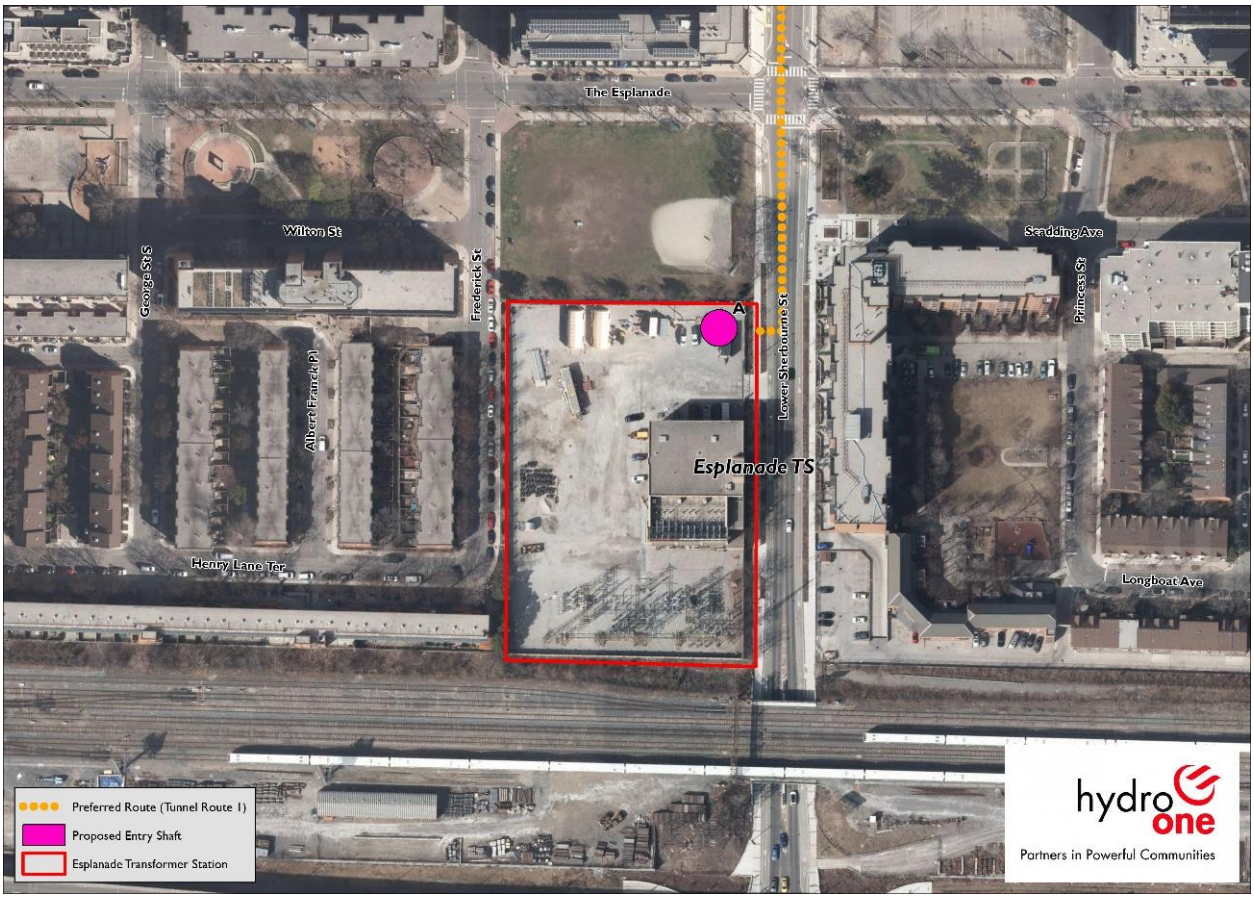
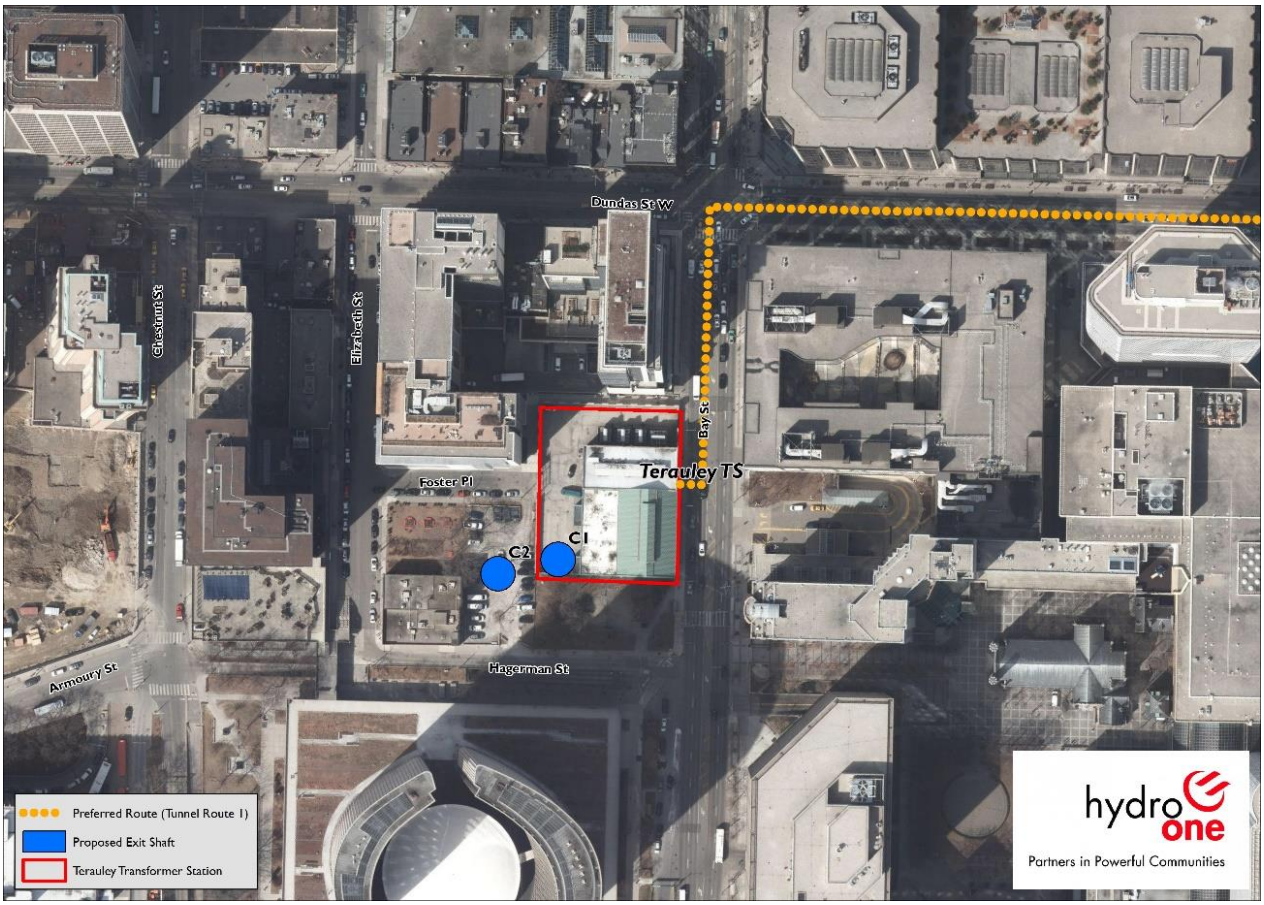


Exhibit 1-3: Proposed Tunnel Mid Shaft Location

Exhibit 1-4: Proposed Tunnel Exit Shaft Location



1.3 Alternatives to the Undertaking

The Class EA process requires identification and evaluation of reasonable alternatives. Alternatives must be reasonable from technical, economic and environmental perspectives. Two distinct types of alternatives were considered:

- "Alternatives to" the undertaking are functionally different approaches to addressing the need for the undertaking; and,
- "Alternative methods" consider different ways of carrying out the undertaking.

The following transmission alternatives to the undertaking were considered:

- Alternative 1: Do Nothing; and,
- Alternative 2: Replace the existing underground cables.

Alternative 1: Do Nothing (Reactive Replacement)

This alternatives involves Hydro One continuing to operate and maintain the existing C5E and C7E cables in their existing state and replace them upon failure (Reactive Replacement). This alternative has been considered and rejected as failure of these cables will result in prolonged circuit outages, potential customer interruptions, loss of redundant supply negatively affecting operational flexibility, and potential for oil leaks requiring environmental remediation.

Given the significant operational disadvantages, the "Do Nothing" alternative is not considered to be a reasonable alternative to be carried forward for further consideration.

Alternative 2: Replace the Existing Underground Cables (Planned Replacement)

This alternative involves the planned replacement of 7.2 circuit km of end-of-life 115-kV low pressure oil-filled (LPOF) underground transmission cables with oil-free cross linked polyethylene (XLPE) cables between Terauley TS and Esplanade TS. Due to the deteriorated condition of the existing cables and the increased risk of cable failure and oil leaks, this alternative will mitigate risks to reliability, loss of supply and adverse environmental impact.

This alternative (Planned Replacement) is the preferred "alternative to" the undertaking as it will meet the need for the undertaking and minimize operational and environmental risks.

The "alternative methods" as well as the methodology and rationale for selecting a preferred alternative is further discussed in **Section 5**.

1.4 Approval Process and Regulatory Requirements

This section outlines the approval process required under the Class EA process as well as other regulatory requirements.

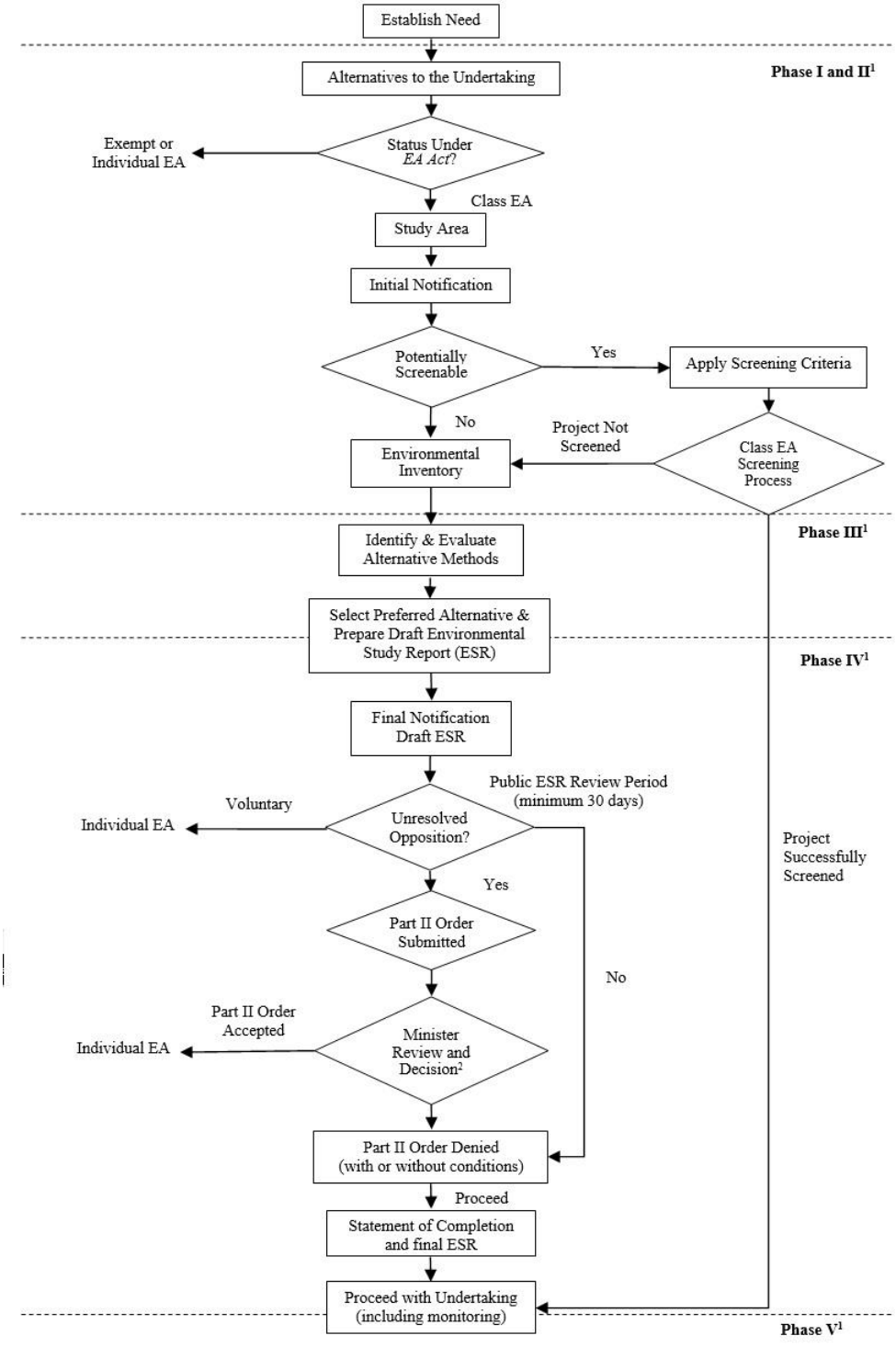
1.4.1 Class Environmental Assessment Process

The draft ESR has been prepared in accordance with the Class EA for Minor Transmission Facilities (Hydro One, 2016), an approved planning process under the *EAA*. Components of the process include:

- Establish need (Section 1.1);
- Identify and evaluate "alternatives to" the undertaking (Section 1.3);
- Define study area (Section 2);
- Issue initial notification (Section 3.1);
- Conduct environmental inventory (Section 4);
- Identify and evaluate "alternative methods" (Section 5);
- Select preferred alternative method (Section 5) and prepare draft ESR;
- Issue final notification and the draft ESR for a 45-day public review and comment period (Section 3.8);
- File final ESR and Class EA Statement of Completion with the MECP, and proceed with the undertaking (Section 3.8); and,
- Conduct consultation throughout the process (Section 3).

The Class EA process is illustrated on **Exhibit 1-5**.

Exhibit 1-5: Class Environmental Assessment Process Diagram



[1] Phases of Generic Project Planning Process as described in the MOECC Code of Practice, s. 6.1.7 (MOECC, 2014)
[2] Refers to the Minister of the Environment

The Class EA for Minor Transmission Facilities (Hydro One, 2016) applies to Category B transmission projects that are not associated with Category B generation projects, as per Guide to EA Requirements for Electricity Projects under Ontario Regulation (O. Reg) 116 (MECP, 2011).

Transmission facilities covered under the Class EA include:

a. The planning, design and construction of minor transmission lines and/or transformer stations (including telecommunication stations), and the subsequent operation, maintenance and retirement of these facilities.

   Minor transmission lines include all transmission line projects involving greater than 2 km of line, which:

   i. Are capable of operating at a nominal voltage equal to 115 kV.

   ii. Are capable of operating at a nominal voltage level higher than 115 kV and less than 500 kV, and which involve less than 50 km of line.

b. The planning, design and construction required to modify or upgrade a transmission line, and the subsequent operation, maintenance and retirement of the revised line where:

   i. The work requires replacement of poles or towers and/or changes in the right of way for existing transmission lines capable of operating at a nominal voltage of 115 kV or higher and no more than 500 kV.

   ii. The modified or upgraded existing lines will operate at a nominal voltage of equal to or greater than 115 kV, and equal or less than 500 kV (nominal voltage).

c. The planning, design and construction required to modify or expand a transformer station, and the subsequent operation, maintenance and retirement of the modified station where:

   i. Acquisition of additional property is required; and,

   ii. The modified stations are capable of operating at a nominal voltage level of equal to or greater than 115 kV and equal to or less than 500 kV (where a station has more than one voltage level, the highest level is used in defining the station's nominal operating voltage.).

It is Section "a." of the Class EA above that is triggered by this proposed Project.

With the completion of this draft ESR, Hydro One has issued a final notification to First Nation and Métis communities, federal, provincial and municipal government officials and agencies, potentially affected and interested persons, and interest groups. The draft ESR will be made available for public review and comment for a period of 45 calendar days, from April 15, 2020 until May 29, 2020 at 4:30 p.m. Hydro One will make best efforts to respond and resolve issues raised by concerned parties during the review period. Any issues and their respective resolutions will be documented and summarized in the final ESR.

If a concern cannot be resolved by the proponent, the concerned party (requester) may request the proponent to elevate the project to a higher level of assessment (i.e., Individual EA). If the proponent decides not to elevate the status of the project, and the requester wishes to pursue the matter, he/she may request that the Minister or delegate grant a Part II Order and elevate the status of the project.

Once the review period of the draft ESR is complete, comments received during the review period will be incorporated into the final ESR. A copy of the final ESR will be placed on the Hydro One project website and provided to the Environmental Assessment Branch (EAB) and the appropriate Regional EA Coordinator at the MECP for filing. Once the final ESR and the Class EA Statement of Completion have been filed with the MECP, the proposed Project will be considered approved and may proceed as outlined in the final ESR.

1.4.2 Other Permits, Licences and Approvals

In addition to meeting *EAA* requirements, there are a number of necessary permits, licenses and approvals that may be required under federal provincial and municipal legislations. These additional requirements are listed in **Table 1-1**. Hydro One will contact the appropriate regulatory agencies to ensure that the proposed Project meets all regulatory requirements prior to construction.

The proposed Project does not trigger a federal EA under the federal *Impact Assessment Act*.

As stated in Section 62.(1) of the *Planning Act* (R.S.O. 1990, c. P.13), "An undertaking of Hydro One Inc. that has been approved under the *EAA* is not subject to this *Act*." Hydro One has been working with the City of Toronto during the Class EA process and will continue to consult with City staff regarding the effects of the construction on local traffic and the community, as needed.

Table 1-1: Potentially Required Permits, Licences and Approvals

Permit, License, or Approval	Primary Agency	Description
Leave to Construct under Section 92 of the *OEB Act*	OEB	Required for the proposed replacement of existing underground transmission cables.
Drainage Environmental Compliance Approval (ECA)	MECP	May be required for construction dewatering operations (i.e., treatment system to discharge tunnel water to sanitary/combined sewer).
Air and Noise Environmental Activity and Sector Registry (EASR)	MECP	May be required for the installation of any noise emitting equipment (i.e., tunnel ventilation equipment and/or building at Esplanade TS, if required).
EASR or Permit to Take Water (PTTW)	MECP	Required for construction dewatering operations between 50,000 - 400,000 litres per day (L/day).
Archaeological Acceptance Letters	Ministry of Heritage, Sport, Tourism and Culture Industries	May require Acceptance Letters prior to undertaking new ground disturbance in areas with archaeological potential (i.e., tunnel shaft locations).
Municipal Building Permit	City of Toronto	May be required for the installation of a tunnel ventilation building at Esplanade, if required.
Municipal Consent	City of Toronto	Required for the installation of the tunnel and mid shaft within City of Toronto road allowances.
Municipal Road Damage Deposit	City of Toronto	May be required to submit a deposit with the City of Toronto as a guarantee against damage to the curb, sidewalk, road, boulevard and other City services located in municipal boulevards, as well as any clean-up of the adjoining street.
Noise Exemption	City of Toronto	May be required if the operation of construction equipment extends beyond the permitted hours.
Street Occupation Permit	City of Toronto	Required for temporarily occupying any portion of the public right of way.
Sewer Discharge Permit	City of Toronto	Required when water from the tunnel during construction and operation is discharged into the City's sewer system.

Permit, License, or Approval	Primary Agency	Description
Temporary Street Closure Permit	City of Toronto	Required to temporarily close the street fully or partially to occupy a curb-lane, sidewalk or boulevard.
Toronto Transit Commission (TTC) Technical Review	TTC	Required to cross TTC Subway Line at Yonge Street.
Enwave Energy Ltd. (Enwave) Technical Review	Enwave	Required to cross Enwave tunnel at Bay Street.
Clearance Letters	City of Toronto, utility or railway company	Required to cross or be in close proximity to utilities or railways.
Utility Relocation Agreements	City of Toronto or utility (e.g., Toronto Hydro Electric System Ltd.)	May be required to relocate existing utility assets.

2 Study Area

A project study area is delineated to encompass the area of potential project effects. The study area has undergone changes prior to and during the Class Environmental Assessment (EA) process.

In 2017, Hydro One completed a technical study that identified five feasible alternative routes for consideration in the Class EA process (alternative routes are discussed further in **Section 5**). The Notice of Commencement was released in May/June 2018 with a study area bounded by the western curb of University Avenue and York Avenue, the eastern curb of Berkeley Street, Lake Ontario to the south, and the northern curb of Gerrard Street (see **Appendix A1**).

2.1 Removal of Open Cut Route 1 and Open Cut Route 3 and Refined Study Area

In February and May of 2018, Hydro One received letters from the City of Toronto that identified a construction restriction area in the area bounded by Dundas Street to the north, Lake Shore Boulevard/Harbour Street to the south, Bathurst Street to the west and Jarvis Street to the east. This construction restriction area within Toronto's downtown core, which limits working hours in the evenings, was also discussed at a Toronto Public Utility Coordination Committee (TPUCC) meeting on September 5, 2018. As a result, Hydro One removed two open cut alternatives located within this construction restriction area (Open Cut Routes 1 and 3). Subsequently, the study area was expanded to just north of Gerrard Street and just east to Parliament Street to incorporate any potential new routes for consideration during the Class EA process.

Project Update #1 was released in late November 2018 and is reflective of these changes (See **Appendix A2**).

2.2 Addition of Open Cut Route 4

Following meetings between Hydro One and the City of Toronto Infrastructure Coordination Unit (ICU) in August and October 2018, ICU staff provided an additional route to be considered in November 2018. This new open cut route (Open Cut Route 4) follows George Street north from Esplanade Transformer Station (TS), Gerrard Street west, and Elizabeth Street south into Terauley TS. As such, the study area was further refined and finalized.

The Community Open House #1 invitation was released in February 2019 and included a map reflective of this change.

The final study area for the proposed Project is delineated as follows: just north of Gerrard Street to the north, slightly east of Parliament Street to the east, McCaul Street to the west, and Lake Ontario to the south.

Exhibit 2-1 shows the refined study area with the existing underground cable to be replaced between Terauley TS and Esplanade TS, and **Exhibit 2-2** shows the refined study area with the four alternative routes that were assessed in the Class EA.

Exhibit 2-1: Refined Study Area with Existing Underground Cable to be Replaced

Exhibit 2-2: Refined Study Area with Alternative Routes

3 Consultation

Consultation is an important part of the Class Environmental Assessment (EA) process as it provides those who may be potentially affected by or interested in the proposed Project with opportunities to contribute to the planning process. It also allows the proponent to gather information and knowledge related to the social, cultural, economic and environmental concerns that are of direct relevance to the proposed Project.

This section outlines the consultation Hydro One carried out with First Nations and Métis (FN&M) communities, federal, provincial and municipal government representatives and agencies, potentially affected and interested persons, businesses and interest groups.

The key principles that have guided Hydro One's approach to encourage two-way communication and consultation for the proposed Project include the following:

- Early, ongoing and timely communications and consultation;
- Clear project information;
- An open, transparent, and flexible consultation process;
- Respectful dialogue with FM&M communities, elected officials, and project stakeholders;
- Clear communication and consultation with elected officials, to ensure they have copies of all public-facing materials before they are distributed to their constituents;
- The provision of ongoing online and in-person opportunities for interested parties to learn about and provide meaningful input on the proposed undertaking; and
- Full and fair consideration and documentation of all input received during the consultation process and incorporation of such input, where feasible, into project decision-making.

Communication and consultation methods were selected to promote a comprehensive and transparent approach, these methods included:

- Project notices via flyers and emails to announce and provide updates on the proposed Project;

- A workshop for key municipal agencies and utilities which provided an opportunity to understand other planned infrastructure projects in proximity of the proposed Project and identify coordination opportunities;
- Community Open Houses, which provided opportunities for interested parties to discuss the proposed Project with the Hydro One project team and pose questions, as well as complete comment forms;
- In-person meetings with FN&M communities, elected officials, key stakeholders and interest groups;
- Establishment of a project contact list, through which interested parties received project updates via email;
- Proactive responses to stakeholder comments and concerns by Hydro One Community Relations representatives;
- Establishment and maintenance of a project website to facilitate the sharing of project information www.HydroOne.com/PowerDowntownToronto; and,
- Establishment and maintenance of an online engagement platform to collect feedback and engage community members interactively and share project information and updates www.TalkPowerDowntownTO.ca.

The consultation activities that took place for the proposed Project are described in the sections below. Copies of consultation materials are included in the appendices as referenced in the report sections below.

Section 3.1 provides a summary of the project notices and **Section 3.2** to **Section 3.6** provide the consultation summary with the project stakeholders. A summary of input received from all interested parties is included in **Section 3.7**. The input was considered by the project team and incorporated into the proposed Project, where appropriate. **Section 3.8** provides a summary of comments received during the draft Environmental Study Report (ESR) public review and comment period.

3.1 Initial Notification and Other Project Notices

Hydro One issued the Class EA Notice of Commencement for the proposed Project in May/June 2018[1]. The Notice of Commencement provided the description and need for the proposed Project, a study area map delineating the alternative routes and associated regulatory processes. In addition, the notice referred to the project website and the online engagement platform, as well as provided contact information for further information.

The notice was emailed and mailed to those on the project contact list which included Mississaugas of the Credit First Nation (MCFN), federal, provincial and municipal government representatives and agencies including the City of Toronto Infrastructure Coordination Unit (ICU), Toronto Public Utility Coordination Committee (TPUCC), potentially affected and interested persons, businesses, and interest groups including business improvement associations (BIAs) and community associations.

The Notice of Commencement was sent via Canada Post unaddressed admail to over 60,000 residential and business addresses within the study area.[2]

In addition, the subsequent project updates and Community Open House invitations were distributed to residents and businesses within the study area and to those on the project contact list via Canada Post unaddressed admail and email:

- **Project Update #1** – A project update was distributed via Canada Post unaddressed admail between November 19 and 23, 2018 and via email between November 16 and 20, 2018. This update provided information on the expansion to the study area, removal of two open cut alternative routes and addition of one open cut alternative route being considered based on input gathered through consultation feedback and technical constraints.

[1] The Notice of Commencement was sent to government agencies together with an invitation to the municipal workshop on May 9, 2018. The Notice of Commencement was distributed to others on the project contact list and the public on June 8, 2018.

[2] The study area has been refined during the Class EA process, see **Section 2** for more details.

- **Community Open House #1 Invitation** – An invitation to the first round of open houses, held on February 26 and 28, 2019, was emailed on February 14, 2019; Canada Post unaddressed admail was delivered between February 14 and 20, 2019.

- **Project Update #2** – A second project update was distributed via email on November 1, 2019. This update advised that Hydro One was working to select a preferred route and that the next round of Community Open Houses would be announced shortly.

- **Community Open House #2 Invitation** – An invitation to the second round of open houses, held on February 25 and 27, 2020, was emailed on February 13, 2020; Canada Post unaddressed admail was delivered between Feb 10 – 14, 2020.

Refer to **Appendix C1** for the contact lists and a map of the Canada unaddressed admail notification area. A copy of the initial notification letter and other project notices can be found in **Appendix C2**.

Notice of Completion of the draft ESR and the associated public review and comment period is discussed in **Section 3.8**.

3.2 First Nation and Métis Communities

The consultation requirements of the Class EA process apply to FN&M communities. In adherence to the Crown's duty to consult and accommodate under Section 35 of the *Constitution Act* (1982), Hydro One contacted the Ministry of Energy, Northern Development and Mines (ENDM) on August 14, 2017 to confirm consultation requirements with regard to potentially interested FN&M communities, and provided a description of the characteristics, location and scope of the proposed Project.

On December 18, 2017, ENDM, on behalf of the Crown stated that "based on the information Hydro One has provided to date, the Ministry is of the view that the project will not result in any appreciable adverse impacts to the asserted or established rights of any First Nation or Metis communities." The letter also stated that "given that this project takes place within the asserted traditional territory of the Mississaugas of the New Credit (now Mississaugas of the Credit [MCFN]), Hydro One may wish to proactively notify them of the project on an interest basis at this time."

MCFN was notified of the proposed Project and, throughout the consultation process was regularly informed of project updates and given opportunities to provide input. This was achieved through

notifications via email and Canada Post registered mail; provision of information and updates about the proposed Project, and offers by the Hydro One project team to meet with the community to present the proposed Project, and to address their issues or concerns.

A summary of the comments and concerns raised and Hydro One responses throughout the Class EA process is provided in **Section 3.7**.

See **Appendix B** for a copy of the letters. Refer to **Appendix C5** for the summary of correspondence for the project.

3.2.1 Mississaugas of the Credit First Nation (MCFN)

Hydro One initiated consultation with MCFN by sending the Notice of Commencement letter via email and registered mail on June 18, 2018 to ensure that the MCFN had the opportunity to provide input at an important stage in the project planning.

Hydro One met with the MCFN on March 27, 2019, to provide a project update and discuss details of the proposed Project. At this meeting, MCFN requested that Hydro One share a copy of the Stage 1 Archaeological Assessment (AA) report. This report was provided to MCFN on December 3, 2019.

On Thursday, February 6, 2020, MCFN's Department of Consultation Accommodation (DOCA) provided comments and concerns with the report's analysis and recommendations, particularly pertaining to the potential for deeply buried deposits. Further, MCFN also requested their Field Liaison Representatives (FLR) be present to monitor the construction activities to ensure that no unknown archaeological deposits have been overlooked.

On February 26, 2020, Hydro One replied to MCFN explaining details about the preferred route and construction method, noting that the proposed tunnel will be at approximately 25 m below grade in the bedrock, and the disturbances to near grade will be limited to the entry, mid, and exit shaft locations. Hydro One committed to reviewing these locations once refined by detailed design to further assess archaeological potential. Hydro One explained that the rationale for not being able to accommodate MCFN's request on having FLRs on site during active construction is due to the inherent risks that exist in electrical and construction environments. Hydro One noted that should any artifacts be found during construction, the work will cease immediately and MCFN will be contacted.

On February 28, 2020, Hydro One clarified that the Stage 1 AA was confined to the alternative route alignments and did not cover the shaft locations. Hydro One noted that the archaeological potential at these locations will be evaluated at a later date once the shaft locations have been finalized. Hydro One also committed to keeping MCFN up to date and providing the revised version of the Stage 1 AA report once it is available.

On March 12, 2020, MCFN responded that while they are still not in agreement with the results and recommendations presented in the report, they are pleased that Hydro One has selected a tunnelling route and are looking forward to reviewing any forthcoming Stage 1 AA reports for the shaft locations.

On March 18, 2020 Hydro One provided the revised report to MCFN and advised that the report will be submitted to Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). Hydro One also noted that MCFN will be advised of any upcoming archaeology work for this project. No further comments have been received.

Hydro One committed to continuing to work with MCFN throughout the duration of the project.

3.3 Federal Government & Agencies

Federal government representatives and agencies were kept informed about the propose Project through notification (see **Section 3.1**). The following federal government representatives and agencies were consulted for the project:

- Canadian Armed Forces;
- Canadian National (CN) Railway;
- Environment and Climate Change Canada (ECCC);
- Ports Toronto;
- Transport Canada (TC); and,
- VIA Rail Canada.

On May 10, 2018, Hydro One received an email from TC indicating that they do not require receipt of Class EA related notification as they are requesting proponents to self-assess whether their projects will interact with a federal property and/or waterway or require approval and/or

authorization under any Acts administered by TC, otherwise they should not be included in any further correspondence. Since the above-mentioned triggers do not apply to the proposed Project, TC has been removed from subsequent project notifications.

On July 5, 2018, Hydro One received an email from VIA Rail Canada indicating that they have no concerns about the proposed Project.

Prior to release of the draft ESR, no comments have been received by any of the other federal agencies contacted.

Refer to **Appendix C5** for the summary of correspondence for the project.

3.4 Provincial Government & Agencies

Provincial government representatives and agencies were kept informed about the propose Project through notification (see **Section 3.1**). The following provincial government agencies were consulted for the project:

- Independent Electricity System Operator (IESO);
- Infrastructure Ontario (IO);
- Metrolinx;
- Ministry of Energy, Northern Development and Mining (ENDM);
- Ministry of the Environment, Conservation and Parks (MECP);
- Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI);
- Ministry of Municipal Affairs and Housing (MMAH);
- Ministry of Natural Resources and Forestry (MNRF);
- Ministry of Safety and Correctional Services (MSCS); and,
- Ministry of Transportation (MTO).

The following Members of Provincial Parliament (MPPs) were also consulted:

- Former MPP Han Dong (Former Trinity-Spadina);
- MPP Jessica Bell (University-Rosedale); and,
- MPP Suze Morrison (Toronto Centre).

Prior to release of the draft ESR, no comments were received from the IESO, ENDM, MHSTCI, MMAH, MNRF, MSCS and MTO.

Additional details on correspondence with the other provincial government representatives and agencies can be found in the sections below.

A summary of the comments and concerns raised and Hydro One responses throughout the Class EA process is provided in **Section 3.7**.

Refer to **Appendix C5** for the summary of correspondence for the project.

3.4.1 Infrastructure Ontario (IO)

On May 9, 2018, IO emailed Hydro One to clarify the IO contact for the project, confirm their attendance at the June 2018 Municipal Workshop (see **Section 3.5.1**) and identify the construction of the new Toronto Courthouse at 11 Centre Avenue as an important project underway within the study area.

On November 14, 2019, Hydro One met with IO and Metrolinx to discuss any possible conflicts related to the proposed new Ontario Line project and opportunities for coordinating the projects during design and construction phases. Metrolinx and IO shared alignment options and timelines for the Ontario Line, while Hydro One shared the status and timeline for the proposed Project, and spoke to the alternatives routes and construction methods being considered. It was concluded at the meeting that if one of the tunnel routes was selected as preferred, Hydro One would install its tunnel below the Ontario Line, and that specific interaction between the projects depended on the preferred alternatives selected by both parties.

IO, Metrolinx and Hydro One agreed to continue to coordinate as engineering details became available for the respective projects.

3.4.2 Metrolinx

Metrolinx representatives attended the June 2018 Municipal Workshop. Concerns were raised regarding the potential crossing of the alternative routes with the existing GO Train Corridor.

Following the uploading of the Relief Line from Toronto Transit Commission (TTC) to the Province and Metrolinx as the Ontario Line, Hydro One met with Metrolinx several times between November 2019 and January 2020. Metrolinx and Hydro One discussed the potential conflicts between the proposed Project and the proposed new Ontario Line and opportunities for coordinating the projects during design and construction phases. The paragraphs below outline a summary of those meetings.

On November 14, 2019, Hydro One met with Metrolinx and IO to discuss any potential conflicts related to the proposed new Ontario Line. Through discussions, it was noted that the two projects had several potential conflicts. Subsequently, Hydro One shared conceptual design information for Metrolinx's review and comment.

On December 11, 2019, a follow-up meeting was held where each party exchanged project status updates.

On January 13, 2020, Hydro One met with Metrolinx to present the preferred route and construction method for the proposed Project (Tunnel Route 1). At this meeting, it was confirmed that the potential conflict areas between the two projects would likely be along Sherbourne Street between Queen Street and King Street. The Ontario Line may follow Sherbourne Street and may involve stations in Corktown, near King Street and Sherbourne Street, as well as near Moss Park. The meeting concluded that a non-disclosure agreement must be signed before Metrolinx could provide their design information.

Collaboration between Metrolinx and Hydro One will continue into the detailed design and construction phases of the proposed Project to minimize potential conflict.

3.4.3 Ministry of the Environment, Conservation and Parks (MECP)

On May 9, 2018, Hydro One received confirmation of the assigned Environmental Coordinator from the MECP Central Region Office.

On May 28, 2018, Hydro One emailed the MECP Environmental Coordinator to extend an invitation to the June 2018 Municipal Workshop, as well as offer a conference call or meeting to provide a project briefing. MECP did not attend the workshop.

On February 1, 2019, Hydro One sent MECP the invitation to the Community Open House #1 and offered to meet to provide a project update and discuss next steps.

On the same day, Hydro One received a response from MECP indicating that the Class EA is a proponent-driven process, and that Ministry would only be involved if there are potential concerns identified. The MECP noted that if Hydro One had any specific questions or concerns related to the Ministry's mandates to forward them the information so they could reply through email.

On February 12, 2020, Hydro One shared a detailed progress with MECP to inform them of the selected preferred route, stakeholders consulted to date, environmental studies undertaken and anticipated project timeline including the expected timing for public comment and review period of the draft Environmental Study Report. No comments were received.

3.4.4 Members of Provincial Parliament

When the Class EA was initiated in May 2018, the provincial ridings identified in the study area were Toronto Centre and Trinity-Spadina. At that time, the Toronto Centre's seat was vacant and MPP Han Dong represented Trinity-Spadina.

After the provincial election in June 2018, MPP riding boundaries and their representatives changed. Following the election, MPP Suze Morrison represented Toronto Centre and MPP Jessica Bell represented University-Rosedale, the two ridings identified in the study area at that time.

3.4.4.1 Former MPP Han Dong (Former Trinity-Spadina)

Hydro One initiated pre-consultation with MPP Dong by sending a project notification letter via email on May 1, 2018. This preliminary engagement activity was undertaken early in the project planning process to ensure that the provincial government was aware and could provide input at an important stage in project planning. Hydro One did not hear back from MPP Dong's Office following this outreach.

3.4.4.2 MPP Jessica Bell (University-Rosedale)

On November 7, 2019, Hydro One contacted MPP Bell via email to introduce her to the proposed Project. Hydro One did not hear back from MPP Bell's Office following the email and the project notices that were sent.

On February 24, 2020, following the invitation to Community Open House #2, Hydro One received a reply from MPP Bell's office stating that she was unable to attend the events but sent best wishes.

Hydro One will continue to keep the MPP's Office updated through the life of the project.

3.4.4.3 MPP Suze Morrison (Toronto Centre)

The Constituency Assistant for MPP Morrison's office attended the first round of Community Open Houses in February 2019.

On November 7, 2019, Hydro One contacted MPP Morrison to introduce her to the project. Subsequently, on November 29, 2019, Hydro One met with MPP Suze Morrison's Constituency Assistant. During this meeting, the MPP's Office shared valuable information with Hydro One regarding the community, potential concerns the community may have about this project, and past experience with underground tunnelling projects in the area.. Hydro One noted the MPP Office's concerns and committed to taking them into consideration during the construction phase of the project.

On February 10, 2020, Hydro One met with MPP Morrison and her Constituency Assistant to provide an update in advance of the second round of Community Open Houses. Discussions focused around Hydro One's preferred route, proposed shaft locations and potential effects on the local community.

Hydro One committed to keeping the MPP's Office up to date through the life of the project.

3.5 Municipal Government and Agencies

Municipal government representatives and agencies were kept informed about the propose Project through notification (see **Section 3.1**). The following municipal government agencies were consulted for this project:

- CreateTO;
- City of Toronto various departments/project teams via Infrastructure Coordination Unit (ICU), including:
    - Infrastructure Coordination Unit (ICU);

    - Northwest PATH Project Team;
    - Parks, Forestry and Recreation (PF&R);
    - Sherbourne Watermain Replacement Project Team;
- Toronto and Region Conservation Authority (TRCA);
- Toronto Portlands Company;
- Toronto Public Utility Coordination Committee (TPUCC);
- Union Station; and,
- Waterfront Toronto.

The following Toronto City Councillors were also consulted for this project:

- Former appointed Councillor Lucy Troisi (former Ward 28);
- Councillor Joe Cressy (former Ward 20, now Ward 10);
- Councillor Michael Layton (former Ward 19, now Ward 11); and,
- Councillor Kristyn Wong-Tam (former Ward 27, now Ward 13).

It should be noted that during the 2018 municipal election, Toronto Ward boundaries were revised.

In addition to providing project notices throughout the Class EA, Hydro One held a Municipal Agency Workshop in June 2018, which was attended by members of several municipal agencies and utilities. More details about the workshop can be found in **Section 3.5.1** below.

On January 30, 2020, Hydro One emailed the City of Toronto departments as well as the TPUCC to provide information on the selected preferred route and the proposed shaft locations to solicit any initial technical feedback/comment to better prepare in advance of the Community Open House #2.

Prior to release of the draft ESR, no comments were received from Toronto Portlands Company and Union Station. Additional details on correspondence with the municipal government representatives and agencies can be found in the sections below.

A summary of the comments and concerns raised and Hydro One responses throughout the Class EA process is provided in **Section 3.7**.

Refer to **Appendix C5** for the summary of correspondence for the project.

3.5.1 Municipal Agency Workshop

On May 9, 2018, Hydro One sent a Municipal Agency Workshop invitation, scheduled for June 5, 2018, along with the Notice of Commencement, to relevant City departments, municipal agencies and members of the TPUCC. Representatives from the following agencies participated:

- Beanfield Metroconnect;
- Bell Canada;
- City of Toronto departments:
    - City Planning
    - Engineering and Construction Services
    - Infrastructure Coordination Unit (ICU)
    - Infrastructure Planning
    - Parks, Forestry & Recreation (PF&R)
    - Toronto Water
    - Waterfront Secretariat;
- Enbridge Gas Inc.;
- Infrastructure Ontario;
- Metrolinx;
- Ports Toronto;
- Rogers Cable Communication Inc.;
- Telecon Design (on behalf of Bell Canada);
- Telus Communications Inc.;
- Toronto Transit Commission;
- Waterfront Toronto; and
- Zayo Group.

At the workshop, Hydro One provided an overview of the proposed Project, which included the Class EA process and project schedule, the alternative routes, and construction methods being considered. Discussions at the workshop focused around potential opportunities and challenges associated with the alternative routes, and identification of upcoming projects within the study area that Hydro One would need to consider as part of the Class EA. In addition, Hydro One provided a list of preliminary route evaluation criteria to participants for review and comment.

A copy of the Municipal Workshop Summary Report is included in **Appendix C3**.

3.5.2 CreateTO

During a meeting held with the Downtown Yonge Business Improvement Association on February 21, 2020, it was brought to Hydro One's attention that the City's parking lot west of Terauley TS (located at1 Foster Place/75 Elizabeth Street) is currently managed by CreateTO. Hydro One reached out to CreateTO thereafter to set up a call for February 28, 2020.

On February 27, 2020, Hydro One emailed relevant project background materials to CreateTO in advance of the planned call. Hydro One expressed interest in a portion of the City property for installing a tunnel exit shaft (C2), should the proposed shaft location within Terauley TS be deemed not feasible through detailed design.

On February 28, 2020, Hydro One had a phone call with CreateTO to discuss the future development plans for the City property and potential impact on these plans. Hydro One also brought up the potential temporary use of the parking lot during construction if the exit shaft is located within the Terauley TS property (C1). See **Exhibit 1-4** for the two exit shaft locations under consideration.

Hydro One committed to continuing to work with CreateTO throughout the duration of the project.

3.5.3 City of Toronto

Throughout the course of the planning phase for this project, Hydro One regularly liaised with City of Toronto via the City's MCIC (now ICU). The MCIC acts as the main point of contact for Hydro One with all City of Toronto departments. It should be noted that MCIC was re-organized in December 2019 into a different municipal department and that the name would be Infrastructure Coordination Unit (ICU) moving forward.

The sections below provides a summary of the consultation undertaken with the various departments/project teams within the City of Toronto.

3.5.3.1 City of Toronto – Infrastructure Coordination Unit (ICU)

Hydro One held several meetings and calls with ICU at key milestones throughout the Class EA process. The ICU was also invited to attend meetings with other stakeholders where coordination of projects was relevant. The following paragraphs summarize the consultation with ICU.

On February 12, 2018, prior to the Class EA initiation, Hydro One and other members of the TPUCC received a letter from the City regarding a revised policy that would apply to utility companies. Key highlights of the policy included that no planned work should take place between 7:00 a.m. and 7:00 p.m. in the area bounded by Dundas Street to the north, Lakeshore Boulevard/Harbour Street to the south, Bathurst Street to the west, and Jarvis Street to the east. Work would be permitted in curb lanes where parking is allowed during off-peak hours (typically 9:30 a.m. to 3:30 p.m.). Outside of the noted boundaries, work would be permitted as determined by a City Work Zone Traffic Coordinator.

On May 1, 2018, Hydro One received a letter stating that City Council had re-confirmed that non-emergency utility work should not take place overnight in downtown Toronto.

On August 13, 2018, following the Municipal Agency Workshop, Hydro One met with ICU to present an overview of the proposed Project. ICU indicated that they are responsible for coordinating infrastructure projects undertaken by public and private organizations in the city and identifying opportunities to coordinate work to minimize disruptions. It was agreed at the end of the meeting that a follow-up working session with the City would be set up after the September 5, 2018 TPUCC meeting, where Hydro One was scheduled to present the project.

On October 16, 2018, Hydro One met with ICU to continue the discussion. Representatives from the City's Engineering and Construction Services department and Toronto Hydro Electric System Ltd. (THESL) were also in attendance. Hydro One indicated that Open Cut Route 1 and Open Cut Route 3 were no longer being considered based on feedback and information received to date. This included: construction restriction area noted in the letters mentioned above, utility congestion, underground parking lots and the NW PATH tunnel.

At this meeting, Hydro One indicated that as a result of the removal of two alternative routes, Hydro One had then extended the study area to the north and to the east to allow for more opportunities for other route options. The slides presented at this meeting can be found in **Appendix C3**.

The challenge with constructing within the City's busy streets was discussed and ICU agreed to review the remaining open cut alternative routes in the context of the other infrastructure construction projects that are being proposed. ICU also brought up a few planned projects that Hydro One should be aware of.

On November 29, 2018, ICU emailed Hydro One and provided a detailed assessment of the open cut alternative routes. They included a detailed breakdown of the past projects and associated construction moratoriums, as well as planned projects along each of the alternative routes under consideration. ICU also suggested new open cut alternative routes based on their project information database and identified a 'ICU preferred route' based on their analysis, which was subsequently added as Open Cute Route 4 to the list of alternative routes considered in the Class EA.

On January 22, 2019, Hydro One met with the ICU to review the open cut alternative routes that they had assessed and proposed. At this meeting, ICU explained the key principles that they considered when they assessed the open cut alternative routes:

- Keep major arterial roads free of construction to keep the core moving, this includes minimizing TTC operational disruptions and public disruptions;
- Avoid construction roads that have been surfaced within the last one to two years; and
- Work with Hydro One's requirements to get from point A to B as directly and cost effectively as possible.

At this meeting ICU expressed their preferences and suggested that Hydro One consult further with the TTC and other organizations that have planned projects that may conflict with the alternative routes.

On May 6, 2019, Hydro One met with ICU to provide a project update. At the meeting, Hydro One indicated that they will be retaining an Engineering Consultant to provide support on the conceptual design which will feed into the route selection process, and detailed design for the preferred route to be selected. The ICU confirmed that they will be the SPOC for Hydro One's

Engineering Consultant with respect to collecting information on active and planned infrastructure projects and moratoriums. The ICU also informed Hydro One that they have a new Director and that he should be briefed on the proposed Project.

On June 17, 2019, Hydro One met with ICU to provide a project update to the new Director. At this meeting, the ICU informed Hydro One that there is an existing watermain along Gerrard Street. Furthermore, ICU indicated that precautions would need to be taken if they were to choose any of the routes that would impact Sherbourne Street due to potential cycling concerns or Moss Park as it is located next to the Moss Park Armoury, a federal property. ICU also noted that the City has existing plans to revitalize George Street. ICU committed to helping Hydro One review their preferred construction route/method to determine potentially affected infrastructure stakeholders. The slides presented at this meeting can be found in **Appendix C3**.

On December 3, 2019, Hydro One called ICU to provide a project update and list of upcoming stakeholder meetings where ICU would be invited to attend. It was noted that Hydro One's route selection process was almost complete and they would be updated once the preferred route was selected.

On January 28, 2020, Hydro One called ICU to inform them of the selected preferred route and construction method (Tunnel Route 1). Hydro One indicated that they plan to inform the rest of the City of Toronto departments as well as the TPUCC to solicit for technical feedback/comments prior to Community Open House #2.

On February 5, 2020, Hydro One emailed ICU to inform them that there may not be sufficient space at the Terauley TS for the exit shaft and that one option being considered is to locate the exit shaft in the City-owned parking lot just west of Terauley TS. Hydro One asked whether the City could provide information (e.g., mapping/drawings) on the underground facilities, if any, within the subject property.

On February 24, 2020 a meeting was held with ICU to present the preferred alternative prior to Community Open House #2. Representatives from Toronto Water, Transportation Services as well as Engineering and Construction Services were also present. The meeting was focused on the potential conflicts between the proposed mid shaft location (near the intersection of Shuter Street and Sherbourne Street) with the planned 2020 Shuter Street Road Resurfacing and planned 2021 Sherbourne Watermain Replacement work. ICU also shared information on other planned work, which included: TTC streetcar track work, Front Street development, and new courthouse at Armoury

Street and Centre Avenue, which may be potentially impacted by the proposed Project. The slides presented at this meeting can be found in **Appendix C3**.

Hydro One and ICU agreed to continue to coordinate through detailed design to help minimize and mitigate potential disruptions during construction.

3.5.3.2 City of Toronto – Northwest PATH Project Team

On July 27, 2018, Hydro One met with City of Toronto's Northwest (NW) PATH Project Team via conference call to discuss the potential conflicts between the alternative routes with the NW PATH Phase 2 Project managed by City's Real Estate Services. The City indicated that Open Cut Route 1 and Open Cut Route 3 are in conflict with the NW PATH which runs along University Avenue between Front Street and Wellington Street. It was also brought up that there are several parking lots located along these routes which would be affected. It was noted by the City that the detailed design for the NW PATH Project will begin in 2019. Hydro One indicated that the preferred route for the proposed Project will not be selected until 2020.

Members of the NW PATH Project Team requested to be kept on the project contact list and have been receiving project notices.

No further concerns are expected since Tunnel Route 1 has been selected as the preferred route for the proposed Project, which will not impact the NW PATH Project.

3.5.3.3 City of Toronto – Parks, Forestry and Recreation (PF&R)

Following the Municipal Agency Workshop in June 2018, the City of Toronto confirmed that the 99-year licence agreement between the City of Toronto and Hydro One related to David Crombie Park is still in place.

On November 7, 2019, City of Toronto PF&R sent comments to Hydro One related to the alternative routes and their potential impact on existing park spaces in the city. The comments noted that some routes passed through existing parks, including Moss Park (150 Sherbourne Street), Parliament Square Park (44 Parliament Street), Sherbourne Common (5 Lower Sherbourne Street), two new park development projects at 120 Queens Quay E., and the planned York Street Park (northwest of York Street and Queens Quay West). Moss Park was identified as a critical part of the City's parks network that will be undergoing revitalization and concerns were raised on the alternative routes (Open Cut 1, Open Cut 3, Open Cut 4 and Tunnel Route 2) which could interfere with its implementation.

On November 15, 2019, Hydro One responded to City of Toronto PF&R clarifying that the routes along Queens Quay were no longer being considered and offered a meeting to discuss the alternative routes near Moss Park.

On December 12, 2019, Hydro One met with Toronto PF&R to discuss the City's plans to re-develop the John Innes Community Recreation Centre (CRC) and other facilities within the Moss Park property between 2019 and 2023. City of Toronto PFR committed to keeping Hydro One informed on their plans regarding Moss Park. It was agreed that a follow-up meeting would be set up in early 2020 to continue discussion on the potential conflicts at Moss Park.

On January 31, 2020, following Hydro One's email update on the selected preferred route and the proposed shaft locations, City of Toronto PF&R indicated that they had no concerns in relation to Moss Park and the John Innes CRC. They also requested for Hydro One to confirm that David Crombie Park will not be impacted by the proposed tunnel entry shaft.

On February 20, 2020, Hydro One responded to City of Toronto PF&R indicating that based on the conceptual design, it is unlikely that David Crombie Park will be impacted by the installation of the entry shaft. The shaft is to be located inside the existing Esplanade TS. Hydro One also noted that Toronto PF&R will be kept apprised as the detailed engineering progresses throughout the next few months, and will be provided specific information about the entry shaft once available.

Hydro One committed to continuing to work with City of Toronto PF&R throughout the duration of the project.

3.5.3.4 City of Toronto – Sherbourne Watermain Replacement Project Team

On March 25, 2020, Hydro One met with City of Toronto's Sherbourne Street Watermain Replacement Project Team via conference call. The call focused on the potential conflicts between the proposed mid shaft near the intersection of Shuter Street and Sherbourne Street, with the planned watermain replacement project. Project information was shared and Hydro One indicated that in addition to the proposed shaft location on Shuter Street east of Sherbourne Street (see **Exhibits 1-1 and 1-3**), the Hydro One Project Team is now considering the area on Sherbourne Street south of Shuter Street for the mid shaft. The final mid shaft location will be determined following detailed design.

Members of the Watermain Replacement Project Team and Hydro One agreed to continue to coordinate throughout detailed design stage help minimize and mitigate potential disruptions during construction.

3.5.4 Toronto and Region Conservation Authority (TRCA)

On December 17, 2018, Hydro One received a letter from the Credit Valley, Toronto and Region and Central Lake Ontario (CTC) Source program which informed that the study area is located on a Highly Vulnerable Aquifer. The CTC is a committee made up of three conservation authorities – Credit Valley, Toronto and Region and Central Lake Ontario – to protect municipal water sources.

On December 17, 2019, Hydro One responded to the TRCA/CTC stating that they will comply with all policies and employ any necessary precautions in their mitigation plan for the proposed Project. Hydro One also committed to sharing their mitigation plans and consulting with the agency as the project progresses.

No further comments have been received from the TRCA/CTC to date.

3.5.5 Toronto Public Utility Coordination Committee (TPUCC)

The City of Toronto has established the TPUCC to provide a forum for discussion on upcoming utility work, to table ideas and encourage safety during construction projects. The TPUCC is committed to tempering the effects of construction and reducing the inconveniences that construction can cause to traffic.

The following utilities are members of the TPUCC (Construction Coordination in the City, 2020):

- Aptum Technologies (formerly Cogeco);
- Beanfield Metroconnect;
- Bell Canada;
- City of Toronto;
- Distributel/A2B Fiber Inc.;
- DPM Energy;
- Enbridge Gas Inc.;
- Enbridge Pipelines Inc.;

- Enwave Energy Ltd. (Enwave);
- Group Telecom;
- Ministry of Transportation of Ontario (MTO);
- Metro Fiberwerx;
- Metrolinx;
- Rogers Cable Communication Inc.;
- Telus Communications Inc.;
- TeraSpan Networks Inc.;
- Toronto Hydro Electric System Limited (THESL);
- Toronto Transit Commission (TTC);
- Trans-Northern Pipelines Inc.;
- Videotron; and,
- Zayo Group.

On September 5, 2018, Hydro One met with the members of the TPUCC to review materials presented at the Municipal Agency Workshop and discuss potential project coordination opportunities with other utilities' planned work. During the meeting, feedback and comments were received related to the following topics:

- City of Toronto permitting requirements;
- Moratoriums;
- Construction restriction area within Toronto's downtown core with limited working hours in the evenings;
- Advantages of tunnel routes; and,
- Asset relocation process and timelines.

On February 5, 2020, Hydro One met with members of the TPUCC to present the preferred route (Tunnel Route 1) and proposed shaft location. Questions were raised related to the following topics:

- Tunnel and shaft design and construction;

- Potential conflicts with existing infrastructure and upcoming projects such as Ontario Line, Sherbourne Watermain Replacement, Bell Canada's work at 1 m below ground surface;
- Potential traffic disruptions;
- Restoration at the mid shaft location; and,
- Coordination opportunities with the upcoming Enwave tunnel.

Hydro One also held specific meetings with key members of the TPUCC including the City of Toronto (see **Section 3.5.3** above), Enwave, Metrolinx (see **Section 3.4.2** above), THESL, and TTC. A summary of the consultation with these stakeholders is outlined in the following sections.

During the detailed design stage, Hydro One will continue to liaise with relevant members of the TPUCC by way of meetings, conference calls, document exchanges, as well as sign-off and mark-up documents.

3.5.5.1 Enwave Energy Ltd. (Enwave)

On August 20, 2018, Hydro One met with Enwave to provide information on the proposed Project and to understand the locations of Enwave's existing and proposed future tunnels. Potential conflicts were discussed and both parties agreed to continue to coordinate as more information become available throughout the project. Potential sharing of tunnel was also discussed however this idea was eliminated as an option due to several construction, operational and maintenance constraints.

Following the February 2020 TPUCC meeting, Hydro One met with Enwave on March 6, 2020 to discuss engineering details of the proposed tunnel. The opportunities for sharing tunnels with Enwave was brought up again considering the use of innovative designs to overcome some of the technical constraints. It was determined that sharing of the tunnel for the proposed Project is currently not a feasible option due to project timelines. It was agreed that a follow-up meeting would be set up to continue the discussion for any future tunnel sharing opportunities.

Hydro One committed to continuing to work with Enwave throughout the duration of the project to coordinate the crossing of Enwave's tunnel on Bay Street.

3.5.5.2 Toronto Hydro Electric System Ltd. (THESL)

The Terauley TS property is a shared facility between Hydro One and THESL, and is owned by THESL. Throughout the Class EA process, Hydro One has consulted with THESL on their existing assets, upcoming plans and matters concerning Terauley TS.

On October 16, 2018, Hydro One met with THESL and ICU to discuss the alternative routes considered and potential conflicts with other planned projects. At this meeting THESL indicated that they have existing assets on Elizabeth Street between College Street and just south of Gerrard Street, on King Street along both sides of the streetcar tracks, and on the east side of Sherbourne Street.

On March 25, 2019, Hydro One reached out to THESL to request for historical building and property information related to Terauley TS to help supplement the Cultural Heritage Evaluation Report (CHER). THESL subsequently provided an old drawing from 1906 but was not able to locate any archive drawings related to the station. On September 11, 2019, the completed CHER was provided to THESL for their records and Hydro One indicated that a Heritage Impact Assessment will be completed prior to construction being initiated at Terauley TS.

On October 7, 2019, Hydro One met with THESL on site at Terauley TS to discuss the following:

- Results of the CHER and heritage attributes at the property;
- Scope of work at Terauley TS related to a potential tunnel shaft, building foundation, secondary cables and contingency plan;
- Anticipated project timelines; and,
- THESL assets relocation process and timelines.

On February 5, 2020, Hydro One emailed THESL to request a meeting to discuss the proposed shafts at Esplanade TS (entry shaft) and at Terauley TS (exit shaft) to understand the potential for interference with their assets. Hydro One requested THESL to provide the mapping/drawings showing the existing infrastructure in those stations, as they are shared facilities between Hydro One and THESL. THESL provided the requested information.

Hydro One committed to continuing to work with THESL throughout the duration of the project to coordinate for the shaft installation and associated work at Esplanade TS and at Terauley TS.

3.5.5.3 Toronto Transit Commission (TTC)

Prior to its uploading to the provincial government and Metrolinx as the Ontario Line, Hydro One met with the TTC's Relief Line South Project Team on February 15, 2019 to discuss the Relief Line South. At this meeting, the TTC provided Hydro One with an overview and status of the project. TTC stated that construction is planned to begin in 2020 and advised that they would provide Hydro One with the details of the engineering design.

On April 1, 2019, Hydro One met with the TTC to provide a project overview and discuss any potential conflicts between the alternative routes and the TTC's existing infrastructure and planned work. Open Cut Route 2 and Open Cut Route 4 were discussed at length with respect to lane occupancy, setbacks, relocation, as well as service diversions. It was agreed that a TTC-Hydro One Memorandum of Understanding (MOU) is to be signed to enable the exchange of information, including the design information for the Relief Line South.

As the Relief Line South (now Ontario Line) has been uploaded to the Province and Metrolinx, and the preferred route is a tunnel route, an MOU is no longer required with TTC.

On February 10, 2020, Hydro One consulted with TTC to gain a comprehensive understanding of their current and planned infrastructure to determine if there would be any potential impact from the proposed tunnel route and shaft locations. The TTC representative stated that if construction is limited to Shuter Street, their routes will not be impacted. However, TTC would like to know when construction vehicles will be on Sherbourne Street so they can better coordinate their Route 75 bus. Hydro One agreed to keep TTC informed of possible traffic impacts to transit on Sherbourne Street.

Hydro One committed to continuing to work with TTC throughout the duration of the project.

3.5.6 Waterfront Toronto

On January 9, 2020, Hydro One inquired whether Waterfront Toronto would be interested in the clean fill material generated from the proposed Project for use on other lakefront projects. Waterfront Toronto subsequently responded that they will consider this request during detailed design.

Hydro One committed to continuing to work with Waterfront Toronto throughout the duration of the project.

3.5.7 City Councillors

In April 2018, during the early planning phase of the project, Hydro One held introductory meetings with City Councillors for Wards 19, 20, 27 and 28 to inform them about the proposed Project. Following the 2018 municipal election, Ward boundaries shifted and the Wards in the study area became 10 (formerly 20), 11 (formerly 19) and 13 (formerly 27). Subsequent meetings were held with Councillors as key milestones in the Class EA process were met.

3.5.7.1 Former Ward 28

On April 16, 2018, the team held an introductory meeting with former Councillor Lucy Troisi (former Ward 28). Hydro One provided a project overview and committed to sharing more information as the Class EA progressed. She expressed no concern.

Following the 2018 municipal election, Ward 28 was eliminated.

3.5.7.2 Ward 10, formerly Ward 20

On April 27, 2018, the team held an introductory meeting with Councillor Joe Cressy. Hydro One provided a project overview and committed to sharing more information as the Class EA progressed. Councillor Cressy committed to providing the contact information for residents who might be interested in the project.

On February 18, 2020, the team held a follow-up meeting with representatives from Councillor Cressy's office. Hydro One informed his staff about the upcoming Community Open House #2, the preferred route and the potential for temporary construction impacts associated with the exit shaft at or near Terauley TS. The meeting covered various project updates, discussion on the selected route, and items Hydro One would need to consider prior to the open house.

Hydro One committed to keeping the Councillor's Office up to date through the life of the project.

3.5.7.3 Ward 11, formerly Ward 19

On December 10, 2018, the team held an introductory meeting with Councillor Michael Layton. Hydro One provided a project overview and committed to sharing more information as the Class EA progresses. He expressed no concern.

On February 4, 2020, Hydro One met with the Councillor's Constituency and Planning Advisor to inform her of the upcoming Community Open House #2, the preferred route and proposed shaft locations. She expressed no concern.

Hydro One committed to keeping the Councillor's Office up to date through the life of the project.

3.5.7.4 Ward 13, formerly Ward 27

On April 27, 2018, the team held an introductory meeting with Councillor Kristyn Wong-Tam and her Constituency and Planning Advisor. Hydro One provided a project overview and committed to sharing more information as the Class EA progresses. Councillor Wong-Tam brought recent infrastructure projects in her Ward to Hydro One's attention, including a watermain replacement on Shuter Street and Ryerson University's proposed work on Gould Street. She committed to helping Hydro One spread the awareness about their project through their newsletter where possible.

On February 10, 2020, Hydro One held a follow-up meeting Councillor Wong-Tam and her Constituency and Planning Advisor to inform them of the upcoming Community Open House #2, the preferred alternative and the potential for temporary construction impacts associated with the mid shaft near the intersection of Shuter Street and Sherbourne Street. Hydro One committed to sharing the general project contact list with the Councillor, which was sent immediately following the meeting. Councillor Wong-Tam's Advisor also put Hydro One staff in touch with an organizer of the Moss Park Festival to seek further information about participating and sharing information with the community about the project (see **Section 3.6.2.3**)

Hydro One committed to keeping the Councillor's Office up to date through the life of the project.

3.6 Potentially Affected and Interested Persons, Businesses and Interest Groups

Consultation opportunities were provided to potentially affected and interested persons, businesses and interest groups throughout the Class EA process. Notification about the proposed Project was achieved through notices that were distributed via email and Canada Post unaddressed admail as noted in **Section 3.1**.

In addition, Hydro One encouraged interested persons to sign up for the project email list as a way to receive project notification updates.

The Community Open Houses and the interactive online engagement platform (**Section 3.6.4**) were key ways for members of the community to learn about the project and provide their feedback. All project notifications included the Hydro One Community Relations contact information that could be used by concerned residents or interested members of the public to provide feedback, and receive replies directly from a Hydro One representative. Approximately 40 individuals reached out to Hydro One Community Relations via email, and approximately 64 individuals registered through the online engagement platform.

The following summarizes the meetings that were held with interested groups, the Community Open Houses and the project-specific websites.

A summary of the comments and concerns raised and Hydro One responses throughout the Class EA process is provided in **Section 3.7**.

Refer to **Appendix C5** for the summary of correspondence for the project.

3.6.1 Community & Business Associations and Interest Groups

As part of the consultation plan for the proposed project, the following local community associations were contacted:

- Cabbagetown Residents Association;
- Cabbagetown South Residents Association;
- Corktown Residents Association;
- Garden District Residents Association;
- Harbourside Condominums;
- McGill Granby Village Residents Association;
- St. Lawrence Neighbourhood Association;
- The Vu Condominiums;
- Toronto Entertainment District Residents Association; and,
- York Quay Neighbourhood Association.

The following Business Improvement Associations (BIAs) were contacted:

- Cabbagetown BIA;
- Downtown Yonge BIA;
- Toronto Entertainment District BIA;
- Toronto Financial District BIA;
- St. Lawrence Market Neighbourhood BIA; and,
- Waterfront BIA.

The project notification was shared with all the above groups as noted in **Section 3.1**. The following sections document additional consultation beyond the notifications that occurred:

3.6.1.1 York Quay Neighbourhood Association

On August 15, 2018, Hydro One met with the York Quay Neighbourhood Association to discuss the need for the proposed Project, the association's area coverage, as well as upcoming projects and pedestrian pathways.

On December 20, 2018, Hydro One received a letter from the president of the association stating that they were concerned that Hydro One's proposed Project could affect their residents. On the same day, Hydro One replied to inform the association that Hydro One was no longer considering the route that concerned them along Queens Quay.

Hydro One committed to continuing to provide updates throughout the duration of the project and shared all subsequent project updates with the association.

3.6.1.2 Downtown Yonge BIA

On June 27, 2018, Hydro One met with the Downtown Yonge BIA to provide a project overview. At this meeting, the BIA informed Hydro One of the concerns that construction may impact profit to area retail stores, if access is impeded. The BIA also informed that they have data available on pedestrian and traffic counts for Yonge Street and Dundas Street that they would be willing to share to assist Hydro One with their route evaluation.

On March 25, 2019, Hydro One received a letter from the BIA explicitly stating that they prefer a tunnel route as it would pose the least impact to the surrounding area.

On February 7, 2020, the BIA emailed Hydro One expressing support for the preferred route. They noted that Tunnel Route 1 was their preferred option and expressed that it will have the least impact on their members.

On February 19, 2020, Hydro One met with the BIA to further discuss the preferred route. Hydro One answered many of the BIA's questions regarding who might be impacted by the proposed Project. Hydro One noted that further details regarding construction vehicles and road washing would be the focus of their planned Pre-Construction Open House.

After this meeting Hydro One received an email from the BIA on February 21, 2020, informing them of the CreateTO city-wide real estate strategy and planning development applications on 75 Elizabeth Street/1 Foster Place suggesting that Hydro One attend their meeting for further information.

Hydro One committed to continuing to provide updates throughout the duration of the project and shared all subsequent project updates with the BIA.

3.6.1.3 St. Lawrence Market Neighbourhood BIA

On July 12, 2018, Hydro One met with the St. Lawrence Market Neighbourhood BIA to provide a project overview. At this meeting, the BIA informed Hydro One of the various current and planned projects within the area that may pose conflicts to Hydro One's project. The BIA also suggested new open cut routes and ideas for Hydro One to consider, including using Victoria Street.

On December 7, 2018, Hydro One met with the BIA to answer their questions and gather insight regarding their concerns. At this meeting, the BIA requested that Hydro One consider the potential for overlapping construction with the development of new private buildings. They were also interested in having Hydro One consider other routes for the proposed Project.

On December 10, 2018, Hydro One received an email from the BIA stating that they would like Hydro One to consider Victoria Street/Scott Street as the main route for the underground cable based on the following stated reason:

> "An Open Cut Route approach might disrupt the road network for a short time, it would, however, leave the community with an enhanced streetscape, which would greatly benefit residents and business owners alike, as well as help the City and the BIA facilitate necessary public realm improvements."

On December 13, 2018 Hydro One responded thanking the BIA for their comments, indicating that their input would be taken into consideration in the Class EA process.

Hydro One committed to continuing to provide updates throughout the duration of the project and shared all subsequent project updates with the BIA.

3.6.1.4 Toronto Entertainment District BIA

On November 30, 2018, Hydro One met with the Toronto Entertainment District BIA to provide a project overview. At this meeting, participants suggested Hydro One reach out to the Toronto Entertainment District Residents Association and the Waterfront BIA to gain insight on how residences and businesses' on the waterfront might be impacted. The BIA also suggested Hydro One push for overnight work to reduce the amount of time that the project construction would impact residents during busy day time hours.

Hydro One committed to continuing to provide updates throughout the duration of the project and shared all subsequent project updates with the BIA.

3.6.1.5 Toronto Financial District BIA

On August 22, 2018, Hydro One met with the Toronto Financial District BIA to provide a project overview and answer the BIA's questions. At this meeting, the BIA stated that they would not support Open Cut Route 1 and Open Cut Route 3. The BIA advised that they would support either of the open cut routes on Sherbourne Street as they have less traffic and do not impact the Gardiner Expressway. As a next step, the BIA suggested setting up a meeting with Waterfront BIA and provided their contact information to Hydro One.

Hydro One committed to continuing to provide updates throughout the duration of the project and shared all subsequent project updates with the BIA.

3.6.2 Other Interest Groups

3.6.2.1 Ryerson University

On November 2, 2018, Hydro One met with Ryerson University to discuss the potential conflicts between the proposed Project, specifically one of the alternative routes Open Cut Route 2, and the upcoming work on Gould Street and Nelson Mandela Walk.

On November 19, 2018, Hydro One held a follow-up phone conversation with Ryerson University. During the phone call Ryerson indicated that Cresford Developments was in the planning stages of a project in the same area. Ryerson University committed to putting Hydro One in touch with Cresford Developments to learn more about their project. Hydro One has since connected with Cresford Developments and indicated that Hydro One will be in touch once the preferred route is selected to coordinate work.

On December 7, 2018, Ryerson University sent a formal letter to Hydro One. The letter expressed their concerns about potential Open Cut Route 2 being selected, as it could potentially undo work completed on O'Keefe Lane and Bond Street. This project is implementing key elements of the Ryerson Campus Public Realm Plan (2017) in coordination with the City of Toronto to create more safe and accessible spaces on campus along Gould and Victoria Street (Ryerson Campus Public Realm Plan, 2017).

On December 12, 2018, Hydro One responded stating that in the event that a open cut route is selected, Hydro One would commit to using underground construction techniques to maintain the integrity of the surface and minimize impacts to the area.

No further concerns are expected since Tunnel Route 1 has been selected as the preferred route for the proposed Project, which will not impact Ryerson University.

3.6.2.2 Cycle Toronto

On February 18th and 19th, 2020, Cycle Toronto emailed Hydro One to inquire about the anticipated impact of constructing the mid shaft for the preferred alternative on the planned Shuter Street cycle track. Hydro One replied stating that the location of the mid shaft was not yet finalized, and that they will work with the City to coordinate construction of the proposed Project and the cycle track project to the extent possible. It was noted that after the construction of the mid shaft (approximately three months), the roadway would return to normal.

Hydro One committed to continuing to provide updates throughout the duration of the Class EA and shared all subsequent project updates with Cycle Toronto, including the final mid shaft location.

3.6.2.3 Neighbourhood Information Post

The Neighbourhood Information Post is a not-for-profit community service provider serving eastern downtown Toronto. Hydro One plans to meet with a representative to gather information about possible opportunities to support the Moss Park Summer Festival.

3.6.3 Community Open Houses

Hydro One held two rounds of Community Open Houses in the study area. Each round had two meetings at different locations close to Terauley TS and Esplanade TS. These Community Open Houses represented key opportunities for those interested and potentially affected to learn more about the project and speak to the project team. Open House materials and summary reports are included in **Appendix C4**.

3.6.3.1 Community Open House #1 - February 2019

The first round of Community Open Houses were held from 6:30 p.m. to 8:30 p.m. on February 26, 2019, at the Marriot Hotel, located near Terauley TS, and February 28, 2019, at the St. Lawrence Recreation Centre, located near Esplanade TS.

The purpose of the Community Open Houses was to introduce the proposed Project and begin to solicit input from the public on alternative routes. A set of fifteen panels were displayed to allow attendees to obtain information about the proposed Project while speaking to members of the project team in one-on-one discussions.

The material presented on the panels included information on:

- Project need and background;
- Study area and the four alternative routes being considered;
- The two construction methods being considered: open cut and underground tunnelling;
- An overview of feedback received to date through consultation;
- A map of the study area and alternative routes;
- An overview of the type of information to be considered in the route evaluation;
- Information on the Class EA and OEB processes;
- A high-level project schedule and;
- Key questions for feedback from attendees.

Aerial maps detailing the alternative routes, roads and major landmarks in the study area were available to assist attendees in discussions.

Twenty-seven (27) individuals attended the February 26, 2019 event and thirteen (13) individuals attended the February 28, 2019 event. Concern about the amount of construction in downtown Toronto and the potential for this project to result in traffic impacts were key comments raised at the first set of Open Houses. Participants expressed a preference for tunnelling as it was perceived to have less impact to the daily lives of Torontonians.

Some of the frequent questions and comments raised at the open houses included:

- Whether a preferred route has been selected and whether Hydro One was considering other routes;
- Concerns about the amount of construction in Toronto's downtown core and the resulting traffic impacts;
- Concerns about the financial implications of the project and if they would be impacted by rates to cover the costs of the project cost;
- Why Hydro One would not automatically choose tunnel construction as it was assumed to have fewer impacts; and,
- When will construction start and how long will it take.

Participants were offered the opportunity to provide their input through the interactive online engagement platform via the tablets provided at the event and comment forms. Two comment forms were submitted after the open house. The comments provided were mainly around frustrations during construction, support for an underground tunnel and interest in the route developed with the City of Toronto.

3.6.3.2 Community Open House #2 - February 2020

Hydro One held its second round of Community Open Houses from 6:30 p.m. to 8:30 p.m. on February 25, 2020 at the Marriot Hotel, located near Terauley TS, and on February 27, 2020 at the St. Lawrence Recreation Centre, located near Esplanade TS.

The purpose of the Community Open Houses was to share details of the preferred route and proposed shaft locations for the proposed Project and collect feedback from the public. A set of sixteen panels were displayed to allow attendees to obtain information about the proposed Project while speaking to members of the project team in one-on-one discussions.

The material presented on the panels included information on:

- Project overview;
- Project approvals (Class EA and OEB);
- Study area;
- Route evaluation criteria and process;
- Preferred route;
- Underground tunnelling;
- Proposed shaft locations;
- Construction effects and mitigation; and,
- Next steps and project schedule.

Aerial maps detailing the preferred route and the proposed shaft locations were available to assist attendees in discussions. A life-size rendering of the proposed tunnel cross section was displayed to allow for attendees to gain a better understanding of the tunnel size and cable configuration.

Twenty-two (22) individuals attended the February 25, 2020 event and fifteen (15) individuals attended the February 27, 2020 event. In general, participants expressed support for the proposed Project.

Some of the frequent questions and comments raised at the open houses included:

- Whether the preferred route can be changed at this phase in the project;
- Concern about the amount of construction in Toronto's downtown core and the resulting traffic impacts;
- Whether there will be a considerable amount of noise and vibration; and
- Inquiries on when construction would start and how long would it take.

Participants were offered the opportunity to provide their input via comment forms. Four comment forms were submitted during and after the open house. These comments supported the process Hydro One followed for keeping people informed and frustrations during construction.

3.6.4 Project Websites

Hydro One has established two websites intended to provide project information and ongoing updates to the public and collect feedback.

www.HydroOne.com/PowerDowntownToronto

Hydro One's Power Downtown Toronto website provides project information, maps, consultation opportunities and project contact information to the public.

www.TalkPowerDowntownTO.com

The TalkPowerDowntownTO website is an online engagement platform to collect feedback on the project, through the use of an interactive map, survey, as well as Questions & Answers. The platform is also used to host project information as described above. This website requires all members of the public to log in in order to provide feedback. Hydro One also sent email updates at key milestones noted in **Section 3.1** to the members of the public that signed up.

A summary of the comments and concerns raised and Hydro One responses throughout the Class EA process is provided in **Section 3.7**.

Refer to **Appendix C5** for the summary of correspondence for the project.

3.7 Summary of Key Comments and Concerns

Table 3-1 below provides a summary of the comments and concerns raised throughout the Class EA process. All commitments to future work and consultation noted in **Table 3-1** have been included in **Section 7** of this ESR. Refer to **Appendix C5** for the summary of correspondence for the project.

Table 3-1: Summary of Comments and Concerns Raised during the Class EA Process

THEME	COMMENT/CONCERN	RESPONSE
General Project		
Project cost	What is the capital expenditure on this project?	The estimated budget for this project is approximately $120 million.
Project cost	What is the cost difference between open cut and tunnel methods?	There is a very small difference in cost between the two construction methods.
Electricity rates	Concern about the financial implications of the project and if they would be impacted by rates to cover the costs of the project cost	The Ontario Energy Board protects the interests of consumers as it relates to prices and the adequacy, reliability and quality of electricity service and will review the prudency and need of the project prior to any increase in rates taking effect.
Contracting Strategy	Will the engineering and design be done in-house? What about construction?	The engineering will be done by a qualified external consultant. Construction will be contracted out as well.
Project schedule	When will the construction begin?	Hydro One plans to start construction in the summer of 2021, assuming that all permits and approvals are acquired. Further information regarding Hydro One's schedule can be found on the project website www.HydroOne.com/PowerDowntownToronto which will continue to be updated. Prior to construction beginning, Hydro One will host a pre-construction open house, which will include details on the construction schedule and what community members can expect during construction.

THEME	COMMENT/CONCERN	RESPONSE
Power outage	Concerns about power outages.	It is not anticipated that local businesses or residences would experience power outages as part of the proposed Project. The transmission system, which this cable is part of, is built with redundant capabilities that allow electricity to be transferred without causing power interruptions.
Capacity increase	What electricity capacity will the new cables have?	The new cables to be installed will have a 230 kV capability, but are expected to operate at 115 kV.
Existing underground cables	What happens with the existing cables?	The existing underground cable will be de-energized and left in place to minimize further disruption. It is industry practice to leave the existing cables in place.
Other projects	Does Hydro One have other projects in Toronto's downtown core?	At this time, the proposed Project is Hydro One's only undertaking in Toronto's downtown core.
Approval Process and Route Selection		
Class EA process	What approval process is the project following?	The proposed Project is being planned in accordance with Class EA for Minor Transmission Facilities (2016), approved under the Ontario *Environmental Assessment Act*. The Class EA is a streamlined process that has proven effective in ensuring that minor transmission projects that have a predictable range of effects are planned and carried out in an efficient and environmentally acceptable manner. The Class EA also includes consultation opportunities, which are

THEME	COMMENT/CONCERN	RESPONSE
		documented in this ESR and made available for public review and comment. The proposed Project is also subject to Leave to Construction under Section 92 of the *OEB Act*.
Environmental studies	Will Hydro One conduct studies along all alternative routes?	Hydro One has collected information through desktop research and has undertaken desktop cultural heritage studies for the proposed Project. Hydro One will undertake a Heritage Impact Assessment for Terauley TS once the exit shaft locations have been finalized and appropriate mitigation measures will be implemented as required. Archaeological potential at the shafts will also be evaluated at that time.
Route selection	Will Hydro One consider additional routes? What about the ones going through the middle of the study area?	A number of alternative routes were initially identified through analysis of technical and environmental data. These routes were reviewed as part of the Class EA process and by the City's ICU. Hydro One has selected Tunnel Route 1 as the preferred route based on a route evaluation process using natural and socioeconomic environments criteria as well as technical and costs considerations. Through feedback received, Hydro One learned that the City of Toronto has a construction restriction zone that applies to the study area from Jarvis Street west and Dundas Street

THEME	COMMENT/CONCERN	RESPONSE
		south. Construction hours are restricted within this area. Given the long construction period for this project it was deemed reasonable to avoid an area that could prolong the length of construction.
Route selection	Why not consider a tunnel running diagonally between the two stations was not considered given it would be the shortest route?	It is industry practice to keep underground infrastructure within road rights-of-way to the extent possible. A diagonal route would require significant private property acquisition, which is not practical.
Route selection	Why would Hydro One not automatically choose the tunnel route as it is assumed to have fewer impacts?	As part of the Class EA process it is important to consider all of the technically feasible alternatives and both open cut and tunnel routes have been identified as feasible.
Consultation		
Indigenous communities	Will Hydro One be contacting any First Nation and Métis communities as part of the project?	The project falls within the traditional territory of the Mississaugas of the Credit First Nation and the community has been notified and consulted throughout the Class EA process.

THEME	COMMENT/CONCERN	RESPONSE
Project notifications	How will people be notified of project updates and open houses.	Hydro One used Canada Post unaddressed admail to widely distribute notifications for this project. Everyone who signed in at an open house or on-line was also kept informed of events directly. Hydro One also has an online engagement platform www.TalkPowerDowntownTO.ca where project updates will be posted.
Natural Environment		
Impacts on wildlife and habitats	Will there be any impacts on Species-at-Risk resulting from construction?	Due to the nature of the urban landscape, there are no concerns about impacts on wildlife as a result of this project.
Vegetation	Will vegetation management be required?	During detailed design Hydro One will confirm if the construction of the shafts has the potential to disturb or require the removal of existing trees. The rest of the project is not anticipated to have any impacts as the tunnel will be at approximately 25 metres below grade.
Underground rivers	There may be some underground rivers that are 'buried' in the study area.	The proposed tunnel will be in the bedrock and the local hydrogeology is not anticipated to be impacted.
Socioeconomic Environment		
Traffic	How will traffic be impacted?	Temporary traffic disruptions are expected during the construction of the mid shaft, proposed to be located near

THEME	COMMENT/CONCERN	RESPONSE
		the intersection of Shuter Street and Sherbourne Street. At this time, we anticipate that temporary lane restrictions for approximately three months (in addition to time for utility relocation, if required). There may also be temporary traffic disruptions during construction as the rock spoil is being hauled out of the entry shaft at Esplanade TS.
Noise and dust	How will residents be affected by noise and dust?	All construction has the potential to result in disruption such as noise and dust. Hydro One will comply with the City of Toronto Noise By-Law by limiting construction operations to between 7 a.m. and 7 p.m. If exemptions are necessary, the requirements of applicable approval processes will be met. Hydro One will mitigate and control potential effects cause by dust through a dust management strategy.
Vibration	Metrolinx and TTC expressed concerns about vibration under the train and streetcar tracks as well as watermains at approximately 2-4 m below ground.	The preferred route resulting from the evaluation is Tunnel Route 1 to be constructed at approximately 25 m below ground, which is not expected to pose any vibration impacts to tracks and watermains.

THEME	COMMENT/CONCERN	RESPONSE
Vibration	Vibration concerns were raised by residents.	The preferred route resulting from the evaluation is Tunnel Route 1 to be constructed at approximately 25 m below ground, which is not expected to pose any vibration impacts at ground level.
Cycling	Will construction interfere with cycling infrastructure?	Temporary lane restrictions will be required for the construction of the proposed mid-shaft. Once its final location is determined, Hydro One will liaise with the City of Toronto to coordinate and minimize disruption to cycling infrastructure to the extent possible.
Businesses	Will this project impede access to retail and other businesses along the route?	Hydro One has considered the potential for financial implications of the project on business owners and has selected a preferred route based on this as well as other considerations. The preferred route (Tunnel Route 1) will not impede patron's access to businesses.
Cultural heritage resources	There is a potential for archaeological resources related to the deeply buried deposits	Hydro One completed a Stage 1 Archaeological Assessment for the alternative routes and will assess the archaeological potential at the shaft locations once finalized.
Cultural heritage resources	There is an existing heritage district at Jarvis and Dundas	Noted. The information has been included in the Cultural Heritage Existing Conditions report.
City parks	Will the project affect Moss Park?	The preferred route (Tunnel Route 1) is to be constructed at approximately 25 m below ground within existing road

THEME	COMMENT/CONCERN	RESPONSE
		allowances, which is not expected to pose any impacts to Moss Park.
City parks	Will the project affect David Crombie Park	The entry shaft is to be located within Esplanade TS, and is not expected to pose any impacts to David Crombie Park.

THEME	COMMENT/CONCERN	RESPONSE
Design and Construction		
TTC streetcar track crossing	Open cut routes that cross the streetcar tracts will need to be via tunnelling or directional drilling.	Noted. Hydro One's preferred route (Tunnel Route 1) will not impact the streetcar tracks.
TTC subway crossing	A 1 m buffer should be maintained from the subway structure	Noted. Hydro One's preferred route (Tunnel Route 1) will be at approximately 25 m below ground surface. Hydro One will liaise with the TTC during detailed design to coordinate the tunnel crossing at the Yonge Street subway.
Metrolinx Ontario Line	Design to consider the proposed new Ontario Line.	Noted. Hydro One will coordinate with Metrolinx and IO during detailed design to minimize conflicts between the preferred route (Tunnel Route 1) and the proposed Ontario Line and associated new stations.
Moratoriums	There are existing moratoriums preventing road work throughout the study area.	Noted. Hydro One will continue to work with the City of Toronto and other agencies and utilities to coordinate work, where possible.
Utility relocation	Existing utilities may need to relocate to accommodate the project.	Noted. Hydro One will work with the directly affected utilities to coordinate asset relocation, if required, during detailed design.
TPUCC sign off	Will Hydro One obtain sign off from TPUCC for the preferred route?	Hydro One will seek sign off from the relevant members of the TPUCC during detailed design.

THEME	COMMENT/CONCERN	RESPONSE
Construction coordination and schedule	Coordination is needed with the City of Toronto and other agencies and utilities during construction.	Hydro One will continue to work with the City of Toronto and other agencies and utilities to coordinate work, where possible.
Operation and Maintenance		
Electric and magnetic fields (EMF)	Potential health effects of EMF	Hydro One looks to the scientific expertise of organizations such as Health Canada and the World Health Organization to assess the scientific studies and provide advice and guidance. Health Canada monitors scientific research on EMFs and human health as part of its mission to help Canadians maintain and improve their health. Health Canada's conclusion about EMF is that there is no conclusive evidence of any harm caused by exposures at levels found in Canadian homes and schools, including those located just outside the boundaries of power line corridors. Magnetic fields drop of quickly with distance from the source. These buried lines would not be detectable above fields generated by the normal use of electricity (typical building uses, lighting, appliances) at surface level.

3.8 Final Notification and Draft ESR Review Period

Hydro One is providing a 45-day public review and comment period, from April 15, 2020 to May 29, 2020, to allow sufficient time for review and comment on the draft ESR. Comments regarding the draft ESR are to be submitted to Hydro One no later than 4:30 p.m. on May 29, 2020 at the following address:

Yu San Ong
Environmental Planner, Hydro One Networks Inc.
Community.Relations@HydroOne.com

1-877-345-6799

On April 8, 2020, the Notice of Completion of draft ESR was emailed to those on the project contact list, which included MCFN, federal, provincial and municipal government representatives and agencies including the City of Toronto ICU, TPUCC, potentially affected and interested persons (including the attendees who signed into the Community Open Houses or via the project websites), businesses, and interest groups (including BIA and community associations).

The Notice of Completion of draft ESR was sent via Canada Post unaddressed admail to over 60,000 residential and business addresses within the study area.

See **Appendix C-2** for a copy of the final notification letter.

In light of recent public health developments, the draft ESR can be viewed electronically on Hydro One's website at www.HydroOne.com/PowerDowntownToronto. Should libraries re-open during the review period, hard copies will made available at the following locations:

Toronto Public Library
St. Lawrence Branch
171 Front Street East, Toronto

Toronto Public Library
City Hall Branch
100 Queen Street West, Toronto

Comments and concerns received by Hydro One during the review period will be recognized, considered, addressed and documented.

Hydro One will make best efforts to respond and resolve issues raised by concerned parties during the review period. If no issues or concerns are expressed, Hydro One will finalize the ESR and file

it with the MECP. The proposed Project will then be considered approved and may proceed as outlined in the final ESR.

The final ESR will be made available on the project website www.hydroone.com/PowerDowntownToronto, hard copies will also be made available to organizations or individuals upon request.

The *EAA* has provisions for interested parties to request for a higher level of assessment if they feel that outstanding issues have not been adequately addressed. This higher level of assessment is referred to as a Part II Order request and must be addressed in writing to the MECP using the MECP form which is available online at the following link: https://www.ontario.ca/page/class-environmental-assessments-part-ii-order. Part II Order request forms must be received no later than 4:30 p.m. on May 29, 2020, at the following addresses:

Minister of the Environment, Conservation and Parks
Ferguson Block, 77 Wellesley St. W., 11th Floor
Toronto, ON M7A 2T5
Fax: 416-314-8452
Email: Minister.mecp@ontario.ca

Director, Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Ave. W., 1st Floor
Toronto, ON M4V 1P5
Email: enviropermissions@ontario.ca

Please note that a duplicate copy of a Part II Order request must also be sent to Hydro One at the address noted above.

4 Environmental Inventory

This section of the Environmental Study Report (ESR) provides the environmental inventory of the study area including information on the following environmental factors:

- Agricultural resources
- Forestry resources
- Cultural heritage resources;
- Land use and communities;
- Mineral resources;
- Natural environment resources;
- Recreational resources and visual; and,
- Visual and Aesthetic resources.

The City of Toronto is a well-established urban centre with a history of over 180 years. Toronto's downtown core is highly developed in terms of infrastructure and land use. While there are urban parks in the study area there are limited natural features outside of the existing ravines. The following subsections describe the socio-economic and environmental baseline conditions within the project study area shown on **Exhibit 2-2**.

Most of the information used to describe the study area is based on secondary source information. No natural environment field work was undertaken for this project given the urban context.

4.1 Agricultural Resources

There are no agricultural resources in the study area.

4.2 Forestry Resources

There are no forestry resources in the study area.

4.3 Cultural Heritage Resources

Cultural heritage resources include built heritage resources, cultural heritage landscapes, and archaeological sites with cultural heritage value or interest for the contributions they make to the understanding of the history of a place, event, or a people (MHSTCI, 2006). Criteria for determining the significance of these resources are established by the Province. The City of Toronto and the Ministry of Heritage Sport and Culture Industries (MHSCI) maintain an index of these locations for their preservation and the planning and of future development in Ontario's communities. The *Ontario Planning Act* (1990) and associated Provincial Policy Statement (PPS) 2020 provide the legislative imperative for heritage conservation in land use planning.

4.3.1 Heritage Properties and Districts

Cultural heritage is important within the City of Toronto and its preservation is embedded in Section 3.15 of the City's Official Plan 2019. The Official Plan puts in place policies to identify, evaluate and preserve the City's cultural heritage. The City of Toronto maintains a Heritage Register of all heritage resources in the city categorized as:

- Designated property - heritage resources designated under Part IV of the *Heritage Act*.
- Listed property – heritage resources not listed but believed to be of cultural value or interest.
- Heritage Conservation District – an area representing a larger group of heritage properties.

Hydro One retained Golder Associates Ltd. to conduct a Cultural Heritage and Existing Conditions Report focusing on the alternative routes being considered for the proposed Project (see **Appendix E1**). The report concluded the following:

- All of the alternative routes being considered for the replacement cable cross or are located adjacent to known cultural heritage resources and may also impact potential cultural heritage resources identified through further research and field investigations.
- Hydro One's Terauley TS at 532 Bay Street meets the Ontario Regulation 9/06 criteria for Cultural Heritage Value or Interest (CHVI) at a municipal level but does not meet the Ontario Regulation 10/06 criteria for CHVI of provincial significance.
- Conducting a Heritage Impact Assessment (HIA) for the Terauley TS as part of the Power Downtown Toronto Project was recommended.

- If the preferred route is in proximity to known and/or potential built heritage and cultural heritage landscape resources an HIA may be required.

Appendix D1 shows the designated and listed heritage properties as well as the designated heritage conservation districts within the study area.

The City of Toronto's Downtown Plan (Official Plan Amendment No. 406, approved in June 2019) also identifies areas deemed as cultural precincts and corridors in downtown Toronto. These areas represent culturally significant streets and districts housing arts and entertainment areas for residents and tourists. A map depicting these areas is provided in **Appendix D2**.

4.3.2 Archaeological Resources

In 2004, the City of Toronto completed a Master Plan of Archaeological Resources for the city. The goal of this work was to identify registered and unregistered archaeological sites in the city; document an overview of the settlement history; develop a high level model to determine archaeological potential and provide recommendations related to the preparation of archaeological guidelines for the city. This work identified areas of archaeological potential within the city. **Appendix D3** shows the areas the city has identified as having archaeological potential.

Hydro One retained Golder Associates Ltd. to conduct a Stage 1 Archaeological Assessment of the study area which was completed in 2019 (see **Appendix E2**). The report concluded that the alternative routes, which are mostly within the city's road allowances, exhibited low to moderate archaeological potential. Therefore no further archaeological work was recommended for any of the routes being considered with the exception of the routes through Moss Park.

4.4 Land Use and Communities

4.4.1 Land Use Planning and Communities

According to a census completed by Statistics Canada in 2016, the City of Toronto is host to 1,179,057 occupied private dwellings and approximately 2.73 million people, making it the most populous city in Canada. The City covers a land area of 630 km^2 with a population density of 4,334.4 people per km^2 in comparison to the provincial average of 14.8 people per km^2 (Statistics Canada, 2018).

Toronto is Canada's business and financial capital. The City is the second largest financial services centre in North America and has one of the highest concentrations of financial services company

headquarters in the Americas. Due to its reputation for safety, soundness, and stability, Toronto is fast becoming a global location destination for financial services (City of Toronto, 2018). The growth of Toronto's business and financial capital are priorities outlined in the city's planning documents which indicate that in the future, there will be a focus on improving employment areas and intensifying land use for economic purposes.

The routes being considered for the proposed Project overlap with 3 of the 25 wards that characterize Toronto's socio-political landscape. The electoral wards affected are Wards 10, 11, and 13 (City of Toronto, 2018). **Appendix D4** provides data on the average socio-economic status, population, and age demographic of residents within each ward.

A Place To Grow (2019), the Province's plan to manage growth in the Greater Golden Horseshoe, identifies a number of urban growth centres with the City of Toronto and estimates a 2041 population of 3,400,000. This continued population growth reinforces the importance of providing reliable electricity supply to the City.

Land use and development within the study area are also guided by the PPS 2020, the City of Toronto's Official Plan (Consolidated in February 2019), and the City of Toronto's Comprehensive Zoning By-law 569-2013 (2015). The PPS provides the Province's policy direction on land use planning to promote the following: community well-being, a prosperous economy, a healthy sustainable environment through efficient management of land and development, the protection of natural resources, and appropriate employment and residential infrastructure. The City of Toronto's Official Plan and other planning documents are required to comply with the PPS.

4.4.1.1 City of Toronto Official Plan

Land-use within the study area is a combination of commercial, residential, institutional and mixed land uses. **Appendix D5** depicts the City of Toronto's land use designations within the study area based on the Official Plan Map 18 - Land Use Plan.

The land use designations identified on this map within the study area include:

- **Mixed-Use Areas** – The majority of lands in the study area west of Jarvis are identified as Mixed Use, making up more than half of the study area. According to Section 4.5 of the Official Plan, many of the properties within the Downtown are designated as Mixed Use areas to achieve a multitude of planning objectives by permitting an array of land uses

including: residential, offices, retail and service institutions, entertainment, recreation and cultural activities and parks and open spaces (Official Plan - Section 4.5, 2019).

- **Neighbourhoods** – The northeast quadrant of the study area, east of Jarvis Street and north of Queen Street is dominated by land designated as Neighbourhoods. A the Yonge Street and Gerrard Street intersection heading east towards Parliament Street, are several forms of residential developments including semi-detached houses and apartment buildings. The Official Plan defines these areas as land developed for residential uses such as detached and semi-detached houses, lower scale buildings, parks, schools, small stores, and local institutions. The Official Plan states that development in these areas must generally fit the existing physical character of the area (Official Plan - Section 4.1, 2019).

- **Regeneration Areas** – The southeast portion of the study area, south of Queen Street, from Jarvis Street to Parliament Street is largely designated as a Regeneration Area. Section 4.7 of the Official Plan defines Regeneration Areas as key parts of the plan's growth strategy to promote the reintegration and development of spaces that are no longer in productive use due to changes in the economy (Official Plan Section 4.7, 2019). These areas are reserved for developing community spaces that promote parks, open spaces, as well as transportation that encourages a preference for public transit, walking and cycling over private automobiles.

- **Apartment Neighbourhoods** – The Apartment Neighbourhoods designation can be identified in two prominent locations within the study area: the Moss Park area on the north side of Queen Street between Sherbourne Street and Parliament Street; and the co-op units south of The Esplanade between Lower Sherbourne Street and Parliament Street. According to the Official Plan, the Apartment Neighbourhoods designation represents areas that are generally stable and not anticipated to see significant growth. This designation includes apartment buildings, parks, and local institutions (Official Plan- Section 4.2, 2019).

- **Parks and Open Space Areas** – The Official Plan states that Parks and Open Space Areas are land masses that "consist of valleys, watercourses and ravines, portions of the waterfront, golf courses, and cemeteries that make up the green space network of Toronto. They also contain many of the city's natural habitat areas, recreation trails, and storm-water management facilities" (Official Plan, 2019). While there are limited valleys and ravines in the study area, there are several parks and open space areas. These areas include urban plazas or common areas like Nathan Phillips Square at the Queen Street and Bay Street

intersection and more traditional parks with natural features such as Moss Park at Queen Street and Sherbourne Street. Other significant parks and open space areas include the waterfront area south of Queens Quay, St James Park at King Street and Jarvis Street and the adjoining Market Lane Park, and David Crombie Park and Parliament Square with the adjoining parkland along The Esplanade.

- **Institutional Areas** – Areas designation Institutional Areas are dedicated to the growth and development of educational facilities, healthcare facilities, and community institutions like libraries, government buildings, churches and nursing homes. There are several campuses and health sciences buildings within the downtown core. For instance, Toronto General, The Hospital for Sick Children, Mount Sinai and Princess Margaret Hospital are all located in the northwest portion of the study area. Other notable Institution Areas include Ryerson University, Toronto City Hall, Toronto Old City Hall, Ontario Court of Justice, Metropolitan United Church, and the Moss Park Armoury.

- **Employment Areas** – These areas are designated to promote economic growth. The Official Plan recognizes these Employment Areas as "hothouses" for business and enterprise. Permission to develop in these areas is granted based on an expectation to maintain a certain degree of flexibility and promote economic functions. There is only one area in the study area, located south of Queens Quay designated as Employment Areas.

4.4.1.2 TOcore

The City of Toronto's Downtown Plan (Official Plan Amendment 406) outlines the City's objectives and plans to guide the growth of downtown Toronto over the next 25 years (TOcore 2018). As population and the demand for new facilities and infrastructure increases in the downtown core, polices found in this in-force Downtown Plan are intended to direct growth to certain areas; encourage the building of complete communities; promote transit supportive development and encourage prioritization of walking, cycling and transit; and promote high quality retail along downtown main streets. The Plan includes specific strategies for community services and facilities, energy, mobility, parks and public realm, and water.

The Downtown Plan also identifies Priority Retail Streets as important streets to maintain and enhance Downtown's retail vitality. Within the study area, Bay Street (from south of Dundas Street north), Yonge Street, Church Street, Lower Sherbourne Street (between Front and Queen), Parliament Street, Dundas Street, Queen Street, King Street, and Front Street are all identified as priority retail streets.

4.4.1.3 City of Toronto Zoning By-law

While the Official Plan sets out the municipality's general policies, the City of Toronto Comprehensive Zoning By-law 569-2013 (2015) sets these plans into action, on an administrative level.

4.4.2 Transportation

In highly urbanized areas transportation infrastructure is a key element for city planning and design. Existing transportation infrastructure identified within the study area includes the TTC Subway system, streetcars and bus routes; regional transportation such as GO and Via Rail; and municipal highways, roads and cycling routes. The transportation infrastructure within the study area is shown on **Appendix D6**.

4.4.2.1 Vehicular Traffic

City roads are classified based on the type of service they provide. Within the study area there are major arterial roads, minor arterial roads, collector roads, local roads and expressways. The Gardiner Expressway is the only expressway located in the study area. Major arterial roads include Dundas Street, Queen Street, Richmond Street, Adelaide Street, King Street, Lakeshore Boulevard, Lower Jarvis Street, Yonge Street, Bay Street and University/York Street.

As it relates to vehicular and public transit, the City of Toronto has implemented policies to reduce and manage congestion and promote safe and efficient travel through the City.

An example of municipal regulation to limit the disruption caused by construction is a construction moratorium. A construction moratorium enforces a period of delay or postponement in the development of construction projects to avoid conflicts between the several construction projects occurring within the city. Therefore, reducing congestion among other conflicts. On February 12, 2018, Hydro One received a letter from ICU, which outlined the introduction of a revised policy governing work by utility companies in the roadway, which balances the needs of both members of the public and utility companies.

The policy states:

> "No planned work on weekdays from 7:00 a.m. to 7:00 p.m. in the area bounded by Dundas Street to the north, Lake Shore Boulevard/Harbour Street to the south, Bathurst Street to the west and Jarvis Street to the east.

Except:

- Work is permitted in curb lanes where parking is allowed during off-peak hours (typically 9:30 a.m. – 3:30 p.m.) – i.e., when the lane would otherwise be blocked by a parked car.
- Emergency work is permitted as defined in the Municipal Consents Requirements document.

Outside of the area noted above, work will be permitted in the off-peak direction only as determined by the Work Zone Traffic Coordinator."

4.4.2.2 Transit

The study area contains parts of Toronto's main subway lines, Line 1 Yonge – University, and Line 2 Bloor - Danforth.

In addition to the subway system, the City of Toronto has a network of streetcars that operate on tracks such as along Dundas Street, Queen Street and King Street. Planned transit in the study area includes:

- **Regional Transit** - Union Station at Bay Street and Front Street represents a major hub for GO Transit with all seven of the GO Transit routes connecting through this station. The Richmond Hill, Stouffville and Lakeshore East routes continue east from Union Station at the southern part of the study area. Via Rail also uses Union Station as its major hub and the same tracks mentioned above for its east-west trains.
- **Waterfront Transit Network Plan** - The City of Toronto, the TTC, and Waterfront Toronto are undertaking a comprehensive assessment of needs and options for transit improvements for the waterfront area. Phase 2 of the study was completed in 2018. On January 31, 2018, City Council endorsed the overall Waterfront Transit Network Plan, and directed staff to proceed with more detailed follow-up planning and design studies according to priority. The city is moving forward with next steps in the Waterfront Transit Network Plan which involves preliminary design and engineering of the light rail transit to East Bayfront (City of Toronto, 2019).
- **Ontario Line** - Metrolinx's proposed new Ontario Line project will develop approximately 16 km of mixed grade transit infrastructure between the Ontario Science Centre in the

northeast of the city to Ontario Place in the southwest of the city. This transit expansion will take place under an agreement officially signed between the city and the Province on February 14, 2020. Under this agreement, the Province will assume sole responsibility of the planning, design, and construction of four major transit projects including the Ontario Line (Metrolinx, 2020).

4.4.2.3 Cycling

Cycling is widely regarded as a very effective and efficient mode of transportation for short to moderate distances. Within the study area there are various forms of cycling infrastructure:

- **Bike Lanes** - Are spaces within a shared roadway that permit the use for cycling (City of Toronto, 2019). Within the study area, bike lanes can be found on Shuter Street, Gerrard Street West, Bay Street, Queens Quay and Yonge Street.

- **Cycle Tracks** - Are cycling infrastructure which possess a boundary from the roadway and pedestrian traffic (City of Toronto, 2019). Cycle tracks within the study area exist on Simcoe Street, Gerrard Street East, Adelaide Street West, Richmond Street West and Sherbourne Street.

- **Major Multi-use Trails** - Are pathways designed to be shared between cyclists and pedestrians (City of Toronto, 2019). This type of infrastructure exists within the study area on Queens Quay, Harbour Street, and Parliament Street.

The City of Toronto actively encourages the development of a cycling network for cyclists to travel safely. The Cycling Network Plan (2019) describes the existing cycling network and lays out the city's vision for future projects. Within the study area, the key future project is to reconfigure the roadway on Shuter Street between Bond Street and River Street to enhance safety for people walking, cycling and driving. These changes include upgrading the existing bicycle lanes to cycle tracks to physically separate the cyclists from moving vehicle traffic (City of Toronto, 2019).

4.4.3 Other Planned and Future Projects

The City of Toronto is poised to undergo several changes in its downtown core aimed at improving the lives of Toronto's citizens through housing, employment, transportation, recreation and parks. Some of these key projects include:

- **David Crombie Park Revitalization** – David Crombie Park is a 1.6 hectare linear park on the east side of downtown Toronto. The park is located south of Front Street bounded by Lower Jarvis Street and The Esplanade to the west by Hahn Place and Scadding Avenue to the east. The City of Toronto is in the process of developing a comprehensive conceptual design and implementation plan for improvements to the park to meet the current and future needs of the community. The Park is intended to be revitalized to allow for multi-purpose uses such as play areas for children, dog parks, and cycling. This park is located adjacent to Hydro One's Esplanade TS. The City of Toronto hosted their third workshop to obtain input on the designs in November 2019 (City of Toronto, 2019).

- **George Street Revitalization** – The George Street Revitalization project centres on the reinvention of the northernmost block of George Street and aims to transform the Seaton House men's shelter into a world-class facility providing specialized care for vulnerable populations. The plans for revitalization involves a long-term care home, a transitional living facility, an emergency shelter, affordable housing, and a community hub serving residents of both the site and the local neighbourhood. (City of Toronto, 2019). One of the open cut alternative routes considered for the proposed Project runs along George Street within the limits of this project.

- **Moss Park Revitalization** – Proposed in May 2016, the City and The 519 are working with the community to identify new facilities and park amenities for Moss Park. The Moss Park project has expanded with a new project scope that will consider changes to the Community Recreation Centre, the park and the arena as a whole. The City of Toronto has stated on their website that they recognize that investment in this area is required (City of Toronto, 2019). The Parks, Forestry and Recreation Division has stated that they will advance their Facilities Master Plan Implementation Strategy, which identifies John Innes Community Recreation Centre, located within Moss Park as a priority revitalization facility. Plans for Moss Park will be finalized after the City's 2020 budget process ends in early 2020. (City of Toronto, 2020). Two alternative routes considered for the proposed Project cross within the property limits of Moss Park.

- **New Toronto Courthouse** – Ontario will be constructing a new 17-storey high-rise courthouse at 11 Centre Avenue in proximity to the Terauley TS. This project began construction in the fall of 2018 and is expected to reach completion in the spring of 2022. Significant archaeological work was undertaken for the site which was part of one of the

City of Toronto's earliest immigrant settlements and there is intention to preserve this history as part of the courthouse development. (Infrastructure Ontario, 2020).

- **Northwest PATH** – The PATH network is an integral part of the City of Toronto's pedestrian infrastructure in the downtown core. The Northwest PATH (NW PATH) aims to extend the network to better service projected future growth (City of Toronto, 2020). It provides a connection to the northwest core of the city relieving congestion in the existing PATH network, surface congestion around Union Station, and improving connections to destinations. The alignment of this underground pedestrian path is along University Avenue from Union Station to north of Wellington Street West. Construction of the NW PATH is anticipated to begin in 2021.

- **Ryerson Campus Core Revitalization** – This project is implementing key elements of the Ryerson Campus Public Realm Plan (2017) in coordination with the City of Toronto who owns the public realm to create more safe and accessible spaces on campus (Ryerson Campus Public Realm Plan, 2017). Work is focusing on improvements along Gould Street and Victoria Street. The plan is for Gould Street between O'Keefe Lane to Bond Street to become a permanent pedestrian-only zone. One of the open cut alternative routes considered for the proposed Project runs along Gould Street within the limits of this project.

- **YongeTOmorrow** – The sidewalks on Yonge Street have some of the highest pedestrian traffic in Canada. There has also been a significant amount of development in the neighbourhood and the current population is projected to double by 2041. The City of Toronto is preparing a study that will focus on the section of Yonge Street from Queen Street to College Street and Carlton Street. Numerous opportunities are being assessed to increase pedestrian space and improve the way people travel and experience Yonge Street (City of Toronto, 2019). All four alternative routes considered for the proposed Project cross Yonge Street within the limits of this study.

4.4.4 Existing Utilities

A variety of both public and private utility services exist within the highly urbanized downtown core including sewage, stormwater, water, gas, electricity, telecommunication services such as Bell Canada, and heating services like Enwave Energy Corporation (Enwave). The Toronto Public Utility Coordination Committee (TPUCC) is a consortium established by the City of Toronto and utility companies to ensure that construction projects in the city are well coordinated to reduce conflict.

Hydro One has consulted with the TPUCC and will continue to work with their members to coordinate planning and implementation of the proposed Project with other utilities.

Some of the larger underground utility infrastructure in the study area includes:

- **Interceptor sewers** – the Low Level and High Level Interceptor sewers that transport wastewater from the city to the Ashbridges Bay Treatment Plant (City of Toronto, 2019).
- **Enwave District Energy** – Enwave is a commercial provider of district heating to customers in downtown Toronto. Their services supply approximately 626 MWth (1.8 million lbs/hr) of steam to more than 140 institutional, commercial and governmental buildings representing over 40 million square feet (Enwave, 2018). Powered by three steam plants, their distribution system provides steam service to buildings from the Lakeshore area to Queens Park by the use of 40 km of underground piping that draw water from Lake Ontario. Enwave has deep intake tunnels situated throughout the core of the city.

4.4.5 First Nations Lands and Territory

The proposed Project falls within the traditional territory of the Mississaugas of the Credit First Nation (MCFN, 2014). The MCFN reserve is located southeast of Brantford, approximately 95 km from the study area (MNRF, 2016). The study area is overlapped by the boundaries of Treaty 13 and the Johnson and Butler Williams Treaty of 1923 (MNRF, 2016). These lands overlapped by the study area were associated with the Toronto Purchase (1787) and were later clarified with the establishment of Treaty 13 in 1805 (Ministry of Aboriginal Affairs, 2014; MCFN, 2014). In 2010, Canada and the MCFN completed the final settlement of the MCFN's Brant Tract and Toronto Purchase specific claims, resolving the outstanding dispute related to the lands now forming the City of Toronto.

4.5 Mineral Resources

There are no mining resources in the study area.

4.6 Natural Environment Resources

Environmental sensitivity including air, land, water, wildlife and wildlife habitat resources and features are factors considered within the study area.

This section addresses physical and biological features in the study area including baseline information for the following:

- Physical environment;
- Atmospheric environment;
- Surface and groundwater resources;
- Designated or special natural areas; and,
- Natural heritage features.

4.6.1 Physical Environment

The City of Toronto covers an area of approximately 630 km^2 and is surrounded by Lake Ontario to the south; Steeles Avenue to the north; Etobicoke Creek, Eglinton Avenue, and Highway 427 to the west; and the Rouge River and the Scarborough Townline to the east.

The general Toronto area is demarcated by natural features such as the Etobicoke Creek and Rouge River. The City of Toronto is situated between two rivers and their tributaries, the Don River east of downtown and the Humber River to the west. Both rivers flow southward to Lake Ontario at Toronto Harbour and Humber Bay, respectively.

The majority of the study area is covered by buildings and impermeable concrete except for small parklands, ravines, and the southernmost portions of the study area towards Lake Ontario. As the City urbanized over time, the demands of expansion resulted in several smaller bodies of water being put into underground pipes to accommodate development. Further discussion specific to surface water and these lost rivers is included in **Section 4.6.3.3**.

4.6.1.1 Physiography

The study area lies within the Iroquois Lake Plain physiographic region (Chapman and Putnam 2007). During the last glaciation, the lowland surrounding Lake Ontario was inundated by a body of water known as Lake Iroquois. The Iroquois Lake Plain spans the western part of Lake Ontario, from the Niagara River to the Trent River, for approximately 300 km, with a varying width up to 13 km (Chapman and Putnam 2007). The Iroquois Lake Plain is composed of till as well as glaciolacustrine deposits within the Study Area. In addition, significant lake-filling (man-made

deposition) has occurred in the south end of the Study Area since the 1850s in order to create lands for the City of Toronto (Metropolitan Toronto Planning Department 1994).

The Iroquois Lake Plain is characterized by a gradual slope south and southeast towards Lake Ontario (Chapman and Putnam 2007).

Elevation along the study area ranges from approximately 95 metres above sea level (masl) to 75 masl, and generally decreases from north to south towards Lake Ontario (Oak Ridges Moraine Groundwater Program [ORMGP] 2019a).

Surficial Geology

In the study area, overburden thickness ranges from approximately 4 m to 18 m (ORMGP 2019). Surficial geologic mapping indicates that the uppermost geologic layers present in the study area are predominantly undifferentiated older till and stratified sediment (Halton Till) exposed from Lake Iroquois shoreline erosion. In the northern edges of the Study area, surficial geologic mapping indicates the presence of coarse-textured foreshore and basinal deposits comprised primarily of sand and gravel (OGS 2010).

Bedrock

Bedrock topography in southwestern Ontario is characterized by uplands, bedrock valleys, and lowlands (Gao et al. 2007). Bedrock geology in the region is typified by Upper Ordovician shale, limestone, dolostone, and siltstone (Ontario Geological Survey [OGS] 1991). Bedrock in the study area consists of shale from the Georgian Bay Formation and is found at depths from 4 metres below ground surface (mbgs) to 18 mbgs (ORMGP 2019b, TRCA 2007). Shale bedrock is between 505 and 438 million years old and was deposited in the former Iapetus Ocean following the break-up of Rodinia approximately 600 million years ago (TRCA 2007). The Georgian Bay Formation is composed of interbedded grey-green to dark grey shale and fossiliferous calcareous siltstone to limestone (Armstrong and Dodge 2007). Bedrock topography generally has a south to southeastward trend towards Lake Ontario and a bedrock valley in the vicinity of the Don River (ORMGP 2019b).

4.6.2 Atmospheric Environment

Climate

The City of Toronto is located within the Central and Eastern Ontario climactic region and experiences humid continental climate conditions influenced by the fact that it's built on the shores of Lake Ontario (Environment and Climate Change Canada [ECCC], 2017a).

ECCC meteorological temperature and precipitation data has been taken from the Toronto City Centre station (Climate Identifier [ID] 6158667). The location of this station is shown in **Appendix D7**. Temperature and precipitation data presented in this section is based on the available data from 2004-2014's Climate Normal data (ECCC, 2018a). The climate normal mean annual temperature at the Toronto City Centre Station is 15.0 °C. The climate normal daily average temperature varies between -5.8 °C (January) and 21.2 °C (July). Extreme climate temperatures range from -35.2 to 37.8 °C. The climate normal frost-free period is from May 5th to October 10th (157 days).

Precipitation is distributed throughout all four seasons, with snowfall typical from November to April, and rain from May to October. Climate normal days with precipitation is 156 days per year. The climate normal total annual precipitation is 852.6 mm, where 142.6 mm typically falls as snowfall and 717.9 mm as rainfall. Extreme daily rainfall depths range from 80.6 mm (September) to 30.6 mm (December) are climate normal. Extreme snow depths range from zero to 70 centimetres (cm) starting from November to March.

4.6.2.1 Climate Change

Climate Change is defined as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (United Nations Framework Convention on Climate Change, 1992). The City of Toronto is trying to actively reduce impact on the climate through its ambitious climate action strategy. In July of 2017, Transform TO laid out a set of long-term, low-carbon goals and strategies to reduce local greenhouse gas emissions. Achieving the targets will require transformational changes in how the people of Toronto will work, build and commute (City of Toronto, 2020).

4.6.2.2 Existing Air Quality

To define existing air quality, a review of ambient air quality monitoring stations within or close to the study area was completed. Indicator compounds were selected based on typical contaminant emissions associated with construction related activities. The ECCC National Air Pollution Surveillance (NAPS) stations were reviewed for the following indicator compounds: Oxides of Nitrogen (NOX) and Nitrogen Dioxide (NO2), Carbon Monoxide (CO), Sulphur Dioxide (SO2), and Total Suspended Particulate Matter (TSP, PM10, and PM2.5). The closest NAPS station to the study area (shown in **Appendix D7**) with a three (3) year data set was selected. A summary of the ECCC NAPS station ID and data range available for each indicator compounds is included in **Appendix D8**.

Background concentrations for 1-hr and 24-hr averaging periods were estimated based on the 90th percentile of data obtained from the monitoring stations. Background concentrations for annual averaging periods were calculated based on the maximum annual average of the three-year data set. Ambient monitoring data for TSP and PM10 is not readily available, as such PM2.5 data was adjusted to provide calculated TSP and PM10 background data. As PM2.5 is a size fraction subset of PM10, and PM10 is a size fraction subset of TSP, the PM10 and TSP background concentrations can be estimated based on the PM2.5 background concentration. Background concentrations of PM10 and TSP can be estimated by applying a PM2.5/PM10 ratio of 0.54 and a PM2.5/PM10 ratio of 0.3 as shown below[3]:

- PM2.5concentration /0.3 = TSP concentration
- PM2.5concentration /0.54 = PM10concentration

Based on MECP pre-processed regional 5-year (1996-2000) metrological data, the predominate wind direction blows from west and northwest directions. A wind rose is provided in **Appendix D9**.

[3] Lall, R., Kendall, M., Ito, K., Thurston, G., 2004. Estimation of historical annual $PM_{2.5}$ exposures for health effects assessment. Atmospheric Environment 38(2004) 5217-5226.

The criteria for air quality in Ontario are established in Ontario Regulation 419/05[4] (O. Reg. 419/05) and in Ontario's Ambient Air Quality Criteria[5] (AAQC). O. Reg. 419/05 provides contaminant concentration standards and guidelines to assess impacts for permitting requirements (i.e., compliance). The AAQCs developed by the MECP are commonly used in environmental assessments, special studies using ambient air monitoring data, assessment of general air quality in a community and annual reporting on air quality across the province.

Federally, the Canadian Council of Ministers of the Environment has a set of Canadian Ambient Air Quality Standards[6] (CAAQS) that were developed to be outdoor air quality targets for air quality actions across the country.

The background concentrations defined for this project are shown in **Appendix D10**, along with their applicable Ontario and Canada-wide standards and criteria. For select contaminate averaging periods (NO_2 annual and PM2.5 annual) the percent contribution of background ambient air concentrations exceeds or is close to their CAAQS. It should be noted that CAAQS are stringent aspirational drivers for air quality management across Canada that are intended to be used as objectives and not as criteria.

4.6.2.3 Ambient Noise

Noise in busy urban environments is common. Ambient noise conditions within the study area are generally expected to be dominated by transportation related activities and other noises associated with daily city life.

The City of Toronto recognizes that prolonged noise can be disruptive to people who live and work downtown and have put into place noise-related policies relevant to the study area. Chapter 591 of Toronto's Municipal Code (City of Toronto, 2019) outlines the definitions and prohibitions related to unreasonable and persistent noise in the City. The disruption caused by construction is mitigated

[4] MECP. Environmental Protection Act. Ontario Regulation 419: Air Pollution – Local Air Quality. January 1, 2019.

[5] MECP. Ontario's Ambient Air Quality Criteria. April 30, 2019.

[6] ECCC. Canadian Ambient Air Quality Standards (CAAQS) for Fine Particulate Matter (PM2.5) and Ozone. October 2012.

and minimized by the proponent under regulations imposed by the MECP and relevant Municipal governments.

Section 591-2.3 of the City of Toronto's Noise By law states:

> "No person shall emit or cause or permit the emission of sound resulting from any operation of construction equipment or any constructions that is clearly audible at the point of reception:
>
> (1) From 7pm-7am the next day except until 9am on Saturdays; and
>
> (2) All day on Sundays and statutory holidays."

The MECP publication NPC-300 "Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning" defines noise sensitive receptors to have the following characteristics:

- Permanent, seasonal, or rental residences;
- Hotels, motels, and campgrounds;
- Schools, universities, libraries and daycare centres;
- Hospitals and clinics, nursing / retirement homes; and
- Churches and places of worship.

4.6.3 Surface Water Resources

The City of Toronto sits on Lake Ontario and all surface waters within the study area drain towards the lake. The study area covers two significant watersheds however most of the smaller tributaries have been buried and now exist within storm sewers. The two watersheds in the study area are the Don River Watershed and the Lake Ontario Waterfront Watershed. The study area falls under the jurisdiction of the Toronto and Region Conservation Authority (TRCA).

- **Don River Watershed** – This watershed is one of the most urbanized watersheds in Canada, home to nearly 1.4 million residents. The TRCA reports that nearly 85 percent of this watershed is covered by what is considered urban land uses (TRCA, 2018). With an area of approximately 36,000 hectares, the Don River stretches almost 38 km in length,

flowing south from its headwaters on the Oak Ridges Moraine to the Keating Channel, where it empties into Lake Ontario (TRCA, 2009).

- **Lake Ontario Waterfront Watershed** – The Lake Ontario watershed is broken down into various sections. The City of Toronto section extends from Humber River in the west to Nursewood Road in the east (TRCA, 2018). The study area of the proposed Project is located in the middle of this 16.9 km section.

  The sediment that makes up the Lake Ontario shoreline within the Toronto sector is generally a mixture of sands, silts, clays, tills, and gravels, all of which are highly erodible. As a result, the shoreline continues to be changed by wave, groundwater conditions, wind erosion and numerous other factors. Loss of property and threats to homes, roads, and services can and have occurred as a result of these processes (TRCA, 2018).

4.6.3.1 Water Quality

According to TRCA's Lake Ontario Report Card, water quality in Toronto Harbour has gradually declined over 200 years of intense development (TRCA 2018). Water quality at the waterfront is monitored by the City of Toronto using E.coli (bacteria from human and animal waste) as an indicator to measure whether recreational waters are safe for swimming. Tighter restrictions on municipal and industrial sewage treatment plants discharges have reduced combined sewer overflows. These restrictions together with other best management practices have resulted in water quality improvement. Results of these improvements are mentioned on the TRCA Watershed Report Card. They include:

- Decreased levels of bacteria and total phosphorus;
- Levels of persistent toxic chemicals such a polychlorinated biphenyl (PCB) and mercury have declined from Lake Ontario's fish;
- Return of native fish species such as walleye and brook silverside; and
- Eight of the 14 waterfront beaches are Blue Flag certified – a world-renowned eco-certification for beaches and marinas (TRCA Watershed Report Card, 2018).

4.6.3.2 Municipal Water Supply

The City of Toronto's drinkable water comes from Lake Ontario. All residences and businesses in the study area receive their water via the municipal water system. Water is drawn from up to 5 km from shore with intake pipes connecting to one of four of Toronto's water treatment plants. The water treatment plant closest to the study area the R.C. Harris Water Treatment Facility located at 2701 Queen St East. The R.C. Harris Water Treatment Facility is the largest in Toronto and provides 950 million litres of water. (City of Toronto, 2018).

4.6.3.3 Lost Rivers

A series of underground creeks and rivers exist in the City of Toronto and are referred to as the lost rivers. The underground rivers within the study area are described below and shown in **Appendix D11**.

- **Lower Don River** – The Don River flows into Lake Ontario but is joined by several tributaries at various confluences of the river. The southern part of the river known as the Lower Don River is located in the area between Queen Street, the Don River, Bloor Street and Yonge Street (Lost Rivers, 2019).

- **Taddle Creek** – Taddle Creek located between Dundas Street and Queen Street stretches past King Street where it flows parallel to Queens Quay and into smaller streams around King Street East and Parliament Street (Lost Rivers, 2019).

- **The Market Streams** – "The Market Streams" consist of six different streams between Simcoe Street and George Street that flow towards Toronto Bay near Queens Quay West. These streams are known as, Cathedral Creek, Court Creek, Leader Creek, Victoria Creek, Newgate Creek and Station Creek (Lost Rivers, 2019).

4.6.4 Groundwater Resources

The Credit Valley, Toronto and Region, and Central Lake Ontario (CTC) have prepared a Source Water Protection Plan under Ontario's Clean Water Act, 2006, which came into effect in 2015. The plan outlines a number of policies for the protection of drinking water in the area (CTC SPC 2019). All development applications within the City of Toronto boundaries are screened based on the plan's requirements (CTC SPC 2019). Highly Vulnerable Aquifer (HVA) areas, which are particularly susceptible to contamination due to shallow, near-surface groundwater or a permeable soil layer above the aquifer, are dispersed throughout the City of Toronto. Based on reports from

the TRCA, the study area for the proposed Project lies in a HVA (CTC SPC 2019).The study area does not fall into any wellhead protection areas.

Intake Protection Zones (IPZ) have also been identified as areas which are particularly susceptible due to surface water contamination (spills, leaks, surface leaching, etc.). The study area does not overlap any IPZs within the City of Toronto (CTC SPC 2019). In addition, the installation of cable lines are not identified as a drinking water threat under the *Clean Water Act*.

4.6.4.1 The Water Table

Water table mapping provided by the ORMGP in the vicinity of the study area indicates that the water table depth ranges from ground surface in areas closest to Lake Ontario to approximately 10 mbgs (74 masl to 96 masl) (ORMGP 2019c). Lake Ontario levels typically range between 74 masl and 76 masl for an average year; thus groundwater levels along the southern portion of the study area are likely influenced by surface water levels in Lake Ontario (DFO 2019). The groundwater flow pattern is generally towards the southeast toward Lake Ontario (TRCA ,2009).

4.6.4.2 Well Records

Well information contained in the MECP Water Well Information System (WWIS) has been reviewed within the study area to gain a better understanding of local ground water conditions. In the study area, a total of approximately 1330 water well records were found. These records consist of observation, dewatering, and abandoned wells, and records where the well use is not identified. It is not expected that water supply wells exist or are used within the study area since the area is municipally serviced. Wells identified in the study area show the water depth ranges between 0.1 mbgs and 50.6 mbgs with an average water depth of 4.5 mbgs based on records in the WWIS. Bedrock was reported to be encountered in several well records at a depth ranging between 4.9 mbgs and 13.1 mbgs.

4.6.5 Designated or Special Natural Areas

There are no designated or special natural areas in the study area.

4.6.6 Natural Heritage Features

Although Toronto is home to several densely forested ravines, the proposed Project will be taking place in the highly developed downtown core. Elements of natural heritage are limited to the flora

and fauna that has adapted to the urban environment. With limited natural areas, the existing grassed and treed public realm and open space areas have high value in the city.

The City of Toronto has a Ravine Protection Program, a Ravine and Natural Feature Protection By-law, and a Toronto Ravine Strategy (City of Toronto, 2017). The purpose of the Ravine Strategy is to provide guidance on the future decision making in and around Toronto's ravines. The study area is not located within the areas identified as protected under the Ravine and Natural Feature Protection By-law.

4.7 Recreational Resources

Within downtown Toronto, there are public spaces that help to improve the lives of those in the community. These features include urban open spaces, public parks and community recreation centres. The parks and recreation features in proximity to the routes being considered for the proposed Project are identified below.

4.7.1.1 Public Parks

- **Berczy Park** is a 3,606 m2 park located in the triangle of land between Wellington, Front and Scott Streets, across from the St. Lawrence Centre for the Arts (City of Toronto, 2019) containing a large fountain, plaza paving ,changing topography and passive sitting areas.
- **City of Toronto's Diversity Garden** is a small garden located at 89 Elizabeth Street behind City Hall and just west of the Terauley TS containing open space with some unique art and plant installation.
- **David Crombie Park** is a well-known, 2 ha park in downtown Toronto. The park is a prime feature of the St. Lawrence Neighbourhood, located at 131 The Esplanade (City of Toronto, 2019) containing playgrounds, basketball courts, walking paths and open lawns.
- **Harbour Square Park** is located at 25 Queens Quay next to the Toronto Ferry Docks. This park features picnic areas and a view of Lake Ontario (City of Toronto, 2019) build over an underground parking garage.
- **Larry Sefton Park** is located at 500 Bay St. immediately south of the Terauley TS. A commemorative park and plaza for passive use.

- **Moss Park** is approximately 3.4 ha and located at Queen Street East and Sherbourne Street. The park features a baseball diamond, two tennis courts, a basketball court, a wading pool and a children's playground. On the east side of the park is the Moss Park Arena and the John Innes Community Recreation Centre (City of Toronto, 2019).

- **St. James Park** is located next to St. James Cathedral in downtown Toronto at 120 King Street East (City of Toronto, 2019). One of the oldest parks in Toronto with a rich history that includes a formal garden with arbours.

4.7.1.2 Recreation Centres and Attractions

The John Innes Community Recreation Centre is located at 150 Sherbourne Street. This recreation centre is currently being considered for improvement by the City of Toronto (City of Toronto, 2019).

The St. Lawrence Recreation Centre is located at 230 The Esplanade and contains a swimming pool and library.

The City of Toronto features several attractions popular with residents and tourists that fall in the study area. Some of the major attractions include:

- Toronto waterfront/Queens Quay;
- Sugar Beach;
- Jack Layton Ferry Terminal;
- Textile Museum of Canada;
- Scotiabank Arena;
- Nathan Phillip's Square; and,
- Toronto Eaton Centre.

4.8 Visual and Aesthetic Resources

From a visual perspective, the City of Toronto is dominated by a strong downtown skyline punctuated with strong building characters, such as the CN Tower. Throughout the study area, the view at street level is primarily retail shops, and residential and commercial buildings that front the

streets of the city. Parks and squares offer locations where the view opens up and elements such as heritage buildings, unique building architecture, building landscaping, street trees, street art/sculpture provide aesthetic value for those travelling along the streets within the study area.

5 Alternative Methods

This section describes the reasonable "alternative methods" for carrying out the proposed Project. "Alternative methods" refer to different means of carrying out the same task to achieve the purpose of the undertaking (e.g., different routes, sites, construction methods). Potential "alternative methods" are identified based on the presence of environmental features, technical considerations, cost factors and input received during the consultation process, as well as the guidance from the PPS (PPS, 2020). Following the identification of "alternative methods" for the undertaking, evaluation criteria are then established to proceed with the evaluation and selection process of the preferred "alternative method".

5.1 Development and Identification of Alternative Methods

In 2017, Hydro One completed a technical study which identified thirteen (13) preliminary feasible open cut routes based on major constraints from a desktop review. These constraints included:

- Utility congestion;
- Streetcar tracks;
- Subway lines;
- Traffic control and density;
- Road width; and,
- Sensitive facilities (e.g., schools, hospitals, etc.).

The initial list of feasible open cut routes was later revised to five (5) feasible alternative routes which included some trenchless installation options (i.e., deep rock tunnel). The technical study also included an initial evaluation based on the following criteria: environmental, engineering, and constructability constraints. This evaluation identified the key challenges and risks related to the routes.

The five routes, of which one was the existing route, identified through the technical study were brought forward as the alternative routes for consideration in this Class Environmental Assessment (EA) process and the information collected on these routes through this process was then used as

input into the route evaluation process. The five routes included three open cut routes and two tunnel routes as shown on **Appendix A1**.

The tunnel routes were identified based on potential conflicts with existing and future deep rock tunnel infrastructure within the study area (e.g., Enwave tunnels, existing Hydro One John Transformer Station [TS] x Esplanade TS tunnel, existing Toronto Hydro Electric System Ltd. [THESL] Copeland tunnel and proposed new transit projects). Tunnel routes going north or west were not considered as they would result in longer length of tunnels and cables that would require multiple crossings with existing tunnels therefore offering minimal advantages.

Making use of the existing Hydro One tunnel was not considered as this would pose potential operational risks in installing multiple circuits within the same tunnel. In addition, a direct alignment tunnel route running from Terauley TS to Esplanade TS was not considered as easement agreements for subsurface rights would have needed to be negotiated with hundreds of private property owners, which is not practical. Therefore, the alternative routes identified are confined within the City's existing road allowances, where possible.

Early in the Class EA process, the following changes were made to the routes being considered:

- Through consultation with the City of Toronto Infrastructure Coordination Unit (ICU), and the Toronto Public Utility Coordination Committee (TPUCC), as well as letters received from the City, it was brought to Hydro One's attention that the City is working to restrict hours of road construction within the downtown area bordered by Dundas Street to the north, Lake Shore Boulevard/Harbour Street to the south, Bathurst Street to the West and Jarvis Street to the east. Given this restriction, Hydro One elected to remove the two open cut routes that fully lay within the construction restriction area: Open Cut Route 1 and Open Cut Route 3. The study area was then expanded to the north and east to allow for opportunities to consider other new alternative routes. See **Section 2** for more details on the study area and **Appendix A2** for a map of the refined study area.

- In late November 2018, ICU provided an additional open cut route to consider in the Class EA. This new alternative route ran along George Street, Gerrard Street and Elizabeth Street and was referred to as Open Cut Route 4.

Exhibit 5-1 presents the final four alternative routes that were brought forward for further consideration in this Class EA. The alternative routes are described in the section below.

Exhibit 5-1: Alternative Open Cut and Tunnel Routes

5.2 Description of Alternative Methods

5.2.1 Open Cut Alternative Routes

The open cut construction method involves the excavation of roads and sidewalks to install cable ducts beneath the surface to house the new cable. The excavation is typically completed in rolling sections. This method of excavation is commonly used to install utilities below grade.

The sections below provide detailed descriptions of the open cut alternative routes which were considered in the Class EA.

5.2.1.1 Open Cut Route 1 – removed from consideration

From the Esplanade TS, Open Cut Route 1 also known as the existing underground cable route (denoted in black in **Exhibit 5-1**) heads south along Sherbourne Street. From Sherbourne Street, the route then turns west onto Queens Quay until turning north onto York Street. The route then follows York Street going north to Queen Street, where it slightly turns east then continues north following Osgoode Lane (unopened road). The route then head east an unopened road between Armoury Street and Hagerman Place, then continues north along Elizabeth Street, before turning east on Foster Place and terminating at Terauley TS.

Though this route was initially considered, it was removed from consideration as it falls within the City of Toronto construction restriction area with restricted construction working hours, and was deemed not feasible as it would not meet the planned in-service date due to a much longer construction timeline.

5.2.1.2 Open Cut Route 2

From the Esplanade TS, Open Cut Route 2 (denoted in turquoise in **Exhibit 5-1**) heads north westerly before heading north along Sherbourne Street. From Sherbourne Street, the route then turns west onto Shuter Street until turning north onto Mutual Street. The route then follows Mutual Street to Gould Street, where it turns west and follows Gould Street to Yonge Street, passing through Ryerson University campus along an unopen road. The route then heads south on Yonge Street before turning west on Edward Street until Elizabeth Street. The route continues south along Elizabeth Street until turning east on Foster Place and terminating at Terauley TS.

The total length of Open Cut Route 2 is approximately 3 km. This route would require hand mining of tunnels under all intersections and TTC streetcar tracks.

5.2.1.3 Open Cut Route 3 - removed from consideration

From Esplanade TS, Open Cut Route 3 follows a similar alignment to the existing underground cable route (denoted in red in **Exhibit 5-1**), heading south along Sherbourne Street. From Sherbourne Street, the route turns west onto Queens Quay until turning north onto York Street. The route then follows York Street north to Front Street where it continues north on University Avenue. The route turns east on Armoury Street and passes through an unopen road between Armoury Street and Hagerman Place, then continues north along Elizabeth Street, before turning east on Foster Place and terminating at Terauley TS.

Though this route was initially considered, it was removed from consideration as it falls within the City of Toronto construction restriction area with restricted construction working hours, and was deemed not feasible as it would not meet the planned in-service date due to a much longer construction timeline.

5.2.1.4 Open Cut Route 4

From Esplanade TS, Open Cut Route 4 (denoted in lime green in **Exhibit 5-1**) follows Sherbourne Street north. The route then turns west on The Esplanade until turning north along George Street. The route then follows George Street until turning west on Gerrard Street, passing by Moss Park along a pedestrian walkway at the western side of the park between Queen Street and Shuter Street. The route continues west on Gerrard Street until Elizabeth Street, and then heads south on Elizabeth Street until turning east on Foster Place and terminating at Terauley TS.

The total length of Open Cut Route 4 is approximately 3.25 km. This route would require hand mining of tunnels under all intersections and TTC streetcar tracks.

This route was added as per consultation with City of Toronto ICU. Based on the City's analysis, this route presented the least amount of potential conflicts with upcoming and planned infrastructure projects.

5.2.2 Tunnel Alternative Routes

Tunnel construction involves boring a tunnel at approximately 25 m below ground surface to house the new cables. To ensure access to and maintenance of the cables, the installation of tunnel shafts at surface level is also required.

In Toronto's downtown core, tunnelling methods have been used to construct large-scale trunk sewers, district energy systems and subway infrastructure. Typically, tunnelling methods are selected to avoid the shallow, heavily congested utility space in urban areas. The proposed Hydro One tunnel routes are well-suited for the use of conventional tunnel boring machines (TBMs), which are self-propelled, due to the limited opportunity for construction shafts along the routes. **Exhibit 5.2** provides several examples of TBMs.

Exhibit 5-2: Examples of Tunnel Boring Machines



The vertical alignment of the tunnel alternatives was designed to avoid three key potential conflicts:

Metrolinx's proposed new Ontario Line

The route selection process for the Ontario Line is ongoing. The previous version of the Ontario Line, developed by the Toronto Transit Commission (TTC), was known as the Relief Line South. Preliminary design details for the Relief Line South indicated that a new station at Sherbourne Street and Queen Street was proposed at a depth of approximately 14 m (elevation 60 m). It has been assumed that the Ontario Line would have a similar elevation, and would therefore require that Hydro One construct the Power Downtown Toronto tunnel routes below this elevation.

Existing Enwave tunnel

Currently, an Enwave Deep Lake Water Cooling (DLWC) tunnel is located along Bay Street at a depth of approximately 29 m to the top of the tunnel (elevation 62 m). In order to minimize the required depth of the construction shaft at Terauley TS, Hydro One would need to construct the Power Downtown Toronto tunnel routes above the Enwave tunnel.

Existing TTC Dundas subway station

The existing TTC Dundas subway station is located in the shallow utility zone. As a result, this station was not a concern in the vertical alignment of the tunnel routes. The bottom of this station is located at approximately 7 m below ground surface (elevation 85 m). The Power Downtown Toronto tunnel routes would pass below the existing Dundas Station.

The sections below provide a detailed description of the horizontal alignments of the two tunnel routes which were considered in the Class EA.

5.2.2.1 Tunnel Route 1

Tunnel Route 1 (denoted in orange in **Exhibit 5-1**) would start at an entry shaft located inside Esplanade TS. This site has adequate space to support the necessary equipment and access for the tunnel mining operation.

From Esplanade TS, Tunnel Route 1 would head north along Sherbourne Street to Dundas Street. At this point, the route would follow Dundas Street, which curves to the northwest then curves southwest before straightening out and heading west. The route continues west along Dundas Street then curves south down Bay Street. The tunnel continues on Bay Street for a short distance before terminating at Terauley TS.

A mid shaft would be constructed near the intersection of Shuter Street and Sherbourne Street. This mid shaft construction would take approximately three (3) months to complete (in addition to time for utility relocation, if required), and would provide access and ventilation during operation.

An exit shaft would be constructed at Terauley TS either within or near the station.

The total length of Tunnel Route 1 is approximately 2.5 km and would be situated within existing road allowances.

5.2.2.2 Tunnel Route 2

Similar to Tunnel Route 1, Tunnel Route 2 (denoted in blue in **Exhibit 5-1**) would start at an entry shaft located inside Esplanade TS.

From Esplanade TS, Tunnel Route 2 follows a similar route to Tunnel Route 1, heading north along Sherbourne Street until Queen Street, where the route bends to the northwest and crosses underneath Moss Park diagonally. The route then heads north along George Street until Dundas Street.

At this point, a mid shaft would be constructed within a landscaped area on the southeast corner of George Street and Dundas Street. The TBM would be lifted by crane to turn the machine 90 degrees at this shaft location. This mid shaft would require a larger construction area to accommodate the TBM turning, as well as a longer construction period of up to two years.

The route would then continue, heading west along Dundas Street. The remainder of the route is the same as Tunnel Route 1 as it continues west along Dundas Street then curves south down Bay Street. The tunnel continues on Bay Street for a short distance before terminating at Terauley TS.

An exit shaft would be constructed at Terauley TS either within or near the station.

The total length of Tunnel Route 2 is approximately 2.2 km and would be situated within existing road allowances with the exception of the portion through Moss Park.

5.3 Evaluation of Alternative Methods

The four alternative routes/construction methods were assessed through a comparative evaluation to select a preferred route/construction method. The comparative analysis serves to highlight the range of relative differences between the potential effects for each alternative route. This evaluation involved an assessment of the advantages and disadvantages related to 19 project-specific criteria. For each criterion, the alternative routes were ranked as:

- **Preferred** – alternative(s) with the most advantages and least disadvantages for that criterion;
- **Less preferred** – alternative(s) with less advantages and/or more disadvantages, for that criterion, compared to the 'most preferred' alternative(s); or
- **Least preferred** – alternative(s) with the least advantages and most disadvantages, for that criterion.

These 19 criteria were categorized within the following four groups:

- Socio-economic environment;
- Natural environment;
- Technical considerations; and

- Costs.

The results of the route evaluation for each criterion were summarized, and preference rankings provided for each of the criteria groupings. The summary of evaluation results is presented in **Table 5-1** below. See **Appendix F** for the detailed Alternative Routes Evaluation Table.

Table 5-1: Summary of Evaluation of Alternative Routes

Evaluation Criteria	Open Cut Route 2	Open Cut Route 4	Tunnel Route 1	Tunnel Route 2
Socioeconomic Environment	Least Preferred	Least Preferred	Preferred	Less Preferred
Natural Environment	Less Preferred	Less Preferred	Preferred	Preferred
Technical Considerations	Least Preferred	Least Preferred	Preferred	Less Preferred
Costs	Preferred	Less Preferred	Preferred	Preferred
OVERALL			Preferred (OVERALL)	

The following sections describe the results of the route evaluation and rationalizes the selection of the preferred route.

Open Cut Route 2

As a result of the extensive surface construction associated with the open cut method, this alternative along with Open Cut Route 4 is least preferred in terms of the socio-economic environment and technical considerations criteria.

From a socio-economic perspective, the required surface construction for Open Cut Route 2, as well as Open Cut Route 4, involve potential disruptions to traffic, cyclists, pedestrians, and surrounding neighbourhoods. Some of the key disadvantages of these routes include the potential to impact local business, streetscape, and public realm amenities. Open Cut Route 2 requires a crossing at Yonge Street, a Priority Retail Street. As such, the impacts associated with the open cut method have the potential to significantly impact businesses. In addition, streetscape projects, including "Yonge

TOmorrow" and Gould Street Revitalization project, could be impacted by the construction. It should also be noted that there would be a number of potential unknowns (i.e., unidentified underground facilities) due to open-cut construction occurring through a highly urbanized area.

This alternative may require the removal of street trees along the full route. As such, it is less preferred in terms of its impacts to the natural environment.

Open Cut Route 2 is associated with a number of technical challenges, including:

- The need to cross more than ten (10) major roads, three streetcar tracks and the Yonge Subway Line, which is situation at a very shallow depth;
- The potential for conflict with the significant number of utilities that exist within the existing road allowances requiring extensive coordination and likely the need to move other infrastructure; and,
- The potential for the new Hydro One infrastructure to be damaged or need to be relocated due to construction of other infrastructure in the future.

Due to its lower relative construction cost and comparable lifecycle cost, this alternative is only preferred from a cost perspective.

Open Cut Route 4

Similar to Open Cut Route 2, Open Cut Route 4 is less preferred or least preferred in terms of the socio-economic environment, natural environment, and technical considerations criteria.

This similar preference ranking is largely due the construction disruptions and potential unknowns related to unidentified underground facilities associated with the open cut method. However, there are several differences between Open Cut Route 2 and 4 related to the alignment of the route. Some key disadvantages of Open Cut Route 4 over Open Cut Route 2 are:

- The route passes two elementary schools (St. Michael Catholic School and Gabrielle-Roy Elementary School), a recreational centre (St. Lawrence Community Recreation Centre) and two hospitals (SickKids Hospital and Toronto General Hospital);
- The route crosses Moss Park, where there is potential for archaeological resources; and

- The route would require an easement on the west side of Moss Park and may require the removal of street trees and landscape trees along the full route, including those in Moss Park.

Relative to the other three alternative routes, Open Cut Route 4 has the highest costs related to operation, maintenance, rehabilitation and replacement. As a result, it is the least cost-effective alternative in terms of total lifecycle costs.

Tunnel Route 1 – Preferred Route

Tunnel Route 1 is the route with the least potential to disrupt the community since surface construction would be localized at the tunnel shafts. Tunnel Route 1 is the preferred route in terms of the potential for disruption to vehicular traffic and pedestrians. More specifically, relative to other routes, it is associated with the shortest construction periods and least amount of surface construction within the roadway.

Both tunnel routes are equally preferred in terms of their impact to the natural environment. While there may be some tree removal required at the mid and exit shaft locations, as a result of the tunnelling method, there is less overall potential for tree removal compared to the open cut alternatives.

While the tunnelling method avoids construction across major roads and surface transit routes, both tunnel routes would need to be constructed deeper than Metrolinx's proposed new Ontario Line, the existing Yonge Subway Line, and the existing Enwave Deep Lake Water Cooling tunnel. As a result of the vertical alignment of the tunnel alternatives, no utility conflicts were identified along either of the tunnel routes. From a technical perspective, Tunnel Route 1 is preferred, as it presents the least amount of technical challenges of all four considered routes.

Tunnel Route 1, along with Open Cut Route 2 and Tunnel Route 2, are all equally preferred in terms of costs.

Tunnel Route 2

Tunnel Route 2 has a greater potential to result in disruptions to traffic, pedestrians, institutions, and recreational facilities when compared to Tunnel Route 1 due to the proposed location of the mid shaft and the duration of construction and associated closures. More specifically:

- There is potential impact to institutional uses, as the mid shaft for Tunnel Route 2 is proposed to be located adjacent to the Gabrielle-Roy Elementary School and would require to remain open for up to two years; and,
- The mid shaft construction would result in a period of full road closure on George Street and partial road closures during the remainder of the construction period.

The key technical challenges associated with this alternative route when compared to Tunnel Route 1 is the need for an easement to tunnel underneath Moss Park, as well as the potential conflicts with the planned revitalization of the park and the community recreation centre.

While this route has minimal effects on the natural environment and lower associated costs, it is still considered to be less preferred compared to Tunnel Route 1 in terms of its potential disruptions to the socio-economic environment and technical challenges.

Overall, Tunnel Route 1 is the preferred alternative route on all four criteria groups.

5.4 Preferred Alternative (Tunnel Route 1)

Based on the route evaluation, Tunnel Route 1 has been selected as the preferred route. The proposed tunnel route and the shaft locations are shown in **Exhibit 5-3**. The key advantages and considerations of Tunnel Route 1 and the proposed shafts are summarized below:

Key advantages:

- Least disruption to vehicular, and pedestrian traffic;
- Least conflicts with existing and planned infrastructure and utilities;
- The anticipated noise and vibrations from the TBM operating at approximately 25 m below ground surface will not be perceptible at the surface, minimizing disruptions to communities;
- No anticipated direct effects to institutions, emergency uses, and businesses as a result of the construction method and route alignment; and,
- Minimal impacts to the natural environment.

Other considerations:

- Increased truck traffic near Esplanade TS and surrounding areas as a result of the removal of excavated rock from the proposed entry shaft inside Esplanade TS;
- Coordination with the City and CycleTO required for the construction of the proposed mid shaft near the intersection of Shuter Street and Sherbourne Street, with the planned road resurfacing work and planned bike infrastructure upgrades on Shuter Street, as well as the planned watermain replacement work on Sherbourne Street;
- Potential for interaction with existing underground and overhead utilities at the proposed location for the mid shaft;
- Further discussion with the City is required as the proposed location for the exit shaft (C2) may result in a permanent installation on an existing City of Toronto parking lot adjacent to Terauley TS, which could potentially remove some parking spaces and affect future development plans on the subject property;
- Potential for interaction with existing THESL assets at Esplanade TS and Terauley TS; and,
- Working in confined space during construction of the tunnel and the periodic inspections during operation.

Exhibit 5-3: Preferred Route (Tunnel Route 1) and Shaft Locations

6 Project Description

The proposed Project involves the construction of an underground tunnel to house new transmission cables to replace the aging cables between Esplanade Transformer Station (TS) and Terauley TS (circuits C5E and C7E). The scope of this project includes the following:

- Replacing the existing direct-buried low pressure oil filled (LPOF) cables (circuits C5E and C7E) with cross linked polyethylene (XLPE) cables in a new route within an underground tunnel;
- Excavation and installation of an entry shaft within Hydro One's Esplanade TS property, an exit shaft on or near Terauley TS property, and a mid shaft within existing road allowance; all three shafts will connect to the tunnel from the surface;
- Installation of required associated equipment at Terauley TS and Esplanade TS;
- Installation of tunnel ventilation equipment and/or building at Esplanade TS, if required;
- Pulling of new XLPE cables through the newly built tunnel;
- Re-establishing the circuits between Terauley TS and Esplanade TS; and
- Decommissioning of the existing LPOF cables between Terauley TS and Esplanade TS.

Exhibits 1-2 to 1-4 show the proposed tunnel and shaft locations. **Exhibit 6-1** shows the cross section of the proposed tunnel and **Exhibit 6-2** shows the XLPE transmission cable.

Exhibit 6-1: Example of a Cross Section of Tunnel Installation

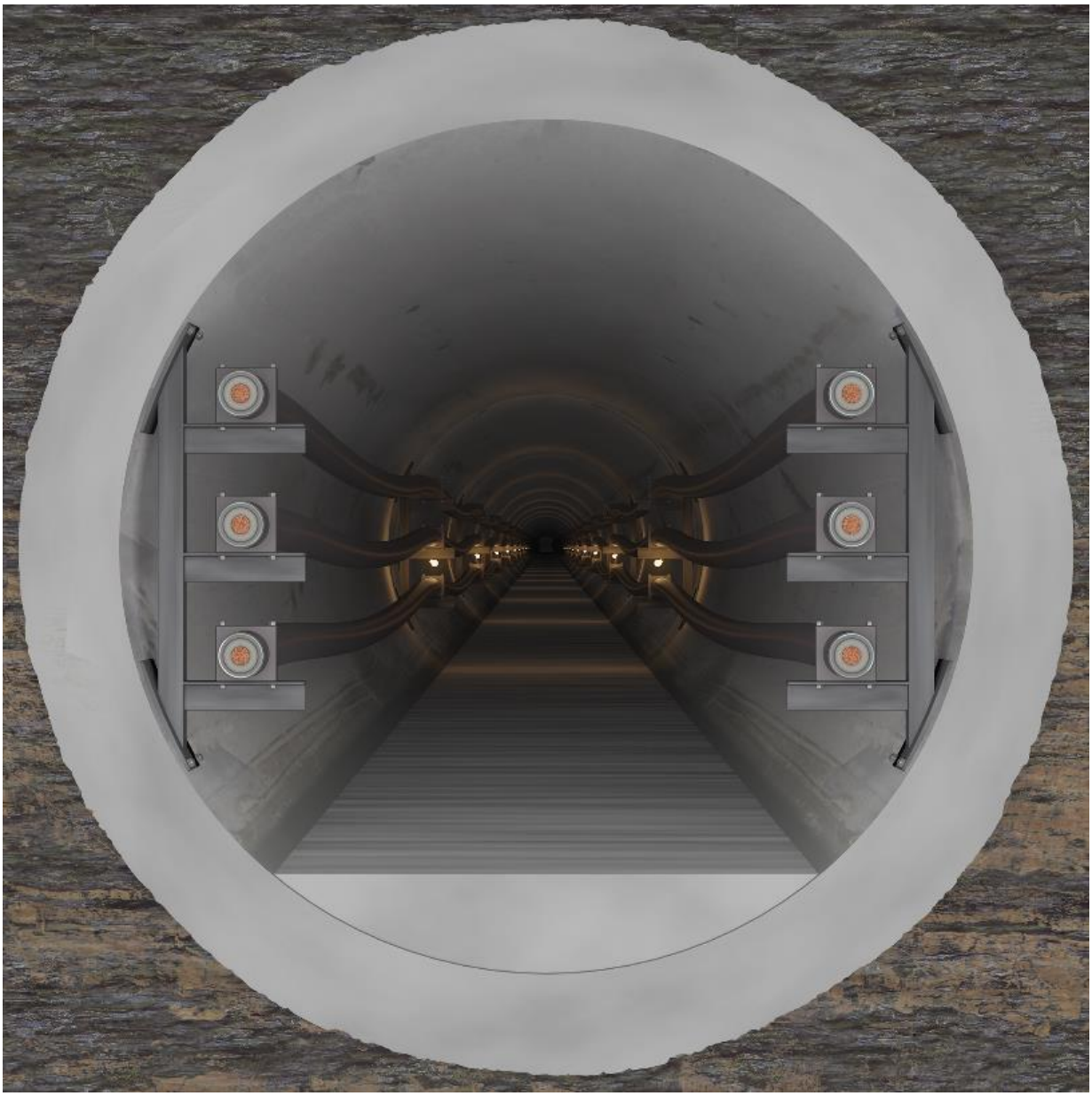
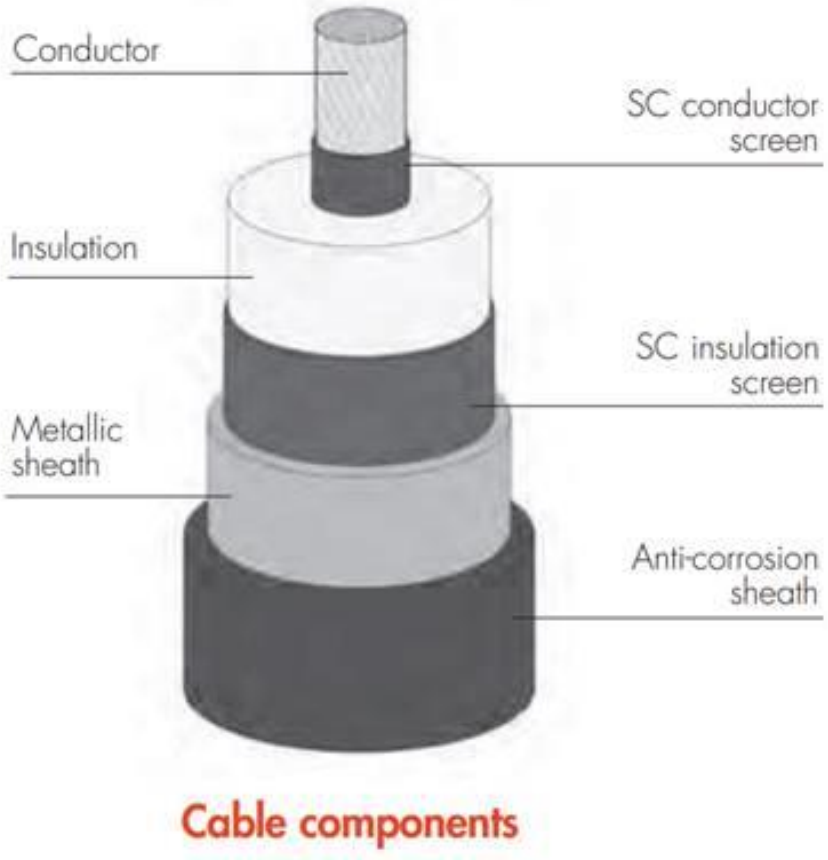


Exhibit 6-2: Cross Linked Polyethylene (XLPE) Transmission Cable



6.1 Design Phase

Following the completion of the Class Environmental Assessment (EA) process, the detailed engineering design will be completed. Final design plans for the proposed facilities will be prepared. The design will be based on necessary surveys and consultation, including the geotechnical survey, and consultation with provincial ministries, municipal officials and other appropriate stakeholders, as necessary.

The final plans will identify the final design and location of the entry, mid and exit shafts, as well as staging and laydown areas. The requirements for any tunnel ventilation equipment and/or building installation will also be determined. The final plans will also show any specific areas requiring restoration, as necessary.

A project-specific Environmental Management Plan (EMP) will be prepared prior to construction. This document will provide specific directions to construction personnel, summarizing legislated

requirements, environmental commitments set out in the final Environmental Study Report (ESR), and terms and conditions, if any. This will include all required monitoring, as specified in the monitoring plan (**Section 8**).

Following completion of the Class EA process, applications will be made for any permits, licences or approvals that may be required (see **Section 1.4.2**).

6.2 Construction Phase

Construction activities will be subject to Hydro One standards and guidelines, as well as project-specific documents; these are to be adhered to by all construction personnel, including contractors and sub-contractors. In addition, the project-specific EMP, outlining specific requirements for the proposed Project, will be followed during the construction phase.

Prior to construction, a detailed construction plan will be developed. Construction activities will be restricted to designated work areas and protective barriers, such as fencing, will be erected to protect adjacent features from construction related effects.

Throughout the construction period, an Environmental Specialist will be available to address unforeseen environmental effects and mitigation requirements. The Environmental Specialist will monitor activities to ensure conformance with the requirements set out in the project-specific EMP.

Upon completion of construction, clean up and restoration of areas disturbed by construction will occur, as required. As well, operation and maintenance staff will be provided with a briefing and "as constructed" documentation covering ongoing commitments, including monitoring and notification requirements, if applicable.

6.2.1 Tunnel and Shaft

Construction of the underground tunnel and the shafts will involve the following activities:

- Set up of temporary laydown areas:
  - within Esplanade TS station fence;
  - near the intersection of Shuter Street and Sherbourne Street within existing road allowance; and,
  - within City's parking lot adjacent to Terauley TS;

- Construction of an entry shaft (approximately 12 m in diameter) at Esplanade TS, which will be used to lower the tunnel boring machine (TBM) into the shaft, as well as to remove rock spoil and groundwater during boring operations, and as a cable exit to connect the XLPE cables to the station;
- Construction of a tunnel through bedrock (using the TBM) that will be approximately 3 m in diameter; approximately 2.5 km in length and approximately 25 m below grade (the tunnel will be lined with concrete);
- Construction of an exit shaft (approximately 8 m in diameter) at Terauley TS (final location to be determine by detailed design), which will be used as an extraction point for the removal of the TBM, and as a cable exit to connect the XLPE cables to the station;
- Construction of a mid shaft near the intersection of Shuter Street and Sherbourne Street (final location to be determine by detailed design), which will provide access to the cables for maintenance as well as ventilation (the shaft will be a grate in the road when completed);
- Excavation for duct bank installation at Esplanade TS and Terauley TS to connect the new XLPE cables between the entry/exit shaft and the underground-to-overhead connections at the respective stations;
- Removal of existing LPOF cables within Terauley TS and Esplanade TS;
- Installation of six (6) new XLPE cables with embedded fibre optic wires through the newly installed tunnel and station cable duct banks;
- Installation of tunnel ventilation equipment and/or building at Esplanade TS, if required;
- Removal and disposal of excavated rock;
- Removal and disposal of groundwater; and,
- Site restoration (e.g. road paving at the mid shaft), as required.

6.2.2 Transformer Stations

The following work at Esplanade TS and Terauley TS will be conducted as part of the proposed Project:

- Installation of new underground-to-overhead cable connections and supports;
- Excavation for duct bank installation at Esplanade TS and Terauley TS to connect the new XLPE cables between the entry/exit shaft and the underground-to-overhead connections at the respective stations;
- Installation of six (6) new XLPE cables with embedded fibre optic wires through the newly installed tunnel and station cable duct banks;
- Installation of tunnel ventilation equipment and/or building at Esplanade TS, if required;
- Stockpiling of materials and excavated soil, as required;
- Removal and disposal of excavated rock and soil;
- Removal of existing LPOF cables within Terauley TS and Esplanade TS;
- Removal and disposal of insulating oil in the LPOF cables and associated equipment;
- Update the protection, teleprotection and control settings and configurations; and,
- Site restoration, as required.

6.2.3 Decommissioning of Existing Underground Cables

The existing 115 kV cables that run along York Street and Queens Quay will be de-energized and disconnected at Terauley TS and Esplanade TS. The insulating oil inside the cables will be drained and disposed of in accordance with environmental regulations and Hydro One standards. The buried cables will then be capped at the terminal ends and left in place to minimize any further surface disruption in Toronto's downtown core.

6.3 Maintenance, Operation and Retirement

The proposed Project is scheduled to be in service by December 2024. Unlike the existing LPOF cables, the new XLPE cables eliminate the need for maintaining both liquid levels and pressure.

Furthermore, in the event of cable damage or failure, the use of oil-free XLPE eliminates the risk of oil being released to the surrounding environment.

Throughout the operating life of the underground cables, preventative and emergency maintenance will be carried out to ensure that the equipment operates according to design parameters and ensure compliance with Hydro One standards and regulatory requirements to maintain a safe and reliable electricity transmission system.

When the transmission facilities become obsolete or unserviceable, the equipment will be retired from service in accordance with the applicable standards and legislation of that time.

6.4 Project Schedule

The anticipated schedule for proposed Project activities is provided below in **Table 6-1**. This schedule shows key milestones remaining in the Class EA process and subsequent anticipated timing of the detailed design and construction stages.

Table 6-1: Project Schedule

ACTIVITY	PERIOD
Draft Environmental Study Report (ESR) for the 45-day public review and comment period	April to May 2020
Comment integration and response	June 2020
Filing of final ESR and Class EA Statement of Completion with the MECP	June 2020
Filing of Leave to Construction application under Section 92 of the *OEB Act*	June 2020
Detailed design complete	October 2020
Pre-construction community open house	April 2021
Planned tunnel and shaft construction start	May 2021
Planned cable connection activities start	March 2024
Planned in-service date	December 2024

7 Potential Environmental Effects and Mitigation Measures

This section describes the potential environmental effects and mitigation measures associated with both the short-term (construction) and long-term (operation) activities of the proposed Project. The assessment of potential environmental effects for the proposed Project considered the baseline information on the environmental features that was collected for the study area as presented in **Section 4**.

As noted in **Section 1.2 and Section 6** the proposed Project is primarily a deep tunnel with surface construction occurring at the entrance shaft, mid shaft and exit shaft only.

The potential environmental effects resulting from the construction and operation of the proposed Project are similar to other projects undertaken by Hydro One and are well understood. Hydro One has a strong track record of environmental compliance and stewardship and is committed to the completion of comprehensive environmental analysis and mitigation of potential effects.

The following sections describe potential environmental effects for both the construction and operational phases of the proposed Project. The selection of mitigation measures are based on the following guiding principles:

- Avoidance of sensitive areas, where practical;
- Proactive communication with area residents, property owners and businesses on proposed Project timelines and construction areas;
- Proactive communication with First Nation and Métis (FN&M) communities, municipal, provincial and federal government officials and agencies, potentially affected and interested persons, and interest groups regarding the proposed Project;
- Implementation of conventional, proven mitigation measures during construction consistent with the criteria set out in Appendix E of the Class Environmental Assessment (EA) for Minor Transmission Facilities, and in accordance with applicable legislative requirements; and,
- Development of environmental enhancement or compensation measures to offset the unavoidable effects of construction and operation where such effects exist where practical.

Given the urban context of the proposed Project, there is limited potential for impact on the natural environment. Mitigation is focused on minimizing disruption that could occur during construction (e.g., noise, dust, vibration and traffic).

7.1 Agricultural Resources

As indicated in **Section 4.1**, there is no potential for the proposed Project to affect agricultural resources. Therefore, no potential effects have been identified.

7.2 Forestry Resources

As indicated in **Section 4.2**, there is no potential for the proposed Project to affect forestry resources. Therefore, no potential effects have been identified.

7.3 Cultural Heritage Resources

As discussed in **Section 4.3**, a Cultural Heritage and Existing Conditions Report focusing on the alternative routes was completed. Based on the findings in this report, there are twenty-three (23) identified cultural heritage buildings and properties adjacent to or crosses the route of proposed Project. These include six (6) designated heritage properties, fifteen (15) listed heritage properties, and two (2) properties with intentions to designate. (Golder Associates Ltd., 2019a). It is noted that while some of these heritage features are in proximity to the shaft locations, the construction will occur within the road allowances or on Hydro One property and it is not anticipated that there will be any structural impacts on individual cultural heritage features or heritage conservation districts during construction or operation. The exception to this is the Terauley TS. Hydro One will avoid construction activities that will impact the façade of the Terauley TS, which is considered a heritage character of the building. In addition, a Heritage Impact Assessment (HIA) will be completed for the Terauley TS property during detailed design, and appropriate mitigation measures will be implemented as necessary.

During construction there is the potential for nuisance effects such as noise, dust and traffic which could have a temporary impact on cultural heritage features. This impact would be confined to the construction period only.

A Stage 1 Archaeological Assessment (AA) was also completed for alternative routes within the study area. The report concluded that there is low potential for the presence of significant archaeological resources in the area impacted by the proposed Project. The Stage 1 AA indicates

that existing archaeological potential, specifically the possible survival of any pre- or post-Contact Indigenous resources, is negated by the Euro-Canadian and modern development activities (Golder Associates Ltd., 2019b). Since the study area has undergone extensive disturbance (i.e., from the demolition of buildings, excavation works for roads, buildings, sewers, etc.), there is a low likelihood for undiscovered archaeological resources to be present. As such, the report recommended that no further archaeological assessment is needed.

Upon completion of the detailed design, the specific locations of the shafts will be determined and additional site-specific considerations for an archaeological assessment will be made if required.

If archaeological resources were to be discovered during the construction stage of the proposed Project, work will be halted, the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) will be notified, and a licensed archaeologist would need to investigate the area further (Golder Associates Ltd., 2019b; BMcD, 2017). Mississaugas of the Credit First Nation (MCFN) will also be notified.

7.4 Land Use and Communities

7.4.1 Land Use Planning and Communities

As indicated in **Section 4.4**, the study area is a highly urbanized and populated area with a combination of commercial, residential, institutional and mixed land uses.

Construction activities have the potential to create temporary, localized effects in terms of air quality, noise, and vibrations that could be experienced by residents, business owners and employees in the immediate vicinity of the proposed Project. See **Sections 7.6.2.2 to 7.6.2.5** for more details on **Air Quality**, **Noise**, **Vibration** and **Mud**.

7.4.1.1 Local Residents and Businesses

While the proposed Project crosses Yonge Street, there are no anticipated impacts to Priority Retail Streets and no impact to other businesses along the route. This is due to the deep tunnelling construction method, which will occur approximately 25 m below ground surface.

The construction of the mid shaft near the intersection of Shuter Street and Sherbourne Street will have the potential for short-term disruption effects on local residents and businesses depending on the final location. The removal of rock from the Esplanade TS will involve truck traffic for the duration of construction which also has potential for disruption to residences and businesses. There are

limited businesses in the immediate vicinity of either location so the impact to businesses is anticipated to be minimal.

There are residential buildings in proximity to all three shaft locations and residents have the potential to experience typical short-term construction impacts such as noise, dust and traffic.

Hydro One is committed to minimizing construction related disruption to the extent possible through construction site best management practices (i.e., dust control, minimizing the laydown area, minimizing the duration of construction where possible, working within the city's Noise By-Law permitted hours, minimizing traffic restrictions etc.).

Hydro One is also committed to inviting local residents and businesses in proximity to the construction area to a pre-construction Open House to keep them informed of construction activities and timing.

Further information on the temporary construction effects that could be experienced by residents and businesses and proposed mitigation can be found in **Sections 7.4.2 and 7.6.2**.

7.4.1.2 Health and Safety

Safety is of the utmost importance at Hydro One both at the workplace and for the public. Construction sites pose a potential safety hazard to the public and workers, if not properly controlled. Hydro One mitigates safety hazards by implementing safety measures in accordance with its corporate policy and Ministry of Labour requirements during construction. This includes ensuring that the proposed Project is executed in accordance with all applicable codes and regulations.

To minimize the effects of construction on public safety, a wide range of safety measures will be implemented, as appropriate. They may include: adding signage; fencing and locking construction laydown areas; installing additional lighting in construction laydown and equipment storage areas; carefully selecting construction laydown areas; holding a pre-construction Open House to inform the public, residents and businesses of proposed Project activities and schedules prior to construction; and providing alternate road and/or pedestrian access, where necessary.

Tunnel construction minimizes the required size and area of the construction sites that the public is exposed to. However, the proposed Project will require a mid shaft construction site compound near the intersection of Shuter Street and Sherbourne Streets, for approximately three months (in

addition to time for utility relocation, if required). In addition, an exit shaft may be located outside of the Terauley TS for approximately two years during construction. These construction sites will include laydown areas for materials, operation of construction heavy equipment and excavation. The construction sites will be fenced and have restricted access strictly to protect the public.

Worker health and safety during construction is regulated by the Occupational Health and Safety Act for Construction Projects (OHSA). Both tunnel and shafts have specific sections covered in the OHSA. All construction activities for the proposed Project will be carried out in a way that supports public and worker safety during construction. Pre-qualified contractors with extensive experience in tunnel and shaft construction will help to ensure the safety of the public and workers during construction.

During operation, employees accessing the tunnel for periodic inspection and maintenance are required to be in a confined space and in close proximity to energized assets. To minimize safety risks, access to the tunnel is restricted to qualified personnel, well established procedures will be followed, access time is kept to a minimum and power system controllers (Ontario Grid Control Centre) are notified of any personnel in the tunnel. In addition, cables system components are monitored in real-time for any abnormalities. In the event of abnormal readings, all work is halted and an investigation will be initiated.

7.4.1.3 Property Rights

The proposed tunnel is to be located approximately 25 m below ground surface within the City's road allowances. While Hydro One will undertake the majority of surface construction within the station property boundaries of Terauley TS and Esplanade TS, a small portion of surface construction for the mid shaft will occur within the City's road allowance near the intersection of Shuter Street and Sherbourne Street. Hydro One will liaise with the city to obtain the necessary land rights for construction within the road allowances.

During detailed design, Hydro One will confirm the feasibility of constructing the exit shaft within the Terauley TS property. Hydro One may be required to obtain the necessary land rights from the City to construct the exit shaft on the adjacent City-owned property (75 Elizabeth Street/1 Foster Place), which is currently being used for parking. The use of the parking lot is anticipated to be needed for a temporary construction laydown area if the shaft is within the Terauley TS. Hydro One has discussed the proposed Project with CreateTO who manages this property asset and will continue to liaise with them during detailed design.

7.4.1.4 Electric and Magnetic Fields (EMF)

Electric and magnetic fields (EMF) are physical and invisible fields produced by electrically charged objects, such as electrical equipment, power cords, and wires that carry electricity. Although they are often referred to as EMF, electric and magnetic fields are actually two distinct components of electricity.

Hydro One is committed to maintaining safe EMF exposure levels for all of their assets and facilities. Potential EMF levels are taken into consideration during the design of any new assets. This commitment ensures that Hydro One employees maintaining its assets and facilities, as well as members of the public in the vicinity of these assets and facilities are not exposed to elevated EMF levels.

Hydro One looks to the scientific expertise of organizations such as Health Canada and the World Health Organization to assess the scientific studies and provide advice and guidance. Health Canada monitors scientific research on EMF and human health as part of its mission to help Canadians maintain and improve their health. Health Canada's conclusion about EMF is that there is no conclusive evidence of any harm caused by exposures at levels found in Canadian homes and schools, including those located just outside the boundaries of power line corridors.

EMF drops off quickly with distance from the source. As noted previously, the tunnel will be approximately 25 m below ground. Therefore, these buried cables would not be detectable above fields generated by the normal use of electricity (e.g., typical building uses, lighting, appliances) at surface level.

7.4.2 Transportation

As noted in **Section 4.4.2**, transportation infrastructure is an integral component of city planning and design in the highly urbanized and populated study area. There is some potential for temporary disruption to vehicular traffic, transit, cyclists, and pedestrians during the construction phase.

Hydro One will work to minimize impact to vehicular, pedestrian and cycling traffic to the extent possible.

7.4.2.1 Vehicular Traffic

While the proposed tunnel construction is not anticipated to result in any full road closures, the proposed Project is anticipated to require temporary lane restrictions for the construction of the mid

shaft, near the intersection of Shuter Street and Sherbourne Street. The restriction is currently anticipated to be a one-lane closure for approximately three months, in addition to time for utility relocation, if required.

Short-term traffic disruptions (i.e., hours) may also occur when the tunnel boring machine (TBM) is brought to and removed from Esplanade TS and Terauley TS, and for delivery of other equipment and materials.

The need for temporary lane restrictions will be confirmed during the detailed design. Where temporary lane restrictions are required, Hydro One will coordinate the timing with the city and other construction projects that may be planned in the area. Hydro One will also obtain all necessary permits for these temporary lane restrictions.

The tunnelling construction will require the removal of excavated rock, which would result in trucks entering and leaving Esplanade TS during the excavation of the tunnel. Approximately 40,000 m^3 of rock will need to be removed which will require an average of approximately 30 to 40 trucks per day to transport the excavated material from the site. Additional information on the expected construction impacts including the number of trucks will be provided at the pre-construction Open House.

Hydro One is currently investigating possible deposit locations for the excavated rock, with a goal of finding a beneficial use for the rock, if possible. Hydro One and contractors will implement a haul route to minimize traffic disruption to the extent possible. The City will also be consulted on the haul route to ensure coordination with other construction projects in the area. Signage and traffic management will be also implemented, as required.

To minimize the potential for impact on emergency services, Hydro One's contractor will be required to submit information to the City of Toronto's Road Disruption Activity Reporting System which is used to inform emergency services of required route changes.

Access to the mid shaft may be required for periodic maintenance during operation. This access will be infrequent and short term. Hydro One will minimize access needs at the mid shaft, where possible, by accessing the other shafts and or accessing during off-peak traffic times.

7.4.2.2 Transit

Based on consultation with the Toronto Transit Commission (TTC), TTC has identified a potential impact to Route 75 Sherbourne depending on the final location of the mid shaft and the route for

trucks leaving the Esplanade TS. The tunnel is located below the existing Yonge Subway (Line 1) and no impact to the subway is anticipated. Hydro One committed to continuing to work with TTC throughout the duration of the project.

Based on consultation with Metrolinx and the conceptual design, the proposed tunnel would be constructed below the proposed new Ontario Line. It is currently anticipated that the timing of construction of the two projects will not overlap. However, if they do, the potential conflict areas between the two projects will likely be along Sherbourne Street between King Street and Queen Street and specifically at the locations of the planned King-Sherbourne and Moss Park Stations. Collaboration between Metrolinx and Hydro One will continue into the detailed design and construction phases of the proposed Project.

7.4.2.3 Cyclists and Pedestrians

Within the Toronto's downtown core, there is an extensive cycling network with dedicated cycling infrastructure (**Appendix D6**). This includes existing on-street cycling facilities on Shuter Street (existing bike lanes) and Sherbourne Street (existing cycle track).

The City of Toronto has advised of their planned road resurfacing and a proposed bike lane upgrade on Shuter Street from Bond Street to River Street. This road reconstruction and upgrade of the existing bike lane to a cycle track is anticipated to occur between the spring and fall of 2020 (City of Toronto, 2020a). Given the timing of the two projects, it is not likely that the construction activities will overlap. However, the construction of the mid shaft has the potential to require construction within the newly re-developed Shuter Street roadway and cycle track. Hydro One will coordinate with the City to determine if work can be coordinated and staged to reduce the potential of construction within a newly paved road section. Hydro One has also been in discussions with CycleTO and will continue to communicate with them as further information becomes available.

During the construction of the mid shaft, temporary lane restrictions will be required for a period of approximately three months (in addition to time for utility relocation, if required) which could impact cyclists using Shuter Street and/or Sherbourne Street.

In addition, excavated materials will be transported from Esplanade TS which could impact cyclists using the Sherbourne Cycle Track. The destination for rock removed from the site will be confirmed during detailed design. This construction activity could also affect pedestrians in the area.

Hydro One's contractor will prepare a safety plan, which includes a safe route for cyclists along Shuter Street and Sherbourne Street during construction. The safety plan will also address pedestrian safety incorporating best management practices such as pedestrian barricades, safety fencing, and traffic control, as necessary, to ensure safe pedestrian passage at Esplanade TS where truck traffic is expected.

7.4.3 Planned and Future Projects

As noted in **Section 4.4.3** there are numerous planned projects and infrastructure improvements in Toronto's downtown core.

It is anticipated that some of these projects, particularly the David Crombie Park Revitalization, and the proposed improvements to Moss Park and associated recreation facilities have the potential to overlap with the construction of the proposed Project. While direct impacts or conflicts are not anticipated, Hydro One will continue to liaise with City of Toronto's Infrastructure Coordination Unit (ICU) and the proponents for these initiatives to coordinate work and minimize the potential for construction of the proposed Project to negatively impact these projects.

Hydro One has reviewed the City of Toronto InView database of planned infrastructure projects and moratoriums that have the potential to overlap with the proposed Project (see **Appendix G**). As information on planned infrastructure projects is updated regularly, continued coordination with City of Toronto's ICU and the project proponents will continue to take place through detailed design and construction phases.

7.4.4 Existing Utilities

As noted in **Section 4.4.4**, there are a number of existing utilities in the City of Toronto's downtown core.

Due to the depth of the proposed tunnel, no direct conflicts with existing utilities have been identified. However, the proposed tunnel will cross under the TTC subway at Yonge Street and the Enwave Energy Ltd.'s (Enwave) tunnel at Bay Street. Hydro One will continue to liaise with the TTC and Enwave during the detailed design and construction phases to minimize potential effects to the existing tunnel infrastructure.

Hydro One has reviewed the City of Toronto's InView database of planned infrastructure projects that have the potential to overlap with the proposed Project (see **Appendix G**).

At this time, the infrastructure projects anticipated to be under construction in 2021 that are located near the entry shaft at Esplanade TS include the following:

- Revitalization of the waterfront area along Lake Shore Boulevard;
- Replacement of an Enbridge Gas main along Lake Shore Boulevard; and
- Underground and overhead infrastructure works along Lower Sherbourne Street.

The mid shaft location near the intersection of Shuter Street and Sherbourne Street was identified based on existing detailed utility mapping maintained by the City of Toronto (i.e., Digital Map Owners Group [DMOG]) to minimize potential conflicts with existing underground utilities. During the detailed design, the final location of the mid shaft will be selected and the need for minor utility relocation will be confirmed. Also, the Shuter Street road resurfacing planned for 2020 and the water main replacement along Sherbourne Street planned for 2021 have the potential to interact with the construction of the mid shaft.

There are also several planned and future projects located in proximity to the exit shaft at Terauley TS. The installation of new Bell Canada cables on Edward Street to the north of Terauley TS is anticipated to occur. The following planned projects along Queen Street to the south of Terauley TS are anticipated to occur in 2021:

- Sanitary Sewer Replacement from Dovercourt Road to James Street;
- Watermain Replacement from University Avenue to Bay Street;
- Pedestrian Infrastructure Improvement near Bay Street;
- Business Improvement Area Program from Bay Street to York Street, including streetscape and intersection improvements, lighting, tree planting, banner poles, etc.; and,
- Replacement of the streetcar tracks/rails and underlying supporting material from Bay Street to University Avenue.

During the construction phase, the overlap of these projects with construction activities associated with the proposed Project could result in increased traffic at some locations. In addition, work inside Terauley TS and Esplanade TS may require relocation of existing Toronto Hydro Electric System Ltd. (THESL) assets.

As a result of the numerous planned projects in proximity to shaft locations, Hydro One is committed to continue work with the City's ICU, THESL, other members of the TPUCC, and the project proponents to coordinate construction and minimize disruption.

7.4.5 First Nations Lands and Territory

As indicated in **Section 4.4.5**, there are no First Nations Reserve Lands located in the study area. However, the proposed Project is located within the traditional territory of the MCFN.

Hydro One is committed to developing and maintaining relationships of mutual respect with the MCFN. Hydro One recognizes that the MCFN and their lands are unique in Canada, with distinct legal, historical and cultural significance. Hydro One is committed to continue to engage with the MCFN to provide regular project updates, and actively identify and avoid geographically defined areas which support current or past traditional use for the harvesting of wildlife or fish, the harvesting of traditional plants, or use as sites of spiritual or cultural significance.

Hydro One will seek to identify MCFN community concerns and build appropriate actions into the proposed Project plans to address expressed concerns, as described in **Section 3.2.1**.

7.5 Mineral Resources

As indicated in **Section 4.5**, there is no potential for the proposed Project to affect mineral resources. Therefore, no potential effects have been identified.

7.6 Natural Environment Resources

7.6.1 Physical Environment

The proposed Project involves tunnelling at approximately 25 m below ground surface through bedrock which consists of shale from the Georgian Bay Shale Formation. Based on the conceptual design, it is expected that approximately 40,000 m^3 of rock will be excavated for the construction of the tunnel and associated shafts.

7.6.1.1 Waste Generation

Construction waste for the proposed Project will consist primarily of excavated soil from the shafts and rock from the tunnel. Prior to removal from the site, the soil and rock from the tunnel construction will be tested to confirm that it meets the applicable reuse or disposal criteria.

Hydro One is investigating options for the beneficial reuse of the excavated rock and has reached out to Waterfront Toronto to determine if any of their projects along the City's waterfront that could use this material. Should no beneficial reuse be available, the material will be handled, stored, transported, and disposed of at licensed waste disposal facilities, in accordance with applicable legislation.

In addition, as of July 1, 2020, excess soil as defined in O. Reg. 406/19 is classified as a waste unless it is beneficially reused, and meets the soil quality (Excess Soil Quality Standards, part of O. Reg. 406/19) and volume requirements of the reuse site. Review of the additives associated with the proposed tunnelling (e.g., water) will also need to be conducted to identify potential contaminants and determine if additional analysis is required. Assessment of rock, soil, and additive quality will be conducted by a Qualified Person (as defined in O. Reg. 153/04). Landfilling of excess soils that meet the applicable Excess Soil Quality Standards will be prohibited by Ministry of the Environment, Conservation and Parks (MECP) as of January 1, 2025, unless it is for beneficial reuse at a landfill.

7.6.1.2 Contaminated Soil and Groundwater

The proposed Project is located within a heavily urbanized environment, which presents the possibility of encountering contaminated soil due to previous uses. Esplanade TS and the area south of Front Street was originally located within Lake Ontario. Previous construction projects in areas of lakefill have encountered contaminated soil and groundwater, hazardous soil, debris, buried foundations, and dock cribs. As such, it is anticipated that excavation of the tunnel shaft at Esplanade TS will encounter some form of soil and/or groundwater contamination (RVA, 2020). Other shafts may also encounter contamination depending on the history of the surrounding area.

In addition, deep tunnelling has the potential to encounter bedrock containing metals and/or petroleum hydrocarbon parameters. During the detailed design phase, Hydro One will complete the hydrogeological and geotechnical investigations necessary to estimate the quantities of soil and groundwater to be managed during construction and to identify possible contaminants.

In the event that contaminated soil or groundwater is encountered during the construction phase, the following mitigation measures will be implemented:

- Hydro One will sample and analyze excess material prior to off-site disposal to determine its disposal requirements;
- Soil and groundwater containment and disposal measures will be implemented, as required; and,
- The disposal of contaminated material will meet appropriate regulations.

With the implementation of the mitigation measures described above, construction activities that have the potential to disturb contaminated soil are not anticipated to have residual effects on groundwater resources.

7.6.2 Atmospheric Environment

7.6.2.1 Climate

The proposed Project is not a power generation project and its operation will not emit greenhouse gases. As noted in **Sections 6.2 and 6.3**, the construction and maintenance activities will result in temporary and localized fossil fuel emissions from the vehicles and equipment used. Hydro One adheres to initiatives such as anti-idling requirements and GPS installation in vehicles to optimize routing in order to reduce fossil fuel emissions. The emissions directly related to the construction and maintenance of this project are expected to be minimal.

Hydro One recognizes that a changing climate is likely to result in an increase of unusual weather patterns and severe weather events, which could potentially damage or adversely affect infrastructure and other public facilities. Hydro One is confident that the facilities being planned for this project will be engineered to adequately withstand the effects of climate change throughout the duration of their planned lifespan.

By nature, buried underground transmission cables, cable duct banks and tunnels are less subject to damage from severe atmospheric weather conditions, such as lightning, high winds and ice accumulation. The concrete duct bank and thermal backfill and deep rock tunnel will provide additional levels of protection for the new cables compared to the existing direct-buried and duct installed infrastructure. In addition, the underground cross linked polyethylene (XLPE) cables are designed to withstand longitudinal water penetration and are housed in a water-impermeable

sheathing, which allows for operation in fully-submerged conditions (i.e., in a worst-case flooding scenario), and ensures that the cables will sustain minimal damage if such an event occurs. The XLPE cables and accessories themselves are designed, manufactured and tested to industry standards and specifications such as Association of Edison Illuminating Companies (AEIC) CS9, International Electrotechnical Commission (IEC) 60840, and Institute of Electrical and Electronics Engineers (IEEE) 404.

7.6.2.2 Air Quality

Construction has the potential to temporarily affect local air quality in the immediate vicinity of the proposed Project. Emissions from construction are primarily comprised of fugitive dust and combustion products from the movement and operation of construction equipment and vehicles. Potential effects associated with construction are anticipated to be minimal due to their short and intermittent duration. As a result, construction emissions are not anticipated to have a long-term effect on the local air quality.

Potential effects to air quality from construction activities will be mitigated through:

- Proper servicing and maintenance of construction vehicles and equipment to assist in reducing combustion emissions;
- Adhering to Hydro One's Fleet Services Environmental Program, which includes anti-idling requirements and GPS installation in vehicles to optimize routing; and
- Implementing best management practices, such as on-site watering and road cleaning to reduce the generation of fugitive dust.

Therefore, it is anticipated that the net effects of construction activities on local air quality would be negligible and no additional mitigation will be required.

During the operation of the proposed Project, no additional emissions are expected with the exception of periodic maintenance activities. Emissions from maintenance activities are expected to be short in duration, and would occur periodically over the lifespan of the proposed facilities. These maintenance activities are not expected to result in long-term changes to the local air quality. Therefore, residual air quality effects associated with maintenance and operation activities would be negligible and no additional mitigation will required.

7.6.2.3 Noise

Construction activities may be a potential source of short-term, intermittent local environmental noise. Common construction methods are expected to be used to complete the necessary work activities associated with the proposed Project. Noise associated with construction will most likely be a result of the construction activities listed in **Section 6.2**. The movement of delivery and worker vehicles will also add to the noise levels during the construction period.

Hydro one will employ best management practices to minimize noise including keeping equipment in good working order; using low noise equipment and/or proper noise abatement equipment on machinery; restricting idling; considering noise when determining construction schedules. Hydro One will also organize truck queuing at the Esplanade TS to minimize the need for back-up beepers.

Noise from construction activities is regulated at the municipal level through by-laws, which typically limit construction activities during certain days of the week and periods of the day. During construction, Hydro One will comply with the City of Toronto's By-Law. However, there may be instances where noise by-law exemptions are sought (e.g., after-hours or weekend work). If exemptions are necessary, the requirements of applicable approval processes will be met.

Hydro One will provide information on the proposed timing of construction activities and the potential for construction noise effects at the pre-construction Open House.

During operation, noise may be generated by tunnel ventilation equipment. This equipment, if necessary, will be installed in accordance with applicable legislation and will meet noise emission requirements. Periodic maintenance activities are expected to be limited to a short duration, and will not result in noise sources. Therefore, no mitigation will be required for noise during maintenance.

7.6.2.4 Vibration

Construction of the tunnel at a depth of approximately 25 m in bedrock, is not expected to affect nearfield ambient vibration levels. Construction of the shafts may have minor vibration effects similar to other construction sites. Construction vibration will be temporary in nature, occur only during specific activities, and be limited to the immediate vicinity of the construction work area.

Mitigation measures to reduce potential nuisance effects resulting from vibration will include: the consideration of vibration when selecting equipment and construction work methods, and determining work schedules for the proposed Project. Hydro One will take reasonable measures to control vibration related to construction near local residents and businesses.

7.6.2.5 Mud

Construction activities may result in the accumulation of mud in construction areas. Vehicles and equipment will be washed and maintained at work areas, as necessary. Periodic cleanup and site restoration will further minimize this potential effect throughout construction.

7.6.3 Surface Water Resources

As noted in **Section 4.6.3.3**, there is a network of underground creeks and rivers in the City of Toronto that have been buried by urban development and now exist within storm sewers. The proposed Project will cross these identified lost rivers multiple times.

The tunnel will be situated below all the storm sewers infrastructure. Based on the conceptual design, it is not anticipated that construction of the shaft locations will impact existing storm sewer infrastructure. This will be confirmed during detailed design and any existing underground infrastructure that requires relocation will be done so in consultation with the City and/or utilities.

7.6.3.1 Spills

During the construction phase of the proposed Project, there is the potential for spills from the unintentional release of oils and fuels from construction vehicles and other equipment. Oil will also be removed from the de-energized existing 115 kV cable and transported to an appropriate disposal facility. The following mitigation measures are proposed to reduce the risk of spills and to minimize the effect in the unlikely event of a spill:

- Storing fuels, chemicals and lubricants on level ground in properly contained storage areas;

- Undertaking refuelling, lubricating or servicing of construction vehicles and equipment in a designated location;
- Locating spill cleanup and response equipment on-site and in Hydro One vehicles;
- Developing and making available an Emergency Response Plan to govern spill and other emergency response, in the unlikely event of occurrence including a 24/7 spill call line; and,
- Should they occur, cleaning up spills as soon as possible and remediating a site after a spill.

During any phase of the project, in the event of an accidental spill of any material such as waste oil, fuel, lubricants or other pollutants, spills will be reported, managed and cleaned up in accordance with pertinent legislation and Hydro One procedures. All spills are to be reported to the MECP Spills Action Centre (SAC).

7.6.4 Groundwater Resources

The proposed Project is located within a heavily urbanized environment, which presents the possibility of encountering contaminated soil and groundwater due to previous uses. The Esplanade TS and south of Front Street is an area that was originally located within Lake Ontario. Construction projects in lakefill have not only encountered contaminated soil and groundwater, but also hazardous soil, debris, buried foundations and dock cribs. As such, it is anticipated that excavation at the tunnel shaft at Esplanade TS will encounter some form of soil and/or groundwater contamination (RVA, 2020). Other shafts may also encounter contamination depending on the history of the surrounding area. In addition, deep tunnelling has the potential to encounter bedrock containing metals and/or petroleum hydrocarbon parameters. During detailed design, Hydro One will complete the hydrogeological and geotechnical investigations necessary to estimate the quantities of soil and groundwater to be managed during construction and to identify possible contaminants. Dewatering and discharge plans will be prepared, as applicable. Appropriate permits (e.g., City of Toronto sanitary or storm water discharge permits) will also be obtained prior to construction. During the construction phase Hydro One will employ best practices for soil and groundwater management.

The proposed Project falls within lands categorized as an Event Based Area or a Highly Vulnerable Aquifer, as stipulated by the CTC Source Protection Region. Hydro One will utilize the appropriate

best management practices such as the preparation of an emergency spills response plan in order to minimize the potential for impact on the aquifer. Refueling best management practices will be used to mitigate for potential effects to groundwater.

7.6.4.1 Excavation and Dewatering

Tunnel construction has the potential to encounter groundwater and result in the need for dewatering during the excavation of the shafts and tunnel, as well as the open trenching in Terauley TS and Esplanade TS to connect the new cables. Water discharge will consist of some local stormwater runoff and groundwater intercepted during the excavation processes. Removal of groundwater may result in temporary lowering of aquifers.

To minimize the potential adverse effects of dewatering activities on groundwater, the following mitigation measures will be implemented:

- The proposed Project will comply with applicable guidelines and legislation, including Provincial Water Quality Objectives, Ontario Drinking Water Standards, Objectives and Guidelines and O. Reg. 153/04;
- Discharge of water from dewatering activities will be in compliance with required permits and approvals from the MECP. If required, a PTTW or EASR will be obtained for dewatering, as per requirements in **Section 7.6.3** above;
- Adequate dewatering and discharge plans will be developed prior to construction (e.g. City of Toronto sanitary or storm water discharge permit); and,
- Collected water will be contained and tested prior to disposal.

Water discharge will be planned and managed in compliance with applicable legislation. Construction dewatering operations between 50,000 - 400,000 litres per day (L/day) can be registered with the MECP under the EASR. If dewatering activities are in excess of 400,000 L/day, a Permit to Take Water (PTTW) under the *Ontario Water Resources Act*, 1990 will be required. A sewer discharge agreement to discharge the private water from the Hydro One tunnel into the City sewers will be required with the City of Toronto for the proposed project.

With the implementation of the mitigation measures described above, as well as the short duration and localization of the dewatering activities, dewatering activities are not anticipated to have long-term residual effects on surface water or groundwater resources.

7.6.4.2 Groundwater Quality

As mentioned in **Section 4.6.3**, the proposed Project falls within lands categorized as an Event Based Area or a Highly Vulnerable Aquifer, as stipulated by the CTC Source Protection Region. Hydro One will utilize the appropriate best management practices such as the preparation of an Emergency Spills Response Plan in order to minimize the potential for impact on the aquifer. Refueling best management practices will also be followed to mitigate for potential effects to groundwater.

7.6.5 Designated or Special Natural Areas

As indicated in **Section 4.6.5**, there is no potential for the proposed Project to affect forestry resources. Therefore, no potential effects have been identified.

7.6.6 Natural Heritage Features

As noted in **Section 4.6.6**, the majority of the study area is highly developed and consists mainly of buildings and impermeable concrete. Natural heritage features are limited to the flora and fauna that have adapted to this environment.

The potential for removal of trees for the proposed Project is limited. Depending on the location of the exit shaft at Terauley TS, approximately two trees within the parking lot adjacent to Terauley TS may need to be removed. This area is also proposed as a temporary laydown area for construction which has potential to disturb the trees. The exit shaft location and the need for tree protection and/or removal will be confirmed during detailed design. Hydro One will liaise with the City to discuss potential tree removal, if required.

Construction of the mid shaft, within the City's road allowance, and the entry shaft, at Esplanade TS, is not anticipated to require tree removal. Hydro One will protect trees adjacent to all construction areas in accordance with the City of Toronto's Tree Protection Policy and Specifications for Construction Near Trees document.

7.7 Recreational Resources

Some recreational resources may be temporarily disturbed at the shaft locations during the construction phase as the proposed Project is located in close proximity to several City parks.

David Crombie Park is located along The Esplanade, to the north of Esplanade TS. Construction of the entry shaft at Esplanade TS should have minimal impact on this park as it will occur within the existing station fence.

Moss Park is located near the mid shaft, and signs, barriers or fencing will be utilized if required to protect and separate park users and other members of the public from the construction activities.

Downtown Diversity Garden and Larry Sefton Park are located adjacent to Terauley TS. If construction of the exit shaft occurs outside of Terauley TS, signs, barriers or fencing will be utilized to protect and separate park users and other members of the public from the construction activities.

Park users may experience noise and dust disruption. However, to minimize this disruption, mitigation measures outlined in **Sections 7.6.2.2 (Air Quality) and 7.6.2.3 (Noise)** will be implemented during construction.

7.8 Visual and Aesthetic Resources

With the exception of the shafts, the proposed Project will be situated underground. As such, the proposed Project will have minimal to no effect to the visual and aesthetic resources of the project area.

It is unlikely that the entry shaft at Esplanade TS will be visible to the surrounding area as it will be located within the station fence. There are also several trees located along the north side of the fence which act as a visual screen, previously planted by Hydro One.

The mid shaft will be located near the intersection of Shuter Street and Sherbourne Street within the City's road allowance. When complete, the mid shaft will be a grate in the road, which is not anticipated to have any visual or aesthetic effect on the surrounding area.

The exit shaft at Terauley TS may or may not be visible to the public depending on the its final location, which will be confirmed during detailed design. If the exit shaft is located outside of Terauley TS, there is a potential need to remove approximately two trees situated within this parking lot. If the shaft is within the parking lot, a permanent fence will be installed around the shaft and Hydro One will consult with City of Toronto to discuss any additional landscape mitigation measures, as required.

7.9 Summary of Potential Environmental Effects, Mitigation Measures, and Residual Effects

Table 7-1 provides a summary of potential effects, the associated mitigation, and the residual effects identified for the proposed Project, during the construction and operation and maintenance phases.

Table 7-1: Summary of Potential Effects, Mitigation Measures and Residual Effects

ENVIRONMENTAL	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL
CULTURAL HERITAGE RESOURCES			
Built Heritage Resources	Potential to impact cultural heritage resources (i.e., Terauley TS building façade) during construction phase at Terauley TS.	• A Heritage Impact Assessment will be undertaken for Terauley TS, and appropriate mitigation measures will be implemented, as necessary. • Hydro One will avoid construction activities that will impact the façade of the building at Terauley TS which is considered to have heritage character.	No residual effects are predicted.
Archaeological Resources	Minimum potential exists for the proposed project to affect any archaeological resources in the study area. Archaeological potential is to be assessed at the final shaft locations.	• Hydro One will review the archaeological potential at the shaft locations once finalized. The need for further archaeological assessment work will be determined. • MCFN will be provided with any further archaeological assessment for the shaft locations, as required. • If archaeological resources are discovered during construction, work will be halted, the MHSTCI will be notified, MCFN will be notified and a licensed archaeologist will investigate.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
LAND USE AND COMMUNITIES			
Local residents and businesses	There is potential for disruption 9e.g., noise, traffic, etc.) in the vicinity of the Shuter Street and Sherbourne Street intersection, as well as near the entry shaft at Esplanade TS where truck traffic will be increased during the construction phase.	• Hydro One will minimize disruption to residents and businesses through construction best management practices, such as – minimizing the duration of construction where possible to reduce traffic impacts; – working within the city's Noise By-Law; and, – minimizing traffic restrictions. • Hydro One will provide additional information on the potential construction impacts at a pre-construction Open House prior to initiating construction.	No residual effects are predicted

Health and Safety	Construction sites, such as the mid shaft, Terauley TS (should construction occur outside of Hydro One property) and Esplanade TS (related to the regular truck travel to remove rock spoils) pose potential safety hazards to area users due to the operation of heavy equipment during the construction phase. Employees are required to be in confined spaces and in close proximity to energized assets during the inspection and maintenance of the tunnel assets.	• Hydro One will implement safety measures in accordance with its Public Safety policy and the Ministry of Labour's requirements during construction. • Hydro One will undertake construction safety measures where appropriate such as: – adding signage, barriers, fencing and locking construction laydown areas; – installing additional lighting in construction laydown and equipment storage areas where appropriate; – carefully selecting construction laydown areas and access routes; – holding a pre-construction Open House to inform the public, landowners and businesses of the proposed Project's activities and schedules prior to construction; and, – providing alternative road, bicycle and/or pedestrian access, if required. • Worker health and safety is regulated by the *Ontario Health and Safety Act* and construction and operation will be carried out in a manner that keeps workers safe during construction. • Hydro One will mitigate potential health and safety effects during operation (e.g. working	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
		in confined spaces and in proximity to energized assets).	
Property Rights	The tunnel including the surface construction near the intersection of Shuter Street and Sherbourne Street will be within City's road allowance. The location of the final exit shaft will be confirmed during the detailed design. The adjacent parking lot owned by the City will be used as a temporary construction laydown area if the exit shaft is constructed within Terauley TS. The exit shaft may be constructed adjacent to Terauley TS on the City's parking lot if it is determined that construction inside the station is not feasible.	• Hydro One will coordinate with the City to obtain the necessary property rights for construction within City's road allowances. • Hydro One will obtain the necessary property rights adjacent to the Terauley TS currently being used for parking for a temporary construction laydown area and to construct the exit shaft, if required.	No residual effects are predicted.

Vehicular Traffic	Construction of the mid shaft will require lane closures on Shuter Street and/or Sherbourne Street for approximately 3 months (plus additional time for utility relocation) resulting in some potential to disrupt traffic. Short-term traffic disruption (i.e., hours) may occur when the tunnel boring machine is brought to and removed from the site. The removal of excavated rock will add an average of approximately 30 to 40 trucks to the road which could have a traffic disruption impact. Road traffic may increase near the tunnel shafts (particularly Esplanade TS) due to equipment and materials delivery and worker vehicular traffic during the construction phase.	• Hydro One will reduce the time required for surface construction to the extent possible. • Hydro One will liaise with the City to coordinate the construction of the mid shaft and the timing of transferring the TBM to and from the site to minimize the traffic disruption. • Signage and traffic management will be put in place, where appropriate. • Hydro One and contractor to work with the City to implement a haul route to minimize traffic disruption to the extent possible. • Hydro One will provide additional information to residents on the potential construction impacts at a pre-construction Open House prior to initiating construction. • To minimize traffic disruption during operation, maintenance access to the tunnel will be minimized during operation (e.g. tunnel access points at Esplanade TS or Terauley TS will be used or access at the mid shaft will be carried out during off-peak traffic times).	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
	Periodic access to the mid shaft for inspection and maintenance may be required during the operational lifespan of the tunnel.		
Emergency Services	Potential for construction and construction related traffic to impact emergency services.	• The contractor will be required to submit information to the City of Toronto Road Disruption Activity Reporting System which is used to inform emergency services of required route changes.	No residual effects are predicted.
Transit	Depending on the final mid shaft location, the TTC Bus Route 75 on Sherbourne Street may be affected during the construction phase. No impact on the Yonge Subway is anticipated. The tunnel construction will be in the vicinity of the planned Ontario Line and care must be taken to avoid design conflicts. It is not expected that the timing of construction of these projects will overlap.	• Hydro One will liaise and coordinate with the TTC on construction timing and possible traffic impacts on transit to minimize potential effects. • Hydro One will continue to coordinate with Metrolinx regarding the proposed Ontario Line during the detailed design and construction phases.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Cycling	Construction of the mid-shaft near the intersection of Shuter Street and Sherbourne Street has the potential to impact the upgraded cycle track on Shuter Street and/or the existing cycle track on Sherbourne Street.. With construction trucks leaving Esplanade TS there is a potential to increase safety concerns for incidents with cyclists using the Sherbourne Cycle Track.	• Hydro One will coordinate construction on the mid shaft with the City of Toronto to minimize the potential for construction to impact to cyclists and on newly constructed cycle track infrastructure. • Hydro One will require the construction contractor to prepare a safety plan, which will include a safe route for cyclists along Shuter Street and Sherbourne Street during construction. • Hydro One has been in touch with Cycle Toronto and will continue to keep them informed regarding plans for the mid shaft construction.	No residual effects are predicted.
Pedestrians	With construction trucks leaving Esplanade TS there is a potential for incidents with pedestrians using the west sidewalk along Sherbourne Street.	• Hydro One's contractor to prepare a safety plan for construction with best practices such as: – pedestrian barricades; – safety fencing; and, – traffic management, as necessary.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Existing Utilities	The tunnel will require crossing under the Yonge Subway Line and Enwave tunnel. Shaft locations may require some minor utility relocation prior to construction; the extent of the potential utility conflict is expected to be minimal. Work inside Terauley TS and Esplanade TS may require relocation of existing THESL assets.	• Hydro One will continue to liaise with the affected utilities such as the TTC and Enwave to obtain the necessary sign offs and approvals. • Hydro One will continue to consult and coordinate with the members of the TPUCC. • Hydro One will continue to work with THESL to coordinate the work inside Terauley TS and Esplanade TS.	No residual effects are predicted.
Traditional Territory	The proposed Project is within the traditional territory of the MCFN.	• Hydro One is committed to developing and maintaining relationships of mutual respect with the MCFN and will continue to seek to identify community concerns and build appropriate actions into proposed Project plans to address expressed concerns. • Hydro One to continue working with MCFN related to archaeology. MCFN will be provided with any further archaeological assessment for the shaft locations, as required.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
NATURAL ENVIRONMENT RESOURCES			
Waste Generation	Production of construction waste for this project will primarily be the excavated soil for the shafts and rock from the tunnel.	• The soil and rock will be tested and disposed of in accordance with applicable legislation. • Hydro One is investigating options for beneficial use and has reached out to Waterfront Toronto to determine if there are projects along the City's waterfront that could use this material. Should no beneficial use be available, the material will be handled, stored, transported, and disposed of at licensed waste disposal facilities, as required, in accordance with applicable legislation.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Contaminated Soil and Groundwater	The potential to encounter contaminated soil and groundwater in areas with history of contaminating uses and on the portion of the route south of Front Street as this area is lakefill. Deep tunneling has the potential to encounter contaminated bedrock containing metals and/or petroleum hydrocarbons.	• Hydro One will complete geotechnical investigations to confirm soil and groundwater quality and quantity. • Excess material will be sampled and disposal of in accordance with application regulations.	No residual effects are predicted.
Climate Change	Emissions from equipment used during construction and maintenance activities will have minimal impact on climate change. Climate change and severe storms are not expected to impact the proposed Project infrastructure.	• Hydro One adheres to initiatives such as anti-idling requirements and GPS installation in vehicles to optimize routing to reduce fossil fuel emissions. • Hydro One is confident that the facilities being planned for this project have been engineered to adequately withstand the effects of climate change throughout the duration of their planned lifespan.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Air Quality	Emissions may be generated from vehicles during the construction of the tunnel shafts and hauling of rocks from the entry shaft at Esplanade TS. Emissions may include dust and equipment and vehicle exhaust. This is a short term situation with no long-term effect on the local air quality.	• Proper servicing and maintenance of construction vehicles and equipment to assist in reducing combustion emissions. • Adhere to Hydro One's policy on anti-idling requirements and the installation of GPS in vehicles to optimize routing. • Implementing best management practices, such as on-site watering and road cleaning to reduce the generation of fugitive dust.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Noise	Noise may be generated during the construction of the tunnel shafts and hauling of rocks from the entry shaft at Esplanade TS.	• Ensure noise abatement equipment on machinery is in good working order. • Maintain equipment such that construction and maintenance activities conform to typical noise parameters. • During construction, organize the truck queuing at Esplanade TS to minimize the need for back-up beepers. • Restrict on-site vehicle and heavy equipment idling to only what is necessary for their proper operation. • Consider noise when deciding on equipment and construction work methods and schedule. • All efforts will be taken to maintain construction noise levels with the City Noise By-Law • Work will take place within the city's Noise By-law hours. If exemptions to the Noise By-laws are necessary, the applicable approvals processes will be followed. • Nearby residents and businesses will be invited to attend a pre-construction Open House where the potential effects of construction including noise will be discussed.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
	Noise may be generated during the operation of tunnel ventilation equipment.	• Tunnel ventilation equipment will be installed, if required, within Esplanade TS, in accordance with applicable legislation and will meet noise emission requirements.	No residual effects are predicted.
Vibration	Construction at a depth of approximately 25 m is not anticipated to result in vibration. Temporary vibration may be generated during the construction of the tunnel shafts.	• Consider vibration when selecting equipment, construction work methods and determining work schedules. • Take reasonable measures to control construction-related vibration near sensitive areas.	No residual effects are predicted.
Mud	Mud may accumulate due to activities during the construction phase.	• Wash and maintain vehicles and equipment at work areas, as necessary. • Carry out clean-up and site restoration, as required.	No residual effects are predicted.
SURFACE WATER RESOURCES			

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Spills	Potential spills from the unintentional release of oils and fuels from construction vehicles and equipment or from the draining and transporting of oil from the de-energized existing 115 kV cables.	• Hydro One will store any fuels, chemicals and lubricants on level ground in properly contained storage areas. • Hydro One will refuel vehicles and equipment in a designated location. • Hydro One will locate spill cleanup equipment nearby and in Hydro One vehicles. • An Emergency Response Plan is available on site, and there is a 24/7 spill call line that will assist in responding to any spills. • Hydro One will clean spills and remediate the site as soon as possible after a spill. • All spills will be reported to the MECP Spills Action Centre (SAC). • Hydro One will dispose of the oil from the existing cable in accordance with applicable regulations.	No residual effect predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Excavation and Dewatering	Tunnel construction will require dewatering to remove local stormwater runoff and intercepted groundwater.	• Hydro One will complete hydrogeological investigations to confirm ground water quality and quantity. • Appropriate permits will be obtained. • The proposed Project will comply with applicable guidelines and legislation, including Provincial Water Quality Objectives, Ontario Drinking Water Standards, Objectives and Guidelines and O. Reg. 153/04. • Discharge of water from dewatering activities will be in compliance with required permits and approvals from the MECP. A PTTW or EASR will be obtained for dewatering greater than 50,000 L/day. • A sewer discharge agreement to discharge the private water from the Hydro One tunnel into the City sewers will be required with the City of Toronto. • Develop adequate dewatering and discharge plans prior to construction. • Contain collected water and conduct testing prior to disposal.	No residual effects are predicted.

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Groundwater Quality	The proposed Project falls within lands categorized as an Event Based Area or a Highly Vulnerable Aquifer as stipulated by the CTC Source Protection Region.	• Hydro One will utilize appropriate best management practices such as the preparation of an Emergency Spills Response Plan.	No residual effects are predicted.
NATURAL HERITAGE FEATURES			
Tree Removal	If the exit shaft is located in the parking lot adjacent to Terauley TS, approximately two trees may require removal. This area is proposed as a temporary construction laydown area which has the potential to disturb these trees. Surface construction at the mid shaft location near the intersection of Shuter Street and Sherbourne Street is not expected to require tree removal.	• Hydro One will protect trees adjacent to the construction area in accordance with the City of Toronto's Tree Protection Policy and Specifications for Construction Near Trees document. • If tree removal is required Hydro One will liaise with the City of Toronto to discuss and will follow the steps related to tree removal in the above noted document.	No residual effects are predicted.
RECREATION RESOURCES			

ENVIRONMENTAL CONCERN	POTENTIAL EFFECTS	MITIGATION MEASURES	RESIDUAL EFFECT
Park Space	Park users at Moss Park, David Crombie Park, Downtown Diversity Garden and Larry Sefton Park may experience noise and dust disruption during construction.	• Mitigation measures outlined under air quality and noise sections will be applied in these areas. • Signs, barriers or fencing will be placed, as required.	No residual effects are predicted.
VISUAL AND AESTHETIC RESOURCES			
Visual and Aesthetic Resources	If the exit shaft at Terauley TS is outside of the station property, it may be visible and approximately two existing trees may need to be removed.	• A permanent fence around the exit shaft will be constructed if required. • Hydro One will consult with the City of Toronto to discuss any additional landscape requirements.	No residual effects are predicted.

8 Effects Monitoring

The purpose of effects monitoring is to confirm the extent of the proposed Project's environmental effects by comparing the actual effects with the predicted effects, to verify the effectiveness of mitigation measures, and to determine whether additional measures are warranted. Monitoring also confirms that the commitments, conditions of approval, where applicable, and compliance with other environmental legislation are met. An Environmental Specialist will be assigned to the project for the duration of construction to monitor construction activities and provide guidance on needed field changes.

As noted in previous sections, a project-specific Environmental Management Plan (EMP) will be prepared following the completion of the Class EA process. The EMP will:

- Summarize legislative requirements;
- Summarize environmental commitments set out in the final ESR, and terms and conditions of approval, if any; and,
- Provide specific directions to construction personnel.

At the end of construction, an as-constructed plan will be prepared to guide ongoing operation and maintenance activities. The plan will document "as constructed" conditions as well as ongoing monitoring requirements, if required.

9 Conclusion

Hydro One has completed a Class Environmental Assessment (EA) for Minor Transmission Facilities in accordance with the *Environmental Assessment Act* (*EAA*)for the proposed replacement of the existing 115 kilovolt (kV) underground transmission cables (Circuits C5E and C7E) between Terauley Transformer Station (TS), near Bay Street and Dundas Street, and Esplanade TS, near Lower Sherbourne Street and The Esplanade, located in the downtown core of the City of Toronto. The proposed Project involves the installation of an underground tunnel at approximately 25 metres (m) below grade in the bedrock within existing road allowances to house the replacement cables. Three (3) associated shafts will be constructed to provide access to the tunnel for operation and maintenance of the cables. The proposed Project also includes de-energizing, disconnecting and capping the existing 115 kV cables that run along York Street and Queens Quay.

The proposed replacement of the aging underground cables will ensure continued reliable electrical supply to the city's residents and critical institution such as Toronto Transit Commission (TTC), hospitals, entertainment complexes, commercial and residential building, as well as universities and colleges located within Toronto's downtown core.

Hydro One has conducted extensive consultation to inform stakeholders about the proposed Project and collect feedback, as well as to identify and resolve potential concerns. Municipal, provincial and federal government officials and agencies, First Nations and Métis (FN&M) communities, potentially affected and interested persons, and interest groups were consulted by way of in-person meetings and/or written or telephone communications, as well as a Municipal Agency Workshop and two rounds of Community Open Houses.

Potential short and long-term environmental effects were identified for the proposed Project and corresponding mitigation measures were developed to address these effects. Based on the information collected, project design and implementation of the proposed mitigation measures, no significant net adverse environmental effects are expected.

This draft Environmental Study Report (ESR) is being made available for public review and comment for 45 calendar days, from April 15, 2020 until 4:30 p.m. on May 29, 2020. Hydro One will make best efforts to respond and resolve issues raised by concerned parties during the review period. Comments received during this period will be addressed and documented in the final ESR.

Upon filing of the final ESR with the Ministry of the Environment, Conservation and Parks (MECP), the proposed Project will be implemented in full compliance with the requirements of the Class EA process as outlined in the final ESR, incorporating input obtained throughout the planning process. Hydro One will obtain the necessary permits, licences and approvals required for the proposed Project.

10 References

City of Toronto (2019) Ashbridges Bay Wastewater Treatment. Retrieved on March 06, 2020 from: https://www.toronto.ca/wp-content/uploads/2019/05/8f0f-2018-TAB-Annual-Report-FINAL-ecopy.pdf)

City of Toronto. (2020a). Bike Lane Upgrade to Cycle Track on Shuter Street. Retrieved on March 13, 2020 from: https://www.toronto.ca/community-people/get-involved/public-consultations/infrastructure-projects/bike-lane-upgrade-to-cycle-track-on-shuter-street/

City of Toronto (2016) Cycling Network Plan - Approved June 2016, Updated July 2019. Retrieved on February 20, 2020 from: https://www.toronto.ca/services-payments/streets-parking-transportation/cycling-in-toronto/cycle-track-projects/cycling-network-10-year-plan ,

City of Toronto (2020). Northwest PATH. Retrieved on March 26,2020, from: https://www.toronto.ca/explore-enjoy/visitor-services/path-torontos-downtown-pedestrian-walkway/northwest-path/

City of Toronto (2019) Planning-Development, Park and Recreation Facility Planning and Construction. Retrieved on March 06, 2020 from: https://www.toronto.ca/city-government/planning-development/

City of Toronto (2018) Road Classification System. Retrieved on March 06, 2020from: https://www.toronto.ca/services-payments/streets-parking-transportation/traffic-management/road-classification-system/

City of Toronto (2019) The City of Toronto Official Plan, Written November 2002 and Consolidated Feb 2019. Retrieved on March 20, 2019, from: https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/

City of Toronto (2017) Toronto Ravine Strategy. Retrieved on March 06, 2020, from: https://www.toronto.ca/city-government/accountability-operations-customer-service/long-term-vision-plans-and-strategies/ravine-strategy/

City of Toronto (2019) - Toronto Municipal Code, Chapter 591, Noise By Law. Retrieved February 06, 2020 from: https://www.toronto.ca/city-government/public-notices-bylaws/bylaw-enforcement/noise/

City of Toronto (2020), TransformTO. Retrieved March 06, 2020 from: https://www.toronto.ca/services-payments/water-environment/environmentally-friendly-city-initiatives/transformto/

City of Toronto (2010) Tree Protection Policy & Specs for Construction Retrieved on March 26,2020 from: https://www.toronto.ca/services-payments/building-construction/tree-ravine-protection-permits/tree-protection/

City of Toronto (2018) Ward Profiles 2018. Retrieved on March 06, 2020 from: https://www.toronto.ca/city-government/data-research-maps/neighbourhoods-communities/ward-profiles/

Constitution Act. (1982, c. 11). Retrieved on March 26,2020, from Rights of the Aboriginal Peoples of Canada, *s7*, Part II of the *Constitution Act*: http://laws-lois.justice.gc.ca/eng/const/

Construction Coordination in the City. Retrieved February 27, 2020, from City of Toronto: https://www.toronto.ca/services-payments/building-construction/infrastructure-city-construction/understanding-city-construction/construction-coordination-in-the-city/

Credit Valley, Toronto and Region, and Central Lake Ontario Source Protection Committee (CTC SPC) (2019). Approved Source Protection Plan: CTC Source Protection Region. Amendment (Version 2.0). Approved March 11, 2019. Retrieved on March 26,2020 from: https://ctcswp.ca/

Environment and Climate Change Canada. Canadian Ambient Air Quality Standards (CAAQS) for Fine Particulate Matter (PM2.5) and Ozone. October (2012)

Environment and Climate Change Canada [ECCC] (2018). Canadian Climate Normal: 2004-2014 climate normal & averages. Retrieved on March 06, 2020 from : http://climate.weather.gc.ca/climate_normals/index_e.html (Accessed March 06, 2020)

Environment and Climate Change Canada [ECCC]. (2018) Retrieved March 06, 2020 from: http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=D189C09D-1

Fisheries and Oceans Canada (DFO). 2019. Monthly Water Level Bulletin. December 2019. Retrieved February 25, 2020 from: https://www.waterlevels.gc.ca/C&A/bulletin-eng.html.

Golder Associates Ltd. (2019a) Existing Environmental Conditions and Cultural Heritage Report, Hydro One Power Downtown Toronto Project, City of Toronto, Ontario

Golder Associates Ltd. (2019b). Stage 1 Archaeological Assessment: Hydro One Power Downtown Toronto Project, City of Toronto, Ontario

Infrastructure Ontario, (2020). New Toronto Courthouse Retrieved on March 26,2020, From: https://www.infrastructureontario.ca/New-Toronto-Courthouse/

Lall, R., Kendall, M., Ito, K., Thurston, G. (2004). Estimation of historical annual $PM_{2.5}$ exposures for health effects assessment. Atmospheric Environment 38(2004) 5217-5226.

Lost Rivers (2018) Retrieved March 06, 2020, from: http://www.lostrivers.ca/content/marketstreams.html

MECP. *Environmental Protection Act* (2018). Ontario Regulation 419: Air Pollution – Local Air Quality. January 01, 2019

Metrolinx (2020). More than Just Rush Hour Relief – Ontario Line Retrieved from: http://www.metrolinx.com/en/greaterregion/projects/ontario-line.aspx (Accessed March 06, 2020)

Ministry of Environment, Conservation and Parks. Environmental Protection Act. Ontario Regulation 419: Air Pollution – Local Air Quality. January 1, 2019.

Ministry of Environment, Conservation and Parks. Ontario's Ambient Air Quality Criteria. April 30, 2019

Ministry of Heritage, Sport, Tourism and Culture Industries. Heritage Resources in the Land Use Planning Process [MTC.Gov]. (2006) Retrieved on February 19, 2020, from: http://www.mtc.gov.on.ca/en/publications/Heritage_Tool_Kit_Heritage_PPS_infoSheet.pdf

Ministry of Municipal Affairs and Housing, A Place to Grow (2017). Retrieved on February 21, 2020, from: https://files.ontario.ca/mmah-greater-golden-horseshoe-place-to-grow-english-15may2019.pdf

NCVA (2020). Ground Water Monitoring Network. Retrieved on March 06, 2020,from: https://www.nvca.on.ca/Pages/Provincial%20Groundwater%20Monitoring%20Network.aspx

Ontario Geological Survey (OGS), 2010.Retrevied on March 12, 2020,from Surficial geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release –Data 128-REV.

Provincial Policy Statement (2020) [PPS] Retrieved on March 13, 2020 from: https://www.ontario.ca/page/provincial-policy-statement-2020

Ryerson University Campus Realm Public Plan [RUCRP]. (2017). Retrieved on February 21, 2020,from: https://www.ryerson.ca/facilities-management-development/campus-design-construction/campus- core-revitalization/

Statistics Canada. 2017. Toronto [Census metropolitan area], Ontario and Ontario [Province] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Retrieved on March 06, 2020 from: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3520005&Geo2=PR&Code2=35&Data=Count&SearchType=Begins&SearchPR=01&B1=All

TOcore Downtown Plan. (2018). Retrieved on February 6, 2020, from: https://www.toronto.ca/wp-content/uploads/2018/08/966f-city-planning-tocore-opa406-attachment-1-schedule-5-downtown-plan.pdf

ToCore Planning Downtown (In-Force Downtown Plan 2019). Retrieved on April 06, 2020, from: https://www.toronto.ca/city-government/planning-development/planning-studies-initiatives/tocore-planning-torontos-downtown/

Toronto Region and Conservation Authority (TRCA), 2009. Don River Watershed Plan (PDF) Retrieved on March 06, 2020 from: http://trca.on.ca/dotAsset/55381.pdf

Toronto Region and Conservation Authority (TRCA), 2018. Don River Watershed Report Card 2018, Retrieved on March 06, 2020 from: https://reportcard.trca.ca/watershed-report-cards/don-river/#groundwater

Toronto Region and Conservation Authority (TRCA), 2018. Lake Ontario Watershed Report Card 2018, Retrieved on March 06, 2020 from: https://reportcard.trca.ca/watershed-report-cards/lakeontario/#groundwater

APPENDICES

POWER DOWNTOWN TORONTO – CLASS ENVIRONMENTAL ASSESSMENT

Draft Environmental Study Report

Appendix A Past Study Area Maps

Appendix A1 Original Study Area in May 2018

Appendix A2 Refined Study Area in November 2018

Appendix B Duty to Consult

Appendix B1 Hydro One's Duty to Consult Inquiry

Appendix B2 Crown's Duty to Consult Delegation

Appendix C Consultation

Appendix C1 Project Contact Lists

First Nations and Métis Communities

Federal Government Representatives and Agencies

Provincial Government Representatives and Agencies

Municipal Government Representatives and Agencies

Potentially Affected and Interested Persons and Interest Groups

Appendix C2 Project Notices

Notice of Commencement

Project Update #1

Community Open House #1 Invitation

Project Update #2

Community Open House #2 Invitation

Notice of Completion of Draft Environmental Study Report

Appendix C3 Municipal Agency – Workshop and Meetings

Municipal Agency Workshop (June 2018)

City of Toronto – Infrastructure Coordination Unit (October 2018)

City of Toronto – Infrastructure Coordination Unit (June 2019)

City of Toronto – Infrastructure Coordination Unit (February 2020)

Appendix C4 Community Open House Summary Reports

Community Open House #1

Community Open House #2

Appendix C5 Consultation Log

First Nations and Métis Communities

Federal Government Representatives and Agencies

Provincial Government Representatives and Agencies

Municipal Government Representatives and Agencies

Potentially Affected and Interested Persons and Interest Groups

Appendix D Environmental Inventory Figures and Tables

Appendix E Supporting Environmental Reports and Information

Appendix E1 Cultural Heritage Existing Condition

Appendix E2 Stage 1 Archaeological Assessment

Appendix F Alternative Routes Evaluation Table

Appendix G City of Toronto InView Database