

**LAKESHORE TRANSMISSION STATIONS
PROJECT**

CLASS ENVIRONMENTAL ASSESSMENT
ENVIRONMENTAL STUDY REPORT

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CLASS ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL STUDY REPORT

January 2020

Hydro One Networks Inc.
Environmental Services & Approvals
483 Bay Street, North Tower, 12th Floor
Toronto, ON, M5G 2P5

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EXECUTIVE SUMMARY

Hydro One Networks Inc. (Hydro One) prepared this Final Environmental Study Report (ESR) for the proposed Lakeshore Switching Station (SS) and 230/27.6 (/44) kV Dual Element Spot Network (DESN) Transformer Station (TS) for the Town of Lakeshore and the County of Essex. The proposed expansion of transmission infrastructure is collectively referred to as the Lakeshore Transmission Stations Project (herein referred to as “the proposed Project”). The proposed Project is required to support the projected electrical load growth in the County of Essex. The immediate need for the proposed Project was identified by the Independent Electricity System Operator’s (IESO); the proposed Project is required to increase capacity of the system to supply load in the Lakeshore-Kingsville-Leamington area and contributes to improved performance of bulk system. Electrical load growth of the system has exceeded expectations in recent years, largely due to the expansion of the greenhouse industry in the area. The proposed Project also accommodates for future expansions for additional equipment of the area.

The proposed Project was subject to the Class Environmental Assessment for Minor Transmission Facilities (Class EA) (Hydro One, 2016) in accordance with the Ontario *Environmental Assessment Act* (EA Act). This ESR was prepared in compliance with the requirements of the EA Act and describes the Class EA process that was undertaken for the proposed Project.

At the onset of the proposed Project, the technical specification and system requirement that would meet the need identified by the IESO was determined and a study area was defined. The Class EA process for the Lakeshore Transmission Stations Project included an assessment of the environmental features within the study area, a consultation program, the consideration of potential environmental effects and identification of mitigation measures. Resources were identified from literature reviews, technical memos commissioned by Hydro One, databases, mapping, consultation and field surveys.

Hydro One conducted comprehensive consultation regarding the proposed Project with municipal and provincial government officials and agencies; First Nation communities; potentially affected and interested persons and interest groups to inform them of the proposed

Project, as well as to identify and resolve potential concerns. The consultation process included local newspaper and radio advertisements, Community Information Centres in the Town of Lakeshore which provided opportunities for interested parties to discuss with, and pose questions to, the Hydro One project team; meetings with key stakeholders; and the establishment and maintenance of a project website.

Potential environmental effects resulting from the project were identified on certain environmental features, and avoidance and/or mitigation measures were proposed accordingly. There may be instances where residual environmental effects remain even with the application of mitigation measures; the residual effects identified to date are primarily temporary (e.g., would only occur throughout the construction period) and are not considered to be significant.

The draft ESR was made available for public review and comment for 30 calendar days, from November 13, 2019 until 4:30 p.m. on December 13, 2019 at the following locations:

Atlas Tube Centre
Essex County Library (Toldo Branch)
447 Renaud Line
Belle River, ON
Tel: (519) 727-0470

Town of Lakeshore
Municipal Office
419 Notre Dome
Belle River, ON
Tel: (519) 728-2700

The draft ESR was also available on the project website at:

www.HydroOne.com/Lakeshore

Comments or questions were submitted to:

Paul Dalmazzi, Environmental Planner
Hydro One Networks Inc.
483 Bay Street, 12th Floor, North Tower
Toronto, ON M5G 2P5
Email: Community.Relations@HydroOne.com
Tel: 1-877-345-6799

Comments received from municipal, provincial and federal government officials and agencies; First Nation communities; potentially affected and interested persons and interest groups during this period have been addressed and documented in the final ESR, as required by the Class EA process.

Hydro One have responded to and have made best efforts to resolve issues raised by concerned parties during the public review period. As a result of the public review period, Hydro One has finalized the ESR and have filed it with the Ministry of the Environment, Conservation and Parks (MECP). The proposed Project is considered acceptable and may proceed as outlined in the ESR.

The EA Act has provisions that allow interested parties to ask for a higher level of assessment for a Class EA project if they feel that outstanding issues have not been adequately addressed by Hydro One. This process 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>, as well as on the Government of Ontario Central Forms Repository website <http://www.forms.ssb.gov.on.ca/> by searching “Part II Order” or “012-2206E”. Part II Order requests and associated forms were required to be received no later than 4:30 p.m. on December 13, 2019 at the following addresses:

Minister

Ministry of the Environment, Conservation and Parks
77 Wellesley Street West, 11th Floor, Ferguson Block
Toronto, ON M7A 2P5
E-mail: Minister.MECP@ontario.ca

Director

Environmental Assessment and Permissions Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, ON M4V 1P5
E-mail: enviopermissions@ontario.ca

Duplicate copies of a Part II Order request must also have been sent to Hydro One at the above noted address. No Part II Order requests were submitted for the proposed Project as a result of the review period.

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 including the consultation process. Hydro One will obtain the necessary environmental approvals and permits required for the proposed Project.

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LIST OF ACRONYMS & ABBREVIATIONS

AAR	Acoustic Assessment Report
ANSI	Area of Natural and Scientific Interest
AQHI	Air Quality Health Index
EBA	Event Based Area
CAAQS	Canadian Ambient Air Quality Standards
CAO	Chief Administrative Officer
CCME	Canadian Council of Ministers of the Environment
Class EA	Class Environmental Assessment for Minor Transmission Facilities, 2016
CLI	Canada Land Inventory
CO	Carbon Monoxide
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
°C	Degrees Celsius
DESN	Dual Element Spot Network
DFO	Department of Fisheries and Oceans Canada
EA	Environmental Assessment
EA Act	Environmental Assessment Act
EAB	Environmental Approvals Branch
EASR	Environmental Activity and Sector Registry
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
EMF	Electric and Magnetic Fields
ESA	Endangered Species Act (provincial)
ESR	Environmental Study Report
EASR	Environmental and Sector Registry
EWEMS	Essex-Windsor Emergency Medical Services
FPTRPC	Federal Provincial Territorial Radiation Protection Committee
GPS	Global Positioning System
Ha	Hectare

HVA	Highly Vulnerable Aquifer
Hydro One	Hydro One Networks Inc.
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IESO	Independent Electricity System Operator
IPZ	Intake Protection Zone
IRRP	Integrated Regional Resource Planning
JCT	Junction
km	Kilometre
km ²	Square Kilometre
kV	Kilovolt
L/min	Litres per Minute
LIO	Land Information Ontario
m	Metre
m ²	Square Metre
m ³ /day	Cubic Metres per Day
m/s	Metre per Second
masl	Metres above Sea Level
MBCA	Migratory Birds Convention Act, 1994
mbgs	Metres Below Ground Surface
mG	Milligauss
mm	Millimetre
MECP	Ministry of the Environment, Conservation and Parks
ENDM	Ministry of Energy, Northern Development and Mines
MNRF	Ministry of Natural Resources and Forestry
MHSTCI	Ministry of Heritage, Sport, Tourism, and Cultural Industries
MVA	Mega Volt Ampere
NAPS	National Air Pollution Surveillance
NHIC	Natural Heritage Information Centre
NO ₂	Nitrogen Dioxide
ERCA	Essex Region Conservation Authority
O. Reg.	Ontario Regulation
OEB	Ontario Energy Board

OEB Act	Ontario Energy Board Act
CIC	Community Information Centre
PM _{2.5}	Particles of 2.5 micrometres or less
PM ₁₀	Particles of 10 micrometres or less
PPS	Provincial Policy Statement, 2014
PSW	Provincially Significant Wetland
PTTW	Permit to Take Water
PWQMN	Provincial Water Quality Monitoring Network
SAC	MECP Spills Action Centre
SAR	Species at Risk
SARA	Species at Risk Act (Federal)
SARO	Species at Risk in Ontario
SF ₆	Sulphur Hexafluoride
SO ₂	Sulphur Dioxide
SPA	Source Protection Area
SPM	Suspended Particulate Matter
SS	Switching Station
SWH	Significant Wildlife Habitat
TS	Transformer Station
VES	Visual Encounter Surveys
V/m	Volt per Metre
WWIS	Water Well Information System
µg/m ³	Microgram per Cubic Metre

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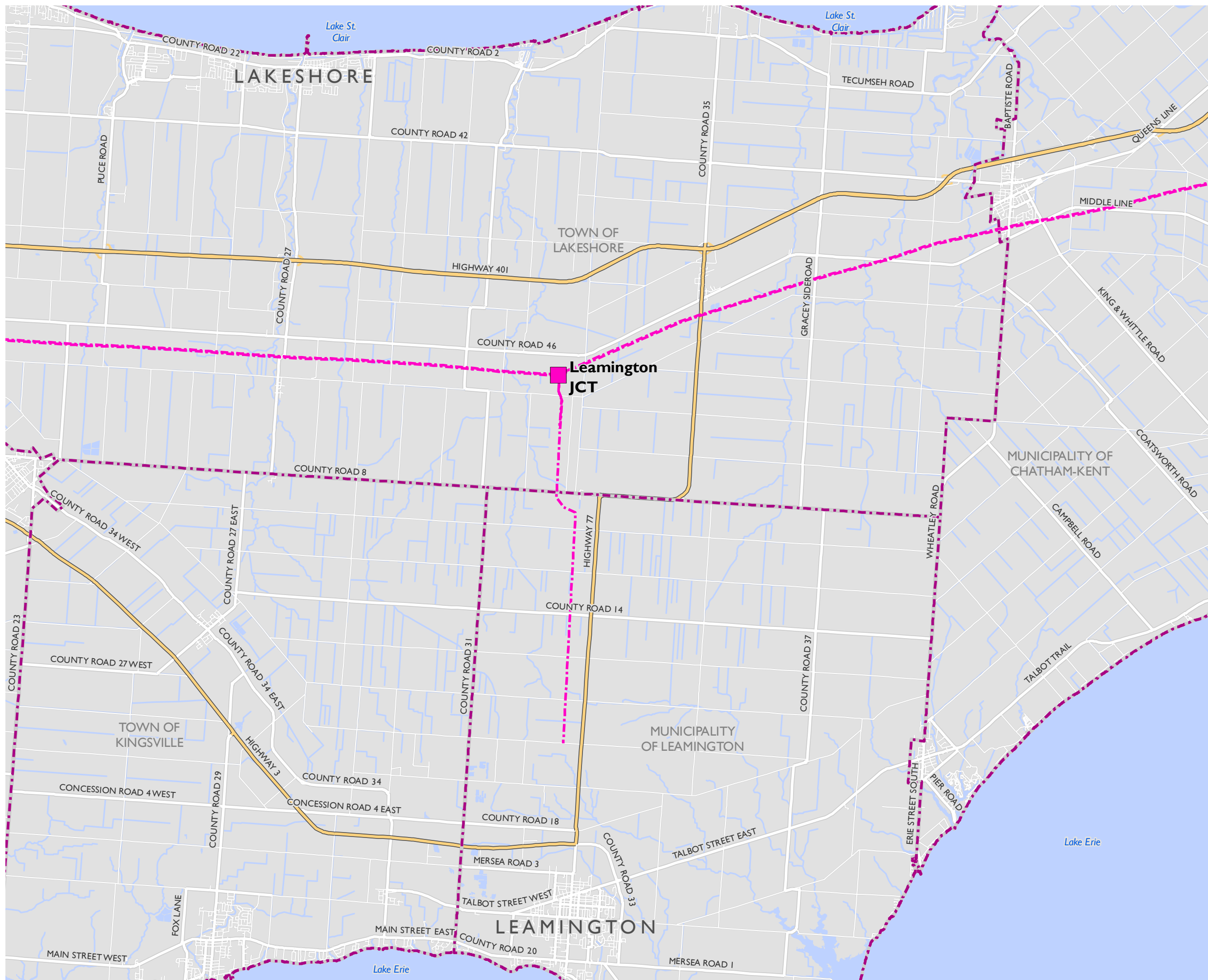
1 Introduction

Hydro One Networks Inc. (Hydro One) has proposed to construct a new Switching Station (SS) and a 230/27.6 (/44) kV Duel Element Spot Network (DESN) Transformer Station (TS) in the Town of Lakeshore, and the County of Essex. The new stations will house switching facilities and four 230/27.6 kV transformers; two of these transformers will potentially be changed to 230/44 kV transformers (this will be determined during detailed design). The proposed work is referred to as the Lakeshore Transmission Stations Project (herein referred to as “the proposed Project”). The purpose of the proposed Project is to increase the reliability and capacity of the existing transmission infrastructure in order to meet the County of Essex’s growing electricity demand. The immediate need for the proposed Project was identified by the Independent Electricity System Operator (IESO); the electrical load growth in the County has exceeded expectations in recent years, largely due to the expansion of the greenhouse industry.

To optimize the utilization of the existing transmission infrastructure the proposed Project will be located within the vicinity of the existing Leamington Junction (JCI) within the Town. The location of the proposed Project is shown in **Figure 1-1**.

An environmental assessment (EA) was carried out to assess the potential environmental effects of the proposed Project. The proposed Project has been subject to the Class Environmental Assessment for Minor Transmission Facilities (Class EA) (Hydro One, 2016), which was approved under the Ontario *Environmental Assessment Act* (EA Act). The Class EA was developed as a streamlined process to ensure transmission projects that have a predictable range of effects are planned and carried out in an environmentally acceptable manner. This ESR describes the Class EA process that was undertaken for the proposed Project.

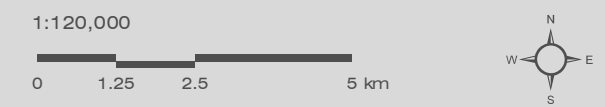
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HYDRO ONE NETWORKS INC.
LAKESHORE TRANSMISSION STATIONS PROJECT
 CLASS ENVIRONMENTAL ASSESSMENT

PROJECT LOCATION
FIGURE I-1

- Junction
- Existing 230 kV Electrical Transmission Line
- Expressway / Highway
- Major Road
- Minor Road
- Ramp
- Municipal Boundary
- Waterbody



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-9558
 STATUS: DRAFT
 DATE: 2019-10-24

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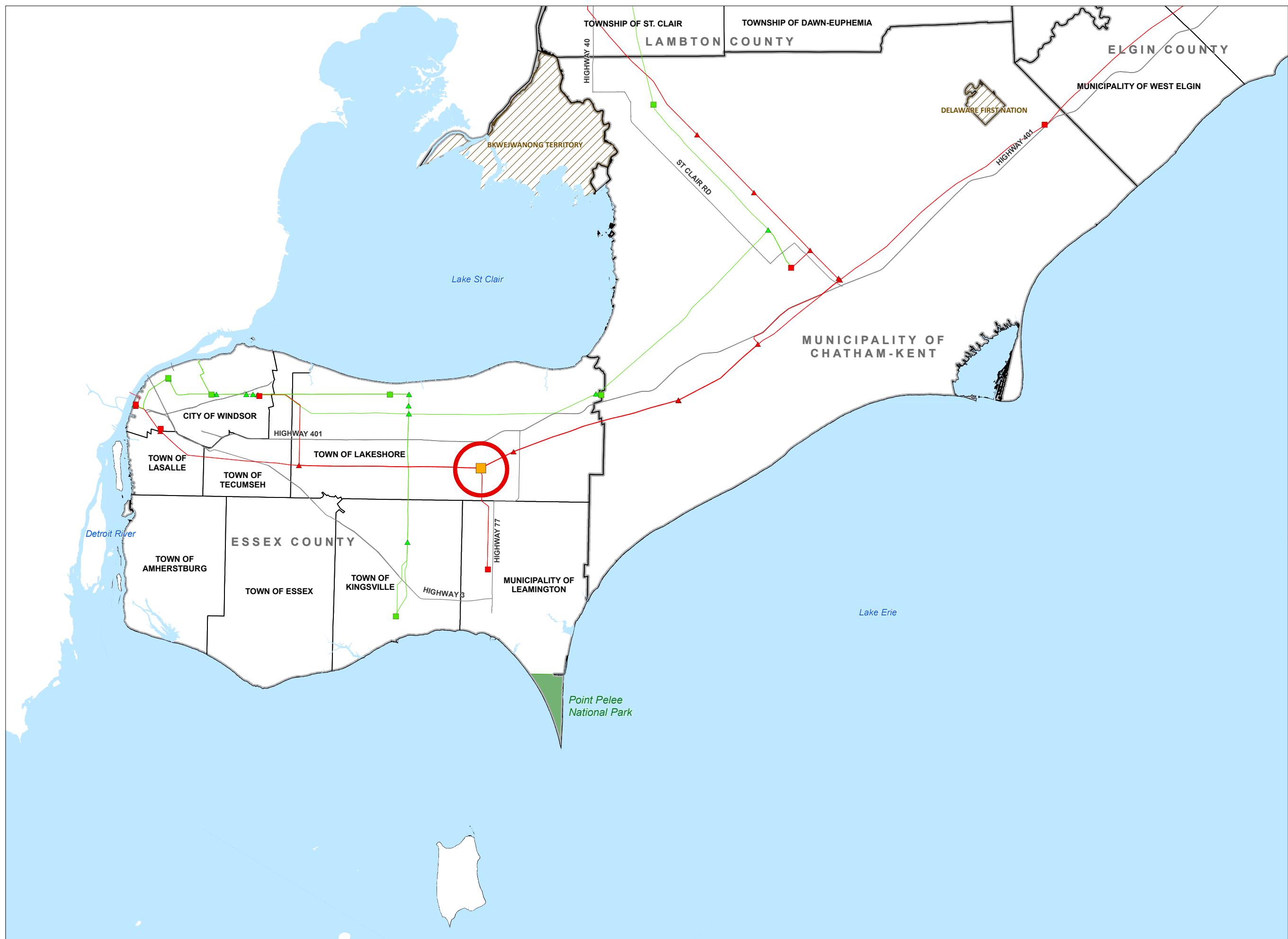
1.1 Need for the Undertaking

Upgrades to transmission infrastructure are needed to meet the County's growing electricity demand. The electrical load growth in the County of Essex has exceeded expectations in the recent years, largely due to the expansion of the greenhouse industry. The immediate need for the proposed Project was identified by the IESO as one of a number of system improvements required as part of the ongoing Windsor-Essex Integrated Regional Resource Plan (IRRP) and bulk transmission planning study for the broader West of London area. The Kingsville-Leamington area encompasses two existing load supply stations, the Kingsville TS and the Leamington TS. As indicated by the IRRP and IESO memo, the Kingsville TS and Leamington TS are forecasted to reach their station capacity within the next year (2020). The initiation of the proposed Project is an outcome of the initial study and is to form the basis for additional supply reinforcements to the area. The need for the proposed Project was formally communicated by IESO to Hydro One in a summary memo (IESO, 2019; Appendix A1). Refer to **Figure 1-2** for southwestern Ontario's transmission network.

The transmission system supplying the Leamington TS is currently limited in its capacity to serve the expanded station. In order to accommodate the expansion of the Leamington TS and permit the connection of two additional transmission customers, interim measures are required; the proposed interim measures are predicted to have a reduced reliability. Beyond these connections and interim measures, the existing system does not have the ability to accommodate the total amount of forecasted electrical load. Alternatives that considered non-wires and the construction of a new radial 230 kV line from Chatham SS to the Leamington TS are considered impractical as these options would not increase the capability of the bulk system or provide flexibility to supply future growth beyond the Leamington TS expansion.

The proposed Project would improve reliability and provide additional local supply capability and continue to supply load in the Kingsville-Leamington area. The proposed SS will improve the performance of the bulk system by balancing the flow and improving transfer capability on the existing transmission circuits from Chatham.

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hydro
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 Prepared by: Energy LP, GIS Services
 Date: June 17, 2019
 MapID: 102_SouthwestOntario_WindsorChatham_v2_TableMap
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Transmission Station	Junction	Transmission Line	First Nation Reserve	Highway
■ 115 kV	▲ 115 kV	— 115 kV	▨ First Nation Reserve	— Highway
■ 230 kV	▲ 230 kV	— 230 kV	▭ Lower Tier Municipal Boundaries	■ National Park
■ Proposed Lakeshore TS			▭ Upper Tier Municipal Boundaries	■ Water

Figure 1-2: Southwest Ontario Transmission Network

1:135,000 0 5 10 km

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1.2 Description of the Undertaking

The proposed Project will involve the construction of a new 230 kV SS, as well as two 230/27.6 kV Dual Element Spot Network (DESN) TSs within a shared fenceline on lands adjacent to the existing Leamington JCT to optimize utilization of existing infrastructure. The scope of the proposed Project will include re-termination of the four existing 230 kV circuits and installation of reactive facilities based on current system needs. The stations have been sized to accommodate future system reinforcement and will include space for future diameters and additional reactive facilities.

A detailed description of the proposed Project is provided in **Section 6** of this document. Detailed design of the proposed Project would take place following submission of this final ESR, as discussed in **Section 6.1**. Upon the successful completion of the approval process, construction is anticipated to begin in summer 2020; the IESO and Hydro One agree on a targeted in-service date of 2023 for all facilities constructed as part of the proposed Project.

1.3 Alternatives to the Undertaking

The Class EA process requires identification and evaluation of alternatives to the undertaking. Alternatives to the undertaking are functionally different approaches to addressing the need for the undertaking. These alternatives must be reasonable from a technical, economic and environmental perspective.

The proposed Project was brought forward by the IESO as an immediate need for the proposed Project is required to meet the future electrical demands of the County of Essex. In their letter to Hydro One (**Appendix A1**), the IESO identified that only one location for the proposed Project was feasible given the existing transmission infrastructure. In order to provide the necessary upgrades to the existing transmission network, adequately service towns within the County of Essex, as well as provide options for future expansions, the proposed Project must be located within the adjacent lands to the Leamington JCT.

Various alternatives to the undertaking were considered by the IESO, including non-wires solutions. Due to the magnitude and the timing of the need, non-wires options alone are not sufficient. A generation option located at the Leamington JCT was considered but was deemed

to be not feasible. An option to build a new radial 230 kV line from Chatham SS to Leamington TS was also ruled out on the basis that this solution would be insufficient to meet the forecasted load growth and would not provide the flexibility to supply future load growth beyond the Leamington TS expansion.

The Do Nothing Alternative is considered to be not feasible, as the existing transmission system does not have the ability to accommodate the total amount of forecasted load, and even with the use of interim measures would operate at a lower level of reliability than what is typically provided.

Following receipt of the IESO letter, Hydro One technical staff undertook an assessment of potentially feasible locations/layouts for the proposed facilities on the lands adjacent to the Leamington JCT. As only one feasible location was identified for the SS, alternatives assessed as part of the Class EA were limited to the TS locations within the lands adjacent to the Leamington JCT. The evaluation of these alternative TS locations and selection of the preferred alternative is described in **Section 5** of this document.

1.4 Approval Process and Regulatory Requirements

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

1.4.1 Class Environmental Assessment Process

This final ESR was prepared in accordance with the Class EA (Hydro One, 2016), which is approved under the EA Act. 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;

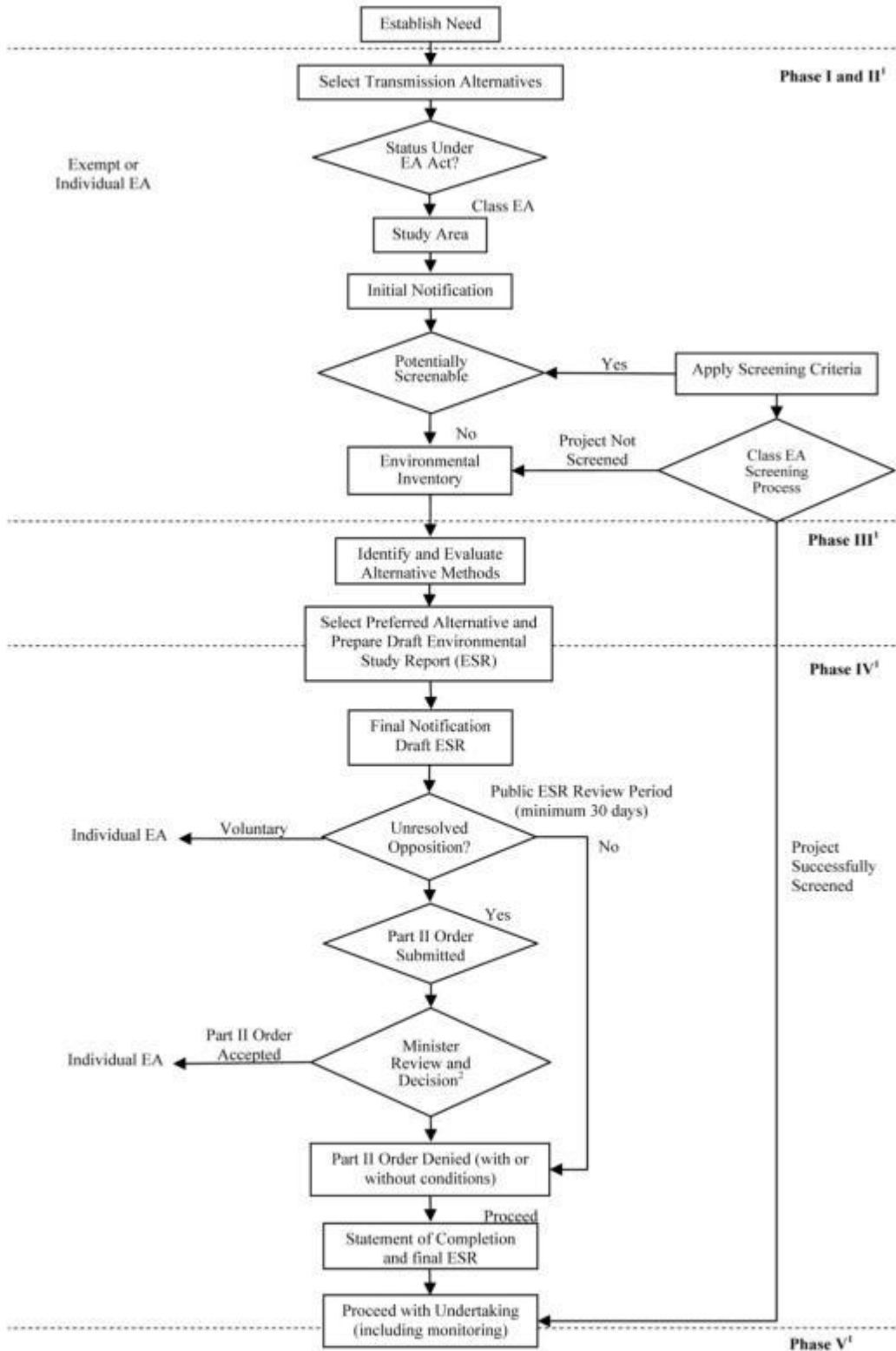
- Issue final notification and commence associated draft ESR review period (**Section 3.7**);
- File Statement of Completion with the MECP (previously referred to as the Ministry of the Environment, Conservation and Parks [MECP]) and proceed with the undertaking (**Section 3**); and
- Conduct consultation throughout the process (**Section 3**).

Hydro One issued notifications of the draft ESR review period to municipal, provincial and federal government officials and agencies, First Nation and Métis communities, potentially affected and interested persons and interest groups. The draft ESR was made available for public review and comment for a period of 30 calendar days, from November 13 to December 13, 2019. Hydro One has responded to and has made best efforts to resolve issues raised by concerned parties during the review period. These issues have been documented and the resolutions summarized in this final ESR.

Should there be substantive issues or potential effects raised by a concerned party regarding the proposed Project that cannot be resolved by the proponent, concerned parties may request that the level of assessment for the project be elevated to an Individual EA (referred to as a Part II Order request). See **Section 3.8** for information on Part II Order requests; no Part II Order requests were submitted for the proposed project as a result of the 30-day review period.

Upon completion of the draft ESR review period, comments raised during the review period have been incorporated into the report and the ESR has been finalized. No Part II Order requests were received during the draft ESR period. Comments received from agencies and Hydro One's responses are summarized in **Section 3.8**. A copy of the final ESR has been placed on the Hydro One website, and sent to the Environmental Assessment and Permissions Branch and the appropriate Regional EA Coordinator at the MECP for filing. The Statement of Completion has been submitted to the MECP along with the final ESR. The proposed Project is now considered acceptable and can proceed as outlined in this ESR.

The Class EA process is illustrated on **Figure 1-3**.



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

Figure 1-3: Class Environmental Assessment Process

1.4.2 Other Permits, Licenses and Approvals

In addition to meeting EA Act requirements, there are a number of necessary permits, licenses and approvals that are required under federal, provincial and municipal legislation (see Table 1-1). Hydro One will contact the appropriate regulatory agencies to ensure that the proposed Project meets applicable requirements and that approvals are obtained as necessary. This project does not trigger a federal environmental assessment under the *Canadian Environmental Assessment Act, 2012*.

Hydro One TS facilities discharge noise and processed stormwater to the surrounding environment. Hydro One is undertaking studies to ensure noise emissions will continue to be within provincial guidelines at surrounding receptors and the facility will be registered under Ontario’s Environmental and Sector Registry (EASR). Hydro One will also obtain Environmental Compliance Approvals (ECA) for operation of industrial sewage works (stormwater processing), and potentially for one standby diesel generator which will be located within the SS. The facility will discharge clean water, meeting Ontario Provincial Water Quality Objectives, to the surface drainage feature adjacent to the stations. Neither noise emissions nor drainage discharge will be in quantities or qualities expected to cause an adverse effect.

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 EA Act is not subject to this *Act*.” While the proposed Project would not be subject to the *Planning Act* after completion of the Class EA, Hydro One consulted with the Town of Lakeshore and the County of Essex during the EA process and will continue to consult with the Town and County on any topics of interest regarding this project going forward.

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

PERMIT, LICENSE, OR APPROVAL	PRIMARY AGENCY	DESCRIPTION
Transport Canada Aeronautical Assessment	Transport Canada	Required for the construction of the new transmission structures.
Nav Canada Land Use Assessment	Nav Canada	Required for the construction of the new transmission structures.
Air and Noise EASR Registration/ECA	MECP	Required for the noise emitting equipment (SS and TS). Air and noise ECA may be required for one standby diesel generator to be located within the SS.

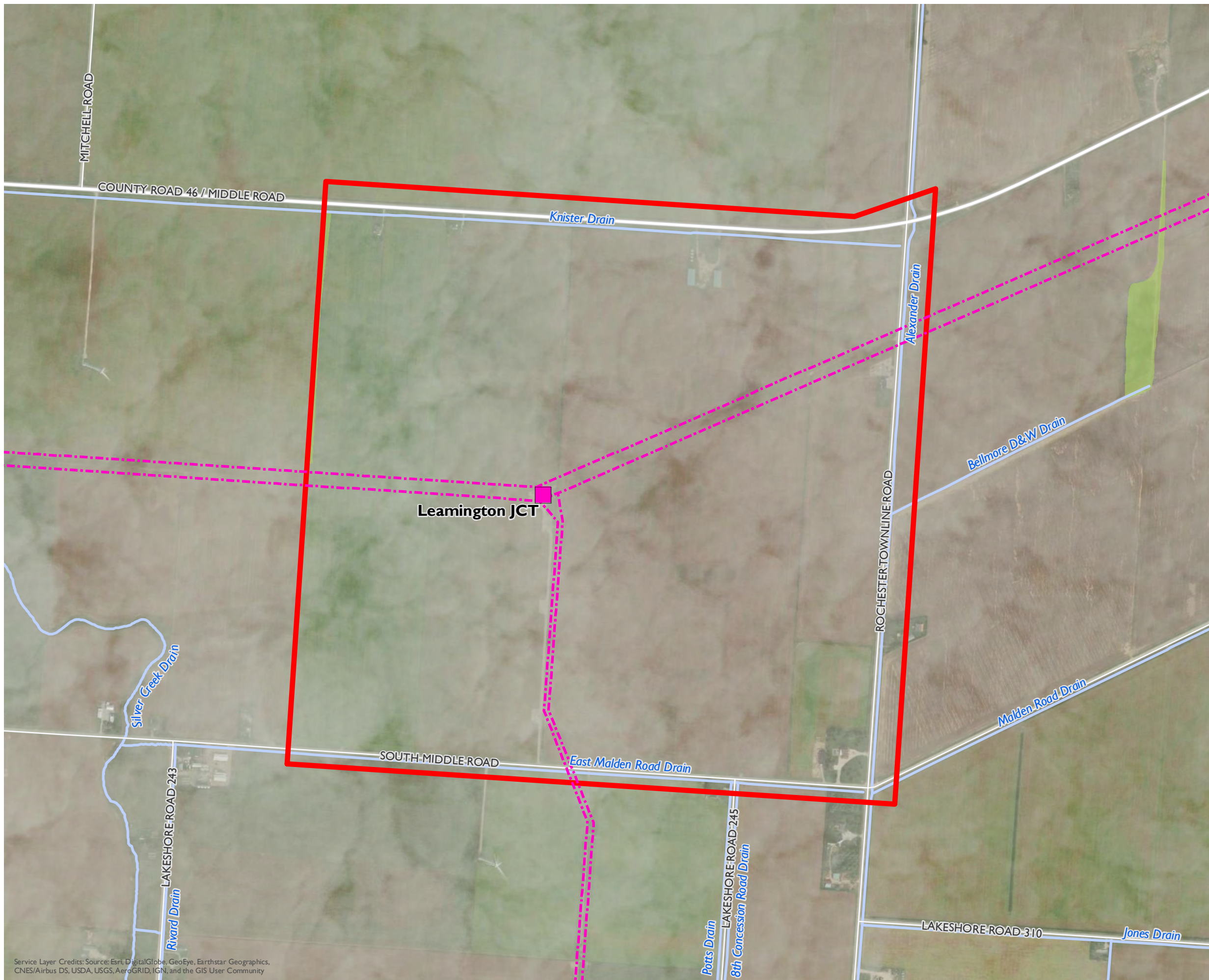
PERMIT, LICENSE, OR APPROVAL	PRIMARY AGENCY	DESCRIPTION
Industrial Sewage Work (Station Drainage) ECA	MECP	Required where modification to the site drainage is anticipated (SS and TS).
EASR or Permit to Take Water (PTTW)	MECP	May be required for construction dewatering.
Species at Risk registration or permits	MECP	May potentially be required if it is determined that SAR habitat will be adversely affected by the proposed Project
Permits under Policy 16 - SLWA123-handlestorefuel-1 the Essex Region Source Protection Plan (2015) as per the Clean Water Act (2007)	ERCA	May be required for fuel handling and storage for construction activities to occur within Source Water Protection areas.
Building Permits	Town of Lakeshore	Building permits will be required for new relay buildings in the SS and protection & control buildings in the TS.
Demolition Permits	Town of Lakeshore	Demolition permits will be required for the removal of existing agricultural buildings on the property.
Noise By-law Exemption	Town of Lakeshore	An exemption may be required if the operation of construction equipment occurs outside of the noise by-law curfew.
Road Entrance Permit	Town of Lakeshore; County of Essex	Required to construct new entrance for access to a construction site.
Clearance Letter	Utility companies	Required to cross utilities (e.g., natural gas or oil pipelines).

2 Study Area Definition

A project study area was delineated to encompass the area of potential project effects. The proposed Project involves the construction of new Hydro One transmission infrastructure within the Town of Lakeshore at the Leamington JCT. Given the size and scope of the required infrastructure, the construction work area and resulting footprint for the proposed Project will extend beyond Hydro One's current RoW for the existing 230 kV transmission line. Lands adjacent to the Leamington JCT comprise of active agricultural lands and municipal drains.








Study area boundaries were established after a review of the existing site infrastructure associated with the Leamington JCT, existing natural environment and socio-economic constraints to identify potential effects associated with the proposed Project. The study area for the Class EA is bounded by County Road 46 (Middle Road) to the north, Rochester Towline Road to the east, south Middle Road to the south, and extends west approximately 550 m from the Leamington JCT (**Figure 2-1**).

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HYDRO ONE NETWORKS INC.
LAKESHORE TRANSMISSION STATIONS PROJECT
 CLASS ENVIRONMENTAL ASSESSMENT

CLASS EA STUDY AREA
FIGURE 2-1

-  Study Area
-  Junction
-  Existing 230 kV Electrical Transmission Line
-  Major Road
-  Minor Road
-  Watercourse / Constructed Drain
-  Woodland



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-9558
 STATUS: DRAFT
 DATE: 2019-10-25

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3 Consultation

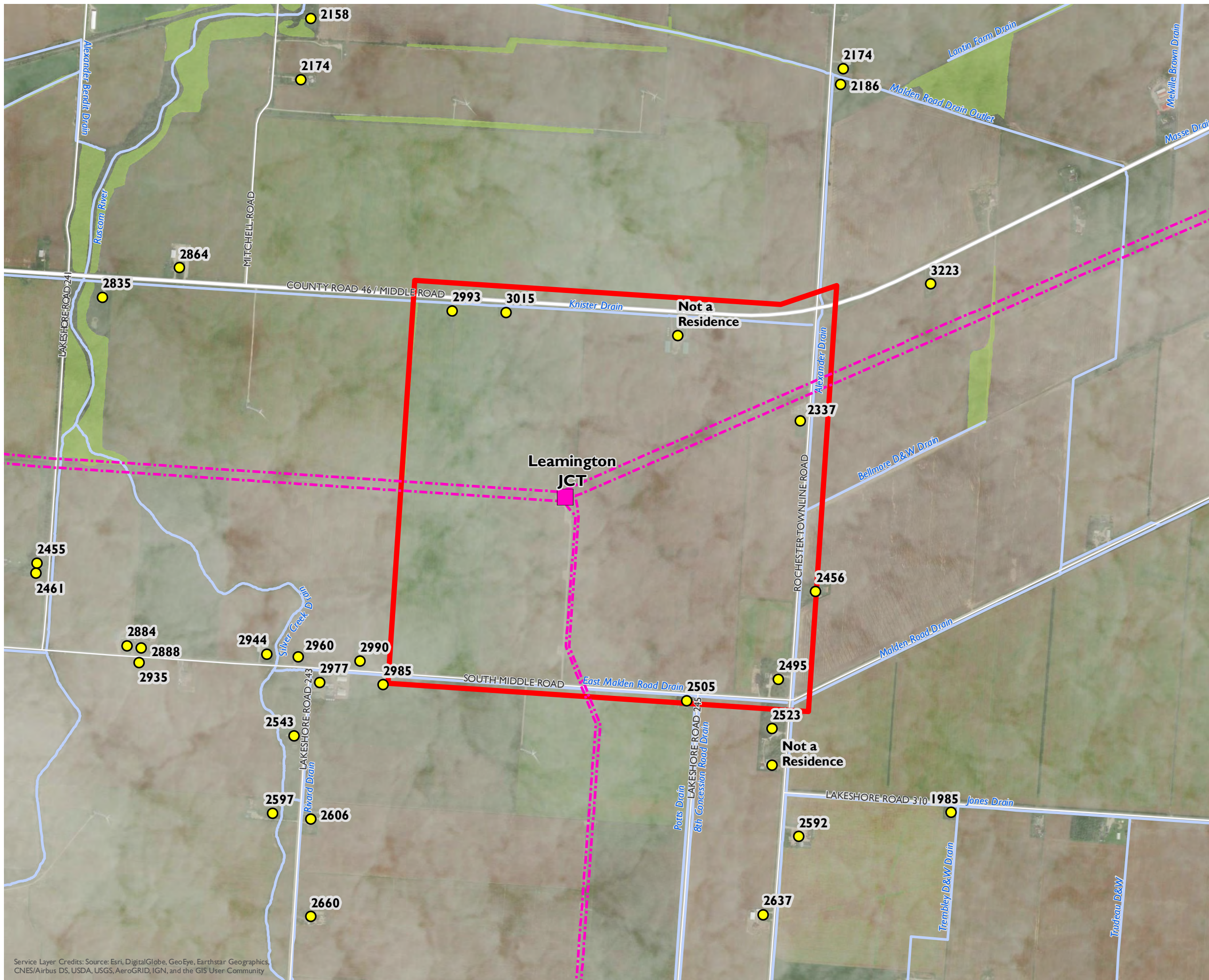
Consultation is an important component of the EA process as it provides those who may be interested in, or potentially affected by, the proposed Project with timely and adequate information and opportunities to participate in the planning process. Consultation also allows the proponent to gain information and knowledge related to social, cultural, economic and environmental considerations of direct relevance to the proposed Project, as well as the means to inform and explain the approach to, and value of, the proposed Project.

The key principles that guide Hydro One's approach to communication and consultation include the following:

- Early, ongoing and timely communications and consultation;
- Clear project information;
- An open, transparent, and flexible consultation process;
- Respectful dialogue with First Nation and Métis communities, community officials, and project stakeholders;
- No surprises approach for elected officials, to ensure they have copies of all public-facing materials before they are distributed to their constituents;
- The provision of ongoing opportunities for interested parties to learn about and provide meaningful input on the proposed undertaking; and
- Full and fair considerations and documentation by the proponent of all input received during the consultation process and incorporation of such input, where feasible, into project decision-making.









The consultation process incorporated and encouraged two-way communication involving: First Nations communities identified by the Crown; provincial and municipal government officials and agencies; local residents and landowners; potentially affected and interested persons; and interest groups. The project contact list is provided in **Appendix A2**. The notification area is depicted in **Figure 3-1**.

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HYDRO ONE NETWORKS INC.
LAKESHORE TRANSMISSION STATIONS PROJECT
 CLASS ENVIRONMENTAL ASSESSMENT

NOTICE OF COMMENCEMENT LETTERS DISTRIBUTION
FIGURE 3-1

-  Study Area
-  Address Point
-  Junction
-  Existing 230 kV Electrical Transmission Line
-  Major Road
-  Minor Road
-  Watercourse / Constructed Drain
-  Woodland



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-9558
 STATUS: DRAFT
 DATE: 2019-10-25

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Consultation methods were selected to promote a comprehensive and transparent - engagement approach. Consultation methods for this project included:

- Letters, emails, radio and newspaper ads to announce and provide updates on the project;
- Community Information Centres (CICs), which provided opportunities for interested parties to discuss with and pose questions to the Hydro One project team and complete comment forms;
- Meetings with First Nations staff and representatives;
- Discussions with local elected officials;
- Discussion with the Windsor-Essex Economic Development Corporation
- Establishment of a project contact list, through which interested parties can receive project updates via e-mail or regular post;
- Dedicated Community Relations representatives; and,
- Establishment and maintenance of a project website (www.HydroOne.com/Lakeshore) which allows for the sharing of project information.

The results of the consultation process are summarized in the sections below. Input was considered by the project team and incorporated into the proposed Project where appropriate. Copies of consultation materials, such as notices and notification letters as well as CIC Summary Reports and CIC panels are provided in **Appendix A3**.

3.1 Initial Notification

Notifications were sent to First Nations communities as identified by the Crown, government officials and agencies, potentially affected and interested persons, community associations, and the nearby residents.

The Notice of Commencement presented details about the proposed Project, information regarding the need for the proposed Project, and outlined opportunities to provide input and comments to Hydro One. Each ministry, department and agency was asked to provide comments with respect to potential concerns relating to their respective policies, mandates and/or jurisdictions.

As instructed by the Ministry of Energy, Northern Development and Mines (ENDM), Hydro One issued a Notice of Commencement letter including a map of the proposed Project area to two First Nations communities as identified by the Crown – Caldwell First Nation and Walpole Island First Nation (Bkejwanong Territory) – in May 2019. A copy of the Notice of Commencement sent to First Nations communities can be found in **Appendix A3**.

The Notice of Commencement was issued to First Nations communities in May 2019, and to municipal and provincial government officials and agencies, potentially affected and interested persons, and interest groups - in June 2019. A copy of the Notice of Commencement sent to the above stakeholders can be found in **Appendix A3**.

Notifications were also hand delivered to addresses within the project notification area, which included the study area and adjacent residences (a map of the Notification Area is provided in **Figure 3-1**).

The Notice of Commencement was also distributed via email and newspaper advertisements. Advertisements were published in the *Belle River Lakeshore News*, the *Leamington Wheatley Kingsville Southpoint Sun*, and *Tecumseh Shoreline Week* on June 19, 20, and 21, 2019. Information about the Notice of Commencement and first CIC was also shared through a radio advertisement, which was aired on CIDR-FM Windsor. A copy of the newspaper advertisements can be found in **Appendix A3**.

3.2 First Nation and Métis Communities

The consultation requirements of the Class EA process apply to First Nation and Métis communities. In adherence to the Crown's duty to consult and accommodate under Section 35 of the *Constitution Act* (1982), Hydro One contacted the ENDM early in the project planning process in April 2019, and provided a description of the characteristics and location of the proposed Project. On April 19, 2019 the ENDM confirmed the duty to consult and advised that the Caldwell First Nation and Walpole Island First Nation (Bkejwanong Territory) be included in the project consultation process.

The Caldwell First Nation and Walpole Island First Nation (Bkejwanong Territory), communities were notified about the proposed Project and, throughout the consultation

process, informed of project updates and given opportunities to provide input. This was achieved by way of mailing and emailing of notifications, provision of information and updates about the proposed Project, and offers by the Hydro One project team to meet with the First Nation communities to listen to any issues and concerns.

3.2.1 Caldwell First Nation

Hydro One initiated consultation by sending a project notification letter first by email on May 10, 2019 and via registered mail and email to Caldwell First Nation on May 14, 2019. This preliminary notification activity and engagement invitation took place early in the project planning process in order to ensure that the Caldwell First Nation could provide input at an important stage in project planning. On June 10, 2019 Hydro One sent an email to Caldwell First Nation to share information regarding the CIC planned for June 26, 2019, and offered to meet with the community for a CIC if they preferred. Hydro One also met informally with the Chief of Caldwell First Nation in July 2019 and followed up with several phone and email conversations regarding the project. In an email dated September 16 2019, Hydro One agreed to update Caldwell First Nation on the progress of the archeological studies. Hydro One also agreed to report any identified artifacts found during the Stage 2 Archaeological Assessment to the Director of Operations of Caldwell First Nation. In addition, Hydro One invited Caldwell to attend the upcoming Stage 2 archeological survey field work. Hydro One and the Chief of Caldwell First Nations agreed to an in-person meeting to discuss the project.

On October 28, 2019, members of the Hydro One Lakeshore TS project team met with representatives of the Caldwell First Nation, including Chief Mary Duckworth, three elected Councillors and the Caldwell First Nation Director of Operations, to discuss the Lakeshore TS project. Chief Duckworth gave some background history of the Caldwell First Nation, and stated the need to respect our ancestors and the environment around us. Hydro One staff gave a brief overview of the project, including the need and how it was identified, and the progress made to date on the Class EA including a description of the field studies and research that had occurred throughout 2019 and the selection of the preferred alternative. Hydro One also informed the Caldwell First Nation representatives about the upcoming release of the draft ESR, and provided a copy of the Notice of Completion newspaper ad. Other topics of discussion at the meeting included the recently-announced 230 kV transmission line project

from Chatham to Lakeshore, upcoming Archaeological (Stage 2) survey work for the proposed Project, distribution structures associated with the Leamington TS, and the importance of Southwestern Ontario as a wildlife migration corridor. Hydro One confirmed that they would work with the Caldwell First Nation to have Caldwell archaeological staff present during upcoming Stage 2 survey work for the Lakeshore TS. Chief Duckworth also requested a hard copy of the draft ESR be sent to the Caldwell First Nation administrative office, and Hydro One confirmed that a copy would be sent when the document was released for review.

On October 30, Hydro One emailed Caldwell First Nation to provide draft minutes of the October 28 meeting for their review and comment, and also provided a formal Notice of Completion of the draft ESR and upcoming review period which would run from November 13 to December 13, 2019. On November 13, Hydro One emailed Caldwell First Nation to provide updates regarding the potential timing for the pedestrian survey and that their retained archeological consultant Wood PLC would contact the community and coordinate with their Archeological Staff for the Stage 2 Archeological Assessment. At this time, Hydro One also reminded Caldwell First Nation that the draft ESR was made available for review until December 13, 2019, and reiterated that Hydro One would provide a hard-copy for Chief Duckworth.

Hydro One will continue to update and consult with the Caldwell First Nation as the proposed Project progresses.

3.2.2 Walpole Island First Nation (Bkejwanong Territory)

Hydro One initiated consultation by sending an email to Walpole Island First Nation on May 10, 2019 followed by a project notification letter on May 14, 2019 via registered mail and to Walpole Island First Nation (Bkejwanong Territory). This preliminary notification activity and engagement invitation took place early in the project planning process in order to ensure that the Walpole Island First Nation (Bkejwanong Territory) could provide input at an important stage in project planning.

A project update e-mail was sent on June 10, 2019, which included the Notice of Commencement newspaper advertisement, an invitation to the first CIC, and an offer to hold an in-person meeting in their community. Hydro One followed up via telephone and email on

July 12, 2019 to share project updates and recount the events of the CIC and the status of the archaeology studies.

On August 1, 2019 Hydro One called Walpole Island First Nation (Bkejwanong Territory) to confirm that their emails had been sent to Chief Miskokomon and Mr. Dashner. No formal comments or questions from the Walpole Island First Nation (Bkejwanong Territory) had been received by Hydro One until that time. Hydro One solicited their interest in discussing the project in more detail, and left their full contact information. On September 11, 2019 Hydro One emailed Walpole Island First Nation (Bkejwanong Territory) to provide further updates and an early look at the flyers for the second CIC scheduled for October 1, 2019. Walpole Island First Nation (Bkejwanong Territory) expressed interest in meeting with Hydro One for further discussion about the proposed Project. On November 13, Hydro One emailed Walpole Island First Nation to provide updates regarding the potential timing for the pedestrian survey and that their retained archeological consultant Wood PLC would contact the community and coordinate with their Archeological Staff for the Stage 2 Archeological Assessment. In addition, Hydro One informed that the draft ESR was available for review and that Hydro One would provide the community with a hard copy.

On October 28, 2019, members of the Hydro One Lakeshore TS project team met with staff from the Walpole Island First Nation External Project Program to discuss the Lakeshore TS project. The Walpole Island First Nation staff shared some history about the First Nation, including their status as an unceded territory. Hydro One staff gave a brief overview of the Class EA process conducted to date, including the delineation of the study area, notifications, field studies and selection of the preferred alternative. Hydro One staff also explained that the draft Environmental Study Report would be completed shortly and would be available for review on November 13, until December 13, and provided hard copies of project maps, information panels, and a copy of the Notice of Completion and Draft ESR Review Period. Walpole Island First Nation staff asked whether there would be any power outages during construction of the new stations, which could potentially affect nearby renewable energy projects of which the First Nation was a part owner. Hydro One explained that no outages were currently planned, and that a temporary 230 kV bypass line would likely be constructed at the start of construction to allow continuation of power supply during construction of the new stations. Other topics of discussion included the recently announced new 230 kV

transmission line project from Chatham to Lakeshore, upcoming Archaeological (stage 2) survey work for the Lakeshore TS, and Hydro One's Indigenous procurement policies and practices. Walpole Island First Nation staff requested to send their own archaeological staff to be present during any stage 2 archaeological work for the Lakeshore TS, and Hydro One confirmed that they would accommodate this request. Hydro One staff also committed to follow up to provide further information regarding Hydro One's Indigenous procurement policies and practices.

On October 30, Hydro One emailed Walpole Island First Nation to provide draft minutes of the October 28 meeting for their review and comment, and also provided a formal Notice of Completion of the draft ESR and upcoming review period which would run from November 13 to December 13, 2019.

Hydro One emailed Walpole Island First Nation on November 13, 2019 and provided a reminder of the Draft ESR 30-day review period and informed the community about the likelihood of the Stage 2 Archeological Assessment being conducted in 2020, rather than 2019 due to poor weather and environmental conditions.

Hydro One will continue to update and consult with the Walpole Island First Nation as the proposed Project progresses.

3.3 Federal Government Agencies

As part of the consultation plan for the project, the following federal government representatives and agencies were contacted.

3.3.1 Agriculture and Agri-Food Canada

The notice of commencement was shared with the agency on June 10, 2019. On July 11, 2019 Hydro One sent further updates regarding the project which included results of the June CIC and informed Agriculture and Agri-Food Canada (AAFC) that the project team was in the process of selecting the preferred alternatives. Hydro One contacted AAFC via email on September 19, 2019 to share an invitation to the second CIC on October 1, 2019. In an email dated September 19, 2019 a representative from AAFC inquired about the project's impacts on their Harrow and Woodslee sites. Hydro One responded and stated that the sites in

question were 10km and further from the study area. The anticipated impacts would be limited to increased traffic on County Road 46 in the vicinity of the Project area due to construction from mid-2020 to late 2023.

On October 30, Hydro One emailed AAFC to provide a formal Notice of Completion of the draft ESR and inform them of the upcoming draft ESR review period, which would run from November 13 to December 13, 2019.

3.3.2 Fisheries and Oceans Canada (DFO)

On October 24, 2019 Hydro One notified DFO through email (at fisheriesprotection@dfo-mpo.gc.ca) of the Class EA as the study area was identified to include aquatic SAR habitat during background review based on DFO mapping. The email included a description of the project as well as a summary of aquatic surveys completed to date, including determination of the suitability of the habitat within the study area for aquatic SAR. Hydro One stated that they did not currently anticipate that the project would cause any harm to fish or fish habitat, but that they would notify and discuss with further with DFO if any future changes to the project design or the current understanding of the site indicated potential adverse effects to fish or fish habitat.

3.4 Provincial Government and Agencies

As part of the consultation plan for the project, the following provincial government representatives and agencies were contacted:

- Local Member of Provincial Parliament (MPP) for Chatham-Kent-Leamington, Rick Nicholls;
- Local Member of Provincial Parliament (MPP) for Essex, Taras Natyshak;
- Essex Region Conservation Authority;
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Energy, Northern Development and Mines;
- Ministry of Heritage, Sport, Tourism, and Cultural Industries– Heritage Planning Unit
- Ministry of Natural Resources and Forestry – Aylmer District Office;
- Ministry of Environment, Conservation, and Parks
- Infrastructure Ontario; and,

- Ontario Clean Water Agency.

Hydro One initiated pre-consultation by sending a project notification letter to the MPPs for the project area on May 19 and 21, 2019. This preliminary engagement activity was hosted early in the project planning process in order to ensure that the provincial government could provide input at an important stage in project planning.

Hydro One initiated formal consultation with government agencies by sending a project notification letter on June 10, 2019; responses and subsequent discussions with these agencies are described in the subsections below. The project notification included the Notice of Commencement and invitation to attend the first CIC.

Additional details on correspondence with the aforementioned provincial agencies is included in the sections below. A summary of the issues and concerns raised by the provincial government and various agencies throughout the consultation process is provided in **Section 3.6**.

3.4.1 Essex Region Conservation Authority

Hydro One sent the Notice of Commencement and invitation to the first CIC to the ERCA on June 10, 2019, and asked for information on any known sensitive features in close proximity to the study area. Hydro One followed up and provided project updates via email on July 10 and 19, 2019, and again via phone (voicemail) on July 31, 2019. Hydro One provided another project update and invitation to the second CIC on September 11, 2019.

ERCA staff emailed Hydro One on October 10, 2019 and acknowledged receipt of the previous project materials and updates. ERCA stated that the project partially occurred within ERCA regulated areas associated with the Knister drain, and stated that any proposed culvert replacement or new entrance/crossing over a municipal drain would require review from ERCA and the Town of Lakeshore Drainage Superintendent as per Section 78 of the *Drainage Act*, as well as permits from ERCA as per Section 28 of the *Conservation Authorities Act*. Hydro One responded on October 11 and thanked ERCA for their comments. Hydro One stated in their response that the project has been previously discussed with the Town of Lakeshore Drainage Superintendent and currently the need for *Drainage Act* Section 78 review is not anticipated, as Hydro One planned to avoid any new crossings or alteration of municipal drains

by utilizing the existing entrance and drain crossing from Middle Road/County Road 46, and if it became apparent that this existing entrance and drain crossing could not be used, Hydro One would pursue a new road entrance to the property from Rochester Townline Road to the east which would not require a municipal drain crossing. Hydro One also stated their position that due to the rights and powers granted to Hydro One under the *Electricity Act*, as well as a reference to those rights and powers in the *Conservation Authorities Act*, that Hydro One remains exempt from the need for Section 28 permits under the *Conservation Authorities Act*. Hydro One reiterated that they valued the input and advice received from Conservation Authorities such as ERCA and will be happy to share and discuss detailed work plans, including site-specific environmental mitigation measures, for ERCA's review and comment once that information is available.

On October 30, 2019 Hydro One shared information regarding the release of the draft ESR and its 30-day review period. Hydro One emailed ERCA on November 13, 2019 to provide a reminder that the draft ESR was available for review and provided contact information to the Hydro One project team for their comments or concerns. Comments were received from ERCA during the 30-day review period on December 10, 2019; no substantial concerns were identified by ERCA with respect to the results outlined in the draft ESR for the proposed Project. In their comments, ERCA noted that they remained of the opinion that Hydro One is no longer exempt from requirements to obtain a permit under Section 28 of the *Conservation Authorities Act*. Hydro One responded on December 13 and reiterated their position due to the rights and powers granted to Hydro One under the *Electricity Act*, as well as a reference to those rights and powers in the *Conservation Authorities Act*, Hydro One continues to be exempt from Section 28 permits. Hydro one also stated they had been, and will continue to work with Conservation Ontario to discuss and clarify Section 28 permit requirements as they pertain to Hydro One, and that they hoped to provide some clarity in the near future subject to the outcome of these discussions. ERCA comments and Hydro One's responses are summarized in **Section 3.8**.

3.4.2 Ministry of Agriculture Food and Rural Affairs

On June 10, 2019 Hydro One shared an invitation to the first community information centre and the Notice of Commencement with the Ministry of Agriculture Food and Rural Affairs.

Hydro One shared information regarding the second community information centre on September 9, 2019. On October 30, 2019 Hydro One shared information regarding the release of the draft ESR and review period with the Ministry of Agriculture Food and Rural Affairs. On November 13, 2019, Hydro One emailed the Ministry of Agriculture, Food and Rural Affairs to provide a reminder that the draft ESR was available for review until December 13, 2019. Hydro One has not received any comments from the Ministry of Agriculture to date.

3.4.3 Ministry of Energy, Northern Development and Mines

On April 19, 2019, the Ministry of Energy, Northern Development and Mines (ENDM) confirmed the list of First Nation communities in proximity to the proposed Project area. The ENDM recommended that Hydro One notify Caldwell First Nation and Walpole Island First Nations communities, provide project information and opportunities for input, and maintain a record of interactions with the communities. The ENDM requested that they be kept updated on the consultations. No further comments have been received from the Ministry of Energy to date.

3.4.4 Ministry of Heritage, Sport, Tourism, and Culture Industries – Heritage Planning Unit

On June 10, 2019 Hydro One provided the Notice of Commencement to the Ministry of Heritage, Sport, Tourism, and Culture Industries. On June 24, Hydro One discussed the project with a representative of the Ministry over the phone in which Hydro One informed the Ministry that there are no anticipated impacts to built heritage resources as a result of this project. On July 2, 2019 the Ministry contacted Hydro One and requested that Hydro One share the PIF numbers of upcoming Archaeological Assessment Reports, once issued. On September 11, 2019 Hydro One provided a project update and an invitation to the second community information center. On October 30, Hydro One sent updates to the Ministry regarding the outcomes of the second community information center and information regarding the release of the draft ESR for a 30-day review period. Hydro One emailed the Ministry of Heritage, Sport, Tourism, and Culture Industries to provide a reminder that the draft ESR was available for review until December 13, 2019. During the 30-day review period, comments were received from the Ministry on December 3, 2019; comments from MHSTCI related to clarifying the Built Heritage Resources and Cultural Landscapes checklist, requesting that a full Stage 1 report be submitted to the MHSTCI (rather than the background review

memo summarizing previous Stage 1 reports encompassing the study area), and minor editorial comments. Hydro One responded on December 13, 2019 to thank the MHSTCI for their comments, and stated that while Hydro One remained of the opinion that the Stage 1 Background Review (review of historical Stage 1 Archaeological Assessment reports that encompassed the Lakeshore TS Class EA Study Area) provides an acceptable level of background information to inform the Class EA, to address the MHSTCI's comments Hydro One has requested their consulting archaeologist to prepare and submit to MHSTCI a standalone Stage 1 Archaeological Assessment Report. Hydro One confirmed that the Stage 1 report will identify the portions of the Class EA study area which will undergo Stage 2 Archaeological Assessment, and will be followed by a separate cover Stage 2 Archaeological Assessment report which will be submitted following completion of the survey work (currently planned to occur in the Spring of 2020). The area which will be assessed during the Stage 2 survey will consist of the portions of the subject property which will house new transmission facilities, as well as the surrounding areas within the property. Hydro One also agreed to provide in the final ESR a memo clarifying the Built Heritage and Cultural Landscapes Checklist (attached in Appendix B) and incorporate the editorial comments provided by the MHSTCI. The Stage 1 Archaeological Assessment Report for the Lakeshore TS project was submitted to the MHSTCI on January 7, 2020. MHSTCI comments and Hydro One's responses are summarized in **Section 3.8**, and revisions to the final ESR were made to address the comments received.

3.4.5 Ministry of Natural Resources and Forestry (MNRF) – Aylmer District Office

The Ministry of Natural Resources and Forestry (MNRF) was notified by email on June 10, 2019. The MNRF replied to the Notice of Commencement and on July 11, 2018, the MNRF emailed Hydro One and stated that they did not have any comments to provide on the project and that they would be interested in viewing the draft Environmental Assessment Report when it is available. Upon the invitation for the second CIC on September 11, 2019, the MNRF noted that the Ministry of Environment, Conservation and Parks (MECP) has assumed responsibility for the Endangered Species Act (ESA), including species at risk (SAR) in Ontario, and instructed that when available, Hydro One should circulate the ESR to the MECP at SAROntario@ontario.ca for their review.

On October 30, Hydro One emailed MNRF to provide a formal Notice of Completion of the draft ESR and inform them of the upcoming draft ESR review period, which would run from November 13 to December 13, 2019.

On November 13, 2019, the Hydro One emailed the MNRF to provide a reminder that the draft ESR was available for review until December 13, 2019. The MNRF replied to Hydro One by email and stated that they would review the draft ESR and provide their comments.

On November 21, 2019, MNRF emailed Hydro One and stated that the MNRF did not have any at this time. MNRF comments are summarized in **Section 3.8**.

3.4.6 Ministry of Environment Conservation and Parks

The MECP EA Branch and Southwestern Region office were notified by email on June 10, 2019. A follow-up email and update on the project/summary of the first CIC was sent on July 9, 2019. A response was received from the MECP Southwestern Region office on July 11, 2019; the MECP required that Hydro One should identify if the proposed Project is to occur within a Source Water Protection area and determine permitting requirements pertaining to policies of the local source protection plan (SPP) under the Clean Water Act (2007) apply. The identification of Source Water Protection areas within the Class EA study area are discussed in **Section 4.6.4**.

On October 24, 2019 MECP SAR Branch (at SAROntario@ontario.ca) was notified by email and provided an overview of the project and the biological surveys completed in 2019 within the study area.

On October 30, 2019 Hydro One emailed MECP Southwestern Region and SAR Branch to provide a formal Notice of Completion of the draft ESR and inform them of the upcoming draft ESR review period, which would run from November 13 to December 13, 2019. On November 13, 2019, Hydro One emailed the Ministry of Environment Conservation and Parks (Southwestern Region and SAR Branch inbox) to provide a reminder that the draft ESR was available for review until December 13, 2019.

On November 26, 2019, the MECP Southwestern Region emailed Hydro One and acknowledged receipt of the previous emails regarding the draft ESR review period, as well as

the hard copy of the draft ESR that was sent to the MECP Southwestern Region office. Southwestern Region staff stated that they had completed their review of the draft ESR and have no comments.

On December 12, 2019, the MECP SAR Branch provided comment that based on their review of the project documentation, the conclusions presented in the draft ESR that the proposed Project will not contravene with either section 9 or section 10 of the ESA (2007) appear reasonable and valid. The SAR Branch also provided some additional information on Eastern Foxsnake habitat and advised that it is the proponent's responsibility to be aware of and comply with all other relevant provincial or federal requirements, municipal by-laws or required approvals from other agencies. SAR Branch staff recommended that Hydro One continue to monitor for SAR activity during the course of the project to document changes, in the event that there should be any. MECP comments and Hydro One's response are summarized in **Section 3.8**.

3.4.7 Infrastructure Ontario

On June 10, 2019 Hydro One shared the Notice of Commencement and information about the community information center with Infrastructure Ontario. In August 2019, Infrastructure Ontario emailed Hydro One and stated that after their review there are no Ministry of Infrastructure properties within the study area and that Infrastructure Ontario could be removed from the contact list for the project.

3.4.8 Ontario Clean Water Agency

On June 10, 2019 Hydro One shared the Notice of Commencement and an invitation to the first Community Information Center. July 26, 2019 Hydro One followed up with the Ontario Clean Water agency to provide updates and the outcomes of the Community Information Centre. On September 11, 2019 Hydro One emailed the Agency to provide further updates and invitation to the second Community Information Centre. On October 30, 2019, Hydro One shared the results of the second Community Information Centre and details regarding the release of the draft ESR for a 30-day review period. On November 13, 2019, Hydro One emailed the Ontario Clean Water Agency to provide a reminder that the draft ESR was

available for review until December 13, 2019. There have been no further comments from the Ontario Clean Water Agency to date.

3.5 Municipal Government and Local Agencies

As part of the consultation process for the proposed Project, the following municipal government representatives and departments were contacted:

- Town of Lakeshore (including the Mayor, Chief Administrative Officer (CAO), and Municipal Clerk);
- Town of Lakeshore, Drainage Services, and Engineering and Infrastructure Services;
- County of Essex (Warden, CAO, Director of Infrastructure, and County Councillor); and,
- Essex-Windsor Emergency Medical Services (EWEMS)

Hydro One initiated consultation with municipal government representatives through a briefing meeting on May 21, 2019 followed by the Notice of Commencement, which was sent on June 10, 2019. In September 2019, Hydro One provided project updates and an invitation to the second CIC. In October of 2019 Hydro One shared project updates and provided formal Notice of Completion of the draft ESR and information on the draft ESR 30-day review period.

3.5.1 Town of Lakeshore

Pre-consultation with municipal elected officials of the Town of Lakeshore took place early in the planning process, with a meeting in which Hydro One gave a briefing on the project (including an overview of the project scope, the need for the project and a preliminary high-level schedule) to Mayor Tom Bain, incoming CAO Truper McBride, and Director of Engineering & Infrastructure Services Nelson Cavacas on May 21, 2019. The Lakeshore Mayor and Staff understood and were generally supportive of the need for the project, and provided some feedback regarding potential locations for CICs close to the study area, and some other feedback on communication methods (local newspapers, potential to post/link to project materials from the Town's website, etc). Hydro One initiated formal consultation with Town of Lakeshore municipal elected officials via the Notice of Commencement and invitation to the CIC, issued on June 10, 2019. On September 12, 2019 Hydro One invited the

Municipal staff to the second CIC planned for October 1, 2019 and consulted with Municipal engineering staff regarding existing drainage systems in the Town of Lakeshore.

Discussions with the Town of Lakeshore Drainage Superintendent were held whereby it was confirmed that a new crossing over a municipal drain (such as the Knister drain) would trigger the need for a detailed review through Section 78 of the *Drainage Act*. Hydro One Engineering staff undertook a visual inspection of the existing road entrance from Middle Road/County Road 46 (and associated crossing of the Knister drain) and confirmed that it would likely be sufficient for the needs of the proposed Project, and that Hydro One would plan to use this existing entrance and crossing to avoid the need for a new crossing and subsequent review under the *Drainage Act*. Hydro One also stated that if it became apparent that the existing entrance and drain crossing from Middle Road/County Road 46 could not be used, Hydro One would pursue a new road entrance to the property from Rochester Townline Road to the east; this would not require a new crossing of a municipal drain. The Town staff provided some information on how to apply for road entrance permits and roadside ditch crossings. Hydro One informed the Town that they would keep both parties notified of their project plans going forward.

On October 30, Hydro One emailed Town of Lakeshore staff to provide a formal Notice of Completion of the draft ESR and inform them of the upcoming draft ESR review period, which would run from November 13 to December 13, 2019. On the same day, Lakeshore staff replied and stated that they would review the draft ESR to determine if there are any concerns necessitating the Town to submit comments.

On November 13, 2019 Hydro One emailed the Town of Lakeshore to provide a reminder that the draft ESR was available for review until December 13, 2019. To date, no further comments from the Town of Lakeshore were received regarding the proposed 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 by means of hand delivered notices to residential properties

within and adjacent to the Class EA study Area, e-mails and local radio and newspaper advertisements. In addition, Hydro One encouraged interested persons to sign up for the project e-mail list as a way to receive project notification updates.

A table summarizing the key comments and concerns raised by potentially affected and interested persons, businesses, and interest groups throughout the consultation process is presented in section 3.67. The table includes a summary of efforts to address concerns and mitigate potential effects, as well as commitments made.

3.6.1 Utilities

The following utilities were included in the contact list as a result of their existing infrastructure within or near the study area:

- Brookfield Renewable Energy; and
- Union Gas.

These organizations were notified by email using known contact information or publically available contact details. These organizations were circulated the Notice of Commencement and invitations to the CICs in June and September 2019. Hydro One has made regular contact with Union Gas to ensure that coordination with existing infrastructure is maintained. In October 2019 Union Gas was notified of project updates and the draft ESR draft review period.

3.6.2 Potentially Affected and Interested Persons

Residential, commercial, and industrial property owners, and local residents who may be potentially affected by the proposed Project were contacted, as described in **Section 3.1**.

Hydro One held CICs in the Town of Lakeshore (Comber) on June 26 and October 1, 2019 (see section 3.6.4).

3.6.3 Interest Groups

As part of the consultation plan for the proposed Project, the following interest group was contacted as described in **Section 3.1**:

- Essex County Federation of Agriculture.

No comments have been received from the Essex County Federation of Agriculture to date.

3.6.4 Community Information Centres

Community Information Centre 1 – June 26, 2019

The first of two CICs was held on Wednesday, June 26 2019 from 17:00 to 20:00 at the Comber & District Community Centre located at 6211 McAllister Street.

The purpose of the CIC was to provide information on the proposed Project, the Class EA process, construction methods and techniques that may be used for the proposed Project, next steps in the planning and approvals process, and to solicit input from the public. A set of display panels and table maps were set up to allow attendees to obtain information about the proposed Project and to allow for one-on-one discussions and question-and-answer with the Hydro One project team. The CIC panels are provided in **Appendix A3** and included information about the following:

- Hydro One's role in delivering power to the area
- Key organizations involved with the proposed Project.
- Project overview.
- Class Environmental Assessment process.
- Class EA Study Area.
- Alternative station configurations.
- Evaluation criteria for the selection of the preferred alternative.
- Next steps.
- Project schedule.

Four individuals attended the June 26 CIC. CIC attendees included the Mayor of the Town of Lakeshore, one municipal staff member, and a representative of the Windsor-Essex Economic Development Corporation.

Project team representatives including the Hydro One project manager, community relations representatives, representatives from the IESO, and subject matter experts were on hand to

answer questions, facilitate discussions with participants, and document any concerns raised by attendees. Comment forms were also available to provide attendees with the opportunity to record comments and/or concerns and to provide feedback. Hydro One responded to the requests for more information from the Town of Lakeshore in an email on July 11, 2019. No further comments, questions, or concerns were raised at the CIC.

Community Information Centre 2 – October 1, 2019

The second CIC was held on Tuesday, October 1, 2019 from 17:00 to 20:00 at the Comber & District Community Centre; 3 individuals attended the CIC (the Mayor of the Town of Lakeshore, one municipal staff member and a member of the public). At the second CIC Hydro One staff informed the participants of the selected preferred alternative for the TS and publicly presented the preferred alternative and additional high-level information on the next stages of the Project. Information was presented in a similar fashion to CIC 1 through the use of information panels and table maps. The CIC panels (**Appendix A3**) informed the participants of the following:

- Hydro One's role in delivering power to the area.
- Key organizations involved with the proposed Project.
- Project overview.
- Class Environmental Assessment process.
- Class EA Study Area.
- Preferred SS configuration.
- Evaluation of the preferred TS configuration.
- Preferred station configurations.
- Construction activities.
- Minimizing construction and project effects.
- Typical construction equipment.
- Typical Hydro One SS and TS photo representation.
- Next steps.
- Anticipated project schedule.

Three individuals attended the October 1 CIC. CIC attendees consisted of the Town of Lakeshore Mayor, municipal staff member and a member from the public. Participants shared their support for the project, asked questions relating to the switching stations, and provided suggestions for Hydro One to consider for the landscape plans of the project. Feedback acquired for the resulting conceptual site plan are discussed in **Section 7.8**.

Lastly, Hydro One informed attendees that the project team would release the draft Environmental Study Report (ESR) for a 30-day public review period in November of 2019.

3.7 Summary of Key Comments and Concerns

Table 3-1 summarizes the key comments and concerns raised during the Class EA process. A complete summary of questions and comments that Hydro One received during the Class EA process is provided in **Appendix A4**.

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Table 3-1: Summary of Questions and Concerns Raised During the Class EA Process

THEME	COMMENT/CONCERN	RESPONSE FROM HYDRO ONE
Class EA Process		
Class EA	Class EA Process.	The proposed Project was planned in accordance with the Class EA for Minor Transmission Facilities, approved under Ontario's EA 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 which is documented in this ESR and made available for public review and comment.
Technical Design		
SS and TS locations	Station locations	Hydro One has taken into account a number of technical, environmental and socio-economic considerations when identifying structure placements. See Section 5 of this document for additional information on the evaluation of alternative TS sites and selection of the preferred alternative.
Engineering	Municipal drain crossings.	The proposed Project plans to utilize the existing entrances off County Road 46/Middle Road to access the SS, while a new entrance off South Middle Road is proposed in order to access the TS. In the event that it becomes apparent that the existing entrance from Middle Road cannot be used without significant modification, Hydro One will pursue a new road entrance from Rochester Townline Road to the east, which not require a new crossing over a municipal drain. Therefore, new municipal drain crossings/culverts are not expected to be required in order to access the SS and/or TS, thus avoiding the need for a Section 78 review under the <i>Drainage Act</i> .
Natural Environment		
Impacts to Wildlife and Habitats	Impacts to species at risk.	The project is not anticipated to have any adverse effects to SAR or SAR habitat. Only one SAR listed as THR was incidentally observed within the study area during 2019 field surveys, Barn Swallow (<i>Hirundo rustica</i>). Visual inspection of the barn structures that will need to be demolished for the project did not identify any Barn Swallow nests, as such, adverse effects to Barn Swallows are not anticipated to occur as a result of this project.
	Impacts to migratory wildlife	The project is not anticipated to have any adverse effects to migratory wildlife. While new facilities (two electrical substations and associated 230 kV transmission structures) are being constructed,

THEME	COMMENT/CONCERN	RESPONSE FROM HYDRO ONE
		these new facilities will be adjacent to existing 230 kV transmission lines of similar height and design.
Vegetation	Vegetation removal.	Limited vegetation removal will be required in support of construction, including the construction of the SS. Given the anticipated planting and seeding that will occur following construction for portions of the property not being kept in agricultural use, the project will likely result in a net gain in native vegetation within the study area.
Socio-Economic Environment		
Visual Aesthetics	Visual screening.	Hydro One committed to develop a conceptual site layout plan for the property that incorporates plantings to visually screen views of the SS and TS. A conceptual site layout plan, is presented in Figure 7-1 , and final plans will be developed during detailed design.
Nuisance Effects	Concerns about power outages.	It is not anticipated that local businesses or residences would experience power outages as part of the proposed Project; a temporary bypass will be implemented during the construction works.
Source Water Protection	Drinking water.	Given the existing land use (i.e. active agriculture), the proposed Project is not anticipated to result in adverse impacts on sources of drinking water (e.g. municipal and private wells). Mitigation measures will be implemented to ensure that municipal drains and associated SWP areas are protected.
Property Impacts	Impacts to Agriculture and Agri-Food Canada lands/sites.	No significant impact to nearby AAFC sites are anticipated to occur as a result of the project; the AAFC sites in question are at least 10 km from the proposed Project. Impacts to Agriculture and Agri-Food Canada (AAFC) lands are expected to be limited to periodic increases in traffic in the area during construction.
Archaeology	Preservation of archeological artifacts.	Through consultation with Caldwell First Nation and Walpole Island First Nation, Hydro One is aware of the interest of both communities in preserving artifacts of their cultural heritage. Hydro One's licensed archaeological consultant has conducted a Stage 1 archaeological background review and Hydro One has committed to undertake a Stage 2 archaeology assessment prior to construction of the new stations and associated transmission structures to determine if archaeological resources are present. Hydro One has committed to updating both Nations immediately of any archaeological findings, and has also committed to accommodate representatives from each community to attend the Stage 2 archaeological assessment survey.

THEME	COMMENT/CONCERN	RESPONSE FROM HYDRO ONE
Construction		
Construction Coordination and Schedule	Coordination with the Town of Lakeshore and other agencies during construction.	The project team will continue to work with the Town of Lakeshore and other agencies to coordinate work where possible.
	Construction timelines and methods.	Once the Class EA has been completed, detailed engineering and construction planning will begin. Details would be made available at a pre-construction event. Preliminary site-preparation activities for construction are anticipated to commence in 2020. Depending on the outcome of construction, the project is expected to be completed by 2022.
Operation		
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. The Health Canada Fact Sheet on EMF is provided in Appendix E .

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3.8 Final Notification and Draft ESR Review Period

Hydro One provided a 30-day review period, from November 13 to December 13, 2019 to allow sufficient time for review and comment of this draft ESR. Comments regarding the draft ESR were to be submitted to Hydro One no later than 4:30 p.m. on December 13, 2019 to:

Paul Dalmazzi, Environmental Planner
Hydro One Networks Inc.
483 Bay Street, 12th Floor, North Tower
Toronto, ON M5G 2P5
Email: Community.Relations@HydroOne.com
Tel: 1-877-345-6799

Copies of the draft ESR were made available for review in hardcopy at the following locations:

**Atlas Tube Centre
Essex County Library (Toldo Branch)**
447 Renaud Line
Belle River, ON
Tel: (519) 727-0470

**Town of Lakeshore
Municipal Office**
419 Notre Dome
Belle River, ON
Tel: (519) 728-2700

The draft ESR was available on the project website: www.HydroneOne.com/Lakeshore

The EA Act has provisions that allow for interested parties to ask for a higher level of assessment for a Class EA project if they feel that outstanding issues have not been adequately addressed by Hydro One. This process 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-as-well-as> on the Government of Ontario Central Forms Repository website <http://www.forms.ssb.gov.on.ca/> by searching “Part II Order” or “012-2206E”. Part II Order requests and associated forms were to be received no later than 4:30 p.m. on December 13, 2019 at the following addresses:

Minister
Ministry of the Environment Conservation and Parks
77 Wellesley Street West, 11th Floor, Ferguson Block
Toronto, ON M7A 2P5
E-mail: Minister.MECP@ontario.ca

Director

Environmental Assessment and Permissions Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, ON M4V 1P5
E-mail: enviopermissions@ontario.ca

Duplicate copies of submitted Part II Order requests were also to be sent to Hydro One at the address noted above.

No Part II Order requests were received by Hydro One during the 30-day review period. During the 30-day review period, the draft ESR was received and reviewed by the MNRF, MECP (Southwestern Region and SAR Branch), ERCA, and the MHSTCI. As a result of the review of the draft ESR, no substantial comments were provided from the MNRF or MECP Southwestern Region. Furthermore, based on the information provided by Hydro One, the MECP SAR Branch determined that neither Section 9 nor Section 10 of the ESA will be contravened as a result of the proposed project. Similarly, no substantial concerns were raised by ERCA upon review of the draft ESR. Comments received from the MHSTCI regarding updates to text and references have been revised in the ESR. In addition, further information (i.e. Built Heritage Memo) has been appended to the ESR to confirm the factual correctness of the MHSTCI Built Heritage Checklist (**Appendix B2**). Comments received by agencies, and responses provided by Hydro One are summarized below in **Table 3-2**.

Table 3-2: Summary of Comments Received During the 30-Day Review Period

COMMENT RECEIVED	DATE RECEIVED	RESPONSE FROM HYDRO ONE	DATE RESPONDED
ESSEX REGION CONSERVATION AUTHORITY			
<p>No substantial concerns with respect to the result outlined in the draft ESR that was circulated as a component of the Notice of Completion.</p> <p>ERCA advises that our information suggests that Hydro One is no longer exempt from requirements to obtain a permit under the authority of Section 28 of the Conservation Authorities Act. Further if permits are required for any proposed works that the current owner of the land would need to be issued to the current owner with Hydro One listed as their agent.</p>	December 10, 2019	<p>Hydro One thanked ERCA staff for their review of the draft ESR.</p> <p>Regarding Section 28 permits under the Conservation Authorities Act, Hydro One reiterated their current position that due to the rights and powers granted to Hydro One under the Electricity Act, as well as a reference to those rights and powers in the Conservation Authorities Act, Hydro One continues to be exempt from Section 28 permits under the CA Act.</p> <p>Hydro One also stated that they have been, and will continue to, work with Conservation Ontario to discuss and clarify permit requirements as they pertain to Hydro One, and that Hydro One hopes to be able to provide some additional clarity in the near future.</p>	December 13, 2019
MINISTRY OF HERITAGE, SPORT, TOURISM, AND CULTURAL INDUSTRIES			
<p>Section 3.4 Provincial Government Agencies (page 29) Please revise Ministry of Heritage, Sport, Tourism, and Cultural Industries – Heritage Program Unit, to read Heritage Planning Unit.</p> <p>Subsection 3.4.4 (page 31) Please revise Heritage Program to read Heritage Planning Unit.</p> <p>Section 4.3 Cultural Heritage Resources (44 and 47) Archaeological Resources (and Appendix B1): The ESR should report on and append the archaeological assessment report completed for this EA and which has been submitted to the Ministry to fulfill the licensee’s PIF requirements. The appended report is not the Stage 1 AA. It appears to be a stop-gap between the Stage 1 (which Wood has been completed) and a Stage 2 AA which has not yet started.</p> <p>Additionally, the ESR states that a Stage 2 AA will be conducted “prior to construction” and “for lands containing proposed new transmission facilities”. Typically, the study area for the Stage 2AA encompasses the same lands as identified in the Stage 1AA. If this is not the case, your archaeologist may need to connect with the ministry’s archaeology unit. In any case, the Stage 2AA would need to include all projects lands, temporary work or construction staging areas and perhaps additional buffer zones.</p> <p>Please be aware that if the Stage 2AA identifies archaeological artifacts then a further archaeological assessment (Stage 3-4) may be required. We typically advise that all archaeological assessments should be completed as early as possible during detail design and prior to any ground disturbing activity.</p> <p>We suggest the following:</p> <ol style="list-style-type: none"> 1. Wood should revise the Preliminary Background Study to comply with the requirements of a Stage 1AA and submit it to the ministry for review. This will require Wood to cancel PIF #P066-323-2019 for a Stage 1-2AA and request a new one for a Stage 1AA. 1. The ESR should be revised to state that the Stage 1AA was completed... and a Stage 2AA is recommended. 2. The commitment in the ESR should read: A Stage 2 archaeological assessment (and Stage 3-4 if warranted) will be completed as early as possible during detail design and prior to any ground disturbing activity. <p>Built Heritage Resources and Cultural Heritage Landscapes (Appendix B2)</p>	December 3, 2019	<p>Hydro One thanked the MHSTCI staff for their review of the draft ESR. While Hydro One remains of the opinion that the Stage 1 Background Review (review of historical Stage 1 Archaeological Assessment reports that encompassed the Lakeshore TS Class EA Study Area) provides an acceptable level of background information to inform the Class EA, for this project Hydro One will accept the MHSTCI’s request and has requested the consulting archaeologist to prepare and submit to MHSTCI a standalone Stage 1 report shortly, which will identify the portions of the Class EA study area which will undergo Stage 2 Archaeological Assessment, followed by a separate cover Stage 2 Archaeological Assessment report which will be submitted following completion of the survey work (currently planned to occur in the Spring of 2020). The area which will be assessed during the Stage 2 survey will consist of the portions of the subject property which will house new transmission facilities, as well as the surrounding areas within the property. Separate property parcels which are not directly affected by the project, as well as the portion of the proposed Station property which is south and east of the existing transmission lines (which will remain in agricultural use for the foreseeable future and is not anticipated to be directly affected by construction) are expected to be excluded from the Stage 2 survey area.</p> <p>Regarding the MHSTCI comments on the Built Heritage checklist appended to the draft ESR, Hydro One stated that they would provide an accompanying memorandum and map to clarify and explain which properties within the Class EA Study area were identified as containing structures over 40 years old, and compare that against the structures which are anticipated to be removed for this project. This memo will be appended and referenced in the Final ESR.</p> <p>Hydro One also stated that they will make the suggested wording edits to Sections 3.4 and 3.4.4 and 7.3 (the latter subject to confirming factual correctness based on the Built Heritage Checklist memo). Hydro One will also clarify the commitment in Table 7-1 as per the MHSTCI’s comments.</p>	December 13, 2019

COMMENT RECEIVED	DATE RECEIVED	RESPONSE FROM HYDRO ONE	DATE RESPONDED
<p>This section should include a brief summary of the existing conditions for Built Heritage Resources and Cultural Heritage Landscapes based on the findings of the screening checklist.</p> <p>Appendix B2 - As per our December 2nd phone discussion it is not clear from the checklist which property(s) were screened and which property(s) include buildings/structures over 40 years old. The study area, as a whole, is comprised of multiple properties at least five of which include buildings/ structures. We suggest the checklist include a map to illustrate which properties were screened and a memo to explain why no evaluation or assessment report was undertaken given that one of the screening criteria was met e.g. these properties will not be acquired, will not be impacted.</p> <p>Section 7.3 Archaeological and Cultural Heritage Resources (Page 89) Paragraph 1 – please revise to be consistent with revisions to Section 4.3.</p> <p>Paragraph 2 – This paragraph needs to be revised to correct usage of heritage terminology. For example, the first step is to identify whether built heritage resource are present in the study area; the second step if resources are identified then identify impacts.</p> <p>The 40-year threshold screening criteria indicates that the study area includes a property(s) with potential CHVI. It is only through evaluation that a determination is made as to whether a property has CHVI. We offer the following suggested revisions (Hydro One to ensure it is factually correct):</p> <p style="padding-left: 40px;">Based on the application of MHSTCI screening criteria, the property located at ????? has potential to have cultural heritage value of interest. However, this property is not anticipated to be affected by the proposed Project and therefore no further evaluation was undertaken. The existing agricultural buildings and structures on the property [MHSTCI comment: please include a map to illustrate which buildings are being referred to.] will likely need to be demolished during construction. This property did not meet any of the screening criteria and therefore is not considered to have potential cultural heritage value or interest. although these structures are not anticipated to have any built heritage value. A copy of the MHSTCI Criteria for Evaluating Built Heritage Resources and Cultural Heritage Landscapes Checklist can be found in Appendix B2.</p> <p>Table 7-1 Summary of Potential Effects, Mitigation Measures and Residual Effects (page 127) Archaeological and Cultural Heritage Resources: The mitigation measures should be revised to be consistent with the revisions made to section 4.3: A Stage 2 archaeological assessment (and Stage 3-4 if warranted) will be completed as early as possible during detail design and prior to any ground disturbing activity.</p>			
MINISTRY OF NATURAL RESOURCES AND FORESTRY			
MNRF staff have reviewed the draft ESR and do not have any comments at this time.	November 21, 2019	Hydro One thanked the MNRF staff for their review of the draft ESR.	November 21, 2019
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS			
Southwestern Region			
The Ministry of Environment, Conservation and Parks Southwestern Region (MECP SWR) has completed its review of the “Draft Lakeshore Transmission Stations Project Class Environmental Assessment” dated November 2019. As a consequence of this review, MECP SWR has no comments.	November 26, 2019	Hydro One thanked the MECP Southwestern Region staff for their review of the draft ESR.	November 26, 2019
Species at Risk Branch			

COMMENT RECEIVED	DATE RECEIVED	RESPONSE FROM HYDRO ONE	DATE RESPONDED
<p>The Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB) has reviewed the attached information, and the draft Environmental Study Report available online, to assess the potential impacts of the project on endangered and threatened species at risk (SAR) protected under the Endangered Species Act, 2007 (ESA 2007).</p> <p>Based on SARB’s review of the project documentation and information that has been provided, the conclusions that you and Dillon Consulting have made - that neither section 9 (species protection) nor section 10 (habitat protection) of the ESA 2007 will be contravened for SAR - appear reasonable and valid. There are no known occurrences of SAR in the project area, however, there are known occurrences of Eastern Foxsnake – Carolinian population in the general area.</p> <p>Eastern Foxsnake and its habitat are protected under the ESA 2007. This species regularly inhabits agricultural lands throughout the area, and so, woodlands, farm hedgerows, old fields, railways, wetlands, and drainage corridors can be important habitats as well as seasonal migration linkages. Specific features such as rotting logs or stumps, piles of organic material (such as compost, sawdust, or woodchips), rock piles, brush piles, and dump sites of old agricultural debris/equipment are likely to provide habitat functions for Eastern Foxsnake in the project area. This species may also utilize old bridges, culverts, and foundations as communal over-wintering sites. If any of the above features are found to occur, they must be protected from all disturbances that would result in damage or destruction of their habitat functions. It is recommended that netting type erosion control measures not be used for projects over drains and rivers. At these locations an alternative product such as Curlex Netfree® blanket or the use of riprap over geotextile fabric should be used for erosion control to prevent entanglement of Eastern Foxsnake.</p> <p>Please be advised that it is the proponent’s responsibility to be aware of and comply with all other relevant provincial or federal requirements, municipal by-laws or required approvals from other agencies. It is recommended that Hydro One continues to monitor for SAR activity during the course of the project to document changes, in the event that there should be any.</p> <p>The position of SARB is based on the information that has been provided by Hydro One. Should information not have been made available and considered in our review, or new information comes to light that changes the conclusions made by Hydro One, or if on-site conditions and circumstances change so as to alter the basis for your conclusions, please contact SARB as soon as possible (SAROntario@ontario.ca) to discuss next steps.</p>	<p>December 12, 2019</p>	<p>Hydro One thanked the SAR Branch staff for their review of the draft ESR, and stated that if any new information arises that indicates there may be adverse effects to a SAR or its habitat as the result of the Lakeshore TS project, Hydro One will contact the MECP SAR Branch to discuss.</p>	<p>December 13, 2019</p>

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4 Environmental Features in the Study Area

As described in the Class EA process information from within the Class EA study area was collected for the following:

- Agricultural resources;
- Forestry resources;
- Cultural heritage resources (i.e., built heritage resources, cultural heritage landscapes and archeological resources);
- Land use and communities;
- Mineral resources;
- Natural environment resources (e.g., air, land, water, wildlife);
- Recreational resources; and,
- Visual and aesthetic resources (i.e., appearance of the landscape).

The following sections summarize the environmental baseline conditions in the study area. The study area is illustrated in **Figure 2-1**. Information presented below was obtained through literature review, reports commissioned by Hydro One, online resource databases and mapping, consultation with stakeholders and agencies, and through the completion of targeted natural heritage field surveys.

Field investigations were completed between May 2019 and October 2019. Results of the field surveys and value/significance interpretations of natural heritage features are presented in summary below and in **Appendix B**.

4.1 Agricultural Resources

The Canada Land Inventory (CLI) rates agricultural land capability. According to CLI data (1998), the study area is dominated by Class 2 lands, which have moderate limitations that restrict the range of crops or require moderate conservation practices (**Figure 4-1**).

Deep soils within Class 2 lands are sub-classified as wet. Excess water may be present as a result of flooding, a high water table, or poor drainage. Wet soils of in the study area lands may limit the type of crops planted and restrict the growth of crops (Government of Canada, 2013). Examination of satellite imagery, the Ecological Land Classification (ELC), and

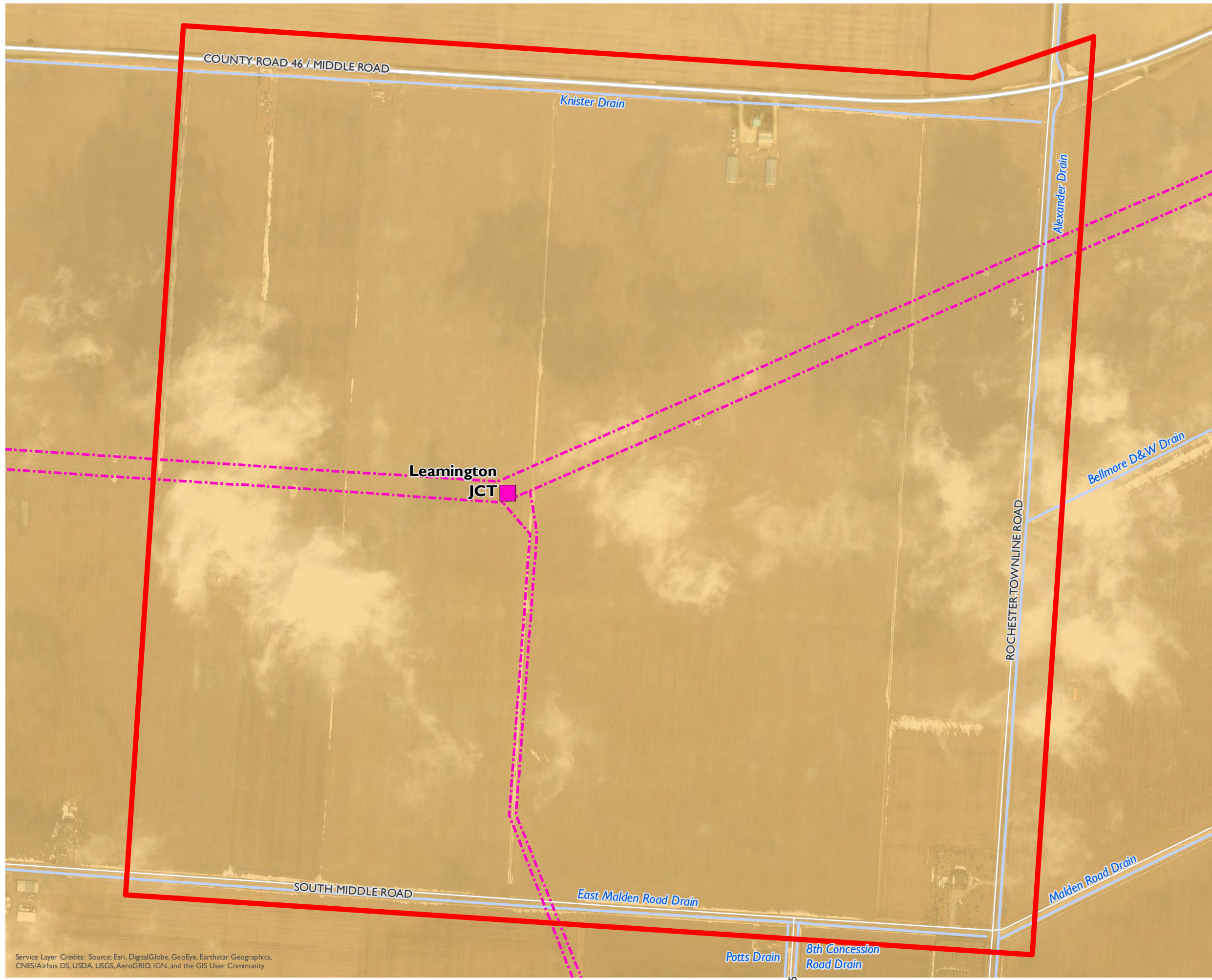
observations made during the 2019 field investigations confirm the presence of tilled agricultural fields throughout the study area. These agricultural lands are actively farmed with annual row crops (e.g. wheat, soybean, corn).

4.2 Forestry Resources

There is no potential for the proposed Project to affect the productivity or utilization of the land for forestry harvesting, as there are no forests located within the study area. No Forestry Management Units, Agreement Forest Areas, Forest Cover Units, Forest Resource Inventory Areas, or Wood Use Areas Forest Resources (as identified through the MNRF Forest Resource Inventory) overlap the study area or are located within adjacent lands (MNRF, 2017a).








4.3 Cultural Heritage Resources

Provincial heritage properties include three types of cultural heritage resources: built heritage resources, cultural heritage landscapes and archaeological sites (Ministry of Heritage, Sport, Tourism and Cultural Industries [MHSTCI], 2010). A licensed archaeologist was retained to conduct a heritage review and archaeological assessments.



HYDRO ONE NETWORKS INC.
LAKESHORE TRANSMISSION STATIONS PROJECT
 CLASS ENVIRONMENTAL ASSESSMENT

AGRICULTURAL SOIL CLASSES
FIGURE 4-1

-  Study Area
 -  Junction
 -  Existing 230 kV Electrical Transmission Line
 -  Major Road
 -  Minor Road
 -  Watercourse / Constructed Drain
- Agricultural Soil Class**
-  Class 2 - Moderate Limitations



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF, MENDM, Agriculture and Agri-Food Canada (1967), Canada Land Inventory: Soil Capability for Agriculture (Windsor 40J-G).

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-9558
 STATUS: DRAFT
 DATE: 2019-10-25

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Previous Stage 1 Archaeological reports have been completed for past projects, which cover the entirety of the Lakeshore TS study area. Hydro One engaged a licensed archaeological consulting firm (Wood PLC) to review these existing Stage 1 reports and update any conclusions and recommendations accordingly. The review of the previous Stage 1 reports confirmed that the proposed Project study area contains lands with potential to contain archaeological resources and reiterated the recommendation for a Stage 2 Archaeological Assessment to be conducted as early as possible during detail design prior to the construction of the new transmission stations and associated structures. Hydro One commits to conduct a Stage 2 Archaeological Assessment for the lands containing the proposed new transmission facilities, as early as possible during detailed design prior to construction. During the draft ESR review period, Hydro One received comments from the MHSTCI requesting that a separate Stage 1 Archaeological Assessment report be submitted for the project. Hydro One responded that it remains of the opinion that the Stage 1 Background Review (review of historical Stage 1 Archaeological Assessment reports that encompassed the Lakeshore TS Class EA Study Area) provides an acceptable level of background information to inform the Class EA, to address the MHSTCI's comments Hydro One has requested their consulting archaeologist to prepare and submit to MHSTCI a standalone Stage 1 Archaeological Assessment Report, which was submitted to the MHSTCI on January 7, 2020. Following completion of the Stage 2 survey (anticipated to occur in early Spring 2020), a Stage 2 Archaeological Assessment Report will be submitted to the MHSTCI.

Copies of the Stage 1 Archaeology review memo and the MHSTCI Built Heritage and Cultural Heritage Landscapes Checklist and memo are provided in **Appendix B1** and **B2**, respectively.

4.4 Land Use and Communities

The study area is located within rural agricultural areas; the entire study area is designated as agricultural in land use schedules within each the Town of Lakeshore (2010) and County of Essex (2014) Official Plans. In general, according to the Statistics Canada 2016 Census, the Town has a population of 36,611 people and a land base of 530.33 square kilometres (km²). The Town is located within the County of Essex, which has a total population of 398,953 and land area of 1,850.90 km² (Statistics Canada, 2017).

While residential homes are located within and adjacent to the study area, the study area is not designated as residential land use by the Town of Lakeshore. Furthermore, the study area is not designated as a settlement area by the County of Essex. No additional designations for recreational commercial or industrial land uses are identified within or adjacent to the study area.

There are no schools or places of worship located within 1 km of the study area. The nearest park is Ruscom Shores Conservation Area, located approximately 10 km north of the study area. The nearest recreational areas and/or community centres within the Town of Lakeshore include the Comber and District Community Centre and the Woodland Hills Golf Club, which are located approximately 4.5 km and 8.5 km northwest of the study area, respectively, and the Tilbury Golf Club, located approximately 12 km to the northeast of the study area. A total of 4 residential dwellings are located within the study area, as well as an additional 21 that are located adjacent (i.e. within approximately 1 km) to the study area. The majority of the residential development is comprised of single detached dwellings in association with rural agricultural properties.

4.4.1 Land Use Planning

With respect to existing land use designations, land uses of the study area are guided by the PPS, the County of Essex Official Plan (2014), and the Town of Lakeshore Official Plan (2010), which is regulated by the Town of Lakeshore Zoning By-law (2-2012). The PPS provides the Government of Ontario's policy direction on land use planning to promote strong communities, a strong economy, and a clean and healthy environment (e.g., the efficient management of land and infrastructure, the protection of resources, and appropriate employment and residential development). The Town of Lakeshore Official Plan, the County of Essex Official Plan and other planning documents are required to comply with the PPS to ensure consistency. Land use maps from the Town of Lakeshore Official Plan and the County of Essex Official Plan are provided in **Appendix C1**.

No provincial land use plans, such as the Greenbelt Plan or the Niagara Escarpment Plan, are applicable to the study area.

County of Essex

Lands within the study area are designated as Agricultural under Schedule A1 of the County of Essex Official Plan. In the County of Essex, the “Agricultural” designation pertains to “all lands that are not otherwise designated as “Settlement Areas” or “Natural Environment” (County of Essex Official Plan, Section 3.3). The vision of lands designated as “Agricultural” by the County of Essex is to provide a variety of types of agriculture including cash crops, greenhouse, orchard, vineyard, and mushroom, as well as livestock farming opportunities. The diverse agricultural practises provided by the County of Essex, are directly attributed to the County of Essex’s goals to “protect prime agricultural areas for agricultural purposes to ensure the continued long-term availability of this resource” and to “restrict the type and amount of non-farm development in the “agricultural” designation by encouraging non-farm uses to locate in the existing settlement areas identified on Schedule A1”. These policies apply when determining the locations for new utility corridors: preferred routes include areas that follow existing RoWs and fence lines, and minimize their impact on agricultural lands and the natural heritage system (County of Essex Official Plan, Section 2.11). Justification for the proposed Project is consistent with Section 2.11a of the County of Essex Official Plan which states that, “utility corridors must exist in order to properly and efficiently serve the public.” A definite need for the proposed Project was identified by the IESO as discussed previously in **Section 1.1**.

No areas designated as natural heritage system exist within the study area (Schedule B1); however, areas designated as Inland Flood Prone Area classified under Schedule C1 are identified west of the study area. Natural Hazards identified adjacent to the study area are in association with Silver Creek Drain and the Ruscom River. Natural hazards identified in areas surrounding inland watercourses are determined by Conservation Authorities based on the 1:100 year maximum observed flood conditions; no development is permitted within flood areas unless associated hazards can be addressed, and no new hazards or environmental impacts are being created by the proposed development (County of Essex Official Plan, Section 2.4.2).

Town of Lakeshore

Under Section 7.5 of the Town of Lakeshore Official Plan, existing communication and transmission corridors and networks are to be protected and enhanced by the town’s planning

activities. The proposed Project is consistent with the town of Lakeshore Official Plan as the construction of the new SS and TS will increase capacity of the existing Hydro One transmission Network. The upgrades are required to meet the projected electrical needs for the County of Essex. Designated land uses of the Town of Lakeshore Official Plan within the study area are discussed below.

The majority of the study area is designated as Agriculture (Schedule C-1, 2010). Permitted uses within this designation include agricultural uses, agriculturally-related uses and secondary agricultural uses including: the growing of crops, nursery and horticultural uses, maple syrup production, and raising livestock and other animals as a resource (Section 6.2.1, 2010). Agricultural uses under this designation are to be protected unless appropriate justification is provided for alternative uses. As stated previously, per the IESO, the only suitable location for the proposed Project are the lands adjacent to the Leamington JCT.

The land uses within the study area are also regulated by the Town of Lakeshore Zoning By-law (2-2012); however, utilities associated with electricity transmission lines are not subject to the provisions of the Zoning By-law (Town of Lakeshore By-law 2-2012, Section 65.a).

4.4.2 Transportation

The proposed Project does not cross road transportation infrastructure as the study area is located internally within agricultural lands; municipal roads do not bisect the study area and surround the periphery. A potential need was, however, identified for access (new permanent road entrance and driveway) to the study area from South Middle Road and potentially from Rochester Townline Road, subject to detail design.

Under Schedule D1, the Town of Lakeshore Official Plan identifies the County Road 46/Middle Road as a Rural Regional Road. Additional rural Collector Roads located within the study area include:

- Rochester Townline Road; and,
- South Middle Road.

The study area does not cross any rail lines. The proposed project is approximately 8 km north of the Cottam Airport.

4.4.3 *First Nation Lands and Territory*

There are no First Nation Reserve Lands located within the study area (MNRF, 2017b). The closest community to the proposed Project is the Caldwell First Nation, of which their local office is located approximately 17 km south of the project study area in the Municipality of Leamington. Point Pelee and Pelee Island are both considered traditional lands of Caldwell First Nation; both areas are 25 km and 40 km south of the study area. The Ministry of Energy, Northern Development and Mines determined that the project may result in adverse impacts on the asserted or established rights of two First Nation communities – Caldwell First Nation, and Walpole Island First Nation (Bkejwanong Territory). Potential effects of the proposed project on First Nations lands and territories are discussed in **Section 7.4.3**.

4.5 Mineral Resources

Based on a review of the MNRF LIO database, satellite imagery interpretation and observations made during field investigations, there are no active aggregate pits and quarries located within the study area (**Appendix C2**).

No active or abandoned mines were identified within the study area or on adjacent lands (Ministry of Energy, Northern Development and Mines [ENDM], 2017a). Although underground gas lines and associated infrastructure are located within the study area, no oil and gas wells were identified in the study area.

4.6 Natural Environment Resources

This factor considers areas of environmental sensitivity including the air, land, water and wildlife resources and features within the study area. The assessment is based on the requirements outlined in the PPS (2014) and following the *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement* (MNR, 2010).

Baseline information regarding the following physical and biological features in the study area was discussed:

- Physical environment;
- Atmospheric environment;
- Surface and groundwater resources;

- Designated or special natural areas; and,
- Natural heritage features.

4.6.1 Physical Environment

The study area is located in the St. Clair Clay Plains physiographic region of Ontario as defined by Chapman and Putnam (1984). The St. Clair Clay Plains span across the majority of Essex County.









Surficial geology of the region consists primarily of bevelled till plains. These plains are classified as silt-textured till derived from glaciolacustrine deposits of clay left over from historical lakes (**Figure 4-2**; ENDM, 2010). Additional deposits may have resulted from receding icebergs. The clay and till plains described for this area are thick and limit water infiltration. While recharge capability is low within this physiographic region, thick layers of clay provide sufficient protection to groundwater.

Bedrock associated with the study area consists of a thick succession of Palaeozoic sedimentary rocks of the Michigan Basin sedimentary deposits (ERCA, 2018; ENDM, 1991). These deposits are characterized as containing limestone, dolostone and shale (ENDM, 1991) of the Dundee Formation in the Middle Devonian group (ENDM, 1991).



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QUATERNARY GEOLOGY
FIGURE 4-2

-  Study Area
 -  Junction
 -  Existing 230 kV Electrical Transmission Line
 -  Major Road
 -  Minor Road
 -  Watercourse / Constructed
- Quaternary Geology**
-  5 - Pleistocene: Tavistock Till (Huron-Georgian Bay Lobe)
 -  24 - Pleistocene: Glaciolacustrine deposits



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, MENDM, Barnett, P.J., Cowan, W.R. and Henry, A.P. (1991). Quaternary geology of Ontario, southern sheet; Ontario

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



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4.6.2 *Atmospheric Environment*

Climate

The Town of Lakeshore and County of Essex are located within the Humid High Moderate Temperate Eco climate Region of southwestern Ontario. Climate in this region is the mildest identified in Canada, with a growing season of approximately 243 days (Crins et al., 2009). Meteorological stations operated by the Government of Canada and the MECP with sufficient long-term data for the County of Essex are located at the Windsor Airport (Climate Identifier [ID] 6139525) and Windsor Riverside (Climate Identifier [ID] 6139520) Ontario (Government of Canada, 2019ab). Both meteorological stations are located approximately 30 km west of the study area. Temperature and precipitation data presented in this section are based on annual data available from 1866 and 2006 (Government of Canada, 2019a).

Temperature

The climate normal mean annual temperature at the Windsor Airport meteorological station is 9.8 degrees Celsius (°C) (Government of Canada, 2019b). The climate normal daily average temperature varies between -3.8°C (January) and 23°C (July). Extreme climate normal temperatures range from -29.1 to 40.2°C. The climate normal frost-free period is from May 19 to September 30 (133 days) (Government of Canada, 2019b).

Precipitation

Precipitation is distributed throughout all four seasons, with snowfall typical from November to April, and rainfall typical from May to September. Climate normal days with precipitation is 240 days per year (Government of Canada, 2019b).

Climate normal monthly precipitation varies between 62 millimetres (mm) (February) and 93.9 mm (September) (Government of Canada, 2019b). The climate normal total annual precipitation is 934.6 mm, where 129.3 mm is associated with snowfall and 822.4 mm as rainfall. Extreme daily rainfall varies from 43 mm (January) to 94.6mm (April) and are considered climate normal. Extreme snow depths range from zero to 42 centimetres (cm) (February) (Government of Canada, 2019b).

Wind

At the Windsor Airport meteorological station, winds are primarily blowing from the southwest with an average wind speed of 15.5 kilometers per hour (km/hr) (Government of Canada, 2019a; Windfinder, 2019)

Air Quality

In Ontario, air quality is monitored through a network of air quality monitoring stations operated by the MECP and Environment Canada (MECP, 2019; EC 2019); the MECP monitors air quality throughout the Province as part of the Air Quality Monitoring System (MECP 2018). The nearest station is approximately 37 km west of the study area (Windsor Downtown). Through hourly monitoring, an Air Quality Health Index (AQHI) reading summarizes background air quality levels for ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulphur dioxide (SO₂) and particulate matter (PM_{2.5}). The AQHI creates a score (i.e. 1 - 10+) totalling the overall risk associated with levels recorded for the five parameters measured. A score of 1-3 indicates a low risk, a score of 4-6 indicates a moderate risk, while a score of 7+ indicates a high risk to ambient air quality. Air monitoring data summarized to provide AQHI scores from the Windsor Downtown station represents the combined effect of emissions from nearby sources, as well as the effect of emissions transported into the region. AQHI readings are recorded hourly. Based on averaged daily AQHI readings recorded over the 2017 and 2018 monitoring years, a low score (1-3), and therefore a low risk to air quality, are indicated for the Windsor area.

Noise and Vibration

A desktop review of publicly available data was completed to identify noise-sensitive receptors within the study area, and to establish existing noise conditions. Existing land uses within the study area primarily consist of agriculture land and 4 residential dwellings (see **Section 4.4.1** for more details about land uses in the study area). In accordance with the MOECC publication NPC-300 “Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning” noise-sensitive receptors, or points of reception, are defined as sensitive land uses, which include dwellings; institutional use (educational, nursery, hospital, health care facility, community centre, place of worship or detention centre); and commercial use (hotel or motel) (MOECC, 2016b). A total of 4 points of reception were

identified to represent the noise-sensitive receptors in the vicinity, all being rural residential dwellings adjacent to active agricultural lands.

Ambient noise conditions within the study area were established through a review of publicly available information and the professional opinion of Hydro One's environmental consultant based on experience on similar projects. Ambient noise conditions within the study area are generally expected to be dominated by anthropogenic activities. These activities include, but are not limited to, transportation (road), agricultural activities, and residential activities. The actual ambient noise levels at a given point of reception depend on a number of factors, including type of noise source, distance to the noise source, and influences from intervening areas (e.g., structures, woodlots, topography, where applicable) that could provide shielding between the noise source and point of reception. Ambient noise levels are expected to vary throughout the various periods of the day (i.e., Daytime [07:00-19:00], Evening [19:00-23:00], and Night-time [23:00-07:00]), days of the week, and seasons of the year. Ambient noise levels are expected to be at their highest during the agricultural planting and harvest seasons.

Ambient noise levels in the study area are likely influenced by the following noise emissions:

- Local and distant road traffic, particularly along Highway 401, County Road 46/Middle Road, Middle Road South and Rochester Townline Road; and
- Agricultural and residential activities.

Vibration can be a by-product of construction activities. Some activities during the construction phase of the proposed Project with the ability to result in vibration include soil compaction, excavation of foundations, and heavy equipment use. No heritage structures and or vibration-sensitive facilities have been identified within the study area.

4.6.3 Surface Water Resources

Based on a review of aerial photography and available base mapping, there are seven municipal drains within the study area (**Figure 4-3**). These drains are each located in the periphery of the study area and are generally associated with existing municipal/county roads. The only drain located within agricultural lands and not bound by a municipal road is the Bellmore

D&W Drain which is located east of Rochester Townline Road. The remaining drains associated with the study area are as follows:

- Knister Drain (County Road 46/Middle Road)
- Alexander Drain (Rochester Townline Road)
- Malden Road Drain (South Middle Road)
- East Malden Road Drain (South Middle Road)
- Ports Drain (Lakeshore Road 245)
- 8th Concession Road Drain (Lakeshore Road 245)

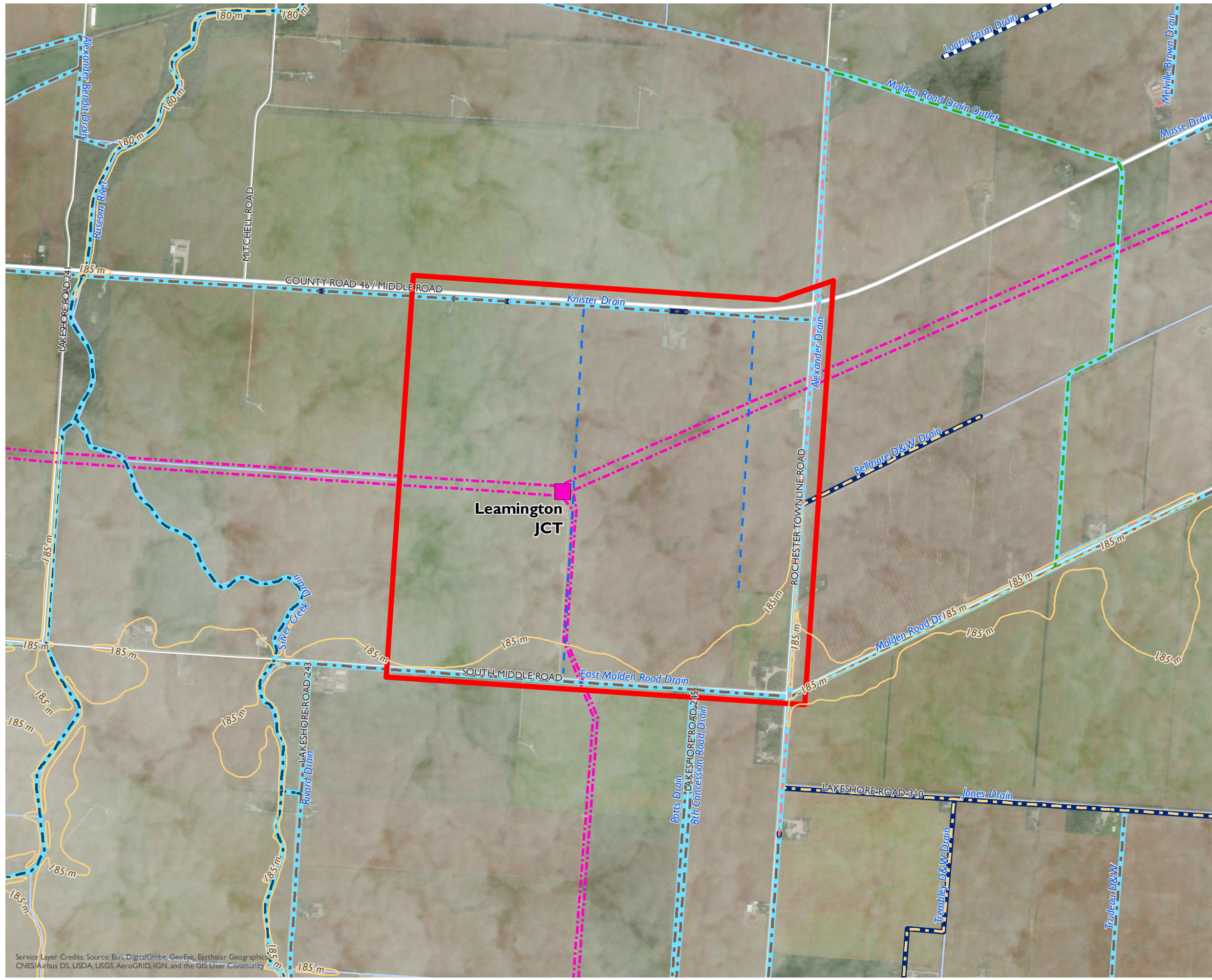
Drains associated with the study area were reported by the Fisheries and Oceans Canada (ERCA, 2019; Kavanagh and Hoggarth, 2017) to have good to fair systematic agricultural tile drainage. With the exception of the Bellmore D&W Drain (which is a closed drain), the remaining municipal drains are classified as Open or Unknown (ERCA, 2019; Kavanagh and Hoggarth, 2017).

The topography within the study area is relatively flat, with a general slope to the west towards the Ruscom River. Surface drainage features bisect agricultural fields from north to south, providing intermittent flow north to the Knister Drain; surface drainage features are represented in **Figure 4-3**. Surface flow from the municipal drains flow north and northwest to the Ruscom River and its associated tributaries (the Silver Creek Drain), and continue north to eventually outlet to Lake St. Clair.

There are no surface water quality monitoring stations within or in the vicinity of the study area. The nearest Provincial Water Quality Monitoring Network (PWQMN) Station is the Ruscom River Station (No. 04001000302), located approximately 3.5 km north of the study area in the County of Essex. While monitoring from this station was terminated in 2016, this monitoring location is part of the Ruscom River subwatershed. This subwatershed was characterized by the ERCA in their 2015 Watershed Assessment Report (ERCA, 2015), which grades the watershed health with respect to several indicators, including total phosphorous, nitrogen, chloride, and total suspended solids. In general, concentrations for each of these parameters reported for the Ruscom River subwatershed were reported to be high and exceeded the Canadian Environmental Quality Guidelines (ERCA 2015). According to the

report, pollution and impacts to the subwatershed are likely attributed to the past and ongoing agricultural and residential land uses.

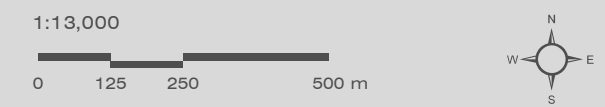
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 CLASS ENVIRONMENTAL ASSESSMENT

SURFACE WATER FEATURES
FIGURE 4-3

- Study Area
 - Junction
 - Existing 230 kV Electrical Transmission Line
 - Major Road
 - Minor Road
 - 5 m Contour
 - Agricultural Surface Drainage
 - Watercourse
 - Waterbody
- DFO Drain Classification**
- C
 - E
 - F
 - N/A
 - NR
 - Unknown
- Constructed Drain Type**
- Open or Unknown
 - Closed/Tiled



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF, MENDM, Ministry of Agriculture, Food, and Rural Affairs (2018). Online Interactive Ag Maps

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



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4.6.4 *Groundwater Resources*

Groundwater resources were evaluated within the study area, as well as within a 500 m radius from the study area to effectively capture potential effects on groundwater resources from the proposed Project. Well records mapped for the province of Ontario were reviewed to determine groundwater quality (MECP, 2019d). Background review determined that one water well is located within the study area (Well Id: 2102655); two additional water wells are located within the 500 m extended search area; one to the southeast (Well Id: 2103005) and one to the southwest (Well Id: 2102650) of the study area (MECP, 2019d; see **Appendix C3**). Well log records are fairly consistent amongst the three identified water wells: groundwater is found approximately between 30 - 35 m, below a thick layer of clay soil (located approximately between 0 and 34 m). The three wells observed within and adjacent to the study area were all used for local water supply (agricultural/livestock and domestic residential). Groundwater observed within boreholes of each of the three water wells was described as clear containing sulphur. Yields for each of the water wells ranged between 64 litres per minute (L/min) to 124 L/min (MOECC, 2017). Excerpted summary water well records from the study area are presented in **Appendix B5**.

No municipal drinking water supplies were identified within the study area or within a 500 m radius. The aquifers in the study area and vicinity have been mapped by the ERCA as having a medium vulnerability index (Vulnerability Score: 5 – 5.4), based on the sandy nature of the near-surface soils with underlying clay plain, the land use and population density, and the existence of a protected groundwater supply in the area (ERCA, 2019; ERCA 2015).

Groundwater Hydrology

Groundwater hydrology was assessed in the Essex Region/Chatham-Kent Region Groundwater Study Volume 1: Geologic/Hydrogeologic Evaluation conducted by Dillon Consulting Limited (Dillon) and Golder Associates Limited (Golder) (2004). Results of the study were incorporated into recent Official Plan mapping. As per Schedule C3 of the County of Essex OP, areas associated with the municipal drains are designated as zone 3 intake protection zones; however, as per Schedule B1 of the Town of Lakeshore Official Plan, the study area overall is considered within an area of low aquifer intrinsic susceptibility (Figure

27A; Dillon and Golder, 2004). Thick layers of clay within the study area slow the infiltration of groundwater below the water table.

The entire study area is located within the Lake St. Clair Watershed, Ruscom River subwatershed (ERCA, 2015). As described in the report by Dillon and Golder (2004), groundwater flow generally follows elevation contours of the County of Essex. A single topographic ridge runs northwest to southeast from Windsor to Leamington; groundwater flow north of the ridge generally travels northeast in the direction of Lake St. Clair. Within the vicinity of the study area, regional topography plays a role on the movement of groundwater. Within the study area groundwater generally travels in the direction of the Ruscom River; as the topography is depressed in the direction of the surface water feature.

According to information depicted in Figure 14a of the Dillon and Golder report (2004), the groundwater elevation within the study area is between 180 – 185 metres above sea level (masl). The depth to the water table within the study area was assessed to be between 2 – 4 m (Figure 15A, Dillon and Golder, 2004); the water table is defined as an unconfined to semi-confined aquifer defined by coarse-grained sand and gravel till deposits. Additional sand and gravel deposits located above the bedrock surface comprise the contact aquifer; within the study area, contact aquifer thickness was evaluated to be between 0-1m thick (Figure 18A; Dillon and Golder, 2004). The contact aquifer is considered a confined system. While it is believed that the water table and contact aquifer are likely connected hydrostatically, layers of clay between these features act as an aquitard to groundwater movement (Dillon and Golder, 2004).

Groundwater Quality

There is a lack of publicly available groundwater quality information in areas proximal to the study area. Dillon and Golder (2004) indicated that the majority of wells in the County of Essex extract groundwater stored in confined contact aquifers.

While ERCA does not conduct groundwater quality sampling within or adjacent to the study area, in the Update Assessment Report – Essex Region Source Protection Area (ERCA 2015), it is noted that contamination from *E. coli* and total coliforms is the primary concern for the County of Essex. Based on an assessment of private wells throughout the County of Essex, microbiological contamination is widespread throughout Highly Vulnerable Aquifers and

Significant Groundwater Recharge Areas. Contamination from *E. coli* and total coliforms to drinking supplies are likely attributed to ongoing and past agricultural land uses within the County of Essex (ERCA 2015).

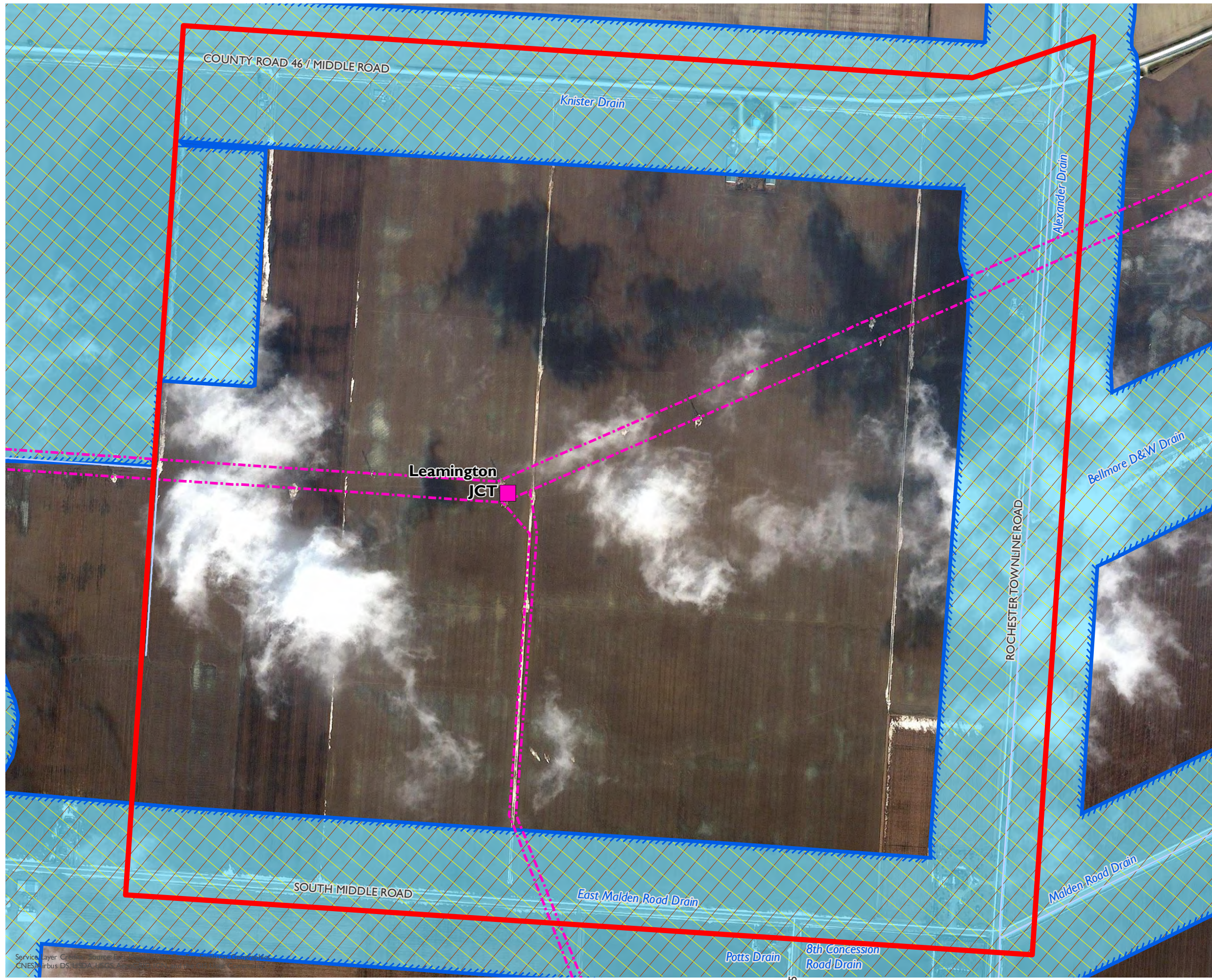
4.6.5 *Source Water Protection*

Designated Source Water Protection areas (the “Essex Source Protection Area”; SPA) are located within the study area (ERCA, 2018); the Essex SPA is restricted to the area of municipal drains (**Figure 4-4**). Based on mapping provided by ERCA (2018), the Essex SPA is categorized as an Event-based Area (EBA). EBAs are considered areas that may pose threats to sources of drinking water (GSCA, 2019), and are determined through analyses to identify the potential risk of spills (GSCA, 2019). Lands within the study area are likely designated as an EBA due to potential contamination from existing land uses (i.e. road ways and active agriculture).

The Essex SPA is also designated by ERCA (2018) as a category 3 Intake Protection Zone (IPZ-3). IPZs are areas where run-off from streams or drainage systems could carry contaminants into sources of drinking water (ERCA, 2019). Specifically, IPZ-3 indicated areas where contaminant spills may reach IPZ from farther distances during areas of extreme rainfall or storm events (ERCA, 2019).

As the study area contains designated EBAs and IPZ-3, permits related to the handling and storage of fuel are required under the Essex Region Source Protection Plan (ERCA, 2015). Specifically, permitting is required to satisfy policy 16 - SLWA123-handlestorefuel-1 (Prescribed Instrument) of the Essex Region Source Protection Plan (ERCA, 2015; MECP, 2019e) under Ontario Regulation 287/07 of the Clean Water Act (2006) (MECP, 2019e). Further discussions regarding permitting requirements for the protection of Source Water Protection are discussed in **Section 7.6.4.1**.

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SOURCE WATER PROTECTION
FIGURE 4-4

- Study Area
- Junction
- Existing 230 kV Electrical Transmission Line
- Major Road
- Minor Road
- Watercourse
- Essex Source Protection Area (MECP, 2019)*
- Event Based Area (EBA; ERCA, 2018)*
- Surface Water Intake Protection Zone (ERCA, 2018)***
- IPZ-3
- Vulnerability Scoring Area (ERCA, 2018)***
- 5.4

* Features are approximate



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF, MENDM, Ministry of Agriculture, Food, and Rural Affairs (2018). Online Interactive Ag Maps

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



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 DATE: 2019-10-25

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4.6.6 *Designated or Special Natural Areas*

Designated or special natural areas are identified by federal or provincial agencies and municipalities through legislation, policies, or approved management plans. These areas typically have special or unique values that result in conservation land initiatives. Such areas may have a variety of ecological, recreational, and aesthetic features and functions that are highly valued.

4.6.7 *Natural Heritage Features*

As defined in the PPS, natural heritage features and areas include “significant wetlands, significant coastal wetlands, fish habitat, significant woodlands south and east of the Canadian Shield, significant valleylands south and east of the Canadian Shield, significant habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest”, which are important for their environmental and social values as a legacy of the natural landscapes of an area.

The key natural heritage features that are defined in the PPS are considered below. Information on natural heritage features was collected from the following sources:

- Species at Risk Ontario (SARO) (O. Reg. 230/08);
- *Species at Risk Act* (SARA) data base;
- Natural Heritage Information Centre (NHIC) database (NHIC, 2018);
- Atlas of Breeding Birds of Ontario (Cadman et al., 2007);
- Atlas of the Mammals of Ontario (Dobbyn, 1994);
- Bat Conservation International range maps (Bat Conservation International, 2016);
- Ontario’s Reptile and Amphibian Atlas (Ontario Nature, 2016);
- Fisheries Habitat Management Plan for the Essex Region (Hayman et al., 2005);
- County of Essex Official Plan (2014);
- Township of Lakeshore Official Plan (2010);
- ERCA;
- Aerial imagery; and,
- Ontario Base Map.

In addition to the background information review, Hydro One's environmental consultant conducted field investigations along the existing transmission line RoW and adjacent lands within the study area. Surveys were completed within study area lands where access was granted; additional effort was provided by conducting roadside surveys. Field investigations were carried out from May 6 to October 18, 2019.

The study area contains predominantly agricultural lands, residential houses and municipal roads. The plant species list compiled as part of an Existing Conditions Technical Report developed for the study area is contained in **Appendix B3** and includes provincial rankings and federal status. Invasive plant species were identified within the study area.

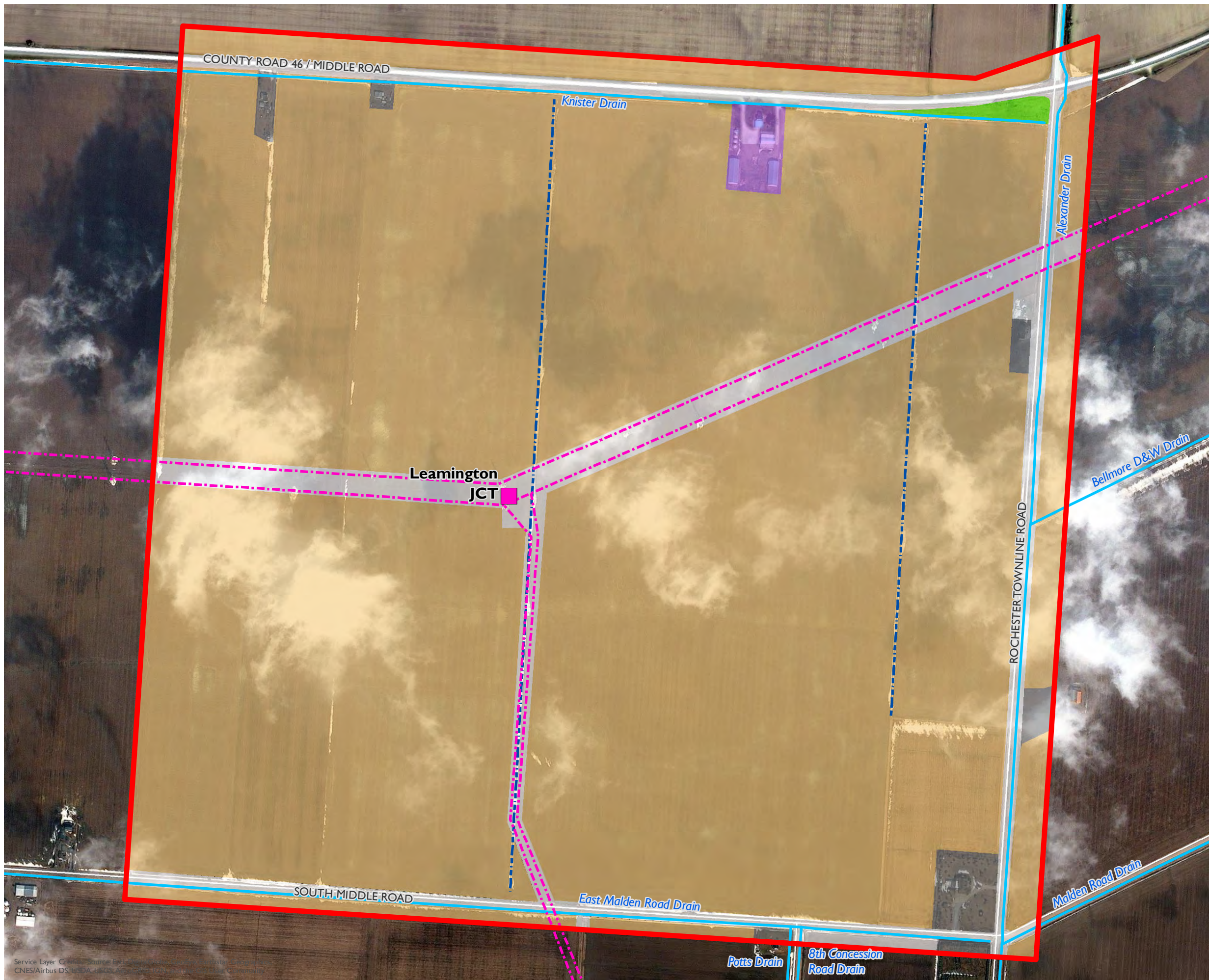
Ecological communities were classified in accordance with ELC for southern Ontario, second approximation (Lee et al., 1998; Lee, 2008). ELC communities were mapped based on aerial imagery and subsequently verified in the field where access was granted (**Figure 4-5**).

No natural vegetation communities were observed within the study area during the 2019 field investigations. Cultural communities identified within the study area included:

- Transportation and Utilities (CVI) – The study area is surrounded by municipal/county roadways to the north, east and south (i.e. County Road 46/Middle Road, Rochester Townline Road, and Middle Road South). In addition, the existing 230 kV Electrical Transmission Line bisects the study area east to west, as well as extends south from the Leamington JCT to South Middle Road.
- Open Agricultural (OAG) – Agricultural fields dominate the study area. They are actively managed and consist of annual row crops (e.g. wheat, soybean, corn).
- Agricultural Infrastructure (IAG) – A single farm property exists within the study area along County Road 46/Middle Road. The property is predominantly vacant, and contains two large barns and butler bins used for equipment and grain storage, respectively.
- Residential (CVR) – four rural residential properties are located within the periphery of the study area along the municipal roads.
- Greenlands (CGL) – A small section of Greenland was identified in the northeast corner of the study area, by the County Road 46/Middle Road and Rochester Towline Road intersection. Lands in this area were maintained and consisted of vegetation

such as Wild Carrot (*Daucus carota*), Common Yarrow (*Achillea millefolium*), Great Ragweed (*Ambrosia trifida*), Chicory (*Cichorium intybus*), Bull Thistle (*Cirsium vulgare*), Common Dandelion (*Taraxacum officinale*), Red Clover (*Trifolium pratense*), and Smooth Crab Grass (*Digitaria ischaemum*)

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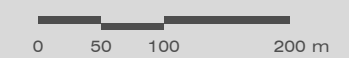


HYDRO ONE NETWORKS INC.
LAKESHORE TRANSMISSION STATIONS PROJECT
 CLASS ENVIRONMENTAL ASSESSMENT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 4-5

- Study Area
 - Junction
 - Existing 230 kV Electrical Transmission Line
 - Major Road
 - Minor Road
 - Agricultural Surface Drainage
 - Watercourse / Constructed Drain
- Ecological Land Classification**
- CGL: Greenlands
 - CVI: Transportation and Utilities
 - CVR: Residential
 - IAG: Agricultural Infrastructure
 - OAG: Open Agriculture

1:6,000



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF, MENDM, Agriculture and Agri-Food Canada (1967), Canada Land Inventory: Soil Capability for Agriculture (Windsor 40J-G).

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-9558

STATUS: DRAFT

DATE: 2019-10-25

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Observations of incidental wildlife were documented during each of the 2019 site visits. In total, 13 bird species were observed incidentally during the 2019 field program. A list of breeding birds heard and/or observed is shown in **Appendix B3**. Species significance was evaluated based on their federal and provincial status levels.

Wetlands

No wetland vegetation communities, including PSW, evaluated non-significant wetlands, as well as unevaluated wetlands were identified in the study area.

Fish Habitat

The Knister Drain is located along County Road 46/Middle Road; based on results of the background review, potential habitat for Maple Leaf Mussel (*Quadrula quadrula*), a species listed as Threatened under the federal *Species at Risk Act, 2002* (SARA) and Special Concern under the provincial *Endangered Species Act, 2007* (ESA) was identified within the Knister Drain. According to Agricultural Maps (AgMaps) the Knister Drain is classified by the Department of Fisheries and Oceans (DFO) as “Intermittent” (F); intermittent drains are dry for at least three months of the year and therefore provide habitat for a portion of the season (AFRA, 2019; DFO, 2017).

An aquatic assessment of the Knister Drain was performed on May 21, 2019; during which low flow was observed. The feature flows in a westerly direction and eventually outlets to the Ruscom River located approximately 1.2 km downstream of the study area. At the time of the assessment the feature was observed to have a small amount of flow with a mean wetted width of approximately 2 m and a mean wetted depth of approximately 0.5 m. Clay was the dominant substrate observed, with areas of cobble also documented. While instream organic debris and emergent vegetation within the drain provides potential cover for fish, manicured lands on the banks provide low riparian cover (**Attachment C** – Photos 7 – 9). Where emergent vegetation was present within the drain, it was dominated by European Common Reed (*Phragmites australis ssp. australis*), an invasive species.

Based on the results from aquatic assessment, the Knister Drain likely provides fish habitat and contributes flows and nutrients to downstream Ruscom River. Furthermore, as Mapleleaf mussels (*Quadrula quadrula*; a species of bivalve federally listed as “Special Concern” federally

and provincially) are usually found in medium to large rivers with slow and moderate flow, and require substrates consisting of dense sand, coarse gravel, and mud, the Knister Drain likely does not provide suitable habitat for Mapleleaf (MNRF, 2019). While habitat may not exist within the study area, it is possible that flow from the drain contributes to Mapleleaf habitat in association with the Ruscom River, outside of the study area.

Woodlands

No woodland features were identified within the study area in Schedule B1 and Schedule B.2 of the County of Essex Official Plan (2014) or the Town Official Plan (2010), respectively. Furthermore, a desktop ELC mapping exercise of the study area did not identify any woodland features; this finding was confirmed during the 2019 field investigations.

Valleylands

Valleylands are natural areas that occur in a valley or other landform depressions in which water flows or stands for part of the year (PPS, 2014). Significant Valleylands are valleylands that are “ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system” (MNR, 2010).

Valleylands were not identified in the study area. Furthermore, drains that bisect agricultural lands within the study area are not associated with valleyland features. The closest designated Significant Valleylands feature is located approximately 660 m west of the study area (ERCA, 2018); this feature is associated with the Ruscom River.

Species at Risk

In June 2008, the ESA came into effect in Ontario. The purpose of the ESA is to identify SAR based on the best available scientific information; to protect SAR and their habitats, to promote the recovery of SAR; and to promote stewardship activities to assist in the protection and recovery of SAR in Ontario. There are two applicable regulations under the ESA; O. Reg. 230/08 (Species at Risk Ontario [SARO] list), and O. Reg. 242/08 (General). These regulation serve to identify which species and habitat receive protection and provide direction on the current implementation of the ESA by the MECP. The ESA applies to lands under the jurisdiction of Ontario.

Similarly, SARA was adopted in 2002 by the Government of Canada to protect SAR and their habitat. Section 27 under SARA provides a list of wildlife SAR that are protected under the Act. Sections 32 and 56 outline general prohibitions and protection of critical habitat of SAR. These Sections serve to identify which species and habitat receive protection and provide direction on the current implementation of the SARA by the Government of Canada. The SARA applies to lands under federal jurisdiction; within the study area the SARA applies to the municipal drains.

Based on information obtained from the NHIC (2018 database), the MNRF, and from field investigations, one SAR (Eastern Foxsnake, (*Pantherophis gloydi*; Carolinian Population)) was identified as having the potential to occur within the study area. A detailed SAR screening was completed and is presented in **Appendix B4**.

While initial screenings for the study area identified the potential for Bobolink (*Dolichonyx oryzivorus*; Threatened), Barn Swallow (*Hirundo rustica*; Threatened) and Mapleleaf (Special Concern) to occur, assessments of vegetation communities, areas of potential impact, and aquatic environments rules out the presence of potential habitat for these species. Suitable grassland communities for Bobolink were not identified within the study area during the 2019 field investigations, and the aquatic assessments determined that conditions provided by the Knister Drain were inadequate to support Mapleleaf. Furthermore, Barn Swallow were incidentally observed foraging over agricultural lands within the study area; potential breeding habitat for this species exists in association with agricultural infrastructure and residential properties within the study area. Agricultural infrastructure with the potential to be impacted (e.g. displaced) as a result of the proposed Project was assessed for presence of Barn Swallow nests on October 30, 2019; no nests were observed.

In accordance with the Ontario Ministry of Natural Resources and Forestry Survey Protocol for Ontario's Species at Risk Snakes (2016), ten visual encounter surveys (VES) were conducted within the study area during the 2019. Surveys were completed within the study area where access was granted. In addition, road surveys for snakes were conducted along municipal roads of the study area. VES and road surveys were initiated on May 6 and continued until October 18. Consistent with the survey protocols, five of the 10 surveys were completed prior to July 1. VES for basking snakes in appropriate habitat of the study area

were conducted during appropriate weather conditions and times of day. No Eastern Foxsnake, or any other snake species were observed during 2019 surveys.

Wildlife and Significant Habitat

The presence of significant wildlife habitat (SWH) was assessed according to the Significant Wildlife Habitat Technical Guide (MNRF, 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015). Habitat types considered include: seasonal concentration areas of animals; rare vegetation communities or specialized habitat for wildlife; habitat for species of conservation concern; and animal movement corridors. Common large and small mammals in the study area include: white-tailed deer (*Odocoileus virginianus*), grey squirrel (*Sciurus carolinensis*), Eastern cottontail (*Sylvilagus floridanus*), and raccoon (*Procyon lotor*). Other common wildlife present in the area include species of birds, reptiles, amphibians, fish and Lepidoptera (e.g., moths and butterflies).

Seasonal Concentration Areas of Animals

Seasonal concentration areas of animals are considered to be areas where large numbers of a species gather together at one time of the year, or where several species congregate on an annual basis, such as deer yards; amphibian breeding ponds; snake and bat hibernacula; waterfowl staging and moulting areas; raptor nesting habitat; bird nesting colonies; shorebird staging areas; and passerine migration concentration areas.

Following the results of the desktop review and 2019 field investigations no SWH for seasonal concentration areas of animals were identified within the study area.

Rare Vegetation Communities or Specialized Habitat for Wildlife

Rare vegetation communities are vegetation communities that are considered rare in the province. Generally, communities assigned a provincial conservation rank of S1 to S3 (extremely rare to rare-uncommon) by the NHIC would qualify. Based on desktop review and 2019 field investigations, it was determined that study area does not contain natural vegetation communities. Therefore, no further assessment is warranted.

Specialized habitat for wildlife is habitat that provides a critical resource for a group of wildlife. Examples include waterfowl nesting areas, turtle nesting areas and raptor nesting habitat.

Based on desktop reviews and field investigations, it was determined that no specialized habitats for wildlife were identified within the study area.

Habitat for Species of Conservation Concern

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015) defines five habitats of species of conservation concern that may be considered significant wildlife habitat:

- Marsh bird breeding habitat;
- Open country bird breeding habitat;
- Shrub/early successional bird breeding habitat;
- Terrestrial crayfish habitat; and,
- Special concern and rare wildlife species habitat.

Based on ELC mapping, no wetland or early successional vegetation communities are present within the study area; therefore, SWH for marsh bird breeding or shrub/early successional breeding birds does not exist.

In addition, indicator species for open country bird breeding habitat listed in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E were not identified as incidental wildlife observations in the study area. While extensive agricultural habitat is present throughout the study area and adjacent lands, ELC mapping confirms the absence of open country bird habitat within the study area.

While drains located throughout the study area may provide areas of open aquatic habitat, suitable marsh habitat for terrestrial crayfish does not exist.

As mentioned previously, habitat for Mapleleaf Mussel; a Species of Conservation Concern, SCC) was identified by DFO within the Knister Drain located north of the proposed SS and TS within the study area (DFO, 2018; ERCA, 2018). Based on a 2019 Aquatic Habitat Assessment of Knister Drain, it was determined that the habitat within the Drain is likely not suitable for Mapleleaf.

Animal Movement Corridors

The Significant Wildlife Habitat Technical Guide (MNR, 2000) defines animal movement corridors as elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another. To qualify as SWH, these corridors need to be a critical link between habitats that are regularly used by wildlife. Specifically, The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015) identify habitat criteria for amphibian movement corridors. Amphibians require corridors consisting of waterways unbroken by roads with riparian vegetation or woodlands providing coverage on either side (MNRF 2015).

Drains present within study area are not associated with riparian corridors wide enough (>15 m) to meet minimum criteria to provide suitable habitat for amphibian animal movement corridors (MNRF 2015). As the remaining landscape of the study area consists of open agricultural fields, SWH for animal movement corridors does not exist within the study area.

Non-Native and Invasive Species

Vegetation associated with drains and surface water features have been disturbed by past and ongoing land use, and as a result contain non-native species which are not associated with conservation rankings. Vegetation within the RoW was comprised mainly of grass and forb species, and was observed to consist of non-native and invasive species. The presence of invasive species is likely attributed to ongoing and past clearing activities within the cultural landscape. A complete list of species observed is provided in the Existing Conditions Technical Memo within **Appendix B3**.

Significant Areas of Natural and Scientific Interest

ANSIs are designated by the MNRF based on the presence of unique natural landscapes or existing features that meet specific criteria as having life or earth science values related to protection, scientific study or education. No ANSIs were identified within the study area (MNRF, 2018).

4.7 Recreational Resources

No recreational resources (i.e. trails, parks golf clubs, and public sport facilities) are located within the study area.

4.8 Visual and Aesthetic Resources

This factor considers the physical appearances of different landscapes and their susceptibility to change due to the imposition of transmission facilities.

The proposed Project will be located adjacent to the Leamington JCT; agricultural lands adjacent to the JCT and within the study area are anticipated to be owned by Hydro One at the time of project construction. The Leamington JCT and adjacent lands are entirely located within active agricultural lands.

Given that the study area is dominated by active agriculture, coupled with the fact that the SS and TS will be located adjacent to existing electrical transmission infrastructure within a rural environment, visual simulations for the proposed Project were not completed. There are potential opportunities to provide visual screening (e.g. vegetated berms, shrub hedgerows, etc.) to the SS and TS for residents both within the study area and local to the area. The exact location of the SS and TS, including associated infrastructure and potential visual screening measures, will be determined during detailed design, after the Class EA is completed.

5 Alternative Station Configurations

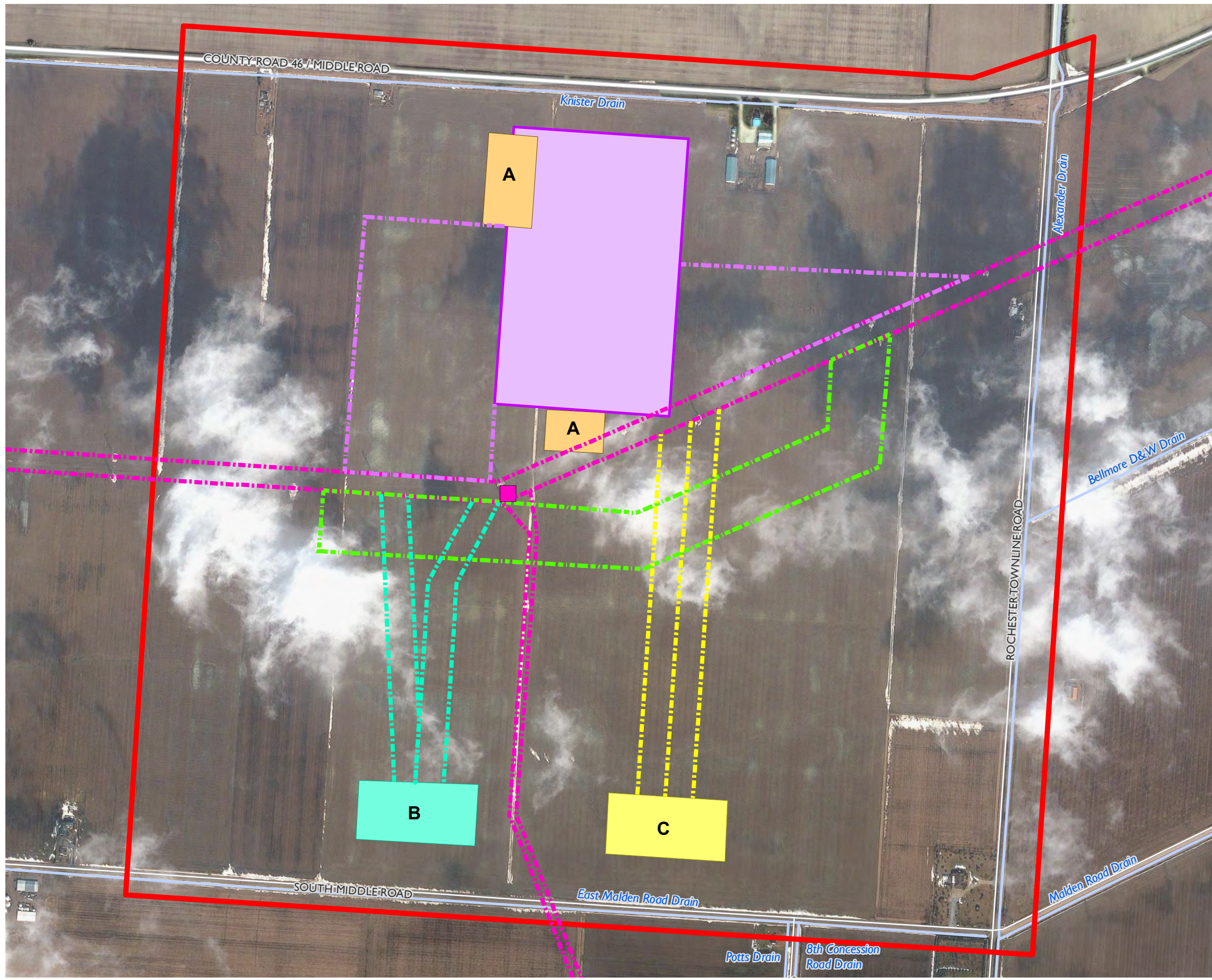
As previously described in **Section 1.3**, a single technically feasible location for the 230 kV SS was identified early in the Class EA process, north of the existing Leamington JCT. The location of the SS for the proposed Project will be located north of the Leamington JCT and south of County Road 46/Middle Road. In regards to the location of the four transformers, the project team assessed the following three alternatives within the study area:

Alternative A: Adjoined to the SS;

Alternative B: Separate, and to the southwest of the SS; and

Alternative C: Separate, and to the southeast of the SS.

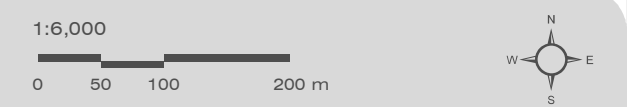
The alternative TS locations are illustrated in **Figure 5-1**



HYDRO ONE NETWORKS INC.
LAKESHORE TRANSMISSION STATIONS PROJECT
 CLASS ENVIRONMENTAL ASSESSMENT

ALTERNATIVE STATION CONFIGURATIONS
FIGURE 5-1

- Study Area
- Junction
- Existing 230 kV Electrical Transmission
- Major Road
- Minor Road
- Watercourse / Constructed Drain
- Proposed Hydro One Temporary Bypass Transmission Corridor
- Proposed Transmission Line Tap Connection
- Alternative Transformer Site B Transmission Corridor
- Alternative Transformer Site C Transmission Corridor
- Alternative Transformer Site A – 2 Transformers each (4 total)
- Alternative Transformer Site B – 4 Transformers
- Alternative Transformer Site C – 4 Transformers
- Proposed Switching Station



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



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Alternative A: Adjoined to the Switching Station

For Alternative A, the four transformers will be positioned adjacent to the SS: two transformers, including associated infrastructure, are located on the south side of the SS; the remaining two transformers, including associated infrastructure, are located at the northwest corner of the SS. Access to the TS would be provided through the proposed SS access off County Road 46 (Middle Road).

Alternative B: Separate, and to the southwest of the Switching Station

For Alternative B, the position of the four transformers associated with the TS are positioned southwest of the SS and the existing Leamington JCT. Access to the TS for Alternative B is proposed off South Middle Road.

Alternative C: Separate, and to the southeast of the SS.

For Alternative C, the position of the four transformers are located southeast of the SS and the existing Leamington JCT. Access to the TS for Alternative C will be provided off South Middle Road.

Table 5-1 provides the evaluation criteria assessed when making the determination regarding the preferred alternative for the TS.

Table 5-1: Evaluation Criteria

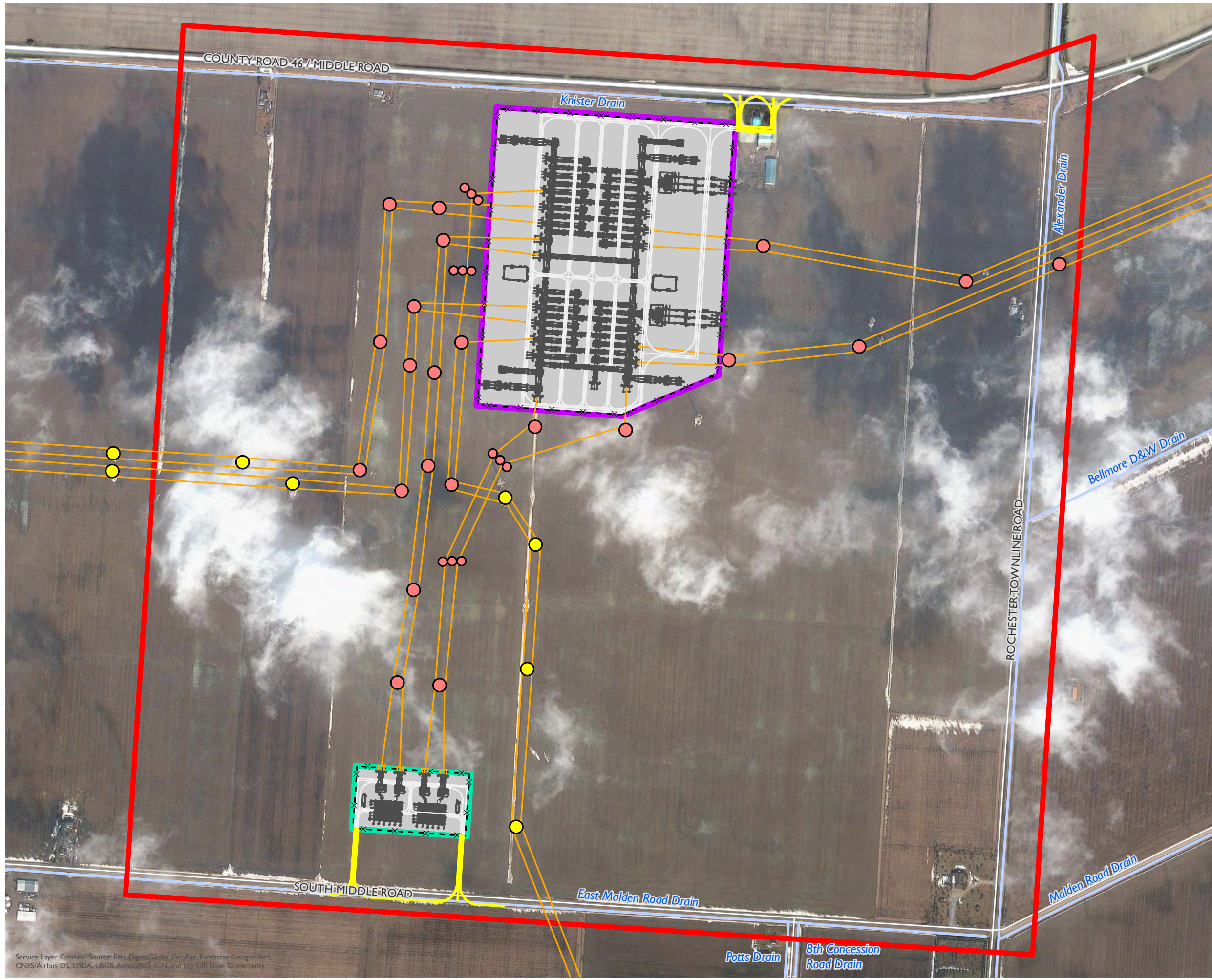
Category	Criteria
Technical & Cost Considerations	<ul style="list-style-type: none"> • Ease of construction; and • Cost.
Natural Environment Considerations	<ul style="list-style-type: none"> • Potential effect on vegetation; • Potential effect on water bodies or aquatic habitat; • Potential effect on terrestrial wildlife; • Proximity to potential natural hazards (erosion, flooding); and • Potential effect on SAR / sensitive species.
Socio-Economic Considerations	<ul style="list-style-type: none"> • Proximity to residences; • Proximity to existing infrastructure; • Potential effect on agricultural lands and resources; • Potential effect on archaeological or built heritage resources; and • Potential effect to Indigenous interests.

5.1 The Preferred Alternative

Due to the reductions to construction staging timeline, cost, avoidance of underground utilities and possibility for future expansions, Alternative B was the preferred alternative for station configuration in support of the proposed Project (**Figure 5-2**). **Table 5-2** reflects the evaluation completed on the station configuration alternatives.

Table 5-2: Evaluation of the Preferred Alternative

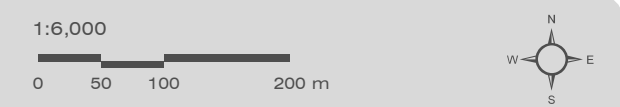
Criteria	Alternative A (refer to Figure 5-1)	Alternative B (refer to Figure 5-1)	Alternative C (refer to Figure 5-1)
Technical and Cost			
Constructability	Not Preferred	Preferred	Not Preferred
Cost	Not Preferred	Preferred	Preferred
Natural Environment			
Vegetation	No Preference		
Aquatic habitat/waterbodies	No Preference		
Terrestrial wildlife	No Preference		
Potential natural hazard	No Preference		
SAR and sensitive species	No Preference		
Socio-Economic Environment			
Distance from residences	Not Preferred	Preferred	Not Preferred
Proximity to existing infrastructure	Preferred	Preferred	Not Preferred
Total project footprint/size, and effects on agriculture	Preferred	Not Preferred	Not Preferred
Archaeology & built heritage resources	No Preference		
Source water protection	No Preference		
Indigenous interests	No Preference		



HYDRO ONE NETWORKS INC.
LAKESHORE TRANSMISSION STATIONS PROJECT
 CLASS ENVIRONMENTAL ASSESSMENT

PREFERRED ALTERNATIVE
FIGURE 5-2

- Study Area
- Major Road
- Minor Road
- Watercourse / Constructed Drain
- Existing Transmission Tower
- Proposed Transmission Tower
- Proposed Station Entrance
- Transmission Line
- Access Road
- Station Fence
- Proposed Site Plan
- Switching Station
- Transformer Station



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF

MAP CREATED BY: LK
 MAP CHECKED BY: CV
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-9558
 STATUS: DRAFT
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6 Project Description

The proposed Project is similar to many other projects completed by Hydro One. Based on the assessment completed by IESO on the electrical load forecast for Essex County, the IESO requested Hydro One to construct a new SS to help meet the growing needs of the area. In addition to IESO's request, Hydro One also identified the need for additional transformers in order to supply more low-voltage electricity to homes and business in the area.

The proposed Project involves a new 230 kV SS and a separate 230/27.6 (/44 kV) kV TS, which together will:

- Improve reliability of the transmission system in Essex County; and,
- Supply the distribution system which carries power to local homes and businesses.

The SS will include the following equipment:

- An all-weather permanent access road with controlled access;
- Station chain-link fence, drainage system, and grounding grid;
- Outdoor 230 kV switchyard with SF₆ circuit breakers, disconnect switches, interconnecting buswork as well as associated equipment such as station service, current and voltage transformers and lightning arrestors;
- 230 kV shunt capacitor banks equipped with surge capacitors;
- 230 kV current limiting reactors;
- Two (2) relay control buildings with washroom facilities; and,
- One standby (backup) 800 kW diesel generator.

The TS will include the following equipment:

- A new all-weather permanent access road with controlled access;
- Station chain-link fence, drainage system, and grounding grid;
- Four 125 MVA 230/27.6 kV transformers (with the potential for two of these transformers will be replaced with 230/44 kV transformers, which will be determined during detailed design);

- Containment systems for the transformers, including an oil-water separator;
- Outdoor 230 kV and 27.6 kV (and potentially 44 kV) switchyards with SF₆ circuit breakers, disconnect switches, interconnecting buswork as well as associated equipment such as station service, current and voltage transformers and lightning arrestors; and,
- Two (2) protection & control buildings.

Both the SS and TS will have associated new 230 kV transmission structures outside of the station fence, to connect the stations to the existing adjacent 230 kV transmission circuits. At the outset of construction, a new temporary 230 kV transmission line bypass will be constructed within the Class EA study area, to allow for the existing transmission circuits in the area to be taken out of service during construction without disrupting the flow of electricity to the Windsor-Essex area. This temporary bypass transmission line will be removed shortly following completion of construction.

Refer to **Figure 6-1** for an example of a typical SS, **Figure 6-2** for an example of a typical TS and **Figure 6-3** for an example of the types of transmission structures (i.e. towers) proposed for the Project.



Figure 6-1: Example of Typical Switching Station



Figure 6-2: Example of Typical Transformer Station

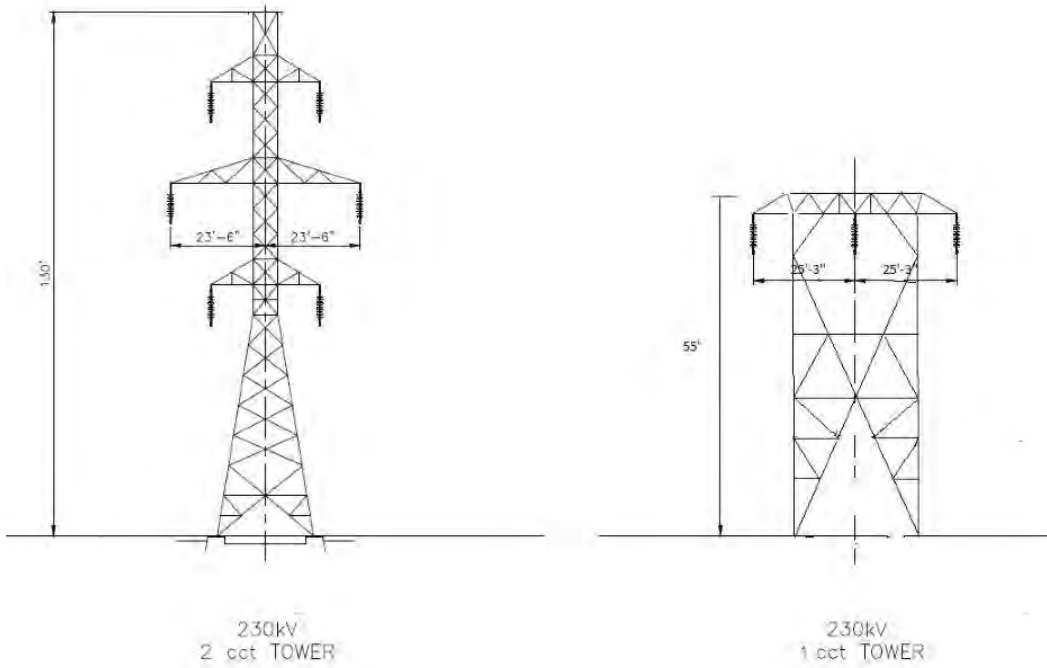


Figure 6-3: Example Designs of Proposed Transmission Structures

6.1 Design Phase

Following completion of the Class EA process, detailed engineering and design for the proposed Project will be undertaken. The final design plans will be based on necessary surveys and consultation, including a geotechnical survey and soil resistivity test. Formal names for both stations will also be determined during the detailed design phase. Concurrent with finalization of the design, required permits, licences and approvals, as listed in **Section 1.4.2**, will be obtained. Hydro One would also finalize site layout plans, including vegetative plantings and seeding, for areas that will not be returned to agricultural use, in consultation with the appropriate stakeholders as necessary.

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 have been engineered to adequately withstand the effects of climate change throughout the duration of their planned lifespan.

6.2 Construction Phase

Construction activities would be guided by 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. Prior to construction, a detailed project-specific Environmental Specification will be developed. Construction activities will be restricted to designated work areas and protective barriers, such as fencing, would be erected to protect adjacent features from construction related effects.

Throughout the construction period, an Environmental Specialist will be available to inform construction crews about potential environmental effects and mitigation requirements, as well as to address unforeseen environmental effects and develop or adjust mitigation measures accordingly. The Environmental Specialist will monitor activities to ensure conformance with the requirements set out in the environmental specification that will be prepared for the project.

Upon completion of construction, clean up and restoration (e.g., seeding, plantings, etc.) of areas disturbed by construction would 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.

Should any archaeological finds be uncovered during construction, work will stop immediately pending assessment by the project archaeologist and further consultation with the MHSTCI, as well as First Nations communities.

6.2.1 Switching Station and Transformer Station Construction Work

Construction of the SS and TS transmission lines for the proposed Project would involve the following activities:

- Site preparation such as sediment and erosion control measures, vegetation removal, grading, temporary access and laydown area;
- Construction of temporary 230 kV bypass line to ensure continued power;
- Demolition of existing agricultural buildings and structures at the property;
- Installation of station fences (i.e. protective barriers), entrances, concrete foundations and station drainage;
- Installation of new/refurbished transmission line structures and station electrical equipment;
- Delivery and installation of new transformers and other station equipment;
- Construction of new relay and protection & control buildings;
- Delivery and installation of a new standby 800 kW diesel generator at the SS;
- Connection of transmission lines and station electrical equipment, testing and commissioning; and,
- Site cleanup and reclamation.

Hydro One will be installing additional distribution lines to carry power from the new stations to customers in the vicinity. These distribution power lines are expected to be on the road allowance of South Middle Road/County Road 31, Lakeshore Road 243, Lakeshore Road 245, and Rochester Townline Road. Distribution lines are not subject to environmental assessment under the EA Act, however Hydro One will be contacting affected property owners and road authorities in advance of construction.

6.2.2 *Temporary Working Space, Access and Laydown Areas*

Temporary facilities for the purpose of the proposed Project will include equipment staging areas and temporary stockpile areas. Temporary facilities will be required prior to, and during, the construction period. The location of the temporary facilities will be determined by the project team and their contractor(s) during detail design/construction planning. It is anticipated that the temporary facilities will be located entirely within Hydro One owned lands.

6.3 Maintenance, Operation and Retirement Phases

The proposed Project is scheduled to be in service by late 2023. The SS and TS would undergo regular maintenance in adherence with Hydro One's maintenance standards and regulatory requirements to maintain a safe and reliable electricity transmission system.

In June 2019, the IESO formally requested Hydro One to begin development work for a new double-circuit 230 kV transmission line from the Chatham SS in Chatham-Kent, to the proposed Lakeshore SS/TS, where the line will terminate. The purpose of this new transmission line is to increase the overall electrical supply capability to the Windsor-Essex Region. This new transmission line will require its own environmental assessment and planning process. Environmental assessment work for this new double-circuit 230 kV transmission line is expected to commence in 2020. More details regarding the needs and solution options considered to reinforce the bulk transmission system west of Chatham are documented in the IESO's report entitled "Need for Bulk Transmission Reinforcement in the Windsor-Essex Region (June 13, 2019)".

In addition to the 230 kV switching equipment described above, the SS will also contain sufficient space to include two potential future 500 kV autotransformers and switching equipment. Currently, there is no 500 kV bulk supply to the Windsor-Essex area. It is expected that the ultimate stage of the Lakeshore SS will also serve as a 500 kV/230 kV TS, although no timeline for the installation of these facilities has been identified and their need will depend on future regional electrical demand trends and forecasts. Installation of two 500 kV transformers and associated switching facilities at the Lakeshore SS will require a new double-circuit 500 kV transmission line to connect the station to the existing 500 kV bulk system; a

new 500 kV line such as this would require its own planning process and environmental assessment when this need is firmly identified in the future.

When transmission facilities become obsolete or unserviceable, the equipment is retired from service. The facilities may be removed and the site made suitable for other purposes. The foundations are typically cut back 0.5 m below ground surface when transmission structures are removed.

If a station site is suspected to be environmentally contaminated, the decommissioning of facilities will follow the guidance provided by O. Reg. 153/04 of the *Environmental Protection Act*.

6.4 Project Schedule

The anticipated schedule for proposed Project activities is provided below in **Table 6-1**. This schedule shows key steps remaining in the Class EA process and subsequent anticipated timing of the start of construction and commissioning of the transmission line upgrade.

Table 6-1: Project Schedule

ACTIVITY	PERIOD
Release of draft ESR and start of review period	November 2019
Comment integration and response	December 2019
Filing of final ESR with the MOECC	December 2019/January 2020
Detailed engineering and permitting	Early 2020
Anticipated start of construction	Mid-2020
Anticipated construction completion	Late 2023

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 effects and mitigation assessment considered the baseline information on the environmental features that was collected for the study area as presented in **Section 4**. If resources were determined to be not present in the study area during the collection of the baseline information, they were not included in this section.

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 and social analysis and mitigation of potential environmental effects.

The selection of mitigation measures are based on the following seven principles:

- Avoidance of sensitive areas, where practical;
- Avoidance of watercourse crossings, where feasible, by use of an existing nearby crossing, access to structures from either side of the watercourse, or use of off-corridor access;
- Appropriate timing of construction activities, where feasible, to avoid sensitive time periods, such as fish spawning and egg incubation periods, or migratory bird nesting periods;
- Proactive communication with area residents and businesses on proposed Project timelines and construction areas;
- Proactive communication with First Nation and Métis communities, government agencies, stakeholders 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 EA document (Hydro One, 2016), 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 and where practical.

Based on the project design and implementation of the proposed mitigation measures, no significant adverse or residual effects (i.e., effects following the implementation of mitigation) are expected.

7.1 Agricultural Resources

Lands associated with the proposed Project are located entirely within active agriculture lands. Having construction equipment cross through agricultural fields may be disruptive to farm operations. Permanent loss of agricultural land would occur in the footprint of the SS and TS (including access roads), while temporary crop loss would occur during the construction period in association with temporary facilities (e.g. staging areas). As discussed in **Section 5.0**, access to the site will be provided through the existing entrance off of County Road 46/Middle Road. The existing entrance was assessed and determined to be sufficient to serve as the primary SS entrance during the construction and operation phase without requiring modification; if this existing entrance is later determined to be insufficient, a new permanent entrance will be sought from Rochester Townline Rd. to the east (rather than from Middle Rd to the north) to avoid any new crossings/structures over or direct disturbance to the Knister drain. A new access off South Middle Road will be constructed in support of the TS.

The mitigation measures that will be implemented to minimize potential effects of the proposed Project on agriculture and soils are as follows:

- Maintain existing agricultural uses within the study area to the extent practical;
- Maintain existing agricultural access to the extent possible;
- Temporary access roads would be built using geotextile and crushed rock and would be removed in agricultural lands after construction is complete; and,
- Contact would be maintained with adjacent land owners/tenants regarding work schedule, fencing, gates, noise, tiles and remediation measures.

Hydro One will make all efforts to design the proposed Project in order to minimize the footprint of the stations and associated infrastructure, and to maximize the available land for agricultural use.

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 for the proposed Project.

7.3 Archaeological and Cultural Heritage Resources

The Stage 1 archaeological background review memo commissioned by Hydro One indicated that much of the study area has archaeological potential and as such a Stage 2 archaeological assessment will be completed during detailed design, prior to commencing construction of the new transmission stations and associated structures. A formal Stage 1 archeological assessment report has been prepared and was submitted to the MHSTCI on January 7, 2020. As per commitments made to the Caldwell First Nation and the Walpole Island First Nation, those communities will be notified in advance of the Stage 2 archaeological survey work and will be provided with the opportunity to send their archaeological staff to observe the survey. Following completion of the Stage 2 Archeological survey, a Stage 2 report will be prepared and submitted to the MHSTCI.

No built heritage resources are anticipated to be affected by the proposed Project. The existing agricultural buildings and structures on the property will likely need to be demolished during construction, although these structures are not anticipated to have any built heritage value. The potential for built heritage to be impacted as a result of the proposed Project is discussed in a memo provided by Wood PLC; the memo as well as a copy of the completed MHSTCI Built Heritage Checklist can be found in **Appendix B2**. Following completion of the Checklist, it was found that no work related to the construction of the proposed Project is anticipated to occur within a property that contains a building or structure that is 40 years or older. Rather, the new transformer station, switching station, new/rebuilt transmission lines, and proposed station entrances and site access points are contained within properties that did not meet the screening criteria for cultural heritage value contained in the Checklist.

In the event that archaeological material is encountered during construction, all activities with the potential to affect these materials will cease immediately and a licensed archaeologist will be engaged. Notification of such findings will be communicated to the MHSTCI. In the event that human remains are encountered, Hydro One will immediately stop work in the area and notify local police, the coroner's office, MHSTCI and the Registrar of Cemeteries. In addition, the Caldwell First Nation and Walpole Island First Nation will also be contacted so that, in the event such resources or remains are of First Nation origin, protocols for handling such resources can be established immediately prior to the disturbance or removal of such from the property.

7.4 Land Use and Communities

As indicated in **Section 4.4**, no settlement areas are located within the study area. The study area contains designated agricultural lands in both the Town of Lakeshore Official Plan and the County of Essex Official Plan. While it is a goal of both Official Plans to protect agricultural lands and resources, policies exist within the OPs to permit the expansion and improvement of utility infrastructure. The proposed Project is consistent with these policies.

Construction sites pose potential safety hazards to local land users and residents due to the operation of heavy construction equipment, if not appropriately controlled. Workplace safety and public safety are leading priorities at Hydro One. Hydro One mitigates safety issues by implementing safety measures in accordance with its Public Safety Policy and Ministry of Labour requirements during construction. This includes ensuring that the replacement and installation procedures are executed in accordance with applicable codes and regulations.

To minimize the effects of construction on public safety, Hydro One and contractors will undertake a wide range of safety measures, such as:

- Secure construction laydown areas using fencing and locks to the extent practical, with appropriate signage to prevent unauthorized access and injury;
- Develop the construction schedule in consultation with the Town of Lakeshore and County of Essex to avoid potential large, pre-scheduled community or other events to the extent practical;
- Provide the final construction schedule to emergency and protective services;

- Informing adjacent residents, landowners, and businesses of the proposed project activities prior to construction; and,
- Install appropriate barriers in select locations that are more heavily used by the public to further maintain public safety and prevent unauthorized access to work areas.

During construction, local residents residing in the dwellings adjacent to the proposed Project may experience some temporary localized nuisance effects. Nuisance effects are subjective, and the magnitude of the effect would vary depending on the individual and their location in relation to construction activities. Noticeable nuisance effects relating to air quality, noise, vibration, and mud could occur intermittently during the construction phase of the project. Further information is provided below.

Air Quality

Construction activities have the potential to create temporary, localized effects on 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. These emissions, in turn, may create a nuisance or disturbance effect for local residents and land users during the construction phase.

Mitigation measures to reduce potential nuisance effects of dust and air emissions include the following:

- Ensure construction equipment is properly maintained and used according to the manufacturer's specifications to minimize exhaust;
- Adhering to Hydro One's Fleet Environmental Program (anti-idling requirements and global positioning system [GPS] installation in vehicles to optimize routing);
- Utilizing effective dust suppression techniques, such as on-site watering and road cleaning, as necessary;
- Use appropriate earth moving practices; and,
- Limit construction activities during high wind events.

Significant emissions from maintenance activities during operation would be variable, are expected to be short in duration, and would occur periodically over the life of the proposed

Project. Nuisance effects posed by these by these temporary activities are expected to be negligible and would not result in noticeable or long-term changes to local air quality.

The SS will include one standby diesel generator, anticipated to be rated at 800 kW. This generator will only run periodically, where needed as a backup power source to operate the switching equipment within the SS (i.e., if the primary distribution voltage supply is unavailable), or as required for occasional maintenance or testing purposes. This generator is expected to be located near the centre of the SS. Given the anticipated rating of the diesel generator (800 kW), it is assumed that emissions modeling and a subsequent ECA for air and noise emissions from this generator will be required from the MECP. If a lower-rated diesel generator is selected, ECA may not be required. It is anticipated that the net effects on local air quality will be negligible and that no additional mitigation will be required.

Noise

The proposed Project activities have the potential to affect ambient noise levels during the construction phase. These effects, in turn, may create a temporary nuisance or disturbance effect for local residents and land users.

All work is expected to be completed using common construction methods. The noise associated with construction would most likely be a result of activities, such as general site grading, foundation work and construction traffic. All of the activities would require the use of various piece of heavy equipment, such as bulldozers, front-end loaders, small trucks, backhoes, bobcats, dump trucks, compactors, concrete trucks and/or cranes. The movement of delivery and worker vehicles would also add to the noise levels during the construction period.

Noise sources and noise levels from maintenance activities after construction would be variable, are expected to be limited to a short duration, and would occur periodically over the life of the proposed facility. With the exception of periodic maintenance activities, no additional noise sources are expected as a result of the maintenance activities. Therefore, no additional mitigation is required for noise during the maintenance and operation of the SS and TS.

Transformers will produce a humming sound when energized and are usually equipped with cooling fans which contribute sound when operated occasionally. Noise can be readily mitigated with conventional technology (e.g., transformer selection, noise enclosures, noise barriers, etc.). Prior to the installation of the transformers, Hydro One will complete an Acoustic Assessment Report (AAR) for the TS and submit for a noise EASR from the MECP.

The SS will include one standby diesel generator, anticipated to be rated at 800 kW. This generator will only run periodically, where needed as a backup power source to operate the switching equipment within the SS (i.e., if the primary distribution voltage supply is unavailable), or as required for occasional maintenance or testing purposes. This generator is expected to be located near the centre of the SS. Given the anticipated rating of the diesel generator (800 kW), it is assumed that an ECA for air and noise emissions will be required from the MECP. If a lower-rated diesel generator is selected, an ECA may not be required.

It is anticipated that the transformers and standby diesel generator will have negligible net effects to nearby receptors. If noise modeling indicates that noise levels at nearby receptors will be above MECP guidelines, noise mitigation will be applied. A preliminary environmental noise checklist for the Lakeshore SS and TS can be found in **Appendix E**.

Noise effects during the construction period will be short-term and temporary. Mitigation measures to reduce potential nuisance effects resulting from noise include the following:

- Ensure construction equipment is properly maintained and used according to the manufacturer's specifications to minimize noise and ensure operation conforms to acceptable noise limits (e.g. proper maintenance of equipment, muffling systems, minimum idling of equipment and vehicles);
- Consider the potential for noise when selecting equipment, construction work methods and schedule; and,
- Taking reasonable measures to control construction-related noise near residential areas.

Construction activities will conform to the Town of Lakeshore noise by-laws (By-Law No. 106-2007). The project team and/or the contractor will seek a noise by-law exemption if work is required outside of the hours specified in the by-law (e.g. overnight).

Vibration

Construction activities have the potential to affect vibration levels during the construction phase, causing nuisance and disturbance effects to local residents and land users in the vicinity of the proposed Project.

Mitigation measures to reduce potential nuisance effects resulting from vibration include:

- Considering vibration when selecting equipment, construction work methods, and schedule; and,
- Taking reasonable measures to control vibration related to project construction near residences.

It is anticipated that construction vibration would be temporary in nature, occur only during specific activities, and limited to the immediate vicinity of the construction work area.

Mud

Construction activities may result in the accumulation of mud in construction areas. Mud mats will be installed, as required, near site exits to loosen and shake off mud. Mud related to construction activities would be removed from access roads, and vehicles and equipment would be washed and maintained at work areas as necessary. Formal cleanup and site restoration (e.g., grass seeding), if necessary, would further minimize this potential project effect.

7.4.1 Land Use Planning

The footprint for the proposed Project is entirely located within lands designated as agriculture land use by the County of Essex Official Plan (Schedule A1) and the Town of Lakeshore Official Plan (Schedule C-1). While agricultural land uses are protected by the County of Essex and the Town of Lakeshore, utility corridors may be permitted within these agricultural lands if there is a need for growth and expansion to efficiently serve the public. Policies regarding the placement and need for utility corridors are defined in Section 2.11a of the County of Essex Official Plan as well as under Section 7.5 of the Town of Lakeshore Official Plan.

7.4.2 *Transportation*

There is some potential for disruption to vehicular traffic in the study area during the construction phase; however, it is expected to be minimal and temporary in nature.

If required, Hydro One and its contractors will develop a Traffic Management Plan in consultation with the Town of Lakeshore and the County of Essex. Advanced notice would be provided to the Town of Lakeshore and the County of Essex, adjacent landowners and emergency response services outlining the location of entry/exit points for construction sites as well as the schedule for construction work in those areas. Road signage and flag persons would also be used, as necessary.

7.4.3 *First Nations Lands and Territory*

As indicated in **Section 4.4.3**, there are no First Nation Reserve Lands located within the study area. Hydro One is committed to developing and maintaining relationships of mutual respect between Hydro One and First Nation and Métis communities. Hydro One recognizes that First Nation and Métis communities and their lands are unique in Canada, with distinct legal, historical and cultural significance. Hydro One is committed to continue to engage with the First Nation communities as identified by the Crown to provide regular project updates.

During the consultation process, no First Nation communities expressed concerns regarding the proposed Project. The Caldwell First Nation asked to be informed of any archaeological artifacts encountered during the Project, and also asked to send their own archaeological staff to observe the upcoming Stage 2 Archaeological Assessment; Hydro One has agreed to accommodate both of these requests. The Walpole Island First Nation (Bkejwanong Territory) also asked to send their own archaeological staff to observe the upcoming Stage 2 Archaeological Assessment; this request will also be accommodated by Hydro One. Walpole Island First Nation also commented that any outages to the provincial transmission system may affect nearby renewable energy projects of which the First Nation is a partner; Hydro One staff explained that no outages were planned as part of this project and that a temporary transmission line bypass would be used during construction to maintain the flow of electricity on the existing transmission circuits.

Hydro One will continue to welcome questions, comments and feedback from the Caldwell First Nation and the Walpole Island First Nation, and will continue to provide project updates to both communities.

7.4.4 Human Health

EMF are invisible fields produced by electrically charged objects, such as electrical equipment, power cords, and wires that carry electricity. Although they are often referred to together as EMF, electric and magnetic fields are actually two distinct components of electricity. Hydro One is committed to meeting safe EMF exposure levels for all of their facilities and EMF are taken into consideration during the design of any new facility. This commitment ensures that Hydro One employees maintaining its facilities, as well as members of the public in the vicinity of these facilities are not exposed to elevated EMF levels.

Regarding research on EMF, Health Canada's conclusion is that there is no conclusive evidence of adverse health effects caused by EMF exposure from power lines (Health Canada, 2016). Health Canada's Fact Sheet that addresses issues related to EMF is available in **Appendix E**.

EMFs are strongest when close to their source. As you move away from the source, the strength of the fields fades rapidly. Standards specifying limits on exposure to EMFs include those published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP, 2010) and by Institute of Electrical and Electronics Engineers (IEEE, 2005). Within the right-of-way, only the IEEE Standard provides guidance for directly below overhead transmission line conductors, accepting electric field strengths up to 10,000 volts per metre (V/m). For magnetic fields, ICNIRP (2010) specifies 2000 milligauss (mG) for general public exposure outside of the right-of-way. The World Health Organization (WHO) has concluded that EMF exposures below the limits recommended in the ICNIRP/IEEE guidelines do not appear to have any known consequence on health.

EMF values from the proposed Project are expected to remain significantly below the general public exposure guidelines.

7.5 Mineral Resources

As discussed in **Section 4.5**, there are no areas within the study area used for the extraction of aggregate.

7.6 Natural Environment Resources

Based on desktop data and field surveys, natural environment resources were identified within the study area. Avoidance, minimization and mitigation measures for any potential impacts to natural environment resources were identified and are provided below.

7.6.1 *Physical Environment*

Physiography and Geology

With backfill, grading and site restoration following construction, physiography or surficial and bedrock geology in the vicinity of the proposed Project are not predicted to be affected. Therefore, no residual effects on the physical environment were identified for the proposed Project.

Spills

During construction, there is the possibility of spills from the release of oils and fuels from construction vehicles and equipment. There are a number of mitigation measures to reduce the risk of spills and to minimize the effect in the unlikely event that a spill occurs. These measures include the following:

- Refuelling of all vehicles and equipment in a designated location located away from sensitive receptors, such as municipal drains or surface drainage features;
- Locating spill cleanup equipment nearby and in Hydro One vehicles;
- Cleaning spills and remediating the site as soon as possible after a spill; and,
- Storing any fuels, chemicals and lubricants on level ground in properly contained storage areas.

Should a reportable spill occur, the MECP Spills Action Centre will be contacted and containment should occur as soon as possible.

Waste Generation

Construction waste will be generated by the proposed Project, and will need to be disposed of in regional landfills and recycling facilities. Waste generated during construction would be tested, handled, stored, transported, and disposed of at licensed recycling and waste disposal facilities, as required, in accordance with applicable legislation. Waste produced will be minimized, segregated, and recycled where possible.

7.6.2 Atmospheric Environment

Climate

It is important to note that with the exception of occasional use of a backup diesel generator, the proposed Project is not a power generation project and its operation will not emit greenhouse gases. However as mentioned in **Section 7.4**, there will be temporary emission of fossil fuels from the vehicles and equipment used to construct the new SS and TS transmission infrastructure. Hydro One adheres to initiatives such as anti-idling requirements and GPS installation in vehicles to optimize routing to reduce fossil fuel emissions. The emissions directly related to the construction and maintenance of this project would be minimal.

Sulphur Hexafluoride (SF₆) is a commercially available non-toxic gas, used by Hydro One and most utilities world-wide as an insulating medium. It is contained in sealed equipment and enables utilities to minimize the footprint of transmission facilities. SF₆ is an inert, colourless, odourless gas in its pure state. It is highly stable both chemically and thermally, and is non-flammable. While SF₆ is considered a greenhouse gas, procedures are in place to minimize leaks. Hydro One facilities are operated on full compliance with all applicable federal and provincial legislations regarding the use of SF₆ as an insulating medium.

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 have been engineered to adequately withstand the effects of climate change throughout the duration of their planned lifespan.

Air Quality

Construction has the potential to temporarily affect local air quality in the immediate vicinity of the proposed Project. See **Section 7.4** for additional information. It is anticipated that the net effects of construction activities on local air quality would be negligible and no additional mitigation is required.

The SS will include one standby diesel generator, anticipated to be rated at 800 kW. This generator will only run periodically, where needed as a backup power source to operate the switching equipment within the SS (i.e., if the primary distribution voltage supply is unavailable), or as required for occasional maintenance or testing purposes. This generator is expected to be located near the centre of the SS. Given the anticipated rating of the diesel generator (800 kW), it is assumed that emissions modeling and a subsequent ECA for air and noise emissions from this generator will be required from the MECP. If a lower-rated diesel generator is selected, ECA may not be required. It is anticipated that the net effects on local air quality will be negligible and that no additional mitigation will be required.

Noise and Vibration

There is also the potential for increased noise and vibration during the construction period; however, as noticed in **Section 7.4**, it is anticipated to be short-term and temporary. A total of four receptors were identified within the study area. **Section 7.4** provides additional information.

Transformers will produce a humming sound when energized and are usually equipped with cooling fans which contribute sound when operated occasionally. Noise can be readily mitigated with conventional technology (e.g., transformer selection, noise enclosures, noise barriers, etc.). Prior to the installation of the transformers, Hydro One will complete an Acoustic Assessment Report (AAR) for the TS and submit for a noise EASR from the MECP.

The SS will include one standby diesel generator, anticipated to be rated at 800 kW. This generator will only run periodically, where needed as a backup power source to operate the switching equipment within the SS (i.e., if the primary distribution voltage supply is unavailable), or as required for occasional maintenance or testing purposes. This generator is expected to be located near the centre of the SS. Given the anticipated rating of the diesel

generator (800 kW), it is assumed that an ECA for air and noise emissions will be required from the MECP. If a lower-rated diesel generator is selected, ECA may not be required.

It is anticipated that the transformers and standby diesel generator will have negligible net effects to nearby receptors. If noise modeling indicates that noise levels at nearby receptors will be above MECP guidelines, noise mitigation will be applied. A preliminary environmental noise checklist for the Lakeshore SS and TS can be found in **Appendix D**.

7.6.3 *Surface Water Resources*

During construction, the potential effects of the proposed Project on surface water include changes in surface water quantity or quality conditions in nearby municipal drains due to site preparation, earthworks and discharge of construction water, and operation of vehicles and equipment.

Construction of both stations will involve the installation of a sub-grade drainage system, which will function to drain away excess precipitation from the station surface to ensure a safe working environment within the station fence (i.e., free of standing/pooling water or saturated soils). These drainage systems will consist of buried perforated pipe situated below the station gravel surfaces, similar to the agricultural tile drainage that currently exists on the property. Each station will have a discharge outlet at a location to be determined during detailed design, and will be subject to Environmental Compliance Approval (ECA) under the *Environmental Protection Act*. In addition, there may be the need to re-route an agricultural surface drainage feature to accommodate the SS. The details of this possible re-routing will be addressed during detailed design, although it is currently not anticipated that the overall drainage patterns or flow volumes from the site will be drastically different than the current condition.

Surface Water Quantity

Proposed project activities during the construction phase that have the potential to influence surface water quantity conditions in nearby watercourses are:

- Site preparation, construction of the TS access road and laydown areas;
- Construction adjacent to municipal drains; and,
- Discharge of construction water from dewatering activities.

Site preparation, including activities such as removal of vegetation, locates/daylighting of potential existing buried utilities, and construction of access roads, would be required in support of the proposed Project.

The proposed location of the SS and TS is within agricultural lands adjacent to the Leamington JCT; prior to construction these lands are anticipated to be under Hydro One ownership. While it is anticipated that the proposed Project will utilize an existing entrance, the number and location of access roads and entrances would be established during the detailed design phase. Additional access entrances may be added off South Middle Road to access the TS. As the East Malden Road Drain is located south of South Middle Road, no crossings of the drain would be anticipated for additional access to the construction site. Similarly, if the existing entrance from Middle Road (existing crossing of the Knister drain) is later determined to be insufficient for Hydro One's purposes, a new permanent entrance will be sought from Rochester Townline Rd. to the east. Similar to the entrance from South Middle Road, a new entrance from Rochester Townline Rd. will avoid the need for a new crossing over a Municipal drain, and will only require crossing a standard roadside ditch.

Site preparation will also be required for laydown areas, the exact locations of which have not been established. It is expected that, where practical, these areas will be placed away from municipal drains.

During construction, it is expected that changes to streamflow and water levels in the municipal drain downgradient of disturbed land from the proposed Project may occur as a result of dewatering activities and as well as increases to impermeable areas.

At the end of construction, the work areas (i.e., construction access roads and laydown areas) may be removed and then seeded. Therefore, there would be negligible residual effects on surface water quantity as a result of site preparation activities.

The proposed Project will require the re-routing of the agricultural surface drainage feature in support of the SS. The re-routing of the agricultural surface drainage feature may result in local changes to flow conveyance conditions to the Knister Drain. Given the potential for the Knister Drain to affect aquatic SAR habitat (though limited), plans to re-route the agricultural surface drainage feature will be designed in consultation with the DFO and ERCA to ensure

that any potential impacts to the habitat are avoided, mitigated and restored to the extent feasible.

To avoid or minimize the potential adverse effects from the diversion of the agricultural surface drainage feature on surface water quantity, the following mitigation measures should be implemented:

- Select a design rainfall event based on the operating life of the agricultural surface drainage feature and a level of hydrologic risk consistent with existing regulatory guidelines and/or good industry practice;
- Design the surface drainage feature to convey the peak flow for the design rainfall event without constricting flow and causing backwater effects in the adjacent municipal drain;
- Re-route the surface drainage feature over a relatively short period of time; and,
- Undertake the work in consultation with ERCA and incorporate their feedback into design and construction.

With the implementation of the mitigation measures described above, the construction of the diverted surface drainage feature is not anticipated to have long-term residual effects on surface water quantity of adjacent municipal drains.

The removal and discharge of construction water may be required as a result of dewatering activities in holes or trenches related to foundations. Discharge is expected to occur to nearby lands. Discharge quantities are expected to be relatively minor. It is not expected that an Environmental Activity and Sector Registry (EASR) or PTTW would be required from the MECP, but this can only be established with certainty during detailed design. The discharge of construction water from dewatering activities may result in slight increases to surface water levels of municipal drains; however, much of the surface water discharged onto land could infiltrate through permeable agricultural lands.

To minimize the potential adverse effects of dewatering activities on surface water quantity conditions, the following mitigation measures would be implemented:

- Discharge construction water in compliance with the required permits and/or approvals from the MECP, if required; and,
- Develop and execute appropriate construction dewatering plans (e.g., passing discharge water through a filter bag or drum before discharge) prior to construction, as required.

With the implementation of the mitigation measures described above, and the short duration of the dewatering activities, dewatering activities are not anticipated to have long-term residual effects on surface water quantity in the receiving watercourses.

As the station drainage systems will simply convey precipitation and stormwater out of the stations and back to surface to follow the existing flow pathways, operation of the stations is not anticipated to have any significant effect on the overall surface water quantity.

Surface Water Quality

Project activities during the construction phase that have the potential to influence surface water quality conditions in nearby municipal drains are:

- Site preparation for the structures, stations, adjacent access road and laydown areas;
- Earthworks associated with the construction of the access road, laydown areas, puller pads, etc.;
- Discharge of construction water from dewatering activities to nearby lands; and,
- Operation of vehicles and equipment throughout the construction phase.

Site preparation will consist of removal of vegetation, rough grading, and stockpiling of materials. These activities would result in the temporary exposure and disturbance of soil with the potential for wind and water erosion and the transport of sediment to surface drainage features and municipal drains. Site preparation will also result in the temporary accumulation of cleared vegetation with the potential for mobilization of organic debris and its transport to municipal drains during runoff events. Earthworks would consist of excavation, fill, and stockpiling activities, and would similarly result in disturbance and exposure of soil and aggregates to wind and water erosion and the transport of sediment to municipal drains. It is expected that the subject lands for the proposed Project be restored to similar grades at the

various areas of disturbance, with the exception of some earth berms which may be constructed following station construction as permanent visual screening measures.

In order to avoid or minimize the potential adverse effects of site preparation activities on surface water quality in these receiving surface drainage features and municipal drains, the following mitigation measures will be implemented where practicable:

- Stage work to minimize the extent of exposed and disturbed areas at any given time;
- Remove cleared vegetation to designated areas away from municipal drains;
- Stockpile soil in designated areas away from municipal drains;
- Develop and execute site-specific erosion and sediment control plans, as required;
- Minimize equipment operation adjacent to municipal drains, where feasible;
- Retain vegetation buffers along the banks of municipal drains, where feasible;
- Carry out work in consultation with the ERCA and incorporate their feedback into design and construction; and,
- Notify the MECP Spills Action Centre of any reportable spills and ensure containment occurs as soon as possible.

With the implementation of the mitigation measures described above, and the short duration of the construction works, site preparation activities are not anticipated to have long-term residual effects on surface water quality conditions in nearby municipal drains.

The removal and discharge of construction water may be required as a result of dewatering activities in holes or trenches related to foundations. Though not anticipated, the need for an EASR or PTTW will be determined during detail design and will be obtained from the MECP if needed.

To minimize the potential adverse effects of dewatering activities on surface water quality conditions, the following mitigation measures would be implemented:

- Discharge construction water in compliance with the required permits and/or approvals from the MECP and the ERCA; and,

- Develop and execute appropriate construction dewatering plans prior to construction, as required.

With the implementation of the mitigation measures described above, and the short duration of the dewatering activities, dewatering activities are not anticipated to have long-term residual effects on surface water quality in the receiving municipal drains.

The TS will be fully equipped with spill containment for each 230 kV transformer and an oil/water separation facility. These facilities, in conjunction with the site drainage are subject to ECA under the *Environmental Protection Act*. These spill containment and oil-water separation systems are proven to be a highly effective means of managing discharge quality, and are similar in design to those installed within Hydro One transformer stations of various size across the province. An Emergency Response Plan (ERP) and spill response equipment (spill kits) will be located on site. Hydro One is confident that, in the event of equipment failure, mineral oil will not escape from the site. In addition, the transformers are designed to withstand the internal forces without tank rupture, under the specified Hydro One internal fault conditions.

In the event of a spill within containment, the event will be reported, managed and cleaned up in accordance with all relevant legislation.

7.6.4 *Groundwater Resources*

During construction, the potential effects of the proposed Project on groundwater include changes in water quality due to disturbance of pre-existing soil contamination which may exist, changes to existing groundwater quality or quantity due to trenching activities and construction dewatering, and changes in groundwater flow regime due to installation of foundations for the new SS and TS. Effects on groundwater during the maintenance and operation phase are not expected.

Groundwater Quality

Soil contamination is unlikely due to the nature of the surrounding land use. Excess material requiring disposal of off-site will be sampled and analyzed to determine its disposal

requirements. Soil and groundwater containment and disposal measures would be implemented according to the pertinent regulations, as required.

No residual adverse effects have been identified for changes in groundwater quality due to the construction of the proposed Project. If changes in groundwater quality were to occur, it is anticipated that groundwater quality would return to baseline conditions following the implementation of mitigation measures, such as containment and removal of contaminated soils.

Groundwater Quantity

Groundwater baseflow (quantity) is seasonally important to nearby waterbodies and natural environment features, including vegetation, fish and fish habitat. The effects on groundwater quantity associated with construction of foundations are anticipated to be local to the hole or excavation. Foundation excavations would be backfilled in a timely manner. As such, it is predicted that there would be limited to no temporal effects on groundwater levels and quantity as a result of construction activities.

Construction is occurring within active agricultural lands. It is anticipated that discharge would be to nearby agricultural lands. There would be some runoff from this discharge and some infiltration.

If detailed design suggests that construction dewatering of foundation holes/excavations is required at a rate greater than 50,000 L/day, a PTTW or EASR will be obtained from the MECP. The proposed Project would comply with applicable guidelines and legislation, including Provincial Water Quality Objectives, Ontario Drinking Water Standards, Objectives and Guidelines and Ontario Regulation (O. Reg.) 153/04. Adequate dewatering and discharge plans would be developed prior to construction, and collected water would be contained and tested prior to disposal, if required.

The municipal wells and local private water wells within the area would not be affected in any measurable way by proposed dewatering of foundation holes or excavations within the stations. The zone of influence of such dewatering activities is very localized, and the majority of water wells exploit aquifer(s) that are at a much greater depth than the proposed excavations.

The effects of the dewatering activities during construction are expected to be temporary, and groundwater levels and flow are expected to return to pre-construction conditions during the construction period. The nature of the sub-surface soils, the existence of a high water table regime, and the small zone of influence to be created by construction dewatering is expected to result in a recovery to the pre-disturbance state in a matter of several days.

7.6.5 Designated or Special Natural Areas

As mentioned previously in **Section 4.6**, no designated or special natural areas are located within the study area. As such, no impacts during pre-construction or construction proposed within the study area are anticipated to occur to designated areas.

Natural Heritage Features

The nature of the construction disturbance associated with the proposed Project is temporary. This disturbance will occur within existing active agricultural lands. No effects on natural heritage features are anticipated during the maintenance and operation phase, and there will likely be opportunities to establish native vegetation on areas of the property which are currently being farmed but cannot feasibly remain in active agricultural use following construction of the stations and new transmission structures. Therefore, following completion of construction and implementation of restoration plantings and seeding, the project will likely result in a net gain in native vegetation within the study area.

Construction activities would be restricted to designated work areas and protective barriers, such as fencing, would be erected to protect adjacent features from construction related effects. For example, silt fencing and/or other sediment and erosion control measures would be installed as required to prevent the migration of sediment-laden water from the site. In most locations, geotextile and gravel used for access and laydown/staging areas would be removed upon completion of construction.

Other measures that would be undertaken to reduce adverse effects resulting from the construction of the proposed Project include:

- Restricting access and minimizing travel/work areas to maximize retention of compatible vegetation;

- Implementing sediment and erosion controls to protect adjacent features such as Municipal drains;
- Selectively cutting and retaining compatible vegetation to promote regeneration, where feasible;
- Using geotextile and gravel for access, where feasible, to reduce compaction; and,
- Restoring compacted areas, if required.

Most wildlife species (including SAR) that occur in the study area are habituated to human activities and are mobile. Any sensitive resident animals can relocate temporarily to avoid noise and disturbance associated with construction activities and return after construction completion. Construction disturbance would be sufficiently local with little displacement of wildlife anticipated. Therefore, the effect of the proposed Project on wildlife (including SAR) will be minimal, if any.

Removal of vegetation has the potential to disturb nesting migratory birds. The *Migratory Birds Convention Act, 1994* (MBCA) prohibits the disturbance, destruction or removal of a nest, egg or nest shelter of a migratory bird. In order to avoid contravention of the MBCA, vegetation removal should not be conducted during the migratory bird breeding season from April 5 to August 31 in nesting zone C1 as provided by ECCC (2017c), where feasible. One property with six agricultural buildings within the study area (two agricultural barns and four silos) have the potential to be impacted by the proposed Project. To rule out the presence of potential breeding habitat for Barn Swallow, targeted surveys of these buildings were completed on October 30, 2019. No Barn Swallow nests were observed as a result of the targeted survey; as such, impacts to Barn Swallow due to the project activities are not anticipated.

Invasive Species

There is potential for the proposed Project to facilitate the spread of non-native or invasive species that may occur within or adjacent to work areas during the construction phase. Measures that would be undertaken to reduce the spread of invasive species include:

- Seeding previously vegetated areas, or areas that will not be returned to agricultural use following construction, with native seed mix;

- Taking care to avoid spreading invasive species (especially invasive plant species) that occur in or adjacent to work areas, and educating crews on the importance of preventing the spread of invasive species;
- Abiding by the *Invasive Species Act* regulations;
- Removing and properly disposing of invasive plant material, where feasible; and,
- Inspecting and cleaning equipment and vehicles as necessary prior to entering/leaving vegetated work areas, to reduce potential for spreading invasive species propagules.

Wetlands

There are no wetlands present in the study area; therefore, no effects on wetlands as a result of the proposed Project are anticipated.

Fish Habitat

Fish habitat is present in association with the Knister Drain; however the drain is not location within the construction area, but rather adjacent to. There is potential for fish habitat to be affected during the construction phase of the proposed Project as an agricultural surface drainage feature which discharges to the Knister Drain, requires re-routing to facilitate the construction of the SS. Impacts to the Knister drain are, however, not anticipated as surface drainage flow currently outlets to the drain, and following completion of construction there will be no significant changes to the overall surface drainage patterns that currently exist on the property. However, if required, necessary permits and approvals would be obtained before work commences. During construction erosion sediment control measures will be installed to prevent the mobilization of sediment to the Knister Drain.

Other potential disturbances to fish habitat resulting from construction activities near water would be minimized through the development of an erosion and sediment control plan, which would include mitigation measures, such as constructing access roads during low flow conditions, retaining riparian vegetation to the extent feasible, and storing materials away from water. In addition, no refuelling of vehicles and/or equipment would be permitted adjacent to municipal drains or existing surface drainage features to avoid potential spills (e.g., fuel, oil, lubricant) from migrating and entering potential fish habitat (i.e. Knister Drain). Spill kits will

be located at work areas to mitigate the effects of accidental spills or releases, should they occur during construction.

Woodlands

Woodlands were not identified within the study area; therefore, no effects on woodlands as a result of the proposed Project are anticipated.

Valleylands

There are no valleylands present within the study area; therefore, no effects on valleylands as a result of the proposed Project are anticipated.

Species at Risk

As noted in **Section 4.6.7**, species designated as either endangered or threatened under the ESA and under Schedule 1 of the federal SARA (specific to the municipal drains) are provided individual and habitat protection. Species designated as special concern under the ESA and SARA do not have regulatory protection and are not discussed further.

Only one SAR (Barn Swallow) was incidentally observed in the study area during the 2019 field investigations. Barn Swallow are listed as Threatened under the ESA. Only one building (an agricultural barn) within the study area has the potential to be impacted by the proposed Project; targeted surveys of this building was assessed on October 30, 2019 to determine the presence of potential breeding habitat for Barn Swallow. No Barn Swallow nests were observed within the building as a result of the targeted surveys; as such, impacts to Barn Swallow due to the project activities are not anticipated.

Though targeted surveys were completed for Eastern Foxsnake (Threatened under the ESA) during the 2019 field program, no observations of the species were made. As a result, impacts to Eastern Foxsnake as a result of project activities are not anticipated. General mitigation measures for wildlife will be employed during the construction phase of the project.

No aquatic SAR were observed during aquatic assessments of the Knister Drain. Based on the aquatic assessment, the Knister Drain likely provides fish habitat and contributes flows and nutrients downstream to the Ruscom River. As Mapleleaf (Threatened under SARA) are

usually found in medium to large rivers with slow and moderate flow, and require substrates consisting of dense sand, coarse gravel, and mud, the Knister Drain likely does not provide suitable habitat for Mapleleaf (MNRF, 2019). As a result, impacts to Mapleleaf as a result of the project activities are not anticipated.

Should other SAR or their habitat be encountered during construction activities, any work activities which may harm SAR or its habitat will be stopped until the works are assessed to determine whether the work/schedule can be modified, or mitigation measures can be employed to avoid potential effects on SAR and their habitat. If avoidance of effects to a SAR is not possible, Hydro One will consult with DFO and/or MECP, as appropriate, to determine whether permitting or approvals are required.

Wildlife Habitat

No SWH was identified within the study area. Therefore, alteration or loss of wildlife habitat (including SWH) as a result of project activities are not anticipated.

During project activities, the following would be taken into consideration:

- Use of native plant species where seeding or planting is completed.

Significant Areas of Natural and Scientific Interest

There are no ANSIs in the study area; therefore, no effects on significant areas of natural and scientific interest as a result of project activities are anticipated.

7.7 Recreational Resources

As no recreational resources were identified within the study area, impacts to recreational resources as a result of project activities are not anticipated.

7.8 Visual and Aesthetic Resources

As described in **Section 4.8**, the proposed Project is located adjacent to the Leamington JCT; agricultural lands adjacent to the JCT and within the study area are anticipated to be owned by Hydro One at the time of project construction. The Leamington JCT and adjacent lands are entirely located within active agricultural lands.

There are potential opportunities to provide visual screening (e.g., earth berms or vegetative screenings) to the SS and TS. A conceptual site layout plan is presented in **Figure 7-1** below; this plan represents a high-level concept for the property following completion of construction. Plans for the site will be refined during detailed design and construction, in conjunction with feedback from the Town of Lakeshore and any other interested stakeholders.

During construction, Hydro One will minimize visual impacts on properties adjacent to the proposed Project by:

- Maintaining temporary construction fencing as required;
- Maintaining a clean and organized workspace; and,
- Performing an on-site assessment after construction to determine if restoration (e.g., grading, grass seeding, etc.) of disturbed areas is required.

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FIGURE 7-1: LAKESHORE TS: CONCEPTUAL SITE LAYOUT PLAN

(scale 1:3000)

OCTOBER 2019

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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.

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

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
AGRICULTURAL RESOURCES			
Agricultural Resources	Temporary loss of agricultural productivity during construction as well as soil compaction from the movement of equipment, accelerated erosion and soil loss from clearing of land, and the mixing of topsoil with less productive subsoil during stripping.	<p>The following is recommended to address potential effects:</p> <ul style="list-style-type: none"> • Contact will be maintained with adjacent land owners/tenants regarding work schedule and other items of interest; • Maintain existing agricultural access to the extent possible; • Build temporary access roads using geotextile and crushed rock and remove them following construction to allow for re-cultivation of the area where feasible; • Use lightweight and wide-tracked equipment to minimize soil compaction, where feasible; • Segregate topsoil within the construction area to avoid compaction and soil mixing and complete activities involving the management of excess soil in accordance with the MECP’s guidance document “Management of Excess Soil – A Guide for Best Practices, 2014”; • Use plywood or tarpaulins to store topsoil and avoid topsoil loss; • Fuel construction equipment with designated refueling areas, located away from drains and other sensitive features; • Verify that all construction equipment used is mechanically sound to avoid leakage of oil, gasoline, hydraulic fluids and grease; and • Maintain proper spill management equipment (e.g. spill kit) on-site at all times. 	No significant net effects are predicted.
	Displacement of agricultural land by the SS and TS.	The following mitigation is recommended:	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
		<ul style="list-style-type: none"> • Make all efforts to design the proposed Project in order to minimize the footprint of the SS and TS and to maximize the available land for agricultural use during and following construction; and • Restore lands following construction for re-cultivation, where feasible. • 	<p>A portion of the study area will be removed from agricultural use, while portions of the study area not planned to house new electrical facilities will remain in use for the foreseeable future, to the extent feasible.</p>
ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES			
Archaeological and Cultural Heritage Resources	Project construction could potentially result in the finding of First Nation / Métis and/or other artifacts or cultural heritage resources.	The Stage 1 archaeological assessment background review concluded that much of the study area retained archaeological potential. As such a Stage 2 archaeological assessment will be completed as early as possible during detailed design and prior to construction or any ground disturbing activity.	No significant net effects are predicted.
LAND USE AND COMMUNITIES			
Public Safety	Construction sites pose potential safety hazards to public, if not appropriately controlled.	<p>To minimize the potential effects of construction on public safety, the project team and its contractor(s) will undertake a wide range of safety measures including the following</p> <ul style="list-style-type: none"> • Develop the construction schedule in consultation with the Town of Lakeshore and County of Essex to avoid any large, pre-scheduled community or other events, to the extent practical; • Secure construction laydown areas using fencing/gated entrances and locks with appropriate signage to prevent unauthorized access and injury; • Provide final construction schedule to emergency and protective services; 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
		<ul style="list-style-type: none"> • Provide advance notice of the commencement of construction to adjacent residents and landowners; and • Install appropriate barriers in select locations that are more heavily used by the public to further maintain public safety and prevent unauthorized access to work areas, as required. 	
Air Quality	<p>Exhaust emissions may be generated from vehicles and equipment during the construction phase.</p>	<p>Mitigation measures to reduce potential nuisance effects of dust and air emissions include the following:</p> <ul style="list-style-type: none"> • Ensure construction equipment is properly maintained and used according to the manufacturer’s specifications to minimize exhausts; and • Adhere to Hydro One’s Fleet Environmental Program (anti-idling requirements and global positioning system [GPS] installation in vehicles to optimize routing. 	<p>No significant net effects are predicted.</p>
	<p>Dust may be generated from vehicles and equipment during construction, as well as the potential demolition of existing agricultural buildings and structures on the subject property.</p>	<p>Mitigation measures to reduce potential nuisance dust and air emissions include the following:</p> <ul style="list-style-type: none"> • Utilize effective dust suppression techniques, such as on-site watering and road sweeping, as necessary; • Apply measures to limit dust during demolition of the agricultural structures; • Use appropriate earth moving practices; and • Limit construction activities during high wind events. 	<p>No significant net effects are predicted.</p>
Noise	<p>Noise from construction related activities could potentially cause temporary nuisance or disturbance effect for local residents.</p>	<p>Mitigation measures to reduce potential nuisance effects resulting from noise include:</p> <ul style="list-style-type: none"> • Ensure construction equipment is properly maintained and used according to the manufacturer’s specifications to minimize noise and ensure 	<p>No significant net effects are predicted.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
		<p>operation confirms to acceptable noise limits (e.g. proper maintenance of equipment, muffling systems, minimum idling of equipment and vehicles);</p> <ul style="list-style-type: none"> • Consider the potential for noise when selecting equipment, construction work methods and developing schedule; • Take reasonable measures to control construction related noise near residential areas; and • Ensure construction activities conform to the Town of Lakeshore noise by-law (No. 106-2007). Hydro One and/or the contractor will seek a noise by-law exemption if work is required outside of the hours specified in the by-law (e.g. overnight). 	
	<p>There will be some operational noise from equipment at the new stations, primarily from the 230 kV transformers within the TS.</p>	<p>Following completion of the Class EA, Acoustic Assessment Reports (AAR) will be completed for the new SS and TS, which will model the anticipated noise produced by each facility, and will recommend noise mitigation if required (i.e., if noise levels at nearby receptors are anticipated to exceed provincial guidelines). Mitigation measures for noise, if deemed necessary by the AAR, may include:</p> <ul style="list-style-type: none"> • Selection of equipment with lower noise levels; and • Noise barriers. <p>Noise emissions approvals (EASR or ECA) will be obtained from the MECP prior to the installation of noise-generating equipment.</p>	<p>No significant net effects are predicted.</p>
<p>Vibration</p>	<p>Increased vibration levels from construction and maintenance equipment.</p>	<p>Mitigation measures to reduce potential nuisance effects resulting from vibration include:</p> <ul style="list-style-type: none"> • Considering vibration when selecting equipment, construction work methods, and schedule; and 	<p>No significant net effects are predicted.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
		<ul style="list-style-type: none"> • Taking reasonable measures to control vibration related to project construction near residential areas. 	
Mud	<p>There is potential for mud accumulation in the construction site and on public roads due to site preparation and construction activities.</p>	<p>Mitigation measures to reduce the accumulation of mud in construction areas and along public roads include:</p> <ul style="list-style-type: none"> • Remove excess mud from roads, as required; • Install mud mats to reduce transport of mud; • Wash vehicles / equipment, as necessary; and, • Initiate a formal cleanup and site restoration (e.g. seeding), if necessary. 	<p>No significant net effects are predicted.</p>
Transportation			
Traffic	<p>Potential for short-term disruption to traffic in areas affected by construction (e.g. equipment/materials delivery, worker vehicular traffic).</p>	<p>Potential for disruption to vehicular traffic during construction is expected to be minimal and temporary in nature. Mitigation measures to reduce traffic related effects during construction include the following:</p> <ul style="list-style-type: none"> • Develop a traffic control plan with the Town of Lakeshore, as necessary; • Establish common parking areas for construction crews away from heavily travelled roads; • Erect road signage and provide notification/pre-construction information to area residents on timelines and construction routes; and • Assign traffic control officers or flag persons to assist with construction truck entry/exit as necessary. 	<p>No significant net effects are predicted.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
First Nation Lands and Territory			
First Nations and Métis Lands and Territory	The project could potentially affect First Nations interests.	<p>First Nation communities were consulted during the EA. Communities expressed interest in being involved with future archaeological field work relating to the proposed Project.</p> <p>If any archaeological artifacts are discovered during future assessment and/or the construction phase, the MHSTCI will be advised along with applicable First Nation communities.</p>	<p>No significant net effects are predicted.</p> <p>Hydro One will continue to consult and work with First Nations communities throughout the course of the project to ensure that their interests are respected and considered.</p>
Human Health			
Electric and Magnetic Fields (EMF)	Potential exposure to increased EMF during operation.	Health Canada has indicated that there is no conclusive evidence or adverse health effects caused by EMF exposure from power lines. Anticipated levels of EMF associated with this project area anticipated to remain significantly lower than the general public exposure guidelines. The proposed Project will be designed and operated in accordance with all regulatory requirements.	No significant net effects are predicted.
MINERAL RESOURCES			
Aggregate Extraction	No potential temporary or permanent disturbance to aggregate extraction.	No aggregate pit operations exist within or adjacent to the study area.	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
NATURAL ENVIRONMENTAL RESOURCES			
Physical Environment			
Physiography and Geology	No potential changes in the physiography and /or geology as a result of excavation activities during the construction phase.	No changes to the physiography and/or geology are anticipated.	No significant net effects are predicted.
Spills	Potential inadvertent release of oil, gasoline or other liquid during construction and/or maintenance.	Mitigation measures to be implemented will include the following: <ul style="list-style-type: none"> • Refuelling of all vehicles and equipment in a designated location located away from sensitive receptors, such as municipal drains or surface drainage features; • Locating spill cleanup equipment nearby and in Hydro One vehicles; • Cleaning spills and remediating the site as soon as possible after a spill; • Storing any fuels, chemicals and lubricants on level ground in properly contained storage areas; • Notify the MECP Spills Action Centre of any reportable spills and ensure containment occurs as soon as possible. 	No significant net effects are predicted.
Waste Generation	Solid and/or liquid waste would be generated during construction.	Mitigation measures to address waste generation include the following: <ul style="list-style-type: none"> • Minimize waste produced and segregate and recycle where possible; and • Test, handle, store, transport and dispose of waste in accordance with all applicable legislation prior to be recycled or disposed at a licensed landfill. 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
Atmospheric Environment			
Climate	Emissions from vehicles and equipment during the construction and maintenance phases.	Fossil fuel emissions from vehicles / equipment used during the construction and maintenance of the proposed Project are anticipated. Mitigation measures include the following: <ul style="list-style-type: none"> • Properly service and maintain equipment; • Adhere to Hydro One’s Fleet Services Environmental Program which includes anti-idling requirements and GPS installation in vehicles to optimize routing; and • Design facilities to adequately withstand the effects of climate change throughout the duration of the facilities lifespan. 	No significant net effects are predicted.
	Insulating mediums of Hydro One equipment contain Sulphur Hexafluoride (SF ₆), a commercially available non-toxic greenhouse gas	Procedures are in place by Hydro One to minimize leaks of insulating material from equipment. Hydro One facilities are operated on full compliance with all applicable federal and provincial legislations regarding the use of SF ₆ as an insulating medium	No significant net effects are predicted.
Air Quality	Air quality is addressed under Land Use and Communities above.	See above.	See above.
Noise	Noise is addressed under Land Use and Communities above.	See above.	See above.
Vibration	Vibration is addressed under Land Use and Communities above.	See above.	See above.
Surface Water Quantity			
Increased runoff rates and volumes	Potential changes in streamflow and water levels in receiving municipal drains during the construction phase and	Mitigation measures including the following: <ul style="list-style-type: none"> • Re-vegetate the new work areas to the extent possible; and 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
from proposed Project site.	the maintenance and operation phase as a result of changes in land cover.	<ul style="list-style-type: none"> Restore the laydown areas to their original condition to the extent possible. 	
Changes in flow conveyance and hydraulics at municipal drains.	<p>Impedance of streamflow and creation of backwater effects as a result of re-routing the agricultural surface drain.</p> <p>Existing agricultural surface drainage features may be re-routed to accommodate the SS and the construction of a sub-grade drainage system which will function to drain away excess precipitation from the station surface.</p>	<p>Mitigation measures to be completed include the following:</p> <ul style="list-style-type: none"> Select a design rainfall event based on the operating life of the agricultural surface drainage feature and a level of hydrologic risk consistent with existing regulatory guidelines and/or good industry practice; Design the surface drainage feature to convey the peak flow for the design rainfall event without constricting flow and causing backwater effects in the adjacent municipal drain; Re-route the surface drainage feature over a relatively short period of time; and Undertake the work in consultation with ERCA and incorporate their feedback into design and construction. An ECA for the installation of the subgrade drainage system will be acquired from the MECP. It is not anticipated that overall drainage patterns or flow volumes from the site will be drastically different than current conditions. 	No significant net effects are predicted.
Discharge of construction water from dewatering activities.	Changes in streamflow and water levels in receiving municipal drains during the construction phase.	<p>Mitigation measures to be implemented will include the following:</p> <ul style="list-style-type: none"> Discharge construction water in compliance with the required permits and/or approvals from the MECP, if required; and Develop and execute appropriate construction dewatering plans (e.g., passing discharge water through a filter bag or drum before discharge) prior to construction, as required. 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
Surface Water Quality			
Increased organic debris and sediment loads in receiving drains.	<p>Mobilization and transport of organic debris to nearby municipal drains as a result of site preparation and earthworks during the construction phase.</p> <p>Erosion and transport of sediment to nearby municipal drains as a result of site preparation, earthworks, and discharge of construction water from dewatering activities during the construction phase.</p>	<p>The following mitigation measures will be implemented where practical:</p> <ul style="list-style-type: none"> • Stage work to minimize the extent of exposed and disturbed areas at any given time; • Remove cleared vegetation to designated areas away from municipal drains; • Stockpile topsoil in designated areas away from municipal drains; • Develop and execute site-specific erosion and sediment control plans, as required; • Minimize equipment operation adjacent to municipal drains, where feasible; • Retain vegetation buffers along the banks of municipal drains, to the extent feasible; • Carry out work in consultation with the ERCA and incorporate their feedback into design and construction; and <p>Notify the MECP Spills Action Centre of any reportable spills and ensure containment occurs as soon as possible.</p>	No significant net effects are predicted.
Erosion	Soil may be lost during site preparation due to rainfall.	In an effort to reduce potential erosion, mechanical erosion control devices will be used as required such as erosion control blankets and sedimentation fences.	No significant net effects are predicted.
Spills from construction and operational equipment.	Spills from equipment to nearby municipal drains as a result of site activities completed during the construction and operational phase.	<p>The following mitigation measures are in place to reduce the risk of impacts from equipment spills during the construction and operational phases:</p> <ul style="list-style-type: none"> • The TS will be fully equipped with spill containment for each 230 kV transformer and an oil/water separation facility. These facilities, in 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
		<p>conjunction with the site drainage are subject to ECA under the Environmental Protection Act.</p> <ul style="list-style-type: none"> An Emergency Response Plan (ERP) and spill response equipment (spill kits) will be located on site. <p>Transformers are designed to withstand the internal forces without tank rupture, under the specified Hydro One internal fault conditions.</p>	
Conveyance of Flow	Crossings required over municipal drains may impede surface flow.	<p>Existing entrances along Middle Road provide suitable access for the proposed project.</p> <p>If the existing entrance from Middle Road (existing crossing of the Knister drain) is later determined to be insufficient for Hydro One’s purposes, a new permanent entrance will be sought from Rochester Townline Rd. to the east. Similar to the entrance from South Middle Road, a new entrance from Rochester Townline Rd. will avoid the need for a new crossing over a Municipal drain, and will only require crossing a standard roadside ditch.</p>	No significant net effects are predicted.
Groundwater Quality			
Effects on groundwater quality.	Disturbance of contaminated soil during the construction phase may contribute to groundwater contamination.	<p>Soil contamination is unlikely due to the nature of the surrounding land use. Excess material requiring disposal of off-site will be sampled and analyzed to determine its disposal requirements. Soil and groundwater containment and disposal measures would be implemented according to the pertinent regulations, as required. If changes in groundwater quality were to occur, it is anticipated that groundwater quality would return to baseline conditions following the implementation of mitigation measures such as containment and removal of contaminated soils.</p>	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
Groundwater Quantity			
Reduced baseflow to drains.	Removal of groundwater may result in temporary lowering of aquifers.	<p>The effects of the dewatering activities during construction are expected to be temporary, and groundwater levels and flow are expected to return to pre-construction conditions during the construction period. The nature of the sub-surface soils, the existence of a high water table regime, and the small zone of influence to be created by construction dewatering is expected to result in a recovery to the pre-disturbance state in a matter of several days.</p>	No significant net effects are predicted.
Removal and disposal of groundwater from dewatering activities.	Removal of groundwater may result in temporary lowering of aquifer.	<p>Mitigation measures to be implemented will include the following:</p> <ul style="list-style-type: none"> • Discharge construction water in compliance with the required permits and/or approvals from the MECP, if required; and • Develop and execute appropriate construction dewatering plans (e.g., passing discharge water through a filter bag or drum before discharge) prior to construction, as required. <p>The municipal wells and local private water wells within the area would not be affected in any measurable way by proposed dewatering of foundation holes or excavations within the stations. The zone of influence of such dewatering activities is very localized, and the majority of water wells exploit aquifer(s) that are at a much greater depth than the proposed excavations.</p>	No significant net effects are predicted.
Designated or Special Natural Areas			
Designated Natural Areas	Effects to the natural areas located within the Study Area	There are no designated natural areas within the study area.	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
Natural Heritage Features			
Vegetation	Removal of vegetation within proposed construction activity areas during construction and maintenance activities.	<p>No natural vegetation communities exist within the study area. The study area contains lands impacted by past and ongoing cultural land uses (i.e. active agriculture). In instances where minor vegetation removal is anticipated (i.e. in association with the re-routing of the agricultural surface drain feature in support of the SS), the area of impact should be minimized to the extent possible. Additional mitigation measures include:</p> <ul style="list-style-type: none"> • Restricting access and minimizing travel/work areas to maximize retention of compatible vegetation; • Implementing sediment and erosion controls; • Selectively cutting and retaining compatible vegetation to the extent feasible, to promote regeneration; • Using geotextile and gravel for access, where feasible, to reduce compaction; • Restoring compacted areas, if required; • Installing barriers (e.g., silt fences and vegetated hedgerows) to promote protection of municipal drains. 	<p>No significant net effects are predicted.</p> <p>Following the completion of construction and implementation of restoration and visual screening plantings and seeding, the project will likely result in a net gain in native vegetation within the study area.</p>
	Accumulation of cleared vegetation during the construction phase.	<p>Mitigation measures to be implemented include:</p> <ul style="list-style-type: none"> • Seeding previously vegetated areas with native seed mix; • Taking care to avoid spreading invasive species that occur in or adjacent to work areas, and educating crews on the importance of preventing the spread of invasive species; • Abiding by the Invasive Species Act regulations; 	<p>No significant net effects are predicted.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
		<ul style="list-style-type: none"> • Removing and properly disposing of invasive plant material, where feasible; and • Inspecting and cleaning equipment and vehicles as necessary prior to entering/leaving vegetated work areas, to reduce potential for spreading invasive species propagules. 	
Fish Habitat	Disturbance to fish habitat as a result of activities (e.g., re-route of agricultural surface water feature, vegetation loss, soil erosion) during the construction phase.	<p>Mitigation measures to be implemented include:</p> <ul style="list-style-type: none"> • Avoid the creation of new municipal drain crossings during construction to the extent feasible by using existing access and crossings (e.g., bridges) and by accessing structures from either side of each municipal drain, where feasible. • Develop an erosion and sediment control plan, which would include mitigation measures such as constructing access roads during low flow conditions where feasible, retaining stream bank vegetation, and storing materials away from water. • Refueling of vehicles and/or equipment will occur within a designated refuelling area located away from drains to avoid potential spills (e.g., fuel, oil, lubricant) from migrating and entering potential fish habitat. • Install sediment traps, silt fences and other mitigation measures as necessary. • Restore disturbed areas to a pre-disturbed state or better, where feasible. 	No significant net effects are predicted.
Woodlands	Loss of woodlands during the construction phase.	There are no woodlands within the study area.	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
Species at Risk (SAR)	Disturbance or loss of SAR as a result of habitat loss from construction activities.	Should other SAR or their habitat be encountered during construction activities, any work activities which may harm the SAR or its habitat will be stopped until the works are assessed to determine whether the work/schedule can be modified, or mitigation measures can be employed to avoid potential effects on SAR and their habitat. If avoidance of effects to a SAR is not possible, Hydro One will consult with DFO and/or MECP, as appropriate, to determine whether permitting or approvals are required.	No significant net effects are predicted.
Wildlife Habitat	Disturbance to wildlife during activities in the construction phase.	<p>No significant wildlife habitat was identified within the study area.</p> <p>If wildlife are encountered during construction, reasonable measures will be undertaken to ensure that they are not harmed by the work. Mitigation measures to be implemented during construction include:</p> <ul style="list-style-type: none"> • Avoid vegetation removal during the migratory bird breeding season (i.e. April 5 to August 31) to the extent feasible. • Undertake a non-intrusive bird nest survey if vegetation removal is required during the breeding season. Implement protective measures (e.g., buffers) as described in the general habitat descriptions for these species should nest sites of these species be identified. • Retain natural vegetation, where possible. Use native species where seeding or planting is carried out. <p>During the operational phase of the project, wildlife deterrents/barriers may be installed on station fences or certain equipment as deemed necessary. These barriers and deterrent help to avoid both the risk of equipment damage and outages, as well as potential harm to wildlife.</p>	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECT
RECREATIONAL RESOURCES			
Recreational resources	Disturbance to recreational trails during construction.	No recreational resources were identified within the study area.	No significant net effects are predicted.
VISUAL AND AESTHETIC RESOURCES			
Appearance of the landscape	Alteration to the existing visuals and aesthetics of the rea during construction and operation.	<p>During construction, Hydro One will minimize visual impacts on properties adjacent to the proposed Project by implementing the following:</p> <ul style="list-style-type: none"> • Maintaining a clean and organized workspace; and • Restoring areas disturbed by construction activities. <p>Hydro One will also consider potential opportunities to provide visual obstructions (e.g. vegetated berms) to the SS and TS for residents within the study area. The potential for visual obstructions will be determined during detailed design.</p>	No significant net effects are predicted.

8 Effects Monitoring

The purpose of effects monitoring is to confirm the extent of the project's environmental effects, by comparing the actual effects with the predicted effects, to verify the effectiveness of implemented 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 would be assigned to the proposed Project for the duration of construction to monitor construction activities and provide guidance on needed field changes.

A project-specific Environmental Specification will be prepared following the completion of the Class EA process. The Environmental Specification 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 regarding environmental avoidance and mitigation measures to be applied for the project.

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

9 Conclusion

Hydro One has successfully completed a Class EA and has subsequently met the requirements of the EA Act for the proposed Lakeshore Transmission Stations Project within the Town of Lakeshore, and the County of Essex. The proposed Project is required to improve reliability and provide additional local supply capability to meet the County's forecasted increase in electricity demand.

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 project design and implementation of the proposed mitigation measures, no significant adverse residual effects are expected.

Hydro One has conducted comprehensive consultation to inform First Nation communities, municipal and provincial government officials and agencies, potentially affected and interested persons and interest groups about the proposed Project, as well as to identify and resolve potential concerns. The consultation process included local newspaper and radio advertisements; CICs, which provided opportunities for interested parties to discuss with, and pose questions to, the Hydro One project team directly; correspondence with property owners; meetings with key stakeholders; and establishment and maintenance of a project website.

The draft ESR was made available for First Nation communities, municipal and provincial government officials and agencies, potentially affected and interested persons and interest groups to review for 30 calendar days from November 13 to December 13, 2019. Hydro One responded to and made best efforts to resolve issues raised by concerned parties during the review period. Comments received during this period were addressed and documented in the final ESR. No Part II Order requests were received during the draft ESR review period.

Upon submission of this ESR, and the associated Statement of Completion, the proposed Project will be implemented in full compliance with the requirements of the Class EA process as outlined in this ESR, incorporating input obtained throughout the planning process including feedback and input from project stakeholders. Hydro One will obtain the necessary environmental approvals and permits required for the proposed Project.

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