

Abstract geometric lines forming a network of triangles and polygons in the top left corner.

THE CHATHAM TO LAKESHORE 230 KV TRANSMISSION
LINE CLASS ENVIRONMENTAL ASSESSMENT
Draft Environmental Study Report

June 11, 2021

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

Executive Summary

Hydro One Networks Inc. (Hydro One) has prepared this draft Environmental Study Report (ESR) for the proposed construction of a new double-circuit 230 kilovolt (kV) transmission line (the Project) in southwestern Ontario. The Project will be approximately 48 kilometres (km) in length, and will connect the Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the future Lakeshore Transformer Station (Lakeshore TS) in the Municipality of Lakeshore. As the preferred Route Alternative will repurpose approximately 16 km of an existing idle 115 kV transmission corridor between Tilbury and Chatham, the Project will involve dismantling and removal of the existing transmission structures, conductor and associated components and equipment along this stretch of the idle transmission line. The Project will also involve an expansion of the Chatham SS to facilitate the connection of the new transmission lines. The purpose of the Project is to reliably supply the forecast load growth in the Windsor-Essex region. This will allow the resources and bulk facilities in this region to operate efficiently for local and system needs, and maintain existing interchange capability on the Ontario-Michigan interconnection.

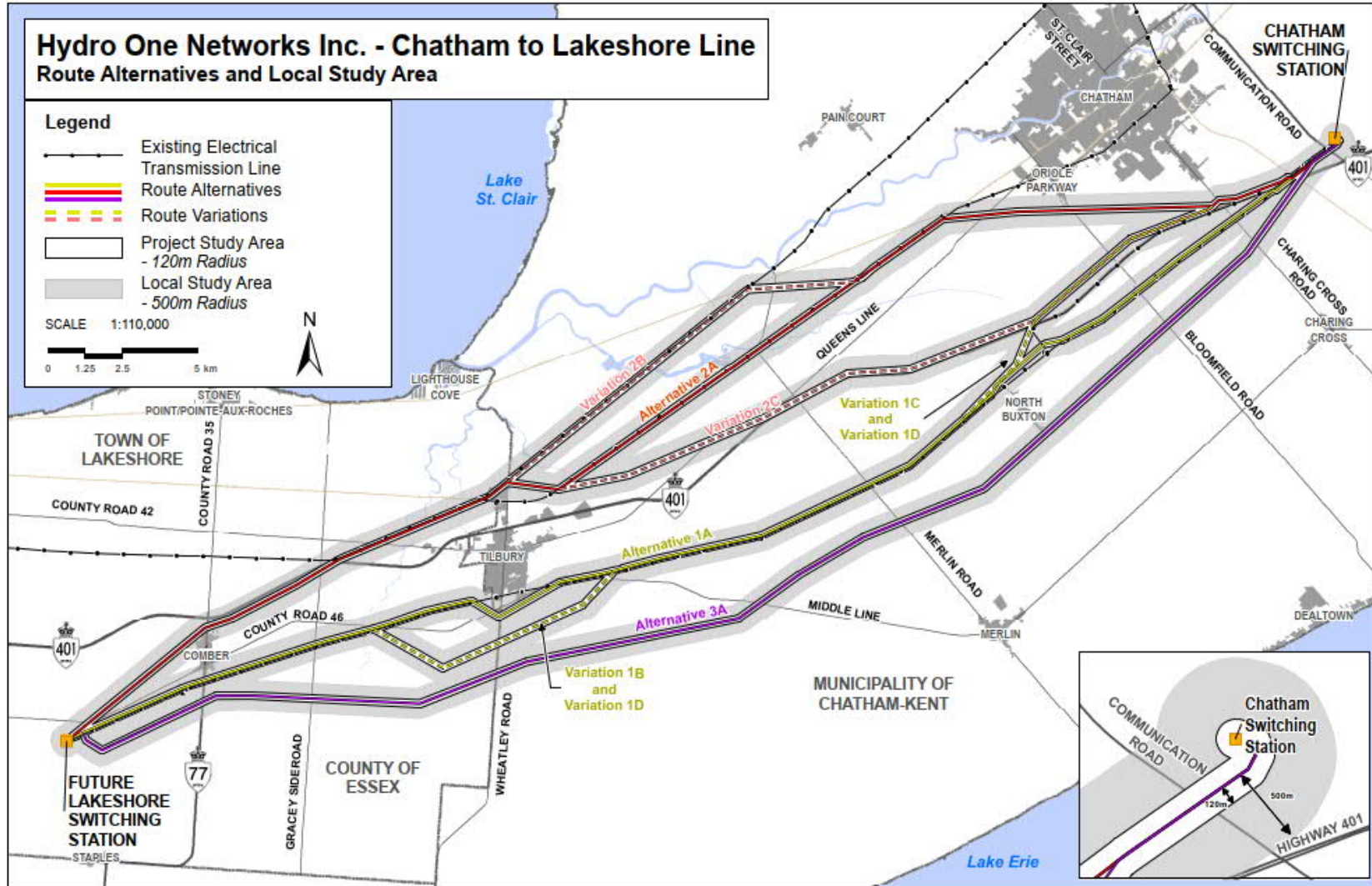
The proposed Project is subject to the Class Environmental Assessment for Minor Transmission Facilities (Hydro One, 2016), an approved planning process under the *Environmental Assessment Act* (EA Act) designed for proponents to characterize the existing environment, assess potential environmental effects and mitigation, identify and evaluate alternatives, conduct consultation and document study findings. The draft ESR has been prepared in accordance with the requirements of the EA Act and describes the Class Environmental Assessment (EA) process undertaken for the proposed Project.

At the outset of the Class EA, two study areas (Local Study Area and Project Study Area) were identified as a mechanism to assess potential natural environment, socio-economic environment, technical and cultural constraints and potential effects associated with each of the three Route Alternatives and their corresponding variations identified (**Figure E-1**). The three Route Alternatives for the Project include:

- **Route Alternative 1**, shown in yellow in **Figure E-1**, largely parallels an existing 230 kV transmission line (similar to what will comprise the new line to be constructed). Route Alternative 1 contains a total of four variations (1A, 1B, 1C and 1D). The variations include different combinations of changes to the route, one around the south end of Tilbury and another closer to the City of Chatham, which parallels the Highway 401 corridor.

- **Route Alternative 2**, shown in red in **Figure E-1**, largely parallels two existing 115 kV transmission lines (including a portion of one of the lines which is an idle 115 kV transmission line between Tilbury and Chatham). There are a total of three variations (2A, 2B and 2C) associated with Route Alternative 2. Route Alternative 2 variations also parallel portions of the Highway 401 corridor.
- **Route Alternative 3**, shown in purple in **Figure E-1**, is a greenfield option. While it does not parallel any existing transmission lines or other linear infrastructure for any significant distance, this was determined to be a feasible Route Alternative for the new 230 kV transmission line. As a result, it was prudent to include for consideration during the Class EA. There are no variations associated with Route Alternative 3.

Figure E-1: Route Alternatives and Local Study Area



For its comparative evaluation procedure, the Class EA process for the proposed Project utilized a weighted multi-criteria decision making analysis to assist in selecting the preferred alternative. Resources were identified, and data obtained from literature reviews, reports and technical memos commissioned by Hydro One, online databases, mapping, consultation and field surveys.

Since late 2019, Hydro One has conducted consultation with municipal, provincial and federal government officials and agencies, Anishnawbek and Haudenosaunee communities, potentially affected and interested persons, and interest groups. This involved project notifications, communications and engagements resulting in issues identification and resolution efforts. The consultation process included the development of a project website, several rounds of Virtual Information Sessions (VIS), in-person meetings with Anishnawbek and Haudenosaunee communities, government officials, potential affected and interested persons, extensive correspondence with Rights-holders and stakeholders, and dedicated Community Relations and Indigenous Relations representatives. Furthermore, a robust Technical Advisory Committee (TAC) was established early in the Project planning process with members representing multiple Indigenous, government, and interest groups to participate in workshops throughout the Class EA process and help inform the project team of important project issues and key decisions.

The Class EA process for the proposed Project included a characterization of the existing environment through literature reviews, reports and technical memos commissioned by Hydro One, online databases, mapping, consultation and field surveys. This research informed an assessment of the Route Alternatives and variations using a weighted multi-criteria decision making analysis to evaluate the alternatives and select the preferred Route Alternative, 2A. Evaluation criteria were identified and relative weightings were assigned using input obtained through the consultation process for the Project, including the formation of a Technical Advisory Committee.

Overall, Route Alternative 2A is preferred because it minimizes the overall impact to the natural and socio-economic environments compared to the other Route Alternatives and minimizes impacts to agricultural lands by utilizing an existing idle transmission corridor for nearly 1/3 its length. From an Anishnawbek and Haudenosaunee Culture, Values and Land Use perspective, Route Alternative 2A minimizes impacts to the natural environment while balancing opportunities to co-locate with existing infrastructure and proximity from identified areas of historical significance to Anishnawbek communities

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

Hydro One is providing a 60-day review period, from June 11, 2021, to August 10, 2021, to allow sufficient time for review and comment on this draft ESR. Written comments or questions regarding the draft ESR are to be submitted to Hydro One no later than 4:30 p.m. on August 10, 2021, and must be addressed to:

Paul Dalmazzi, Environmental Planner, Hydro One Networks Inc.
483 Bay Street, North Tower, 12th Floor, Toronto, ON, M5G 2P5
Phone: 1-877-345-6799 (community relations hotline)
Email: CommunityRelations@HydroOne.com

Due to the ongoing public health developments related to COVID-19, the draft ESR can be viewed electronically on Hydro One's website at www.HydroOne.com/Chatham-to-Lakeshore. Electronic copies of the draft ESR are also available on USB drives for sign out and/or curbside pickup at the following locations, pending operating hours (please call ahead):

Chatham-Kent Public Library 120 Queen Street Chatham, ON N7M 2G6 519-654-2940	Chatham-Kent Public Library 2 Queen Street Tilbury, ON NOP 2L0 519-682-0100	Chatham-Kent Civic Centre 315 King Street Chatham, ON N7M 5K8 519-360-1998	Atlas Tube Centre Essex County Library-Toldo Branch 447 Renaud Line Lakeshore, ON NOR 1K0 519-727-0470
---	---	--	--

To help aid those without access to a computer, limited e-readers will be available at the above locations for sign out. In the event that public health restrictions cease during the review period, hard copies of the draft ESR will also be available for on-site review at the above locations.

On June 11, 2021, the Notice of Completion of draft ESR was distributed to all interested parties including the Anishnawbek and Haudenosaunee communities, municipal, provincial and federal government officials and agencies, potentially affected and interested persons, and interest groups presented in **Section 3** (see contact list in **Appendix B-1**). The Notice was published in the Leamington/Wheatley/Kingsville Southpoint Sun, Windsor Star, Chatham-Kent This Week and Chatham Daily Press local community papers between June 8 and June 10, 2021,, in addition to being posted on the Project website www.HydroOne.com/Chatham-to-Lakeshore (see **Appendix B-2** for notification letter and newspaper ad).

Comments received will be addressed and documented in the final ESR as required by the Class EA process. Hydro One will make best efforts to respond and resolve issues raised by concerned parties during the public review period. Following completion of the review period, the ESR will be finalized for the proposed Project in accordance with the Class EA, and the final ESR will be filed with the Ministry of the Environment, Conservation and Parks (MECP). The Project will then be considered approved and may proceed as outlined in the ESR.

A request may be made to the MECP for an order requiring a higher level of study (i.e., requiring comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse effects on constitutionally protected Aboriginal and treaty rights. The MECP will not consider requests on other grounds.

Requests should include the requester's contact information and full name, as well as specify what kind of order is being requested (request for conditions or comprehensive EA), how an order may prevent, mitigate or remedy potential adverse effects on Aboriginal and treaty rights, and any information in support of the statements in the request. This will allow an efficient review of the request. The request should be sent in writing or email to:

Minister of the Environment, Conservation and
Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
Email: minister.mecp@ontario.ca

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

Requests should also be copied to Hydro One per the contact information provided above.

Table of Contents

Executive Summary	i
Table of Contents	vii
List of Acronyms & Abbreviations.....	xvii
1 Introduction	1-1
1.1 Need for the Undertaking	1-4
1.2 Description of the Undertaking	1-4
1.3 Alternatives to the Undertaking.....	1-5
1.4 Approval Process and Regulatory Requirements.....	1-6
1.4.1 Class Environmental Assessment Process	1-7
1.4.2 Other Permits, Licenses and Approvals	1-10
2 Study Area	2-1
2.1 Project Study Area	2-1
2.2 Local Study Area	2-1
3 Consultation	3-1
3.1 Notice of Commencement.....	3-4
3.2 Community Information Centre #1	3-4
3.3 Virtual Information Session (VIS #1)	3-5
3.3.1 Overview of VIS #1	3-6
3.3.2 Live Discussion – May 12, 2020.....	3-7
3.3.3 Live Discussion – May 14, 2020.....	3-8
3.4 Virtual Information Session (VIS #2)	3-9
3.4.1 Virtual Open House (VIS #2).....	3-10
3.4.2 Live Discussion (VIS #2).....	3-11
3.5 Virtual Information Session (VIS #3)	3-12
3.5.1 Virtual Open House (VIS #3).....	3-13
3.5.2 Live Discussion (VIS #3).....	3-13
3.6 Indigenous Communities.....	3-14
3.6.1 Capacity Funding Agreements.....	3-16
3.6.2 Community Engagement Coordinators.....	3-17
3.6.3 Aamjiwnaang First Nation (AFN).....	3-18
3.6.4 Bkejwanong (Walpole Island) First Nation (WIFN)	3-20
3.6.5 Caldwell First Nation (CFN).....	3-23
3.6.6 Chippewas of Kettle and Stony Point First Nation.....	3-25

3.6.7	Chippewas of the Thames First Nation (COTTFN).....	3-27
3.6.8	Oneida Nation of the Thames	3-29
3.6.9	Six Nations of the Grand River Elected Council (Six Nations).....	3-30
3.6.10	Haudenosaunee Confederacy Chiefs Council/Haudenosaunee Development Institute (HCCC/HDI).....	3-32
3.6.11	Project Updates & Key Communications.....	3-34
3.6.12	Anishnawbek and Haudenosaunee Virtual Information Sessions (VIS - May 2020).....	3-35
3.6.13	Anishnawbek and Haudenosaunee Virtual Information Sessions (VIS - March 2021).....	3-38
3.6.14	Summary of Key Anishnawbek and Haudenosaunee Comments and Concerns.....	3-40
3.7	Federal Government & Agencies	3-49
3.7.1	Agriculture and Agri-Food Canada	3-49
3.7.2	Canadian National Railway (CN Rail).....	3-49
3.7.3	Canadian Pacific Railway (CP Rail)	3-49
3.7.4	Canadian Wildlife Services (CWS)	3-50
3.7.5	Environment and Climate Change Canada (ECCC)	3-50
3.7.6	Fisheries and Oceans Canada (DFO)	3-50
3.7.7	Transport Canada (TC).....	3-50
3.7.8	VIA Rail	3-51
3.8	Provincial Government & Agencies	3-51
3.8.1	Rick Nicholls, MPP for Chatham-Kent-Leamington	3-52
3.8.2	Taras Natyshak, MPP for Essex.....	3-52
3.8.3	Ministry of Agriculture, Food and Rural Affairs (OMAFRA).....	3-53
3.8.4	Ministry of Energy, Northern Development and Mines (ENDM)	3-53
3.8.5	Ministry of the Environment, Conservation and Parks (MECP)	3-53
3.8.6	Ministry of Government and Consumer Services (MGCS)	3-54
3.8.7	Ministry of Indigenous Affairs (MIA)	3-54
3.8.8	Ministry of Municipal Affairs and Housing (MMAH)	3-55
3.8.9	Ministry of Natural Resources and Forestry (MNRF)	3-55
3.8.10	Ministry of Transportation (MTO)	3-55
3.8.11	Essex Region Conservation Authority (ERCA)	3-56
3.8.12	Infrastructure Ontario (IO).....	3-57
3.8.13	Lower Thames Valley Conservation Authority (LTVCA).....	3-57
3.8.14	Ontario Clean Water Agency (OCWA).....	3-57
3.8.15	Ontario Provincial Police (OPP).....	3-57
3.9	Municipal Governments and Agencies	3-57
3.9.1	County of Essex – Municipal Staff	3-58
3.9.2	County of Essex – Elected Officials.....	3-58
3.9.3	Municipality of Chatham-Kent – Municipal Staff	3-59
3.9.4	Municipality of Chatham-Kent – Elected Officials.....	3-60
3.9.5	Municipality of Lakeshore – Municipal Staff.....	3-61
3.9.6	Municipality of Lakeshore – Elected Officials	3-63

3.10	Potentially Affected and Interested Groups, Businesses, School Boards and Utilities	3-64
3.10.1	Christian Farmers Federation of Ontario (CFFO)	3-65
3.10.2	Ontario Federation of Agriculture (OFA)	3-65
3.10.3	Enbridge Gas Inc./Union Gas.....	3-66
3.11	Property Owners/Residents/General Members of the Public.....	3-67
3.11.1	Meetings with Property Owners and Potentially Affected Members of the Public	3-67
3.11.2	Former CASO Rail Corridor Review Requests	3-68
3.11.3	Lakeshore Route Diversion Requests.....	3-69
3.12	Technical Advisory Committee (TAC).....	3-70
3.12.1	TAC Workshop #1	3-71
3.12.2	TAC Workshop #2	3-82
3.12.3	TAC Workshop #3	3-88
3.13	Summary of Stakeholder Comments and Concerns	3-91
3.14	Final Notification and Draft ESR Review Period	3-104
4	Environmental Inventory	4-1
4.1	Agricultural Resources	4-2
4.2	Forestry Resources	4-4
4.3	Cultural Heritage Resources	4-4
4.3.1	Archaeology.....	4-4
4.3.2	Cultural Heritage	4-5
4.4	Land Use and Communities.....	4-5
4.4.1	Land Use Planning	4-5
4.4.1.1	Provincial Policy Statement (2020).....	4-6
4.4.1.2	County of Essex Official Plan (2014).....	4-6
4.4.1.3	Municipality of Lakeshore Official Plan (2010)	4-7
4.4.1.4	Municipality of Chatham-Kent Official Plan (2018).....	4-7
4.4.2	Transportation.....	4-8
4.4.3	First Nations Lands.....	4-9
4.5	Mineral Resources	4-9
4.6	Natural Environment Resources	4-10
4.6.1	Physical Environment.....	4-10
4.6.2	Atmospheric Environment.....	4-14
4.6.3	Surface Water Resources.....	4-17
4.6.4	Groundwater Resources.....	4-20
4.6.5	Source Water Protection.....	4-22
4.6.6	Designated or Special Natural Areas	4-23
4.6.7	Natural Heritage Features.....	4-25
4.7	Recreational Resources.....	4-44

4.8	Visual and Aesthetic Resources.....	4-44
5	Identification and Evaluation of Alternative Routes.....	5-1
5.1	Step 1: Establish Need	5-1
5.2	Step 2: Identify Alternatives	5-2
5.3	Step 3 – Define Criteria	5-6
5.3.1	Natural Environment Factor.....	5-6
5.3.2	Socio-Economic Environment Factor.....	5-7
5.3.3	Technical and Cost Factor.....	5-9
5.3.4	Anishnawbek and Haudenosaunee Culture, Values and Land Use Factor.....	5-11
5.4	Step 4 – Weight Criteria	5-17
5.5	Step 5 – Evaluate and Select	5-21
5.6	Summary of Comparative Evaluation	5-27
5.6.1	Natural Environment Factor Summary.....	5-27
5.6.2	Socio-Economic Environment Factor Summary.....	5-27
5.6.3	Technical and Cost Factor Summary.....	5-27
5.6.4	Anishnawbek and Haudenosaunee Culture, Values and Land Use Factor Summary.....	5-27
5.6.5	Technically Preferred Route Alternative.....	5-28
6	Project Description.....	6-1
6.1	Design Phase	6-4
6.2	Construction Phase.....	6-4
6.3	Maintenance, Operation and Retirement Phases.....	6-6
6.4	Project Schedule	6-6
7	Potential Environmental Effects and Mitigation Measures	7-1
7.1	Agricultural Resources	7-2
7.1.1	Loss of Agricultural Lands and Crops	7-2
7.1.2	Soil Compaction.....	7-3
7.1.3	Soil Mixing.....	7-4
7.1.4	Disturbance to Farm Operations	7-5
7.1.5	Vegetation Removal	7-5
7.1.6	Contamination of Organic or Identity Preserved (IP) Crops.....	7-6
7.1.7	Damage to Field Tile Drains	7-7
7.1.8	Livestock Stress, Loss or Injury.....	7-7
7.1.9	Electric and Magnetic Interference	7-8
7.2	Forestry Resources	7-9
7.3	Archaeological Resources.....	7-9
7.4	Cultural Heritage Resources	7-9

7.5	Land Use and Communities.....	7-10
7.5.1	Business Operations.....	7-10
7.5.2	Effects to Existing and Future Land Use Designations and Potential Future Development.....	7-10
7.5.3	Effects to Local Roads and Traffic.....	7-11
7.5.4	Mud and Construction Debris.....	7-12
7.5.5	Electric and Magnetic Fields (EMF).....	7-13
7.5.6	Noise and Vibration.....	7-14
7.5.7	Community Benefits Initiative.....	7-15
7.6	Mineral and Petroleum Resources.....	7-15
7.6.1	Aggregate Extraction.....	7-15
7.6.2	Petroleum Resources.....	7-15
7.7	Natural Environment Resources.....	7-16
7.7.1	Physical Environment.....	7-16
7.7.1.1	Physiography and Geology.....	7-16
7.7.1.2	Spills.....	7-16
7.7.1.3	Waste Generation.....	7-17
7.7.1.4	Excess Materials Management.....	7-17
7.7.2	Atmospheric Environment.....	7-18
7.7.2.1	Climate Change.....	7-18
7.7.2.2	Air Quality.....	7-18
7.7.3	Noise and Vibration.....	7-19
7.7.4	Surface Water Resources.....	7-19
7.7.4.1	Potential Effects on Surface Water Quantity.....	7-19
7.7.4.2	Potential Effects on Surface Water Quality.....	7-24
7.7.5	Source Water Protection.....	7-26
7.7.6	Groundwater Resources.....	7-27
7.7.6.1	Potential Effects on Groundwater Quality.....	7-27
7.7.6.2	Potential Effects on Groundwater Quantity.....	7-27
7.7.7	Designated or Special Natural Areas.....	7-28
7.7.7.1	East Lake St. Clair Important Bird Area.....	7-28
7.7.7.2	Significant Woodlands.....	7-29
7.7.7.3	Conservation Areas.....	7-30
7.7.7.4	Areas of Natural and Scientific Interest.....	7-31
7.7.7.5	Valleylands.....	7-31
7.7.7.6	Provincially Significant Wetlands.....	7-31
7.7.8	Natural Heritage Features.....	7-31
7.7.8.1	Wetlands.....	7-33
7.7.8.2	Fish and Aquatic Habitat.....	7-34
7.7.8.3	Woodlands.....	7-34
7.7.8.4	Species at Risk.....	7-34
7.7.8.5	Wildlife and Significant Habitat.....	7-36

7.7.8.6	Invasive Species	7-36
7.7.8.7	Biodiversity Initiative	7-37
7.8	Anishnawbek and Haudenosaunee Lands and Territory	7-37
7.9	Recreational Resources	7-38
7.10	Visual and Aesthetic Resources	7-39
7.11	Technical Considerations	7-40
7.11.1	Wind Turbines	7-40
7.11.2	Infrastructure Crossings	7-40
7.12	Summary of Potential Environmental Effects, Mitigation Measures, and Net Effects	7-40
8	Effects Monitoring	8-1
9	Conclusion	9-1
10	References	10-1

List of Tables

Table 1-1:	Potentially Required Permits, Licenses and Approvals	1-11
Table 3-1:	May 2020 VIS Overview	3-6
Table 3-2:	May 12 VIS Survey Polling Question Summary	3-8
Table 3-3:	May 14 VIS Survey Polling Question Summary	3-9
Table 3-4:	May 2020 Anishnawbek and Haudenosaunee VIS Overview	3-35
Table 3-5:	Haudenosaunee May 25 VIS Survey Polling Question Summary	3-36
Table 3-6:	Anishnawbek May 26 VIS Survey Polling Question Summary	3-37
Table 3-7:	March 2021 Anishnawbek and Haudenosaunee VIS Overview	3-38
Table 3-8:	Summary of Key Comments and Concerns from Anishnawbek and Haudenosaunee Communities	3-41
Table 3-9:	Summary of TAC Workshop #1 Moderated Conference Calls	3-72
Table 3-10:	TAC Proposed Criteria and Measures	3-74
Table 3-11:	TAC Recommended Additional/Alternative Assessment Methods	3-77
Table 3-12:	Summary of TAC Workshop #1 Moderated Conference Call	3-83
Table 3-13:	Summary of Stakeholder Comments and Concerns	3-91
Table 4-1:	Road Classifications within PSA	4-8
Table 4-2:	Summary of Published Annual Climate Normals for the 1981 to 2010 Period for the Kingsville MECP and Chatham WPCP Stations	4-14
Table 4-3:	Watercourse Crossings Surveyed	4-18
Table 4-4:	Water Well Records Selected for Review within the PSA	4-20

Table 4-5:	Vegetation Communities Identified within the PSA.....	4-26
Table 4-6:	SAR with the Potential to Occur within the General Vicinity of the PSA.....	4-34
Table 4-7:	SCC with the Potential to Occur within the General Vicinity of the PSA.....	4-40
Table 5-1:	Natural Environment Factor Criteria.....	5-6
Table 5-2:	Socio-Economic Environment Factor Criteria.....	5-8
Table 5-3:	Technical and Cost Factor Area Criteria.....	5-10
Table 5-4:	Anishnawbek and Haudenosaunee Culture, Values and Land Use Factor Area Criteria.....	5-16
Table 5-5:	Criteria Weighting.....	5-18
Table 5-6:	Comparative Evaluation Results.....	5-22
Table 6-1:	Project Schedule.....	6-6
Table 7-1:	Summary of Potential Effects, Mitigation Measures and Net Effects.....	7-41

List of Figures

Figure E-1:	Route Alternatives and Local Study Area.....	iii
Figure 1-1:	Project Location.....	1-3
Figure 1-2:	Class Environmental Assessment Process.....	1-8
Figure 2-1:	Study Areas.....	2-2
Figure 3-1:	Consultation Timeline.....	3-3
Figure 3-2:	Socio-Economic Environment Criteria Weighting Survey Results.....	3-86
Figure 3-3:	Natural Environment Criteria Weighting Survey Results.....	3-87
Figure 4-1:	Agricultural Soil Classes.....	4-3
Figure 4-2:	Bedrock Geology.....	4-12
Figure 4-3:	Quaternary Geology.....	4-13
Figure 5-1:	Multi-Criteria Decision Making Process.....	5-1
Figure 5-2:	Route Alternatives, Variations and Refinements.....	5-5
Figure 5-3:	Technically Preferred Route Alternative.....	5-29
Figure 6-1:	Example of Transmission Structure Proposed for the Project.....	6-2
Figure 6-2:	Preliminary Right-of-way Cross Section.....	6-3

List of Appendices

Appendix A **Independent Electricity System Operator (IESO), June 11, 2019 Handoff Letter**

Appendix B **Class EA Consultation**

Appendix B1 **Project Contact List**

Appendix B2 **Class EA Consultation Materials**

Notice of Commencement - notice/invitation

Notice of Commencement - newspaper advertisement

Notice of Community Information Centre (CIC) #1 - notice/invitation

Notice of Community Information Centre (CIC) #1 - newspaper advertisement

Community Update - Community Information Centre (CIC) #1 Postponement Notice

Notice of Virtual Information Sessions (VIS) #1 - notice/invitation

Notice of Virtual Information Sessions (VIS) #1 - newspaper advertisement

Virtual Information Session (VIS) #1 Presentation Slides

Notice of Virtual Open House and Live Discussion (VIS #2) - notice/invitation

Notice of Virtual Open House and Live Discussion (VIS #2) - newspaper advertisement

Virtual Open House and Live Discussion (VIS #2) Presentation Slides

Notice of Virtual Open House and Live Discussion (VIS #3) - notice/invitation

Notice of Virtual Open House and Live Discussion (VIS #3) - newspaper advertisement

Virtual Open House and Live Discussion (VIS #3) Presentation Slides

Notice of Draft Environmental Study Report (ESR) - newspapers advertisement

Appendix B3 **Anishnawbek and Haudenosaunee Consultation Materials**

Hydro One Duty to Consult Determination and Delegation for the Chatham to Lakeshore Transmission Line letter to the Ministry of Energy, Northern Development and Mines (ENDM)

Ministry of Energy, Northern Development and Mines (ENDM) Response letter for Duty to Consult Determination and Delegation

Sample Interim Update Letter to Anishnawbek and Haudenosaunee Communities

Sample Notice of Commencement Letter to Anishnawbek and Haudenosaunee Communities

Notice of Virtual Information Sessions (VIS) #1 - Haudenosaunee Communities

Notice of Virtual Information Sessions (VIS) #1 - Anishnawbek Communities

Virtual Information Sessions (VIS) #1 Presentation Slides

Notice of Virtual Open House and Live Discussion (VIS #2) - Anishnawbek Communities

Notice of Virtual Open House and Live Discussion (VIS #2) -Haudenosaunee
Communities

Virtual Open House and Live Discussion (VIS #2) Presentation Slides

Appendix B4 Key Correspondence with Stakeholders

Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)

Ministry of Transportation (MTO)

Lower Thames Valley Conservation Authority (LTVCA)

Municipality of Lakeshore

Appendix B5 Technical Advisory Committee Consultation Materials

Technical Advisory Committee (TAC) Workshop #1 Presentation Slides

Preliminary Evaluation Criteria

Technical Advisory Committee (TAC) Workshop #2 Presentation Slides

Final Evaluation Criteria and Weighting Exercise

Technical Advisory Committee (TAC) Workshop #3 Presentation Slides

Appendix B6 Record of Consultation

Appendix C Environmental Inventory

Appendix C1 Natural Environment Existing Conditions Technical Report

Appendix C2 Cultural Heritage Reports

Stage 1 Archaeological Assessment

Cultural Heritage Existing Conditions

Appendix C3 Official Plan Schedules

Municipality of Chatham-Kent

Municipality of Lakeshore

County of Essex

Appendix C4 Mineral and Mining Mapping

Appendix C5 Southwestern Ontario Gas Line Mapping

Appendix C6 Secondary Watersheds

**Appendix C7 Ministry of the Environment, Conservation and Parks (MECP) Source Water
Protection and Provincial Water Quality Monitoring (PWQM) Stations
Mapping**

Appendix C8 Well Records Mapping and Summaries

Appendix C9 Essex Region/Chatham-Kent Region Groundwater Study Volume 1:
Geologic/Hydrogeologic Evaluation

Figures

Appendix C10 Ministry of the Environment, Conservation and Parks (MECP) and Fisheries
and Oceans Canada (DFO) Drainage Mapping

Appendix D Health Canada Electric and Magnetic Fields (EMF) Fact Sheet

List of Acronyms & Abbreviations

AFN	Aamjiwnaang First Nation
ANSI	Area of Natural and Scientific Interest
AQHI	Air Quality Health Index
BHA	Butternut Health Assessments
CEC	Community Engagement Coordinator
CFA	Capacity Funding Agreement
CFFO	Christian Farmers Federation of Ontario
CFN	Caldwell First Nation
CHEC	Cultural Heritage Existing Conditions
CHVI	Cultural Heritage Value or Interest
CIC	Community Information Centre
CLI	Canada Land Inventory
CNR	Canadian National Railway
CO	Carbon monoxide
COTTFN	Chippewas of the Thames First Nation
CP Rail	Canadian Pacific Railway
CWS	Canadian Wildlife Services
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EA Act	Environmental Assessment Act
EAB	Environmental Assessment Branch
EASR	Environmental Activity and Sector Registry
EBA	Event Based Areas
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
ECI	Early Contractor Involvement
EMF	Electro-magnetic Fields
ENDM	Ministry of Energy, Northern Development and Mines
EPC	Engineering, Procurement and Construction
ERCA	Essex Region Conservation Authority
ESA	Endangered Species Act
ESR	Environmental Study Report

HCCC	Haudenosaunee Confederacy Chiefs Council
HDI	Haudenosaunee Development Institute
HIA	Heritage Impact Assessments
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IBA	Important Bird Area
IEEE	Institute of Electrical and Electronics Engineers
IESO	Independent Electricity System Operator
IO	Infrastructure Ontario
IPZ	Intake Protection Zone
km	Kilometres
kV	Kilovolt
LACP	Land Acquisition Compensation Principles
LIO	Land Information Ontario
LSA	Local Study Area
LTVCA	Lower Thames Valley Conservation Authority
masl	Metres above sea level
MCDA	Multi-Criteria Decision Making Analysis
MECP	Ministry of the Environment, Conservation and Parks
mG	Milligauss
MGSC	Ministry of Government and Consumer Services
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MIA	Ministry of Indigenous Affairs
MMAH	Ministry of Municipal Affairs and Housing
MNRF	Ministry of Natural Resources and Forestry
MPP	Member of Provincial Parliament
MTO	Ministry of Transportation
MW	Megawatts
NHIC	Natural Heritage Information Centre
NHRM	Natural Heritage Reference Manual
NHSC	National Historic Site of Canada
NO ₂	Nitrogen dioxide
NRCan	Natural Resources Canada
O. Reg.	Ontario Regulation
O ₃	Ozone

OCWA	Ontario Clean Water Agency
OEB	Ontario Energy Board
OFA	Ontario Federation of Agriculture
OMAFRA	Ministry of Agriculture, Food and Rural Affairs
OPP	Ontario Provincial Police
OWES	Ontario Wetland Evaluation System
PM	Particulate Matter
PSA	Project Study Area
PSW	Provincially Significant Wetlands
PTTW	Permit to Take Water
PWQMN	Provincial Water Quality Monitoring Network
ROW	Right-of-way
SAR	Species at Risk
SARA	Species at Risk Act
SCC	Species of Conservation Concern
SCGT	Simple Cycle Gas Turbine
Six Nations	Six Nations of the Grand River Elected Council
SO ₂	Sulphur dioxide
SPA	Source Protection Area
SS	Switching Station
SWH	Significant Wildlife Habitat
SWHTG	Significant Wildlife Habitat Technical Guide
TAC	Technical Advisory Committee
TC	Transport Canada
TEK	Traditional Ecological Knowledge
TMHC	Timmins Martelle Heritage Consultants Inc.
TS	Transformer Station
VIS	Virtual Information Session
WHO	World Health Organization
WIFN	Walpole Island First Nation
WPCP	Water Pollution Control Plant

1 Introduction

Hydro One Networks Inc. (Hydro One) is proposing to construct a new, double-circuit, 230 kilovolt (kV) transmission line (the Project) in southwestern Ontario. The Project will be approximately 48 kilometres (km) in length and will connect the Chatham Switching Station (SS) in the Municipality of Chatham-Kent to the future Lakeshore Transformer Station (Lakeshore TS) in the Municipality of Lakeshore (**Figure 1-1**). As the preferred Route Alternative will repurpose approximately 16 km of an existing idle 115 kV transmission corridor between Tilbury and Chatham, the Project will involve dismantling and removal of the existing transmission structures, conductor and associated components and equipment along this stretch of the idle transmission line. The Project will also involve an expansion of the Chatham SS to facilitate the connection of the new transmission lines. The purpose of the Project is to reliably supply the forecast load growth in the Windsor-Essex region. This will allow the resources and bulk facilities in this region to operate efficiently for local and system needs, and maintain existing interchange capability on the Ontario-Michigan interconnection.

The proposed Project is subject to the Class Environmental Assessment for Minor Transmission Facilities (Hydro One, 2016), an approved planning process under the *Environmental Assessment Act* (EA Act) designed for proponents to characterize the existing environment, assess potential environmental effects and mitigation, identify and evaluate alternatives, conduct consultation and document study findings. This draft Environmental Study Report (ESR) has been prepared in accordance with the requirements of the EA Act and describes the Class Environmental Assessment (EA) process undertaken for the proposed Project.

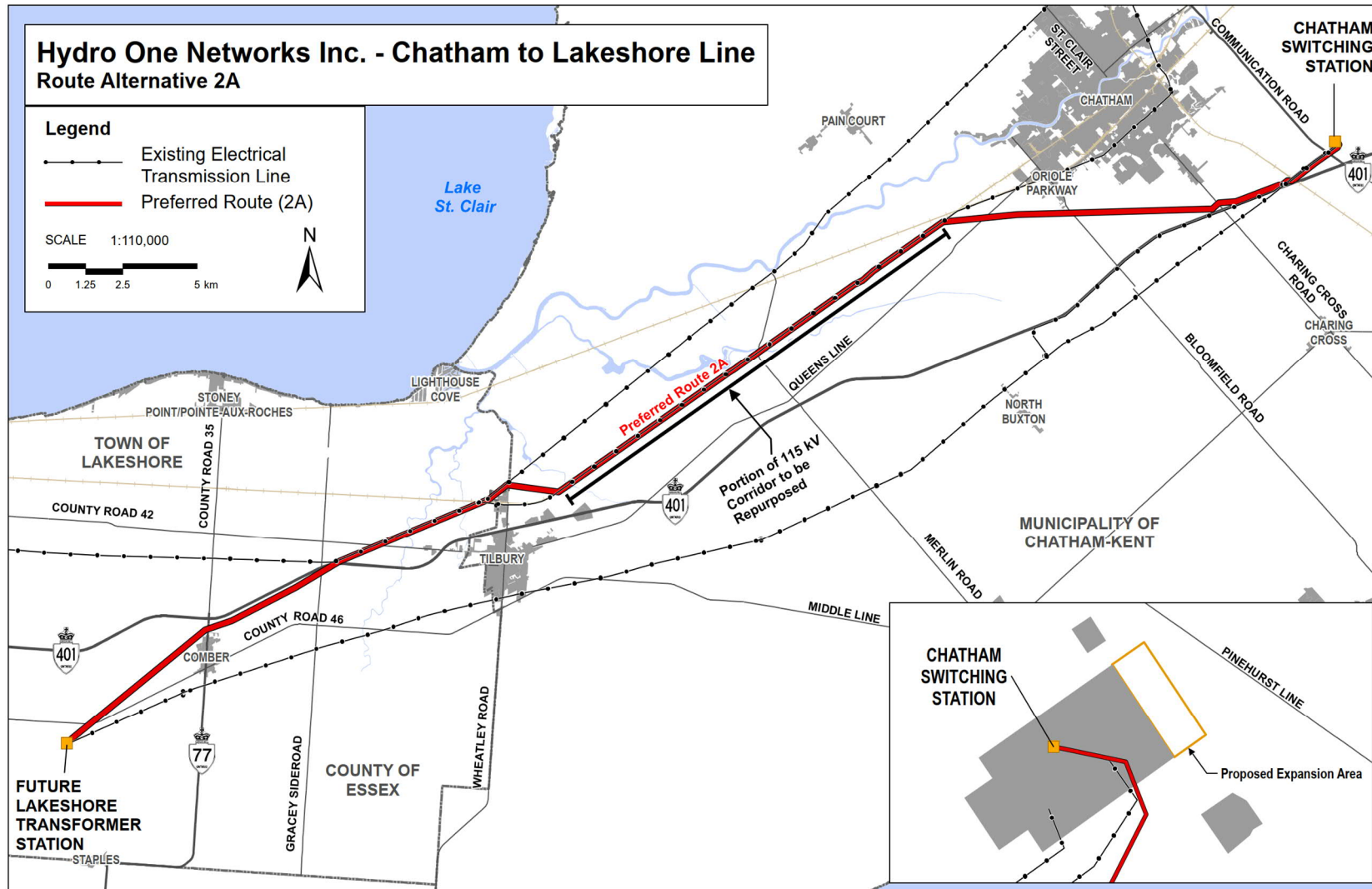
The Class EA was developed as a streamlined planning process to ensure that applicable projects are planned and carried out in a manner that is efficient and environmentally acceptable.

This draft Environmental Study Report (ESR) describes the Class EA process that was undertaken for the proposed Project. The draft ESR:

- Summarizes existing conditions in the Local Study Area (LSA) (500 m) and Project Study Area (PSA) (120 m)
- Documents the notification to, and consultation undertaken with; Anishnawbek and Haudenosaunee communities, government agencies, municipal staff and elected officials, interest groups and members of the public about the Project

- Documents the route identification and evaluation process conducted to select the Preferred Route Alternative
- Identifies potential environmental effects associated with the Project
- Identifies potential avoidance, mitigation and restoration measures to address these potential environmental effects.

Figure 1-1: Project Location



1.1 Need for the Undertaking

In June 2019, the Independent Electricity System Operator (IESO) – the agency responsible for monitoring electricity demand and forecasting future needs in the province – requested Hydro One to initiate work on development activities, including seeking relevant regulatory approvals and to construct a new double-circuit 230 kV transmission line between the Chatham SS in the Municipality of Chatham-Kent, to the future Lakeshore TS in the Municipality of Lakeshore (**Appendix A**).

The purpose of the new double-circuit 230 kV transmission line is to:

- Increase the overall transfer capability of the bulk transmission system west of Chatham to reliably supply the forecast load growth in the Kingsville-Leamington area and the broader Windsor-Essex Region in the near- to mid-term due to a strong growth in the agricultural sector.
- Permit the resources and bulk facilities in this region to operate efficiently for local and system needs.
- Maintain existing interchange capability on the Ontario-Michigan interconnection between Windsor and Detroit.

The required in-service date for the Project is prior to the winter of 2025/2026 to address the specified bulk system electricity needs. To meet the energy needs of the region as quickly as possible, Hydro One is seeking opportunities to advance the in-service date.

1.2 Description of the Undertaking

The proposed Project will involve the installation of a new double-circuit 230 kilovolt kV transmission line, including associated infrastructure (e.g. towers, access roads), along the preferred Route. As the preferred Route Alternative will repurpose approximately 16 km of an existing idle 115 kV transmission corridor between Tilbury and Chatham, the Project will involve dismantling and removal of the existing transmission structures, conductor and associated components and equipment along this stretch of the idle transmission line. The Project will also involve an expansion of the Chatham SS to facilitate the connection of the new transmission lines.

Upon the successful completion of the Class EA process and receipt of subsequent required approvals, construction could begin as early as 2023/2024.

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.

Alternatives to the undertaking must be reasonable from a technical, economic and environmental perspective and must fall within the mandate of the proponent. It is understood that companies whose operating licences (i.e., as granted by the Ontario Energy Board) are limited to assessment of transmission alternatives cannot, for example, assess generation as an alternative to transmission facilities.

This project resulted from a recommendation of the IESO, as documented in the report “Need for Bulk Transmission Reinforcement in the Windsor-Essex Region” (June 13, 2019) and the letter sent to Hydro One by the IESO in June 2019 requesting Hydro One to initiate work on development activities, including seeking relevant regulatory approvals and to construct a new double-circuit 230 kV transmission line between the Chatham SS in the Municipality of Chatham-Kent, to the future Lakeshore TS in the Municipality of Lakeshore.

In such cases, the transmitter will accept the recommendations of an independent agency as a starting point for the Class EA Process and will not revisit alternatives considered and rejected by the planning process (e.g., generation alternatives and other transmission alternatives).The following summarizes the conclusions of the IESO report regarding the alternatives to the undertaking that were considered to address the identified need:

- Alternative 1: Do nothing
- Alternative 2: Additional Generation
- Alternative 3: New Transmission Infrastructure

Alternative 1: Do Nothing

The “Do Nothing Alternative” is an alternative to the undertaking that must be considered.

Due to the significant increase in the demand forecast for electricity in the Essex area, the Do Nothing Alternative would result in the inability to reliably supply the forecasted load growth. This load growth is anticipated for the Kingsville-Leamington area and the broader Windsor-Essex Region in the near- and mid-term. Furthermore, the Do Nothing Alternative would limit resources

and bulk facilities in the region from operating efficiently for local and system needs. Therefore, the Do Nothing Alternative is not considered to be a feasible option.

Alternative 2: Additional Generation

The IESO, in their June 13, 2019 report titled "Need for Bulk Transmission Reinforcement in the Windsor-Essex Region (IESO, 2019), documents the results of a planning study undertaken by IESO. This study assessed the adequacy of the bulk transmission system in the Windsor-Essex Region and recommended preferred near- and mid-term solutions to address identified needs.

After an assessment by the IESO of the capabilities and cost of potential resources, a new natural gas-fired simple cycle gas turbine (SCGT), located west of the future Lakeshore TS was identified as the lowest cost resource alternative capable of supplying the magnitude of energy and capacity required. Other generation types were also considered (e.g., wind, solar, storage, combined cycle gas turbine); however, the profile of energy required to meet the regional needs made these options less cost-effective compared to a SCGT. Additionally, a proponent's choice of location for a new generation facility may require new or reinforced transmission infrastructure to ensure that the installed generator is able to meet the identified need. Therefore, the Additional Generation Alternative is not considered to be a feasible option.

Alternative 3: Transmission Alternatives

The IESO report concludes that for the current planning assumptions and the evaluated load growth scenarios, new transmission was found to be the most cost effective and technically feasible option to meet identified system needs in a timely manner. For the needs considered, the transmission option has a net present value approximately \$500M lower than the least cost resource alternative for the most likely scenario. Based on the results of the two studies, the IESO recommends a new 230 kV double circuit transmission line from the existing Chatham SS to the Lakeshore.

1.4 Approval Process and Regulatory Requirements

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

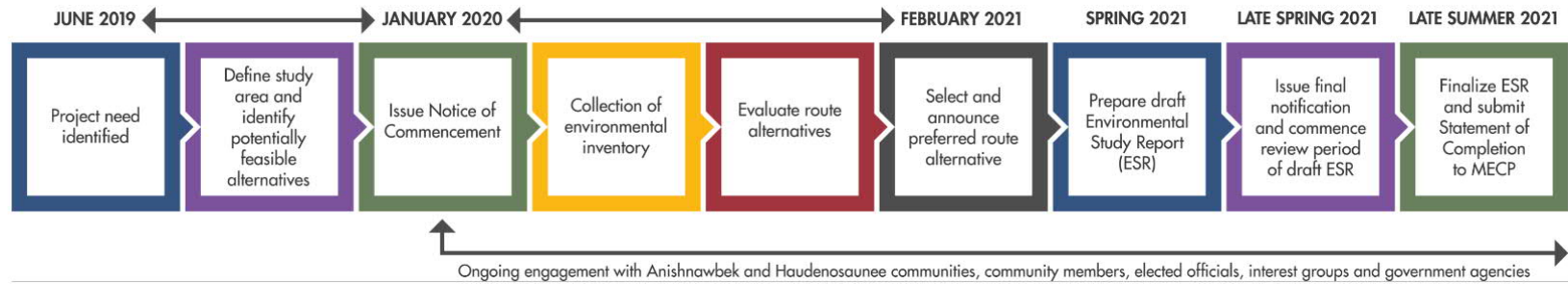
1.4.1 Class Environmental Assessment Process

This draft ESR has been prepared in accordance with the Class EA for Minor Transmission Facilities (Hydro One, 2016), an approved planning process 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 2.0).
- Issue initial notification (Section 3.1).
- Conduct an environmental inventory (Section 4.0).
- Identify and evaluate “Route Alternatives” (Section 5.0).
- Select preferred Route Alternative (Section 5.6.5) and prepare draft ESR.
- Issue final notification and the draft ESR for public review and comment (Section 3.14).
- File final ESR and Class EA Statement of Completion with the MECP and proceed with the undertaking (Section 3.13).
- Conduct consultation throughout the process (Section 3.0).

The Class EA process is illustrated in Figure 1-2.

Figure 1-2: Class Environmental Assessment Process



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

The criteria that triggered the Class EA for this project is from Section 1.1 Class Definition subsection a, which states:

“The projects that are subject to this Class EA Document are defined as follows:

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

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

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

With the completion of the draft ESR as presented herein, Hydro One has issued a final notification to municipal, provincial and federal government officials and agencies, Anishnawbek and Haudenosaunee communities, potentially affected and interested persons, and interest groups. The draft ESR is being made available for public review and comment for a period of 60 calendar days, from June 11, 2021 until August 10, 2021. Hydro One will make best efforts to respond to, and resolve issues raised by concerned parties during the draft ESR review period. Any issues and their respective resolutions will be documented and summarized in the final ESR.

As outlined by recent Provincial government amendments, a request may be made to the Ministry of the Environment, Conservation and Parks (MECP) for an order requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed). A request may also be submitted that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. The MECP will not consider requests on other grounds.

Requests should include the requester’s contact information, as well as specify what kind of order is being requested (request for conditions or a comprehensive EA), how an order may prevent, mitigate or remedy potential adverse impacts on Aboriginal and treaty rights, and any information in support of the statements in the request. This will ensure that the ministry is able to efficiently

begin reviewing the request. The request should be sent in writing or by email to MECP. A copy of the request and any supporting information must also be forwarded to Hydro One.

If no requests are received by MECP during the 60-day period, the Project may proceed to detailed design, permitting and construction. See **Section 3.14** for more details.

A copy of the final ESR will be placed on the Hydro One Project website, as well as provided to the Environmental Assessment Branch (EAB) and the appropriate Regional EA Coordinator at MECP for filing. Once the final ESR and the Class EA Statement of Completion have been filed with MECP, the proposed Project will be considered acceptable and may proceed as outlined in the final ESR.

1.4.2 Other Permits, Licenses and Approvals

In addition to meeting EA Act requirements, there are several permits, licenses and approvals that may be required under municipal, federal and provincial legislation and regulations. These are described in **Table 1-1**. Hydro One or its contractors will contact the appropriate regulatory agencies to ensure that the proposed Project will meet all regulatory requirements prior to construction. The proposed Project does not trigger a federal EA under the *Impact Assessment Act, 2019*.

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 is not subject to the *Planning Act* after completion of the Class EA, Hydro One has been working with the County of Essex and the Municipalities of Chatham-Kent and Lakeshore during the Class EA process and will continue to consult with these municipalities regarding design, and the potential effects of the construction on local traffic and nearby communities, as needed.

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

Permit, License, or Approval	Primary Agency	Description
Section 92 Leave to Construct	Ontario Energy Board (OEB)	Required for the construction of the new transmission line.
Transport Canada Aeronautical Assessment	Transport Canada	Required for the construction of the new transmission structures within 6 km of an aerodrome.
Nav Canada Land Use Assessment	Nav Canada	Required for the construction of the new transmission structures within 6 km of an aerodrome.
Environmental Activity and Sector Registry (EASR) / Permit to Take Water (PTTW)	MECP	May be required for construction dewatering.
Air and Noise Environmental Activity and Sector Registry (EASR)	MECP	May be required for noise-emitting equipment as part of the expansion of the Chatham SS for this project.
Industrial Sewage Works Environmental Compliance Approval (ECA) for station drainage	MECP	May be required for changes to the station drainage system as part of the expansion of the Chatham SS for this project.
Approvals and/or Permits under the <i>Endangered Species Act, 2007</i>	MECP	May be required for planned works that might affect species at risk and/or their habitat which are protected under the <i>Endangered Species Act, 2007</i> .
Archaeological Acceptance Letters	Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)	Acceptance is required prior to undertaking new ground disturbance in areas with archeological potential.

Permit, License, or Approval	Primary Agency	Description
Encroachment Permit	Ministry of Transportation (MTO)	Required for works within the Highway 401 corridor.
Land Use Permit	MTO	Required for project assets to be located within 400 m of a 400-series highway.
Noise By-law Exemption	Municipalities of Lakeshore and Chatham-Kent	An exemption may be required if the operation of construction equipment occurs outside of the noise-by-law curfew.
Use, Storage, Transportation of Explosives	Natural Resources Canada (NRCan)	Required for magazines, vehicles used for transportation of explosives, and activities related to storage of explosives in support of splicing.
Road Entrance Permits	Municipalities of Lakeshore and Chatham-Kent	Required to construct potential new entrances for access to a construction site from existing municipal roads.
Building Permit	Municipality of Chatham-Kent	Required for new relay building being constructed as part of the expansion of the Chatham SS.
Demolition Permit	Municipalities of Lakeshore and Chatham-Kent	Required for the demolition and removal of structures.
Section 28 Development, Interference with Wetlands and Alternations to Shorelines and Watercourses Permit	Essex Region Conservation Authority (ERCA) and Lower Thames Valley Conservation Authority (LTVCA)	Required for construction works within ERCA and LTVCA regulated areas.
<i>Fisheries Act</i> Authorization	Fisheries and Oceans Canada (DFO)	May be required for in-water construction works or works with potential releases that have potential to adversely affect fish or fish habitat.

Permit, License, or Approval	Primary Agency	Description
Crown Land Work Permit	Ministry of Natural Resources and Forestry (MNRF)	May be required for work on Crown lands (e.g., river beds).
Notice of Work	Rail Companies	May be required for crossings of federally regulated rail lines.
Clearance Letter	Utility companies	Required to cross utilities (e.g. natural gas or oil pipelines).

In the event that other permits are identified as required, Hydro One and/or the EPC will work with the regulator to ensure compliance.

2 Study Area

At the outset of the Class EA, two study areas (Local Study Area and Project Study Area) were identified to consider potential natural and socio-economic environmental features and potential effects associated with each of the Route Alternatives and their corresponding variations (**Figure 2-1**).

As further described in **Section 5.2**, at the beginning of the Class EA process, the Hydro One project team completed a preliminary assessment to identify the technical specifications, constraints and system requirements for the proposed double-circuit 230 kV transmission line. This preliminary assessment mapped viable Route Alternatives, including variations, for the proposed transmission line. This included mapping known environmental and technical feature constraints, identifying opportunities to parallel existing linear infrastructure, as well as utilization of existing easements and/or ROW, where possible.

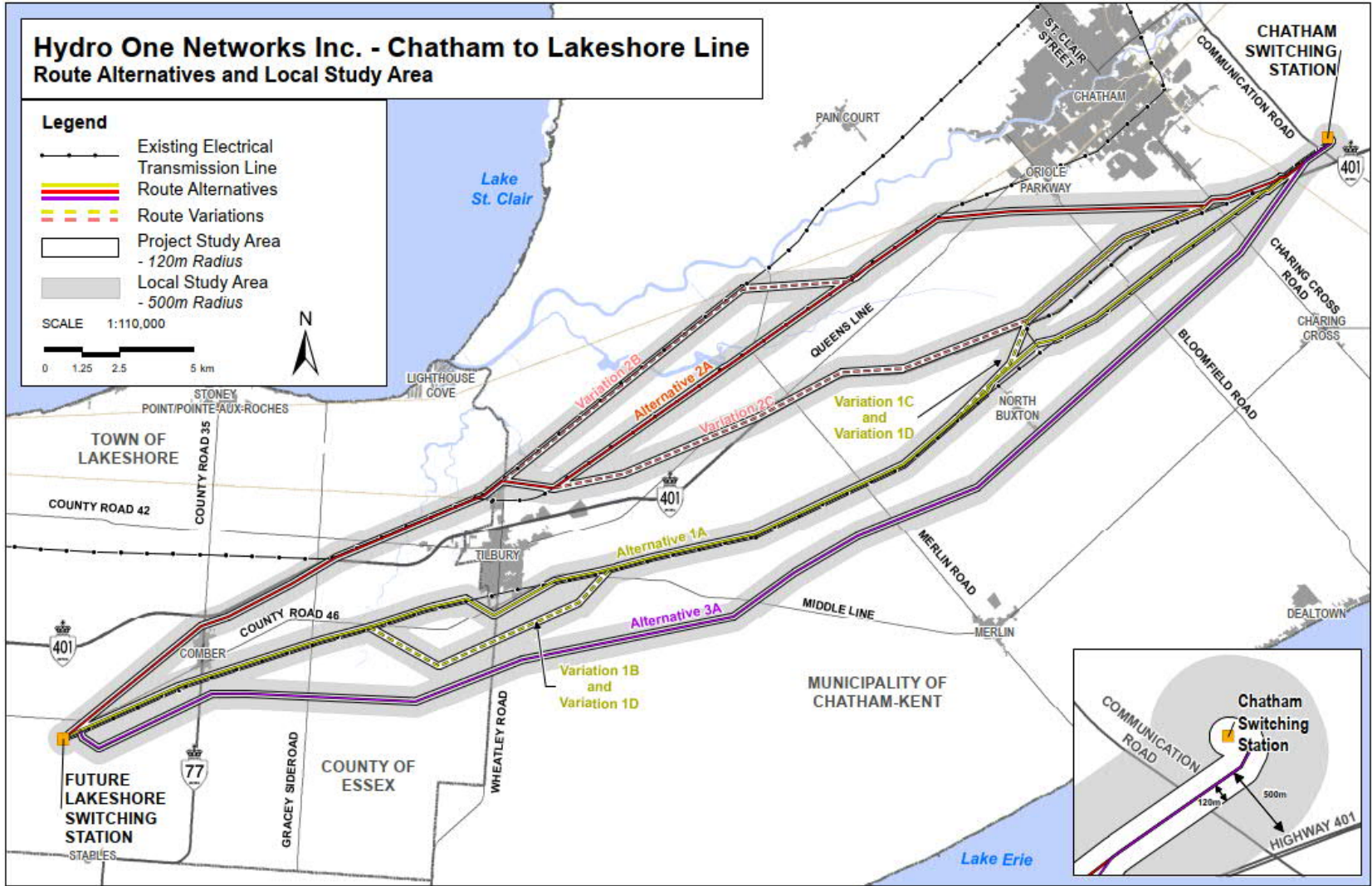
2.1 Project Study Area

A Project Study Area (PSA) was delineated to include lands within 120 m of each of the Route Alternative centre lines, including their respective variations. The PSA encompasses the proposed length of the transmission line from the Chatham SS to the future Lakeshore TS. The purpose of the PSA was to determine an area that would encompass the future asset location, associated ROW and adjacent lands such that technical studies and field investigations for the purposes of documenting baseline existing conditions could be appropriately scoped and planned.

2.2 Local Study Area

The Local Study Area (LSA) was delineated to include lands within 500 m of each of the Route Alternative centre lines, including their respective variations. The LSA encompasses the proposed length of the transmission line Route Alternatives from the Chatham SS to the future Lakeshore TS in the Municipality of Lakeshore. The purpose of the LSA was to expand upon the PSA to include an area of potential project effects on the natural and socio-economic environments associated with each of the Route Alternatives, including their corresponding variations.

Figure 2-1: Study Areas



3 Consultation

Consultation is an important component of the Class EA process. It provides those potentially affected by, or interested in, the proposed Project with opportunities to provide input and participate in the planning process. It also allows the proponent to gain information and knowledge related to social, cultural, economic and natural environment concerns and considerations of direct relevance to the proposed Project. The key principles that have guided Hydro One's approach to communication and consultation include:

- Early, ongoing and timely communication and engagement.
- An open, transparent, and flexible engagement process.
- Clear project information and respectful dialogue with Anishnawbek and Haudenosaunee communities, community officials, and project Rights holders and stakeholders.
- Ongoing opportunities for interested parties to learn about and provide meaningful input on the proposed Project.
- Full and fair considerations and documentation by the proponent of all input received during the consultation process and incorporation of such input, where feasible and reasonable, into project decision-making.

The consultation process for this Project incorporated methods to encourage two-way communication involving: Anishnawbek and Haudenosaunee communities (identified by the Crown); local elected officials; federal, provincial and municipal government agencies; local residents, farmers and property owners; potentially affected and interested persons and businesses; and interest groups. The Project contact list is provided in **Appendix B-1**.

To facilitate comprehensive, transparent and adequate consultation and engagement, an integrated multi-channel communication program was implemented, consisting of:

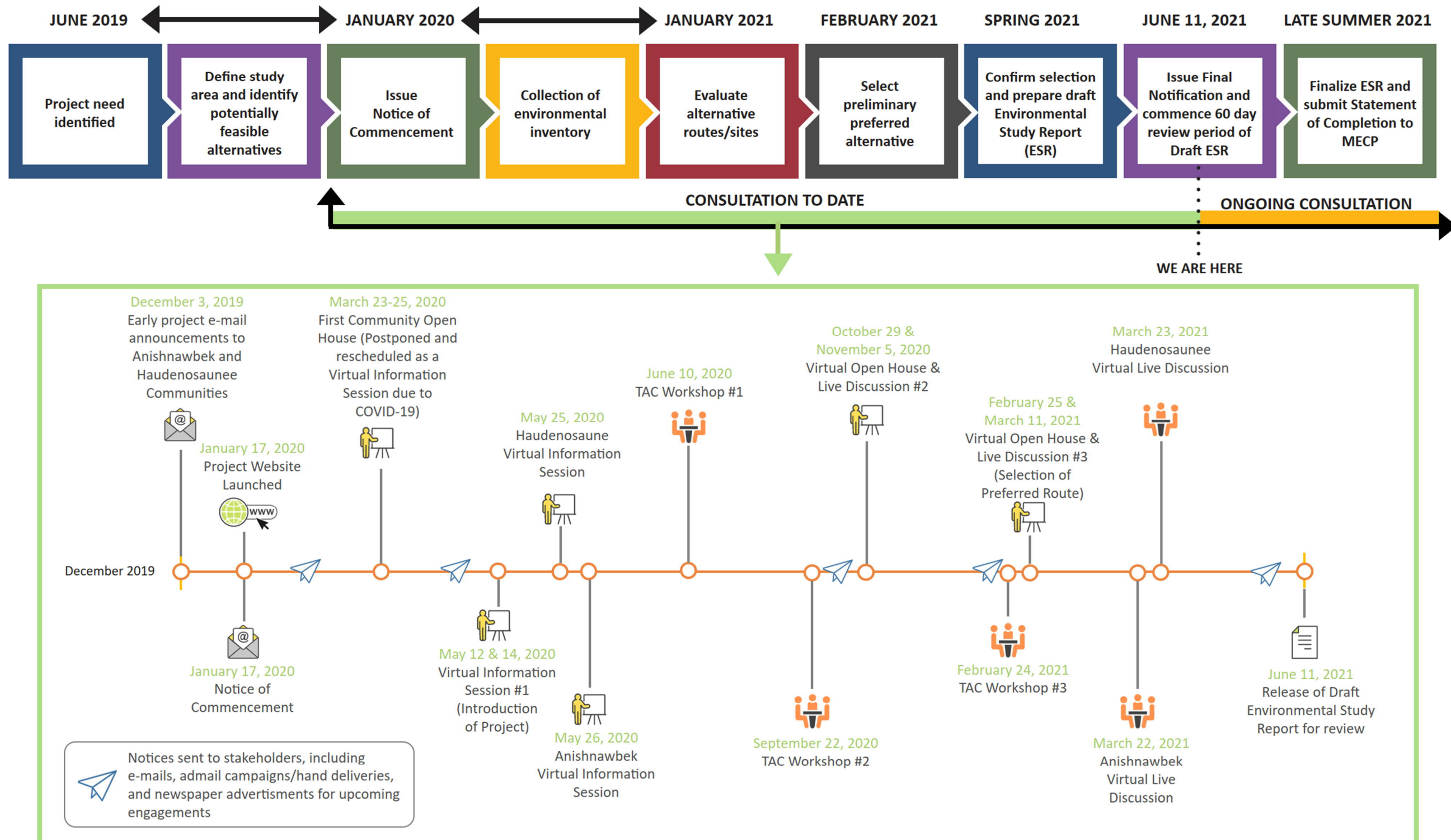
- Notification letters, flyers and newspaper advertisements to announce and provide updates on the Project. Notices were sent via Canada Post admail campaigns to target all available postal routes within the LSA.
- Social media advertisements, radio advertisements and phone call reminders of upcoming public consultation events.
- Virtual Information Sessions (VIS), which consisted of online open houses, live discussions, and workshops.
- Meetings and discussions with municipal and provincial elected officials.

- Meetings, video conference calls and correspondence with Rights-holders and stakeholders who expressed specific interests or concerns.
- Establishment of a project contact list, through which interested parties received project updates via email.
- Dedicated Community Relations representatives and email address.
- Establishment and maintenance of a project website with an interactive online project mapping tool at www.HydroOne.com/Chatham-to-Lakeshore which allowed for the sharing of project information and updates.

The results of the consultation program are summarized in the sections below. Input was considered by the project team and incorporated into the Project planning, where considered feasible and reasonable. Copies of consultation materials such as notices, notification letters, VIS display panels, presentation slides and correspondence are included in **Appendix B-2**, **Appendix B-3**, **Appendix B-4** and **Appendix B-5** respectively. A copy of the Project correspondence log is provided in **Appendix B-6**

A high-level overview of the consultation timeline is outlined in **Figure 3-1** and further explained in the subsequent sections below.

Figure 3-1: Consultation Timeline



3.1 Notice of Commencement

The Notice of Commencement, introducing the Project, providing details on the need, description, study areas, Route Alternatives and associated regulatory processes, was published in the Windsor Star, Chatham-Kent This Week, Chatham Daily Press, Belle River Lakeshore News and Leamington/Wheatley/Kingsville Southpoint Sun local community papers between January 18, 2020, and January 24, 2020. The Notice of Commencement referred to the Project website and solicited questions and comments to be provided to Hydro One. Copies of the Notice of Commencement were distributed as follows:

- Hydro One sent a project initiation letter by email and registered mail to Anishnawbek and Haudenosaunee communities on December 3, 2019
- Hydro One issued the Notice of Commencement to Anishnawbek and Haudenosaunee communities by email and by registered mail on January 7, 2020 and January 8, 2020, respectively
- Beginning January 16, 2020, the Notice of Commencement was sent via email to elected officials, government agencies and officials, interest groups, businesses, utilities, community associations and school boards
- The Notice of Commencement was issued to homes and businesses within the LSA as admail by Canada Post during the week of January 13, 2020
- A hand delivery of the Notice of Commencement was completed on January 16, 2020, for properties near Communication Road and Highway 401 that were not part of the larger admail route coverage

Refer to **Appendix B-2** for the Notice of Commencement materials.

3.2 Community Information Centre #1

The first set of Community Information Centres were scheduled (same content) to be held on March 23, 24 and 25, 2020 to provide flexibility in schedule. The Notice inviting Rights-holders and stakeholders to attend one of these events was distributed as follows:

- Hydro One issued the Notice to Anishnawbek and Haudenosaunee communities beginning March 5, 2020, by email.
- The Notice was sent via email beginning March 3, 2020, to elected officials, government agencies and officials, interest groups, businesses, utilities, community associations and school boards

- The Notice was issued to homes and businesses within the LSA as admail by Canada Post beginning the week of March 9, 2020
- A hand delivery of the Notice was completed on March 4, 2020, for properties near Communication Road and Highway 401 that were not part of the larger admail route coverage
- The Notice was published in the Belle River Lakeshore News, Tilbury Times, Leamington/Wheatley/Kingsville Southpoint Sun, Windsor Star, Chatham-Kent This Week and Chatham Daily Press local community papers between March 10, 2020, and March 14, 2020
- Radio ads were also played on local stations, including:
 - CIMX-FM Radio (Windsor - New Rock)
 - CIDR-FM Radio (Windsor - Adult Alternative)
 - CKLW-AM Radio (Windsor – News)

Prior to the CICs being held, the public health emergency related to the COVID-19 pandemic was announced restricting in-person gatherings. As a result, CIC #1 needed to be postponed, and Rights-holders and stakeholders were informed of the postponement beginning March 16, 2020, through radio ads, social media, the Project website and the Project email mailing list. Anishnawbek and Haudenosaunee leadership were informed through email that the CICs were to be rescheduled as virtual events. The project team remained available to answer questions via email and phone.

In lieu of CIC #1, Virtual Information Sessions (VIS) were held on May 12 and May 14, 2020 (see **Section 3.3** below).

Refer to **Appendix B-2** for the Notice of CIC #1 materials.

3.3 Virtual Information Session (VIS #1)

Hydro One issued a Notice for the VIS inviting stakeholders to attend VIS#1 (same content on two separate days) in May 2020. Copies of the Notice were distributed as follows:

- The Notice was sent by email to Anishnawbek and Haudenosaunee communities, elected officials, government agencies and officials, interest groups, businesses, utilities, community associations and school boards beginning in late-April 2020
- The Notice was published in the Belle River Lakeshore News, Tilbury Times, Leamington/Wheatley/Kingsville Southpoint Sun, Windsor Star, Chatham-Kent This Week

and Chatham Daily Press local community papers between April 30, 2020 and May 6, 2020

- Radio ads were played on local stations and an automated call reminding stakeholders of the upcoming session was circulated
- The Notice was issued to homes and businesses within the LSA as admail by Canada Post beginning the week of April 20, 2020
- A hand delivery of the Notice was completed on May 4, 2020, for properties near Communication Road and Highway 401 that were not part of the larger admail route coverage.

Anishnawbek and Haudenosaunee communities were invited to attend the public VIS. Separate Notices for the Anishnawbek and Haudenosaunee VIS were sent to communities. Refer to **Section 3.6** for Anishnawbek and Haudenosaunee community engagement.

Refer to **Appendix B-2** for the VIS #1 materials.

3.3.1 Overview of VIS #1

To provide flexibility in schedule, VIS #1 was held over two days (same content) on May 12, 2020, and May 14, 2020 (**Table 3-1**). The two sessions were scheduled to provide stakeholders with an opportunity to learn more about the Project need, the Class EA process, the proposed Route Alternatives, the route selection process, key milestones, and next steps.

Table 3-1: May 2020 VIS Overview

Date and Time	Platform	Number of Attendees
May 12, 2020 7:00 p.m. to 8:00 p.m. E.T.	Online Presentation and Live Discussion	2,630
May 14, 2020 7:00 p.m. to 8:00 p.m. E.T.	Online Presentation and Live Discussion	1,616

The sessions were presented through a virtual forum and participants could register and call into the event to listen to the presentation and/or view the live stream of materials online. Participants were able to submit their questions in advance or dial in to join a queue for live questions. The virtual sessions included a panel of Hydro One representatives and a moderator. The presentation covered the following topics:

- Project overview

- Class EA process
- Proposed Route Alternatives and Route selection process
- Key milestones and next steps
- Live Q&A session

During the session, Hydro One responded to pre-submitted questions and live questions. Hydro One asked three survey polling questions during each of the sessions and participants were invited to phone in their response. If participants were unable to ask their question live, participants were invited to contact Hydro One's Community Relations team at 1-877-345-6799 or Community.Relations@HydroOne.com with their question. Hydro One uploaded the video presentation, audio recordings from the Q&A and Notice materials to the Project website available at www.HydroOne.com/Chatham-to-Lakeshore.

Overall, VIS #1 was well attended with a combined total of over 4,000 participants signing on over the two days. A combined total of 22 questions were answered during the sessions and the majority of questions focused on the following themes:

- Existing and new infrastructure
- Property requirements for the new transmission line
- Route direction, location and design
- Electricity rates
- Power supply/reliability
- Effects to residential/agricultural land

Pre-submitted email questions were responded to by Hydro One Community Relations after the sessions.

A summary of key questions and responses throughout the Class EA are provided in **Section 3.12**.

3.3.2 Live Discussion – May 12, 2020

In total, 2,630 participants joined the May 12 VIS and the Hydro One panel responded to 11 live questions and three pre-submitted questions.

The results of the three survey polling questions asked during the event are summarized in **Table 3-2**.

Table 3-2: May 12 VIS Survey Polling Question Summary

Survey Question	Options	Response
Question 1: What do you hope to learn more about after tonight's session?	1) Project Need	1) 23
	2) Route Selection Process	2) 117
	3) How to participate	3) 6
	4) Project Timelines	4) 16
	5) Another Topic	5) 20
Total Responses		182
Question 2: In your view, which criteria is most important to take into consideration as part of this project?	1) Vegetation, Wildlife and/or Water Bodies	1) 41
	2) Residential Properties	2) 74
	3) Commercial Operations	3) 7
	4) Agricultural Lands and Operations	4) 81
	5) Another Criteria	5) 13
Total Responses		216
Question 3: What is your preferred method to receive project updates or information?	1) Newsletters or Emails	1) 96
	2) Virtual Information Sessions	2) 28
	3) In-person Sessions or Meetings	3) 36
	4) A Different Method Not Mentioned	4) 9
Total Responses		169

As shown in **Table 3-2**, the majority of participants wanted to learn more about the route selection process, and considered residential property and agricultural lands and operations to be the most important criteria to take into consideration in the evaluation of Route Alternatives. In addition, the majority of participants preferred newsletters or emails for project updates and information. This feedback informed ongoing engagement and evaluation for the Project.

3.3.3 Live Discussion – May 14, 2020

In total, 1,616 participants joined the May 14 VIS. The Hydro One panel responded to six live questions and two pre-submitted questions.

Results of the three survey polling questions are summarized in **Table 3-3**.

Table 3-3: May 14 VIS Survey Polling Question Summary

Survey Question	Options	Response
Question 1: What do you hope to learn more about after tonight's session?	1) Project Need	1) 13
	2) Route Selection Process	2) 108
	3) How to participate	3) 4
	4) Project Timelines	4) 12
	5) Another Topic	5) 11
Total Responses		148
Question 2: In your view, which criteria is most important to take into consideration as part of this project?	1) Vegetation, Wildlife and/or Water Bodies	1) 21
	2) Residential Properties	2) 31
	3) Commercial Operations	3) 0
	4) Agricultural Lands and Operations	4) 47
	5) Another Criteria	5) 3
Total Responses		102
Question 3: What is your preferred method to receive project updates or information?	1) Newsletters or Emails	1) 40
	2) Virtual Information Sessions	2) 17
	3) In-person Sessions or Meetings	3) 29
	4) A Different Method Not Mentioned	4) 1
Total Responses		87

As shown in **Table 3-3**, the results reflected the same priorities expressed in the first VIS #1 session. The majority of participants wanted to learn more about the route selection process, and considered residential property and agricultural lands and operations to be the most important criteria to take into consideration in the evaluation of Route Alternatives. In addition, the majority of participants indicated they prefer receiving newsletters or emails for project updates and information. This feedback informed ongoing engagement and evaluation for the Project.

3.4 Virtual Information Session (VIS #2)

Hydro One hosted two engagement events to provide stakeholders with an opportunity to learn more about the Project need and updates, recent Route Alternative refinements, key milestones and next steps. Due to public health restrictions around in-person gatherings related to the COVID-19 pandemic, a virtual Open House was available to view online beginning October 29, 2020, and a Live Discussion was held over the phone on November 5, 2020.

Copies of the Notice were distributed as follows:

- The Notice was sent by email to Anishnawbek and Haudenosaunee communities, elected officials, government agencies and officials, interest groups, businesses, utilities, community associations and school boards beginning the week of October 12, 2020
- The Notice was published in the Leamington/Wheatley/Kingsville Southpoint Sun, Windsor Star on October 28, 2020, and the Chatham-Kent This Week and Chatham Daily Press local community papers on October 29, 2020. An automated call reminding stakeholders of the upcoming session was circulated
- Social media ads were posted on Facebook between October 30, 2020, and November 12, 2020
- Radio ads were also played on local stations from October 29, 2020, to November 5, 2020, and included the following stations:
 - CIMX-FM Radio (Windsor - New Rock)
 - CIDR-FM Radio (Windsor - Adult Alternative)
 - CKLW-AM Radio (Windsor – News)
- The Notice was sent via email to property owners/members of the public on October 26, 2020
- The Notice was sent to homes and businesses within the LSA as admail by Canada Post and by mail to absentee landowners during the week of October 26, 2020
- A hand delivery of the notice was completed on October 20, 2020, for properties near Communication Road and Highway 401 that were not part of the larger admail route coverage

Anishnawbek and Haudenosaunee communities were invited to attend the public VIS. Separate notices for the Anishnawbek and Haudenosaunee VIS were sent to communities. Refer to **Section 3.5** for Anishnawbek and Haudenosaunee community engagement.

Refer to **Appendix B-2** for the Virtual Open House and Live Discussion (VIS #2) materials.

3.4.1 Virtual Open House (VIS #2)

The Open House, hosted online at www.chatham-to-lakeshore-openhouse.com, consisted of a virtual interactive room, which allowed stakeholders to view information boards on their own schedule and provide feedback either through a comment form or by contacting Hydro One's Community Relations team. The key information shared included:

- Project overview and benefits

- Class EA process
- Route Alternative refinements and project maps
- Work completed to date
- Evaluation of Route Alternatives
- Ontario Energy Board approval requirements
- Land requirements and detailed design
- Project milestones and next steps
- Registration link to, and subsequent live recording of, the Live Discussion

The Open House room remained live until February 21, 2021.

3.4.2 Live Discussion (VIS #2)

Similar to a tele-Townhall, the virtual Live Discussion session was conducted by phone and had a corresponding presentation that could be viewed online (**Appendix B-2**) by visiting www.HydroOnemeeting.ca. The event was divided into two parts: a presentation outlining key project details and updates, and a facilitated Q&A session with project team members.

To join the event, participants could either register in advance or dial into the session using a toll-free phone number. Hydro One's vendor also dialed out to publicly available phone numbers to encourage listeners to attend the event.

The session was hosted by a panel of Hydro One representatives, and the presentation covered the following:

- Project overview
- Update on Class EA process
- Work completed to date
- Route Alternative refinements
- Key milestones and next steps

During the Q&A session, Hydro One responded to pre-submitted questions, and listeners were asked to join the queue for live questions via phone or through a submission box located online. If listeners were unable to ask their live question, Hydro One encouraged participants to contact Community Relations at 1-877-345-6799 or email Community.Relations@HydroOne.com. Following the event, Hydro One uploaded the presentation, audio recording from the Live Discussion and notice materials to the Project website www.HydroOne.com/Chatham-to-Lakeshore.

In total, 1,590 listeners joined the virtual Live Discussion and the Hydro One panel responded to 15 questions. During the Q&A session, Hydro One addressed three frequently received questions from stakeholders over the last few months, as well as live and pre-submitted questions. A total of 34 live questions were submitted.

The majority of questions focused on the following themes:

- Existing and new infrastructure
- Property (including property rights and property acquisition)
- Route selection, location and design
- Setbacks from existing dwellings and livestock buildings
- Residential electricity rates and costs
- Health and safety
- Effects to residential/agricultural land
- Community Involvement

The remaining pre-submitted email questions were responded to by the Hydro One Community Relations teams after the sessions.

A summary of key questions and responses throughout the Class EA are provided in **Section 3.13**.

3.5 Virtual Information Session (VIS #3)

Hydro One hosted two engagement events to provide stakeholders with an opportunity to learn more about the preferred Route Alternative, the Class EA evaluation process and next steps. Due to public health restrictions around in-person gatherings related to the COVID-19 pandemic, a virtual Open House was available for stakeholders to view online beginning February 25, 2021, and a Live Discussion was held over the phone on March 11, 2021.

Copies of the Notice were distributed as follows:

- The Notice was sent by email to Anishnawbek and Haudenosaunee communities, elected officials, government agencies and officials, interest groups, businesses, utilities, community associations and school boards beginning February 22, 2021
- The Notice was published in the Leamington/Wheatley/Kingsville Southpoint Sun, Windsor Star, Chatham-Kent This Week, and Chatham Daily Press local community papers on March 3, 2021 and February 25, 2021, respectively. Radio ads were played on local stations

- The Notice was issued to homes and businesses within the LSA as admail by Canada Post and to absentee landowners by mail during the week of February 22, 2021
- The hand delivery routes identified during previous notice distributions were mailed the Notice on February 22, 2021. This included properties within the LSA that were not part of the larger admail route coverage

Anishnawbek and Haudenosaunee communities were directly invited to attend the public VIS. Separate notices for the Anishnawbek and Haudenosaunee VIS were sent to communities. Refer to **Section 3.6** for Anishnawbek and Haudenosaunee engagement).

Refer to **Appendix B-2** for the Virtual Open House & Live Discussion (VIS #3) materials.

3.5.1 Virtual Open House (VIS #3)

The Open House, hosted online at www.chatham-to-lakeshore-openhouse.com, consisted of a virtual interactive room, which allowed stakeholders to view information boards on their own schedule and provide feedback either through a comment form or by contacting Hydro One's Community Relations team. The key information shared included:

- Project overview
- Class EA process
- Route Alternatives assessed
- Evaluation of Route Alternatives
- Preferred Route Alternative
- Engagement and technical work to date
- Ontario Energy Board approval requirements
- Key milestones and next steps
- Registration link to, and subsequent live recording of, the Live Discussion

3.5.2 Live Discussion (VIS #3)

Similar to a tele-Townhall, the virtual Live Discussion session was conducted by phone and had a corresponding presentation that could be viewed online (**Appendix B-2**) by visiting www.HydroOnemeeting.ca. The event was divided into two parts: a presentation outlining key project details and updates, and a facilitated Q&A session with project team members. To join the event, participants could either register in advance or dial into the session using a toll-free phone number. Hydro One's vendor also dialed out to publicly available phone numbers to encourage listeners to attend the event. The presentation covered the following:

- Project update
- Update on Class EA process
- Route evaluation process and selection of the Preferred Route Alternative
- Ongoing engagement
- Key milestones and next steps

During the Q&A session, Hydro One responded to pre-submitted questions, and listeners were asked to join the queue for live questions via phone or through a submission box located online. If listeners were unable to ask their live question, Hydro One encouraged participants to contact Community Relations at 1-877-345-6799 or email Community.Relations@HydroOne.com.

Following the event, Hydro One uploaded the presentation, audio recording from the Live Discussion and notice materials to the Project website www.HydroOne.com/Chatham-to-Lakeshore.

In total, 1,211 listeners joined the virtual Live Discussion and the Hydro One panel responded to 15 questions. A total of 54 questions were submitted.

The majority of questions focused on the following themes:

- Preferred Route Alternative.
- Costs.
- Design & Infrastructure.
- Impacts to Lands/Properties & Agreements/Compensation.
- Consultation.
- Evaluation Process.
- Construction.
- Interference with electronic/GPS equipment.

The remaining pre-submitted email questions were responded to by the Hydro One Community Relations teams after the sessions.

A summary of key questions and responses throughout the Class EA are provided in **Section 3.13**.

3.6 Indigenous Communities

Consultation with Indigenous communities is an important part of the engagement requirements of the Class EA process. In addition, there exists the Crown's Duty to Consult requirements per Section 35 of the Constitution Act (1982), which, while separate; may be discharged (partially or fully)

concurrent with the Class EA process. With respect to the latter, Hydro One contacted the Ministry of Energy, Northern Development and Mines (ENDM) on July 5, 2019 to understand if the Crown's Duty to Consult was triggered by the Project, and if so; which Indigenous communities need to be consulted and if they would be delegating procedural aspects of the consultation to Hydro One. In the correspondence Hydro One provided a description of the characteristics, general location and scope of the proposed Project. .

On November 29, 2019, the ENDM confirmed the Duty to Consult. The letter provided specific delegation of procedural aspects of the Crown's Duty to Consult to Hydro One, and advised that the following communities were to be included in the consultation process (see **Appendix B-3** for the Hydro One inquiry letter to the Crown and the Crown Duty to Consult delegation letter):

- Aamjiwnaang First Nation
- Bkejwanong (Walpole Island) First Nation
- Caldwell First Nation
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of the Thames First Nation
- Oneida Nation of the Thames
- Six Nations of the Grand River Elected Council
- Haudenosaunee Confederacy Chiefs Council/Haudenosaunee Development Institute

The communities listed above were notified of the proposed Project through a pre-Notice of Commencement email sent on December 3, 2019, notifying the communities that the IESO had contacted Hydro One identifying the need to build a 230 kV transmission line from Chatham SS to the future Lakeshore TS. A formal Notice of Commencement was sent to all Anishnawbek and Haudenosaunee communities on January 7, 2020, notifying that Hydro One was initiating a Class EA for the Project. The letters outlined that the procedural aspects of the duty to consult had been delegated to Hydro One, and provided Crown contacts for questions or comments regarding this delegation.

The Anishnawbek and Haudenosaunee community consultation and engagement process was implemented to promote a comprehensive, transparent and meaningful consultation approach. The process included:

- Direct mailings of notifications and provision of information to provide updates on the Project throughout the Class EA process
- Ongoing reminders of upcoming public and Anishnawbek and Haudenosaunee specific community information virtual events

- Direct resident phone call reminders with prior authorization from Anishnawbek and Haudensaunee leadership to community members were also placed
- VIS events, which consisted of virtual open houses and live discussions for Anishnawbek and Haudenosaunee communities in addition to invitation to public events
- Offers by the Hydro One project team to meet with the community to present the proposed Project and to address their issues or concerns
- Frequent meetings and discussions with Anishnawbek and Haudenosaunee Chiefs/leadership
- Meetings, conference calls and correspondence with Anishnawbek and Haudenosaunee nation representatives
- Dedicated Indigenous Relations representatives and email inbox
- A series of Route Evaluation documents were created and shared with the Anishnawbek and Haudenosaunee communities to assist in gathering input on the Route Evaluation process. These documents included a workbook and one-page overview to encourage review and feedback from communities
- Establishment and maintenance of a project website and interactive project map (www.hydroone.com/Chatham-to-Lakeshore), allowing for the sharing of project information and updates
- Community Engagement Coordinators
- Capacity Funding

Ongoing correspondence with Anishnawbek and Haudenosaunee communities is included in the Record of Consultation (**Appendix B-6**).

3.6.1 Capacity Funding Agreements

The eight Anishnawbek and Haudenosaunee communities identified by the Crown to be consulted by Hydro One (via delegation) are key partners in the Project. At the outset of the Class EA process, Hydro One offered financial assistance through Capacity Funding Agreements (CFA). The CFAs are meant to address the following aspects with communities:

- Outline an agreed-upon method of consultation and engagement, taking into account community protocols and practices.
- Outline a jointly agreed-upon work plan and budget for each community to be meaningfully consulted on the Project, including adequate capacity and resourcing to participate.
- Identify a Community Engagement Coordinator or similar position.

Outline a process for the sharing of information regarding the Project and associated studies and regulatory processes.

Hydro One recognizes that each community may wish to amend aspects of the agreement to reflect community consultation protocols that may already be established. Anishnawbek and Haudenosaunee communities were requested to review the agreements and share revisions with Hydro One.

Funding was also provided to communities seeking to undertake or enhance Traditional Ecological Knowledge/Traditional Resource and Land Use studies (collectively referred to as Indigenous Knowledge).

3.6.2 Community Engagement Coordinators

As part of its initiatives to support and build capacity for the Haudenosaunee and Anishnawbek communities that are participating in the Project, Hydro One offered each participating community the financial resources necessary to hire a Community Engagement Coordinator (CEC). The role of the CECs has been to provide support to, and facilitate, their community's participation on the Project and to liaise with Hydro One Project team members in obtaining/sharing input and information. CECs are employed directly by their community. The specific role of the CECs has included:

1. Coordinating the community's engagement related to the advancement of the Project Environmental Assessment
2. Being responsible for the dissemination of Project-related information to community members and leadership
3. Collecting, documenting, and sharing community comments, issues, and concerns about the Project with Hydro One
4. Collecting, documenting, and sharing Project information to support the community's participation in the EA process
5. Liaising as necessary with Hydro One team members, Hydro One's project consultants, and other participating communities related to community engagement, employment, training, business, economic development opportunities, and capacity building related to the Project
6. Liaising, collecting, documenting, and sharing Project information with the community and Hydro One

CECs will continue to be retained through to the commencement of construction. Not all communities chose to retain a CEC.

The following paragraphs provide a description of engagement and consultation activities per community.

3.6.3 Aamjiwnaang First Nation (AFN)

Class EA

In addition to the consultation process outlined above, AFN received an advanced project initiation letter dated December 3, 2019. The Notice of Commencement was sent on January 7, 2020. Hydro One spoke with AFN on February 3, 2020, and informed the community that they will hold community events in March and April 2020. Hydro One met with AFN, Environment Committee for a pre-engagement meeting on February 4, 2020. The Notice for the CIC was sent to the community on March 5, 2020, and Hydro One invited the community to participate in field studies commencing in early April, 2020. Prior to COVID-19 public health restrictions, Hydro One attended the community's St. Clair Day in person on March 7, 2020, and provided project information, including maps of the alternative routes to community members. Discussions included topics such as migratory birds, bald eagles and the health and safety of electromagnetic fields.

Hydro One emailed the community on March 20, 2020, informing them of the cancellation of the in-person CIC due to public health developments related to COVID-19. Hydro One shared the proposed CFA with the community on April 20, 2020, and requested an opportunity to speak with Chief Plain. Correspondence regarding the CFA occurred from April 2020 to when the CFA was signed by Chief Plain on August 28, 2020. Correspondence regarding setting up the invoicing process and Purchase Order to access the capacity funding followed. A project update email was sent to the community by email on May 1, 2020, detailing the status of ongoing environmental studies and both public and Anishnawbek VIS. Hydro One followed up with the community throughout May 2020, and continued to provide updates on the VIS, field studies and the Technical Advisory Committee (TAC). A reminder email was sent to the community for the VIS on May 23, 2020, and a copy of the presentation slides was shared. The VIS for the Anishnawbek communities was held on May 26, 2020, during which Hydro One provided a presentation on the Project and responded to questions from community members. Throughout June 2020, Hydro One shared the invitation to join the TAC and provided materials, including the initial evaluation criteria and informational video.

Hydro One followed up with the community by email on August 17, 2020, and provided an update on the CFA, technical corridor workshop, participation in field surveys, engagement and economic benefits. An email was sent on September 9, 2020, inviting the community to the second TAC workshop. Hydro One reached out to the community throughout September 2020 and in January 2021 regarding economic participation and invited the community to discuss opportunities. Hydro One offered to hold a virtual route Selection Workshop with the community by email on September 28, 2020, and provided materials including the presentation and dialogue workbook. Hydro One mailed hard copy materials for the draft Stage 1 Archaeology Report, Cultural Heritage Existing Conditions Report and workbook with the community on November 30, 2020 and encouraged Aamjiwnaang's feedback into the reports. On January 11, 2021, Hydro One provided virtual training on the online invoicing platform and process in relation to the CFA Purchase Order.

Prior to announcing the selection of the preferred Route, Hydro One invited the community to attend sessions related to the Project, including an early briefing, the third TAC workshop and information sessions by email on February 2, 2021. An early briefing meeting was held on March 8, 2021, during which Hydro One provided an overview of the Project to date and insight into the selection of the preferred Route, including the participation from the Anishnawbek communities. Discussions also included economic participation opportunities. At this time, it was requested that Hydro One work with the Economic Development staff on economic opportunities.

On February 25, 2021, the community was emailed to inform them of the upcoming Public VIC on March 8, 2021 and the Anishnawbek VIS on March 22, 2021.

Hydro One emailed the community with updates on the Project on March 5, April 1 and April 9, 2021, regarding Early Contractor Involvement (ECI), the Anishnawbek VIS, and an opportunity to discuss the assessment of environmental effects and potential mitigation measures.

Economic Opportunities – Jobs, Training and Procurement

Hydro One sent an email on April 9, 2021 to explain the ECI process, introduce the two Engineering, Procurement and Construction (EPC) contractors and offer an introductory meeting. Following the community's request to discuss economic equity participation at the March 8, 2021 meeting, a meeting with Economic Development staff was held on April 20, 2021 to provide an introduction of these opportunities.

The Hydro One team is currently working to provide dates to the community in order to continue the conversation and ensure that the community has the opportunity to engage in the ECI process.

Equity Participation

Hydro One has been corresponding with the community on equity participation opportunities from April 28, 2021. A term sheet template for equity participation was shared with the community. The first meeting to begin discussions regarding equity participation and potential economic benefits was held on May 14, 2021.

The Hydro One team will continue to meet with the community to work through Equity Participation negotiations.

3.6.4 Bkejwanong (Walpole Island) First Nation (WIFN)

Class EA

In addition to the consultation process outlined above, WIFN received an advanced project initiation letter dated December 3, 2019. The Notice of Commencement was sent on January 7, 2020. Hydro One emailed WIFN on February 7, 2020, to inform them of the upcoming CICs and provided the invitation on March 5, 2020. Hydro One requested an opportunity for a meeting prior to the CIC and invited the community to participate in field studies commencing in April, 2020. A meeting was held with WIFN on March 20, 2020.

Hydro One emailed the community on March 20, 2020, informing them of the cancellation of the CIC due to public health developments related to COVID-19. An update was provided by email on May 14, 2020, regarding upcoming Anishnawkeb VIS, field studies, the TAC and the CFA. The invitation was shared on May 14 and May 21, 2020. Correspondence regarding the CFA occurred from May 2020 to July 2020. The CFA was signed on May 20, 2020 and correspondences in relation to the invoicing process to access the funding followed.

Hydro One shared the invitation to join the TAC and provided materials, including the initial evaluation criteria and informational video in early June 2020. Throughout June 2020, Hydro One corresponded with WIFN regarding their concerns and questions related to the Project and other transmission stations projects.

On June 12, 2020, Hydro One emailed WIFN with updates on upcoming field surveys and included the TAC survey. A summary of the remaining field surveys was shared with WIFN on June 19, 2020, and Hydro One invited the community to participate. WIFN representatives participated in baseline natural environment field surveys for the Project in 2020. More information on field

surveys was provided to WIFN as requested. Following a concern from WIFN regarding the TAC Workshop #1 survey, Hydro One offered to hold a virtual corridor workshop with WIFN.

A letter dated July 7, 2020, was sent by WIFN regarding their concerns with the Project, including Hydro One's relationship with WIFN. A meeting was requested with Hydro One.

Hydro One emailed WIFN on August 17, 2020, to follow up and reiterate opportunities for the community to participate in the Project. An additional follow up was sent on September 10, 2020, relating to the completion of the field surveys, next steps, and the second TAC workshop. The materials from the first TAC workshop were shared with WIFN. Hydro One scheduled a meeting with WIFN on September 18, 2020; however, due to the pending election within the community the meeting was cancelled within 10 minutes of attending the meeting.

An email was sent to WIFN on October 2, 2020, sharing previous emails and a letter with updated information regarding the Project. Hydro One inquired whether WIFN would be interested to discuss potential economic participation opportunities for the Project, and Hydro One shared an outline of opportunities via email on October 6, 2020. Correspondence took place with WIFN throughout November 2020 related to the timeline and completion of the Class EA and route selection process. Hydro One shared hard copy materials for the draft Stage 1 Archaeology Report, Cultural Heritage Existing Conditions Report and workbook with the community on November 30, 2020, and encouraged WIFN's feedback into the reports.

WIFN attended a technical route selection workshop on November 27, 2020, during which the Route Alternative were presented. WIFN provided feedback during the meeting on potential route evaluation criteria of interest. A meeting was held on January 4, 2021, to discuss the points raised during the previous meeting regarding projects and facilities which generate revenue for the community, an identified butternut grove and archaeological review. Following this meeting, WIFN provided maps highlighting areas of historic significance to assist in the evaluation of Route Alternatives and corresponded with Hydro One with background information related to the maps. Hydro One corresponded with WIFN regarding fish species of significance or interest to WIFN and provided information regarding the butternut trees observed during field surveys attended by a representative from WIFN.

Prior to announcing the selection of the preferred Route Alternative, Hydro One invited the community to attend sessions related to the Project, including an early briefing, the third TAC workshop and information sessions by email on February 2, 2021. Hydro One provided an update

via email on February 12, 2021, regarding upcoming VIS. The invitation to the community VIS was emailed on February 25, 2021.

A letter dated February 25, 2021, was sent by the Council of Three Fires stating their concern regarding the November 2019 delegation letter from the Crown to Hydro One. On March 18 2021, WIFN stated at that time they were not in support for the advancement of this Project and is currently on 'hold', Hydro One responded back thanking them for letting them know. On April 1, Hydro One acknowledged the email from WIFN and in effort to maintain transparency and accountability regarding the EA process, Hydro One continued to share information and opportunities to meet. A meeting was held on May 5, 2021 to discuss WIFN's concerns.

Hydro One emailed the community with an update on the Project on March 5, April 1 and April 9, 2021, regarding ECI, the community VIS, and an opportunity to discuss the assessment of environmental effects and potential mitigation measures. WIFN provided Hydro One with historical information to be considered in the evaluation of alternative corridors prior to release of the draft ESR in late spring.

Economic Opportunities – Jobs, Training and Procurement

Hydro One sent an email on April 9, 2021 to explain the ECI process, the announcement of the two EPC contractors and offer an introductory meeting.

Following the meeting held with WIFN on May 5, the Hydro One team is currently working to provide dates to WIFN in order to continue the conversation and ensure that the community has the opportunity to engage in the ECI process.

Equity Participation

On January 19, 2021, Hydro One and WIFN had an introductory meeting to provide an overview of equity participation and potential economic benefits and opportunities. A term sheet was provided to WIFN for their review and consideration.

The Hydro One team will continue to meet with WIFN to work through Equity Participation negotiations.

3.6.5 Caldwell First Nation (CFN)

Class EA

In addition to the consultation process outlined above, CFN received an advanced project initiation letter dated December 3, 2019. The Notice of Commencement was sent on January 7, 2020. Hydro One followed up with CFN in early February 2020 regarding the Notice of Commencement, to discuss the Project and to provide early notice of the upcoming CICs. The invitation to the CIC was sent on March 5, 2020, and Hydro One also invited the community to participate in the upcoming field surveys in April 2020.

Hydro One emailed the community on March 20, 2020, informing them of the cancellation of the CIC due to public health developments related to COVID-19. Hydro One informed CFN of both the public and Anishnawbek VIS in May 2020 and requested input on the process via email on April 17, 2020. Correspondence regarding the CFA occurred from April 2020 to July 2020. A meeting was held on April 20, 2020, and discussions included the communities identified in the Crown delegation letter, archaeology and Anishnawbek VIS. Following the meeting, Hydro One shared several consultation materials, including the cancellation notice for the CICs, the notice for the VIS, presentation slides and previously sent emails.

An update email was sent to CFN on May 14, 2020, regarding the Anishnawbek VIS, upcoming field surveys, the TAC and the CFA. The invitation to the VIS was shared on May 14 and 22, 2020. Hydro One invited CFN to participate in the TAC and offered a virtual community TAC as an alternative by email on May 27, 2020. An additional update email was sent on August 17, 2020, and Hydro One reiterated participation opportunities on the Project, including the CFA, TAC workshop, field surveys, Indigenous Engagement Consultant and economic benefits. CFN signed a CFA on July 23, 2020, and correspondences in relation to invoicing for capacity funding has been ongoing since. A Community Engagement Coordinator was hired by the First Nation utilizing the CFA funds. The coordinator manages the flow of information and coordinates capacity and resources for CFN to assess the Project information. Hydro One shared the TAC workshop invitation and emailed CFN to follow up on September 15, 2020, with information. CFN participated in the September 22, 2020 and February 24, 2021, TAC workshops.

Hydro One also held a virtual route selection/TAC workshop with CFN on October 27, 2020, during which the Route Alternatives, route selection criteria and weighting, including Anishnawbek and Haudenosaunee participation, and Class EA process were presented and discussed. A meeting was held on November 24, 2020, to discuss economic participation opportunities for the Project.

Hydro One shared hard copy materials for the draft Stage 1 Archaeology Report, Cultural Heritage Existing Conditions Report and workbook with the community on November 30, 2020.

CFN shared a route evaluation memo with the project team on December 15, 2020, and a subsequent WebEx meeting was held on December 18, 2020, to discuss the memo, and for the project team to answer questions and provide additional context on the Project, the evaluation of the Route Alternatives and the natural environment field surveys conducted to support the Class EA.

In early January 2021, Hydro One corresponded with CFN regarding the importance of potential fishing grounds and fish-bearing creeks to CFN. Prior to announcing the selection of the preferred Route Alternative, Hydro One invited the community to attend sessions related to the Project, including an early briefing, the third TAC workshop and information sessions by email on February 2, 2021. An early briefing was held on February 19, 2021, to present the progress and rationale on the preferred Route Alternative, including the input gathered from CFN.

CFN emailed Hydro One on February 17, 2021, and reiterated the community's strong interest in ecological protection and the opportunity to exercise their rights, and reiterating the community's preference for Route Alternative 1A. A subsequent virtual meeting was held on February 19, 2021, where Hydro One staff provided an early briefing on the selection of preferred Route Alternative 2A, including the rationale for why it had been selected and how input provided by CFN had been incorporated into the evaluation process. Subsequent to the meeting, a formal response to the February 17 email from CFN was sent on March 22, 2021, which reiterated many of the items discussed at the February 19 meeting.

Hydro One emailed CFN on February 25, 2021, and shared the invitation and information for the public and upcoming Anishnawbek VIS. An update email was sent in early March 2021 regarding the Project, ECI and the upcoming VIS.

Hydro One emailed the community with an update on the Project on April 1, April 9 and April 23, 2021, regarding ECI, the announcement of the two EPC contractors, the community VIS, and an opportunity to discuss the assessment of environmental effects and potential mitigation measures.

Hydro One emailed CFN on April 23, 2021 welcoming CFN to undertake a Traditional Ecological Study and provided examples on how the results of the study will be incorporated into aspects of the Project moving forward, and applied to future projects.

Economic Opportunities – Jobs, Training and Procurement

Hydro One sent an email on April 9, 2021 to explain the ECI process, introduce the contractors and offer an introductory meeting.

CFN emailed on May 7, 2021, requesting a meeting to discuss equity participation and employment and training opportunities on the Project. The Hydro One is currently working with CFN to arrange a meeting to continue the conversation and ensure that the community has the opportunity to engage in the ECI process.

Equity Participation

Correspondence regarding Indigenous economic participation commenced on September 21, 2020 with CFN requesting a meeting. Hydro One met CFN on November 21, 2020 to have an introductory meeting regarding economic opportunities and equity participation. A draft term sheet was shared with CFN for their review and consideration. A second meeting has been requested and dates are being coordinated. The Hydro One team will continue to meet with CFN to work through equity participation negotiations.

3.6.6 Chippewas of Kettle and Stony Point First Nation

Class EA

In addition to the consultation process outlined above, Chippewas of Kettle and Stony Point First Nation received an advanced project initiation letter dated December 3, 2019. The Notice of Commencement was sent on January 7, 2020. Hydro One followed up with the community in early February 2020 regarding the Notice of Commencement, to discuss the Project and to provide early notice of the upcoming CICs. The invitation to the CICs were sent by email on March 5, 2020, and Hydro One also invited the community to participate in the upcoming field surveys in April 2020.

Hydro One emailed the community on March 20, 2020, informing them of the cancellation of the CIC due to public health developments related to COVID-19. Correspondence regarding the CFA occurred from April 2020 and is still ongoing. A meeting was held on May 4, 2020, during which Hydro One provided an introduction to the Project, the Class EA process, the CFA and potential employment and training opportunities. Hydro One followed up by email on May 14, 2020, to provide an update on Anishnawbek VIS, field surveys, the TAC and the CFA.

In late-September 2020, Hydro One provided updates regarding the Route Selection Virtual Workshop and offered to host one with the community. The route selection presentation and workbook were provided. Hydro One reached out to the community on October 6, 2020, to inquire whether they would be interested to discuss the potential economic participation opportunities for the Project. Hydro One shared hard copy materials for the draft Stage 1 Archaeology Report, Cultural Heritage Existing Conditions Report and workbook with the community on November 30, 2020.

Hydro One followed up with the community on December 4, 2020, to provide a project update and to inquire whether the community would be interested in providing input into the route evaluation selection process, or identification of sensitive features. Hydro One had a phone call with the community later that day to discuss the Project.

Hydro One invited the community to attend sessions related to the Project, including an early briefing, the third TAC workshop and information sessions by email on February 2, 2021. Hydro One also provided an update on availability for an upcoming economic participation meeting and the upcoming VIS in early February 2021. The invitation to the community VIS was emailed on February 25, 2021.

Hydro One emailed the community with updates on the Project on March 8, April 1 and April 9, 2021, regarding ECI, the announcement of the two EPC contractors, the community VIS, and an opportunity to discuss the assessment of environmental effects and potential mitigation measures. Hydro One reached out on April 26, 2021, to share previous correspondence on the Project and requesting input for how to proceed.

Economic Opportunities – Jobs, Training and Procurement

Hydro One sent an email on April 9, 2021 to explain the ECI process, introduce both EPC contractors and offer an introductory meeting.

The Hydro One team is currently working to engage with the community in order to have a dialogue and to ensure that the community has the opportunity to engage in the ECI process and other potential economic benefits.

Equity Participation

On February 12, 2021, Hydro One and the First Nation had an introductory meeting to provide an overview of Equity Participation opportunities. In an email dated May 4, 2021, Hydro One

provided correspondence exchange between Hydro One and the community regarding the Project, including the term sheet, for their legal counsel's review and consideration. The purpose was for their legal counsel to provide further advice to the community and get back to Hydro One with next steps.

The Hydro One team will continue to meet with the First Nation to work through equity participation negotiations.

3.6.7 Chippewas of the Thames First Nation (COTTFN)

Class EA

In addition to the consultation process outlined above, COTTFN received an advanced initiation letter dated December 3, 2019. The Notice of Commencement was sent on January 7, 2020. Hydro One followed up with the community in early February 2020 regarding the Notice of Commencement, to discuss the Project and to provide early notice of the upcoming CICs. The invitation to the CICs was sent by email on March 5, 2020, and Hydro One also invited the community to participate in the upcoming field surveys in April 2020.

Hydro One emailed the community on March 20, 2020, informing them of the cancellation of the CIC due to public health developments related to COVID-19. Hydro One corresponded with COTTFN regarding the CFA from April 2020 to December 2020. Hydro One also informed COTTFN of the upcoming VIS for both the public and communities, and requested input on the process.

A teleconference was held on April 27, 2020, and discussions included COTTFN consultation protocol, upcoming environmental studies and opportunities to participate. Hydro One followed up by email on May 14, 2020, to provide an update on the public and Anishnawbek VIS, field surveys, the TAC and the CFA. In follow up to a discussion with COTTFN, Hydro One provided the VIS invitation, presentation and overview of the Project and CFA by email on May 25, 2020. Representatives were also invited to attend the TAC workshop.

In late-September 2020, Hydro One offered to host a Route Selection Virtual Workshop with the community. Hydro One shared hard copy materials for the draft Stage 1 Archaeology Report, Cultural Heritage Existing Conditions Report and workbook with the community on November 30, 2020, and encouraged feedback on the reports.

COTTFN signed a CFA on December 14, 2020, and correspondence followed to set up the invoicing process. On January 15, 2020, Hydro One provided virtual training on the online invoicing platform to help with accessing the capacity funding.

Hydro One invited the community to attend sessions related to the Project, including an early briefing, the third TAC workshop and information sessions by email on February 2, 2021. Hydro One followed up with an email providing an overview of the upcoming public and Anishnawbek VIS and provided the invitation via email on February 25, 2021.

Hydro One emailed the community with updates on the Project on March 8 and April 9, 2021, regarding ECI, announcing the two EPC contractors, the community VIS, and Indigenous participation. Hydro One is expecting COTTFN to submit a first draft of a Traditional Ecological Study by spring 2021.

Economic Opportunities – Jobs, Training and Procurement

COTTFN informed Hydro One via letter on January 19, 2021, that they would like to discuss economic participation opportunities. A meeting was held on February 18, 2021, to discuss economic participation and equity partnerships. Another meeting was held on March 15, 2021, regarding their interest and concerns on economic participation.

Hydro One sent an email on April 9, 2021 to explain the ECI process, introduce the EPC contractors and offer an introductory meeting.

The Hydro One team is currently working to provide dates to COTTFN in order to continue the conversation and ensure that the community has the opportunity to engage in the ECI process.

Equity Participation

On September 15, 2020, Hydro One and COTTFN had an introductory meeting to provide an overview of equity participation and other potential economic opportunities. A term sheet was provided to the First Nations for their review and consideration. Two additional meetings on February 10 and March 15, 2021 were held to continue the dialogue related to the term sheet and equity participation. A letter was sent to Hydro One on March 16, 2021, reaffirming interest in equity partnership.

The Hydro One team will continue to meet with the COTTFN to work through equity participation negotiations.

3.6.8 Oneida Nation of the Thames

Class EA

In addition to the consultation process outlined above, Hydro One received a letter from Oneida regarding the Notice of Commencement and acknowledged it will be released in January 2020. Oneida received an advanced project initiation letter dated December 3, 2019. The Notice of Commencement was sent on January 8, 2020. A meeting was held on January 16, 2020, regarding the Project. The invitation to the CICs was sent by email on March 5, 2020, and Hydro One also invited the community to participate in the upcoming field surveys in April 2020.

Hydro One emailed the community on March 20, 2020, informing them of the cancellation of the CIC due to public health developments related to COVID-19. Correspondence regarding the CFA occurred from April 2020 to April 2021. Hydro One also informed Oneida of the upcoming VIS for both the public and the Haudenosaunee session, and requested input on the process in April 2020. Hydro One followed up by email on May 14, 2020, to provide an update on the Haudenosaunee VIS, field surveys, the TAC and the CFA. Hydro One also invited Oneida to participate in the TAC.

Hydro One offered to host a Route Selection Virtual Workshop with Oneida via email on September 23, 2020. In October 2020, Hydro One corresponded with Oneida regarding potential economic participation opportunities and updates on the Project, including the route selection process, VIS #2 and the CFA. The invitation to the VIS was shared with the community via email on October 23, 2020. Hydro One shared hard copy materials for the draft Stage 1 Archaeology Report, Cultural Heritage Existing Conditions Report and workbook with the community on November 30, 2020. Hydro One followed up with the community on December 4, 2020, to provide a project update and to inquire whether the community would be interested in providing input into the route evaluation, selection process, or identification of sensitive features.

Hydro One invited the community to attend sessions related to the Project, including an early briefing, the third TAC workshop and information sessions by email on February 2, 2021. Hydro One followed up with an email providing an overview of the upcoming VIS and provided the invitation via email on February 25, 2021. A meeting was held on February 28, 2021, and Hydro One provided an overview of the selection of the preferred Route Alternative, the rationale for its selection and how input received helped to inform the evaluation. The invitation to the upcoming community VIS was shared via email on February 25, 2021.

Hydro One emailed the community with updates on the Project on March 8 and April 1, 2021, regarding ECI, announcing the two EPC contractors, the community VIS, assessment of environmental effects and potential mitigation measures and Indigenous participation. Hydro One reached out to Oneida in late-March 2021 and shared information for the community VIS and economic opportunities for the Project. Hydro One also provided the list of communities included in the Crown's delegation letter.

A meeting was held on April 1, 2021, regarding the Project and to discuss Oneida's inquiries related to Stage 2 Archaeological Assessment participation and Class EA review.

Economic Opportunities – Jobs, Training and Procurement

Hydro One sent an email on April 9, 2021 to explain the ECI process, introduce the contractors and offer an introductory meeting.

On April 13, 2021, Hydro One met with representatives of the Oneida Nation of the Thames to introduce the ECI process. The EPC contractors were introduced and participants were provided the opportunity to ask questions and have dialogue regarding next steps.

The Hydro One team is working with the EPC to continue the dialogue and ensure the First Nation has the opportunity to engage in the ECI process.

3.6.9 Six Nations of the Grand River Elected Council (Six Nations)

Class EA

In addition to the consultation process outlined above, Six Nations received an advanced project initiation letter dated December 3, 2019. The Notice of Commencement was sent on January 8, 2020. Hydro One followed up with the community in early February 2020 regarding the Notice of Commencement and to provide early notice of the upcoming CICs. Hydro One and Six Nations also corresponded regarding a meeting to discuss the Project. The invitation to the CICs was sent by email on March 5, 2020, and Hydro One also invited the community to participate in the upcoming field surveys in April 2020.

Hydro One emailed the community on March 20, 2020, informing them of the cancellation of the CIC due to public health developments related to COVID-19. Correspondence regarding the CFA began in April 2020 and is ongoing. In April 2020, Hydro One informed Six Nations of both the public and the Haudenosaunee VIS in May and requested input for the process. Hydro One

followed up by email on May 14, 2020, to provide an update on VIS, natural environment field surveys, the TAC and the CFA. Six Nations and Hydro One discussed the VIS and Six Nations requested materials in advance. Hydro One also invited Six Nations to participate in the TAC.

Hydro One shared hard copy materials for the draft Stage 1 Archaeology Report, Cultural Heritage Existing Conditions Report and workbook with the community on November 30, 2020. Hydro One followed up with the community on December 4, 2020, to provide a project update and to inquire whether the community would be interested in providing input into the route evaluation, selection process, or identification of sensitive features.

Hydro One invited the community to attend meetings and workshop sessions related to the Project, including an early briefing, the third TAC workshop and information sessions by email on February 2, 2021. Hydro One followed up with an email providing an overview of the upcoming VIS and provided the invitation via email on February 25, 2021.

Hydro One emailed the community with updates on the Project on March 8, April 1 and April 9, 2021, regarding ECI, announcing the two EPC contractors, the public and Haudenosaunee VIS, assessment of environmental effects and potential mitigation measures and Indigenous Participation.

Economic Opportunities – Jobs, Training and Procurement

Hydro One sent an email on April 9, 2021 to explain the ECI process, introduce the contractors and offer an introductory meeting.

On May 11, 2021, Hydro One met with representatives of Six Nations to introduce the ECI process. Both EPC contractors were introduced and participants were provided the opportunity to ask questions and have dialogue regarding next steps.

Following the introductory meeting, the EPC contractors are currently engaging with Six Nations to continue the discussion on employment, training and procurement opportunities. The Hydro One team is working with the EPC contractors to continue the dialogue and ensure the First Nation has the opportunity to engage in the ECI process.

Equity Participation

On September 15, 2020, Hydro One and the First Nation had an introductory meeting to provide an overview of equity participation opportunities. As a follow-up, a term sheet was provided to the First Nation for their review and consideration. Three additional meetings on January 26, February

16 and February 26, 2021 were held to continue the dialogue related to the term sheet and potential economic opportunities.

At the February 26 meeting, there were discussions about the land use treaty between Haudenosaunee and Anishnawbek nations regarding the mutual respect of each other's Aboriginal and treaty rights and the extent to which they will be involved in projects within each other's traditional territories.

Hydro One will continue to communicate with Six Nations to understand their position in relation to economic benefits on the Project.

3.6.10 Haudenosaunee Confederacy Chiefs Council/Haudenosaunee Development Institute (HCCC/HDI)

Class EA

In addition to the consultation process outlined above, HCCC/HDI received an advanced initiation letter dated December 3, 2019. The Notice of Commencement was sent on January 8, 2020. The community notified Hydro One via letter on January 27, 2020, of their concerns related to the Project and delegation. ENDM responded to HCCC/HDI on March 27, 2020, and provided the delegation letter. Hydro One followed up with the community in early February 2020 to organize a meeting to discuss the Project and to provide early notice of the upcoming CICs.

Hydro One emailed the community on March 20, 2020, informing them of the cancellation of the CIC due to public health developments related to COVID-19. Correspondence regarding the CFA occurred from April 2020 to May 2021. In April 2020, Hydro One informed HCCC/HDI of both the public and Haudenosaunee VIS in May and requested input on the process and invited the community to participate in environmental studies. Correspondence from May 2020 to July 2020 included coordinating the community's participation in environmental surveys. An update email was sent on May 1, 2020 for environmental studies, and the public and Haudenosaunee VIS. Hydro One followed up by email on May 14, 2020, to provide an update on community VIS, field surveys, the TAC and the CFA.

Hydro One also invited HCCC/HDI to participate in the TAC and shared the initial route evaluation criteria on June 25, 2020. In late-September 2020, Hydro One offered to host a Route Selection Virtual Workshop with the community. Hydro One followed up in October 2020 to offer a discussion regarding potential economic participation opportunities for the Project. Hydro One

shared hard copy materials for the draft Stage 1 Archaeology Report, Cultural Heritage Existing Conditions Report and workbook with the community on November 30, 2020.

In-early January 2021, Hydro One informed the community of potential participation and responded to previously submitted questions related to consultation, consent, project initiation and delegation.

Hydro One invited the community to attend sessions related to the Project, including an early briefing, the third TAC workshop and information sessions by email on February 2, 2021. Hydro One followed up with an email providing an overview of the upcoming VIS and provided the invitation via email on February 25, 2021.

On February 26, 2021, Cavalluzzo LLP sent a letter on behalf of the HCCC/HDI to the ENDM, and cc'd Hydro One, to communicate concerns regarding the Project and the failure of the Crown to engage on the selection of Hydro One to construct the Project. The letter called on the Crown to engage and accommodate on any infringement of rights.

Hydro One emailed the community with updates on the Project on March 8, April 1 and April 9, 2021, regarding ECI, the community VIS, assessment of environmental effects and potential mitigation measures and Indigenous participation. Hydro One also provided an overview of the EPC contractors and invited the community to arrange an introductory meeting with Hydro One and the EPC contractors.

On May 4, 2021, Cavalluzzo LLP sent an email to Hydro One expressing concerns of Hydro One's proposed edits to the CFA in seeking to prescribe the limit and parameters of capacity funding being offered. In addition, HCCC/HDI maintains concerns of Hydro One not recognizing Haudenosaunee rights in relation to the Project. On May 5, 2021, Hydro One's legal counsel responded to the email providing points of clarification in respect to the CFA and invited HCCC/HDI to share a workplan to help inform the ongoing discussions regarding the CFA.

Economic Opportunities – Jobs, Training and Procurement

Hydro One sent an email on April 9, 2021 to explain the ECI process, introduce the contractors and offer an introductory meeting.

The Hydro One team is currently working to provide dates to the First Nation in order to continue the conversation and ensure that the community has the opportunity to engage in the ECI process.

Equity Participation

On December 17, 2020, Hydro One and the HCCC/HDI had an introductory meeting to provide an overview of economic benefit opportunities. The conversation focused on HCCC/HDI asserted rights within the Project study area.

Hydro One is working with HCCC/HDI and their legal counsel to finalize the CFA and to continue the discussion on potential economic benefits.

3.6.11 Project Updates & Key Communications

In addition to correspondence with each community and invitations to VIS, Anishnawbek and Haudenosaunee communities were sent project updates throughout the Class EA process. The following updates were sent to Anishnawbek and Haudenosaunee Communities:

- May 27, 2020: Communities were invited to participate in the TAC and Hydro One also offered to hold a virtual Anishnawbek and Haudenosaunee route evaluation workshops.
- October 23, 2020: Communities were emailed an update on the route selection and were offered an opportunity to meet to discuss. They were invited to the virtual open house happening November 5, 2020. They were also provided an opportunity to meet to discuss economic participation and capacity funding.
- November 30, 2020: A cover letter, hard copy package and USB were sent to Anishnawbek and Haudenosaunee communities and included the GIS dataset and survey results/species list, Draft Stage 1 Archaeology Report, CHEC Report and workbook.
- February 2, 2021: Invitation to Anishnawbek and Haudenosaunee communities to attend sessions related to an early briefing of the Preferred Route, upcoming TAC Workshop and VIS.
- February 16, 2021: Invitation to Anishnawbek and Haudenosaunee communities to attend sessions related to an early briefing on the Preferred Route and Save the Date for the upcoming community VIS.
- February 25, 2021: Invitation to Anishnawbek and Haudenosaunee communities to attend VIS on March 22 and 23, 2021.
- March 8, 2021: Anishnawbek and Haudenosaunee communities were sent an email providing an update on the Project and to outline the upcoming consultation.

3.6.12 Anishnawbek and Haudenosaunee Virtual Information Sessions (VIS - May 2020)

Two VIS were held on May 25, 2020, and May 26, 2020 (**Table 3-4**). Originally, CICs with Anishnawbek and Haudenosaunee communities were to be held in-person; however, due to public health developments related to COVID-19, the in-person CICs were postponed and provided virtually as two separate VIS. The first round of VIS were scheduled to provide the Anishnawbek and Haudenosaunee communities an opportunity to learn more about the Project need, the Class EA process, the proposed Route Alternatives, the route selection process, key milestones, and next steps.

The VIS also provided Hydro One an opportunity to gather important information about community interests and values. Participants were informed that their feedback will contribute to the decision-making process and ultimately influence Hydro One’s preferred route selection.

Anishnawbek and Haudenosaunee communities were notified of the virtual sessions by email on May 14, 2020, and provided with a notice detailing the VIS (**Appendix B-3**). Some communities provided consent to send automated calls to community members as a reminder of the upcoming information session.

Table 3-4: May 2020 Anishnawbek and Haudenosaunee VIS Overview

Date and Time	Virtual Forum	Number of Attendees
Haudenosaunee Communities		
May 25, 2020 7:00 p.m. to 8:00 p.m. E.T.	Online Presentation and Live Discussion	213
Anishnawbek Communities		
May 26, 2020 7:00 p.m. to 8:00 p.m. E.T.	Online Presentation and Live Discussion	56

The VIS were hosted using a virtual platform and participants could register and view the live stream of materials (**Appendix B-3**), and/or call in to listen to the presentation. Participants were able to submit their questions in advance or phone in to ask live questions. The VIS included a panel of Hydro One representatives and a moderator. The presentation covered the following topics:

- Project overview.
- Class EA process.
- First Nations Consultation.
- Proposed Route Alternatives and route selection process.

- Key milestones and next steps.
- Live Question and Answer (Q&A) session.

Hydro One responded to pre-submitted questions and participants were asked to join the queue for live questions. Hydro One asked two survey polling questions during each of the sessions and participants dialled in their response. If participants were unable to ask their live question, Hydro One encouraged questions to be emailed to Indigenous.Relations@HydroOne.com. Hydro One uploaded the video presentation, audio recordings from the Q&A and Notice materials to the Project website at www.HydroOne.com/Chatham-to-Lakeshore.

Overall, 269 participants engaged in both VIS'. In total, 25 questions were asked during the sessions. The majority of questions focused on the following themes:

- Route selection.
- Indigenous training/employment and business opportunities.
- Use of Indigenous Traditional Knowledge.
- Indigenous Community Engagement and Consultation.

Haudenosaunee VIS – May 25, 2020

In total, 213 participants joined the Haudenosaunee VIS and the Hydro One panel responded to one live question and ten pre-submitted questions. The results of the two survey polling questions are summarized in Table 3-5.

Table 3-5: Haudenosaunee May 25 VIS Survey Polling Question Summary

Survey Question	Options	Response
Question 1: In your view, which criteria is most important to take into consideration as part of this project?	1) Vegetation, Wildlife and/or Water Bodies	1) 7
	2) Archeological Assessments	2) 0
	3) Protection of Indigenous Values and Traditional Land Use	3) 9
	4) Class Environmental Assessment Process	4) 1
	Total Responses	
Question 2: What project information would you like to learn more about in future	1) Project Need	1) 0
	2) Technical Route Selection Process	2) 1
	3) Indigenous Business Opportunities	3) 1
		5) 2

Survey Question	Options	Response
engagement sessions with the community?	5) Employment and Training Opportunities	
Total Responses		4

As shown in **Table 3-5**, the majority of Haudenosaunee participants thought the protection of Indigenous Values and traditional land use was the most important criteria to take into consideration. Half of the participants also wanted to learn more about employment and training opportunities.

A total of 11 questions were asked during the VIS; one live question and ten pre-submitted questions. Refer to Section **3.6.14** for a summary of key comments and responses.

Anishnawbek VIS – May 26, 2020

In total, 56 participants joined the virtual session and the Hydro One panel responded to four live questions and ten pre-submitted questions.

The results of the two survey polling questions are summarized in **Table 3-6**.

Table 3-6: Anishnawbek May 26 VIS Survey Polling Question Summary

Survey Question	Options	Response
Question 1: In your view, which criteria is most important to take into consideration as part of this project?	1) Vegetation, Wildlife and/or Water Bodies	1) 5
	2) Archeological Assessments	2) 0
	3) Protection of Indigenous Values and Traditional Land Use	3) 1
	4) Class Environmental Assessment Process	4) 0
Total Responses		6
Question 2: What project information would you like to learn more about in future engagement sessions with the community?	1) Project Need	1) 1
	2) Technical Route Selection Process	2) 0
	3) Indigenous Business Opportunities	3) 2
	4) Employment and Training Opportunities	4) 1
Total Responses		4

As shown in **Table 3-6** the majority of the Anishnawbek participants agreed that the protection of the natural environment was the most important criteria to take into consideration. Half of the respondents wanted to learn more about Indigenous business opportunities.

A total of 14 questions were asked during the virtual session; four live questions and ten pre-submitted questions. Refer to Section **3.6.14** for a summary of key comments and responses.

3.6.13 Anishnawbek and Haudenosaunee Virtual Information Sessions (VIS - March 2021)

Due to the ongoing COVID-19 pandemic public health restrictions applying to in-person gatherings, the Open House and Live Discussions were held virtually. The virtual Open House was available for communities to view online beginning February 25, 2021, and the Live Discussions were held on March 22, 2021, and March 23, 2021 (**Table 3-7**). The virtual sessions were scheduled to provide the Anishnawbek and Haudenosaunee communities with information regarding the preferred Route Alternative, including an in-depth update to the feedback and participation received from the Anishnawbek and Haudenosaunee communities into the route evaluation process. The virtual sessions also provided an overview of the Class EA process and employment and training opportunities along with next steps.

The Anishnawbek and Haudenosaunee communities were notified of the virtual sessions by e-mails detailing the virtual session information (**Appendix B-3**) beginning the week of February 22, 2021. The notice included a social media package with details of the virtual session encouraging the communities to post on their social media platforms inviting members to attend the scheduled event. In addition, the vendor provided a call to community members to inform them about the upcoming virtual session the day of the event with permission from representatives of the communities.

Table 3-7: March 2021 Anishnawbek and Haudenosaunee VIS Overview

Date and Time	Virtual Forum	Number of Attendees
Anishnawbek Communities		
March 22, 2021 7:00 p.m. to 8:00 p.m. E.T.	Online Presentation and Live Discussion	27
Haudenosaunee Communities		
March 23, 2021 7:00 p.m. to 8:00 p.m. E.T.	Online Presentation and Live Discussion	72

The Open House was available online (www.chatham-to-lakeshore-openhouse.com) prior to the Live Discussions. The Open House displayed information covering the following:

- Project overview.
- Class EA process.
- Interactive Project Map.
- Route Alternatives assessed.
- Route Evaluation Criteria.
- Evaluation of Route Alternatives.
- Preferred Route Alternative.
- Engagement and technical work to date.
- Next steps.
- Comment Form.

Community members could register online to participate in the live discussion sessions. The virtual Live Discussion sessions were presented live by phone by a panel of Hydro One representatives and a moderator, and included an online presentation that was uploaded to the Project website at www.hydroone.com/Chatham-to-Lakeshore (**Appendix B-3**). Community Members were invited to view the presentation materials online during the presentation. Community members were also invited to submit questions in advance to IndigenousRelations@HydroOne.com, or by dialing in to submit live question and through a question submission box. The presentation covered the following:

- Project update.
- Update on Class EA process.
- Route evaluation process and selection of the Preferred Route Alternative.
- Ongoing engagement including employment, training and Indigenous procurement opportunities.
- Next steps.
- Live Q&A session.

Community Members who preferred not to ask their question live, were provided an email address to submit their question electronically - IndigenousRelations@HydroOne.com.

In total, the panelists answered 18 questions during the sessions. The majority of questions focused on the following themes:

- Environmental Assessment Process.
- Traditional Ecological Knowledge.

- Indigenous-owned businesses and Employment Opportunities.
- Indigenous Consultation and Participation.
- Evaluation of Route Alternatives.

Anishnawbek VIS – March 22, 2021

In total, 27 attendees joined the Anishnawbek Virtual Live Discussion. The Hydro One panel provided responses to two recurring questions and seven pre-submitted questions. Refer to Section 3.6.14 for a summary of key comments and responses.

Haudenosaunee VIS – March 23, 2021

In total, 72 attendees joined the Haudenosaunee Virtual Live Discussion. The Hydro One panel provided responses to two recurring questions, one live question and ten pre-submitted questions. Refer to Section 3.6.14 for a summary of key comments and responses.

3.6.14 Summary of Key Anishnawbek and Haudenosaunee Comments and Concerns

Table 3-8 provides a consolidated summary of the comments and concerns raised from Anishnawbek and Haudenosaunee communities throughout the Class EA consultation process.

Table 3-8: Summary of Key Comments and Concerns from Anishnawbek and Haudenosaunee Communities

THEME	QUESTION/CONCERN	RESPONSE
Project Need/Information		
Project Information	What is the location of the new transmission line?	The Project website (www.HydroOne.com/Chatham-to-Lakeshore) contains more detailed ortho-photo tile maps of the preferred Route Alternative, as well as an interactive online mapping tool that allows users to view the preferred Route Alternative in detail in specific areas.
Project Need	What is the need for the new line?	In Ontario, the IESO oversees electricity planning. They conduct routine planning to identify where electricity growth or demand is in the province and they work in conjunction with transmitters, generators and utilities like Hydro One to confirm how to best address these needs. In 2019, the IESO requested that Hydro One build a new transmission line that connects from our Chatham SS to our future Lakeshore TS to meet the significant amount of electricity growth in Essex County and the surrounding region over the next several years. Currently, there is only a limited amount of electric power, which can be transmitted by the existing transmission lines from our Chatham SS into Windsor-Essex Region.
Electricity Rates	What impact will this project have on my electricity rate?	An application will be made for this project to obtain a Leave to Construct from the OEB. Through this regulatory process, the OEB will make a ruling on the viability of proceeding with this Project at the presented costs. Every few years, Hydro One provides details on our plans for the transmission system via a rate application to the OEB. Through the rigorous regulatory process the OEB will then make a decision on our rate application, ensuring that customers are protected from any undue costs.
Cost	What is the cost of the Project?	The preliminary cost of the Project, as indicated in a letter dated June 2019 from the IESO letter, is estimated between \$115 - 150 million. A detailed estimate will be provided before Hydro One seeks approval from OEB in late 2021.
Class Environmental Assessment & Consultation		
Class EA process	What is the Class EA process that is supporting the Project?	<p>The Class EA for Minor Transmission Facilities (Hydro One, 2016) in accordance with the Ontario EA Act, sets out a planning and decision-making process that ensures transmission projects that have a predictable range of effects are planned and carried out in an environmentally acceptable manner.</p> <p>This process includes:</p> <ul style="list-style-type: none"> • Consultation with government officials; government agencies; Indigenous communities; potentially affected and interested persons, affected businesses and interest groups. • Collection of environmental data and a description of existing conditions. • Identification and evaluation of alternative methods of undertaking the Project. • Identification of potential environmental effects of the Project and mitigation measures. • Selection of preferred Route Alternative. <p>As part of the Class EA process, a draft ESR is made available for public review and comment period.</p>
	Will Hydro One incorporate Indigenous Knowledge into the environmental studies?	Hydro One will incorporate feedback regarding Indigenous Knowledge into the Class EA including, where provided, the route evaluation and selection process and the effects assessment of the preferred Route Alternative. Representatives from Anishnawbek and Haudenosaunee communities have attended field surveys. As the Project progresses towards design and construction, Hydro One will work with communities to identify additional opportunities to incorporate this knowledge into the planning and execution of the Project, including the Biodiversity Initiative.

THEME	QUESTION/CONCERN	RESPONSE
	Are there still opportunities for the Anishnawbek and Haudenosaunee communities to continue to participate in environmental studies?	Hydro One appreciates and encourages the continued participation of Anishnawbek and Haudenosaunee community representatives. Hydro One looks forward to continuing discussions for the remainder of the Class EA, subsequent studies and other project activities as the Project proceeds. Hydro One will provide field liaison monitoring opportunities for Stage 2 Archaeological Assessment and natural environment assessments for the preferred Route Alternative. As the Project progresses towards design and construction, Hydro One will work with communities to identify additional opportunities for participation, including the Biodiversity initiative for the Project.
	What is the timeline for the EA process?	Hydro One is planning to release the draft ESR in June, for review and comment over the summer of 2021.
Consultation	Which Indigenous communities has Hydro One consulted with on this project?	<p>Consultation with Indigenous communities is a top priority for Hydro One. We have received delegation of the procedural aspects of consultation from the Crown (Ministry of Energy, Northern Development and Mines). The Crown provided Hydro One with a list of Anishnawbek and Haudenosaunee communities with whom Hydro One is required to consult with on this project. Throughout the development activities, Hydro One has consulted and will continue to work closely with the communities identified, which include:</p> <ul style="list-style-type: none"> ● Aamjiwnaang First Nation ● Bkejwanong (Walpole Island) First Nation ● Caldwell First Nation ● Chippewas of Kettle and Stony Point First Nation ● Chippewas of the Thames First Nation ● Oneida Nation of the Thames ● Six Nations of the Grand River Elected Council ● Haudenosaunee Confederacy Chiefs Council/ Haudenosaunee Development Institute
	How can I provide feedback on this project?	<p>Hydro One will offer several opportunities to engage with interested individuals through direct contact with their Indigenous Relations Department and through community sessions. Several areas where individual feedback may aid in the Project include:</p> <ol style="list-style-type: none"> 1. Helping to understand local and existing environment. 2. The development of evaluation criteria – in an Indigenous context. <p>Informing the project team on how to help avoid or mitigate environmental effects and learning about the net effects (including positive). This will be documented in the ESR.</p>
	WIFN/3 Fires Council concerns with Haudenosaunee involvement / recognition from the Crown?	Hydro One acknowledges and respects that Anishnawbek and Haudenosaunee communities may have recognized or asserted Aboriginal or treaty rights and overall interests within the Project area. Hydro One also acknowledged that these interests might be overlapping and varying. As a privately owned company, we have been directed by the Crown to undertake the procedural aspects of the Crown's duty to consult on the Project. Hydro One is committed to robust and respectful engagement with all communities with an interest in the Project. A list of communities that Hydro One has been asked to engage and consult with has been provided by the Crown based on <i>their</i> assessment of the communities' rights and potential project impacts. Hydro One continues to consult with all communities listed by the Crown in the duty to consult delegation letter provided to Hydro One to address any Project related interests or concerns.

THEME	QUESTION/CONCERN	RESPONSE
	Concerns raised by HCCC/HDI.	HCCC/HDI expressed concerns regarding assertion of rights and economic participation in relation to the Project. Hydro One met with HCCC/HDI to work towards addressing their concerns and has committed to working together to move the Project forward. Hydro One is presently corresponding with HDI representatives on the conclusion of a CFA to assist HCCC/HDI with capacity funding to participate in the engagement process.
Archaeological Resources		
Archaeological Resources	How will assessment of potential Archaeological resources be conducted for this project?	<p>Stage 1 Archaeological Assessment was conducted for each of the Route Alternatives to confirm known archaeological sites and identify features and areas of archeological potential. This contributed to refinements in the some of the Route Alternatives to locate them away from known sites with Archaeological resources still anticipated to remain in the ground, as well as the consideration of archaeological features of potential in the evaluation of Route Alternatives.</p> <p>Now that a preferred Route Alternative has been selected, a Stage 2 Archaeological Assessment will be conducted for the areas identified along the preferred Route Alternative with the potential for archaeological resources. If any areas are identified during the Stage 2 Archaeological Assessment as requiring further assessment, Stage 3 and/or 4 Archaeological Assessments will be conducted for those areas as required.</p> <p>Should archaeological artifacts be encountered during construction, work in the vicinity will cease and a licensed archaeologist will be engaged immediately to ensure compliance with the provincial <i>Heritage Act</i>. Likewise, should any human remains be encountered during construction, work in the vicinity will cease and the police and coroner will be notified immediately, as well as the Registrar of Cemeteries to ensure compliance with the <i>Funeral, Burial and Cremation Services Act</i>.</p>
	Will there be opportunities for Anishnawbek and Haudenosaunee communities to participate in upcoming Archaeological Assessments?	Yes, Hydro One will provide field liaison monitoring opportunities for the upcoming Stage 2 Archaeological Assessment for the preferred Route Alternative. Field surveys for the Stage 2 Archaeological Assessment are anticipated to commence in late-summer 2021.
Health and Safety		
Electric and Magnetic Fields (EMFs)	Concerns about EMFs	<p>Health and safety is our top priority at Hydro One, and we design and operate our equipment across the province in accordance with all regulatory requirements including the Canadian Electric Code and CSA Standards, which account for public safety.</p> <p>EMF levels are invisible sources found everywhere electricity is used including home appliances, computers, offices and electrical stations. They are strongest when close to their source, and as you move away from the source, the strength of the fields fades rapidly.</p> <p>Hydro One seeks guidance from health experts such as Health Canada and the World Health Organization for health related concerns. We understand, Health Canada does not consider that any precautionary measures are needed regarding exposure to power frequency or fields produced by power transmissions.</p> <p>Generally, by the edge of our ROW, EMF fields in the home are higher from everyday household items, such as appliances and general use of electricity than from transmission lines at a distance.</p> <p>We are committed to understanding, addressing and communicating information regarding health concerns individuals may have. Hydro One has further information on our website, as well as a designated EMF information telephone line for any specific questions. Information can be found on our website www.HydroOne.com/power-outages-and-safety/corporate-health-and-safety/electric-and-magnetic-fields, and our toll free EMF hotline is 1-800-728-9533.</p>

THEME	QUESTION/CONCERN	RESPONSE
Herbicide Use	Will herbicide be used at any time in the Project?	<p>The construction contractor will implement a weed control plan for their work within agricultural areas.</p> <p>During operation of overhead transmission lines, herbicides are one of many tools that Hydro One employs to manage incompatible vegetation within the transmission line ROW to ensure the safe and reliable operation of the line. Any herbicide use will be planned in accordance with integrated pest management standards and to limitations such as setbacks from water bodies and other best practices.</p>
Route Alternatives and Evaluation		
Route Alternatives	How did you identify the Route Alternatives?	Prior to the start of the Class EA, our team conducted preliminary work to identify Route Alternatives to build the new line from the Chatham SS to our future Lakeshore TS. We considered known technical and environmental features and constraints such as large waterbodies, dense residential areas, environmentally significant areas, and looked for opportunities to parallel linear infrastructure and utilize existing transmission corridors. Based on that information, we developed three viable Route Alternatives and associated variations which were evaluated throughout the Class EA.
Route Evaluation and Selection	Why are Natural Environment criteria being weighted differently? All aspects of the natural environment should be considered equally.	Incorporating a weighted criteria analysis in the evaluation of Route Alternatives was done to provide an additional avenue for Anishnawbek and Haudenosaunee communities, and project stakeholders such as agencies, municipalities, interest groups and members of the public to provide input into the route evaluation framework (e.g., beyond just the identification of criteria). Hydro One has considered this feedback during the weighting of criteria for the Project, and will consider it for other projects in the future going forward.
	How was the preferred Route Alternative selected?	Over the past year Hydro One has conducted a process to study, learn more and collect feedback on the three Route Alternatives and associated variations that were identified at the start of the Project. Using feedback received from stakeholders, in addition to information from technical and environmental studies, we weighed the advantages and disadvantages of each Route Alternative in a fair and holistic manner across the four different categories. Through this analysis, Route Alternative 2A was selected as the preferred, based on its collective advantages.
	How is cost being considered in the evaluation of the Route Alternatives?	The Technical and Cost category represents a number of criteria relating to the design and construction aspects of each Route Alternative, many of which will ultimately impact the final cost of each Route Alternative.
Project Design		
Lines	What are the design criteria for the new transmission line?	<p>The new transmission line must meet several technical criteria, which includes the following:</p> <ul style="list-style-type: none"> • The transmission line must operate at 230 kV and transfer 400 megawatts (MW) of power. • The line itself could be a lattice tower design or monopole steel tower design. Once further defined, Hydro One will be able to decide on the correct structure and width of the ROW. <p>The transmission line right of way can be expected to be approximately 150 feet in width.</p>
	Will the lines be buried?	When burying high voltage transmission lines in either a tunnel or within a duct bank, there are many factors that need to be taken into consideration. This includes technical feasibility, disruption to the surface environment (e.g. open trench excavations) and cost. When considering those factors, it was determined that for this Project, an overhead line was the only viable means of meeting the need for the Project.
	Will the line go above watercourses?	The Project will involve an overhead transmission line; this means that the conductors (wires carrying the electricity), supported by steel structures will exist several metres above the ground surface at a safe height. As a result, any watercourses that needs to be crossed by the transmission line can be spanned overhead.

THEME	QUESTION/CONCERN	RESPONSE
Right-of-Way	How wide is the ROW for the transmission corridor?	The typical ROW for a 230 kV transmission corridor is 150 feet. However, the exact corridor width will be determined as Hydro One conducts design planning. Further details are expected to be shared this summer.
Existing Infrastructure		
Use of Existing Infrastructure	Was upgrading the existing lines considered?	In Ontario, the IESO evaluates the future electricity needs. They conduct routine planning to identify where electricity growth or demand is in the province is and how to best address these needs. As a part of their recent planning cycle, they assessed a variety of options to ensure that the region’s electricity needs are met reliably and at the lowest cost, and found the new 230 kV transmission line between the Chatham SS and the future Lakeshore TS to be most preferable option to meet near- to mid-term electricity needs in the area west of Chatham.
	As part of the work to identify the route have you considered the old rail corridor or a portion of the 401?	Hydro One has thoroughly investigated the viable Route Alternatives to connect the Chatham SS to the future Lakeshore TS, and has identified and assessed a diverse set of Route Alternatives that will meet the need for the Project. As part of the preliminary work to identify potential Route Alternatives, the Hydro One team looked at a number of considerations, including known technical and environmental constraints such as waterbodies, dense residential areas and environmentally significant areas. Hydro one also considered opportunities to parallel linear infrastructure – such as existing transmission corridors, Highway 401 and railroads. More specifically, Hydro One looked at paralleling the old railroad which runs through North Buxton, Fletcher, Tilbury, Comber and onwards. This railroad, however, was deemed unfeasible due to several technical constraints, including its narrow width, bisection of established residential areas, the availability of the railway corridor as sections are utilized by other industries, and encroachment upon existing wind turbines. Additionally, Route Alternative 2C parallels the Highway 401 corridor to the extent determined viable by Hydro One. Through the Class EA, Hydro One evaluated and compared each of these Route Alternatives, including Route Alternative 2C, to select the preferred Route Alternative for the Project. Route Alternative 2A was ultimately selected as the preferred Route Alternative.
	Was paralleling existing infrastructure considered?	When planning a new transmission lines, paralleling existing linear infrastructure is typically considered as an alternative where viable due to efficiencies that can be realized in the required ROW width, as well as the reduction in the number of corridors located across the landscape/region, which is in line with the Provincial Policy Statement. That said, while paralleling the existing 230 kV corridor was a starting point in identifying Route Alternatives for this Project, we did not limit ourselves to this option and that is why we evaluated a wide variety of diverse routes, each with their own benefits. This includes utilizing an existing idle transmission line corridor, paralleling the Highway 401 corridor, and building an entirely new greenfield corridor.
Community Partnerships and Revenue-Generating Projects	Potential effects to projects and facilities involving equity partnerships with communities should be considered. Effects to these facilities, such as extended outages, could affect important revenue streams for partner communities.	Where identified by communities, Hydro One has assessed such facilities to determine whether any of the Route Alternatives may cause an effect such as outages. While some of these identified facilities did overlap with the LSA for the Project, or were connected to transmission circuits in the area, Hydro One did not identify any potential for significant adverse effects to these facilities related to any of the Route Alternatives. The Lakeshore TS, currently under construction, will help to mitigate any risk of extended transmission outages to the circuits that these facilities are connected to, by providing additional switching capabilities to the 230 kV transmission network in the region.

THEME	QUESTION/CONCERN	RESPONSE
Natural Environment		
Impacts to animals and their habitats	Concerned about the impact the line will have on animals and their habitat.	Within the Class EA, effects to natural environment and wildlife habitats, are considered in the evaluation of the Route Alternatives, and the identification of environmental effects and potential mitigation measures (Section 7.7.8.5), before an infrastructure project advances to detailed design and construction. Hydro One will continue to provide opportunities for Anishnawbek and Haudenosaunee communities to participate in discussions regarding effects, mitigation and restoration to wildlife and their habitats on the Project moving forward.
Impacts to aquatic habitats	Concerned about the impact the line will have to aquatic habitats.	Within the Class EA, effects to natural environment and aquatic habitats are considered in the evaluation of the Route Alternatives, and the identification of environmental effects and potential mitigation measures (Section 7.7.8.2), before an infrastructure project advances to detailed design and construction. The Project will involve an overhead transmission line; this means that the conductors (wires carrying the electricity), supported by steel structures will exist several metres above the ground surface at a safe height. As a result, any watercourses crossed by the transmission line can be spanned overhead. While temporary watercourse crossings may need to be installed, mitigation measures will be employed as mentioned above. Hydro One will continue to provide opportunities for Anishnawbek and Haudenosaunee communities to participate in discussions regarding effects, mitigation and restoration to aquatic habitats on the Project moving forward.
Species at Risk (SAR)	Concerned about the impact that the Project could have to a Butternut grove identified along Route 1 during field surveys.	<p>As described in Section 4.6.7, during the natural environment field surveys conducted in the 2020 field season, Hydro one's consulting biologists and attending community representatives identified a grove of endangered Butternut (<i>Juglans cinerea</i>) adjacent to the existing 230 kV transmission lines. Butternut were also identified along an adjacent hedgerow which would have been traversed by some variations associated with Route Alternative 1, necessitating removal of some Butternut as they are an incompatible species with overhead transmission lines.</p> <p>During the route evaluation, potential and known SAR habitats, including the observed Butternut and their habitat, were considered in the Natural Environment and Anishnawbek and Haudenosaunee categories. As Route Alternative 2A was ultimately selected as the preferred Route Alternative, and no Butternut were identified along Route Alternative 2A, Hydro One does not currently anticipate any effects to Butternut as a result of the Project.</p> <p>In the event Butternut is identified along Route Alternative 2A going forward, Hydro One will follow the appropriate provincial regulations regarding assessment and removal of Butternut.</p>
	Concerned about the impact that the Project could have to aquatic SAR.	As described in Section 4.6.7 , potential aquatic SAR habitat was identified for Lake Chubsucker (<i>Erimyzon sucetta</i>) and Lilliput (<i>Tozolasma parvum</i>) in association with Route Alternative 2. Lake Chubsucker is listed as endangered federally and threatened provincially, while Lilliput is provincially listed as threatened. Similarly, although background mapping identified habitat for Round Pigtoe (<i>Pleurobema sintaxia</i>), listed as endangered federally and provincially, in association with all Route Alternatives, the PSA is beyond the current Canadian range of the species (DFO, 2019). The same mitigation measures outlined above for aquatic habitat would be employed with respect to potential impacts to aquatic SAR. In the event the construction of watercourse crossings have the potential to impact habitat of Lake Chubsucker and Lilliput, necessary permits and approvals from MECP and DFO would be obtained before the commencement of work.
Traditional Ecological Knowledge	Will Hydro One use Indigenous people to identify medicinal plants?	Hydro One has sought input from community members and participants on the location, type and importance of medicinal plants during the Route Alternative evaluation process and during the effects assessment of the preferred Route Alternative. Additionally, representatives from Anishnawbek and Haudenosaunee communities have attended field surveys. As the Project progresses towards design and construction, Hydro One will work with communities to identify additional opportunities to incorporate this knowledge into the planning and execution of the Project.

THEME	QUESTION/CONCERN	RESPONSE
Biodiversity Initiative	Are there opportunities for communities to participate in biodiversity initiatives?	Hydro One values input from community members on biodiversity initiatives, whether it be Traditional Knowledge or any information that the community may want to put forward. Hydro One would like to work with communities to identify locations for the initiative, to identify Anishnawbek and Haudenosaunee-specific ideas, how they benefit the communities and the surrounding region, and understand Indigenous values. Hydro One plans to advance the Biodiversity Initiative following completion of the Class EA and OEB Section 92 processes.
Property Acquisition		
Property Acquisition	Once the route has been selected will Hydro One be purchasing the land it needs or pursuing easement rights?	Hydro One's real estate team will work closely with directly impacted property owners who have the preferred ROW on their property. In order to construct the line, Hydro One will require new land rights. Hydro One's goal is to secure voluntary property settlements, using project specific land acquisition compensation principles, which would grant Hydro One the ability to construct, operate and maintain the transmission line. These principles will provide property owners the choice of Hydro One either acquiring an easement or ownership of the lands required for the Project.
Pinery Provincial Park	Will this project go through Pinery Provincial Park? "This is considered unceded territory and will present issues."	Pinery Provincial Park will not be affected or traversed by the new transmission line, as it is approximately 100 km north of the Study Area.
Economic and Skills Development Opportunities		
Employment, Training and Business Opportunities	Was there any participation of Anishnawbek and Haudenosaunee communities in the hiring process?	Hydro One is currently in the early definition and delivery stage; however, Hydro One believes that in order to be a good partner with the communities, opportunities for training and skill development are to be offered.
	Will there be potential business opportunities for Indigenous businesses?	Yes, there will be opportunities for Indigenous-owned businesses within the region. Discussions will occur between the EPC Contractors, the community businesses, and Hydro One to try and ensure that the participation of Indigenous owned businesses is maximized during the construction on this Project.
	Will there be potential Anishnawbek and Haudenosaunee employment and procurement opportunities through this Project?	Hydro One recognizes the importance of engagement with Anishnawbek and Haudenosaunee communities in connection with the Project. Hydro One will explore and discuss various benefits, including, but not limited to, capacity funding to participate in the engagement process, procurement, contracting and employment opportunities. Indigenous Peoples are an important part of Hydro One's workforce. Hydro One is committed to increasing the representation of qualified Indigenous employees as part of the Project and for all levels in their workforce. Hydro One is committed to developing and maintaining business relationships with Indigenous businesses and communities for opportunities. Hydro One supports procurement opportunities for qualified Indigenous-owned businesses and the development and capacity of Indigenous suppliers who can provide goods and services for the Project.

THEME	QUESTION/CONCERN	RESPONSE
	<p>Following Hydro One's announcement of the ECI this month, can you please share whether there will be further engagements from both the EPC contractors and the Anishnawbek and Haudenosaunee participation?</p>	<p>Hydro One has chosen an ECI model for the Project. Under this model, two EPC contractors have been pre-qualified and will work with Hydro One to develop the design and construction solution to be utilized on this Project. Indigenous participation and inclusion in the delivery of the Project is of greatest importance to Hydro One. As the Project progresses, Hydro One will be holding engagements with the EPC contractors and your community to discuss the Project. Information such as job types and numbers, procurement and sub-contracting that need to be utilized in the delivery of the works will be discussed. This will assist Hydro One in understanding the capacity that exists within the communities. Hydro One is committed to meaningful Indigenous participation on the Project and will have discussions about capacity building through forms such as training and skills development, as well as opportunities for business enhancement to ensure participation from the community is maximized.</p>
	<p>Will there be training and job opportunities for Anishnawbek and Haudenosaunee communities through this project?</p>	<p>The EPC Contractors and Hydro One will be meeting with representatives from Anishnawbek and Haudenosaunee communities. Part of the meetings will be to discuss the opportunities for employment on the Project. The workforce that will be delivering the construction phase of the Project will be one of our EPC contractors; however, they will draw upon as many members from the communities as possible to carry out aspects of the construction of the Project. To ensure that community members are able to meaningfully participate in construction, there will be training and jobs that will be offered through the EPC contractors.</p>
<p>Partnership Opportunities</p>	<p>Will there be partnership opportunities on this project?</p>	<p>Hydro One recognizes the importance of engagement with Anishnawbek and Haudenosaunee communities in connection with the Project. Hydro One has engaged with the communities regarding potential opportunities for economic participation in the Project and will continue to work to advance meaningful opportunities for economic benefits throughout the process.</p>

3.7 Federal Government & Agencies

As part of the consultation program for the Project, the following federal government representatives and agencies were contacted during the Class EA Process:

- Agriculture and Agri-Food Canada.
- Canadian National Railway (CNR).
- Canadian Pacific Railway (CP Rail).
- Canadian Wildlife Services (CWS).
- Environment and Climate Change Canada (ECCC).
- Fisheries and Oceans Canada (DFO).
- Transport Canada (TC).
- VIA Rail.

No concerns were raised by the federal agencies. Correspondence with Federal Government and Agencies is included in the Record of Consultation (**Appendix B-6**).

3.7.1 Agriculture and Agri-Food Canada

Hydro One emailed the notices for the above mentioned engagement opportunities to Agriculture and Agri-Food Canada. No comments or concerns were raised by Agriculture and Agri-Food Canada.

3.7.2 Canadian National Railway (CN Rail)

Hydro One emailed the notices for the above mentioned engagement opportunities to CN Rail. Hydro One called CN Rail on November 6, 2020 to follow up on the notices and provided a brief overview of the Project and referred to a crossing with CN Rail. In the call, CN Rail indicated that if the line is an overhead crossing then there would be minimal concerns as long as standards were met and there would be no interference with train electronics. No other comments or concerns were raised by CN Rail.

3.7.3 Canadian Pacific Railway (CP Rail)

Hydro One emailed the notices for the above mentioned engagement opportunities to CP Rail. Hydro One called CP Rail in September 2020 to follow up on the notices. CP Rail returned the call on September 21, 2020, and Hydro One provided a brief overview of the Project and referred to the Route Alternatives which may impact CP Rail track. In the call, Hydro One confirmed the

expansion would not be in the direction of the CP Rail ROW and CP Rail staff indicated that as long as the new line would remain outside of the CP Rail ROW, they do not foresee any immediate conflicts. CP Rail indicated more details may be required depending on the work adjacent to the railway. Hydro One followed up by email on September 22, 2020, and provided maps and more information on the Route Alternatives that may cross CP Railway track and outlined anticipated next steps for the Project. The following day, CP Rail emailed to indicate they do not foresee any issues and Hydro One agreed to notify CP Rail if the preferred Route Alternative crosses or parallels CP Rail track. No other comments or concerns were raised by CP Rail. CP Rail was included on the update regarding the selection of the preferred Route Alternative on February 25, 2021, and a subsequent follow-up email reiterating the selection of the preferred Route Alternative and section parallel to the CP track was also sent on March 2, 2021.

3.7.4 Canadian Wildlife Services (CWS)

Hydro One emailed the notices for the above mentioned engagement opportunities to CWS. No comments or concerns were raised by CWS.

3.7.5 Environment and Climate Change Canada (ECCC)

Hydro One emailed the notices for the above mentioned engagement opportunities to ECCC. ECCC emailed Hydro One and inquired whether the Route Alternatives crossed federal lands. Hydro One provided confirmation in a follow up email on June 12, 2020, that the Route Alternatives do not cross federal lands. No other comments or concerns were raised by ECCC.

3.7.6 Fisheries and Oceans Canada (DFO)

Hydro One emailed the notices for the above mentioned engagement opportunities to DFO. Hydro One received a confirmation of receipt for the Notice of Commencement from DFO on January 28, 2020, by email. No other comments or concerns were raised by DFO.

3.7.7 Transport Canada (TC)

Hydro One emailed the notices for the above mentioned engagement opportunities to TC. Hydro One followed up by email on December 3, 2020, regarding previous correspondence and inquired whether TC had any comments related to the route evaluation. TC emailed Hydro One on December 9, 2020, and indicated they do not typically provide input regarding Route Alternatives and encouraged Hydro One to contact the Navigation Protection program team. The Navigation

Protection program team responded to Hydro One's email regarding the Project and provided Hydro One with resources. No other comments or concerns were raised by TC.

3.7.8 VIA Rail

Hydro One emailed the notices for the above mentioned engagement opportunities to VIA Rail. Hydro One followed up by email in August 2020, regarding previous correspondence and inquired whether VIA Rail had any comments related to the Project. VIA Rail emailed Hydro One on August 21, 2020, and indicated they do not have any objection with the Project. Hydro One indicated that if the Route Alternative near the VIA Rail line is selected, they would be in touch to discuss further. No other comments or concerns were raised by VIA Rail.

3.8 Provincial Government & Agencies

As part of the consultation program for the Project, the following provincial government representatives and agencies were contacted during the Class EA Process:

- Ministry of Agriculture, Food and Rural Affairs (OMAFRA).
- Ministry of Energy, Northern Development and Mines (ENDM).
- Ministry of the Environment, Conservation and Parks (MECP).
- Ministry of Government and Consumer Services (MGSC).
- Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Ministry of Indigenous Affairs (MIA).
- Ministry of Natural Resources and Forestry (MNRF).
- Ministry of Municipal Affairs and Housing (MMAH).
- Ministry of Transportation (MTO).
- Essex Region Conservation Authority (ERCA).
- Infrastructure Ontario (IO).
- Lower Thames Valley Conservation Authority (LTVCA).
- Ontario Clean Water Agency (OCWA).
- Ontario Provincial Police (OPP).

Correspondence with Provincial Government and Agencies is included in the Record of Consultation (**Appendix B-6**).

3.8.1 Rick Nicholls, MPP for Chatham-Kent-Leamington

Hydro One had regular touchpoints with MPP Nicholls by way of email and meetings to share updates on the Class EA process and notices regarding the above-mentioned engagement opportunities. On January 16, 2020, Hydro One and MPP Nicholls' staff had a teleconference to introduce the Project, share further information and expected next steps. In July 2020, Hydro One shared a written update on the Project and consultation to date. In October 2020 and during the Live Discussion, MPP Nicholls shared questions related to health and safety and electro-magnetic fields (EMF). A subsequent meeting was held on November 13, 2020, to follow up with MPP Nicholls to discuss these items further.

In February 2021, Hydro One held a briefing with MPP Nicholls on the selection of the preferred Route Alternative and next steps. MPP Nicholls shared feedback and concerns related to route considerations, impacts to drainage tiles, property values and impacts to agricultural operations. A subsequent meeting was held on March 13, 2021 to discuss additional comments and concerns from the community, including the proximity of the line to homes, the impact the line will have on farmers' contracts with distributors, the impact of the line to future growth, interference to farming equipment communication systems and tower design. Route Alternatives previously studied and suggested diversions along the preferred Route Alternative were also discussed.

On April 16, 2021, Hydro One held meetings with MPP Nicholls, his staff and residents in both Chatham and Comber to discuss their concerns related to the Project. The topic of discussion focused on health concerns, property values and impacts, visual impacts, development in Comber and suggested diversions along the preferred Route Alternative.

As Hydro One continues work on the Project and working with landowners, they will continue to engage with MPP Nicholls and respond to items raised.

3.8.2 Taras Natyshak, MPP for Essex

Hydro One shared notices and updates by way of email throughout the Class EA process, and also shared notices regarding the above-mentioned engagement opportunities, with MPP Natyshak's office. On January 29, 2020 Hydro One had a meeting with MPP Natyshak's staff to introduce the Project, share further information and expected next steps. In July 2020, Hydro One shared a written update on the Project and consultation to date. In February 2021, Hydro One shared information on the preferred Route Alternative and next steps, and offered an opportunity for further discussion.

As Hydro One continues work on the Project and working with landowners, they will continue to engage with the MPP Natyshak and respond to items raised.

3.8.3 Ministry of Agriculture, Food and Rural Affairs (OMAFRA)

Hydro One shared notices via email for the above mentioned engagement opportunities to OMAFRA. On September 29, 2020, OMAFRA emailed Hydro One and confirmed the feedback received from the agricultural sector regarding the placement of lines and Hydro One responded with more information as requested. On October 16, 2020, OMAFRA emailed Hydro One and inquired about comments received regarding mid-field towers. Hydro One provided clarification on the comments received in an email on October 30, 2020. No other comments or concerns were raised by OMAFRA.

3.8.4 Ministry of Energy, Northern Development and Mines (ENDM)

As discussed in **Section 3.6**, on November 29, 2019, ENDM confirmed the list of Indigenous communities to be included in the consultation process for the proposed Project (**Appendix B-3**) and formally delegated the procedural aspects of consultation to Hydro One, with respect to any regulated requirements for the Project. ENDM directed Hydro One to notify these communities, provide project information and opportunities for input, and maintain a record of interactions with the communities. Additionally, ENDM requested that they be kept up to date on the consultations. ENDM emailed Hydro One on November 25, 2020 to provide an updated list of staff to include on upcoming updates. No other comments or concerns were raised by ENDM. As requested, ENDM staff identified in the delegation letter of November 29, 2019, were circulated on the Notices of Commencement and other key project updates provided to Indigenous communities.

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

Hydro One shared notices via email for the above-mentioned engagement opportunities to MECP. On June 23, 2020, MECP shared comments from their Air Quality Analyst and Hydro One confirmed that temporary effects such as air quality and dust will be considered as part of the ESR but may not be considered as a criterion for the selection of the preferred Route Alternative, as these effects are generally limited to the construction phase of the Project and therefore would be generally equivalent for all of the Route Alternatives. MECP forwarded an email from their Species at Risk Branch on July 29, 2020, containing the Proponent's Guide: Preliminary Screening for Hydro One's reference for Species at Risk. Hydro One informed MECP on August 5, 2020, that the resources provided by MECP will inform part of the baseline environment description in the ESR.

As requested by ENDM, MECP staff identified in the delegation letter of November 29, 2019, were circulated on the Notices of Commencement and other key project updates provided to FN&H communities.

Baseline natural environment field surveys were completed between April 20 and July 13, 2020. The baseline field surveys were conducted in accordance with the Natural Environment Field Program Terms of Reference (TOR) (Dillon, 2020). The Natural Environment Field Program TOR was submitted to the MECP throughout February and March 2020 for review and comment in advance of the 2020 field program. MECP responded on March 18, 2020 acknowledging that the Natural Environment Field Program TOR had been provided to a Management Biologist for review, and that they would follow up directly with Hydro One following their review with any comments. No comments were received and the natural environment field program was conducted as described in the Natural Environment Field Program TOR.

3.8.6 Ministry of Government and Consumer Services (MGCS)

Hydro One shared notices via email for the above mentioned engagement opportunities to MGCS. No comments or concerns were raised by MGCS.

Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)

Hydro One shared notices via email for the above mentioned engagement opportunities to MHSTCI. In response to the Notice of Commencement, MHSTCI provided their formal comments and recommendations for the Project by email on February 18, 2020 (**Appendix B-4**). Hydro One responded and confirmed the Project will proceed with initial baseline studies for all potential Route Alternatives to inform the selection of the preferred Route Alternative. On June 25, 2020, MHSTCI emailed Hydro One and re-shared the February 18, 2020 letter providing an outline of their expectations for the study with regards to cultural heritage. No other comments or concerns were raised by MHSTCI.

3.8.7 Ministry of Indigenous Affairs (MIA)

Hydro One shared notices via email for the above mentioned engagement opportunities to MIA. No other comments or concerns were raised by MIA.

3.8.8 Ministry of Municipal Affairs and Housing (MMAH)

Hydro One shared notices via email for the above mentioned engagement opportunities to MMAH. Upon receiving the invitation to participate in the TAC, MMAH stated that they do not need to be involved in the TAC but would be available as a technical resource if specific land use planning matters arose. Hydro One emailed MMAH in May 2021 to inform them of the concerns raised by the Municipality of Lakeshore regarding the preferred Route Alternative and the designated Employment Lands in the community of Comber that are traversed by the preferred Route Alternative. Hydro One staff noted that the Lakeshore Official Plan designations had been considered in the evaluation of the Route Alternatives and that it is very common for new commercial/industrial developments to occur directly adjacent to, and occasionally find compatible uses within, overhead transmission corridors. MMAH staff thanked Hydro One for the update, and agreed with Hydro One's planned approach to continue to work with the Municipality to address their concerns. No other comments or concerns were raised by MMAH.

3.8.9 Ministry of Natural Resources and Forestry (MNRF)

Hydro One shared notices, via email, for the above mentioned engagement opportunities to MNRF. On February 13, 2020, MNRF notified Hydro One that a screening of natural heritage or other resources has not been completed. Hydro One informed MNRF that the background research had begun. In March 2020, Hydro One left a voicemail for the MNRF Petroleum Operations Section to seek further information about petroleum operations for the Project and received information by email. Hydro One emailed MNRF on June 25, 2020 and requested data. MNRF provided a guide to assist Hydro One with accessing natural heritage information. No other comments or concerns were raised by MNRF.

3.8.10 Ministry of Transportation (MTO)

Hydro One shared notices via email for the above mentioned engagement opportunities to MTO. Hydro One informed MTO of the overlapping study areas and requested that the project teams coordinate. MTO emailed Hydro One on July 2, 2020 and shared a document containing their comments and requirements for the Project (**Appendix B-4**). A video-conference was held on July 8, 2020, with MTO and Hydro One staff to discuss the projects in the area, including scope and anticipated timelines. MTO provided Hydro One with their minimum vertical clearances and requirements and requested they be incorporated in the drawings. A meeting was held on August 13, 2020 regarding MTO's setback requirements related to Highway 401, restrictions and requirements for future maintenance and work, and potential conflicts at crossings and

interchanges. A subsequent meeting was held on September 4, 2020 during which MTO provided an overview of their project plans and how they relate to Hydro One's project and nearby lines. MTO emailed Hydro One on September 15, 2020 sharing a letter stating their concerns with the proposed Route Alternatives, specifically with Route Alternatives 2C, 1C and 1D, particularly as they relate to potential conflicts at Charing Cross Road and at the Bloomfield Road interchange (**Appendix B-4**).

Hydro One emailed MTO in response to their letter on September 28, 2020 and indicated that they have been investigating minor refinements to the Route Alternatives and requested clarification for some of the items in their letter. Hydro One presented the route refinements to MTO on October 14, 2020 and discussed any potential conflicts or concerns with MTO. Hydro One had a phone call with MTO on November 17, 2020 regarding Hydro One's inquiry about updates with MTO's Regional Director and the agreement. Hydro One followed up by phone on December 4, 2020 to inquire whether MTO had any further comments, specifically from MTO regional management. Hydro One confirmed with MTO by email on December 7, 2020 that they would review the additional comments received. A meeting was held on February 2, 2021 to provide MTO with an early briefing on the preferred Route Alternative as requested. MTO did not raise any immediate concerns about the preferred Route Alternative. A meeting was held on April 19, 2021 with MTO, Hydro One and representatives from the Owner's Engineer and ECI firms to discuss next steps on the Project, and to further discuss MTO considerations for the preferred Route Alternative design and permitting. No other comments or concerns were raised by MTO.

3.8.11 Essex Region Conservation Authority (ERCA)

Hydro One shared notices via email for the above mentioned engagement opportunities to ERCA. Hydro One provided shapefiles of the Route Alternatives to ERCA on February 7, 2020, as requested. Hydro One spoke with ERCA on June 5, 2020 regarding the Biodiversity Initiative that Hydro One is planning to implement for the Project to compensate for net effects to natural features as a result of the Project. ERCA also stated a request for Hydro One to share natural heritage information obtained through the Class EA so that the information could contribute to the provincial knowledge base, and Hydro One staff confirmed that they would be willing to share this information with organizations such as ERCA. ERCA shared environmental data sets requested by the Hydro One project team by email on August 5, 2020. No other comments or concerns were raised by ERCA.

3.8.12 Infrastructure Ontario (IO)

Hydro One shared notices via email for the above mentioned engagement opportunities to IO. On January 31, 2020 IO emailed Hydro One and identified potential government properties within or adjacent to the study area. Hydro One emailed IO on May 28, 2020 and confirmed the lands and easements within the existing transmission corridors. Hydro One emailed IO on March 26, 2021 and confirmed the government properties directly affected by the Project based on the recent selection of the preferred Route Alternative, and noted that other than some MTO property parcels associated with highways, these government properties generally consisted of lands used for existing transmission lines and facilities. No other comments or concerns were raised by IO.

3.8.13 Lower Thames Valley Conservation Authority (LTVCA)

Hydro One shared notices via email for the above mentioned engagement opportunities to LTVCA. Hydro One emailed LTVCA on June 23, 2020 and requested datasets to support the Project. LTVCA provided comments on the proposed Route Alternatives on November 4, 2020 (**Appendix B-4**). Hydro One emailed LTVCA on November 5, 2020 and requested data for the areas mentioned in LTVCA's comments, as well as any additional information. Hydro One emailed LTVCA on April 6, 2021 and requested that LTVCA identify regulated areas adjacent to the Chatham SS in support of detailed design and construction planning for the planned expansion of the station. LTVCA confirmed that the Chatham SS expansion area is outside of the LTVCA regulations limits and noted they will look over the preferred Route Alternative to confirm LTVCA regulatory requirements. No other comments or concerns were raised by LTVCA.

3.8.14 Ontario Clean Water Agency (OCWA)

Hydro One shared notices via email for the above mentioned engagement opportunities to OCWA. No comments or concerns were raised by OCWA.

3.8.15 Ontario Provincial Police (OPP)

Hydro One shared notices via email for the above mentioned engagement opportunities to OPP. No comments or concerns were raised by OPP.

3.9 Municipal Governments and Agencies

As part of the consultation program for the proposed Project, the following Municipal Governments and agencies were contacted:

- County of Essex.
- Municipality of Chatham-Kent.
- Chatham-Kent Fire and Emergency Services.
- Municipality of Lakeshore.
- Municipality of Lakeshore Fire Services.
- Essex-Windsor Emergency Medical Services.
- Chatham-Kent Small Business Centre.

For each of the aforementioned, the Mayor, Deputy Mayor, Ward Councillors, Chief Administrative Officer (CAO), Clerk, and key department staff (e.g. Engineering, Public Works, Planning) were contacted, where appropriate.

Correspondence with Municipal Government and Agencies is included in the Record of Consultation (**Appendix B-6**).

3.9.1 County of Essex – Municipal Staff

Hydro One emailed the notices for the above mentioned engagement opportunities to the County of Essex. Staff from the County of Essex participated in the TAC for the Class EA. More detail on the TAC is provided in **Section 3.12**. County staff emailed Hydro One on June 25, 2020 and shared their concerns regarding the Project, including effects to County Roads, construction timing, effects to County projects and property effects. Hydro One emailed the County staff on July 3 and August 11, 2020 and provided responses to their questions related to traffic management and the future Lakeshore TS, and that the concerns raised regarding County roads would be addressed in the draft ESR for the Project (**see Section 7.5.3**). County staff replied on August 11, 2020 and stated that they would review and provide comments on the draft ESR.

3.9.2 County of Essex – Elected Officials

Hydro One had regular touchpoints by way of email and meetings with Warden McNamara and CAO Maisonville to provide regular updates on the Class EA process and to share notices regarding the above mentioned engagement opportunities. On January 13, 2020 Hydro One had a meeting with Warden McNamara and CAO Maisonville to introduce the Project, share further information and expected next steps.

In June 2020, a touchpoint meeting was held with the Warden and CAO during which Hydro One shared information on the current status of the Project and feedback received from the community.

The County noted that through the TAC they would provide comments and feedback on access and protecting local roads during construction. Hydro One presented to County of Essex Council on November 11, 2020 to provide an update on the Project, and shared what Hydro One had been hearing to date and next steps. Warden McNamara emphasized the importance of electricity infrastructure for the expected growth in the region.

Prior to announcing the selection of the preferred Route Alternative, Hydro One met with Warden McNamara and CAO Galloway on February 17, 2021 to provide a briefing on the preferred Route Alternative and next steps in the process. The discussion included items related to the design of the line, including how it would cross county roads.

As Hydro One continues work on the Project and working with landowners, they will continue to engage with Warden McNamara and CAO Galloway, and respond to items raised.

3.9.3 Municipality of Chatham-Kent – Municipal Staff

Hydro One shared notices, via email, for the above mentioned engagement opportunities to the Municipality of Chatham-Kent. Staff from the Municipality of Chatham-Kent participated in the TAC for the Class EA. More detail on the TAC is provided in **Section 3.12**.

Subsequent to comments received at the first TAC workshop, Hydro One reached out to the Municipality regarding future growth plans on July 31, 2020 and received the requested information on growth in the community in August 2020. Hydro One and the Municipality discussed the Municipality's concerns related to sections of Route Alternatives 2A and 2B in relation to current and forecasted growth in discussions beginning September 2020. Additional mapping, datasets, and other information related to the Municipality's future land use plans were requested and provided in October 2020 for consideration in the evaluation. Hydro One also informed the Municipality in October 2020 that criterion for both existing and future (planned) land uses will be included in the evaluation. Hydro One informed the Municipality on October 15, 2020 that four route refinements have been identified based on the technical studies and stakeholder feedback.

Hydro One held a briefing with the Municipality on February 17, 2021 to present the selected preferred route and next steps for the Project. Meetings were held on March 4 and 10, 2021, during which the Municipality staff stated that they fundamentally understood the rationale for the selection of the preferred route but raised concerns for specific areas around Chatham from a future growth and development perspective, and asked about the potential of minor adjustments to the route. Hydro One stated that they would consider the requests, but noted that they could likely not make any significant changes to the route which would introduce new directly-impacted properties

or environmental effects. Hydro One staff confirmed that the information previously provided by Municipality staff had been taken into consideration during the evaluation of the Route Alternatives, but also reiterated that overhead transmission lines were not necessarily a barrier to new development and growth and in several locations throughout the province, growth and new development were actively occurring around transmission corridors. Hydro One staff also stated that there were compatible uses with overhead transmission corridors themselves, such as green spaces or trails, which could potentially accompany new development. The Municipality shared information related to upcoming growth studies with Hydro One in April 2021. The Municipality drainage staff contacted Hydro One and requested to be kept informed of design progress and tower location selection with regards to Municipal drains, and provided information on Municipal drains in the area to be considered during design. Hydro One indicated this information will be shared with the engineering firms involved in the design work, and that the Municipal drainage staff would be kept apprised of progress on the Project design.

3.9.4 Municipality of Chatham-Kent – Elected Officials

Hydro One had regular touchpoints with Mayor Canniff, Ward 1, 2 and 6 Councillors and CAO Shropshire by way of email and meetings to provide regular updates throughout the Class EA, and share notices regarding the above mentioned engagement opportunities. On January 14, 2020 Hydro One met with Mayor Canniff, Councillor's from Ward 2 and CAO Shropshire to introduce the Project, share further information and expected next steps. During the meeting, specific items were discussed regarding identified areas of potential SAR, project timelines, the land acquisition process and community growth and energy needs.

As requested by Mayor Canniff and CAO Shropshire, monthly meetings were organized beginning in June 2020. These discussions included updates on the work completed to date, as well as upcoming engagement sessions and feedback heard from the community. Feedback was shared and questions were discussed on topics including potential effects to agricultural operations and land, route considerations, compensation, and health and safety.

Ward Councillors also shared concerns, comments and feedback from their constituents throughout the Class EA, and participated in regular phone calls and meetings with the Project team. Councillors also informed Hydro One of constituents wishing to speak with the team regarding their concerns.

During the spring and summer of 2020, Mayor Canniff and members of Council requested Hydro One reconsider the use of the former railway corridor as a Route Alternative for the Project based on requests from community members.

On September 14, 2020 Hydro One presented to Chatham-Kent Council on the status and next steps of the Project. A deputation letter was read from residents regarding route considerations for the Project, and comments and questions were provided by Council on utilizing the railway corridor and benefits for the Chatham-Kent community. Following this presentation, as described in **Section 3.11.2**, Hydro One shared findings of the reconsideration of the use of the former rail corridor, concluding that the use of the railway provided minimal benefit compared to existing Route Alternatives as far as reducing impact to agricultural properties or environmental features, as well as achieving recognizable cost savings.

Prior to announcing the selection of the preferred Route Alternative, Hydro One held briefings with Mayor Canniff and CAO Shropshire, as well as a Ward 2 Councillor on February 17 and 22, 2021, respectively, to discuss the selection of the preferred Route Alternative and next steps.

In a call held on March 9, 2021, Hydro One followed up with Mayor Canniff and CAO Shropshire on concerns shared by the Municipality regarding the potential impact of the line to future growth plans and shared how Hydro One will work with the Municipality when designing the line to incorporate these plans. Route refinements suggested by residents were also discussed. Following the announcement of the preferred Route Alternative, Hydro One, Mayor Canniff, Ward Councillors and CAO Shropshire have continued to have frequent touchpoints through monthly calls, additional meetings and correspondence to discuss land acquisition compensation principles, tower design options, route refinements and meetings with residents.

As Hydro One continues work on the Project and working with landowners, they will continue to engage with Elected Officials and respond to items raised.

3.9.5 Municipality of Lakeshore – Municipal Staff

Hydro One shared notices, via email, for the above mentioned engagement opportunities to the Municipality of Lakeshore. Staff from the Municipality of Lakeshore participated in the TAC for the Class EA. More detail on the TAC is provided in **Section 3.12**. Hydro One emailed Lakeshore staff twice in October 2020 and requested any information or plans related to future land uses to assist in the evaluation of the Route Alternatives. Hydro One informed the Municipality on October 15, 2020 that four route refinements have been identified based on stakeholder feedback.

Following the announcement of the selection of the preferred Route Alternative and the third TAC workshop, the Municipality expressed concerns regarding the preferred Route Alternative traversing the Employment Lands designated in the north portion of Comber. A virtual meeting was held on March 1, 2021 to discuss the Municipality's concerns. At the meeting, Lakeshore staff raised concerns regarding the route traversing current commercial/industrial land uses as well as future/potential future development expansion in north Comber. Lakeshore staff asked questions regarding the identification and selection of the preferred route, design options, and upcoming Real Estate processes. Lakeshore stated that they did not currently support the selection of Route Alternative 2A for the effects to existing and future/potential future land uses, and Hydro One staff responded that land uses had been taken into consideration during the route evaluation and noted that overhead transmission corridors are not a barrier to future development in practice and there are many examples of both commercial/industrial and residential development occurring around such corridors. Hydro One staff stated that they would continue to work closely with Lakeshore staff to discuss and address their concerns going forward. Municipality staff emailed Hydro One on March 3 and thanked Hydro One for the opportunity to meet and discuss the Project but reiterated that they remain opposed to the location of the preferred Route Alternative through Comber and suggested that the route be moved to the North, diverting around Comber. Hydro One followed up with the Municipality by email on March 8, 2021, and provided more insight on the preferred Route Alternative relative to Comber. Hydro One also noted that diversions of the route north of Comber would introduce new directly-impacted properties, transmission line crossings, and would have greater overall effects to agricultural fields and operations. A follow up meeting with Lakeshore staff was held on March 31, 2021 during which route diversions, real estate rights, proximity to Comber, potential future uses, and the need for OEB approvals for the Project were discussed. At the meeting, Hydro One staff reiterated that large diversions of the preferred route could not be considered for the reasons previously provided, and that new development around and adjacent to overhead transmission corridors, as well as compatible secondary uses (including compatible commercial facilities or uses) within transmission corridors, was fairly common. Lakeshore staff stated that while they understood and supported the need for the Project, they could not support the preferred route traversing the Employment lands in Comber. Both groups agreed that subsequent discussion would be required as the Project progressed.

The Municipality sent a letter on April 16, 2021, reiterating the Municipality's concerns and request for the route to be diverted to the north. Hydro One shared their response via email on May 6, 2021, which reiterated the process conducted to select the preferred Route Alternative and the rationale for the selection of Route Alternative 2A. The response to Lakeshore staff provided several

examples of other areas in southern Ontario where residential, commercial and industrial developments had successfully occurred adjacent to overhead transmission lines, as well as examples of compatible uses developed within the ROWs, and also reiterated Hydro One's desire to work with the Municipality to address their concerns and to work with them as development plans for these areas unfold.

In May 2021 Hydro One contacted the Municipality of Lakeshore Drainage staff and requested further information on municipal drains traversed by the preferred route, so that this information could be considered during design and construction planning. Municipality staff subsequently provided a number of drain reports.

3.9.6 Municipality of Lakeshore – Elected Officials

Hydro One had regular touchpoints by way of emails and meetings to provide updates on the Class EA and share notices regarding the above mentioned engagement opportunities to Mayor Bain, Deputy Mayor Bailey, Wards 4, 5 and 6 Councillors and CAO McBride. On January 13, 2020 Hydro One met with Mayor Bain and Nelson Cavacas, Director of Infrastructure, to introduce the Project, share further information and expected next steps. During the meeting, items relating to protecting local roads during construction, communication methods and locations for community information centres were discussed.

In July 2020, a touchpoint meeting was held with Mayor Bain and Nelson Cavacas during which Hydro One shared information on the current status of the Project. Discussion items included providing an update on the future Lakeshore TS, reviewing consultation and feedback with residents to date and discussing energy needs in the area. A subsequent letter was shared to Mayor Bain, Nelson Cavacas and CAO McBride from Hydro One's Vice President of Stakeholder Relations thanking Mayor Bain for meeting and acknowledging Hydro One's commitment to working with the Municipality. On November 10, 2020 Hydro One presented to the Municipality of Lakeshore's Council to provide an update on investments Hydro One is making in the Lakeshore community, including the Project, and what feedback has been received to date. Questions from Council ranged from power surges and reliability concerns to load growth and maintenance.

Prior to announcing the selection of the preferred Route Alternative, Hydro One held a briefing with Mayor Bain and CAO McBride on February 19, 2021. The discussion included items related to the proximity of the route to the Comber community in relation to a previous development proposed in the area, community engagement, the line's crossing of County roads and the location of a national historic site that was identified as part of Hydro One's route evaluation.

On March 9, 2021, Hydro One had a follow-up call with Mayor Bain to discuss concerns regarding interference to satellite and TV from the line, as well as concerns shared by the Municipality regarding the potential impact of the line traversing Comber's designated Employment lands. Hydro One noted they can look at opportunities to work with the Municipality to mitigate effects with the placement and spacing of the towers, as it relates to planned developments. Hydro One had an additional meeting with Mayor Bain, Councillor McKinlay, Councillor Walstedt and CAO McBride on March 12, 2021 to review the preferred Route Alternative selected, provide an overview of the route selection and next steps. Representatives shared concerns about the location of the route in Comber regarding impacts to future development and agricultural lands. Questions around whether modifications to the route could be made were discussed and Hydro One indicated that they would work with landowners on a property-by-property basis to discuss opportunities to best mitigate effects, where practical and feasible.

The Municipality shared a formal response stating their position to the preferred Route Alternative on April 16, 2021 and requested Hydro One present before Council to discuss the route selection. As described in (**Section 3.9.5**), Hydro One reviewed the Municipality's route diversion request and determined that the diversions introduced greater adverse net effects in comparison to preferred Route Alternative 2A. During the week of May 16, 2021, Hydro One met with Mayor Bain, Deputy Mayor Bailey, Councillor McKinlay, Councillor Walstedt and CAO McBride on different occasions to share these findings. On May 25, 2021, Hydro One presented before Council to discuss concerns raised by the Municipality and to reiterate Hydro One's commitment to working with them as future development plans in the Comber area unfold.

As Hydro One continues work on the Project and working with landowners, they will continue to engage with Elected Officials and respond to items raised.

3.10 Potentially Affected and Interested Groups, Businesses, School Boards and Utilities

Consultation opportunities were provided to potentially affected and interested groups, businesses, school boards and utilities throughout the Class EA process.

As part of the consultation program, approximately 50 potentially affected interest groups, businesses, school boards and utilities were contacted during the Class EA process. A complete list of the interest groups is provided in **Appendix B-1**.

Correspondence with potentially affected and interested groups, businesses, school boards and Utilities is included in the Record of Consultation.

3.10.1 Christian Farmers Federation of Ontario (CFFO)

Hydro One emailed the notices for the above mentioned engagement opportunities to CFFO. CFFO was invited to participate in the TAC in May 2020 and the CFFO confirmed their representative through email. CFFO informed Hydro One in August 2020 that through discussions with farmers, they have received comments and concerns regarding the Project. CFFO noted that the placement of towers is important for their members and that the line installation should be completed using a collaborative approach. In February 2021, CFFO and Hydro One corresponded regarding the preferred Route Alternative, including its planned direction, easement, impact to farms and the idle line. CFFO inquired why the idle 115 kV line cannot be used. A conference call was held on March 1, 2021 during which CFFO's concerns were discussed with the project team. No other comments or concerns were raised by CFFO.

3.10.2 Ontario Federation of Agriculture (OFA)

Hydro One had several touchpoints by way of email and meetings with the OFA to provide regular updates on the Class EA process, and to share notices regarding the above mentioned engagement opportunities. Following the Notice of Commencement, the OFA stated their support for bringing more capacity to southwestern Ontario for agricultural business. In May 2020, representatives were invited to participate as a member of the TAC, as well as for all subsequent committee meetings held.

In mid- to late-2020, Hydro One spoke and met with representatives from the OFA to provide project updates and discuss comments and recommendations received from their membership. On August 19, 2020 a meeting was held with representatives to share a project status update and discuss feedback received. During the meeting, items related to engagement activities, impacts to agricultural operations, tower types, maintenance of infrastructure assets, and route considerations were discussed. A meeting was held on October 28, 2020 to share further information on Hydro One's route refinements, Hydro One's findings of railway corridor analysis, and next steps.

Following the announcement of the preferred Route Alternative, OFA shared feedback from their membership pertaining to tower design and location, interference to agricultural communication equipment, farming operations, and route diversions. On March 18, 2021 a meeting was held

with representatives to review the preferred Route Alternative, provide an overview of the route selection process and discuss next steps.

During April and May 2021, Hydro One continued to have frequent touchpoints with the OFA who shared ongoing feedback from their members pertaining to the transmission line and tower design, property rights and compensation, future community development, archaeological surveys and impacts to farm equipment operation.

As Hydro One continues work on the Project, they will further engage with the OFA and respond to items raised.

3.10.3 Enbridge Gas Inc./Union Gas

Hydro One emailed the notices for the above mentioned engagement opportunities to Enbridge. Enbridge was invited to participate in the TAC in May 2020. Enbridge followed up with Hydro One on July 9, 2020 and noted their appreciation for the outreach from Hydro One and that they will provide their comments and information on assets shortly. Correspondence between Hydro One and Enbridge included discussions related to project coordination in the area and identifying any potential conflicts with their assets. A conference call was held on September 1, 2020 to discuss the Project. Shapefiles of the Route Alternatives were shared with Enbridge to confirm any potential conflicts. Follow up emails were sent to Enbridge throughout November 2020 seeking information on assets and any potential concerns.

An early briefing was held on January 28, 2021 to discuss the preliminary preferred Route Alternative and potential implications to Enbridge assets or projects. Enbridge staff emailed Hydro One on February 17, 2021 identifying areas requiring further study to ensure no existing Enbridge facilities will be negatively impacted.

Hydro One had a virtual meeting with Enbridge staff on February 25, 2021 to discuss their concerns regarding the preferred Route Alternative. Information was shared with Hydro One following the meeting with specifications for setback requirements. Hydro One had a meeting with Enbridge staff on April 6, 2021 to discuss next steps in order to coordinate between the two teams. No other concerns were raised.

3.11 Property Owners/Residents/General Members of the Public

As outlined in **Section 3**, property owners, residents and general members of the public within the LSA were provided project notifications by means of email, Canada Post airmail, hand delivered notices near Communication Road and Highway 401, advertisements in local newspapers, radio, social media and the Project website. Five airmail campaigns with over 16,000 recipients in each campaign were delivered throughout the Class EA process. Hydro One also received feedback and comments by phone and email to their Community Relations team.

Throughout the Class EA process, Hydro One had over 600 interactions with property owners, residents and general members of the public via phone, email and virtual/in-person meetings.

Table 3-13 in **Section 3.13** summarizes the frequent comments received and the responses provided by Hydro One through the Class EA process.

3.11.1 Meetings with Property Owners and Potentially Affected Members of the Public

In addition to the public VIS' and direct correspondence with individual property owners and interested or potentially affected members of the public, Hydro One arranged for meetings with groups of landowners and interested stakeholders upon request. This included the following:

- A virtual update Meeting was held on July 22, 2020 with landowners regarding the Route Alternatives and compensation.
- A socially distanced outdoor site meeting was held on October 16, 2020 with landowners.
- A teleconference was held on November 3, 2020 with a landowner on route refinements and effects to agricultural operations.
- A teleconference was held on November 5, 2020 with landowners regarding route refinements, selection and effects to agricultural operations.
- A virtual meeting was held on April 7, 2021 with landowners and stakeholders on the selection of the preferred Route Alternative.
- A virtual meeting was held on April 8, 2021 with landowners and stakeholders on the selection of the preferred Route Alternative.
- Four virtual meetings with landowners and MPP Rick Nicholls were held on April 16, 2021 regarding the selection of the preferred Route Alternative.

3.11.2 Former CASO Rail Corridor Review Requests

During spring and summer of 2020, reconsidering the use of the former rail corridor (current Entegrus distribution line right-of-way) as an alternative for the Project was repeatedly requested. These requests were initially made by members of the public and were also conveyed by elected officials from the Municipality of Chatham-Kent. Initially, the Hydro One project team reiterated that the former rail corridor was initially considered during the identification of viable Route Alternatives for the Project, as well as the technical rationale for why this corridor was rejected as a potential Route Alternative. The rationale included its narrow width, bisection of established residential areas, the limited availability of the former rail corridor (as sections are utilized by other utilities), and encroachment upon existing wind turbines.

Project stakeholders reiterated their belief that using the former rail corridor (by applying a narrowed infrastructure design if necessary) would avoid the need to traverse numerous agricultural properties, thus avoiding effects to agricultural operations and landowners while presenting potential cost savings to Hydro One. Based on feedback received, the project team agreed to reconsider the viability (feasibility and reasonability) of adding the former rail corridor to the existing Route Alternatives by subjecting it to a more detailed assessment, involving data collection and analysis including site reconnaissance.

The results of this more detailed assessment of the former rail corridor confirmed that none of the former rail corridor options considered proved to be viable when compared to existing Route Alternatives. In fact, all options introduced additional as well as more severe constraints in almost all areas assessed without satisfying the premise of the request; that is, presenting no appreciable reduction of effects to agricultural properties nor recognizable cost savings. Key findings of the assessment included:

- Even with significant design considerations to minimize ROW width, utilizing the former rail corridor would significantly affect built-up and residential areas in Tilbury and Comber along the rail corridor, including an increase in the total number of properties impacted and a significant increase in the total number of properties requiring buy-outs.
- Hydro One would be required to take ownership of several aging bridges, culverts/box culverts and other constructed watercourse crossings resulting in upward pressure on future sustainment investment that would be borne by customers, which would otherwise not be required for the existing Route Alternatives.

- 1.9 km of the rail corridor being assessed is currently occupied by a transmission line associated with the South Kent Wind Farm, including a tap connection to the South Kent Wind Farm substation.
- Utilizing the former rail corridor would have greater effects to adjacent channelized surface water features compared to existing Route Alternatives.
- Sections of the rail corridor assessed included several conflicts regarding close proximity to wind turbines, much closer than found along any of the existing Route Alternatives, and would likely require deviations off of the former rail corridor in these locations.
- A much greater extent of removal of mature trees and other incompatible vegetation associated with use of the former rail corridor (proportionate to line length).
- Disturbance to a linear, contiguous vegetated area representing potential SAR habitat. Such vegetated corridors are not common in this region. None of the existing Route Alternatives risk disturbance to SAR habitat to this degree.

Following completion of this reassessment, Hydro One communicated the findings to interested stakeholders including elected officials of the Municipality of Chatham-Kent that had requested further investigation into the use of the former rail corridor.

3.11.3 Lakeshore Route Diversion Requests

Following the announcement of the preferred Route Alternative, some members of the public located in the Municipality of Lakeshore requested Hydro One to consider two diversions of the preferred Route Alternative around the community of Comber. The request to consider these diversions was also reiterated by elected officials representing the Municipality of Lakeshore. These requests involved deviating from the preferred Route Alternative at either northwest Tilbury or Gracey Sideroad, and utilizing existing transmission lines westward until the Rochester Townline Road, before turning southward towards the Lakeshore TS.

In responding to both the Lakeshore councillors and members of the public, Hydro One staff clarified that the existing transmission lines identified were not idle in these sections, and were required to remain in operation for the foreseeable future, and also that the road allowance (such as the Rochester Townline road allowance) was not sufficient to house a double-circuit 230 kV transmission line. Therefore, following these existing lines would require additional new transmission line ROW for the new double-circuit 230 kV line. Hydro One staff reiterated the process that had been conducted to select the preferred Route Alternative based on feedback received through the Class EA process, and confirmed that these diversions were not considered to be viable as they were

significantly longer and more complex than the preferred Route Alternative. The requested diversions introduced additional challenges and effects including:

- Several kilometres of additional transmission line resulting in greater effects to agricultural operations (several more transmission line structures and several hectares of additional transmission line ROW within prime agricultural lands) compared to the preferred Route Alternative.
- Require an increase in the total number of properties impacted and a significant increase in the total number of properties requiring buy-outs, including dozens of properties that had not previously been considered or notified of such a potential transmission line route through the Class EA process. Additional technical and cost challenges such as additional line angles and two additional crossings of existing operational 115 kV transmission line, which introduces additional risk to the reliability of the overall bulk transmission system.
- Additional effects to other environmental features that were assessed through the route evaluation process, such as fish and aquatic habitat, source water protection areas, Conservation Authority regulated areas and floodplains, and potential SAR habitats.

Hydro One staff will be sending a delegation to a Lakeshore Council meeting on May 25, 2021, as well as issuing responses directly to residents who had initially requested the consideration of these diversions. The responses will present the above rationale as to why the requested diversions are not considered viable options for the new transmission line, and will reiterate Hydro One's commitment to working with the Municipality to address their concerns and to work with them going forward as future development plans in the Comber area unfold.

3.12 Technical Advisory Committee (TAC)

Three TAC workshops were held throughout the Class EA process. The purpose of the TAC was to provide a platform for Hydro One to present information, hold discussions and draw upon the experience and knowledge of representatives from Anishnawbek and Haudenosaunee communities, government agencies, Municipalities and interest groups. This knowledge-sharing forum helped to inform the planning and Class EA process for the Project. Specifically, Hydro One drew upon the technical knowledge represented by TAC organizations to help inform the comparative evaluation used to select the preferred Route Alternative for the new Chatham to Lakeshore double-circuit 230 kV transmission line.

Due to the ongoing public health developments related to COVID-19, the TAC workshops were held virtually. A summary of each workshop is outlined below.

3.12.1 TAC Workshop #1

Originally, the first TAC Workshop was intended to be an in-person event; however, due to public health developments related to COVID-19, a three part virtual workshop format was developed. The workshop consisted of:

1. A video presentation.
2. Moderated conference call discussion.
3. A digital survey to collect feedback on the evaluation criteria.

The purpose of the first TAC Workshop was to introduce the Project, provide an update on the status of the Class EA, and begin the conversation to identify the criteria and methods for measuring criteria in support of the route evaluation.

On May 26, 2020, Hydro One sent email invitations to Anishnawbek and Haudenosaunee communities, government agencies, Municipalities and interest groups explaining the purpose of the TAC and inviting them to attend the first workshop. TAC members attending the workshop consisted of representatives from AFN, WIFN, federal and provincial agencies, municipalities and interest groups. Remaining Anishnawbek and Haudenosaunee representatives from other Indigenous Communities were also invited to participate in the workshop. As part of the invitations, TAC members were requested to confirm their participation prior to the first component of the workshop.

Video Presentation

On June 3, 2020, Hydro One sent TAC members a short video presentation and preliminary criteria list (**Appendix B-5**). The video presentation covered the following topic areas:

- Project Overview.
- Status of Class EA.
- Explanation of the weighted Multi-criteria Decision-Making Analysis framework being used to evaluate the Route Alternatives.
- Initial Evaluation Criteria.
- Next Steps.

The intent of the video presentation was to provide an overview of the Project, the process and objectives of the TAC. TAC members were asked to view the video and review the initial criteria list prior to the second component of the workshop: the moderated conference call.

Moderated Conference Call Discussion

Following the video presentation, TAC members were asked to participate in a moderated conference call. To keep conversations focused on key topic areas, the moderated conference call discussion was split into two sessions: one focused on the Socio-Economic Environment and the other focused on the Natural Environment (**Table 3-9**). The intent of the moderated conference calls was to receive input and feedback from TAC members and have a general group discussion regarding the Project evaluation criteria and measures.

Table 3-9: Summary of TAC Workshop #1 Moderated Conference Calls

Date and Time	Virtual Forum	Number of Attendees
Socio-Economic Environment Criteria		
June 10, 2020 10:00 a.m. - 11:30 a.m. E.T.	Online Presentation and Discussion	20
Natural Environment Criteria		
June 10, 2020 2:00 p.m. - 3:30 p.m. E.T.	Online Presentation and Discussion	16

Moderated conference calls were held using a virtual platform and participants could join via video or phone. Hydro One provided an overview of the Project and the status of the Class EA prior to the moderated discussions. A general summary of comments and topics discussed on both calls is outlined below:

Socio-Economic Environment Moderated Conference Call

TAC members raised the following topics for discussion during the call:

- Importance of paralleling existing infrastructure (including crossing and paralleling infrastructure to Highway 401).
- Proximity to existing infrastructure.
- Agricultural operations (equipment clearance, alignment of poles along property lines and drainage effects).
- Need for Stage 1 and 2 Archaeological Assessments.
- Existing and future land uses.
- Tower placement and spacing in relation to roads.

Natural Environment Moderated Conference Call

TAC members raised the following topics for discussion during the call:

- Importance of capturing hedgerows/wind breaks and tree lines in the criteria.
- Importance of including floodplains as a criterion.
- The construction methods to install the transmission line and construction timing need to be considered.
- Natural heritage system protection (consider in a focused manner).
- Prioritizing the avoidance of environmentally significant areas.
- Prioritizing avoidance of the Important Bird Area.
- Whether the biodiversity initiative can be integrated in the criteria.

Digital Survey

Following completion of the moderated conference calls, Hydro One invited TAC members to complete a digital survey. The survey was available until 5:00 p.m. on June 26, 2020 and had a total of 21 questions and was comprised of five sections:

- Natural Environment Factor.
- Socio-Economic Environment Factor.
- Technical/Cost Factor.
- Factor Weighting.
- Workshop Feedback.

The intent of the survey was to formally document comments on the initial evaluation criteria and measures for the Project.

Summary of Digital Survey Results

In total, 11 survey responses were received. Generally, respondents only filled out sections they felt compelled to complete based on the nature of their comments.

TAC members recommended the addition of five criteria for the Natural Environment factor area, 15 criteria for the Socio-Economic Environment factor area, and four criteria for the Technical and Cost factor area. Four of the recommended criteria under Socio-Economic and one recommended criterion under Technical and Cost were recommended revisions to the preliminary list of criteria. The recommended criteria additions and criteria revisions are summarized in **Table 3-10**.

Table 3-10: TAC Proposed Criteria and Measures

Factor Area	Proposed Criteria To Be Added	Proposed Measure To Be Added
Socio-Economic Environment	Placement of towers on farm land (on property lines)	Look at county maps to see where existing property lines are currently and try to place towers as close to them as possible.
	Agri-Food Network	Infrastructure such as transportation, drainage/irrigation, natural gas and electrical agri-food assets. Services such as food and beverage processors, grain elevators, refrigerated warehousing, abattoirs, agricultural research facilities, fresh produce terminals, food hubs. Municipalities may have some of this data. It would likely take the form of a map of the facilities and the interconnectivity between them.
	Construction Methods	Routes where the design options are limited should be rated less preferred.
	Service Corridor Alignment	The number of easements or restrictions already in place on a given property. The average of these values should be minimized.
	Underwire Clearance Restrictions	Area of restricted farm use (support structure design can mitigate).
	"Existing and Future Land Use Designations" should also include "Potential Future Settlement Area Expansions"	Further consultation with the Municipality.
	Aggregate Resources	Further consultation with the Municipality.
	Include primary and secondary settlement boundaries as part of the future land use designations discussion	If the land use designation is agricultural, the potential effects should be weighed against that type of land use. If the land use is for future development and potential commercial, residential,

Factor Area	Proposed Criteria To Be Added	Proposed Measure To Be Added
		manufacturing, etc. this would require a separate level of consideration to account for the potential risks and mitigation required.
	Impact to future active transportation facilities	Comparing the route options with the County Wide Active Transportation System Master Plan proposed facilities maps.
	Future development potential along Highway 401	Transportation, logistics, warehousing sectors.
	In addition to growth of greenhouse industry, consider potential industrial growth (advanced manufacturing)	Measure not included.
	Potential growth in the Comber Area	Measure not included.
	Placement of electrical towers in relation to wind turbines	Measure not included.
	Consider the potential growth in rural communities post-COVID-19 in "Effects to residential buildings, properties or site plans" criteria	Measure not included.
	Include Site Plans and identified areas of potential residential and business development	Measure not included.
Natural Environment	Support structure placement	The level of restrictions within a route such as other structures/right of ways/established uses; where these restrictions will limit support structure placement.
	Effects to established tree lines or wind breaks	Number of tree lines/wind breaks crossed by the line.

Factor Area	Proposed Criteria To Be Added	Proposed Measure To Be Added
	Line maintenance activities (pesticide use)	Land elevation or grade can be a useful indicator where water tables are higher than others (low grade or elevation can be more susceptible to a high water table; natural springs; subsurface water courses).
	Potential impact to restoration areas and linkages as identified in Official Plans or other studies/strategies (potential for enhancement)	<p>Measurements and assessments of the potential area of habitat that could be restored and linked based on different routes.</p> <p>Potential for ranking to include the availability of external agencies or non-government organizations to initiate stewardship and securement discussions with private landowners on those areas.</p> <p>Data could come from existing prioritization maps from County of Essex Official Plan land use planning schedules. The metric could also include a qualitative ranking of the relative quality or benefit of a particular linkage.</p> <p>The TAC could identify a smaller subset of individuals to complete this.</p>
	Add Existing and Future Land Use Designations to Natural Environment (remove from Socio-Economic)	Measure not included.
Technical and Cost	Line Angles	Measure not included.
	Crossings	Measure not included.
	Structure Life Expectancy	Support structure design for each route. Maintenance plan for the design.

Factor Area	Proposed Criteria To Be Added	Proposed Measure To Be Added
	Include linear infrastructure related to wind turbines (i.e. associated TLs/DLs and substations) to “Proximity to Wind Turbines”	Measure not included.

TAC members did not recommend the removal of any of the existing criteria; however, it was noted that Source Water Protection may not be applicable depending on the policies within relevant Source Water Protection Plans.

TAC members were also requested to provide their input on whether any of the factor areas (Natural Environment, Socio-economic Environment, Technical and Cost, and First Nations Interests/Traditional Land Use) should be weighed more heavily than other factors. Generally, TAC members were divided between weighing the Natural Environment and Socio-Economic Environment more heavily in the evaluation. A select few respondents indicated that the First Nations Interests/Traditional Land Use factor area should be weighed more heavily. A further select few respondents indicated that all of the factors should be in alignment with each other and weighted equally.

In addition, TAC members were requested to provide any additional or alternate methods of assessing or scoring any of the initial Socio-Economic Environment and Natural Environment criteria. The recommended additional or alternate methods of assessing criteria are summarized below in **Table 3-11**.

Table 3-11: TAC Recommended Additional/Alternative Assessment Methods

Factor	Criteria	Measure	TAC Recommended Method of Assessment
Natural Environment	Effects to Fish and Aquatic Habitat	Effects to aquatic habitat including total number of watercourse crossings, effects to bank riparian vegetation, potential effects to surface flows (info source:	A complete review of the available data from the NHIC and potentially searches of data from older Renewable Energy Approvals for wind turbines may also yield additional data and studies to help to inform steps.

Factor	Criteria	Measure	TAC Recommended Method of Assessment
		NHIC/DFO historical data, field investigations)	The Carolinian Canada Coalition may have a local Conservation Action Plan that is located within or immediately adjacent to this area. If so, this could provide another additional source of information to inform the consideration of metrics.
	Effects to Vegetation	Effects to vegetation including footprint effects, potential effects to incompatible vegetation communities (info source: ELC mapping, field investigations)	No Recommendations.
	Terrestrial and Wildlife Habitat	Effects to terrestrial wildlife and habitat including footprint effects, potential removal, disturbance and/or destruction of habitat, potential disturbance to wildlife movement/habitat fragmentation (info source: ELC mapping, field investigations)	<p>Look at either existing research, or conduct research on how many bird strikes are in the existing transmission line ROW that will possibly be doubled. Research in zones where birds fly between feeding areas (fields) and wetlands.</p> <p>Lake St. Clair, and the Eastern Lake St. Clair IBA (Important Bird Area), is recognized as being one of the most significant staging areas for waterfowl in southern Ontario. Also, marshes in the area support significant populations of breeding</p>

Factor	Criteria	Measure	TAC Recommended Method of Assessment
			<p>birds including a few at risk species (Least Bittern and King Rail).</p> <p>Recommend a heavier ranking to routes that avoid wetlands and woodlots. Especially in Essex and Chatham Kent counties. They have already been developed so heavily – more than 95% of original wetlands and forests are gone, so this should be ranked more heavily than in other regions. The remaining habitat in the counties is vital to wildlife.</p>
	Species at Risk & Species of Conservation Concern	Effects to Species at Risk and their habitat (info source: NHIC historical data, MECP, ELC mapping, field investigations)	No Recommendations.
	Natural Hazards, Wetlands and Floodplain Areas	Distance of the route that occurs within/in close proximity to floodplain areas, wetlands, areas of erosion concern (info source: CA mapping and regulated areas, ELC mapping, field investigations)	No Recommendations.

Factor	Criteria	Measure	TAC Recommended Method of Assessment
Socio-Economic Environment	Existing and future land use designations	Alignment with existing and future land use designations as defined by the Provincial Policy Statement and local Municipal Official Plans (<i>info source: OP land use designations, zoning, and mapping</i>)	Comparison of Official Plans from all adjoining Counties and Municipal government tiers.
	Agricultural Operations	Effects to agricultural operations including farming of land, movement of farm machinery and access to processing facilities (<i>info source: feedback from stakeholders, socio-economic baseline assessment</i>)	Soil compaction if construction is on agricultural land; effects during construction and after completion should be separated out.
	Petroleum Operations	Effects to petroleum operations including access to petroleum wells or resources and distribution networks/ pipelines (<i>info source: feedback from stakeholder, socio-</i>	No Recommendations.

Factor	Criteria	Measure	TAC Recommended Method of Assessment
		<i>economic baseline assessment)</i>	
	Effects to residential buildings, properties or site plans	Effects to existing residential properties including proximity to existing homes, site plan alteration or building effects (<i>info source: feedback from stakeholder, socio-economic baseline assessment)</i>	No Recommendations.
	Effects to commercial / industrial buildings, properties, site plans or business operations/ supply chains	Effects to existing commercial or industrial properties including proximity to commercial/industrial operations, building effects or supply chain effects (<i>info source: feedback from stakeholder, socio-economic baseline assessment)</i>	No Recommendations.
	Source water Protection	Effects to source water resources including policy areas and drinking water sources for private landowners (<i>info source: source</i>	No Recommendations.

Factor	Criteria	Measure	TAC Recommended Method of Assessment
		<i>water protection mapping)</i>	
	Cultural Resources	Effects to properties or landscapes with cultural heritage resource potential <i>(info source: MHSTCI background information, heritage inventories, etc.)</i>	No Recommendations.
	Archaeological Resources	Effects to lands with archaeological potential, proximity to known archaeological sites <i>(info source: Consultation with First Nations, MHSTCI background information, Stage 1 archaeological assessment, etc.)</i>	No Recommendations.

3.12.2 TAC Workshop #2

The purpose of the second TAC Workshop was to gather information on the relative importance of evaluation criteria from TAC members. TAC Workshop #2 also provided an opportunity to update TAC members on the status of the Class EA and summarize how their feedback from TAC Workshop #1 was incorporated into the study process.

On September 8, 2020, Hydro One sent email invitations to TAC members. TAC members in attendance of the workshop consisted of representatives from CFN, Oneida Nation of the Thames, COTTFN, federal and provincial agencies, municipalities and interest groups. Remaining Anishnawbek and Haudenosaunee representatives from other Indigenous Communities were also

invited to participate in the workshop. Included in the invitation were two memos; one summarizing the first TAC Workshop and a second outlining how survey responses from the first TAC Workshop were analysed and used to determine the Project criteria list. TAC members were asked to review the memos prior to the second workshop.

Workshop Sessions

The second TAC Workshop was held on September 22, 2020. To keep conversations focused on key topic areas, the workshop was split into two sessions: one focused on Socio-Economic Environment interests and the other focused on Natural Environment interests (**Table 3-12**).

The sessions were held virtually using an online presentation and participants could join via video or phone.

Table 3-12: Summary of TAC Workshop #1 Moderated Conference Call

Date and Time	Virtual Forum	Number of Attendees
Socio-Economic Environment Interests		
September 22, 2020 10:30 a.m. - 12:00 p.m. E.T.	Online Presentation and Discussion	17
Natural Environment Interests		
September 22, 2020 1:30 p.m. - 3:00 p.m. E.T.	Online Presentation and Discussion	17

Each workshop included an overview presentation (**Appendix B-5**) which included the following topics:

- Project Overview.
- Status of the Class EA.
- Re-cap of the Route Evaluation Framework.
- TAC Workshop #1 Results.
- Final Criteria List and Weighting Exercise.
- Next Steps.

A general summary of comments and topics discussed during both sessions is outlined below.

Socio-Economic Environment Workshop Session

TAC members raised the following questions and/or comments for discussion during the Socio-Economic Environment focused session:

- A TAC member inquired about data sources for measuring criteria and how those would be identified and found.
- The project team indicated that they are collecting available information through the field program, as well as published plans, policies, secondary sources and spatial data sources (i.e. mapping of vegetation, water). These data sources would be collected and used wherever possible, in addition to local area knowledge provided through TAC and public comments.
- Commentary regarding non-renewable resources (e.g., wetlands) and how they would be addressed in the comparative evaluation. Specifically, if non-renewable resources are encountered from a policy perspective in land use plans they would require mitigation measures as part of the impact assessment for the preferred route.
- The project team noted that it is important to consider and the application of specific mitigation measures will occur later in the process following the selection of the preferred route.
- It was noted that archaeological and cultural resources are non-renewable resources; once removed they are gone forever. Additionally, knowledge of these resources and sites are reliant on studies completed to date and knowledge of existing resources and sites. A question was posed about the studies/sources for archaeology and cultural resources being completed as part of the Project.
- The project team noted that a Stage 1 Archaeological Assessment and Cultural Heritage Existing Conditions Report are a component of the Project and will be used to inform the route evaluation.
- Comments were noted with respect to the placement of the transmission line relative to farmland parcel boundaries and parcel layouts. It was also noted that tower placement will depend on landowners/farm use, but is subject to engineering/design requirements first and foremost.

Natural Environment Workshop Session

TAC members raised the following questions and/or comments for discussion during the Natural Environment focused session:

- A TAC member noted that criteria for Traditional/Indigenous Ecological Knowledge (e.g., medicinal plants) is important to Anishnawbek and Haudenosaunee communities in the area and there is a need to ensure that this is included. The project team noted this is being pursued in the Anishnawbek and Haudenosaunee Culture, Values and Land Use factor and will depend heavily on input from communities.
- A TAC member cautioned that a flaw may exist in the weighting and evaluation process. Specifically a concern was noted that Indigenous perspectives utilize a holistic approach to considering effects on the environment. It is difficult to identify one criterion as more valuable than another. It was suggested this be considered in future weighting exercises.

Weighting Exercise

As part of the presentation, the final criteria list (**Appendix B-5**) was presented to TAC members. Input sought in TAC Workshop #2 focused on weighting the relative importance of each criteria through a weighting exercise. Using a live survey tool, participants were asked to weight each of the criterion within the criteria list using the following weighting scale:

- Most Important.
- Important.
- Neutral.
- Less Important.
- Least Important.

TAC members who attended both session were asked to complete the live survey only once.

Summary of Weighting Exercise

The results of the weighting exercise are summarized below in **Figure 3-2** and **Figure 3-3**.

FIGURE 3-2: SOCIO-ECONOMIC ENVIRONMENT
 CRITERIA WEIGHTING SURVEY RESULTS

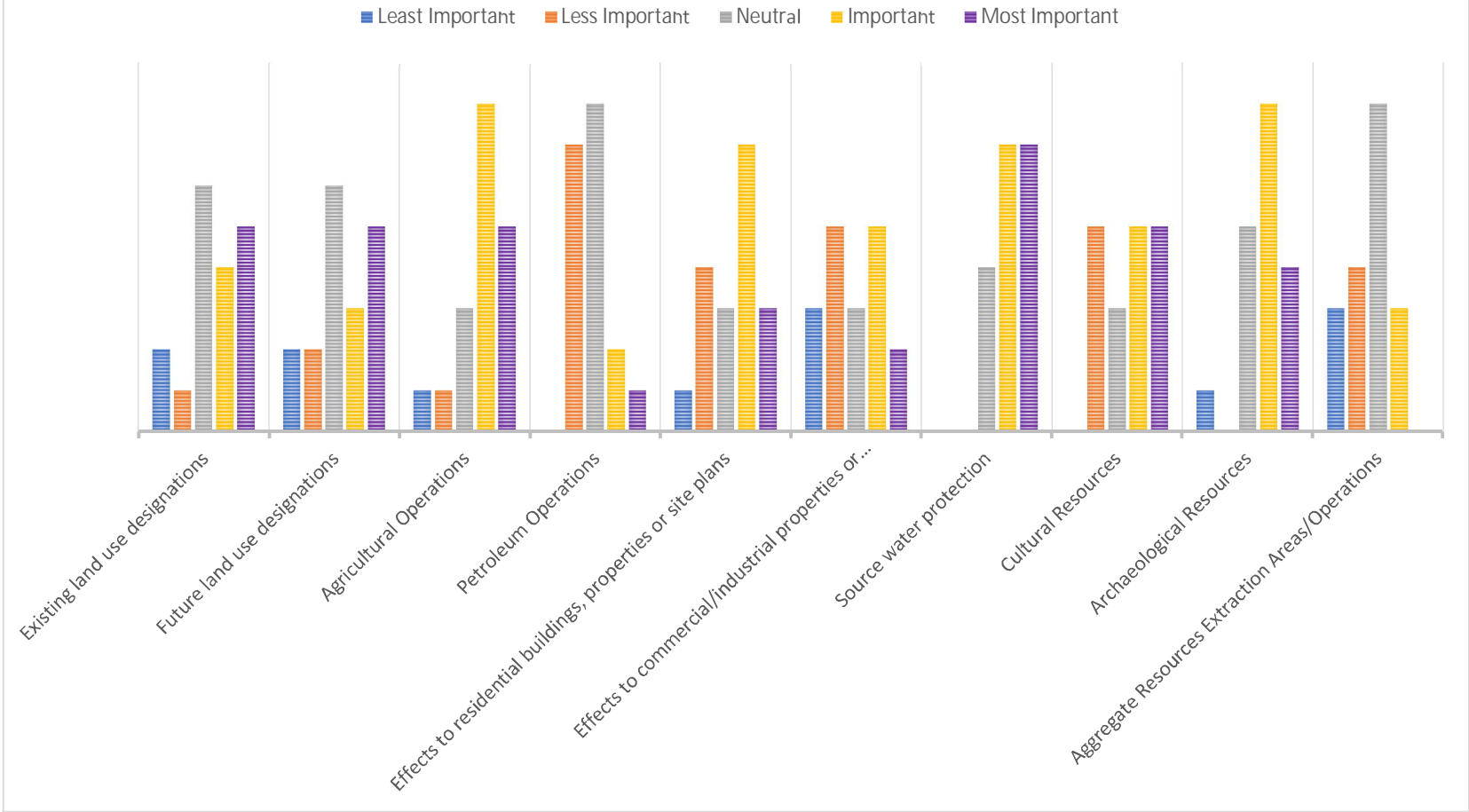
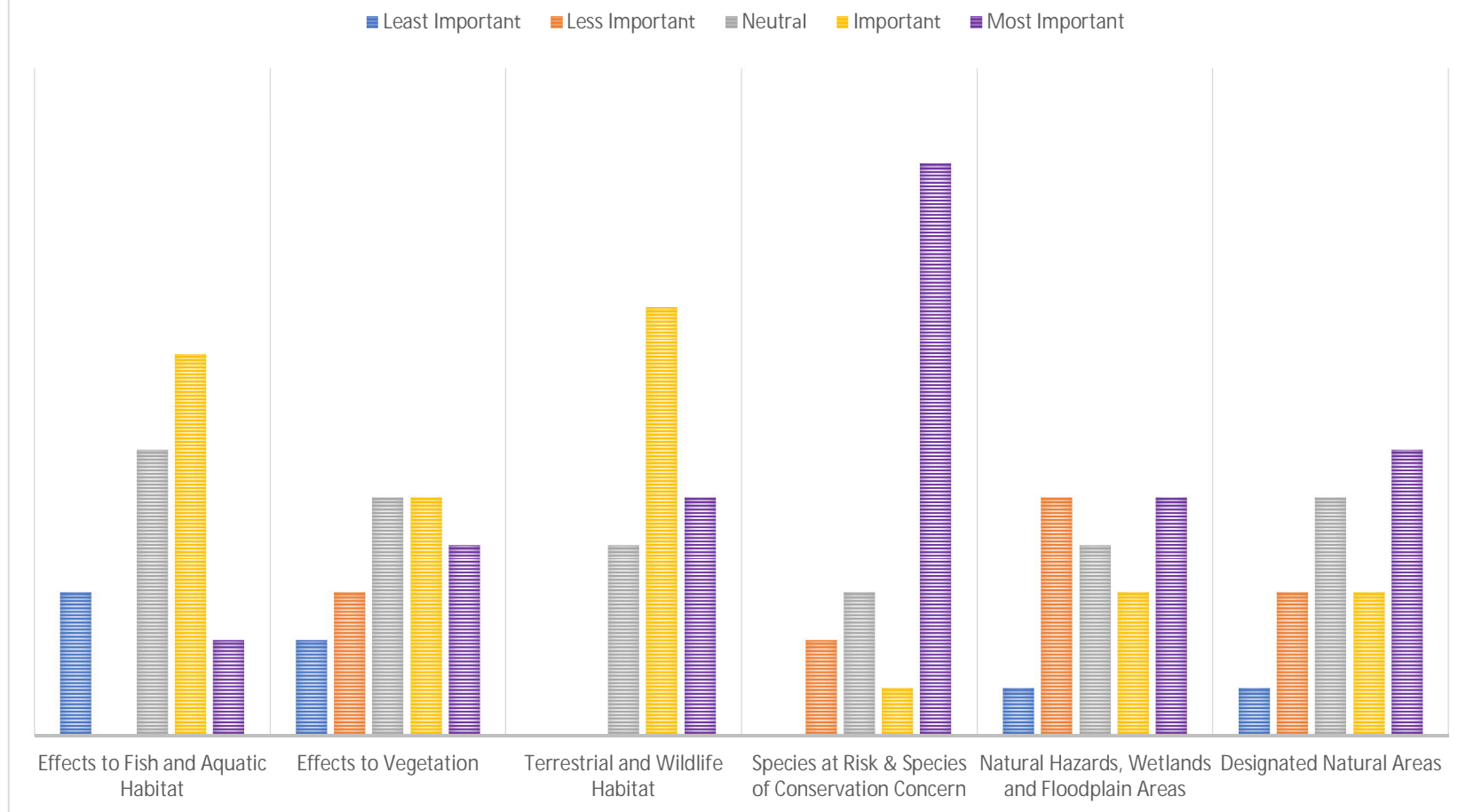


FIGURE 3-3: NATURAL ENVIRONMENT CRITERIA WEIGHTING SURVEY RESULTS



3.12.3 TAC Workshop #3

The purpose of the third TAC Workshop was to present the results of the comparative evaluation completed in support of the preferred Route Alternative for the Project. TAC Workshop #3 also provided an opportunity to update TAC members on the status of the Class EA and summarize how their feedback from TAC Workshop #2 was incorporated into the evaluation that led to the selection of the preferred Route Alternative.

On February 8, 2021 Hydro One sent email invitations to TAC members. TAC members in attendance consisted of representatives from CFN, federal and provincial agencies, municipalities and interest groups. Remaining Anishnawbek and Haudenosaunee representatives from other Indigenous communities were also invited to participate in the workshop. Included in the invitation were two memos; one summarizing TAC Workshop #2 and a second outlining how criteria weighting feedback from TAC Workshop #2 were analysed and used in the selection of the preferred Route Alternative.

Workshop Session

The third TAC Workshop was held virtually on February 24, 2021, using a virtual platform and participants could join via video or phone. The workshop was held from 10:00 a.m. to 11:30 a.m. ET with 22 individuals in attendance.

The workshop included a presentation (**Appendix B-5**) which included the following topics:

- Project Overview.
- Status of the Class EA.
- Re-cap of the Route Evaluation Framework.
- Selection of the Preferred Route Alternative (Route 2A).
- Review of TAC Workshop #2 Weighting Exercise Results.
- Next Steps.

A general summary of comments received and topics discussed during the Workshop is outlined below.

Summary of TAC #3 Workshop Discussion

TAC members raised the following questions for discussion during the third TAC Workshop session:

- A municipal representative inquired whether the existing transmission line that appears to be within the “idle line corridor” remains idle or is currently active through the Municipality of Lakeshore.
- The project team indicated that the idle line being reused for Preferred Route Alternative 2A will involve full replacement of the existing idle towers east of Tilbury. The project team indicated they will confirm if the line remains inactive within the Municipality of Lakeshore and get back to the commenter.
- Post-meeting Note: The portion of the existing transmission line through Tilbury and to the west through the Municipality of Lakeshore is currently being utilized and is not fully idle.
- An agricultural representative noted their appreciation for the use of the existing idle line along Route Alternative 2A. They commented that Route Alternative 2A goes through prime agricultural land and inquired why the route does not follow the idle line further to avoid this land.
- The project team indicated that the line could not continue along the idle line further due to increasing technical constraints..
- An agricultural representative inquired whether everyone along the preferred Route Alternative ROW had been notified about the decision.
- The project team indicated the notice announcing the preferred Route Alternative is currently being distributed and notices are anticipated to begin reaching mailboxes this week. Additional outreach initiatives (e.g., radio, website, social media, etc.) were also planned to commence over the next week. It was also noted that there will be a virtual information session to present the preferred Route Alternative starting February 25, 2021, with a live virtual discussion planned for March 11, 2021. The project team explained that the real estate team will work with directly impacted landowners.
- A municipal representative inquired whether there is still an opportunity to provide input on the tower positioning and placement of the mainline.
- The project team indicated there is still an opportunity to provide input as tower placement specific details are not yet confirmed. The TAC member also requested a map of the centreline near Comber and the project team indicated this information is available through the interactive map and confirmed they would provide this map. The project team also confirmed that they would reach out regarding tower positioning.
- An agricultural representative requested a map showing parcel fabric information near the Chatham Substation.

- The project team directed the representative to the Project website, noting this information is available through the interactive map. A link to the website was shared with all attendees on the call: (www.hydroone.com/Chatham-to-Lakeshore).
- A municipal representative indicated they have a minor question and wished to speak to the project team offline following the call.
- The project team confirmed they would follow-up with the attendee to discuss.

3.13 Summary of Stakeholder Comments and Concerns

Table 3-13 provides a consolidated summary of the comments and concerns raised from the interested parties throughout the Class EA consultation process.

Table 3-13: Summary of Stakeholder Comments and Concerns

THEME	QUESTION/COMMENT	RESPONSE
Project Need/Information	Who owns Hydro One?	Hydro One is Ontario's largest electricity transmission and distribution service provider. We distribute electricity across Ontario to nearly 1.4 million predominantly rural customers, or approximately 26% of the total number of customers in Ontario. In November 2015, we became a publicly traded company on the Toronto Stock Exchange (H).
	Where is the new transmission line located?	The Project website (www.HydroOne.com/Chatham-to-Lakeshore) contains more detailed ortho-photo tile maps of the preferred Route Alternative, as well as an interactive online mapping tool that allows users to view the preferred route in detail in specific areas.
	What is the need for the new line?	In Ontario, the IESO oversees electricity planning. They conduct routine planning to identify where electricity growth or demand is in the province and they work in conjunction with transmitters, generators and utilities like Hydro One to confirm how to best address these needs. In 2019, the IESO requested that Hydro One build a new transmission line that connects from our Chatham SS to our future Lakeshore TS to meet the significant amount of electricity growth in Essex County and the surrounding region over the next several years. Currently, there is only a limited amount of electric power, which can be transmitted by the existing transmission lines from our Chatham SS into Windsor-Essex Region.
	Will the load forecasts justify the need for this expansion and what market segment is this additional capacity supporting?	The IESO is the agency in Ontario that oversees electricity planning. As a part of their most recent electricity planning cycle for the Windsor-Essex region, the IESO's forecasts showed a significant amount of electricity growth in Essex County and the surrounding region for the next several years. You can find further information regarding the need and forecasted growth in the IESO's report entitled "Need for Bulk Transmission Reinforcement in the Windsor-Essex Region/ June 13, 2019, which can be found on their website: www.ieso.ca/en/Get-Involved/Regional-Planning/Southwest-Ontario/Southwest-Ontario-Bulk-Planning-Initiatives . For more information, you may also contact the IESO.
	Will the new transmission line support greenhouses?	The Independent Electricity System Operator's forecasts show a remarkable amount of electricity growth in Essex County and the surrounding region over the next several years. This growth is expected to meet the evolving needs of residents and emerging industries and businesses including greenhouse operators. The new double-circuit 230 kV transmission line and the Lakeshore TS will: <ul style="list-style-type: none"> • Increase the overall transfer of the bulk transmission system west of Chatham in order to reliably supply the forecast load growth in the Kingsville-Leamington area and the broader Windsor-Essex Region in the near- to mid-term. • Permit the resources and bulk facilities in this region to operate efficiently for local and system needs. • Maintain existing interchange capability on the Ontario-Michigan interconnection between Windsor and Detroit.
	What is the Local Study Area?	The local study area refers to the area within 500 m on each side of the Route Alternatives, for which available background data was collected and incorporated as input to the Class EA. It also served as the notification area around the alternative routes.

THEME	QUESTION/COMMENT	RESPONSE
	What is the cost of the Project?	The preliminary cost of the Project, as indicated in a letter dated June 2019 from the IESO letter, is estimated between \$115 - 150 million. A detailed estimate will be provided before Hydro One seeks approval from the OEB in late 2021.
	Where can I find a more detailed map?	The Project website (www.HydroOne.com/Chatham-to-Lakeshore) contains detailed maps of the preferred Route Alternative, as well as an interactive mapping tool to provide more information on the location of the preferred Route Alternative in specific areas.
Class Environmental Assessment & Consultation	What is the Class EA process that is supporting the Project?	<p>The Class EA for Minor Transmission Facilities (Hydro One, 2016) in accordance with the Ontario Environmental Assessment Act, sets out a planning and decision-making process that ensures transmission projects that have a predictable range of effects are planned and carried out in an environmentally acceptable manner. This process includes:</p> <ul style="list-style-type: none"> ● Consultation with government officials; government agencies; Indigenous communities; potentially affected and interested persons, affected businesses and interest groups. ● Collection of environmental data and a description of existing conditions. ● Identification and evaluation of alternative methods of undertaking the Project. ● Identification of potential environmental effects of the Project and mitigation measures. ● Selection of preferred Route Alternative. <p>As part of the Class EA process, a draft ESR is made available for public review and comment period.</p>
	Why have I been notified about the project?	As part of our notification of the Project, we contacted Anishnawbek and Haudenosaunee communities, nearby residents and community members, business small and large, associations and all other potentially interested stakeholders to learn more about the Project.
	Who has Hydro One consulted with?	<p>Throughout the Project, Hydro One has been committed to creating opportunities for community members and key stakeholders to provide insights and input into our project planning. We have followed the Class EA process and taken extensive efforts using a variety of tools and methods to obtain feedback on the Project, such as:</p> <ul style="list-style-type: none"> ● Hosting multiple virtual information sessions and live discussions. ● Launching virtual open houses. ● Issuing newspaper and radio ads as well as thousands of admail notices encouraging residents and landowners to provide feedback and comments. ● Maintaining a dedicated project website and interactive mapping tool. Establishing a technical advisory committee with our technical stakeholders.

THEME	QUESTION/COMMENT	RESPONSE
	Has Hydro One consulted with and sought approval from Municipalities?	<p>Since the commencement of the Class EA in January 2020, Hydro One has engaged with staff and elected officials from all three municipal governments by way of email and meetings, including the County of Essex, Municipality of Lakeshore and Municipality of Chatham-Kent, on the planning process being conducted for the new transmission line. This included holding a number of meetings with elected officials, presenting before each respective Municipality's Council in Fall 2020 and hosting Technical Advisory Committee workshops, which included municipal staff.</p> <p>While the approval authority for the Class EA process is the MECP, Hydro One or its contractors may need to obtain additional, more specific permits from Municipal governments, generally relating to specific aspects of the construction work for this project.</p>
	Were landowners consulted on this route?	<p>Since the commencement of the Class EA in January 2020, Hydro One has notified, consulted and engaged with landowners and community members along each of the various Route Alternatives being considered. Notification and outreach methods used included hosting multiple virtual presentation and discussion sessions; launching virtual open houses; issuing newspaper, radio and social media ads; hosting a dedicated project website; and sending multiple notices by mail within 500 m of transmission line Route Alternatives encouraging landowners to provide feedback and comments. During this time, Hydro One corresponded and/or met with over 100 landowners and community members, and with the selection of the preferred Route Alternative selected, Hydro One will continue to directly work with landowners traversed by the route.</p>
	Will there be further consultation on the selection of the preferred route?	<p>Since January 2020, as part of the Class Environmental Assessment, we have undertaken an extensive process to study, learn more and collect feedback on three alternative routes and associated variations. This feedback was used to evaluate and compare the advantages and disadvantages of each of the alternatives in a fair and holistic manner.</p> <p>While we have selected the preferred route, Hydro One will continue to have ongoing conversations with landowners and learn more about individual features and uses of properties, which will be considered as we complete our design and construction planning.</p>
Health & Safety	Concerns about stray voltage	<p>Hydro One has been working with the farming community for many years now, to help identify, assess and mitigate stray voltage problems. And in the industry and by our regulator, the OEB, this phenomenon is largely understood to be a concern related to local distribution infrastructure rather than transmission infrastructure, as the problem can extend from the close proximity of a distribution line's neutral conductor to farming equipment. Hydro One has a team that specializes in these requests if property owners or community members have further questions.</p>

THEME	QUESTION/COMMENT	RESPONSE
	Concerns about Electric and Magnetic Fields (EMFs)	<p>Health and safety is our top priority, and we design and operate our equipment across the province in accordance with all regulatory requirements including the Canadian Electric Code and CSA Standards, which account for public safety.</p> <p>EMF levels are invisible sources found everywhere electricity is used including home appliances, computers, offices and electrical stations. They are strongest when close to their source, and as you move away from the source, the strength of the fields fades rapidly. Hydro One seeks guidance from health experts such as Health Canada and the World Health Organization for health related concerns. We understand Health Canada does not consider that any precautionary measures are needed regarding exposure to power frequency or fields produced by power transmissions. Generally by the edge of our corridor right-of-way, EMF fields in the home are higher from everyday household items, such as appliances and general use of electricity than from transmission lines at a distance.</p> <p>We are committed to understanding, addressing and communicating information regarding health concerns individuals may have. Hydro One has further information on our website www.hydroone.com/power-outages-and-safety/corporate-health-and-safety/electric-and-magnetic-fields, as well as a designated EMF information telephone line 11-800-728-9533 to help address any specific questions.</p>
	Will the lines hum?	The level of noise emitted by transmission lines is related to a number of different factors, including weather conditions. During regular weather, our lines are typically silent, however during certain weather conditions, such as windy or wet weather, those noise levels may increase, although background noise is also generally elevated during these periods.
	Will the construction affect the water table?	The construction of the new transmission line is not anticipated to cause any adverse effect to groundwater quantity or quality.
Electricity & Power	Will I be able to use my solar panels and tie into the hydro to give any excess power?	Following the Project, we anticipate that there will be an increase in capacity to connect distributed generation. However, the total amount at each of the existing transformer stations is unknown at this time and those calculations are done once infrastructure upgrades are complete.
	Do the existing wind turbines not provide enough power? Will the wind turbines be fully utilized?	<p>In Ontario, the IESO ensures the reliability of the province's power system. This includes balancing the supply of electricity production from generation sources and the demand for electricity on a minute-by-minute basis. Hydro One does not own any generation facilities, but owns and maintains the equipment that transmits or carries electricity produced by generators to homes and businesses in the province.</p> <p>Currently, there is only a limited amount of electric power which can be transmitted by the existing transmission lines from Chatham Switching Station into Windsor-Essex Region. The new Chatham to Lakeshore Transmission line project is being built to ensure that enough power is being delivered to meet significant anticipated growth and need in the region. For more information, you may visit: www.ieso.ca.</p>

THEME	QUESTION/COMMENT	RESPONSE
	What impact will this project have on my electricity rate?	An application will be made for this project to obtain a Leave to Construct from the OEB. Through this regulatory process, the OEB will make a ruling on the viability of proceeding with this project at the presented costs. Every few years, Hydro One provides details on our plans for the transmission system via a rate application to the OEB. Through the rigorous regulatory process the OEB will then make a decision on our rate application, ensuring that customers are protected from any undue costs.
	Will this project affect who my utility provider is?	As part of this Project, there will be no change in electricity service providers.
	Would this give me better hydro in Wheatley?	The new line will not only support the forecasted load growth in the Essex region, but will also reinforce the local electricity system. For specific questions related to power interruptions, I would encourage you to contact our Customer Communications team at 1-888-664-9376.
	Where is the power coming from to feed the Chatham Switching Station?	The transmission system is an interconnected network. Once power is generated, our transmission equipment carries it to where and when it is needed. As a result of this interconnection, this southwestern Ontario area is supplied by electricity generated locally as well as remotely from locations such as the Bruce peninsular and the Niagara peninsular. In Ontario, the IESO, who is the province's system planner and is responsible for ensuring that future energy needs are being met, will continue to assess the needs and requirements of the broader transmission system.
	Will there be any expected power outages or surges during the construction of the line?	There are no anticipated power surges or outages expected for residential customers as a result of this Project.
	Will the line impact the TV reception or any other electronics in our homes?	Hydro One has many kilometres of transmission line corridors where residential developments border the corridor throughout the Province. Based on our experience, we do not anticipate there to be any issues with TV reception. There are some particular circumstances during adverse weather conditions where if a satellite dish beam or antenna is pointing directly at high voltage line hardware, such as towers, that there may be experiences with some static noise. However, it is more likely for interference to be experienced from things such as a faulty microwave. Should a customer identify a television or radio interference problem that they believe is caused by hydro equipment, they can call 1-888-664-9376, and request a technician be sent out to investigate.
Route Alternatives & Evaluation	How did you identify the alternative routes?	Prior to the start of the Class EA, our team conducted preliminary work to identify viable Route Alternatives to build the new line from the Chatham SS to our future Lakeshore TS. We considered known technical and environmental features and constraints such as waterbodies, dense residential areas, environmentally significant areas, and looked for opportunities to parallel linear infrastructure and utilize existing transmission corridors. Based on that information, we developed three Route Alternatives and associated variations which were evaluated throughout the Class EA.
	As part of the route identification process, why was paralleling the existing 230 kilovolt transmission line considered?	When identifying Route Alternatives, paralleling existing transmission lines is typically considered where viable due to efficiencies that can be realized, which is in line with the Provincial Policy Statement. That said, while paralleling the existing 230 kV corridor was a starting point in identifying Route Alternatives for this Project, Hydro One evaluated a wide variety of diverse routes, each with their own benefits. This included utilizing an existing idle transmission line corridor, paralleling the Highway 401 corridor to the extent feasible, and building an entirely new greenfield corridor.

THEME	QUESTION/COMMENT	RESPONSE
	Why is the old railway corridor not being considered as a route alternative?	<p>While the feasibility of the railway corridor was looked at initially, based on feedback received early on when these routes were introduced, our team completed an additional analysis to understand whether it could represent a viable route alternative. The objective of this analysis was to determine whether this route would reduce the need to cross numerous agricultural properties, while presenting potential costs savings to Hydro One. Our findings confirmed that:</p> <ul style="list-style-type: none"> • The use of the railway provided minimal benefit compared to existing Route Alternatives as far as reducing impact to agricultural properties or environmental features • That each option looked at introduced additional or more severe constraints compared to existing Route Alternatives • That upon looking at the sum of all considerations, only minimal sections of the railway corridor were considered usable, which is not sufficient for the Project (Refer to Section 3.11.2). <p>As such, it was not added as an additional Route Alternative.</p>
	Was upgrading the existing lines considered?	As a part of the IESO's recent planning cycle, they assessed a variety of options to ensure that the region's electricity needs are met reliably and at the lowest cost, and found the building of a new 230 kV transmission line between Chatham-Kent and the future Lakeshore TS to be most preferable option to meet near- to mid-term electricity needs in the area west of Chatham.
	How was the preferred route selected?	Over the past year, Hydro One has conducted a process to study and collect feedback on three Route Alternatives and associated variations that were identified at the start of the Project. Using feedback received from stakeholders, in addition to information from technical and environmental studies, we weighed the advantages and disadvantages of each route in a fair and holistic manner across four different categories. Through this analysis, Route Alternative 2A was selected as the preferred Route Alternative, based on its collective advantages.
	How did the Preferred Route 2A compare to Alternative 3?	Overall, Route Alternative 2A is preferred because it minimizes the overall impact to the natural and socio-economic environments compared to the other Route Alternatives and minimizes impacts to agricultural lands by utilizing an existing idle transmission corridor for nearly 1/3 its length. From a technical perspective, Route Alternative 2A is more complex to construct (soil conditions, line angles, etc.) but crosses the fewest number of property parcels and makes use of the existing idle line corridor. From an Anishnawbek and Haudenosaunee Culture, Values and Land Use perspective, Route Alternative 2A minimizes impacts to the natural environment while balancing opportunities to co-locate with existing infrastructure and proximity from identified areas of historical significance to Anishnawbek communities

THEME	QUESTION/COMMENT	RESPONSE
	How did Route 2A score highly within the socio-economic category?	<p>The four categories of the route evaluation (Natural Environment, Socio-Economic Environment, Technical and Cost, and Anishanwbek and Haudenosaunee Culture, Values and Land Use) are each made up of several specific criteria. For example, the Socio-Economic Environment category consists of criteria relating to Existing Land Uses, Future Land Uses, Effects to Agricultural Operations, Archaeological Resources and several others.</p> <p>Each Route Alternative and variation has different advantages and disadvantages which were captured in the various criteria making up these four categories. In some instances, preferred Route Alternative 2A did score lower on certain criteria, including criteria within the Socio-Economic Environment category. However, this was outweighed by advantages in other criteria within the category. For example, in the Socio-Economic category, Route Alternative 2A scored highly on criteria related to Effects to Agricultural Operations, Effects to Archaeological resources, etc., which resulted in Route Alternative 2A receiving the highest overall score for that category and the entire evaluation.</p>
Project Design	When will we be notified of tower locations?	Hydro One is completing the design planning for the new line, where we will confirm details such as the transmission corridor width, as well as tower design and location. Further information on these details will be shared in summer 2021.
	What will the tower design and footprint be?	<p>There are a number of different tower designs that could be used to complete this Project, and the design of the transmission line will take into account a number of considerations. Some of these considerations include, existing structure locations, new structure heights, span between structures, topography and soil conditions, road crossing clearances and environmental constraints.</p> <p>Generally, the typical tower footprint range for a 230 kV line is 26 feet (ft.) by 26 ft. to 46 ft. by 46 ft. As Hydro One completes design planning, the tower design and exact footprint will be confirmed.</p>
	Will the towers be larger in size than the existing 115 kilovolt towers?	The 230 kV transmission line towers will be larger than the existing towers located within the idle 115 kV transmission corridor. Generally, towers that carry a lower voltage are smaller in scale because less space is required between each conductor on the tower. As Hydro One completes the design planning for the line, the exact height of the towers will be confirmed.
	What is the span length between the towers?	For this Project, we anticipate that the span length will range between 900 ft. to 1200 ft, with the exact length determined once Hydro One completes design planning. It is anticipated that further information will be shared by summer 2021.
	Will the existing idle line and towers along Route 2A be removed and replaced with new ones?	A portion of Route Alternative 2A between approximately Montpetit Road and Dillon Road will repurpose a section of an existing transmission line that is no longer energized or operating. To utilize this section to build the Chatham to Lakeshore Line, Hydro One will remove the existing towers and lines in this area, and install our new infrastructure.

THEME	QUESTION/COMMENT	RESPONSE
	Why does Hydro One not plan to continue using the existing old idle transmission line further east from the current point of deviation?	While the existing idle transmission line presents a beneficial opportunity to repurpose an existing transmission corridor to meet the needs of this project, Hydro One determined early on that we would only be able to utilize approximately 16 kilometres of this line due to constraints that exist both east and west of where Route Alternative 2A begins to utilize the idle line. More specifically, continuing to utilize the idle line to the east would require the bisection of woodlots and commercial facilities/structures. Additionally, as the line moves more eastward into Chatham, it is also constrained on both sides by dense development, including a large number of commercial and residential properties that would be directly affected by the widening of the existing transmission line corridor.
	Will the lines be buried?	When burying high voltage transmission lines in either a tunnel or within a duct bank, there are many factors that need to be taken into consideration. This includes technical feasibility, disruption to the surface environment (e.g. open trench excavations) and cost. When considering those factors, it was determined that for this Project, an overhead line was the most viable means of meeting the need for the Project.
	Will the line go above water?	As an overhead transmission line, the steel structures supporting the conductors (wires carrying the electricity), will exist several metres above the ground surface at a safe height. While the new line will span across 26 watercourses, these watercourses can be crossed overhead, such that no direct disturbance to a watercourse is required during construction.
	What land uses are traversed by the transmission line and what removal is required to construct the transmission line?	While the majority of the lands traversed by the preferred Route Alternative are currently being used for agricultural production, there are some areas where the preferred Route Alternative will require the removal of trees and incompatible vegetation, or in some very specific areas, potentially existing buildings and structures. Where structures are determined to require or potentially require removal, Hydro One's Real Estate representatives will work directly with the landowners to discuss options available under Hydro One's project specific Land Acquisition Compensation Principles.
	Will the existing idle line be removed prior to beginning construction?	While the sequencing of construction activities is being confirmed, typically towers would be removed prior to construction start. More information on the sequencing of activities will be available and shared with landowners once the design and construction planning has been finalized.
	How wide is the ROW for the transmission corridor?	The typical ROW for a 230 kV transmission corridor is 150 feet. However, the exact corridor width will be determined as Hydro One completes the design and planning of the line. Further details are expected to be shared by summer 2021.
	Why was the existing transmission corridor north of Highway 401 not considered?	Following the announcement of the preferred Route Alternative, Hydro One received requests from property owners and members of Council in the Municipality of Lakeshore to consider two diversions of the preferred Route Alternative around the community of Comber and north of the 401. Based on these requests and feedback received, Hydro One completed an analysis and compared the proposed diversions to preferred Route Alternative 2A, while keeping feedback heard through the planning process – such as feedback received through the Technical Advisory Committee and all project stakeholders – top of mind. Upon completing this analysis, Hydro On confirmed the requested diversions would introduce greater net effects and additional challenges in comparison to the selected Route Alternative. This included increasing the potential environmental effects, impacting more properties and agricultural lands, and introduce additional technical and cost challenges as well as a risk to power reliability (Refer to Section 3.9.5). As a result, it was not considered further.

THEME	QUESTION/COMMENT	RESPONSE
	There is a small Hydro One station in Merlin, will that be affected in this build?	The Merlin Distribution Station (DS) will not be affected by this project.
	Have the existing wind turbines been taken into consideration for the planning of routes? Also how can we minimize the impact to the operation of wind turbines during the construction phase?	The proximity to wind turbines was taken into consideration as part of our preliminary assessment to identify routes for the new transmission line. As a part of the construction of this Project, we do not anticipate any impacts to existing wind farms.
	What is the setback distance from Highway 401?	As part of the Class EA process, Hydro One consulted with a wide variety of technical stakeholders, including the MTO. As a part of those discussions, they indicated that a minimum setback distance of 25-30 metres is required from the edge of our ROW to the Highway 401 corridor. Hydro One recognizes the importance of the 400-series highways and the need to work collaboratively with MTO to coordinate ongoing projects being planned now and into the future by both organizations.
	Can there be any variations in the route to keep the corridor further away from my property?	When building linear infrastructure that spans such distances, there are technical challenges and considerations that limit the ability to weave and turn around individual property locations. It is important to note that our contractors are currently working on developing a preliminary design - which includes tower placements - that takes into consideration opportunities to minimize the view of the towers amongst other considerations.
	Will you consider tweaking the proposed route and consider following property lines and/or roadways versus traversing fields and properties on a diagonal?	In the design phase, some flexibility may be considered on a property-by-property basis to best mitigate any effects of the properties traversed by the line, where it is deemed to be practical and feasible.
	How close to Comber will these towers be?	The preferred route crosses Highway 77 just south of the 401. The Project website (www.hydroone.com/Chatham-to-Lakeshore) contains more detailed maps of the preferred route, as well as an interactive online mapping tool that allows users to view the preferred route in detail in specific areas.
Route Refinements	What is the rationale for the Highway 401 route refinement?	This route was refined and shifted further north from Highway 401 and away from the interchange ramp at Bloomfield Road and overpass at Charing Cross Road to accommodate certain setback distances from the Highway 401 corridor and interchanges, as provided by the Ministry of Transportation.
	Why was this route re-routed just northeast of North Buxton to run along north of the 401?	Route Refinement 2 changed the way that Route Alternative 1, Variations C/D are angled towards Highway 401, in order to reduce effects to vegetated watercourses, avoid a known archaeological site and increase distance from a wind turbine. It is important to note that this refinement did not re-route any of the Route Alternatives to the north of the 401, as Route Alternative 1, Variations C/D followed the north side of the 401 since we commenced the Class EA for the Project. At the outset of the Project, we did consider opportunities to parallel the existing transmission line, which runs on the south side of the Highway 401; however, this was not taken forward for further consideration due to existing constraints, such as built-up commercial facilities, woodlots, watercourses, and roads, in the area near Bloomfield Road.

THEME	QUESTION/COMMENT	RESPONSE
Property	Impact to property value	Hydro One's real estate representatives will work closely with directly impacted property owners to acquire land rights for transmission ROW that would cross their property. Our goal is to secure voluntary property settlements, utilizing project specific Land Acquisition Compensation Principles. These principles set out the process between Hydro One and property owners to attain voluntary property settlements, and have been tailored to the Project based on local characteristics of the region and feedback we've heard to date. Each impacted property owner will be will presented with a formal offer based upon the information contained in a property specific, independent third party appraisal report. If deemed applicable by the independent third party appraiser, Hydro One's offer will take into consideration Injurious Affection, which is a payment offered when reductions to the market value of the remainder of the property, occur as a result of Hydro One's use and interest in the property. This analysis takes into consideration various attributes – such as the separation distance between the residence and transmission line and/or location of the transmission crossing on the subject property – and whether a loss of value is likely to result from the proposed transmission line. If deemed applicable by the third party appraiser, an injurious affection payment will be made.
	Will I be compensated?	
	If I am not a directly impacted property owner, will I be compensated?	As a part of our practices, Hydro One is offering compensation to landowners who have the new transmission line directly on their property. This compensation is being offered for Hydro One to build and host our new infrastructure on these lands.
	What if a farmer doesn't want to sell their land? Do you have any expropriation ability?	Hydro One's goal is to secure voluntary property settlements which would grant Hydro One the ability to construct, operate and maintain the transmission line. The OEB does provide additional provisions to seek land rights, however, we will seek to work closely with landowners in a fair, transparent and consistent manner to provide them with a choice in Hydro One either acquiring an easement or fee simple interest (ownership) of the lands required for the Project corridor. Hydro One has developed project specific Land Acquisition Compensation Principles to incent landowners to reach voluntary agreements.
	Will there be agreements for the new line?	<p>In order to construct the line, Hydro One will require new land rights, and our goal is to secure voluntary property settlements using project specific Land Acquisition Compensation Principles, which would grant Hydro One the ability to construct, operate and maintain the transmission line. These principles will provide property owners the choice of Hydro One either acquiring an easement or ownership of the lands required for the Project corridor.</p> <p>Additionally, there will be various agreements required through the pre-construction phase of the Project as well as to facilitate construction of the Project. These agreements come in the form of Access Agreements and Option Agreements. The details of these agreements will be shared with property owners traversed by the line and can be further discussed one-on-one with their dedicated real estate representative.</p>
Do we have to pay rent to maintain your land?	Hydro One's Land Acquisition Compensation Principles provide property owners the choice of Hydro One either acquiring an easement or fee simple interest (ownership) of the lands required for the Project corridor. If a property owner chooses to transfer the required transmission right-of-way to Hydro One in fee, the landowner may licence this area for a compatible use (i.e. cropland) from Hydro One.	

THEME	QUESTION/COMMENT	RESPONSE
	Is the route confirmed in terms of its location on my property?	<p>A key component of the Class EA process was ensuring that the evaluation of each route was done fairly and through a balanced framework, incorporating feedback received and weighing that feedback over the entire length of the proposed route. That is why we looked at the cumulative advantages and disadvantages of each option. And as a whole, Route Alternative 2A had the least impacts overall to three of the evaluation categories assessed.</p> <p>Following the selection of the preferred Route Alternative, we will continue to work with landowners and discuss on a property-by-property basis opportunities to best mitigate effects where practical and feasible. The feedback shared with our real estate representatives on your property details and use will help our team take these factors into consideration.</p>
	What is the setback from residences?	<p>The typical width for a 230 kV transmission line corridor is 150 feet, however, the exact corridor width will be confirmed once we design details. Our real estate team will work closely with directly impacted property owners and will discuss property specific questions related to the line's proximity to structures on a property. While Hydro One does not permit buildings or structures within the ROW, they are generally permitted immediately adjacent to our ROW.</p>
	Are residences within the 500 m taken into account?	<p>The local study area of the Project represents a 500 metre radius of each Route Alternative and variation where available background data was collected, and where admail notification campaigns were targeted. For the evaluation of Route Alternatives, effects to residences and residential properties were considered within the Project study area, which is 120m from the Route Alternatives.</p>
Effects to Agricultural Land & Operations	Concerned about impacts to agricultural operations, damages to farms and decrease in value of the farms.	<p>Throughout the Class EA and consultation process, the importance of considering effects to the agricultural community, and agricultural operations, in our planning for this new transmission line was top of mind. We had the opportunity to hear from many local farmers in the Project area, including having the opportunity to see first-hand the size of modern day farming equipment. Based on this feedback, effects to agricultural operations was a key criterion used to evaluate each of the different Route Alternatives. As Hydro One continues environmental and construction planning for this Project, we will look for opportunities to avoid, protect and prevent damage to environmental features, such as soil compaction and tile drainage, to every extent possible and, where necessary, make appropriate repairs. Our real estate representatives will continue to work closely with landowners who have the preferred ROW on their property, and share further details on the design and construction planning this summer. The dedicated Real Estate Representatives will facilitate one-on-one meetings with directly impacted landowners to understand their property and any specifics that may require further discussion with Hydro One.</p>
	Will you restore the land to its original condition? What if we have crops planted in the area you are building on?	<p>Directly impacted landowners will have an opportunity to work with their dedicated real estate representative who will communicate access onto the property. With respect to our crop loss out of production program, landowners are compensated for payment during and post-construction for cropland out of production and any physical damages or crop loss that is unable to be mitigated. Details for that program will be communicated in the one-on-one discussions with the dedicated real estate representatives. Hydro One is committed to ensuring that you can continue your farming operations and all associated physical damages associated with Hydro One activities are compensated.</p>

THEME	QUESTION/COMMENT	RESPONSE
	Can we farm the land around the towers?	Farming is a compatible use within the transmission corridor. Hydro One's focus is to mitigate construction impacts as much as possible and Hydro One will compensate landowners for croplands out of production during and post-construction, with payment recognizing compaction to land, years after construction is completed. This cropland out of production program is specific to this project and is designed to take into account community input. Property specific questions pertaining to this program can be further reviewed and discussed with your dedicated real estate representative.
	Will the voltage interfere with GPS Systems?	Some farmers have raised concerns regarding potential interference from overhead transmission lines to precision agriculture applications, possibly resulting in inaccurate or imprecise position determinations. While obstructions such as buildings or trees are known to block reception of GPS signals, published studies assessing these concerns indicate that overhead power line conductors are too thin to cause appreciable screening. Hydro One acknowledges these localized issues have been raised by farmers working beneath the transmission lines and while we do not anticipate effects to communication systems in farm equipment, Hydro One will work with concerned farmers to collect information on the systems of concern, and contact manufacturers of these systems to gain further insight into potential concerns and possible solutions if applicable.
	Are the damaged tile drains going to be repaired by a licensed drainage contractor or landowner?	As Hydro One continues environmental and construction planning for this project, we will look for opportunities to avoid, protect and prevent damage to environmental features such as tile drainage, to the extent practical. Should repairs be required, Hydro One is committed to fully repairing damage with landowner involvement, and we will use professionally licensed contractors to execute this type of work.
	How will Hydro One access the towers for maintenance following construction? Will they be driving through fields?	When maintenance is required, Hydro One will make every effort to facilitate access by the least intrusive means and methods. Access along the ROW is preferred, however, if there is a less intrusive way to get to the towers, Hydro One will look to coordinate this with the property owner. At the time of any required maintenance, property owners will be notified by Hydro One personnel and advanced coordination would be provided. Hydro One will seek to mitigate any physical property damages during these activities, however, should any damages/crop loss occur by these activities, compensation would be provided.
	How deep will the fields be ploughed in looking for artifacts?	Ploughing required for Pedestrian surveys conducted as part of the Stage 2 Archaeological Assessment for the Project will generally be conducted to the same depth that the field has historically been ploughed to.
	Will we have advanced notice of construction?	Ongoing communication with landowners will continue throughout the Project, including advanced notice of construction activities. Hydro One will host a pre-construction information session to share details on what can be expected throughout construction. This will be followed by subsequent information sharing.
	How long after completion of the Project do landowners have to have any drainage issues repaired?	Hydro One commits to rectifying any drainage issues that may appear due to our presence on the lands. If such, instance occurs even years after completion of the Project, Hydro One will look to resolve this issue.
Effects to Natural Environment	Will the line have any impacts to animals and/or their habitat?	Within the Class EA, effects to natural environment and wildlife habitats were considered in the evaluation of the Route Alternatives. This included the identification of environmental effects and potential mitigation measures (refer Section 7.0) before the Project advances to detailed design and construction.

THEME	QUESTION/COMMENT	RESPONSE
	Organizations requested natural heritage information obtained through Class EA to contribute to the provincial knowledge base	Hydro One will share this information with organizations.
Construction	Will the work be done by a local contractor that values safety and properties?	The Project will be completed by an Engineering, Procurement and Construction (EPC) contractor. Safety is our number one priority, and we work closely with our contactors to ensure they provide the same level of safety and care when working on private properties.
	Will local contractors have an opportunity to be involved in this project?	We always make it a priority to support the local economy by sourcing materials and hiring from the local area as much as possible. As a part of this project, we are working with a number of EPC partners that will take on the general contractor role associated with the construction phases of this Project, and we are committed to ensuring that the use of local businesses is considered and maximized in their delivery plans.
	How will Hydro One intend on accessing the new transmission corridor?	Hydro One will work with landowners to identify access routes along properties with a preference to remain within the transmission line ROW and use existing access points, where possible.
	What kind of access road will be built to build the towers?	Where practical, temporary access roads and work pads will be built in agricultural fields using mats or geotextile and crushed rock, which can be easily removed when construction is complete to allow for re-cultivation of the area.
	How will Hydro One prevent trespassers from driving down the access roads from our road during the construction period?	In the past, Hydro One has controlled access with the use of gates along access roadways. Hydro One has requested the construction contractor to do the same for this project.

3.14 Final Notification and Draft ESR Review Period

Hydro One is providing a 60-day review period, from June 11, 2021, to August 10, 2021, to allow sufficient time for review and comment on this draft ESR. Comments regarding the draft ESR are to be submitted to Hydro One no later than 4:30 p.m. on August 10, 2021, and must be addressed to:

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

Due to the ongoing public health developments related to COVID-19, the draft ESR can be viewed electronically on Hydro One's website at www.HydroOne.com/Chatham-to-Lakeshore. Electronic copies of the draft ESR are also available on USB drives for sign out and/or curbside pickup at the following locations, pending operating hours (please call ahead):

Chatham-Kent Public Library 120 Queen Street Chatham, ON N7M 2G6 519-654-2940	Chatham-Kent Public Library 2 Queen Street Tilbury, ON N0P 2L0 519-682-0100	Chatham-Kent Civic Centre 315 King Street Chatham, ON N7M 5K8 519-360-1998	Atlas Tube Centre Essex County Library-Toldo Branch 447 Renaud Line Lakeshore, ON NOR 1K0 519-727-0470
---	---	--	--

To help aid those without access to a computer, limited e-readers will be available at the above locations for sign out. In the event that public health restrictions cease during the review period, hard copies of the draft ESR will also be available for on-site review at the above locations.

- On June 11, 2021, the Notice of Completion of draft ESR was distributed to all interested parties including the Anishnawbek and Haudenosaunee communities, municipal, provincial and federal government officials and agencies, potentially affected and interested persons, and interest groups presented in **Sections 3** (see contact list in **Appendix B-1**). The notification indicated that the draft ESR was complete, and that the public review and comment period would run between June 11, 2021, and August 10, 2021. The Notice was published in the Leamington/Wheatley/Kingsville Southpoint Sun, Windsor Star, Chatham-Kent This Week and Chatham Daily Press local community papers between June 8 and June

10, 2021, and was posted on the Project website www.HydroOne.com/Chatham-to-Lakeshore (see **Appendix B-2** for the notice and newspaper ad).

Comments and concerns received by Hydro One during the draft ESR review period will be recognized, considered, addressed and documented. The ESR will be finalized for the proposed Project in accordance with the Class EA. Upon completion of the Class EA process, the final ESR will be filed with the MECP, and will be made available on the Project website www.HydroOne.com/Chatham-to-Lakeshore. The Project will then be considered acceptable to proceed as outlined in the ESR.

A request may be made to the MECP for an order requiring a higher level of study (i.e., requiring comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse effects on constitutionally protected Aboriginal and treaty rights. The MECP will not consider requests on other grounds.

Requests should include the requester's contact information and full name, as well as specify what kind of order is being requested (request for conditions or comprehensive EA), how an order may prevent, mitigate or remedy potential adverse effects on Aboriginal and treaty rights, and any information in support of the statements in the request. This will allow an efficient review of the request. The request should be sent in writing or email to:

Minister of the Environment, Conservation and
Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
Email: minister.mecp@ontario.ca

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

Requests should also be copied to Hydro One per the contact information provided above.

4 Environmental Inventory

The following sections summarize the environmental baseline conditions in the study area. Information presented below was obtained through published documents, government agency and only resources databases and mapping tools, municipal websites, government planning and guidance documents, relevant project documents, reports commissions by Hydro One, and primary data collection through targeted natural heritage field surveys.

In accordance with Section 3.3.4 of the Class EA document (Hydro One, 2016), information for the below factors was collected for the purposes of defining existing conditions:

- 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 and wildlife habitat).
- Recreational resources.
- Visual and aesthetic resources.

Natural and socio-economic environment baseline conditions are described in the following sections. Desktop information for the natural and socio-economic environment was generally collected within the LSA, while natural environment field surveys were completed within the PSA (see **Section 2.0**). Field surveys were undertaken between April and July of 2020 to assess baseline environmental conditions and significant natural values to inform the Class EA. Additional information beyond the PSA is provided for some environmental features (such as the socio-economic environment and cultural heritage) where additional context is appropriate.

Natural heritage field surveys were conducted in accordance with the Natural Environment Field Program Terms of Reference (TOR) (Dillon, 2020) which was submitted to the MECP on February 10, 2020 for review and comment in advance of the 2020 field program. As of the drafting of this ESR, comments from MECP on the Natural Environment Field Program TOR remain outstanding.

Environmental staff were regularly accompanied during aquatic and terrestrial surveys by Indigenous Environmental Monitors from WIFN and the Haudenosaunee Development Institute (HDI). Where private property access was granted in advance of the 2020 field program, field

studies occurred within or directly adjacent to natural heritage features. Where private property access was not granted and the property was associated with a natural feature(s), field data was collected from the ROW, Hydro One's existing transmission ROW and/or from property limits where access was granted. Field data collected from adjacent lands was supplemented with information collected through aerial imagery interpretation and secondary data sources. Results of the natural heritage field surveys are summarized in the Natural Environment Existing Conditions Technical Report for the Project (**Appendix C-1**). A summary of the 2020 field survey results are summarized in **Section 4.6.7**, below.

4.1 Agricultural Resources

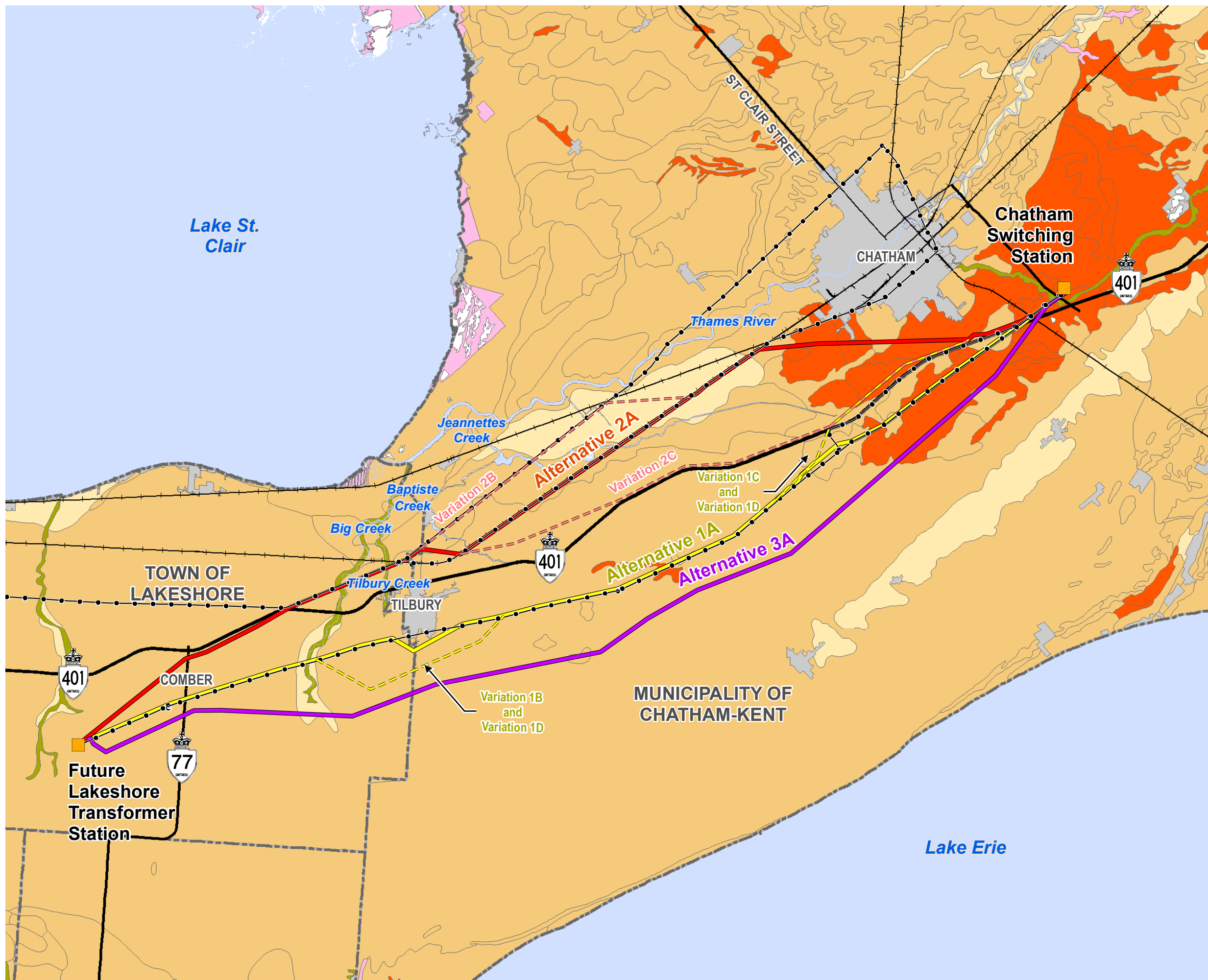
The Canada Land Inventory (CLI) classification system rates agricultural land capability. According to CLI data (1998), the PSA is dominated by Class 2 agricultural lands, which have moderate limitations that restrict the range of crops or require moderate conservation practices (**Figure 4-1**). Portions of the PSA near the Municipality of Chatham-Kent are rated as Class 1 and Class 3 lands. Class 1 soils have no significant limitations for crops, whereas Class 3 lands have moderate to severe limitations that restrict the range of crops or require special conservation practises. Lastly, soils associated with riparian habitat of Big Creek have been mapped as Class 5 soils. Class 5 lands have significant limitations to producing perennial forage crops.

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 may limit the type of crops planted and restrict the growth of crops (Government of Canada, 2013). It is for this reason that a significant portion of the agricultural lands within the PSA are tile drained (OMAFRA, AgMaps 2020). Similarly, Class 3 soils within the PSA were considered to have low permeability and excessive soil moisture. On the other hand, soils in Class 1 are considered level, deep, well to imperfectly drained and have good nutrient and water holding capacity. If properly managed, soils are considered moderately high to highly productive for common field crops (Government of Canada, 2013).

The majority of agricultural lands within the LSA are used to produce traditional cash crops such as winter wheat, corn (commercial and seed), and soybeans, as well as tomatoes. While crops are rotated annually, the type of crop and soil characteristics in the LSA generally support traditional crop types. Approximately 96% of lands traversed by Route Alternative 1, and its variations, are used for agricultural purposes. Route Alternative 2, and its variations, and Route Alternative 3 are similar with approximately 92% and 96%, respectively, of each route spanning lands used for agricultural production.

**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**AGRICULTURAL SOIL CLASSES
FIGURE 4-1**



- Station
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
- Agriculture Soil Class**
- Urban Area
 - Class 1
 - Class 2
 - Class 3
 - Class 5
 - Class 7
- Base Data**
- Existing Electrical Transmission Line
 - Highway
 - Road
 - Railway
 - Municipality Boundary
 - Water Body

SCALE 1:160,000

0 1 2 4 km



MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: DB
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: FINAL
DATE: 2021-06-04

4.2 Forestry Resources

Timber harvesting in Ontario occurs on both Crown and private land. Forest harvesting on Crown land occurs according to the *Crown Forest Sustainability Act*. Private land harvest occurs at the decision of landowners.

While there are several woodlands located within the PSA and adjacent lands, these areas fall outside of 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 (MNRF, 2017). As such, there is no potential for the proposed Project to affect the productivity or utilization of the land for timber harvesting.

4.3 Cultural Heritage Resources

Provincial heritage properties include three types of cultural heritage resources: built heritage resources, cultural heritage landscapes and archaeological sites (MHSTCI, 2010).

4.3.1 Archaeology

Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted by Hydro One to conduct a Stage 1 Archaeology Assessment for the Project. The need for archaeological assessment work was determined through Hydro One's internal environmental review of the Project lands, as per the Class EA. All archaeological consulting activities were performed in accordance with MHSTCI's *Standards and Guidelines for Consultant Archaeologists* (2011a) by a licenced archaeologist. The results of the Stage 1 Archaeological Assessment were provided to MHSTCI and entered into the Ontario Public Register of Archaeological Reports. The Stage 1 Archaeological Assessment (TMHC, 2020) determined that the PSA for all Route Alternatives contains lands with archaeological potential, as well as previously recorded archaeological finds and sites. It was recommended that a Stage 2 Archaeological Assessment be completed for the technically preferred Route Alternative, for all lands exhibiting archaeological potential that have not been previously assessed. Hydro One commits to completing the Stage 2 Archaeological Assessment for these identified areas of archaeological potential along the preferred Route Alternative prior to construction.

A copy of the Stage 1 Archaeology Assessment report is provided in **Appendix C-2**.

4.3.2 Cultural Heritage

Golder Associated Ltd. (Golder) was retained by Hydro One to provide a Cultural Heritage Existing Conditions (CHEC) report for the Project. The CHEC report was completed following guidance provided by MHSTCI. The CHEC report (Golder, 2020) determined that all Route Alternatives cross properties of known or potential cultural heritage value or interest (CHVI) within the LSA. Similarly, it was determined that Route Alternative 1 is associated with a property listed on the Lakeshore Municipal Heritage Register, while both Route Alternatives 1 and 3 impact the Buxton Settlement National Historic Site of Canada (NHSC). It was recommended that a Preliminary Heritage Impact Assessment be conducted to identify direct and indirect impacts from the preferred Route Alternative on the known and potential built heritage resources identified in the CHEC.

A copy of the CHEC is provided in **Appendix C-2**.

4.4 Land Use and Communities

The majority of the PSA is designated as agricultural land as identified in the County of Essex (2014), Municipality of Chatham-Kent (2018) and Municipality of Lakeshore (2010) Official Plans. Human settlement areas include those located within the Municipality of Chatham-Kent and the Municipality of Lakeshore.

The Municipality of Lakeshore is comprised of multiple hamlets and urban centres and had a population of 36,611 in 2016 (Municipality of Lakeshore, 2010; Statistics Canada, 2017a). The PSA includes the Urban Area of Comber.

The Municipality of Chatham-Kent is comprised of several hamlets and urban centres and had a population of 101,647 in 2016 (Municipality of Chatham-Kent, 2018; Statistics Canada, 2017b). There are no hamlets or urban centres within the PSA; however, the LSA does include the Primary Urban Centre of Tilbury and the periphery of the Rural Settle Area associated with North Buxton.

There are four district school boards within the LSA; however, there are no schools or private schools located within the PSA.

4.4.1 Land Use Planning

Three Official Plans apply to the PSA, including the County of Essex, the Municipality of Chatham-Kent and the Municipality of Lakeshore Official Plans. Land use planning and development in the PSA is also guided by the Provincial Policy Statement (PPS).

Schedules from the Official Plans are included in **Appendix C-3**.

4.4.1.1 Provincial Policy Statement (2020)

The PPS is issued under Section 3 of the Ontario *Planning Act*, and came into effect on May 1, 2020. Section 3 of the *Planning Act* states that decisions affecting planning matters “shall be consistent with” the PPS. The consistency of the proposed Project (defined as “infrastructure” in the PPS) with the relevant Infrastructure and Public Service Facilities policies included in Section 1.6.8 of the PPS is summarized as follows:

- Planning and protecting corridors and ROWs for infrastructure to meet current and projected needs.
- Preserving and reusing abandoned corridors for purposes that maintain the corridor’s integrity and continuous linear characteristics wherever feasible.
- Co-locating linear infrastructure is promoted where appropriate.

Section 1.6.8.6 of the PPS requires that when planning for corridors and ROWs for significant electricity transmission and infrastructure facilities, consider the significant resources protected by Section 2 of the PPS, Wise Use and Management of Resources. Effects to significant resources, as identified by Section 2 of the PPS, outside of the PSA are not anticipated.

4.4.1.2 County of Essex Official Plan (2014)

The County of Essex (County) Official Plan provides guidance and direction for how the land in its local municipalities should be used. The County’s Official Plan provides the fundamental policy framework for the land use planning by local municipalities. The local municipalities, including the Municipality of Lakeshore, must implement their own local Official Plan and conform to the County’s Official Plan. The Municipality of Chatham-Kent neighbours the County of Essex and is not subject to the County’s Official Plan.

Agricultural areas make up the majority of the landscape within the County, with over 80% of the land area used as farm land (County of Essex, 2014). As identified in Schedule A1 of the Official Plan (**Appendix C-3**), the majority of the lands within the PSA are designated as Agricultural. The PSA also includes Settlement Areas and Natural Environment Areas.

The Official Plan specifies that utility corridors, including transmission facilities, are to be designed in a manner that will minimize potentially negative effects where possible. The Official Plan acknowledges that utility corridors must exist and it is preferred that the routes for these corridors

follow existing ROWs, fence lines and property lines, and if unable to accommodate existing ROWs, to avoid built-up and heavily populated areas. Preferred routes for utility corridors, as indicated in the Official Plan, should not infringe on environmentally significant areas. The Official Plan also identifies that minimizing impacts on agricultural lands and natural heritage systems is a high priority.

4.4.1.3 Municipality of Lakeshore Official Plan (2010)

As noted in Section 3.4.1.2, the Municipality of Lakeshore must implement their own local Official Plan and it must conform to the County of Essex's Official Plan.

Agricultural Areas make up the majority of the landscape within the Municipality of Lakeshore, and are generally outside of Urban Areas, Urban Fringe Areas, Hamlet Areas, Employment Areas and Waterfront Areas. The Agricultural Areas consists of prime agricultural land and accommodate agriculturally-related uses. All agricultural uses and secondary agricultural uses as identified in Section 3.3.11 of the Official Plan.

As identified in Schedule C.1 of the Official Plan (**Appendix C-3**), the majority of lands within the PSA are designated as Agricultural. The PSA also includes Comber, which is designated as an Urban Area. Route Alternatives in Comber cross land use designations for Employment, Service Commercial, Environmental Protection and Parks and Open Space (Schedule C.10; Municipality of Lakeshore, 2010).

Under Section 7.5(g) of the Official Plan, utilities are permitted in all land use designations and are to be installed within appropriate easements or public road allowances where possible (Municipality of Lakeshore, 2010).

4.4.1.4 Municipality of Chatham-Kent Official Plan (2018)

The majority of the Municipality of Chatham-Kent's land is designated as Agricultural (Schedule A) and, as identified under Section 3.10 of the Official Plan, over 550,000 acres of land is under cultivation and is considered prime agricultural land (Municipality of Chatham-Kent, 2018). Other land use designations within the Municipality include Residential, Commercial/Industrial and Other (i.e. Open Space/Conservation Lands, Urban Reserve, etc.).

As identified in Schedule A of the Official Plan (**Appendix C-3**), the majority of the lands within the PSA are designated as Agricultural. The LSA includes Tilbury, which is designated as a Primary

Urban Centre, and is associated with designated residential land use. The PSA is associated with other land use designations, including industrial rural, Business Park, and suburban residential.

As outlined under Section 2.4.6, utility corridors, communications corridors and transmission facilities are encouraged and are permitted in any land use designation, provided the development satisfies the applicable provincial and/or federal legislation (Municipality of Chatham-Kent, 2018).

4.4.2 Transportation

The PSA comprises multiple road networks in both the Municipality of Lakeshore and the Municipality of Chatham-Kent. The highway network through the PSA is centralized by Highway 401, which passes through both Municipalities from west to east.

Road classifications within the PSA for each Municipality are summarized in **Table 4-1**. Many of the arterial roads in rural areas of the Municipality of Lakeshore are owned and maintained by the County of Essex.

Table 4-1: Road Classifications within PSA

Municipality	Road Classification
Municipality of Lakeshore	<ul style="list-style-type: none"> ● Rural Regional Road ● Rural Secondary Road ● Rural Collector Road ● Rural Local Road
Municipality of Chatham-Kent	<ul style="list-style-type: none"> ● Local Road ● Rural Arterial ● Rural Collector

Source(s): Municipality of Lakeshore Official Plan: Schedule D1 (2010); Municipality of Chatham-Kent Official Plan: Schedule B1 (2018).

There are three airports located within the general vicinity of the Project. In the west end in the Town of Lakeshore, Cottam Airport is located approximately 8 km south of the Route Alternative 3, whereas The Stoney Point (Le Cunff) Airport is located approximately 5 km north of Route Alternative 2. Lastly, the Chatham-Kent Municipal Airport is located approximately 6.4 km south of Route Alternative 3.

Railway lines for Canadian National Railway (CNR), Canadian Pacific Railway (CP Rail), BNSF Railway Company and VIA Rail cross the PSA in a west to east direction. The CNR rail system

travels west to east through the middle of the PSA. The VIA Rail line travels west to east towards Windsor through the northern portion of the PSA. CP Rail and BNSF Railway are also located in the northern portion of the PSA. Each of the railway lines cross the U.S. border at Detroit in the west, and continue east to London.

4.4.3 First Nations Lands

As outlined in **Section 3.6**, several Anishnawbek and Haudenosaunee Communities were consulted as part of the Class EA process; however, there are no First Nation reserve lands situated within the PSA. Of the Anishnawbek and Haudenosaunee Communities identified by the Crown, the closest communities to the PSA include Bkejwanong (WIFN)(No. 06192), and CFN (No.165) (Government of Canada, 2020).

As identified in ENDM's letter confirming Indigenous communities to be consulted on the Project, Anishnawbek and Haudenosaunee communities were consulted on the basis that they have or may have constitutionally protected Aboriginal and/or treaty rights that may be adversely affected by the Project.

Section 3.6 provides additional information regarding Anishnawbek and Haudenosaunee communities consultation.

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 PSA (**Appendix C-4**).

No active or abandoned mines were identified within the PSA or on adjacent lands (ENDM, 2017a).

While no active oil and gas wells were identified in the PSA, major gas (4") pipelines are present and provide a connection between Lakeshore to Tilbury (**Appendix C-5**). Additional pipelines connect Tilbury to Chatham to the north of the PSA; further major pipelines extend west from Chatham into the PSA.

4.6 Natural Environment Resources

Natural environment features including air, land, water, wildlife and wildlife habitat resources and features were factors considered within the PSA.

This section addresses physical and biological features in the Project Study Area including baseline information for the following:

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

4.6.1 Physical Environment

Bedrock Geology of the PSA is illustrated on **Figure 4-2** (ENDM, 2010). Bedrock deposits within the majority of the PSA are characterized as limestone, dolostone and shale (ENDM, 1991) of the Dundee Formation and Hamilton Group of the Middle Devonian period (MNDM, 1991). These formations consist of thick layers of Palaeozoic sedimentary rocks of the Michigan Basin sedimentary deposits (ERCA, 2018; MNDM, 1991). Conversely, bedrock geology for the remainder of the PSA in the northeast, consist of shale. Bedrock geology in this portion of the PSA is associated with the Kettle Point Formation from the Upper Devonian period (MNDM, 2010).















Quaternary geology of the PSA is depicted on **Figure 4-3** (MNDM, 2010). The majority of the PSA consists of Tavistock Till. Tavistock Till is described a nearly level to gently sloping glaciolacustrine plain over clayey glaciolacustrine sediments (MNDM, 2010). The glaciolacustrine deposits within this section of the PSA are considered fine textured and consist of silt-clay layers with some gravel and sand; the clay and till described for this area are thick and limit water infiltration. Quaternary geology within the remaining PSA consists of a combination of lacustrine and glaciolacustrine deposits. Generally, the lacustrine deposits are finer in texture, and consist of silt-clay layers with some gravel and sand. Conversely, the glaciolacustrine deposits are considered course-textured, and are comprised of mostly sand and gravel with contributions of silt and clay.

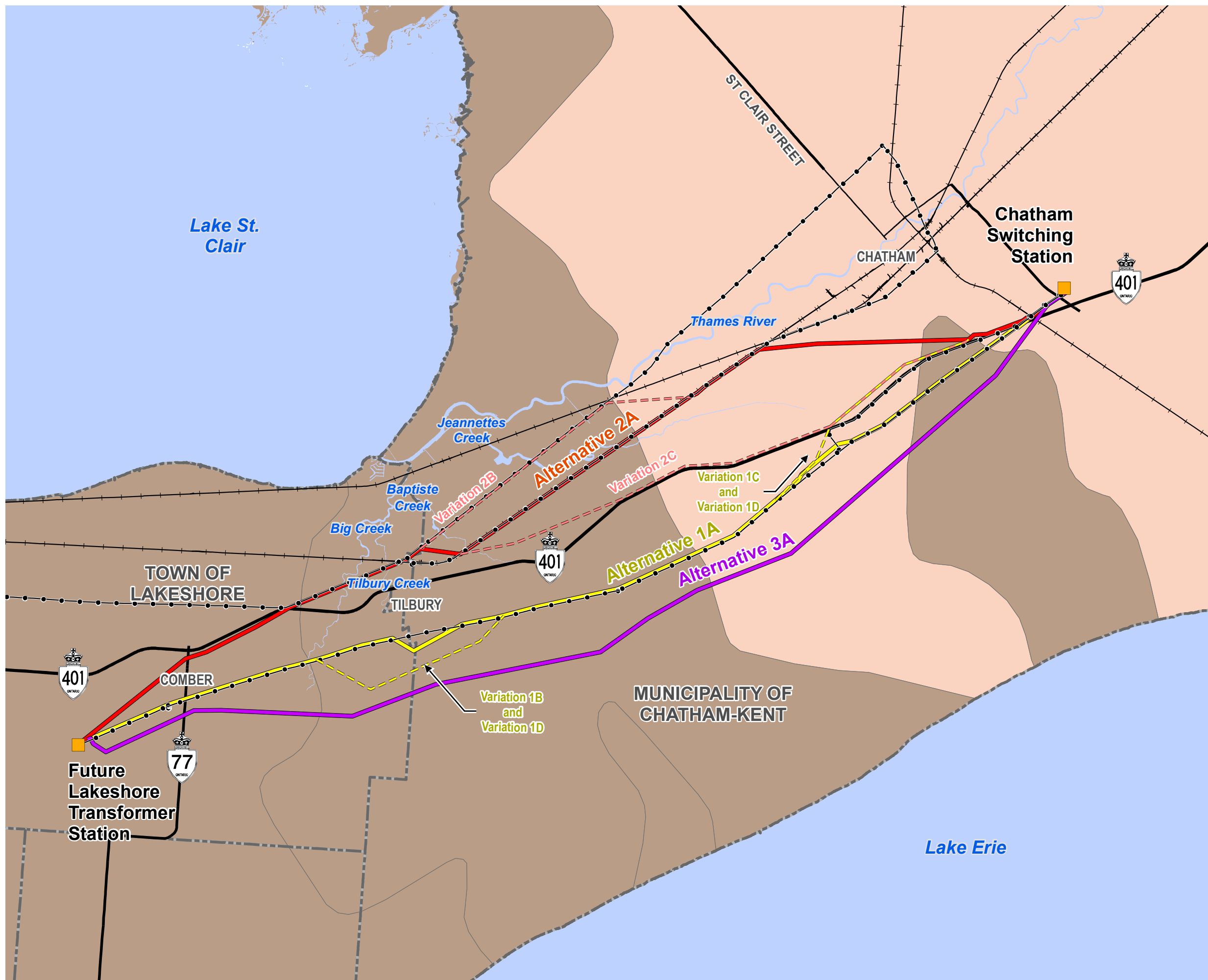
The bedrock and quaternary geology described for the PSA is consistent with the physiographic region described for southwestern Ontario. The PSA extends across the St. Clair Clay Plains and the Bothwell Sand Plains physiographic regions of Ontario as defined by Chapman and Putnam

(1984). The St. Clair Clay Plains span across the majority of Essex County, whereas the Bothwell Sand Plains initiate closer to the Municipality of Chatham-Kent and continue north. Topography of the PSA and surrounding region in general are considered as mostly flat (MNRF, 2021).

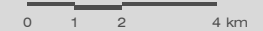
**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**BEDROCK GEOLOGY
FIGURE 4-2**

-  Station
-  Alternative 1
-  Variation
-  Alternative 2
-  Variation
-  Alternative 3
- Bedrock Geology**
-  Limestone, dolostone, shale
-  Shale
- Base Data**
-  Existing Electrical Transmission Line
-  Highway
-  Road
-  Railway
-  Municipality Boundary
-  Water Body



SCALE 1:160,000



MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

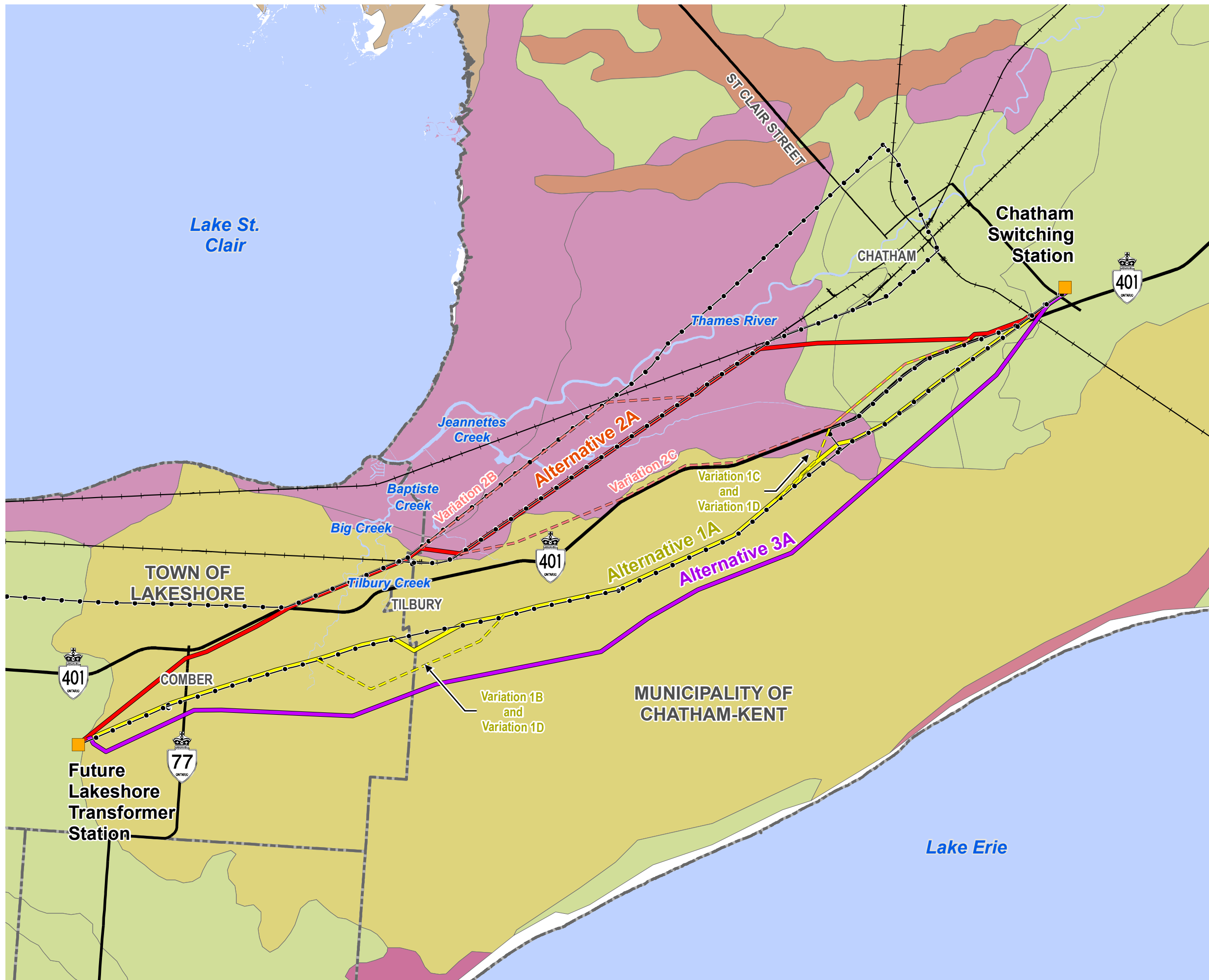
MAP CREATED BY: SFG/LMM
MAP CHECKED BY: DB
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: FINAL
DATE: 2021-06-04

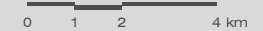
**HYDRO ONE NETWORKS INC.
CHATHAM TO LAKESHORE LINE
CLASS ENVIRONMENTAL ASSESSMENT**

**QUATERNARY GEOLOGY
FIGURE 4-3**



- Station
 - Alternative 1
 - Variation
 - Alternative 2
 - Variation
 - Alternative 3
- Quaternary Geology**
- Fluvial deposits
 - Glaciofluvial ice-contact deposits
 - Glaciolacustrine deposits
 - Lacustrine deposits
 - Organic deposits
 - Port Stanley Till
 - Tavistock Till
- Base Data**
- Existing Electrical Transmission Line
 - Highway
 - Road
 - +— Railway
 - Municipality Boundary
 - Water Body

SCALE 1:160,000



MAP DRAWING INFORMATION:
Data provided by LIO, MNR, CanVec, Project data provided by Hydro One Networks and refined by Dillon Consulting Limited.

MAP CREATED BY: SFG/LMM
MAP CHECKED BY: DB
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 19-1917
STATUS: FINAL
DATE: 2021-06-04

4.6.2 Atmospheric Environment

Climate

The Municipality of Lakeshore and Municipality of Chatham-Kent 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 general region of the PSA have been identified in Kingsville (Kingsville MECP [formerly MOE], Climate Identifier [ID] 6134190) and in Chatham (Chatham Water Pollution Control Plant, WPCP; Climate Identifier [ID] 6131415) Ontario (Government of Canada, 2019). The meteorological stations are located approximately 18.0 km southwest, and 1.1 km north of the PSA, respectively. Temperature and precipitation data presented in this section are based on annual Climate Normals data available from 1981 and 2010 (Table 4-2; Government of Canada, 2019).

Table 4-2: Summary of Published Annual Climate Normals for the 1981 to 2010 Period for the Kingsville MECP and Chatham WPCP Stations

PARAMETER	Kingsville MOE (Station ID: 6134190)	Chatham WPCP (Station ID: 6131415)
	18.0 km southwest of Project Study Area	1.1 km north of Project Study Area
Daily average (°C)	9.6	9.8
Daily maximum (°C)	13.5	14.1
Daily minimum (°C)	5.6	5.4
Rainfall (mm)	814.2	803.1
Snowfall (cm)	86.3	79.2
Precipitation (mm)	900.5	882.3
Days with maximum temperature >35°C	0.21	0.55
Days with minimum temperature <-30°C	0.0	0.0
Days with rainfall ≥ 25 mm	5.9	5.6

PARAMETER	Kingsville MOE (Station ID: 6134190)	Chatham WPCP (Station ID: 6131415)
	18.0 km southwest of Project Study Area	1.1 km north of Project Study Area
Days with snowfall \geq 25 mm	0.12	0.09
Days with precipitation \geq 25 mm	6.0	5.7

Source: Government of Canada, 2019

Temperature

The climate normal mean annual temperature recorded at the Kingsville MOE and Chatham WPCP meteorological stations are 9.6 and 9.8 degrees Celsius ($^{\circ}\text{C}$), respectively (Government of Canada, 2019). For these two stations, the climate normal daily average temperature varies between 5.6 - 5.4 $^{\circ}\text{C}$ and 13.5 -14.1 $^{\circ}\text{C}$. The climate normal frost-free period is from May 19 to September 30 (133 days) (Government of Canada, 2019).

Precipitation

Precipitation is distributed throughout all four seasons, with snowfall typically limited between November to April, and rainfall occurring throughout the year. Climate normal days with precipitation (equal to or over 0.2 mm) range between 111.1 and 118 days per year for the Kingsville MECP and Chatham WPCP meteorological stations, respectively (Government of Canada, 2019).

Climate normal monthly precipitation varies between 31.6 – 32.9 millimetres (mm) (January) and 87.9- 89.1 mm (September) (Government of Canada, 2019). For the two meteorological stations, the climate normal total annual precipitation is 803.1 mm (Chatham WPCP) and 900.5 mm (Kingsville MECP), where 79.2 mm and 86.3 mm are associated with snowfall and 882.3 mm (Chatham WPCP) and 814.2 mm (Kingsville MECP) occur as rainfall.

Extreme daily rainfall for the Chatham WPCP meteorological station varies from 32.0 mm (November) to 86.1 mm (July) and are considered climate normal. Extreme snow depths for the Chatham WPCP station range from zero to 26.0 centimetres (cm) (January; Government of Canada, 2019). On the other hand, extreme daily rainfall climate normal data for the Kingsville MOE meteorological station varies from 38.0 mm (January) to 106.0 mm (September), while extreme snow depth ranges from zero to 30.0 cm (February; Government of Canada, 2019).

Wind

At the Chatham WPCP meteorological station, winds are primarily blowing from the southwest with an average maximum hourly speed of 60.5 kilometres per hour (km/hr) (Government of Canada, 2019a; Windfinder, 2019). Wind data was not provided in the climate normal data set for the Kingsville MECP meteorological station.

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 stations are located approximately 37 km west (Windsor Downtown) and 3.5 km north (Chatham) of the PSA. 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}). All five parameters are measured at the Windsor Downtown station; however, only ozone, nitrogen dioxide and particulate matter are measured at the Chatham station.

The AQHI creates a score (i.e. 1 - 10+) totalling the overall risk associated with levels recorded for the 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 2018, 2019 and 2020 monitoring years, a low score (1-3) and, therefore a low risk to air quality, are indicated for the Windsor Downtown area (MECP, 2018). Similarly, annual average AQHI readings recorded for the parameters measured at the Chatham station indicated an overall low score (1-3) during 2018, 2019 and 2020, respectively (MECP, 2018).

Noise and Vibration

In accordance with the MECP (formerly MOE) 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). Based on a

desktop review, points of reception were identified within the LSA to represent the noise-sensitive receptors in the vicinity, all being rural residential dwellings and/or commercial operations adjacent to active agricultural lands.

Ambient noise conditions within the LSA were established through a review of publicly available information and the professional opinion of Hydro One based on experience on existing transmission line and station projects. Ambient noise conditions within the LSA 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, vegetation, as 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 LSA are likely influenced by the following noise emissions:

- Local and distant road traffic, particularly along Highway 401
- Railway activities; and
- Agricultural (seasonal) 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. The known and/or potential build heritage resources identified in **Section 4.3.2** will be further assessed during the Preliminary Heritage Impact Assessment.

4.6.3 Surface Water Resources

For the purposes of field studies conducted in 2020 in support of the Class EA, surface aquatic features were defined using two categories: 1. water crossings, and 2. waterbodies. Water crossings were considered rivers, watercourses and constructed drains, whereas waterbodies were considered natural or man-made ponds or pools that are land-locked within the landscape. As summarized in the Natural Environment Existing Conditions Technical Report (**Appendix C-1**), a total of 182 watercourse intersections are associated with the Route Alternatives within the PSA

based on background review. Of the 182 identified watercourse intersections, 42 water crossings were assessed as part of the 2020 field program. Similarly, 18 waterbodies were identified within the PSA; of which 8 were associated with Route Alternatives 1 and 2, respectively, with the remaining two associated with Route Alternative 3.

Physical conditions of water crossings assessed in 2020 were summarized in Section 3.1 of the Natural Environment Existing Conditions Technical Report (**Appendix C-1**). Most of the watercourse features within the PSA flow into Jeannettes Creek, McGregor Creek Drain, Baptiste Creek, Tilbury Creek or Big Creek. Jeannettes Creek, also identified as Duke Drain and Ferguson Drain in the upstream reaches, flows into the Thames River approximately 3 km east of Lighthouse Cove, and is the most prominent feature throughout the east portion of the PSA.

A list of water crossings surveyed in association with each Route Alternative are provided in **Table 4-3** below.

Table 4-3: Watercourse Crossings Surveyed

Watercourse/Drain Name	Route Alternative		
	Route Alternative 1	Route Alternative 2	Route Alternative 3
Locke Drain	✓	✓	---
Duke Drain (Jeannettes Creek)	✓	---	✓
Waddick Drain	✓	---	---
O'Rourke Drain	✓	---	✓
Government Drain	✓	---	---
Kersey Drain	✓	---	✓
Deary Drain	✓	---	✓
Baptiste Creek Drain (Baptiste Creek)	✓	✓	✓
Powell Drain	✓	---	---
Tremblay Creek Drain (Tilbury Creek)	✓	✓	---
Big Creek Drain (Big Creek)	✓	✓	---
McGregor Creek Drain (McGregor Creek)	---	✓	---
Chinnick Drain (Indian Creek)	---	✓	---
Bullis Creek Drain (Bullis Creek)	---	✓	---

Watercourse/Drain Name	Route Alternative		
	Route Alternative 1	Route Alternative 2	Route Alternative 3
Ferguson Drain (Jeannettes Creek)	---	✓	---
Unnamed feature	---	✓	✓
Little Creek	---	✓	---
Malden Road Drain Outlet	---	✓	---
Doyle Drain	---	✓	---
Unnamed Drain (tributary to Doyle Drain)	---	✓	---
Ferguson Drain (Jeannettes Creek)	---	✓	---
Finn and Cooper Drain	---	✓	---
6-7 Sideroad Drain	---	✓	---
Carter Drain	---	---	✓
Thibert Drain	---	---	✓
Robb-Dales Drain (Big Creek)	---	---	✓
East Branch of Big Creek Drain	---	---	✓
Big Creek Drain – West Branch	---	---	✓
Toomey Drain	---	---	✓

While geographically large, the topography across the PSA is relatively flat, with general sloping observed towards watercourse systems and surface drainage features. In general, surface flow from constructed drains and watercourses flow north and northwest within two tertiary watersheds (i.e. the Sydenham River- St. Clair River, the Lower Thames River; MNRF Ontario Flow Assessment Tool, 2019). Surface flow within the PSA is generally directed towards the major watercourses and watercourse systems; within the western most sections of the PSA, surface flows are directed towards the Ruscom River and eventually outlet to Lake St. Clair (MECP, 2019). As mentioned above, surface flows collected by the Baptist Creek, Jeannettes Creek and McGregor Creek systems travel north-northwest to outlet to the Lower Thames River (MNRF, 2019). MNRF secondary watershed mapping for the PSA is provided in **Appendix C-6**.

A total of five active Provincial Water Quality Monitoring Network (PWQMN) stations have been identified within or in the vicinity of the PSA. PWQMN stations for Jeannettes Creek (No. 04001311002) and McGregor Creek (No. 04001308102) are located within the PSA, whereas stations for the Thames River (No. 04001300782), Ruscom River (No. 04001000302) and Big

Creek (No. 04001303302) are located approximately 2.0 km north, 3.5 km north, and 2.8 km south, respectively, from the PSA. The five PWQMN stations were mapped in MECP available background source protection data (**Appendix C-7**). The Jeannettes Creek, McGregor Creek, Ruscom River and Big Creek stations were last surveyed in 2019 for Phosphorus, Nitrates, Suspended Solids and Chloride; the Thames River station was last surveyed in 2002 for the same parameters. These parameters were measured in order to document the health of subwatersheds within the regulated areas of ERCA and LTVCA. As identified in the Essex Region Conservation Authority 2015 Watershed Assessment Report, and in the 2018 Lower Thames Valley Watershed Report Card, surface water quality for the subwatersheds identified within, and in the general vicinity of the PSA were considered poor. Furthermore, readings reported by ERCA exceeded the Canadian Environmental Quality Guidelines (ERCA, 2015). According to the ERCA/LTVCA watershed reports, conditions of the subwatershed are likely attributed to past and ongoing agricultural and residential land uses.

4.6.4 Groundwater Resources

Groundwater resources were evaluated within the PSA 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 many water wells are located within the extent of the PSA; mapping identifying the extent of well records for the PSA and general vicinity are illustrated in **Appendix C-8**. As such, select well records were chosen within the PSA in order to identify the approximate ground water and overburden depths for areas associated with the three Route Alternatives. The summary of the water wells chosen for review are listed in **Table 4-4**.

Table 4-4: Water Well Records Selected for Review within the PSA

Well ID	Date Complete	UTM Coordinates (Zone 17 T)		Depth to Water (m)	Overburden
		Eastings	Northings		
2103039	05/30/1959	368940	4674500	30.7	clay
2103012	08/13/1962	372100	4672150	34.7	Clay, stoney gravel and sand
2103036	01/27/1961	373600	4676950	30.5	Clay, gravel
2102993	08/12/1951	380000	4673110	43.5	Clay, sand
7232108	10/21/2014	381972	4681519	n/a	Sand, silt clay
3305828	07/01/1973	389000	4684114	n/a	clay

Well ID	Date Complete	UTM Coordinates (Zone 17 T)		Depth to Water (m)	Overburden
		Eastings	Northings		
3304832	04/14/1969	416500	4691990	30.2	Clay, stoney clay, gravel
3302640	03/15/1962	409500	4693000	22	Clay, gravel
3306048	10/12/1974	411626	4690276	28.9	Sand, clay, gravel

Source: MECP, 2019

Well log records are consistent amongst the water wells: groundwater is typically found approximately between 30 - 45 m below ground surface, below a thick layer of clay soil (located approximately between 0 and 34 m below ground surface). The majority of wells observed within and adjacent to the PSA were all used for local water supply (agricultural/livestock and domestic residential). Groundwater observed within boreholes of several of the water wells were described as clear and containing sulphur. Excerpted summary water well records listed in **Table 4-4** are presented in **Appendix C-8**.

No municipal drinking water supplies were identified within the PSA or within the general vicinity. The aquifers in the PSA and vicinity have been mapped by the MECP as having a high vulnerability index (Vulnerability Score: 6; MECP, 2019), 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). Highly vulnerable aquifers within the PSA are included in **Appendix C-7**.

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 and Golder Associates Limited (Dillon and Golder, 2004). Water table depths and aquifer susceptibility were mapped in Figures 14a, 14b, 15a, 15b, 27a and 27b respectively within the report (Dillon and Golder, 2004; **Appendix C-9**). Results of the study were incorporated into recent Official Plan mapping. As per Schedule C3 of the County of Essex Official Plan, western sections of the PSA associated with municipal drains are designated as zone 3 intake protection zones; however, as per Schedule B1 of the Municipality of Lakeshore Official Plan, the PSA overall is considered within an area of low aquifer intrinsic susceptibility (Figure 27A; Dillon and Golder, 2004). Similarly, the majority of the eastern half of the PSA is identified as a "Low Susceptibility Area" in Schedule D2

(Intrinsic Susceptibility to Ground Water Contamination) of the Municipality of Chatham-Kent Official Plan (2018). Thick layers of clay within the PSA slow the infiltration of groundwater below the water table. Additional “Medium Susceptibility Areas” were noted in Schedule D2 around Tilbury and the limits of Chatham; limited “High Susceptibility Areas” were also noted near Chatham. The mix of High and Medium Susceptibility Areas near Chatham correspond to areas where highly vulnerable aquifers are mapped in **Appendix C-7**.

As described in the report by Dillon and Golder (2004), ground water flow generally follows surface elevation contours towards Lake St. Clair and the Lower Thames River. According to information depicted in Figure 14a and 14 b of the Dillon and Golder report (2004), the ground water elevation within the PSA is between 176-190 metres above sea level (masl). The depth to the water table within the PSA was assessed to be between 2 – 4 m (Figure 15a and 15b, Dillon and Golder, 2004); the water table is described as an unconfined to semi-confined aquifer defined by coarse-grained sand and gravel till deposits (Dillon and Golder, 2004). A deeper contact aquifer overlies bedrock within the PSA and consists of glacially derived sediments (Dillon and Golder, 2004). Below this, a bedrock aquifer was identified within fractured portions of the bedrock formations (confined to limestone and dolomite) present within the PSA (Dillon and Golder, 2004).

4.6.5 Source Water Protection

The PSA spans the Essex Source Protection Area (SPA) and Lower Thames Valley SPA (MECP, 2019; **Appendix C-7**). Lands within the two SPAs are categorized as Event-based Areas (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). As identified in **Appendix C-7**, EBAs are identified in the western sections of the PSA. Lands within the PSA are likely designated as EBAs due to potential contamination from existing land uses (i.e. road ways and active agriculture).

The ERCA and LTVCA SPAs are also designated as category 3 Intake Protection Zones (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 indicate areas where contaminant spills may reach IPZ from farther distances during areas of extreme rainfall or storm events (ERCA, 2019).

As a portion of the PSA (including portions of all three Route Alternatives) contain 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) and Source Protection Plan for the Thames-Sydenham and Region (LTVCA, 2015).

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. Significant woodlands are discussed below in **Section 4.6.7**.

Big O Conservation Area

Located within the PSA and administered by the Lower Thames Valley Conservation Authority (LTVCA), the Big O Conservation Area is approximately 4.5 hectares in size and is located off Main Street in the community of Comber. The Conservation Area was donated to the LTVCA in 1992 by the Big O Drain Tile Company, is known to be frequented by birdwatchers during the spring and fall migrations, and contains a number of natural trails for public enjoyment. The Conservation Area is open for dayuse from 8:00 AM to 10:30 PM year round and free of charge. The existing 230 kV transmission line runs directly adjacent to the Bio O Conservation Area.

C.M. Wilson Conservation Area

Located within the PSA approximately 9 kilometres south of Chatham, the 30 hectare C.M. Wilson Conservation Area was acquired by the LTVCA in 1967. The Conservation Area includes 100 camp sites with a mix of hydro, hydro and water, or unserviced sites, including season-long camping sites for trailers. The Conservation Area includes fully serviced washroom facilities, pavilions, a playground, a man-made lake and several natural trails for public enjoyment. The Conservation Area is also home to the McKinlay Woodlands Memorial Forest where hundreds of trees are planted annually in memory of friends and family through the McKinlay Funeral Homes Ltd. The Conservation Area is open year-round from 8:00 AM to sunset daily.

Important Bird Areas

The PSA overlaps with the Eastern Lake St. Clair Important Bird Area (IBA; Figure set 2 of **Appendix C-1**). IBAs are considered a relatively new concept in Canada and are not legally protected in their own right. In Canada, IBAs complement (and often overlap partially or entirely with) other national, provincial, and local conservation designations such as National and Provincial Parks, Migratory Bird Sanctuaries, National Wildlife Areas, Crown Reserve lands, and Ecological Reserves.

The IBA noted in the vicinity of the Project was identified to promote conservation and stewardship of migratory stopover and staging habitat for waterfowl along the eastern shoreline of Lake St. Clair. Staging and stopover habitat consists of agricultural fields subject to sheet flooding and standing water during the spring and fall migratory seasons. Historically and to the present day, Lake St. Clair and the general vicinity of the IBA have been used as seasonal recreational hunting grounds. Further to this, the Eastern Lake St. Clair Lake IBA is associated with staging habitat provided mainly by the St. Clair National Wildlife Centre and Bradley Farm Recreational Hunting Area (located approximately 5.3 km northeast and 3.8 km east of the Project, respectively). While habitat along the lake shoreline is the primary focus of the IBA, the extent of the IBA continues southeast over active agricultural lands as a buffer to these important shorelines areas. Specifically within the PSA, the furthest extents of the IBA overlap with Route Alternative 2 and Route Alternative 1 (Figure set 2 of **Appendix C-1**).

Lake St. Clair is included in two major migration flyways (the Atlantic and Mississippi) and is identified as a critical feeding, resting and staging area for numerous species, such as: Canvasbacks (*Aythya valisineria*), Redheads (*Aythya americana*), Black-bellied Plovers (*Pluvialis squatarola*) and American Golden Plovers (*Pluvialis dominica*). The identification of the IBA was intended to promote conservation stewardship and to ensure recreational practises and hunting traditions were maintained. While the IBA was identified as a mid-point between two migration flyways; it is noted that migration routes differ among species. Telemetry data collected in support of scientific studies track the trajectory of individual birds in Ontario during spring and fall migration. Through reviewing available data, flight paths for the species listed above do not appear to extend through the eastern extents of the IBA which overlap with the PSA.

In addition, wetland habitat within the IBA may provide suitable habitat for two SAR under the provincial Endangered Species Act (2007) and the federal Species at Risk Act (2002): King Rail (*Rallus elegans*; Endangered) and Least Bittern (*Lxobrychus exilis*; Threatened). Both species prefer large undisturbed marsh habitat (MNR, 2017). Suitable habitat conditions for these species within the IBA were not identified within the PSA as a result of the background review and/or field investigations; however, potential suitable habitat does exist adjacent to the PSA in association with Route Alternative 2A and 2B.

Recommended mitigation measures and/or best practices to mitigate potential impacts to birds is discussed further in **Section 7.7.7** and **7.8.8**.

4.6.7 Natural Heritage Features

As defined in the PPS (2020), natural heritage features and areas include “significant wetlands, significant coastal wetlands, fish habitat, significant woodlands, 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) database.
- 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).
- Municipality of Chatham-Kent Official Plan (2018).
- ERCA.
- LTVCA.
- Aerial imagery.
- Ontario Base Map.

In addition to the background information review, Hydro One’s environmental consultant, conducted natural heritage field surveys within the PSA. As discussed previously in **Section 4**, surveys were completed within PSA lands where access was granted, and/or from existing ROW and property boundaries. Field surveys were carried out between April through July of 2020. A summary of the field survey results is provide below. Refer to Figures set 3 in **Appendix C-1** for survey locations.

Ecological Land Classification & Botanical Assessment

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 (**Appendix C-1**). The PSA is dominated by agricultural lands, residential houses and municipal roads. Natural areas documented within the PSA were identified as isolated features in the landscape.

Vegetation communities identified within the PSA are illustrated in Figure set 4 in **Appendix C-1**. The composition of natural vegetation communities identified within the PSA per Route Alternative are listed below in **Table 4-5**.

Table 4-5: Vegetation Communities Identified within the PSA

ELC Community	Dominant Plant Species / Description	Route Alternative 1	Route Alternative 2	Route Alternative 3
SWT Thicket Swamp	American Elm (<i>Ulmus americana</i>), Eastern Red Cedar (<i>Juniperus virginiana</i>), Green Ash (<i>Fraxinus pennsylvanica</i>), Gray Dogwood (<i>Cornus racemosa</i>), and Common Evening Primrose (<i>Oenothera biennis</i>).	---	✓	---
SWDO2-1 Red-Maple Organic Deciduous Swamp	Red Maple (<i>Acer rubrum</i>), Eastern Cottonwood (<i>Populus deltoides ssp. deltoides</i>), Freeman's Maple (<i>Acer x freemanii</i>), Sugar Maple (<i>Acer saccharum</i>), Gray Dogwood, Sensitive Fern (<i>Onoclea sensibilis</i>), Riverbank Grape (<i>Vitis riparia</i>), Virginia Creeper (<i>Parthenocissus quinquefolia</i>), and Climbing Poison Ivy (<i>Toxicodendron radicans</i>).	✓	---	---
SWD02 Maple Organic Deciduous Swamp	Red Maple, Eastern Cottonwood, Sugar Maple, Gray Dogwood, Poplar Species (<i>Populus sp.</i>), Black Walnut (<i>Juglans nigra</i>), Silver Maple (<i>Acer saccharinum</i>), European Wood-sorrel (<i>Oxalis stricta</i>), English Plantain (<i>Plantago lanceolata</i>), and American Water-horehound (<i>Lycopus americanus</i>)	---	✓	---

Chatham to Lakeshore 230 kV Transmission Line Class Environmental Assessment
 Draft Environmental Study Report
 Environmental Inventory

ELC Community	Dominant Plant Species / Description	Route Alternative 1	Route Alternative 2	Route Alternative 3
SWDM4-2 White Elm Mineral Deciduous Swamp	American Elm, Green Ash, Gray Dogwood, and Eastern Cottonwood.	---	✓	---
FOD Deciduous Forest	Sugar Maple, Black Walnut, Black Locust (<i>Robinia pseudoacacia</i>), Northern Red Oak (<i>Quercus rubra</i>), American Elm, Poplar Species, White Avens (<i>Geum canadense</i>), and Northern Prickly Ash (<i>Zanthoxylum americanum</i>).	✓	✓	✓
FODM9-4 Fresh-Moist Shagbark Hickory Deciduous Forest	Shagbark Hickory (<i>Carya ovata</i>), Northern Prickly Ash, American Elm, and Bur Oak (<i>Quercus macrocarpa</i>).	---	✓	✓
FODM6-4 Fresh-Moist Sugar Maple- White Elm Deciduous Forest	Green Ash, Sugar Maple, Freeman's Maple, American Basswood (<i>Tilia Americana</i>), American Elm, Northern Red Oak, Eastern Cottonwood, and Yellow Birch (<i>Betula alleghaniensis</i>)	---	---	✓
FODM5-7 Dry-Fresh Sugar Maple – Black Cherry Deciduous Forest	Sugar Maple, Wild Black Cherry (<i>Prunus serotina</i>), Yellow Birch, American Elm, Northern Prickly Ash, American Beech (<i>Fagus grandifolia</i>), Spicebush (<i>Lindera benzoin</i>), Jack-in-the-Pulpit (<i>Arisaema triphyllum</i>), Broad-leaved Enchanter's Nightshade (<i>Circaea canadensis</i>), and May Apple (<i>Podophyllum peltatum</i>).	✓	---	---
WOD Deciduous Woodland	Black Walnut, Russian Olive (<i>Elaeagnus angustifolia</i>), Curly Dock (<i>Rumex crispus</i>), Black-eyed Susan (<i>Rudbeckia hirta var. hirta</i>), and Common Milkweed (<i>Asclepias syriaca</i>).	✓	✓	✓

Chatham to Lakeshore 230 kV Transmission Line Class Environmental Assessment
 Draft Environmental Study Report
 Environmental Inventory

ELC Community	Dominant Plant Species / Description	Route Alternative 1	Route Alternative 2	Route Alternative 3
THD Thicket	Manitoba Maple (<i>Acer negundo</i>), Staghorn Sumac (<i>Rhus hirta</i>), and Black Locust.	✓	✓	---
THM Mixed Thicket	Eastern Red Cedar, and Northern Prickly Ash.	---	✓	---
MAS Shallow Marsh	Field Penny-cress (<i>Thlaspi arvense</i>), Dame's Rocket (<i>Hesperis matronalis</i>), European Common Reed (<i>Phragmites australis ssp. australis</i>), Common Blackberry (<i>Rubus allegheniensis</i>), and Virginia Creeper.	---	✓	---
OA or OAO Open Aquatic	European Common Reed.	✓	✓	---
SA Shallow Aquatic	European Common Reed and Broad-leaved Cattail (<i>Typha latifolia</i>).	✓	✓	✓
MEF Forb Meadow	Broadleaf species.	✓	✓	---
MEM Mixed Meadow	Curly Dock, Fuller's Teasel (<i>Dipsacus fullonum</i>), Orange Daylily (<i>Hemerocallis fulva</i>), Red Clover (<i>Trifolium pratense</i>), and Yellow Parsnip (<i>Pastinaca sativa</i>), etc.	✓	✓	✓
MEMM3 Dry-Fresh Mixed Meadow		✓	✓	✓
FODM12 Naturalized Deciduous Plantation	Vegetation appeared to consist of trees planted in maintained rows within private properties.	---	---	✓
TAGM3 Deciduous Plantation		---	✓	---

Chatham to Lakeshore 230 kV Transmission Line Class Environmental Assessment
 Draft Environmental Study Report
 Environmental Inventory

ELC Community	Dominant Plant Species / Description	Route Alternative 1	Route Alternative 2	Route Alternative 3
TAGM5 Hedgerow	Black Locust, Manitoba Maple, Eastern White Cedar (<i>Thuja occidentalis</i>), Colts-foot (<i>Tussilago farfara</i>), Norway Spruce (<i>Picea abies</i>), Common Mullein (<i>Verbascum thapsus</i>), Common Burdock (<i>Arctium minus</i>), and Hemp Dogbane (<i>Apocynum cannabinum</i>)	✓	✓	✓
SAG Shrub Agriculture	Active agricultural fields.	✓	---	---
OAGM1 Annual Row Crop	Active agricultural fields, planted with corn, wheat or bean crops.	✓	✓	✓
CVR Residential	Residential properties. Contains mowed lawns and landscaping trees.	✓	✓	✓
CVR_3 Single Family Residential		✓	✓	✓
CVR_4 Rural Property		✓	✓	✓
IAG Agricultural Infrastructure	Rural farm properties containing agricultural infrastructure (i.e. barns, silos, etc.).	✓	✓	✓
IAGM1 Agricultural Buildings		✓	✓	---
CVC Commercial and Industrial	Land associated with commercial businesses or light industrial work. May contain equipment, paved parking lots, and areas of maintained lawn and landscaping trees.	✓	✓	---
CVC_1 Light Industrial		✓	---	---

ELC Community	Dominant Plant Species / Description	Route Alternative 1	Route Alternative 2	Route Alternative 3
CGL Parkland (mowed grass)	Great Ragweed (<i>Ambrosia trifida</i>), Common Yarrow (<i>Achillea millefolium</i>), Broad-leaved Enchanter's Nightshade, Field Sow-thistle (<i>Sonchus arvensis ssp. arvensis</i>), White Sweet-clover (<i>Melilotus albus</i>), and Canada Thistle (<i>Cirsium arvense</i>).	✓	✓	✓
CGL_4 Recreational	Mowed grass areas.	✓	✓	✓
CVI_1 Transportation	Municipal Roads, Highways, and railways observed within Project Study Area.	✓	✓	✓
CVI_4 Power Generation	Hydro One Infrastructure.	✓	✓	✓

Wetlands

Wetland vegetation communities observed within the PSA consisted of deciduous swamp, thicket swamp, and marsh. In total, five wetland vegetation communities, were identified within the PSA (Table 4-5). Four unevaluated wetlands (Shallow Marsh, Thicket Swamp, White Elm Mineral Deciduous Swamp) were identified in association with Route Alternative 2, while a single swamp community (Red-Maple Organic Deciduous Swamp) was identified in association with Route Alternative 1. No wetland communities were identified in association with Route Alternative 3.

While no Provincially Significant Wetlands (PSW) were identified within the PSA in current land use planning documents and LIO data, the five wetland units observed during ELC investigations may meet criteria for significance under the Natural Heritage Reference Manual (NHRM; 2010) and Ontario Wetland Evaluation system (OWES; MNRF, 2002) based on their potential to support SAR habitat (e.g. SAR bats, Eastern Foxsnake).

As described in Section 6.3.1 of the NHRM (2010) and under Section 6.3.3 of the OWES (MNRF, 2002), the wetland units have the potential to meet criteria for significance as they have the potential to provide biological, hydrological, and special feature components.

Aquatic and Fish Habitat

The most common substrate observed in association with surface aquatic features across all three Route Alternatives consisted of clay with gravel and detritus; minor sand, boulder and cobble substrate were also observed. The dominant instream habitat consisted of emergent aquatic vegetation with woody and organic debris.

While many of the drains associated with the PSA were not rated (classification of NR), the majority of those assessed by DFO (ERCA, 2019; Kavanagh and Hoggarth, 2017; MECP, 2019) were reported to have good to fair systematic agricultural tile drainage (classifications of C, E and F). Mapping acquired from the MECP illustrating the drain classifications provided by DFO are included in **Appendix C-10**. Drainage classifications provided by DFO were confirmed in the field for water crossings during aquatic assessments; results of these assessments were summarised in Appendix D of the Natural Environment Existing Conditions Technical Report (**Appendix C-1**).

The majority of watercourses within the PSA are characterized as a combination of open natural watercourses, roadside and agricultural drains with permanent flow regimes, and provide direct fish habitat. Conversely, seasonal fish habitat was identified within surveyed sections of the Tremblay Creek Drain (Tilbury Creek) of Route Alternative 1, the O'Rourke Drain of Route Alternative 2, and an Unnamed Drain, Thibert Drain, Robb-Dales Drain (Big Creek), and Toomey Drain of Route Alternative 3.

Through background review and field investigations conducted along Route Alternative 1, the Locke Drain, Waddick Drain, Kersey Drain and Deary Drain crossings were confirmed as providing direct fish habitat, including a top predator (Northern Pike or Longnose Gar) observed in Locke Drain. The remaining watercourse crossings assessed (Duke Drain (Jeannettes Creek), O'Rourke Drain, Government Drain, Baptiste Creek Drain, Powell Drain, Tremblay Creek Drain and Big Creek Drain) are anticipated to provide direct fish habitat based on site specific conditions and/or the DFO drain classifications (classifications C and E; Permanent flow regimes with or without sensitive fish species present, respectively); though fish were not observed during the field investigations. The Tremblay Creek Drain (Tilbury Creek) crossing of Route Alternative 1 is anticipated to provide seasonal fish habitat based on the DFO drainage classification and conditions observed (classification F; Intermittent flow regime with no data on fish community).

With respect to Route Alternative 2, the Locke Drain and Ferguson Drain (Jeannettes Creek) crossings were confirmed as providing direct fish habitat based on desktop and field investigation results. Although fish were not observed due to unsafe wading conditions and/or turbid water

conditions, the McGregor Creek Drain, Chinnick Drain (Indian Creek), Bullis Creek Drain (Bullis Creek), Doyle Drain, Ferguson Drain (Jeanettes Creek), Baptiste Creek Drain (Baptiste Creek), Tremblay Creek Drain (Tilbury Creek), Big Creek Drain (Big Creek), Little Creek, Malden Road Drain Outlet and Finn & Cooper Drain are anticipated to provide direct fish habitat based on site specific conditions and/or the DFO drain classifications (classifications C and E; Permanent flow regimes with or without sensitive fish species present, respectively). The unnamed tributary to Doyle Drain was dry at the time of field investigations and is anticipated to provide seasonal fish habitat at best. Based on field observations, the 6-7 Sideroad Drain is assumed to be piped.

Along Route Alternative 3, the Duke Drain (Jeannettes Creek) and Carter Drain crossings were confirmed as providing direct fish habitat based on desktop and field investigation results. Although fish were not observed due to unsafe wading conditions and/or turbid water conditions, the Kersey Drain, Deary Drain, East Branch of Big Creek Drain and Big Creek Drain – West Branch are anticipated to provide direct fish habitat based on site specific conditions and/or the DFO drain classifications (classifications C and E; Permanent flow regimes with or without sensitive fish species present, respectively). O'Rourke Drain, an unnamed drain, Thibert Drain, Robb-Dales Drain (Big Creek) and Toomey Drain are anticipated to provide seasonal fish habitat based on site specific conditions and/or the DFO drain classifications (classification F; Intermittent flow regime with no data on fish community).

Woodlands

Under the PPS, significant woodlands are protected in Ecoregions 7E. As discussed in Section 4.2 of the Natural Environment Existing Conditions Technical Report (**Appendix C-1**), sixty-nine woodlands were identified within the PSA based on desktop review; this count included features considered linear treed fencerows. Of the sixty-nine woodlands, fourteen were identified as significant to the Municipality of Lakeshore ($n=9$ woodlands; 2020) and Municipality of Chatham-Kent five; ($n=5$ woodlands; 2014) Official Plans, respectively. No woodlands within the PSA were identified as significant by the County of Essex (Schedule B1; 2014). Of the aforementioned 14 woodlands, six are associated with Route Alternative 1, while four are associated with each Route Alternatives 2 and 3, respectively. The remaining woodlands are located along the periphery of the PSA.

Following the 2020 field investigations, additional forest communities were identified during ELC surveys. As a result of the 2020 field investigations, four additional forest communities met criteria for woodland significance; three of the four woodlands were associated with Route Alternative 2

(2 significant woodlands) and Route Alternative 3 (1 significant woodland). These three forest communities met criteria for significance as they consisted of natural vegetation communities greater than 2 ha in size (Table 3, County of Essex Official Plan, 2014). The fourth additional woodland is associated with Route Alternative 1, and is considered significant as it met criteria (≥ 2 ha in size) of Section 4.3.2 of the Chatham-Kent Official Plan (2018).

Based on the results of the initial background review and 2020 field investigations, a total of seven significant woodlands are associated with Route Alternative 1, six significant woodlands are associated with Route Alternative 2, and five significant woodlands are associated with Route Alternative 3. Significant woodlands within the PSA are mapped within Figure 5 of the Natural Environment Existing Conditions Technical Report (**Appendix C-1**). Overall, the woodland communities identified were often isolated in the landscape and were limited in connectivity to adjacent natural heritage features. Each of the significant woodland communities are considered common or secure in Ontario.

Valleylands

Under the PPS, significant valleylands are protected in Ecoregions 7E. No valleylands were identified within the PSA as part of the background review. In addition, no topographic features or valleylands meeting criteria of Section 8.0 of the 2010 NHRM were observed during the 2020 field investigations.

Areas of Natural and Scientific Interest

Areas of Natural and Scientific Interest (ANSI) are contiguous lands and waters officially designated by the province that have geological or ecological features of significant representative provincially, regionally, or locally. These features are important and valued for natural heritage protection, appreciation, scientific study or education. No Life Science or Earth Science ANSIs were identified within the PSA based on secondary source reviews.

Species at Risk

In June 2008, the Endangered Species Act, 2007 (ESA) came into effect in Ontario; the ESA applies to lands under provincial jurisdiction. 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.

Similarly, the Species at Risk Act (SARA) was adopted in 2002 by the Government of Canada to protect SAR and their habitat. The SARA applies to lands under federal jurisdiction. Section 27 under SARA provides a list of SAR that are protected under the Act, while Sections 32 and 56 outline general prohibitions and protection of critical habitat.

A screening to identify potential SAR and SAR habitat within the PSA was completed in support of the Natural Environment Field Program TOR. In total, 16 SAR were identified as having the potential to occur within the general vicinity of the PSA (Table 4-6).

Table 4-6: SAR with the Potential to Occur within the General Vicinity of the PSA

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Information Source ⁴
Botanicals					
<i>Cornus florida</i>	Eastern Flowering Dogwood	END	END	S2?	NHIC
<i>Juglans cinerea</i>	Butternut	END	END	S3?	NHIC
Birds					
<i>Hirundo rustica</i>	Barn Swallow	THR	THR	S4B	OBBA
<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	S4B	OBBA, NHIC
<i>Sturnella magna</i>	Eastern Meadowlark	THR	THR	S4B	OBBA, NHIC
Mammals					
<i>Myotis leibii</i>	Eastern Small-footed Myotis	---	END	S2S3	MWH
<i>Myotis lucifugus</i>	Little Brown Myotis	END	END	S4	MWH
<i>Myotis septentrionalis</i>	Northern Myotis	END	END	S3	MWH
<i>Pipistrellus subflavus</i>	Tri-colored Bat	END	END	S3?	MWH
Herpetofauna					
<i>Pantherophis gloydi pop. 2</i>	Eastern Foxsnake (Carolinian population)	END	END	S2	OHA

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Information Source ⁴
Fish and Molluscs					
<i>Erimyzon sucetta</i>	Lake Chubsucker	END	THR	S2	DFO
<i>Lampsilis fasciola</i>	Wavy-rayed Lampmussel	SC	THR	S1	NHIC
<i>Obovaria subrotunda</i>	Round Hickorynut	END	END	S1	DFO
<i>Opsopoeodus emiliae</i>	Pugnose Minnow	SC	THR	S2	DFO
<i>Pleurobema sintoxia</i>	Round Pigtoe	END	END	S1	DFO
<i>Toxolasma parvus</i>	Lilliput	---	THR	S1	DFO

¹Federal Species at Risk Act, 2002 (SARA), where SC = special concern, THR = threatened and END = endangered;

²Provincial Endangered Species Act, 2007 (ESA), where THR = threatened and END = endangered; ³Provincial Conservation Ranking (SRank) where S5 = secure, S4 = apparently secure, S3 = vulnerable, S2 = imperiled, S1 = critically imperiled, SX = extirpated, SH = possibly extirpated, SNA = A conservation status rank is not applicable because the species is not a suitable target for conservation activities, SE = exotic, SU = unranked, B = breeding, N = non-breeding, and ? = some uncertainty with the classification due to insufficient information.

⁴NHIC = Natural Heritage Information Centre (MNRF, 2018), OBBA – Ontario Breeding Bird Atlas (Bird Studies Canada, 2017), MWH = Mammals of the Western Hemisphere (Patterson et al, 2007), OHA – Ontario Reptile and Amphibian Atlas (Ontario Nature, 2013), DFO – Fisheries and Oceans Canada SAR Mapping (DFO, 2019).

Results of the screening and field investigations were summarized in the Natural Environment Existing Conditions Technical Report (**Appendix C-1**). Throughout the 2020 field season, SAR (Butternut, Barn Swallow and Bobolink) were observed within the PSA. While Eastern Flowering Dogwood (*Cornus florida*) and Eastern Meadowlark (*Sturnella magna*) were identified as having the potential to occur within the PSA, neither species was observed during the botanical surveys or breeding bird surveys, respectively.

The following aquatic SAR were identified as having the potential to occur within the PSA based on background review:

- Lake Chubsucker, *Erimyzon sucetta*;
- Wavy-rayed Lampmussel, *Lampsilis fasciola*;
- Round Hickorynut, *Obovaria subrotunda*;
- Pugnose Minnow, *Opsopoeodus emiliae*;
- Round Pigtoe, *Pleurobema sintoxia*; and,
- Lilliput, *Toxolasma parvum*

Following the 2020 field assessments, suitable habitat was identified for Lake Chubsucker and Lilliput within the PSA in association with Route Alternative 2. If effects to aquatic habitat capable of supporting Lake Chubsucker and Lilliput are anticipated, consultation with DFO will occur during detailed design to confirm next steps.

Based on the background review and habitat screening, habitat for Wavy-rayed Lampmussel, Round Hickorynut and Pugnose Minnow, was not identified within 100 m of any of the aquatic survey stations within the PSA. Furthermore, while Round Pigtoe was identified as having the potential to occur within the McGregor Creek Drain based on background mapping (DFO, 2019), given its current Canadian range (Lake St. Clair delta, Sydenham River, Middle Thames and Grand River) McGregor Creek Drain is beyond the range of this species (DFO, 2019).

Although SAR bats, Eastern Foxsnake, Lake Chubsucker and Lilliput were not observed, natural features within the PSA were assessed as having the potential to support the species habitat based on the 2020 field survey results. Descriptions of suitable habitat for each species are provided in the following subsections.

Butternut

Nine Butternut trees were observed within significant woodlands (FODM5-7) and a hedgerow (TAGM5) located near survey station 2 in association with Route Alternative 1 (Figure 5B-15, **Appendix C-1**). While formal Butternut Health Assessments (BHA) were not conducted, there is evidence that the observed Butternut trees are infected with Butternut Canker disease. Cankers and canopy loss were observed for several of the Butternut. A 25 m buffer is identified by the Butternut Recovery Strategy (Poisson and Uric, 2013) to protect the canopy and root zone of 'retainable' Butternut. Based on the aforementioned, Route Alternative 1 would require the removal of three Butternut trees.

Should Butternut and Butternut habitat have the potential to be impacted as a result of the Project, formal BHAs are required. It is recommended that genetic testing be completed concurrent with the BHA to confirm genetic purity. Removal of Non-retainable (Category 1) and Retainable (Category 2) trees may occur via Project registration under Section 23 of *O. Reg. 242/08*, so long as the conditions in the Regulation are followed.

Barn Swallow

As stated previously, Barn Swallow observations were documented during the 2020 breeding bird surveys. Individuals were observed foraging over agricultural lands in association with each of the Route Alternatives. Although suitable nesting habitat has the potential to occur within the PSA in

association with residential homes, agricultural buildings and culverts, the presence of active Barn Swallow nests was not observed during the 2020 field investigations. Mitigation for potential impacts to this species as a result of the Project are further discussed in **Section 7.7.8**.

Bobolink

Bobolink observations were documented during the 2020 breeding bird surveys; three observations of Bobolink were reported in association with annual row crop (wheat fields) adjacent to survey stations 2 and 12 of Route Alternative 1, and survey station 10 of Route Alternative 3. Annual row crops are not considered suitable breeding habitat for Bobolink. Furthermore, large hayfields (5 ha or larger; MNRF, 2019) conducive to Bobolink (and Eastern Meadowlark) nesting were not observed within the PSA during ELC surveys.

Potential Habitat for SAR Bats

As a result of the ELC mapping, the significant woodlands and smaller forest and swamp communities identified within the PSA were assessed as potential SAR bat Habitat. Given that habitat is limited across the landscape, and although confirmation of SAR bat habitat is traditionally based on acoustic survey results, the forest communities identified as potential SAR bat habitat is consistent with previous MNRF/MECP guidance (Figure set 5 in **Appendix C-1**).

Furthermore, where access was permitted, snag/cavity trees were identified concurrently during ELC surveys and botanical assessments. A total of 15 potential suitable snag trees were identified; 11 snag trees were identified along Route Alternative 1 while two snag trees were identified along each Route Alternative 2 and 3, respectively. Refer to Figure set 5 in **Appendix C-1** for the locations of snag trees identified within the PSA. Although snags were observed, the density of snags did not meet criteria outlined in the 2017 Survey Protocol for Species at Risk Bats within Treed Habitats for high quality SAR bat habitat (MNRF, 2017).

Mitigation for potential impacts to SAR bats are provided in **Section 7.7.8.4**. In brief, direct impacts to SAR bats from tree clearing can be avoided if trees representing potential roosts are cleared during the non-active bat season (October – March). However, should it be determined that the Project has the potential to impact forest communities within the PSA, further studies may be required to confirm the presence of SAR bat habitat, and whether permitting under the ESA is required.

Eastern Foxsnake

According to the Recovery Strategy for the Eastern Foxsnake (*Pantherophis gloydi*) – Carolinian and Georgian Bay populations in Ontario (MNRF, 2010), Eastern Foxsnake prefer a variety of habitats, with a strong preference towards hedgerows, marshes, naturalized pasture, and open

woodland areas. Eastern Foxsnake Habitat is regulated per Section 24.3 of *Ontario Regulation 242/08*. Nest sites include rotting cavities of downed trees, decaying vegetation piles, rodent burrows, and hay piles. From late-October until April, the species hibernates in burrows, limestone bedrock fissures, canals, and old building foundations. Although specific surveys to identify hibernacula habitat for Eastern Foxsnake were not included as part of the 2020 field surveys, hibernacula habitat has the potential to occur within the PSA. Burrows incidentally observed at survey station 1 of Route Alternative 3 have the potential to support hibernacula habitat for the species (**Appendix C-1** – Photo 74 of Appendix E). No other features identified as potential hibernacula habitat were identified within the PSA during the 2020 field surveys.

Based on the species habitat description, hedgerows, marsh, meadow, forests and naturalized riparian corridors with a mix of canopy and meadow coverage were identified as potential Eastern Foxsnake habitat within the PSA. Refer to Figure set 5B of **Appendix C-1** for the locations of potential Eastern Foxsnake habitat within the PSA. Based on this rationale, potential habitat for the species was observed throughout the PSA in association with all three Route Alternatives.

Mitigation for potential impacts to Eastern Foxsnake is provided in **Section 7.7.8.4**. Given that Eastern Foxsnake have Regulated habitat protection under the ESA, in the event the Project has the potential to impact Eastern Foxsnake and/or its Habitat, the MECP should be consulted to determine whether a permit under the ESA is required in support of the Project.

Lake Chubsucker

As mentioned previously, Route Alternative 2 has the potential to provide suitable habitat for Lake Chubsucker in association with the Bullis Creek Drain (Bullis Creek). Refer to Figure set 5 of **Appendix C-1** for the location of Lake Chubsucker habitat identified within the PSA.

The preferred habitat of Lake Chubsucker consists of clear, still, well-vegetated waters, including backwaters, bayous, drainage ditches, floodplain lakes, marshes, oxbows, sloughs and wetlands, with substrates of gravel, sand and silt mixed with organic debris (COSEWIC, 2008). In Ontario, Lake Chubsucker has been captured primarily in heavily vegetated, stagnant bays, channels, ponds, and wetlands with low turbidity and substrates of clay, silt, sand and organic debris (COSEWIC, 2008). Due to unsafe conditions for wading, a shoreline aquatic assessment was completed and identified abundant aquatic vegetation and clay substrate at survey station 3 along Route Alternative 2 which is anticipated to provide potential suitable habitat for the species. No critical habitat has been identified by DFO for Lake Chubsucker at or adjacent to survey station 3 along Route Alternative 2.

Should potential impacts to Lake Chubsucker habitat be anticipated as a result of the Project, additional consultation with DFO and the MECP is recommended during detailed design to confirm whether permitting under the ESA and/or the *Fisheries Act* may be required. Mitigation for potential impacts to this species are further discussed in **Section 7.7.8.4**.

Lilliput

As mentioned previously, Route Alternative 2 has the potential to provide suitable habitat for Lilliput in association Baptiste Creek Drain (Baptiste Creek). Refer to Figure set 5 **Appendix C-1** for the location of Lilliput habitat identified within the PSA.

The preferred habitat of Lilliput consists of small to large rivers, wetlands, shallows of lakes, ponds and reservoirs with soft substrates such as mud, sand and silt (COSEWIC, 2013). Due to unsafe conditions for wading, shoreline aquatic assessments were completed and identified a wide, deep watercourse with turbid conditions at survey stations 6 and 15 along Route Alternative 2 which are anticipated to provide potential suitable habitat for the species. No critical habitat has been identified by DFO for Lilliput at or adjacent to survey stations 6 or 15 along Route Alternative 2.

Should potential impacts to Lilliput habitat be anticipated as a result of the Project, additional consultation with DFO and the MECP is recommended during detailed design to confirm whether permitting under the ESA and/or the *Fisheries Act* may be required. Mitigation for potential impacts to this species are further discussed in **Section 7.7.8.4**.

Wildlife and Significant Habitat

Species of Conservation Concern (SCC) are defined as:

- Species listed as Special Concern, Threatened, or Endangered under SARA.
- Species that are provincially rare/tracked (i.e., have a Sub-national (provincial) Rank of S1 - Critically Imperiled, S2 – Imperiled, or S3 – Vulnerable).
- Species that are designated as Special Concern under the ESA.

Based on desktop background review previously summarized in the Natural Environment Field Program TOR, the following 11 SCC were identified as having the potential to occur within the general vicinity of the PSA Area (**Table 4-7**).

Table 4-7: SCC with the Potential to Occur within the General Vicinity of the PSA

Scientific Name	Common Name	SARA ¹	ESA ²	SRank ³	Information Source ⁴
Botanicals					
<i>Quercus shumardii</i>	Shumard Oak	---	SC	S3	NHIC
<i>Rosa setigera</i>	Climbing Prairie Rose	SC	SC	S3	NHIC
<i>Vernonia gigantea</i>	Giant Ironweed	---	---	S1?	NHIC
Birds					
<i>Contopus virens</i>	Eastern Wood-pewee	SC	SC	S4B	OBBA
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	THR	SC	S4B	OBBA
Herpetofauna					
<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	S3	NHIC, OHA
Fish and Molluscs					
<i>Ichthyomyzon unicuspis</i> pop. 1	Silver Lamprey (Great Lakes - Upper St. Lawrence populations)	---	SC	S3	DFO
<i>Minytrema melanops</i>	Spotted Sucker	SC	SC	S2	DFO
<i>Quadrula quadrula</i>	Mapleleaf Mussel (Great Lakes - Upper St. Lawrence population)	SC	SC	S2	DFO
<i>Villosa iris</i>	Rainbow	SC	SC	S2S3	DFO
Lepidoptera					
<i>Danaus plexippus</i>	Monarch	SC	SC	S4	NHIC

¹ Federal Species at Risk Act, 2002 (SARA), where SC = special concern, THR = threatened; ² Provincial Endangered Species Act, 2007 (ESA), where SC = special concern

³ Provincial Conservation Ranking (SRank) where S5 = secure, S4 = apparently secure, S3 = vulnerable, S2 = imperilled, S1 = critically imperilled, SX = extirpated, SH = possibly extirpated, SNA = A conservation status rank is not applicable because the species is not a suitable target for conservation activities, SE = exotic, SU = unranked, B = breeding, N = non-breeding, and ? = some uncertainty with the classification due to insufficient information.

⁴ NHIC = Natural Heritage Information Centre (MNRF, 2018), OBBA – Ontario Breeding Bird Atlas (Bird Studies Canada, 2017), OHA – Ontario Reptile and Amphibian Atlas (Ontario Nature, 2013), DFO – Fisheries and Oceans Canada SAR Mapping (DFO, 2019).

As the Project is located in Ecoregion 7E (the Carolinian Zone), 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, 2015a). 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. Based on the list of SCC identified in **Table 4-7**, the following

Candidate SWH were assessed as having the potential to occur within the PSA based on the background review:

Seasonal Concentration Areas of Animals

- Bat Maternity Colonies.
- Turtle Wintering Areas.

Specialized Habitat for Wildlife

- Bald Eagle and Osprey nesting, Foraging and Perching Habitat.
- Amphibian Breeding Habitat (woodland).

Habitat for Species of Conservation Concern

- Special Concern and Rare Wildlife Species:
- Shumard Oak (*Quercus shumardii*).
- Climbing Prairie Rose (*Rosa setigera*).
- Giant Ironweed (*Vernonia gigantea*).
- Eastern Wood-pewee (*Contopus virens*).
- Red-Headed Woodpecker (*Melanerpes erythrocephalus*).
- Mapleleaf (*Quadrula quadrula*).
- Rainbow (*Villosa iris*).
- Silver Lamprey (*Ichthyomyzon unicuspis* population).
- Spotted Sucker (*Minytrema melanops*).

SWH identified within the PSA was confirmed, identified as candidate, or ruled out using criteria outlined in the Ontario Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015a), habitat mapping reviewed from aerial imagery, and information collected during the 2020 field surveys. Incidental observations of wildlife (including dens, tracks and scats, and other wildlife evidence) were recorded during the 2020 field surveys. Observations of SCC made during the 2020 field surveys are illustrated in Figure set 4 in **Appendix C-1**. Descriptions of candidate and confirmed SWH within the PSA are provided below, and illustrated in Figure set 5 in **Appendix C-1**.

Seasonal Concentrations of Animals

While surveys for snag and cavity trees were not formally conducted throughout the PSA, forest and swamp communities identified within the PSA (i.e. FOD, FODM9-4, FODM6-4, FODM5-7, SWDO2-1, SWDO2, and SWDM4-2; **Table 4-5**) have the potential to provide Candidate SWH for Bat Maternity Colonies.

Similarly, swamp (SWD, SWDO2-1, SWD02, and SWDM4-2), marsh (MAS) and open aquatic (OA) communities were assessed as Candidate SWH for Turtle Wintering Areas. One area of deciduous thicket swamp (SWT) was ruled out as potential overwintering habitat for reptiles as the vegetation community was observed to be dry during summer ELC surveys. Shallow Aquatic (SA) communities identified within the PSA appeared to consist of man-made ponds; as man-made features do not meet criteria for significance under the Ecoregion criteria, these areas were not included in the classification for SWH.

Specialized Habitat for Wildlife

While amphibians were observed at each of the survey stations during the 2020 amphibian breeding surveys, low call codes documented for individual species did not meet criteria for SWH for amphibian breeding (wetland or woodland) within the PSA.

While suitable combinations of riparian, deciduous forest and aquatic habitat exist within the PSA, no evidence of active or old Bald Eagle or Osprey nests were documented during the 2020 field surveys. Furthermore, no breeding evidence or observations of Bald Eagle or Osprey were noted incidentally or during the breeding bird surveys. As a result, SWH for Bald Eagle and Osprey Nesting, foraging and Perching Habitat has been ruled out for the PSA.

Habitat for Species of Conservation Concern

Eastern Wood-pewee (Special Concern) was observed at several stations throughout the PSA during the 2020 breeding bird surveys. Based on the results of the 2020 breeding bird surveys, each of the habitats associated with Eastern Wood-pewee observations are considered Confirmed SWH for Special Concern and Rare Wildlife Species: Eastern Wood-pewee.

Additional Confirmed SWH for Special Concern and Rare Wildlife Species exists within the PSA in association with two botanical species (i.e. Climbing Prairie Rose and Honey Locust). Both species were identified during the 2020 ELC and botanical assessment. Multiple stems of Climbing Prairie Rose (Special Concern) were observed within swamp (SWDO2-1 – 40 stems) and deciduous forest (FOD – 12 stems) communities located at survey station 14 of Route Alternative 1, and survey station 19 of Route Alternative 2, respectively. In accordance with Ecoregion 7E Criterion Schedules, these aforementioned ELC communities are therefore considered Confirmed SWH for Species Concern and Rare Wildlife Species: Climbing Prairie Rose. Similarly, Confirmed SWH for Species Concern and Rare Wildlife Species for Honey-locust exists within hedgerows (TAGM5) near survey station 10 of Route Alternative 1 (13 stems), and survey station 14 of Route Alternative 3.

Although Shumard Oak and Giant Ironweed (both SCC) had the potential to occur within the PSA based on background review, neither species was observed during ELC and/or botanical assessments or incidentally in 2020. As such, no SWH for either species exists within the PSA.

Candidate SWH for Special Concern or Rare Wildlife Species was identified for the following aquatic species within the PSA:

- Mapleleaf (*Quadrula quadrula*).
- Rainbow (*Villosa iris*).
- Silver Lamprey (*Ichthyomyzon unicuspis* population).
- Spotted Sucker (*Minytrema melanops*).

As mentioned previously, each of the aforementioned species were identified as having the potential to occur within watercourses during the background review. Although targeted fish and mussel surveys were not completed, based on suitable habitat observed during the 2020 aquatic surveys, candidate SWH for Special Concern and Rare Wildlife Species was identified for:

- Mapleleaf - in McGregor Creek associated with Route Alternatives 1 and 2, and Baptiste Creek Drain (Baptiste Creek) in association with Route Alternatives 1 and 2.
- Spotted Sucker - in Baptiste Creek Drain (Baptiste Creek), Tremblay Creek Drain (Tilbury Creek), and Little Creek in association with Route Alternative 2.

Based on the background review and habitat screening, Rainbow and Silver Lamprey were not identified as having potential habitat at survey stations within the PSA. Therefore, the PSA was assessed as not containing candidate SWH for Special Concern and Rare Wildlife Species for Rainbow and Silver Lamprey.

Non-Native and Invasive Species

During ELC and botanical surveys, vegetation communities throughout the PSA exhibited signs of disturbance by past and ongoing land use, and as a result contained non-native species which are not associated with conservation rankings. Of the 111 botanical species observed during the 2020 botanical assessment, forty-seven were listed as introduced species and were not considered suitable targets for conservation activities by the province (SRank of SE, SU or SNA). A complete list of species observed is provided in the Natural Environment Existing Conditions Technical Report in **Appendix C-1**.

4.7 Recreational Resources

There are several outdoor recreation areas serving the region, including Lake Erie, Lake St. Clair and Rondeau Provincial Park. Within the LSA there are three conservation areas including Rowsom's Tilbury West Conservation Area, C.M. Wilson and Big O. Conservation Areas, all operated by the LTVCA (Section 4.6.6.).

Trail networks are also present within the region including the Great Lakes Waterfront Trail which follows the Thames River from Jeannettes Creek to Pain Court, outside of the LSA. The CASO Trail extends through the LSA following the former Canadian Southern Railway line which is south of Highway 401, and forms part of the TransCanada Trail through the region (Schedule B1; Appendix C-3).

4.8 Visual and Aesthetic Resources

This factor considers the change to physical appearances across the landscape and their susceptibility to change as a result of the Project.

The Project is located within predominantly flat agricultural lands, providing views that are open and expansive. Natural elements include isolated woodlots, tree canopies of rural communities, as well as forest cover and other successional riparian vegetation adjacent to waterways. Existing vertical elements include traffic and light standards, existing transmission lines and wind turbines. The majority of sensitive receptors are residences with wide views into the horizon. Many of the properties have existing tree lined wind breaks and hedgerows that offer localized privacy from adjacent visual elements.

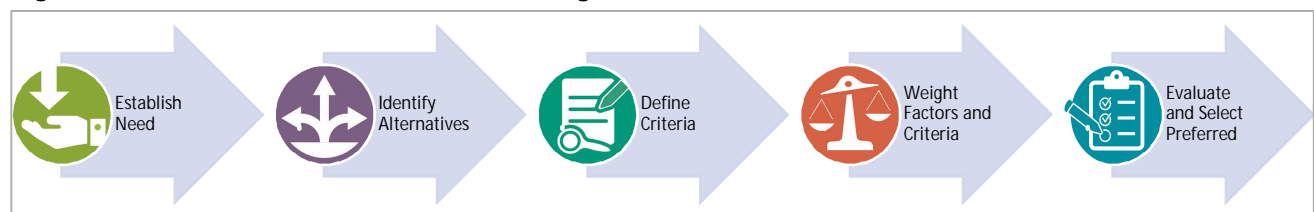
5 Identification and Evaluation of Alternative Routes

This section describes the identification and evaluation of the alternative methods for carrying out the proposed Project. “Alternative methods” refer to different means of carrying out the same task to achieve the purpose of the undertaking, which in this case; involves the construction of a double-circuit 230 kV transmission line to transmit electricity between two transmission stations. Following the identification of “alternative methods” for the undertaking, evaluation criteria are established, through which, a comparative evaluation results in the selection of a preferred alternative.

Hydro One’s Class EA for Minor Transmission Facilities (Class EA) process (**Section 1.4**) requires the identification of feasible alternatives that can be compared and evaluated on the basis of natural environment, socio-economic environment, and technical and cost factors following the recommendations of the Provincial Policy Statement (PPS) to determine a preferred alternative. Potential quantitative and qualitative effects associated with each of the alternatives identified are considered. For this undertaking, a weighted Multi-Criteria Decision Making Analysis (MCDA) was used.

A weighted MCDA is a common decision-making approach involving a five-step process outlined below (**Figure 5-1**).

Figure 5-1: Multi-Criteria Decision Making Process



5.1 Step 1: Establish Need



As outlined in Section 1.1, IESO identified the need for a new double-circuit 230 kV transmission line in Southwestern Ontario. Hydro One received direction from the IESO to initiate work on development activities, including seeking relevant approvals to construct the line from the Chatham SS in the Municipality of Chatham-Kent, to the future Lakeshore TS in the Town of Lakeshore (**Appendix A**).



5.2 Step 2: Identify Alternatives

The Class EA process requires identification of technically feasible alternatives to address the need of the Project.

Following direction from the IESO in June 2019, Hydro One conducted an internal preliminary assessment to identify feasible routes (the “Route Alternatives”) for the new 230 kV transmission line. The project team researched and mapped clear technical, socio-economic, and natural environment constraints and identified potential opportunities to parallel linear infrastructure, such as existing transmission lines and highways, where possible.

Technical and environmental constraints were identified from desktop data and orthophotos, and were categorized as High, Medium or Low constraints, and mapped. High constraints included features that would likely preclude technical or economic feasibility, such as large waterbodies, dense residential areas, and close proximity to known wind turbines, etc.

Medium and Low constraints included features which may not individually render an alternative to be not viable, however they represented an important, early consideration, which would be best to avoid, to the extent practical. Examples of Medium and Low constraints considered include wetlands, Environmentally Significant Areas (ESAs), Areas of Natural and Scientific Interest (ANSIs), standalone structures/buildings, and woodlots.

Using this constraint mapping, the Hydro One project team applied technical transmission line engineering principles (best practices and industry drivers such as NERC standards) to identify viable transmission alternatives which would meet the need for the Project. In addition to the above-mentioned constraints, considerations were given to minimizing unnecessary costs and total project footprint (e.g., potential routes which had no apparent advantages but were longer or more complex than other similar routes, were discarded). Consideration was also given to opportunities to parallel existing linear infrastructure, particularly existing transmission corridors.

Based on the preliminary assessment, three feasible Route Alternatives and associated variations were identified (**Figure 5-2**):

- **Route Alternative 1**, shown in yellow in **Figure 5-2**, largely parallels an existing 230 kV transmission line (similar to what will comprise the new line to be constructed). Route Alternative 1 contains a total of four variations (1A, 1B, 1C and 1D). The variations include

different combinations of changes to the route, one around the south end of Tilbury and another closer to the City of Chatham, which parallels the Highway 401 corridor.

- **Route Alternative 2**, shown in red in **Figure 5-2**, largely parallel two existing 115 kV transmission lines (including a portion of one of the lines which is an idle 115 kV transmission line between Tilbury and Chatham). Route Alternative 2 and its variations also parallel portions of the Highway 401 corridor. There are a total of three variations (2A, 2B and 2C) associated with Route Alternative 2.
- **Route Alternative 3**, shown in purple in **Figure 5-2**, is a greenfield option. While it does not parallel any existing transmission lines or other linear infrastructure for any significant distance, this was determined to be a feasible Route Alternative for the new 230 kV transmission line. As a result, it was prudent to include for consideration during the Class EA. There are no variations associated with Route Alternative 3.

In October 2020, prior to VIS #2, Hydro One made four refinements to the Route Alternatives and identified a need to expand the Chatham SS east based on advancement of preliminary engineering work related to the station and technical and environmental information acquired through the Class EA process and consultation with stakeholders. Specifically, the advancement of technical studies and input received from Anishnawbek and Haudenosaunee communities and stakeholders identified technical and land use constraints/opportunities which resulted in refinements to the routes. The four refinements are detailed below and shown on **Figure 5-2**.

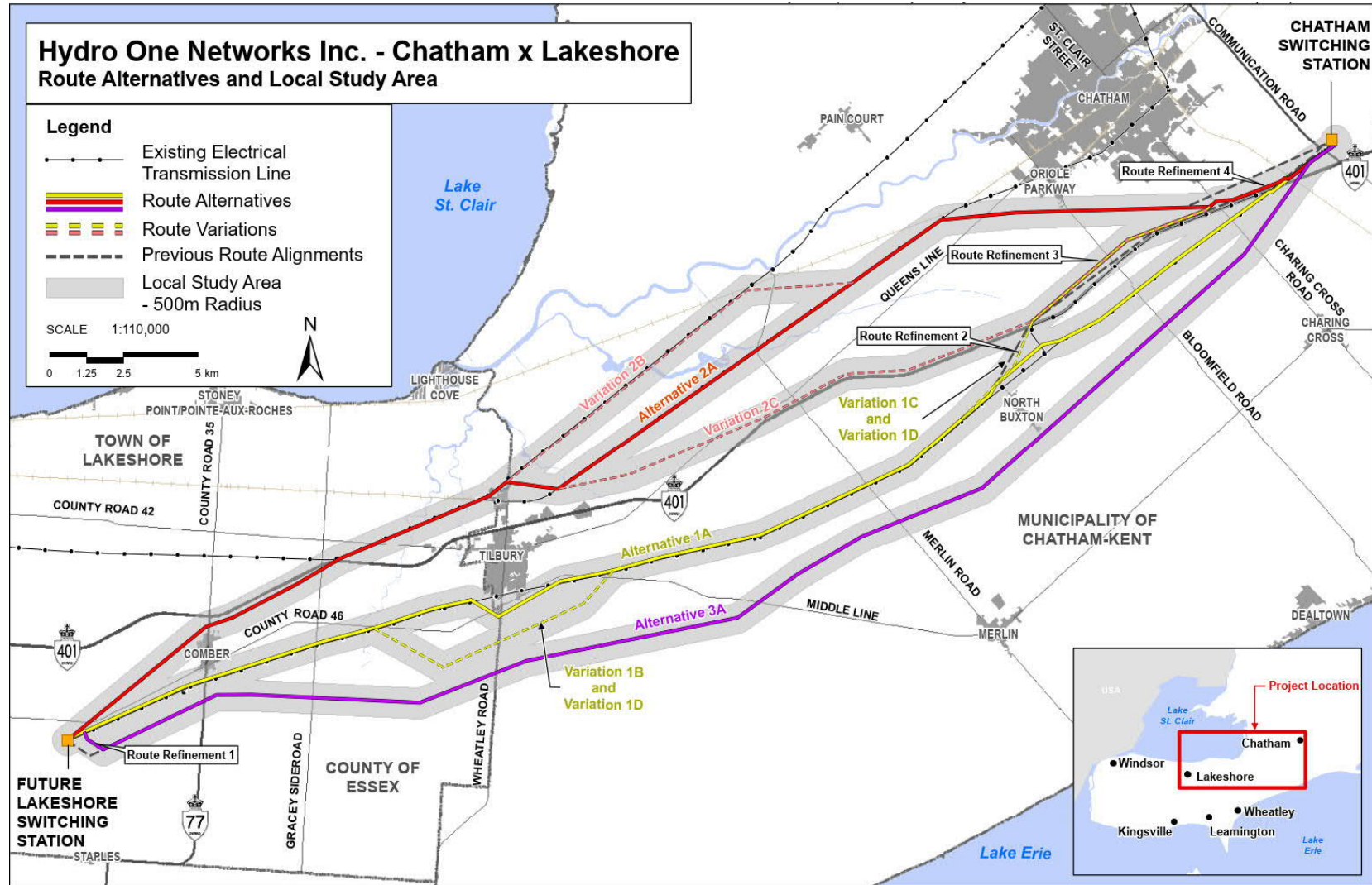
- **Route Refinement 1**: A portion of Route Alternative 3 was refined to connect to the future Lakeshore TS north of the existing 230 kV transmission lines.
- **Route Refinement 2**: A portion of Route Alternative 1, variations C and D, were refined to adjust the angle towards the highway to reduce effects to vegetated watercourses, avoid a known archaeological site and to increase distance from a wind turbine.
- **Route Refinement 3**: A portion of Route Alternative 1, variations C and D, and Route Alternative 2, variation C, were refined and shifted further north from Highway 401 and away from the interchange ramp at Bloomfield Road, to accommodate required setback distances from the Highway 401 corridor and interchanges, as provided by the MTO.
- **Route Refinement 4**: A portion of Route Alternative 2, variations A and B, were consolidated with the other Route Alternatives paralleling Highway 401, and the existing transmission line corridor. Additionally, a portion of Route Alternative 1, variations C and D, and Route Alternative 2, variation C, were refined and shifted further north from the underpass at Charing Cross Road. Both of these route refinements are now consolidated with the route leading into the south end of the Chatham SS. These refinements accommodate certain

setback distances from the Highway 401 corridor and Charing Cross overpass, as provided by the MTO; address technical constraints with an existing wind farm transmission line crossing; further align with existing infrastructure; avoid known archaeological sites; and meet the requirements to connect the new transmission line to the south side of the Chatham SS.

The Route Alternatives, including the route refinements made as shown in **Figure 5-2**, were carried forward for the comparative evaluation.

No other viable alternatives were identified for the expansion of the Chatham SS, due to the configuration of equipment within and around the station.

Figure 5-2: Route Alternatives, Variations and Refinements





5.3 Step 3 – Define Criteria

The next step in the weighted MCDA process, following identification of the Route Alternatives and variations, was the establishment of criteria (with associated quantitative and qualitative metrics) to compare and evaluate Route Alternatives against.

The development of the evaluation criteria was based on input and comments provided by Anishnawbek and Haudenosaunee communities, the public, members of the TAC and project team members (see Section 3.0). Criteria for the Project were grouped into four key Evaluation Categories, as follows:



5.3.1 Natural Environment Factor

The natural environment factor comprises six criteria, as shown in **Table 5-1**. The criteria aim to measure the potential effects of the Project on the natural environment.

Table 5-1: Natural Environment Factor Criteria

Criteria	Measure
Effects to Fish and Aquatic Habitat	Effects to aquatic habitat including total number of watercourse crossings, effects to bank and riparian vegetation, and potential effects to surface flows
Effects to Vegetation	Effects to vegetation including potential effects to incompatible vegetation communities and disturbance/alteration/destruction of existing windbreaks
Terrestrial and Wildlife Habitat	Effects to terrestrial wildlife and habitat including footprint effects, potential removal, disturbance and/or destruction of habitat, potential disturbance to wildlife movement/habitat fragmentation

Criteria	Measure
Species at Risk & Species of Conservation Concern	Effects to Species at Risk and Species of Conservation Concern, and their habitats
Natural Hazards, Wetlands and Floodplain Areas	Distance of the route that occurs within/in close proximity to floodplain areas, wetlands, areas of erosion concern
Designated Natural Areas	Alignment with existing land use designations as defined by the PPS, local Municipal Official Plans and the Important Bird Area (IBA)

The following data sets were used to evaluate Natural Environment criteria:

- Field surveys and GIS analysis and interpretation, including:
- Aquatic habitat assessments.
- Ecological Land Classification.
- Botanical assessment.
- Breeding bird surveys.
- Amphibian breeding surveys.
- Species at Risk habitat assessments.
- Publicly accessible Land Information Ontario (LIO) geographic datasets.
- Aerial photography.

5.3.2 Socio-Economic Environment Factor

The socio-economic environment factor comprises ten criteria, as shown in **Table 5-2**. The criteria generally aim to measure the potential effects of the Project on the social and economic environments that the Project is located in, including the Municipality of Chatham-Kent, County of Essex and Municipality of Lakeshore.

Table 5-2: Socio-Economic Environment Factor Criteria

Criteria	Measure
Existing Land Use Designations	Alignment with existing land use designations as defined by the PPS and local Municipal Official Plans (does not include Designated Natural Areas or Natural Environment designations under the PPS*)
Future Land Use Designations	Alignment with future land use designations including potential future settlement area expansion plans, growth areas and development boundaries, as defined by the PPS and local Municipal Official Plans (does not include Designated Natural Areas or Natural Environment designations under the PPS)
Agricultural Operations	Effects to agricultural operations including farming of land, movement of farm machinery and access to processing facilities
Petroleum Operations	Effects to petroleum operations including access to petroleum wells or resources and distribution networks/ pipelines
Effects to residential buildings, properties or site plans	Effects to existing residential properties including proximity to existing homes, site plan alteration or building effects
Effects to commercial/industrial buildings, properties, site plans or business operations/ supply chains	Effects to existing commercial or industrial properties including proximity to commercial/industrial operations, building effects or supply chain effects
Source water Protection	Effects to source water resources including policy areas and drinking water sources for private landowners
Cultural Resources	Effects to properties or landscapes with cultural heritage resource potential

Criteria	Measure
Archaeological Resources	Effects to lands with archaeological potential proximity to known archaeological sites
Aggregate Resources Extraction Areas/Operations (Pits/Quarries)	Effects to aggregate extraction site operations including expansion plans, and site operations

*Natural Environment designated areas under Official Plans and the PPS are included in the Designated Natural Areas criterion under the Natural Environment Factor Area.

To evaluate Socio-Economic Environment criteria a wide range of data was used, including:

- Statistics Canada census community profiles.
- Canadian Land Inventory information.
- Field data collection and GIS analysis and interpretation of Ecological Land Classification.
- Local Official Plans and policies.
- Ontario Provincial Policy Statement (2020).
- Publicly accessible LIO geographic datasets.
- Aerial photography.
- Source Water Protection Mapping and Policy documents for the Thames-Sydenham Source Water Protection Region and Essex Region Source Protection Area.
- Cultural Heritage Existing Conditions Report completed for the Project.
- Stage 1 Archaeology Assessment completed for the Project.

5.3.3 Technical and Cost Factor

The technical and cost factor comprises seven criteria, as shown in **Table 5-3**. The criteria aim to measure the technical and cost considerations of the Project including potential effects associated with land acquisition in support of the ROW and constructability concerns, including construction complexity associated with line angles and distances.

Table 5-3: Technical and Cost Factor Area Criteria

Criteria	Measure
Line Length	Total length of each route or variation
Line Angles	Number of turns in each route/variation, as well as the angle of the turn (sharper or wider than 30°)
Crossings	Total number of crossings of: Rivers, Railways, Highways, Existing 230 kV transmission lines, etc.
Parallel & Adjacent to Existing Infrastructure	Total distance of each route/variation that parallels an existing transmission line corridor (preference to routes/variations with longer parallel distance) Total distance of each route/variation that parallels a non-TX linear infrastructure/corridor (E.g., Highway 401; preference to routes/variations with longer parallel distance) Total distance parallel/adjacent to underground facilities (pipelines, sewers, communication/power line, etc.) preference to routes/variations with less parallel distance
Proximity to Existing Wind Turbines	Proximity to the wind turbines
Impacted Property Parcels and Property Acquisition	Real Estate and land acquisition considerations, including the total number of property parcels traversed and the anticipated number of property buyouts
Overall Constructability	Other considerations affecting the complexity of construction, such as information on soils, construction obstacles and potential construction conflicts

Data used to evaluate criteria in the Technical and Cost factor area included:

- Property parcel fabric.
- Publicly accessible LIO geographic datasets.
- Information provided by third parties including mapping data for wind turbine facilities, gas pipeline, utility line information, etc.
- Engineering standards and best practices.

5.3.4 Anishnawbek and Haudenosaunee Culture, Values and Land Use Factor

The Anishnawbek and Haudenosaunee Culture, Value and Land Use factor comprises seven criteria, as shown in **Table 5-4**. As described in **Section 3.6**, Hydro One provided several opportunities for Anishnawbek and Haudenosaunee communities to participate in the route evaluation process, including opportunities to participate in the Technical Advisory Committee (TAC), opportunities to hold community-specific route evaluation workshops and discussions, and the provision of project data (such as results of environmental field surveys and Archaeological and Cultural reports) and workbooks to collect information and input from communities which could help inform the route evaluation. The sections below summarize the discussions with Anishnawbek and Haudenosaunee communities revolving around the route evaluation and how the input provided was ultimately reflected in the route evaluation framework.

Bkejwanong (Walpole Island) First Nation

On November 27, 2020, Hydro One hosted a virtual route evaluation workshop with staff from Walpole Island First Nation (WIFN). Following brief introductions and clarification of staff roles, Hydro One provided an overview of the Class EA process conducted to date including the route alternatives that were being considered for the new transmission line, and the anticipated timeline for selection of the preferred route in early 2021. Feedback provided by WIFN staff at the workshop included:

A preference for Route Alternatives that would utilize existing transmission line assets or parallel existing infrastructure;

- Interest in the comparative cost of the Route Alternatives, and preference for lower costs;
- Preference for the avoidance of woodlots, particularly a woodlot and adjacent hedgerow along Route Alternatives 1A and 1B that were found during recent field studies (attended by WIFN staff) to contain several young, relatively healthy butternut trees. WIFN staff reiterated a strong desire to protect these butternut trees for their ability to contribute to overall species recovery;
- Preference for the avoidance of natural features such as watercourses, wetlands and other natural habitats;
- Noted that while the regional landscape is largely disturbed, some small pockets of remnant native species and habitats (e.g., Carolinian species and patches of native Tallgrass prairie habitat) had been identified by previous projects, and that these species and habitats were important to the WIFN;

- Concern regarding the large number of known archaeological sites in the south Chatham area;
- Identified the lands near the Thames River as an area of historical significance and importance; and
- Identified a number of wind farm projects of which the WIFN is a partner in ownership, and noted that these projects provide an important revenue stream for the community, and that any potential loss of this revenue (e.g., through transmission line outages or impacts to the facilities) would adversely affect the WIFN.

Following the workshop, WIFN staff provided additional information to Hydro One, including copies of historical maps outlining the areas of historical significance and importance mentioned previously. On January 4th, 2021, Hydro One staff had a follow-up virtual meeting with WIFN to further discuss the items raised at the November workshop and how they related to the Route Alternatives. At the meeting, Hydro One and WIFN further discussed the areas of historical significance identified and their relation to the Route Alternatives. Hydro One also inquired further as to particular areas or current land uses where harvesting or fishing activities were being conducted, or species of interest; WIFN staff advised that current uses did not reflect the entirety of WIFN's interests in their traditional territory, and that potential harvesting areas should be considered more generally to reflect potential future uses by community members.

The feedback and information provided by WIFN was used to inform the development of the Anishnawbek and Haudenosaunee Culture, Values and Land Use criteria.

Caldwell First Nation

On October 27, 2020, Hydro One hosted a virtual route evaluation workshop with staff from Caldwell First Nation (CFN). Following brief introductions and clarification of staff roles, Hydro One provided an overview of the Class EA process conducted to date including the Route Alternatives that were being considered for the new transmission line, and the anticipated timeline for selection of the preferred route in early 2021. Hydro One also provided information on how input received from CFN would be considered during the route evaluation.

On December 15, 2020, CFN provided a technical memorandum to Hydro One summarizing the findings of CFN's study of the Route Alternatives and identification of route evaluation criteria. The technical memo laid out the methodology that CFN had undertaken to date, their observations, concerns and preferences and conclusions about the Route Alternatives, and stated an overall preference for Route Alternative 1A as it had the greatest overall distance parallel to existing

transmission lines. The technical memo also outlined the key considerations and criteria that CFN had identified as priorities in the evaluation of the Route Alternatives, specifically:

Caldwell participants identified ecological protection and restoration as their primary criteria for route selection, including:

- Protection, to the greatest extent possible, of existing ecological systems;
- Avoidance of habitat required to support Species at Risk and poses least risk of adverse effects on species at risk;
- Poses least risk (i.e., from erosion, construction impacts) to fish-bearing streams, avoid loose soils, steep terrain, and other areas with erosion potential;
- Selection of route with the least new impacts and disturbances, i.e., the Route Alternative that has the highest percentage of length following existing transmission line or road (ROWs), in order to minimize area of new clearance;
- Avoid a route that requires new access roads for construction and maintenance;
- Avoid important or endangered (threatened) habitat (wetlands, forested areas, waterways, etc.)
- Incorporation of Caldwell's requests for modification of the selected route to adhere as tightly as possible to existing ROWs;
- For greater certainty, Caldwell participants do not want their input and influence to be limited to choosing between the presented Route Alternatives. While they may prefer Option 1a, they request that that route be modified to reduce the total amount of new cut;
- If Caldwell's preferred Route Alternative 1A is selected, Caldwell would still like Hydro One to explore the feasibility of further modifications of the routing to reduce the remaining 13% of new ROW that would be required.
- Caldwell participants also considered the following criteria in their review of each option:
- Protection and restoration of harvesting areas
- Avoid country food harvesting locations, e.g., berry picking, fishing, hunting, plant and medicine gathering sites
- Avoidance of areas that have been used historically or could potentially be used in the future, for other cultural uses (e.g., instruction, camping, etc.)
- Cultural heritage protection and restoration:
- Avoid building transmission towers that might impact sight-lines of cultural value (e.g., cultural landscape)
- Avoidance of sites with known or potential Caldwell archaeological values
- Avoidance of specific high value cultural and spiritual sites

Hydro One held a subsequent virtual meeting with CFN staff on December 18, 2020, to review the technical memo provided by CFN and provide some additional context on the Route Alternatives, including sections of Route Alternatives 2A and 2B which represented opportunities to repurpose an existing idle line, and the constraints and other existing features which lead to deviations from the existing transmission lines on Route Alternative 1A (i.e., that Route Alternative 1A represented the greatest extent to which paralleling the existing transmission line had been deemed viable by Hydro One). Hydro One also provided further information on the research and environmental studies that had been undertaken along the Route Alternatives over the past year. Hydro One staff also asked some questions and sought clarification on the contents of the technical memo, including whether CFN could identify any specific traditional use species of interest, or current harvesting areas or other land uses, which could be considered. CFN replied that identification of specific species would be difficult as that knowledge was spread over many community members, and also that current land uses did not reflect the entirety of CFN's interests within their traditional territory, and that potential harvesting areas should be considered more generally to reflect potential future uses by community members.

On February 17, 2021, CFN emailed Hydro One a letter following up on the December 18 meeting. In the letter, CFN thanked Hydro One for the opportunities to discuss the Project and route evaluation and reiterated the importance that CFN places on ecological protection and restoration for the long-term well-being of Caldwell members and opportunity to exercise their rights within their territory. In the letter, CFN also reiterated their previously stated preference for Route Alternative 1A over Route Alternatives 2A and 2B as the former maximizes the distance parallel to existing transmission lines, and the latter overlap with the Eastern Lake St. Clair IBA and are closer in proximity to the lake itself. CFN stated that if one of Route Alternative 2A or 2B were to be selected, that additional research would be required to understand effects to fish and fish habitat in the creeks traversed by these routes. CFN closed the letter by reiterating a desire to participate in the Biodiversity Initiative for the Project.

On February 19, 2021, Hydro One held a virtual meeting with CFN to provide an early briefing on the selection of preferred Route Alternative 2A and to explain the outcome of the route evaluation process. At the meeting, Hydro One staff explained how they had focused on the key criteria and considerations that CFN had provided in the technical memo, and utilized those along with similar input from other communities to develop a set of criteria in the Anishnawbek and Haudenosaunee Culture, Values and Land Use category that were fairly applied across all of the Route Alternatives. Hydro One noted that CFN's stated preference for Route Alternative 1A had been captured specifically in a new criteria relating to overall distance parallel to existing infrastructure, but that

other criteria in this category, particularly criteria relating to the natural environment aspects such as Species at Risk, fish and aquatic habitats, and areas of potential hunting and harvesting uses, generally ended up favouring Route Alternatives 2A and 2B as these Route Alternatives had less overall potential effects when compared to other Route Alternatives. Hydro One staff also noted that Route Alternative 1A, while favoured by CFN for its larger overall distance parallel to existing transmission lines, ended up scoring poorly in many of the natural environment criteria, and provided examples such as traversal of the Big O Conservation Area woodlot in Comber, greater extent of fish and aquatic habitat traversed, and the effects to endangered Butternut trees identified adjacent to the existing transmission lines.

Following the announcement of the preferred Route Alternative 2A, Hydro One formally responded on March 22, 2021, to CFN's letter dated February 17. In the response, Hydro One thanked CFN staff for the input provided into the Project and route evaluation and reiterated many of the key points of the discussion and explanation of the selection of Route Alternative 2A from the February 19 meeting. Hydro One also reiterated their desire to work with CFN to further characterize the aquatic habitats along Route Alternative 2A as requested in the February 17 letter from CFN, and also committed to engaging CFN on the biodiversity initiative for the Project.

Oneida Nation of the Thames

A representative from Oneida Nation of the Thames participated in the second TAC workshop on September 22, 2020. At the workshop, the representative inquired as to whether traditional medicinal species and harvesting areas would be considered during the route evaluation, as these were of importance to the Oneida Nation. Hydro One staff responded that one of the four categories of the route evaluation criteria would capture specific criteria related to Anishnawbek and Haudenosaunee Culture, Values and Land Use, and that criteria could be developed within this category to capture specific traditional use or medicinal species or harvesting areas but that the effects assessment would largely depend on input provided directly from communities.

The representative for the Oneida Nation also stated that he felt that the exercise of utilizing weighted criteria, particularly for the natural environment factor area, was flawed as his Nation's perspective was that all of these factors should be considered equally. Hydro One staff replied that the purpose of including criteria weighting was to provide an additional means of incorporating input, both from Anishnawbek and Haudenosaunee communities and from project stakeholders into the route evaluation process, in addition to just identifying criteria to be included. Hydro One stated that they would consider this comment for future planning process.

Table 5-4: Anishnawbek and Haudenosaunee Culture, Values and Land Use Factor Area Criteria

Criteria	Measure
Proximity to Areas of Historical Significance	Relative proximity to Anishnawbek and Haudenosaunee identified areas of historical significance associated with the Thames River
Effects to First Nations revenue generating projects	Potential for effects to identified project sites (eg. Belle River and North Kent Wind Farms)
Areas that support hunting/trapping/harvesting grounds	Effects on lands with habitat or vegetation types that support or have potential to support hunting/trapping/harvesting activities and medicinal plants
Areas that support fish bearing waters with identified or inferred habitat of game fish	Effects to identified aquatic habitat and/or known watercourses with fishery management programs
Effects to rare/undisturbed native habitats/ ecosystems	Effects to rare habitats in southwestern Ontario including tall grass prairies, savannah, native woodlands, natural wetlands, etc. and measured level of disturbance of native habitat and ecosystems based on calculated average coefficient of conservatism
Rare/sensitive species regeneration potential	Long-term effects to SAR and their regeneration potential
Co-location of existing	Length of line that is sited within or beside existing linear infrastructure

Evaluation infrastructure of Anishnawbek and Haudenosaunee Culture, Values and Land Uses was based on similar data sources to other criteria but adapted to suit the intent of Anishnawbek and Haudenosaunee interests as discussed with these communities, where possible. Data included:

- Field surveys and GIS analysis and interpretation, including:
- Ecological Land Classification (ELC) focusing on vegetation communities that support hunting/trapping and harvesting
- Aquatic habitat assessments with a focus on waterbodies that support fisheries including fish stocking information

- Botanical assessment
- Breeding bird surveys
- Amphibian breeding surveys
- Species at Risk habitat assessment
- Publicly available data on wind energy ownership/partnerships
- Information provided by Anishnawbek and Haudenosaunee communities
- Publicly accessible LIO geographic datasets
- Aerial photography
- Cultural Heritage Existing Conditions Report completed for the Project
- Stage 1 Archaeology Assessment completed for the Project.

5.4 Step 4 – Weight Criteria



Following identification of the evaluation criteria and their measures, the project team, using input provided by the TAC, including Anishnawbek and Haudenosaunee communities, and members of the public, assigned weights for the evaluation. Weights are used to identify key factors and criteria most important to the local community. The higher the weighting, the more important the factor or criteria was considered in the outcome of the evaluation.

At the outset of this step, the project team determined that the importance of each factor area (natural environment, socio-economic environment, technical and cost and Anishnawbek and Haudenosaunee Culture, Values and Land Use) was equal. This ensured one factor area was not elevated over another, such as technical and cost being given more weight ahead of natural environment interests. For this reason, weighting was only completed at the criteria level.

To complete weighting of the criteria, each factor area was given an assigned value of 100. To complete this process input from the public consultation process was considered together with direct input from TAC members through a weighting workshop (**Section 3.11**) and input from Anishnawbek and Haudenosaunee communities. **Table 5-5** summarizes the weights applied to each criteria.

Table 5-5: Criteria Weighting

Criteria	Measure	Weight
NATURAL ENVIRONMENT FACTOR AREA		
Effects to Fish and Aquatic Habitat	Effects to aquatic habitat including total number of watercourse crossings, effects to bank and riparian vegetation, and potential effects to surface flows	15
Effects to Vegetation	Effects to vegetation including potential effects to incompatible vegetation communities and disturbance/alteration/destruction of existing windbreaks	15
Terrestrial and Wildlife Habitat	Effects to terrestrial wildlife and habitat including footprint effects, potential removal, disturbance and/or destruction of habitat, potential disturbance to wildlife movement/habitat fragmentation	20
Species at Risk & Species of Conservation Concern	Effects to Species at Risk and Species of Conservation Concern, and their habitats	20
Natural Hazards, Wetlands and Floodplain Areas	Distance of the route that occurs within/in close proximity to floodplain areas, wetlands, areas of erosion concern	15
Designated Natural Areas	Alignment with existing land use designations as defined by the PPS, local Municipal Official Plans and the Important Bird Area (IBA)	15
Factor Area Total		100
SOCIO-ECONOMIC ENVIRONMENT FACTOR AREA		
Existing Land Use Designations	Alignment with existing land use designations as defined by the PPS and local Municipal Official Plans (does not include Designated Natural Areas or Natural Environment designations under the PPS*)	10
Future Land Use Designations	Alignment with future land use designations including potential future settlement area expansion plans, growth areas and development boundaries, as defined by the PPS and local Municipal Official Plans (does not include Designated Natural Areas or Natural Environment designations under the PPS)	7.5

Criteria	Measure	Weight
Agricultural Operations	Effects to agricultural operations including farming of land, movement of farm machinery and access to processing facilities	20
Petroleum Operations	Effects to petroleum operations including access to petroleum wells or resources and distribution networks/ pipelines	2.5
Effects to residential buildings, properties or site plans	Effects to existing residential properties including proximity to existing homes, site plan alteration or building effects	15
Effects to commercial/industrial buildings, properties, site plans or business operations/ supply chains	Effects to existing commercial or industrial properties including proximity to commercial/industrial operations, building effects or supply chain effects	10
Source water Protection	Effects to source water resources including policy areas and drinking water sources for private landowners	10
Cultural Resources	Effects to properties or landscapes with cultural heritage resource potential	10
Archaeological Resources	Effects to lands with archaeological potential proximity to known archaeological sites	15
Aggregate Resources Extraction Areas/Operations (Pits/Quarries)*	Effects to aggregate extraction site operations including expansion plans, and site operations	0
Factor Area Total		100
TECHNICAL AND COST FACTOR AREA		
Line Length	Total length of each route or variation	20
Line Angles	Number of turns in each route/variation, as well as the angle of the turn (sharper or wider than 30°)	20
Crossings	Total number of crossings of: Rivers, Railways, Highways, Existing 230 kV transmission lines, etc.	12.5

Criteria	Measure	Weight
Parallel & Adjacent to Existing Infrastructure	Total distance of each route/variation that parallels an existing transmission line corridor (preference to routes/variations with longer parallel distance) Total distance of each route/variation that parallels a non-TX linear infrastructure/corridor (E.g., Highway 401; preference to routes/variations with longer parallel distance) Total distance parallel/adjacent to underground facilities (pipelines, sewers, communication/power line, etc.) preference to routes/variations with less parallel distance	5
Proximity to Existing Wind Turbines	Proximity to the wind +turbines	5
Impacted Property Parcels and Property Acquisition	Real Estate and land acquisition considerations, including the total number of property parcels traversed and the anticipated number of property buyouts	25
Overall Constructability	Other considerations affecting the complexity of construction, such as information on soils, construction obstacles and potential construction conflicts	12.5
Factor Area Total		100
ANISHNAWBEEK AND HAUDENOSAUNEE CULTURE, VALUES AND LAND USE FACTOR AREA		
Proximity to Areas of Historical Significance	Relative proximity to Anishnawbek and Haudenosaunee identified areas of historical significance associated with the Thames River	14.3
Effects to First Nations revenue generating projects	Potential for effects to identified project sites (eg. Belle River and North Kent Wind Farms)	14.3
Areas that support hunting/trapping/harvesting grounds	Effects on lands with habitat or vegetation types that support or have potential to support hunting/trapping/harvesting activities and medicinal plants	14.3

Criteria	Measure	Weight
Areas that support fish bearing waters with identified or inferred habitat of game fish	Effects to identified aquatic habitat and/or known watercourses with fishery management programs	14.3
Effects to rare/undisturbed native habitats/ecosystems	Effects to rare habitats in southwestern Ontario including tall grass prairies, savannah, native woodlands, natural wetlands, etc. and measured level of disturbance of native habitat and ecosystems based on calculated average coefficient of conservatism	14.3
Rare/sensitive species regeneration potential	Long-term effects to SAR and their regeneration potential	14.3
Co-location of existing infrastructure	Length of line that is sited within or beside existing linear infrastructure	14.3
Factor Area Total		100


*Aggregate resources extraction areas/operations was provided a weighting of 0 because there are no active licensed aggregate extraction areas/operations within the PSA. While it is recognized that this criteria is important based on comments received, the weighting was removed based on its inability to impact the Project and was re-assigned to other criteria to better reflect existing local conditions in the community.


5.5 Step 5 – Evaluate and Select





Following identification and weighting of the evaluation criteria, the project team completed a geographic information system (GIS) analysis of the measures identified for each criteria for each Route Alternative based on available data sources. The information was then fed into a comparative evaluation matrix where numerical weighted scores were provided per criterion and totalled for each factor area. The analysis for each criterion was rationalized with a reasoned argument statement that identified the measured differences and similarities between each Route Alternative. Following completion of the comparative evaluation matrix, a summary was provided for each factor area and a reasoned argument for the overall technically preferred alternative route. The results of the weighted MCDA are found in **Table 5-6**.

Table 5-6: Comparative Evaluation Results

Criteria	Metric of Measurement/Scoring	Criteria Weight	Scoring Scale: 1 = Most Effect 3 = Neutral 5 = Least Effect	Alternative Routes							Alternative 3
				Alternative 1A	Alternative 1B	Alternative 1C	Alternative 1D	Alternative 2A	Alternative 2B	Alternative 2C	
 Natural Environment											
Natural Environment Factor											
Effects to Fish and Aquatic Habitat	Effects to aquatic habitat including total number of watercourse crossings, effects to bank riparian vegetation, potential effects to surface flows	15	Reasoned Argument	Traverses 2.11 km of watercourse (surface flow), crossing 43 watercourses in total, with potential to affect fish and fish habitat and riparian vegetation.	Traverses 2.21 km of watercourse (surface flow), crossing 46 watercourses in total, with potential to affect fish and fish habitat and riparian vegetation.	Traverses 1.89 km of watercourse (surface flow), crossing 42 watercourses in total, with potential to affect fish and fish habitat and riparian vegetation. .	Traverses 1.99 km of watercourse (surface flow), crossing 43 watercourses in total, with potential to affect fish and fish habitat and riparian vegetation.	Traverses 1.57 km of watercourse (surface flow), crossing 26 watercourses in total, with potential to affect fish and fish habitat and riparian vegetation.	Traverses 1.63 km of watercourse (surface flow), crossing 28 watercourses in total, with potential to affect fish and fish habitat and riparian vegetation.	Traverses 1.94 km of watercourse (surface flow), crossing 32 watercourses in total, with potential to affect fish and fish habitat and riparian vegetation.	Traverses 2.59 km of watercourse (surface flow), crossing 46 watercourses in total, with potential to affect fish and fish habitat and riparian vegetation.
			Score	2	2	3	2	5	5	4	1
Effects to Vegetation	Effects to vegetation including potential effects to incompatible vegetation communities and disturbance/alteration/destruction of existing windbreaks	15	Reasoned Argument	Traverses 6.92 ha of vegetation communities including hedgerows (e.g. windbreaks). 4.05 ha (59%) are incompatible with transmission lines (long term effects) while 2.87 ha (or 41%) are compatible (short term effects).	Traverses 6.99 ha of vegetation communities including hedgerows (e.g. windbreaks). 4.20 ha (or 60%) are incompatible (long term effects) with transmission lines, while 2.79 ha (or 40%) are compatible (short term effects).	Traverses 6.29 ha of vegetation communities including hedgerows (e.g. windbreaks). 3.79 ha (or 60%) are incompatible (long term effects) with transmission lines, while 2.50 ha (or 40%) are compatible (short term effects).	Traverses 6.37 ha of vegetation communities including hedgerows (e.g. windbreaks). 3.95 ha (or 62%) are incompatible (long term effects) with transmission lines, while 2.41 ha (or 38%) are compatible (short term effects).	Traverses 6.18 ha of vegetation communities including hedgerows (e.g. windbreaks). 3.05 ha (49%) are incompatible (long term effects) with transmission lines, while 3.13 ha (or 51%) are compatible (short term effects).	Traverses 5.51 ha of vegetation communities including hedgerows (e.g. windbreaks). 2.88 ha (52%) are incompatible (long term effects) with transmission lines, while 2.64 ha (or 48%) are compatible (short term effects).	Traverses 6.92 ha of vegetation communities including hedgerows (e.g. windbreaks). 3.41 ha (or 49%) are incompatible (long term effects) with transmission lines, while 3.51 ha (or 51%) are compatible (short term effects).	Traverses 6.73 ha of vegetation communities including hedgerows (e.g. windbreaks). 4.02 ha (or 60%) are incompatible (long term effects) with transmission lines, while 2.71 ha (or 40%) are compatible (short term effects).
			Score	1	1	2	1	5	5	3	1
Terrestrial and Wildlife Habitat	Effects to terrestrial wildlife and habitat including footprint effects, potential removal, disturbance and/or destruction of habitat, potential disturbance to wildlife movement/habitat fragmentation	20	Reasoned Argument	Affects 2.52 ha of terrestrial and wildlife habitat, including SWH for bat maternity roosts, special concern and rare wildlife species, and turtle wintering areas. Located along the periphery, and slightly within the Important Bird Area; not anticipated to impact movement of avian species.	Affects 2.52 ha of terrestrial and wildlife habitat, including SWH for bat maternity roosts, special concern and rare wildlife species, and turtle wintering areas. Located along the periphery, and slightly within the Important Bird Area; not anticipated to impact movement of avian species.	Affects 2.19 ha of terrestrial and wildlife habitat, including SWH for bat maternity roosts, special concern and rare wildlife species, and turtle wintering areas. Located along the periphery, and slightly within the Important Bird Area; not anticipated to impact movement of avian species.	Affects 2.19 ha of terrestrial and wildlife habitat, including SWH for bat maternity roosts, special concern and rare wildlife species, and turtle wintering areas. Located along the periphery, and slightly within the Important Bird Area; not anticipated to impact movement of avian species.	Affects 3.0 ha of terrestrial and wildlife habitat, including SWH for bat maternity roosts, special concern and rare wildlife species, and turtle wintering areas. Located within the Important Bird Area with the potential of impacting movement of avian species.	Affects 3.55 ha of terrestrial and wildlife habitat, including SWH for bat maternity roosts, special concern and rare wildlife species, and turtle wintering areas. Located within the Important Bird Area with the potential of impacting movement of avian species.	Affects 2.66 ha of terrestrial and wildlife habitat, including SWH for bat maternity roosts, special concern and rare wildlife species, and turtle wintering areas. Located within the Important Bird Area with the potential of impacting movement of avian species.	Affects 1.04 ha of terrestrial and wildlife habitat, including SWH for bat maternity roosts and special concern and rare wildlife species. Located outside of Important Bird Area; not anticipated to impact movement of avian species.
			Score	3	3	3	3	2	1	2	5
Species at Risk & Species of Conservation Concern	Effects to Species at Risk and Species of Conservation Concern, and their habitats	20	Reasoned Argument	Affects 6.60 ha of confirmed and/or potential Species at Risk habitat (Butternut, Eastern Foxsnake, SAR Bats) and species of conservation concern (Climbing Prairie Rose, Honey Locust and Mapleleaf).	Affects 6.66 ha of confirmed and/or potential Species at Risk habitat (Butternut, Eastern Foxsnake, SAR Bats) and species of conservation concern (Climbing Prairie Rose and Mapleleaf).	Affects 5.59 ha of potential Species at Risk habitat (Eastern Foxsnake, SAR Bats) and species of conservation concern (Climbing Prairie Rose, Honey Locust and Mapleleaf).	Affects 5.65 ha of potential Species at Risk habitat (Eastern Foxsnake, SAR Bats) and species of conservation concern (Climbing Prairie Rose and Mapleleaf).	Affects 4.94ha of potential Species at Risk habitat (Eastern Foxsnake, Lake chubsucker, Lilliput and SAR bats) and species of conservation concern (Eastern Wood-pewee, Mapleleaf and Spotted Sucker).	Affects 4.58 ha of potential Species at Risk habitat (Eastern Foxsnake, Lake chubsucker, Lilliput and SAR bats) and species of conservation concern (Eastern Wood-pewee, Mapleleaf and Spotted Sucker).	Affects 5.47 ha of potential Species at Risk habitat (Eastern Foxsnake, Lilliput and SAR bats) and species of conservation concern (Eastern Wood-pewee, Mapleleaf and Spotted Sucker).	Affects 5.12 ha of potential Species at Risk habitat (Eastern Foxsnake and SAR bats) and species of conservation concern (Eastern Wood-pewee, Honey Locust and Mapleleaf).
			Score	1	1	3	3	5	5	3	4
Natural Hazards, Wetlands and Floodplain Areas	Distance of the route that occurs within/in close proximity to floodplain areas, wetlands, areas of erosion concern	15	Reasoned Argument	Traverses 1.78 ha of regulated lands, including potential impacts to 0.65 ha of wetland.	Traverses 1.78 ha of regulated lands, including potential impacts to 0.65 ha of wetland.	Traverses 1.78 ha of regulated lands, including potential impacts to 0.65 ha of wetland.	Traverses 1.78 ha of regulated lands, including potential impacts to 0.65 ha of wetland.	Traverses 3.74 ha of regulated lands, including potential impacts to 0.49 ha of wetland.	Traverses 3.74 ha of regulated lands, including potential impacts to 0.49 ha of wetland.	Traverses 3.74 ha of regulated lands, including potential impacts to 0.49 ha of wetland.	Traverses 0.33 ha of regulated lands, none of which are wetlands.
			Score	3	3	3	3	1	1	1	5
Designated Natural Areas	Alignment with existing land use designations as defined by the PPS, local Municipal Official Plans and the Important Bird Area (IBA)	15	Reasoned Argument	Traverses 1.47 ha of designated Significant Woodland, 2.85 ha of designated Important Bird Area lands and 0.37 ha of the Big "O" Conservation Area.	Traverses 1.47 ha of designated Significant Woodland, 2.85 ha of designated Important Bird Area lands and 0.37 ha of the Big "O" Conservation Area.	Traverses 1.13 ha of designated Significant Woodland, 2.85 ha of designated Important Bird Area lands and 0.37 ha of the Big "O" Conservation Area.	Traverses 1.13 ha of designated Significant Woodland, 2.85 ha of designated Important Bird Area lands and 0.37 ha of the Big "O" Conservation Area.	Traverses 1.53 ha of designated Significant Woodland and 43.09 ha of designated Important Bird Area lands.	Traverses 1.30 ha of designated Significant Woodland and 59.73 ha of designated Important Bird Area lands.	Traverses 1.30 ha of designated Significant Woodland and 58.41 ha of designated Important Bird Area lands.	Traverses 0.96 ha of designated Significant Woodland and 0.24 ha of the C.M. Wilson Conservation Area. Does not impact designated Important Bird Area lands.
			Score	5	5	5	5	2	1	1	5
Natural Environment Factor Total Weighted Score				245	245	315	285	335	300	235	360

Criteria	Metric of Measurement/Scoring	Criteria Weight	Alternative Routes								
			Scoring Scale: 1 = Most Effect 3 = Neutral 5 = Least Effect	Alternative 1A	Alternative 1B	Alternative 1C	Alternative 1D	Alternative 2A	Alternative 2B	Alternative 2C	Alternative 3
 Socio-Economic Environment											
Socio-Economic Environment Factor											
Existing land use designations	Alignment with existing land use designations as defined by the Provincial Policy Statement and local Municipal Official Plans (does not include Designated Natural Areas or Natural Environment designations under the PPS)	10	Reasoned Argument	Local Official Plans (OPs) permit utility/transmission facilities on any land use designation provided development satisfies applicable legislation. Alternative 1A generally follows existing transmission ROWs (as encouraged by local OPs) but approaches Tilbury's fringe area where the line deviates south around the community. This deviation aligns with the OP but is not as pronounced as Alternative 1B and 1D. Alternative 1A co-locates with 41.67km of existing infrastructure.	Local Official Plans (OPs) permit utility/transmission facilities on any land use designation provided development satisfies applicable legislation. Alternative 1B generally follows existing transmission ROWs (as encouraged by local OPs) but approaches Tilbury's fringe area where the line deviates south around the community. This deviation aligns with the official plan and is further from the fringe area compared to Alternative 1A and 1C. Alternative 1B co-locates with 36.4km of existing infrastructure.	Local Official Plans (OPs) permit utility/transmission facilities on any land use designation provided development satisfies applicable legislation. Alternative 1C generally follows existing transmission ROWs (as encouraged by local OPs) but approaches Tilbury's fringe area where the line deviates south around the community. This deviation aligns with the official plan but is not as pronounced as Alternative 1B and 1D. Alternative 1C co-locates with 34.75km of existing infrastructure.	Local Official Plans (OPs) permit utility/transmission facilities on any land use designation provided development satisfies applicable legislation. Alternative 1D generally follows existing transmission ROWs (as encouraged by local OPs) but approaches Tilbury's fringe area where the line deviates south around the community. This deviation aligns with the official plan and is further from the fringe area compared to Alternative 1A and 1C. Alternative 1D co-locates with 29.5km of existing infrastructure.	Local Official Plans (OPs) permit utility/transmission facilities on any land use designation provided development satisfies applicable legislation. All variations of Alternative 2 cross through a built-up area/Urban Area designation at the northern area of Comber which is not preferred by the municipality. Alternative 2A is separated from Tilbury's Urban Fringe Area. Alternative 2A co-locates with 26.04km of existing infrastructure of which 15.66 km involves repurposing an existing idle transmission line.	Local Official Plans (OPs) permit utility/transmission facilities on any land use designation provided development satisfies applicable legislation. All variations of Alternative 2 cross through a built-up area/Urban Area designation at the northern area of Comber which is not preferred by the municipality. Alternative 2B is separated from Tilbury's Urban Fringe Area. Alternative 2B co-locates with 24.29km of existing infrastructure of which 3.65 km involves repurposing an existing idle transmission line.	Local Official Plans (OPs) permit utility/transmission facilities on any land use designation provided development satisfies applicable legislation. All variations of Alternative 2 cross through a built-up area/Urban Area designation at the northern area of Comber which is not preferred by the municipality. Alternative 2C is separated from Tilbury's Urban Fringe Area. Alternative 2C co-locates with 19.81km of existing infrastructure..	Local Official Plans (OPs) permit utility and transmission facilities on any land use designation provided development satisfies applicable legislation. Unlike other alternatives, Alternative 3 does not parallel existing transmission lines which is discouraged in local OP policies. It does avoid built-up areas and Urban Fringe Areas as identified in the Municipality of Lakeshore OP. Alternative 3 co-locates with 1.5km of existing infrastructure.
			Score	5	5	5	5	4	4	3	1
Future land use designations	Alignment with future land use designations including potential future settlement area expansion plans, growth areas and development boundaries, as defined by the Provincial Policy Statement and local Municipal Official Plans (does not include Designated Natural Areas or Natural Environment designations under the PPS)	7.5	Reasoned Argument	Does not traverse land identified for future development potential.	Does not traverse land identified for future development potential.	Right of way traverses 10.78 ha of lands identified for future development potential by local municipality.	Right of way traverses 10.78 ha of lands identified for future development potential by local municipality.	Right of way traverses 14.65 ha of lands identified for future development potential by local municipality.	Right of way traverses 14.65 ha of lands identified for future development potential by local municipality.	Right of way traverses 9.85 ha of lands identified for future development potential by local municipality.	Does not traverse land identified for future development potential.
			Score	5	5	2	2	1	1	2	5
Agricultural Operations	Effects to agricultural operations including farming of land, movement of farm machinery and access to processing facilities	20	Reasoned Argument	Traverses 164.06 ha of prime agricultural land, of which 41.67 km is co-located with existing infrastructure.	Traverses 173.65 ha of prime agricultural land, of which 36.40 km is co-located with existing infrastructure.	Traverses 177.74 ha of prime agricultural land, of which 34.75 km is co-located with existing infrastructure.	Traverses 187.31 ha of prime agricultural land, of which 29.50 km is co-located with existing infrastructure.	Traverses 165.74 ha of prime agricultural land, of which 10.38 km is co-located with existing infrastructure and an additional 15.66 km includes reusing an existing idle transmission corridor (including replacing existing Tx towers) which provide easier ROW access and maximizes the use of existing ROW corridors without widening or creating new corridors.	Traverses 183.6 ha of prime agricultural land, of which 20.64 km is co-located with existing infrastructure and an additional 3.65 km includes reusing an existing idle transmission corridor (including replacing existing Tx towers) which provide easier ROW access and maximizes the use of existing ROW corridors without widening or creating new corridors.	Traverses 195.74 ha of prime agricultural land, of which 19.81 km is co-located with existing infrastructure.	Traverses 211.91 ha of prime agricultural land, of which 1.50 km is co-located with existing infrastructure.
			Score	5	4	4	3	5	3	2	1
Petroleum Operations	Effects to petroleum operations including access to petroleum wells or resources and distribution networks/ pipelines	2.5	Reasoned Argument	Alternative 1A has 2 abandoned petroleum wells within the ROW and crosses 24.96 ha of petroleum pool resources.	Alternative 1B has 2 abandoned petroleum wells within the ROW and crosses 24.96 ha of petroleum pool resources.	Alternative 1C has 2 abandoned petroleum wells within the ROW and crosses 26.18 ha of petroleum pool resources.	Alternative 1D has 2 abandoned petroleum wells within the ROW and crosses 26.18 ha of petroleum pool resources.	Alternative 2A has 2 abandoned petroleum wells within the ROW and crosses 5.48 ha of petroleum pool resources.	Alternative 2B has 2 abandoned petroleum wells within the ROW and crosses 5.48 ha of petroleum pool resources.	Alternative 2C has 2 abandoned petroleum wells within the ROW and crosses 13.46 ha of petroleum pool resources.	Alternative 3A has 2 abandoned petroleum wells within the ROW and crosses 32.99 ha of petroleum pool resources.
			Score	2	2	2	2	5	5	4	1
Effects to residential buildings, properties or site plans	Effects to existing residential properties including proximity to existing homes, site plan alteration or building effects	15	Reasoned Argument	92 residential homes and/or residential parcels are located within the project study area for Alternative 1A	79 residential homes and/or residential parcels are located within the project study area for Alternative 1B	76 residential homes and/or residential parcels are located within project study area for Alternative 1C	63 residential homes and/or residential parcels are located within the project study area for Alternative 1D	107 residential homes and/or residential parcels are located within the project study area for Alternative 2A	80 residential home and/or residential parcels are located within the project study area for Alternative 2B	103 residential homes and/or residential parcels are located within the project study area for Alternative 2C	58 residential homes and/or residential parcels are located within the project study area for Alternative 3
			Score	2	3	4	5	1	3	1	5
Effects to commercial/industrial buildings, properties, site plans or business operations/ supply chains	Effects to existing commercial or industrial properties including proximity to commercial/industrial operations, building effects or supply chain effects	10	Reasoned Argument	5 commercial properties are located within the right of way for Alternative 1A	5 commercial properties are located within the right of way for Alternative 1B.	4 commercial properties are located within the right of way for Alternative 1C.	4 commercial properties are located within the right of way for Alternative 1D.	3 commercial properties are located within the right of way for Alternative 2A.	3 commercial properties are located within the right of way for Alternative 2B.	3 commercial properties are located within the right of way for Alternative 2C.	No commercial properties are located within the right of way for Alternative 3.
			Score	1	1	2	2	3	3	3	5
Source water Protection	Effects to source water resources including policy areas and drinking water sources for private landowners	10	Reasoned Argument	Crosses 91.21 ha of Source Water Protection designated areas.	Crosses 94.56 ha of Source Water Protection designated areas.	Crosses 129.56 ha of Source Water Protection designated areas.	Crosses 132.86 ha of Source Water Protection designated areas.	Crosses 125.8 ha of Source Water Protection designated areas.	Crosses 129.14 ha of Source Water Protection designated areas.	Crosses 104.81 ha of Source Water Protection designated areas.	Crosses 117.97 ha of Source Water Protection designated areas.
			Score	5	5	1	1	1	1	4	2
Cultural Resources	Effects to properties or landscapes with cultural heritage resource potential	10	Reasoned Argument	Potentially affects 24 properties with cultural heritage value or interest as well as four properties within the nationally significant Buxton NHSC and one property listed on the Lakeshore Municipal Heritage Register.	Potentially affects 24 properties with cultural heritage value or interest as well as four properties within the nationally significant Buxton NHSC and one property listed on the Lakeshore Municipal Heritage Register.	Potential to affect 27 properties with cultural heritage value and interest including sites at the Buxton NHSC and a property listed on the Lakeshore Municipal Heritage Register.	Potential to affect 26 properties with cultural heritage value and interest including sites at the Buxton NHSC and a property listed on the Lakeshore Municipal Heritage Register.	Potential to affect 28 properties with cultural heritage value or interest but does not impact the Buxton NHSC.	Potential to affect 25 properties with cultural heritage value or interest but does not impact the Buxton NHSC.	Potential to affect 18 properties with cultural heritage value or interest but does not impact the Buxton NHSC.	Potential to affect 17 properties with cultural heritage value or interest while also affecting the Buxton NHSC.
			Score	1	1	2	2	3	3	4	3

Criteria	Metric of Measurement/Scoring	Criteria Weight	Alternative Routes								
			Scoring Scale: 1 = Most Effect 3 = Neutral 5 = Least Effect	Alternative 1A	Alternative 1B	Alternative 1C	Alternative 1D	Alternative 2A	Alternative 2B	Alternative 2C	Alternative 3
Archaeological Resources	Effects to lands with archaeological potential, proximity to known archaeological sites	15	Reasoned Argument	Traverses 79 features with archaeological potential.	Traverses 69 features with archaeological potential.	Traverses 73 features with archaeological potential.	Traverses 65 features with archaeological potential.	Traverses 52 features with archaeological potential.	Traverses 46 features with archaeological potential.	Traverses 54 features with archaeological potential.	Traverses 69 features with archaeological potential.
			Score	1	2	2	3	5	5	4	2
Aggregate Resources Extraction Areas/Operations (Pits/Quarries)	Effects to aggregate extraction site operations including expansion plans, and site operations	0	Reasoned Argument	No aggregate resources or operations were identified within the PSA	No aggregate resources or operations were identified within the PSA	No aggregate resources or operations were identified within the PSA	No aggregate resources or operations were identified within the PSA	No aggregate resources or operations were identified within the PSA	No aggregate resources or operations were identified within the PSA	No aggregate resources or operations were identified within the PSA	No aggregate resources or operations were identified within the PSA
			Score	5	5	5	5	5	5	5	5
Socio-Economic Factor Total Weighted Score				307.5	317.5	290	300	320	310	280	275
 Technical and Cost											
Technical and Cost Factor											
Line Length	Total length of each route or variation	20	Reasoned Argument	Total line length is 48.04 km.	Total line length is 48.68 km.	Total line length is 48.48 km.	Total line length is 49.11 km.	Total line length is 48.26 km.	Total line length is 48.32 km.	Total line length is 47.74 km.	Total line length is 49.35 km.
			Score	5	3	3	1	4	4	5	1
Line Angles	Number of turns in each route/variation, as well as the angle of the turn (sharper or wider than 30°)	20	Reasoned Argument	Alternative 1A requires 5 turns greater than 30°.	Alternative 1B requires 6 turns greater than 30°.	Alternative 1C requires 7 turns greater than 30°.	Alternative 1D requires 8 turns greater than 30°.	Alternative 2A requires 7 turns greater than 30°.	Alternative 2B requires 7 turns greater than 30°.	Alternative 2C requires 8 turns greater than 30°.	Alternative 3 requires 3 turns greater than 30°.
			Score	4	3	2	1	2	2	1	5
Crossings	Total number of crossings of: watercourses, railways, Highways, Existing 230 kV transmission lines, etc.	12.5	Reasoned Argument	Crosses 0.04 km of railway, 1.81 km of roadway, 0.81 km of utilities, 2.11 km of watercourse, 2.47 km of constructed drains, and 0.13 km of wind farm transmission line for a total of 7.38 km of infrastructure crossings within the ROW.	Crosses 0.04 km of railway, 1.94 km of roadway, 0.69 km of utilities, 2.21 km of watercourse, 2.47 km of constructed drains and 0.13 km of wind farm transmission line for a total of 7.48 km of infrastructure crossings within the ROW.	Crosses 0.04 km of railway, 2.19 km of roadway, 0.80 km of utilities, 1.89 km of watercourse, 2.22 km of constructed drains and 0.13 km of wind farm transmission line for a total of 7.27 km of infrastructure crossings within the ROW.	Crosses 0.04 km of railway, 1.59 km of roadway, 0.68 km of utilities, 1.99 km of watercourse, 2.21 km of constructed drains and 0.13 km of wind farm transmission line for a total of 6.64 km of infrastructure crossings within the ROW.	Crosses 0.29 km of railway, 1.93 km of roadway, 1.24 km of utilities, 1.57 km of watercourse, 2.65 km of constructed drains and 0.04 km of wind farm transmission line for a total of 7.72 km of infrastructure crossings within the ROW.	Crosses 0.31 km of railway, 1.71 km of roadway, 1.27 km of utilities, 1.63 km of watercourse, 2.46 km of constructed drains and 0.04 km of wind farm transmission line for a total of 7.41 km of infrastructure crossings within the ROW.	Crosses 0.29 km of railway, 1.85 km of roadway, 0.56 km of utilities, 1.94 km of watercourse, 2.89 km of constructed drains and 0.04 km of wind farm transmission line for a total of 7.56 km of infrastructure crossings within the ROW.	Crosses 0.05 km of railway, 2.06 km of roadway, 0.35 km of utilities, 2.59 km of watercourse, 3.38 km of constructed drains and 0.15 km of wind farm transmission line for a total of 8.58 km of infrastructure crossings within the ROW.
			Score	4	3	4	5	3	4	3	1
Parallel & Adjacent to Existing Infrastructure	<p>Total distance of each route/variation that parallels an existing transmission line corridor (preference to routes/variations with longer parallel distance)</p> <p>Total distance of each route/variation that parallels a non-TX linear infrastructure/corridor (E.g., Highway 401; preference to routes/variations with longer parallel distance)</p> <p>Total distance parallel/adjacent to underground facilities (pipelines, sewers, communication/power line, etc.) preference to routes/variations with less parallel distance</p>	5	Reasoned Argument	Parallels 41.67 km of existing infrastructure but does not reuse the existing idle line corridor.	Parallels 36.40 km of existing infrastructure but does not reuse the existing idle line corridor.	Parallels 34.75 km of existing infrastructure but does not reuse the existing idle line corridor.	Parallels 29.50 km of existing infrastructure but does not reuse the existing idle line corridor.	Parallels 26.04 km of existing infrastructure of which reuses 15.66 km of existing idle line ROW which parallels an existing active rail line.	Parallels 24.29 km of existing infrastructure of which reuses 3.65 km of existing idle line ROW which parallels an existing active rail line.	Parallels 19.81 km of existing infrastructure but does not reuse the existing idle line corridor.	Parallels 1.5 km of existing infrastructure but does not reuse the existing idle line corridor.
			Score	5	5	5	4	4	3	3	1
Proximity to Wind Turbines	Proximity to wind turbines	5	Reasoned Argument	Similar to Alternatives 1B, 1C and 1D, Alternative 1A does not directly impact any existing wind turbines. There are however, 2 turbines within a 150-200m radius and one turbine within 100-150m radius of the ROW. This is similar to other Alternative 1 options but worse than Alternative 2 and 3 options.	Similar to Alternatives 1A, 1C and 1D, Alternative 1B does not directly impact any existing wind turbines. There are however, 2 turbines within a 150-200m radius and one turbine within 100-150m radius of the ROW. This is similar to other Alternative 1 options but worse than Alternative 2 and 3 options.	Similar to Alternatives 1A, 1B and 1D, Alternative 1C does not directly impact any existing wind turbines. There are however, 2 turbines within a 150-200m radius and one turbine within 100-150m radius of the ROW. This is similar to other Alternative 1 options but worse than Alternative 2 and 3 options.	Similar to Alternatives 1A, 1B and 1C, Alternative 1D does not directly impact any existing wind turbines. There are however, 2 turbines within a 150-200m radius and one turbine within 100-150m radius of the ROW. This is similar to other Alternative 1 options but worse than Alternative 2 and 3 options.	Similar to Alternatives 2B and 2C, Alternative 2A does not directly impact any existing wind turbines. There is however one turbine within 150-200m of the ROW and two turbines within 200-250m of the ROW. This is similar to Alternatives 2B, 2C, 3 but better than Alternative 1A, 1B, 1C and 1D.	Similar to Alternatives 2A and 2C, Alternative 2B does not directly impact any existing wind turbines. There is however one turbine within 150-200m of the ROW and two turbines within 200-250m of the ROW. This is similar to Alternatives 2A, 2B and 2C but better than Alternative 1A, 1B, 1C and 1D.	Similar to Alternatives 2A and 2B, Alternative 2C does not directly impact any existing wind turbines. There is however one turbine within 150-200m of the ROW and two turbines within 200-250m of the ROW.	Alternative 3 does not directly impact any existing wind turbines. There is however one turbine within 150-200m of the ROW and one turbine within 200-250m of the ROW which is similar to Alternatives 2A, 2B and 2C but better than Alternative 1A, 1B, 1C and 1D.
			Score	3	3	3	3	4	4	4	4

Criteria	Metric of Measurement/Scoring	Criteria Weight	Alternative Routes								
			Scoring Scale: 1 = Most Effect 3 = Neutral 5 = Least Effect	Alternative 1A	Alternative 1B	Alternative 1C	Alternative 1D	Alternative 2A	Alternative 2B	Alternative 2C	Alternative 3
Impacted Property Parcels and Property Acquisition	Real Estate and land acquisition considerations, including the total number of property parcels traversed and the anticipated number of property buyouts	25	Reasoned Argument	Property rights required on 164 property parcels and requires a buy-out of 6 identified properties.	Property rights required on 166 property parcels and requires a buy-out of 3 identified properties.	Property rights required on 174 property parcels and requires a buy-out of 4 identified properties.	Property rights required on 177 property parcels and requires a buy-out of 1 identified property.	Property rights required on 123 property parcels and requires a buy-out of 4 identified properties.	Property rights required on 132 property parcels and requires a buy-out of 1 identified property.	Property rights required on 163 property parcels and requires a buy-out of 1 identified property.	Property rights required on 165 property parcels.
			Score	2	2	2	3	4	5	3	3
Overall Constructability	Other considerations affecting the complexity of construction, such as information on soils, construction obstacles and potential construction conflicts	12.5	Reasoned Argument	Alternative 1 line options are located in soil type composed of course-grained glaciolacustrine deposits (Sand and gravel with minor silt) and till (Clayey to silty in composition and stiff to very stiff). These options are less favorable than option 3A but better than option 2A, 2B and 2C based on the publicly available geotechnical data. Routes 1C and 1D are less desirable due to conflicts with MTO.	Alternative 1 line options are located in soil type composed of course-grained glaciolacustrine deposits (Sand and gravel with minor silt) and till (Clayey to silty in composition and stiff to very stiff). These options are less favorable than option 3A but better than option 2A, 2B and 2C based on the publicly available geotechnical data. Routes 1C and 1D are less desirable due to conflicts with MTO.	Alternative 1 line options are located in soil type composed of course-grained glaciolacustrine deposits (Sand and gravel with minor silt) and till (Clayey to silty in composition and stiff to very stiff). These options are less favorable than option 3A but better than option 2A, 2B and 2C based on the publicly available geotechnical data. Routes 1C and 1D are less desirable due to conflicts with MTO.	Alternative 1 line options are located in soil type composed of course-grained glaciolacustrine deposits (Sand and gravel with minor silt) and till (Clayey to silty in composition and stiff to very stiff). These options are less favorable than option 3A but better than option 2A, 2B and 2C based on the publicly available geotechnical data. Routes 1C and 1D are less desirable due to conflicts with MTO.	Alternative 2 options are located in soil type composed of course-grained glaciolacustrine deposits (Sand and gravel with minor silt) and till (Clayey to silty in composition and stiff to very stiff). For these reasons, these options are the least favorable based on the publicly available geotechnical data and will be the most expensive area to design and build the tower foundations. In addition, variation 2A and 2B will require to dismantle the 115 kV circuit K6Z (-16km along Route 2A and -3.6 km along Route 2B). Route 2C does not require removal of idle TX towers, and less distance in undesirable soil types, but is not preferred by MTO and will likely have much more involved permitting/review process and potential for conflicts with MTO construction/maintenance work).	Alternative 2 options are located in soil type composed of course-grained glaciolacustrine deposits (Sand and gravel with minor silt) and till (Clayey to silty in composition and stiff to very stiff). For these reasons, these options are the least favorable based on the publicly available geotechnical data and will be the most expensive area to design and build the tower foundations. In addition, variation 2A and 2B will require to dismantle the 115 kV circuit K6Z (-16km along Route 2A and -3.6 km along Route 2B). Route 2C does not require removal of idle TX towers, and less distance in undesirable soil types, but is not preferred by MTO and will likely have much more involved permitting/review process and potential for conflicts with MTO construction/maintenance work).	Alternative 2 options are located in soil type composed of course-grained glaciolacustrine deposits (Sand and gravel with minor silt) and till (Clayey to silty in composition and stiff to very stiff). For these reasons, these options are the least favorable based on the publicly available geotechnical data and will be the most expensive area to design and build the tower foundations. In addition, variation 2A and 2B will require to dismantle the 115 kV circuit K6Z (-16km along Route 2A and -3.6 km along Route 2B). Route 2C does not require removal of idle TX towers, and less distance in undesirable soil types, but is not preferred by MTO and will likely have much more involved permitting/review process and potential for conflicts with MTO construction/maintenance work).	This line route option is located primarily in a most appropriate and favorable soil type composed of till (Clayey to silty in composition and stiff to very). This route will be the most cost effective to design and build the tower foundation.
			Score	3	3	2	2	1	1	1	5
Technical and Cost Factor Total Weighted score				357.5	285	265	237.5	310	342.5	280	295
 Anishnawbek and Haudenosaunee Culture, Values and Land Use Factor											
Proximity to Areas of Historical Significance	Relative proximity to Anishnawbek and Haudenosaunee identified areas of historical significance associated with the Thames River	14.3	Reasoned Argument	Not in close proximity to identified areas of historic significance.	Not in close proximity to identified areas of historic significance.	Not in close proximity to identified areas of historic significance.	Not in close proximity to identified areas of historic significance.	Alternative 2A is closer (than other alternatives) in proximity to identified area of historic significance, but not as close as Alternative 2B.	Alternative 2B is in closest proximity to identified area of historic significance.	Not in close proximity to identified areas of historic significance.	Not in close proximity to identified areas of historic significance.
			Score	5	5	5	5	3	1	5	5
Effects to First Nations revenue generating projects	Potential for effects to identified project sites (eg. Belle River and North Kent Wind Farms)	14.3	Reasoned Argument	Effects to revenue generating projects are not anticipated.	Effects to revenue generating projects are not anticipated.	Effects to revenue generating projects are not anticipated.	Effects to revenue generating projects are not anticipated.	Effects to revenue generating projects are not anticipated.	Effects to revenue generating projects are not anticipated.	Effects to revenue generating projects are not anticipated.	Effects to revenue generating projects are not anticipated.
			Score	5	5	5	5	5	5	5	5
Areas that support hunting/trapping/harvesting grounds	Effects on lands with habitat or vegetation types that support or have potential to support hunting/trapping/harvesting activities and medicinal plants	14.3	Reasoned Argument	Affects 6.92 ha of lands identified that have potential to support hunting, trapping, and harvesting activities.	Affects 6.99 ha of lands identified that have potential to support hunting, trapping, and harvesting activities.	Affects 6.29 ha of lands identified that have potential to support hunting, trapping, and harvesting activities.	Affects 6.37 ha of lands identified that have potential to support hunting, trapping, and harvesting activities.	Affects 6.18 ha of lands identified that have potential to support hunting, trapping, and harvesting activities.	Affects 5.51 ha of lands identified that have potential to support hunting, trapping, and harvesting activities.	Affects 6.92 ha of lands identified that have potential to support hunting, trapping, and harvesting activities.	Affects 6.73 ha of lands identified that have potential to support hunting, trapping, and harvesting activities.
			Score	1	1	3	3	3	5	1	1

Criteria	Metric of Measurement/Scoring	Criteria Weight	Alternative Routes								
			Scoring Scale: 1 = Most Effect 3 = Neutral 5 = Least Effect	Alternative 1A	Alternative 1B	Alternative 1C	Alternative 1D	Alternative 2A	Alternative 2B	Alternative 2C	Alternative 3
Areas that support fish bearing waters with identified or inferred habitat of game fish species	Effects to identified aquatic habitat and/or known watercourses with fishery management programs	14.3	Reasoned Argument	Traverses 2.11 km of watercourse, crossing 43 watercourses in total with potential to effect fish habitat. Does not cross any watercourses with publicly known fish stocking programs.	Traverses 2.21 km of watercourse, crossing 46 watercourses in total with potential to effect fish habitat. Does not cross any watercourses with publicly known fish stocking programs.	Traverses 1.89 km of watercourse, crossing 42 watercourses in total with potential to effect fish habitat. Does not cross any watercourses with publicly known fish stocking programs.	Traverses 1.99 km of watercourse, crossing 43 watercourses in total with potential to effect fish habitat. Does not cross any watercourses with publicly known fish stocking programs.	Traverses 1.57 km of watercourse, crossing 26 watercourses in total with potential to effect fish habitat. Does not cross any watercourses with publicly known fish stocking programs.	Traverses 1.63 km of watercourse, crossing 28 watercourses in total with potential to effect fish habitat. Does not cross any watercourses with publicly known fish stocking programs.	Traverses 1.94 km of watercourse, crossing 32 watercourses in total with potential to effect fish habitat. Does not cross any watercourses with publicly known fish stocking programs.	Traverses 2.59 km of watercourse, crossing 46 watercourses in total with potential to effect fish habitat. Does not cross any watercourses with publicly known fish stocking programs.
			Score	2	2	3	2	5	5	4	1
Effects to rare/undisturbed native habitats/ecosystems	Effects to rare habitats in Southwestern Ontario including tall grass prairies, savannah, native woodlands, natural wetlands, etc. and measured level of disturbance of native habitat and ecosystems based on calculated average coefficient of conservatism	14.3	Reasoned Argument	Affects 1.85 ha of native habitat. The measured level of disturbance to native habitats (within Alternative 1 routes) is calculated at 3.83 average coefficient of conservatism (highly disturbed).	Affects 1.85 ha of native habitat. The measured level of disturbance to native habitats (within Alternative 1 routes) is calculated at 3.83 average coefficient of conservatism (highly disturbed).	Affects 1.51 ha of native habitat. The measured level of disturbance to native habitats (within Alternative 1 routes) is calculated at 3.83 average coefficient of conservatism (highly disturbed).	Affects 1.51 ha of native habitat. The measured level of disturbance to native habitats (within Alternative 1 routes) is calculated at 3.83 average coefficient of conservatism (highly disturbed).	Affects 1.90 ha of native habitat. The measured level of disturbance to native habitats (within Alternative 2 routes) is calculated at 3.21 average coefficient of conservatism (highly disturbed).	Affects 1.67 ha of native habitat. The measured level of disturbance to native habitats (within Alternative 2 routes) is calculated at 3.21 average coefficient of conservatism (highly disturbed).	Affects 1.67 ha of native habitat. The measured level of disturbance to native habitats (within Alternative 2 routes) is calculated at 3.21 average coefficient of conservatism (highly disturbed).	Affects 1.03 ha of native habitat. The measured level of disturbance to native habitats (within Alternative 2 routes) is calculated at 3.72 average coefficient of conservatism (highly disturbed).
			Score	1	1	2	2	3	4	4	3
Rare/Sensitive species regeneration potential	Long-term effects to SAR and their regeneration potential	14.3	Reasoned Argument	Affects 6.58 ha of potential SAR habitat (Butternut, Eastern Foxsnake and SAR bats) and subsequent regeneration potential,	Affects 6.64 ha of potential SAR habitat (Butternut, Eastern Foxsnake and SAR bats) and subsequent regeneration potential,	Affects 5.57 ha of potential SAR habitat (Eastern Foxsnake and SAR bats), including subsequent species regeneration potential.	Affects 5.63 ha of potential SAR habitat (Eastern Foxsnake and SAR bats), including subsequent species regeneration potential.	Affects 4.79 ha of potential SAR habitat (Eastern Foxsnake, Lake Chubsucker, Lilliput and SAR bats), including subsequent species regeneration potential.	Affects 4.42 ha of potential SAR habitat (Eastern Foxsnake, Lake Chubsucker, Lilliput and SAR bats), including subsequent species regeneration potential.	Affects 5.27 ha of potential SAR habitat (Eastern Foxsnake, Lilliput and SAR bats), including subsequent species regeneration potential.	Affects 5.12 ha of potential SAR habitat (Eastern Foxsnake and SAR bats), including subsequent species regeneration potential.
			Score	1	1	3	3	5	5	4	4
Co-Location of existing infrastructure	Length of line that is cited within or beside existing linear infrastructure	14.3	Reasoned Argument	Parallels 41.67 km of existing infrastructure.	Parallels 36.40 km of existing infrastructure.	Parallels 34.75 km of existing infrastructure.	Parallels 29.50 km of existing infrastructure.	Parallels 26.04 km of existing infrastructure.	Parallels 24.29 km of existing infrastructure.	Parallels 19.81 km of existing infrastructure.	Parallels 1.5 km of existing infrastructure.
			Score	5	5	5	4	4	3	3	1
Anishnawbek and Haudenosaunee Culture, Values and Land Use Factor Total Weighted Score				285.7	285.7	371.4	342.9	400.0	400.0	371.4	285.7
Final Accumulated Total Overall Weighted Score				1195.7	1133.2	1241.4	1165.4	1365.0	1352.5	1166.4	1215.7

5.6 Summary of Comparative Evaluation

5.6.1 Natural Environment Factor Summary

Alternative 3 is the technically preferred alternative from a Natural Environment perspective. Route Alternative 3 has the least impact on terrestrial and wildlife habitat, designated natural areas and natural hazards, wetlands, and floodplain areas, while also minimizing impacts to species at risk and SCC. Route Alternative 2A scored very high in the Natural Environment factor, as it minimizes potential effects to fish and aquatic habitat, and effects to vegetation while also having the least effect to potential SAR and SCC habitat.

5.6.2 Socio-Economic Environment Factor Summary

Route Alternative 2A is the technically preferred in the Socio-Economic Factor overall. Route 2A conforms well to the recommendations of the PPS, although it traverses a portion of Employment lands in Comber. Route Alternative 2A impacts the least amount of prime agricultural land while also maximizing reuse of the existing idle line corridor. Route Alternative 2A traverses few features associated with archaeological potential and avoids a National Historic Site of Canada.

5.6.3 Technical and Cost Factor Summary

Overall for technical and cost, Route Alternative 1A is preferred because it parallels the largest amount of existing infrastructure, minimizes line length, reduces the need for line angles and crossings of existing infrastructure. From a technical and cost perspective Route Alternative 2A is more complex and costly to construct due to the number of line angles and construction complexity associated with surrounding topography. Route Alternative 2A traverses the fewest property parcels along its entire length, but does require some buyouts.

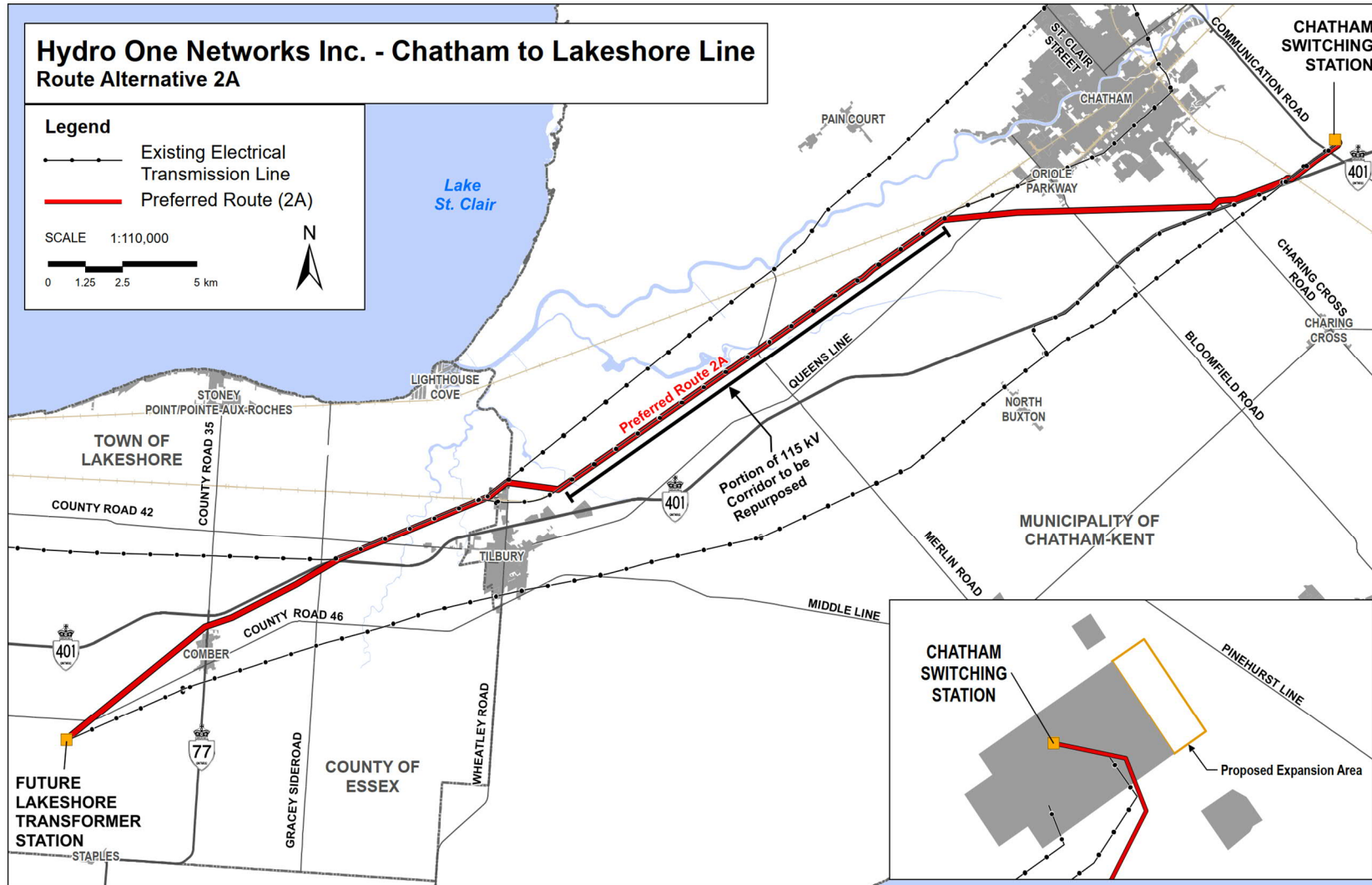
5.6.4 Anishnawbek and Haudenosaunee Culture, Values and Land Use Factor Summary

Route Alternative 2A is preferred as it balances opportunities to co-locate with existing infrastructure while minimizing impacts to native, undisturbed, natural areas. It is recognized that Route Alternatives 2A and 2B score the same in this category; however, Route Alternative 2A is located further away from historic sites identified by Anishnawbek communities, and is therefore preferred over 2B.

5.6.5 Technically Preferred Route Alternative

Overall, Route Alternative 2A (**Figure 5-3**) is preferred because it minimizes the overall impact to the natural and socio-economic environments compared to the other Route Alternatives and minimizes impacts to agricultural lands by utilizing an existing idle transmission corridor for nearly 1/3 its length. From a technical perspective, Route Alternative 2A is more complex to construct (soil conditions, line angles, etc.) but crosses the fewest number of property parcels and makes use of the existing idle line corridor. From an Anishnawbek and Haudenosaunee Culture, Values and Land Use perspective, Route Alternative 2A minimizes impacts to the natural environment while balancing opportunities to co-locate with existing infrastructure and proximity from identified areas of historical significance to Anishnawbek communities.

Figure 5-3: Technically Preferred Route Alternative



6 Project Description

The proposed Project is similar to many other projects completed by Hydro One. Based on the need identified by the IESO on the electrical load forecast for Essex County, the IESO requested Hydro One to construct a new double-circuit 230 kV transmission line between the Chatham SS in the Municipality of Chatham-Kent, to the future Lakeshore TS in the Municipality of Lakeshore. The purpose of the new double-circuit 230 kV transmission line is to:

- Increase the overall transfer of the bulk transmission system west of Chatham in order to reliably supply the forecast load growth in the Kingsville-Leamington area and the broader Windsor-Essex Region in the near- to mid-term due to a strong growth in the agricultural sector.
- Permit the resources and bulk facilities in this region to operate efficiently for local and system needs.
- Maintain existing interchange capability on the Ontario-Michigan interconnection between Windsor and Detroit.

Refer to **Figures 6-1** and **Figure 6-2** for examples of the types of transmission structures (i.e. towers) proposed for the Project. The structures shown in these figures are considered preliminary illustrative examples as they subject to the continuation of engineering and design work.

As the preferred Route Alternative will repurpose approximately 16 km of an existing idle 115 kV transmission line corridor between Tilbury and Chatham, the Project will involve dismantling and removal of the existing transmission structures, conductor and associated components and equipment along this stretch of the idle transmission line.

The Project will also involve the expansion of the Chatham SS to facilitate connection of the new transmission circuits. This expansion will occur at the eastern end of the station (within lands owned by Hydro One and Infrastructure Ontario), and will involve an expansion of the fenceline, grounding grid and station drainage systems, construction of access roads within the station fence, construction of additional buswork and associated equipment, and the construction of one additional relay building. No new permanent access road or entrance outside of the station fence will be required for the expanded station.

Figure 6-1: Example of Transmission Structure Proposed for the Project

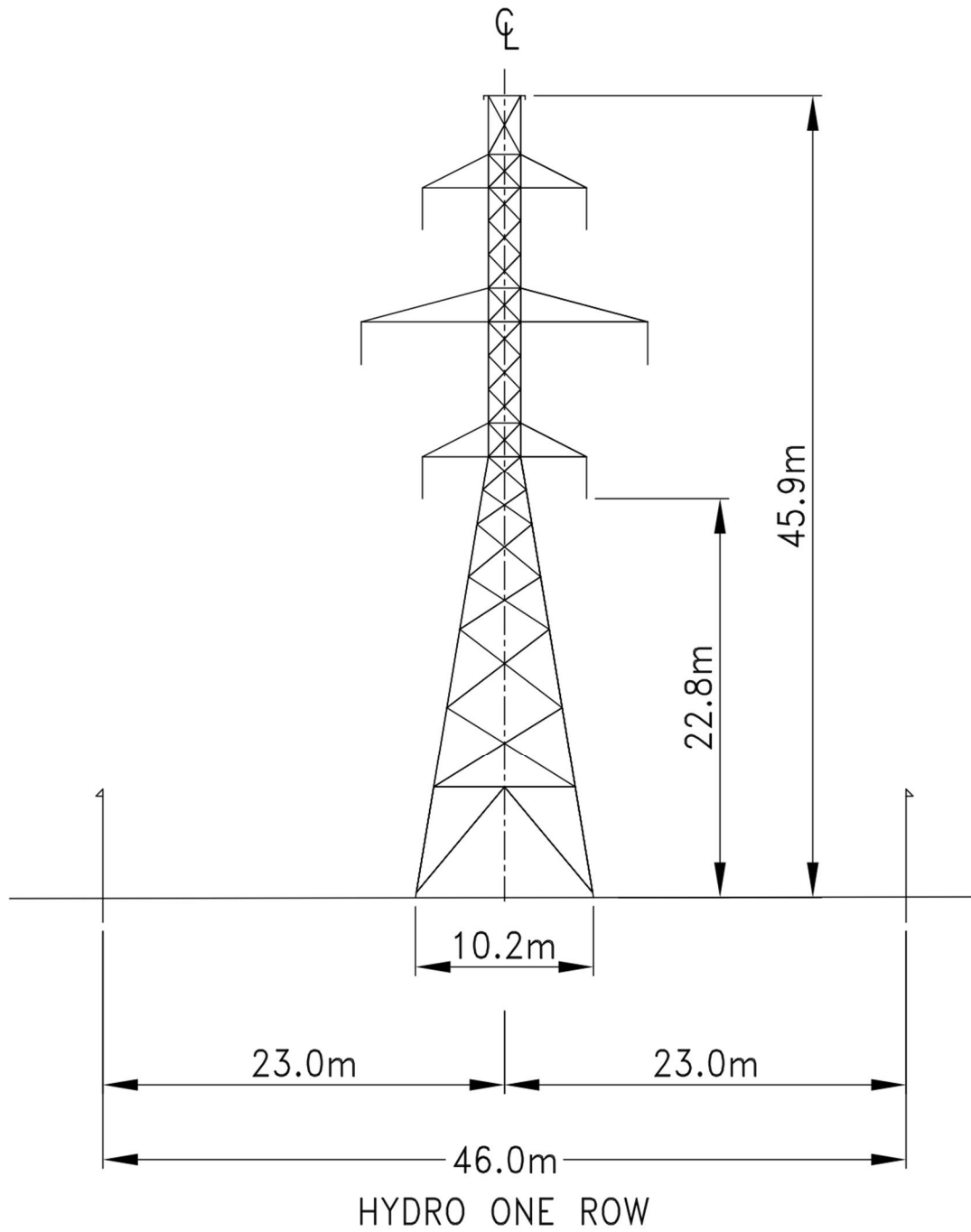
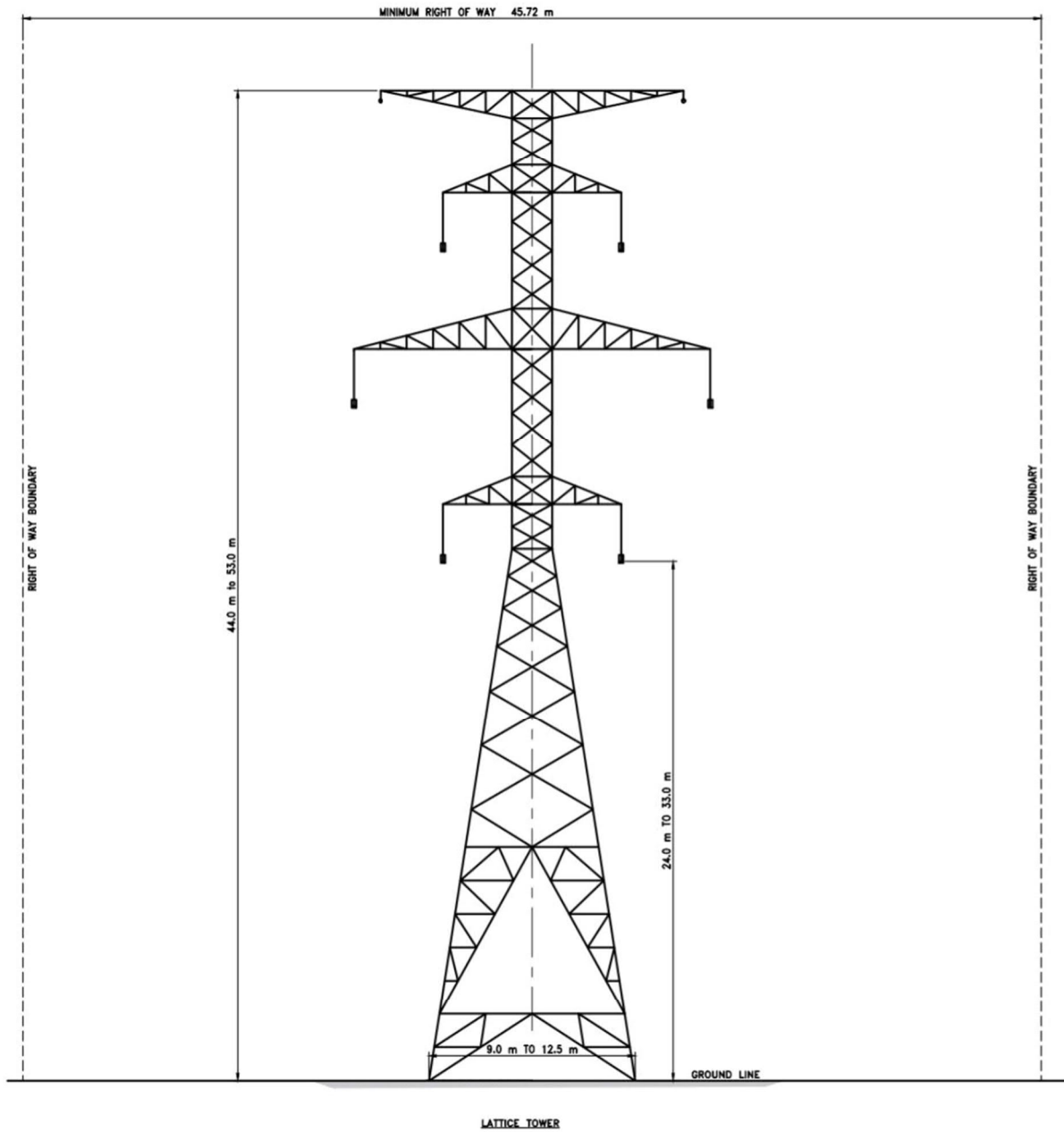


Figure 6-2: Preliminary Right-of-way Cross Section



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, including a geotechnical survey, and consultation with stakeholders. During the design phase, additional studies and surveys (e.g., Stage 2 Archaeological Assessment, geotechnical investigations) will be conducted as required. Concurrent with finalization of the design, required permits, licences and approvals, as listed in **Section 1.4**, will be obtained. Hydro One will also finalize restoration plans in consultation with appropriate stakeholders and the local communities, 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 will 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. In addition, a project-specific Environmental Specifications will be prepared, outlining specific requirements to be followed for the proposed Project.

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

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

Should any archaeological finds be uncovered during construction, work will stop immediately pending assessment by the Project archaeologist and further consultation with the Ministry of Tourism, Culture and Sport (MTCS) – Heritage Program Unit, as well as the appropriate Anishnawbek and Haudenosaunee communities.

Upon completion of construction, clean up and restoration (e.g. seeding, plantings, etc.) of areas disturbed by construction would occur, as required. Documents covering ongoing commitments, including monitoring and notification requirements will be prepared, and operation and maintenance staff will be briefed, as necessary.

Construction of the new double circuit 230 kV transmission line will involve the following activities:

- Site preparation including clearing, demolition and removal of existing structures (including dismantling and removal of existing idle transmission line structures, conductors and associated equipment) as required, and grading;
- Installation of foundations at the new structure locations;
- Assembly and construction of the transmission structures;
- Stringing new transmission conductors (wires) on the structures and installation of associated equipment; and
- Clean up and site restoration.

Expansion of Chatham SS will involve the following activities:

- Site preparation including clearing and grading;
- Expansion of the station grounding grid;
- Expansion of any sub-grade station drainage systems;
- Installation of a new portion of station fence;
- Installation of foundations at the new structure locations;
- Construction of one new relay building;
- Connection of new buswork and associated equipment;
- Relocation and reconfiguration of existing structures outside of the station fence, as required; and
- Clean up and site restoration.

Temporary facilities for the purpose of the proposed Project may include equipment staging areas and temporary stockpile areas, temporary rider poles or similar protective measures required during conductor stringing, and temporary structures near the transmission stations for the staging of outages. 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.

6.3 Maintenance, Operation and Retirement Phases

The proposed Project is planned to be in service by 2025 or earlier. The new double circuit 230 kV transmission line and the new expanded portion of the Chatham SS would undergo regular maintenance in adherence with Hydro One’s maintenance standards and regulatory requirements to maintain a safe and reliable electricity transmission system.

When transmission facilities become obsolete or unserviceable and/or deemed to be at end-of-life, the equipment is retired from service. Transmission facilities that are retired from service are often left in place (idle) for potential future use. The facilities may eventually be removed and the site made suitable for other purposes. The foundations are typically cut back 1.0 m below ground surface when transmission structures are removed. As mentioned above, the Project involves the removal of approximately 16 km of idle 115 kV transmission line.

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 the proposed Project activities is provide 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 proposed Chatham SS expansion.

Table 6-1: Project Schedule

ACTIVITY	PERIOD
Draft ESR released for 60-day public review and comment period	June 11, 2021
Comment integration and response	June 11 to August 10, 2021
Filing of final ESR and Class EA Statement of Completion with the MECP	September 2021
Submission of Section 92 application to the Ontario Energy Board	Winter 2021
Ontario Energy Board Section 92 Approval	2022
Construction Start	2023-2024
Planned in-service date	2024-2025

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/maintenance) activities of the proposed Project. The assessment of potential environmental effects for the proposed Project considered the baseline information on the environmental features that was collected for the PSA as presented in **Section 4**.

The potential environmental effects resulting from the construction and operation/maintenance of the proposed Project are similar to other projects undertaken by Hydro One and are well understood by the project Team. 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 effects.

The selection of mitigation measures are based on the following seven (7) guiding 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, property owners and businesses on the proposed Project timelines and construction areas.
- Proactive communication with Anishnawbek and Haudenosaunee 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 (Hydro One, 2016), and in accordance with applicable legislative requirements.
- 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 net effects (e.g. effects following the implementation of mitigation) are anticipated. The following subsections detail the effects assessment and identify avoidance, mitigation and/or compensation commitments required for the proposed project.

7.1 Agricultural Resources

Agriculture is a predominant land use within southwestern Ontario and is an important component of the regional economy. The majority of agricultural land use in southwestern Ontario is designated for production of cash crops and agricultural greenhouses (OMAFRA, 2020) as outlined in **Section 4.1**. The PSA is dominated by prime agricultural soils (Class 1-3). The preferred alternative will cross several agricultural property parcels and will have temporary and long-term effects on agricultural operations in the area. Potential effects from the Project include:

- Permanent loss of agricultural land for production of crops in the areas of new tower locations.
- Temporary loss of agricultural land for production of crops associated with construction activities in the ROW.
- Temporary soil compaction from construction vehicles.
- Potential for excavation activities to mix soil horizons, lowering the quality of soil or mixing of soil across agricultural properties.
- Potential disturbance to farm operations including planting and harvesting schedules, spraying and tilling activities.
- Removal of sections of agricultural hedgerows.
- Application of herbicides within the ROW with potential to spread into adjacent farm operations.
- Potential damage to field tile drains.
- Potential effects to adjacent livestock including stress, injury or loss from construction activities including use of implosive conductor splicing methods.
- Potential for transmission line interference with automated GPS guided farm equipment.

While some of the effects to agricultural operations will be long-term and result in net effects, many are temporary in nature and can be mitigated with diligent construction planning and implementation of mitigation measures during construction. No significant net effects to agricultural resources are anticipated. The following subsections outline the effects assessment for each potential agricultural effect and outline anticipated avoidance, mitigation and/or compensation strategies to be employed by Hydro One.

7.1.1 Loss of Agricultural Lands and Crops

The Project will result in temporary removal of planted/established crops and/or lands available for crop production to facilitate construction activities within the transmission line ROW. Also, some

agricultural lands will be permanently lost as a result of project infrastructure (e.g. tower footing locations). All lands and crops lost will be compensated in accordance with Hydro One real estate practices as agreed upon with landowners during the property acquisition process. Additionally the following mitigation measures are proposed for effects to agricultural lands and crops:

- Contact will be maintained with landowners and stakeholders regarding work schedules and other items of interest (e.g. access routes, minimizing disturbances to existing and planned farm operations, etc.).
- Where practical, construction and maintenance activities will be scheduled to avoid the growing season or sensitive times of year (e.g., extreme wet periods). To the extent practical, activities will be scheduled to occur during non-growing seasons or during frozen conditions.
- Access roads, staging areas, tower construction and stringing activities will be constructed to a minimum length and width required to accommodate the safe movement of construction equipment.
- Work will be limited to the planned access roads, staging and work areas. If a later expansion to these areas is required, it will be discussed with the landowner in advance.
- Towers will be located along fence/property lines where practical to minimize impeding on agricultural operations, to the extent practical.
- Existing farm lanes and other existing access routes will be used whenever possible. In the event farm lanes are absent, access will be focused along field edges, to the extent practical.
- Restoration measures, as informed by discussions with landowners, to cultivate or otherwise alleviate soil compaction on areas affected by construction, may be undertaken following the completion of construction and removal of temporary construction access, as necessary.

7.1.2 Soil Compaction

Project activities have potential to cause soil compaction through the use of heavy equipment. Compaction of soil may occur during both the construction and operation/maintenance phases of the Project. Soil compaction resulting from these activities is largely unavoidable and is anticipated to be temporary in nature. Measures to mitigate soil compaction include:

- Equipment with low bearing capacity will be used, where practical.
- Access will be located along existing farm lanes or field edges, where practical.
- Access roads, staging areas and tower and stringing activities will be constructed to a minimum length and width required to accommodate the safe movement of construction equipment.

- Work will be limited to the planned access roads, staging and work areas. If a later expansion to these areas is required, it will be discussed with the landowner in advance.
- Where practical, temporary access roads and work pads will be built in agricultural fields using mats, or geotextile and crushed rock, or equivalent means, which can be easily removed when construction is complete to allow for re-cultivation of the area.
- Restoration measures, as informed by discussions with landowners, to cultivate or otherwise alleviate soil compaction on areas affected by construction, may be undertaken following the completion of construction and removal of temporary construction access, as necessary.

7.1.3 Soil Mixing

Mixing of soil including soil horizons and movement of soil between property parcels is a potential effect of the Project. Excavations may be required for construction activities. Excavation has the potential to result in mixing of soil horizons, reducing the quality of surface topsoil for agricultural purposes. This effect is anticipated to be minimal and limited to areas of deep excavation (tower locations), but may be permanent. Additionally, movement of construction equipment through the ROW may cause migration of soils from one agricultural field to another. Mitigation measures to minimize topsoil and subsoil mixing will include:

- Augured tower footings or screw-pile foundations will be utilized to the extent feasible to minimize soil excavations.
- Stripping or excavation of soils will be minimized to the extent practical.
- Where soil stripping is required, topsoil and subsoils will be removed and stockpiled separately.
- Depths of soil being removed will be carefully monitored and minimized during stripping activities.
- Volume of topsoil and subsoil salvaged will be maximized, where practical.
- Soils will be stripped under generally dry conditions (not saturated), such that rutting, soil mixing, or other undesired ground disturbance is minimized to the extent practical;
- Vegetation, stone piles, fencing and deleterious materials will be removed prior to stripping.
- For backfilling operations, topsoil and subsoil will be replaced in reverse order of excavation to minimize the potential for additional mixing and maximizing future growing potential.
- Soil cover on exposed areas within agricultural areas will be discussed with the landowner, and if hydro seed application is used, will be limited to annual rye or similar, and will not contain any potential noxious weed species or invasive species.

- Equipment and vehicle inspections and cleaning will be conducted as required during construction, to minimize the potential for inadvertent transport of trace soils between contaminated and non-contaminated agricultural fields.
- Cleaning will be conducted using a risk-based approach, whereby vehicles and equipment that have come in contact with soils will be inspected and cleaned of dirt/debris/seeds.
- Cleaning will occur in a manner that ensures that runoff is contained and waste materials can be collected.

7.1.4 Disturbance to Farm Operations

Project activities will require construction and maintenance of the transmission line ROW. These activities inherently involve activities during times of the year typical to agricultural production activities. Effects to agricultural operations from construction and maintenance activities may include impediments to farm vehicle maneuverability or disruption to farm operations including planting and harvesting or tilling and spraying times of the year. Generally, disruption effects are anticipated to be temporary in nature and can be mitigated by:

- Where practical, the location of towers will be placed to minimize impacts to maneuverability of agricultural equipment (e.g., along lot lines or field boundaries).
- Contact will be maintained with affected landowners regarding work schedules and other items of interest (e.g., access routes, minimizing disturbances to farm operations, etc.).
- Access roads, staging areas, tower construction and stringing activities will be constructed to a minimum length and width required to accommodate the safe movement of construction equipment.
- Work will be limited to the planned access roads, staging and work areas. If a later expansion to these areas is required, it will be discussed with the landowner in advance.
- To the extent practical, construction and maintenance activities will be scheduled to avoid sensitive times of the year with regards to agricultural operations.
- Crossovers and feathering of constructed access roads will be implemented to allow for vehicular and equipment crossing, where practical.

7.1.5 Vegetation Removal

Construction and maintenance of the transmission line ROW will require removal of non-compatible vegetation including trees typically found in hedgerows or windbreaks. Construction and maintenance activities may require mechanical removal of vegetation (tree felling) and/or application of herbicides to control noxious weeds. Effects from vegetation removal include potential

for herbicide overspray and/or fragmentation of existing hedgerows and windbreak systems. Compensation measures will be employed to restore vegetated areas with compatible vegetation (bushes) where practical. Additional mitigation measures include:

- A project-specific Weed Control Plan will be developed for implementation during construction, and will incorporate feedback from landowners to the extent practical.
- The Project ROW will be monitored for establishment of weeds until the Project is completed.
- The Weed Control Plan will be managed by an Ontario Professional Agrologist.
- Vegetation that will not affect construction or line clearances will be retained, where possible.
- Hedgerows and windbreak areas impacted by construction will be replaced with compatible vegetation post-construction, in consultation with the landowner.

7.1.6 Contamination of Organic or Identity Preserved (IP) Crops

Construction and maintenance activities have potential to utilize herbicides to control noxious weeds and/or vegetation. There is also potential for inadvertent movement of trace soils between agricultural fields. Chemical control methods have potential to overspray to adjacent crops and movement of soils has potential to transport undesirable soil types and compounds. It is recognized that some agricultural operations in the PSA are certified organic or produce Identity Preserved (IP) crops. Other agricultural operations are transitioning to organic/IP crop types. To minimize potential disruption or contamination to organic or IP agricultural operations the following mitigation measures will be implemented:

- Contact will be made with landowners to determine if organic or IP operations are present which may require additional considerations during construction planning.
- Equipment and vehicle inspections and cleaning will be established during construction, to minimize the potential for inadvertent transport of trace soils.
- Cleaning will occur in a manner that ensures that runoff is contained and waste materials can be collected.
- Field crews will be informed if working in organic or IP croplands.
- Mitigation strategies will be discussed with landowners prior to construction and field crews will be informed of the required mitigation and monitored to ensure these strategies are properly implemented.

7.1.7 Damage to Field Tile Drains

The use of heavy equipment for construction and maintenance activities has potential to cause damage to agricultural tile drains. If damage to tile drains occurs as a result of construction or maintenance activities the tile will be repaired by a licensed tile drainage contractor in consultation with the affected landowner. To minimize potential for tile drain damage the following mitigation measures will be implemented for the Project:

- Landowners will be consulted to determine existing field tile locations in support of avoidance/protection measures.
- Tile drains will be avoided and/or protected (e.g., tower locations, temporary construction access), to the extent practical.
- Access roads, staging areas, tower construction and stringing activities will be constructed to a minimum length and width required to accommodate the safe movement of construction equipment.
- Work will be limited to the planned access roads, staging and work areas. If a later expansion to these areas is required, it will be discussed with the landowner in advance.
- Temporary access roads and work pads will be built in tiled agricultural areas using mats, or geotextile and crushed rock, or equivalent means, to protect tile drains.
- Equipment with low bearing capacity will be used to minimize potential damage to tile drains, where practical.

7.1.8 Livestock Stress, Loss or Injury

Construction and maintenance activities are inherently loud and will occur in proximity to livestock managed areas (grazing fields, pastures, etc.) resulting in potential for livestock stress, injury or loss. Some construction activities such as the potential use of implosive conductor splicing may scare or startle agricultural livestock. These effects are anticipated to be temporary in nature and of a relatively short duration. To minimize impacts to livestock the following mitigation measures will be implemented:

- Landowners will be informed in advance of upcoming work activities which may disturb or pose a risk to livestock, and consulted with respect to potential mitigation measures, such as moving or containing livestock, as necessary.
- Vehicle and equipment travel on agricultural lands will follow existing roads, trails and paths to the extent practical.

- Field crews will be informed about livestock in the vicinity of work areas to confirm they are aware of the need to secure gates, are cognizant of noise sensitivity controls, and to ensure clean-up of construction materials and debris at the end of each day to minimize potential livestock ingestion.
- If excavations cannot be closed immediately, exclusion fencing will be erected to protect livestock from entering.
- Vehicles/Equipment will be inspected and cleaned as necessary prior to entering onto designated lands to prevent the potential introduction of diseases.
- Existing gates and fences will be used as required. All fences and gates will be left in "as-found" condition following construction;
- Livestock access control gates and fencing will be installed during construction at roads and between fenced fields as necessary to prevent escape of livestock or movement of livestock into work areas.
- Equipment and machinery used on site will be maintained in good working condition with functioning mufflers.
- Prior to any use of implosive splicing, a Blasting Communication and Management Plan will be developed outlining proper storage, security, detonation, and notification requirements.
- Notify area residents, municipal authorities, police department, and other crews within 1.6 km about the use of implosive splicing, one week prior to the work commencing.
- Signs shall be posted on all roadways leading to a blasting area in accordance with government rules and regulations.
- Maintain safe distances of the blasting site from other employees, vehicles, equipment, structures, and fire hazard sources. Perform blasts during pre-determined times.

7.1.9 Electric and Magnetic Interference

Operation of the transmission line may produce low level electric and magnetic fields with potential to interfere with automated or GPS-guided agricultural equipment (e.g. auto-steer). Hydro One acknowledges the concerns raised as well as insistence by some farmers currently working fields below transmission lines, that localized issues have been observed beneath the transmission lines. While we do not anticipate effects to communication systems in farm equipment, Hydro One will work with concerned farmers to collect information on the systems of concern, and contact manufacturers of these systems to gain further insight into potential concerns and possible solutions if applicable. While obstructions such as buildings or trees are known to block reception of GPS signals, published studies assessing these concerns indicate that overhead power line conductors are too thin to cause appreciable screening.

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 Resources

As noted in **Section 4.3.1**, a Stage 1 Archaeology Assessment was completed by TMHC (2020). The Stage 1 Archaeological Assessment determined that the PSA for the preferred Route Alternative contains lands with potential to support archaeological resources. A Stage 2 Archaeological Assessment is required for the technically preferred Route Alternative, for all lands exhibiting archaeological potential that have not been previously assessed. Prior to construction, a Stage 2 Archaeological Assessment will be completed within the identified areas of archaeological potential along the new transmission line corridor in accordance with MHSTCI requirements. If the Stage 2 Archaeological Assessment identifies the need for further assessment, a Stage 3/4 Archaeological Assessment will occur as required and as outlined in the "Standards and Guidelines for Consultant Archaeologists", Ministry of Tourism, Culture and Sport (2011)." Copies of all Archaeological Assessment will be filed for acceptance with MHSTCI prior to construction.

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 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, all Anishnawbek and Haudenosaunee communities that have an interest in the Project and/or location will also be immediately contacted so that, in the event such resources or remains are Anishnawbek and Haudenosaunee in origin, protocols for handling such resources can be established immediately prior to the disturbance or removal of such from the property.

7.4 Cultural Heritage Resources

Based on the findings of the Cultural Heritage Existing Conditions Report, there is the potential for project-related works to adversely affect 28 known and/or potential built heritage resources within the study area for the preferred Route Alternative. No cultural heritage landscapes were identified in the study area associated with the preferred Route Alternative.

To minimize potential adverse effects to built heritage resources, work will be planned in a manner that avoids adverse effects to the identified potential built heritage resources to the extent practical. Where an identified built heritage resource cannot be feasibly avoided and will be directly impacted through destruction, alteration, or disruption, Hydro One will undertake property specific Cultural Heritage Evaluation Reports (CHERs) and/or Heritage Impact Assessments (HIAs). The additional study will confirm the cultural heritage value or interest and heritage attributes of the impacted built heritage resource and identify all adverse effects. All evaluation and assessment will be in compliance with the Hydro One Cultural Heritage Identification and Evaluation Process and MHSCTI Standards and Guidelines.

7.5 Land Use and Communities

7.5.1 Business Operations

Project activities are required in areas of existing commercial operations such as those located in the community of Comber or adjacent to Highway 401 (e.g., truck stop areas). There is potential for disruption to the function and to the access of commercial operations during the construction phase of the Project; however, it is expected to be minimal and temporary in nature.

To minimize disruptions and/or impacts, contact will be maintained with commercial property owners during construction. Business access will be maintained at all times during construction, and in instances where access cannot be maintained, arrangements will be made for alternate access prior to construction activities starting and appropriate road signage will be provided. Access to construction areas will be carefully designed to avoid and minimize adverse effects. Advanced notice will be provided to nearby residences, farmers, landowners and commercial operations, the MTO, and emergency response services outlining the location of entry/exit points for the construction site (e.g., at the transmission line and Highway 401), as well as the schedule for construction work or construction related traffic in those areas. Road signage will also be created and installed to reflect this information.

7.5.2 Effects to Existing and Future Land Use Designations and Potential Future Development

The Project is within the County of Essex, Municipality of Lakeshore and Municipality of Chatham-Kent's OP designated areas. The outline of land use policies and OP acceptable uses and how the Project fits into provincial policy and local OPs is outlined in **Section 4.4.1**. Generally, OPs include support towards energy transmission and investment in southwestern Ontario. Specifically, the local

OPs allow for the provision of opportunities to develop energy supply including electricity transmission facilities in all land use types. It is recognized that the proposed Project will cross multiple types of current and future land use designations, including agricultural lands, commercial lands and lands designated for future development. While transmission lines are largely compatible with development, the location of a transmission line corridor will introduce certain restrictions to future uses within 2 m of the corridor.

Throughout the province, development (both residential and commercial/industrial) occurs around and adjacent to existing transmission line corridors and stations. Uses deemed to be compatible with overhead transmission lines are often approved within transmission line ROWs. Hydro One has existing departments and processes to review proposals for developments that are planned adjacent to or within transmission line ROWs, and facilitate compatible uses of these corridors. Typically there are no restrictions placed on development or new construction outside of the transmission line ROW itself.

Where and when future development projects or initiatives are proposed to occur along or within the ROW for the new Chatham to Lakeshore transmission line, Hydro One will apply its existing processes to review and facilitate these future developments, including potential compatible uses within the transmission line ROW. In addition, Hydro One will work with local Municipalities to consider potential means of accommodating potential future development during design of the transmission line, within the property fabric traversed by the transmission line ROW.

7.5.3 Effects to Local Roads and Traffic

The proposed Project is located within a rural landscape, with Highway 401 serving as a key access route through southwestern Ontario. Construction activities have potential to cause disruption to Provincial highway traffic and to local traffic on municipal and county roads during construction phases of the proposed Project. Specifically, stringing of conductors across road and highways may require temporary road closures, rolling closures and/or detours. The presence of heavy equipment may also increase traffic and loads which may result in localized wear and tear on lower order roadways. Effects to road and highway traffic and roadways are expected to be minimal and temporary in nature. Potential disruption to airports/aerodromes and railway lines are not anticipated.

Temporary effects to roads and traffic are largely unavoidable. To mitigate potential impacts from construction activities, Hydro One will:

- Complete a pre and post-construction road survey to document impacts to local roads caused by heavy equipment and increased construction traffic during construction activities. Survey results will be shared with Municipal staff in advance of construction work commencing. Damage caused as a direct result of construction activities on the Chatham to Lakeshore project will be repaired upon completion of construction activities.
- The proposed Project will adhere to seasonal load restrictions.
- Where required, a Traffic Control Plan will be developed and shared with local municipalities, as necessary.
- Construction haul routes and schedules will be shared with local municipalities in advance of construction, as necessary.
- Construction traffic will access the construction area from the existing road network at specified construction access/egress locations.
- Common parking areas will be established for construction crews.
- To the extent practical, in an effort to avoid road closures and other disruptions during stringing, conductor stringing will utilize rider poles, boom-tipped riders, or other protective measures.
- If temporary road or highway closures (e.g., rolling closures) are required during stringing or other construction activities, the construction contractor will coordinate closely with the appropriate road authority to ensure that proper notice is provided and that required signage and traffic controls are utilized, and that the duration of any temporary closures will be minimized to the extent practical.
- Local advertisements (e.g. radio, newspaper, etc.) will be issued and road signage will be erected to provide notification / pre-construction information to area residents on timelines and construction routes, and potential detours, if required.
- Traffic control officers or flag persons will be assigned to assist with construction entry/exit, as necessary.

With the implementation of the mitigation measures described above, the proposed Project is not anticipated to have a long-term net effect on local roads and traffic.

7.5.4 Mud and Construction Debris

Construction activities may result in the accumulation of mud and construction debris on and adjacent to local roads in construction areas. These effects have the potential to migrate to areas outside of the construction zone.

Construction will be completed with general clean site policies enforced requiring pick-up and disposal of refuse and construction waste on a regular basis. Mud related to construction activities will be removed from local roads and access roads as necessary throughout construction. Mud mats will be installed (as needed) as a mechanism to reduce the transport of debris off-site. Vehicles and equipment will be washed and maintained at work areas as necessary. Formal cleanup and site restoration (e.g., restoration planting and seeding) will further minimize this potential effect as construction progresses and is completed.

With the implementation of the mitigation measures described above, mud and construction debris generated by the proposed Project is not anticipated to have a long-term net effect.

7.5.5 Electric and Magnetic Fields (EMF)

EMF are invisible forces that surround electrical equipment, power cords, and wires that carry electricity. Although they are often referred to together as EMF, electric fields and magnetic fields are actually two distinct components of electricity. Hydro One is committed to meet safe EMF exposure levels for the proposed Project and EMF are taken into consideration during the design of any new electrical transmission project. This commitment ensures that both employees maintaining the infrastructure, as well as members of the public in the vicinity of transmission infrastructure are not exposed to elevated EMF levels.

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 transmission line ROW, 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 transmission ROWs. 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.

Regarding research on EMF, Health Canada's conclusion is that there is no conclusive evidence of adverse effects caused by EMF exposure from power lines (Health Canada, 2016). Health Canada does not consider that any precautionary measures are needed regarding daily exposures to EMFs at extremely low frequencies. Health Canada's Fact Sheet that addresses issues related to EMF is available in **Appendix D**.

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

7.5.6 Noise and Vibration

Construction and maintenance activities have the potential to affect ambient noise and vibration levels. These effects, in turn, may create temporary nuisance or disturbance effects for local residents and land users.

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

Noise and vibration effects are anticipated to be short-term, temporary and transient during the construction period. Specific to vibration, it is expected to be temporary in nature, occur only during specific activities (e.g. implosive splicing), and limited to the immediate vicinity of the construction work area. Mitigation measures to reduce potential nuisance effects resulting from noise and vibration include:

- Equipment and machinery used on site will be maintained in good working condition.
- Prior to any use of implosive splicing, a Blasting Communication and Management Plan will be developed outlining proper storage, security, detonation, and notification requirements.
- Area residents, municipal authorities, police department, and other crews within 1.6 km will be notified about the use of implosive splicing one week prior to the work commencing.
- Signs shall be posted on all roadways leading to a blasting area in accordance with government rules and regulations.
- A safe distance of the blasting site will be maintained from other employees, vehicles, equipment, structures, and fire hazard sources. Blasts will be performed during pre-determined times and outside of electrical storms or adverse weather conditions.

Construction activities will also conform to local noise control by-laws (Municipality of Lakeshore Noise by-Law 106-2007 and Municipality of Chatham-Kent Noise By-Law 178-2017). Noise By-Law exemptions will be sought if work is required outside of the hours specified in the aforementioned by-laws (e.g. overnight)

Noise sources and vibration 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 Project. With exception of periodic maintenance activities (e.g., inspection from ground-based vehicles and vegetation maintenance, etc.), no additional noise (or vibration) sources are expected during maintenance and operation of the proposed Project. Therefore, no additional mitigation is required during the maintenance and operation of the proposed project.

With the implementation of the mitigation measures described above, noise sources and vibration levels generated by the proposed Project are not anticipated to have a long-term net effect.

7.5.7 Community Benefits Initiative

While Hydro One always strives to avoid and mitigate potential effects to the socio-economic environment, and restore areas that are affected by the Project, Hydro One acknowledges that there may be net effects. Because these net effects cannot be further avoided or mitigated, they are typically compensated for by undertaking positive activities. In an effort to offset net effects, Hydro One is committed to working with municipalities in the area to identify opportunities that could enhance and contribute to the broader landscape, recognizing that community benefits can be varied and diverse in nature. Hydro One will continue to engage and work with project stakeholders to identify and implement such opportunities.

7.6 Mineral and Petroleum Resources

7.6.1 Aggregate Extraction

As discussed in **Section 4.5**, there are no areas within the PSA used for the extraction of aggregate; therefore; no potential effects have been identified for the proposed Project.

7.6.2 Petroleum Resources

Although the proposed project falls within portions of a petroleum pool resource area, the proposed Project is not anticipated to have a temporary and/or permanent effect on petroleum pools in proximity to the proposed Project.

7.7 Natural Environment Resources

7.7.1 Physical Environment

7.7.1.1 Physiography and Geology

The existing physiography, topography and geology is expected to remain as is following the construction of the proposed Project. Therefore, no net effects on the physical environment have been identified for the proposed Project.

7.7.1.2 Spills

During construction and maintenance activities, there is the possibility of spills from the release of oils and fuels from construction/maintenance 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.

An Emergency Response Plan and spill cleanup equipment will be maintained and readily accessible at all times during construction and maintenance activities. Refueling of vehicles and equipment will be completed in designated locations, a minimum of 30 m away from sensitive receptors (e.g. source water protection areas, watercourse, wetlands, etc.) while utilizing emergency spill trays. In the event refueling is required outside of designated areas, additional containment or other mitigation and spill prevention measures will be utilized. Fuelling operations will require the operator to visually observe the fuelling process at all times.

There are a number of additional 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:

- Areas impacted by a spill will be secured, and unauthorized personnel will be kept out of the affected area until further assessment and/or clean-up is conducted.
- Clean-up and the disposal of contaminated materials will be managed in accordance with provincial regulations and guidelines.
- Fuels, chemicals, lubricants or other deleterious substances will be stored on level ground in properly contained storage areas.
- Only approved aboveground petroleum storage tanks will be used during the construction phase of the Project, and will be stored in designated fuelling areas and with additional temporary containment measures.

- Work conducted near Provincially/locally designated Vulnerable Areas (namely Wellhead Protection Areas [WHPAs]; Intake Protection Zones [IPZs]) will be avoided or limited, where practical.
- ERCA, the LTVCA and/or the Municipality of Lakeshore, County of Essex and Municipality of Chatham-Kent will be consulted in order to undertake the proper action for managing the potential threats to source water protection areas.

Should a spill occur, the MECP Spills Action Centre (SAC) will be notified of all reportable spills and containment and remediation should occur as soon as possible.

7.7.1.3 Waste Generation

Construction waste would be generated by the proposed Project, and would need to be disposed of in regional landfills and recycling facilities. Waste produced during the construction period may include non-hazardous wastes (packaging, spent lubricating cartridges, coffee cups, etc.) and hazardous wastes (pneumatic oils from hydraulic systems, gasoline and other lubricants/oils).

Hazardous waste (solid and liquid) should be transported by MECP licensed waste haulers to MECP registered disposal sites. Good management practices are recommended to prevent spills and contamination during construction (see above). Any temporary waste on-site should include the use of secured containers in designated sites away from sensitive areas and removed from the site on an ongoing basis. With respect to concrete wash water, all water from concrete chute washing activities will be contained in leak proof containers or in an approved settling pond off site. Waste produced will be minimized, segregated, and recycled where possible, and all testing, handling, storage, transport and disposal of waste will be completed in accordance with all applicable legislation.

With the implementation of the mitigation measures described above, waste generated by the proposed Project is not anticipated to have a long-term net effect.

7.7.1.4 Excess Materials Management

Project activities have the potential to produce excess materials during construction and maintenance phases. Excess materials can include topsoil and subsoil from excavation or stripping activities. All efforts will be made to reuse soils onsite where practical and feasible; however, excess materials that cannot be managed onsite will be handled in accordance with O.Reg. 406/19.

Soil testing to meet the requirements of O.Reg. 406/19 will be completed, if necessary, during geotechnical investigations prior to or during construction. If excess material is deemed suitable, Hydro One will work with landowners to explore opportunities for beneficial reuse within the property parcel. Any excess soil required to leave the site will be taken to an approved facility licensed to accept excess soil based on its characterization or other off-site location that can demonstrate beneficial reuse.

7.7.2 Atmospheric Environment

7.7.2.1 Climate Change

It is important to note that the proposed Project is not a power generation project and its operation would not emit greenhouse gases. However, there would be temporary emission of fossil fuels from the vehicles and equipment used during construction and maintenance activities associated with the proposed Project. Idling of construction vehicles and equipment will be kept to a minimum and GPS or other navigational tools will be utilized to optimize routing to reduce fossil fuel emissions. The emissions directly related to the construction and maintenance of this project would be minimal.

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

7.7.2.2 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 activities 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.

During construction, equipment and machinery will be maintained in good working condition to minimize excessive exhaust. Idling of construction vehicles and equipment will be kept to a minimum and GPSs will be installed in vehicles to optimize routing to reduce fossil fuel emissions. Additional mitigation measures to reduce nuisance effects of dust and air emissions during construction include the following:

- Vehicles will not exceed posted speed limits.

- Minimize and stabilize vehicular traffic and exposed soils in high traffic areas with suitable cover material.
- Avoid excavation and other construction activities that have the potential to release airborne particulates during windy and prolonged dry periods, to the extent practical.
- If excavation or other construction activities with a potential to release airborne particulates must occur during windy conditions, dust controls will be utilized.
- Effective dust suppression techniques, such as on-site watering, will be implemented as necessary.
- Cover or otherwise contain loose construction materials with the potential to release airborne particulates during transport, installation or removal.
- Disturbed areas will be restored as soon as practical to minimize duration of soil exposure.

Significant emissions from maintenance activities during operation will be variable, are expected to be short-term in duration, and would occur periodically over the life of the proposed Project. Nuisance effects posed by these temporary activities are expected to be negligible and would not result in noticeable or long-term changes to local air quality.

7.7.3 Noise and Vibration

There is the potential for increased noise and vibration during the construction and maintenance activities; however, as noted in **Section 7.5.6**, they are anticipated to be short-term, temporary, transient and intermittent. This is because the proposed Project is linear and activities would be planned sequentially. The duration of construction and maintenance activities at any one location along the transmission line corridor would be limited and intermittent; thereby, reducing the amount of time of noise and vibration at any given area. **Section 7.5.6** provides additional information.

7.7.4 Surface Water Resources

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

7.7.4.1 Potential Effects on Surface Water Quantity

Project activities during the construction phase that have the potential to influence surface water quantity conditions in nearby municipal drains and watercourses include:

- Site preparation for the new transmission towers, construction of temporary access roads and temporary laydown areas.
- Construction adjacent to municipal drains, watercourses and in/adjacent to wetland areas.
- 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 temporary access roads would be required in support of transmission tower installation. Vegetation removals during construction have the potential to result in a temporary increase in overland flows, potential organic and sediment loading to nearby municipal drains and water courses, as well as potential water temperature increases in instances where vegetation removal adjacent to watercourses is required. Similarly, vehicle and construction equipment have the potential to create temporary rutting in soils which have the potential to result in localized ponding and/or channelization leading to additional erosion of soils.

To avoid or minimize the potential adverse effects related to vegetation removals and soil rutting on surface water quantity, the following mitigation measures would be implemented:

- Where practical, activities with potential to cause rutting, ponding/channelization or erosion will be planned during stable and dry ground conditions.
- Existing watercourse crossings and constructed access routes will be utilized to the extent practical.
- Where required, temporary crossing structures will be installed for construction access at watercourses and other low lying areas, and will be removed upon completion of construction.
- The use of constructed access (e.g., mats or geotextile/crushed stone) roads will be utilized and will be monitored to ensure there is no surface ponding to minimize rutting and pooling of water;
- Vegetation removals will be minimized to the extent practical. Compatible vegetation will be retained within riparian areas adjacent to watercourses.
- Machine clearing and grubbing will be restricted near sensitive environmental areas; hand clearing will be required within watercourse banks/riparian areas or in wetlands.
- Replant with compatible vegetation as required.
- Where erosion is of a concern, exposed soils in previously vegetated areas will be re-vegetated as practical, or have other erosion or sedimentation measures applied as necessary.
- Where applicable and possible, vegetative buffers will be maintained to protect receptors.

- Construction access and laydown areas will be restored following completion of construction.
- Work will be staged to minimize the extent of exposed and disturbed areas at any given time.
- Cleared vegetation will be relocated to designated areas away from water features.
- Topsoil will be stockpiled in designated areas away from water features and will utilize containment measures such as erosion and sediment control as appropriate.
- Disturbed areas will be stabilized and restored as soon as practical.
- Equipment operation adjacent to water features will be minimized, where possible.
- Works adjacent or around water feature banks will be conducted during appropriate conditions and times of the year (e.g., dry or frozen conditions), to the extent practical.
- Vegetation buffers along water feature banks will be maintained to the extent practical, and restored.
- ERCA and LTVCA will be consulted (specifically for ESC measures within regulated areas) during detail design.

With the implementation of the mitigation measures described above, vegetation removals and temporary soil rutting are not anticipated to have a long-term net effect on surface water quantity in the receiving municipal drains/watercourses.

The proposed project is predominantly located within agricultural lands. It is anticipated that the proposed Project will utilize existing access roads wherever practical; the number and location of access roads would be established during the detailed design phase. Access roads will be chosen where possible to avoid crossing municipal drains or watercourses. In the event the proposed Project requires the construction of new access roads, their construction has the potential to disrupt sheet flow of surface waters over agricultural lands.

To avoid or minimize the potential adverse effects associated with the installation of access roads on surface water quantity, the following mitigation measures would be implemented:

- Existing, natural drainage patterns and flows will be identified and maintained to the extent practical.
- Equalization culverts or similar methods may be used in construction of access roads.
- Existing watercourse crossings and constructed access routes will be utilized to the extent practical.

- Construction and access planning will take into account tiles drains to ensure continued function of drainage tiles to the extent practical. Discussions with landowners will be held where further information is needed to avoid adverse effects.

With the implementation of the mitigation measures described above, installation of access roads is not anticipated to have a long-term net effect on surface water quantity in the receiving municipal drains/watercourses.

Site preparation would also be required for temporary laydown areas, and conductor “pulling pads”; the locations of which have not been established. Where practical, these areas would be placed away from sensitive areas (e.g. municipal drains, watercourses, wetlands, woodlots) to the extent feasible.

During construction, it is expected that changes to streamflow and water levels in the municipal drains and watercourses downgradient of disturbed lands would reflect the proportion of disturbed area relative to the total watercourse catchment area. In the case of adjacent wetlands, where construction dewatering associated with nearby transmission tower pads and foundations may be undertaken; the zones of influence of this dewatering are expected to be measured in the range of several to tens of metres radius for a brief period of time. As a result, changes to water levels in adjacent wetlands would be ephemeral and negligible in quantity.

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, of which quantities are expected to be relatively minor. It is not expected that an Environmental Activity and Sector Registry (EASR) or Permit to Take Water (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 aquatic features; however, much of the surface water discharged onto land could infiltrate through permeable agricultural lands.

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

- Construction water will be discharged in compliance with permits and/or approvals from MECP and the Municipality of Lakeshore, County of Essex and Municipality of Chatham-Kent, as required.

- A construction water management plan will be developed prior to construction and implemented appropriately (e.g., passing discharge water through a filter bag or drum before discharge to the environment to capture sediment and slow down the water velocity, etc.), as required.
- Where possible, opportunities to maximize retention times and reduce surface flow velocities will be executed.

With the implementation of the mitigation measures described above, and the short duration of the dewatering activities, these activities are not anticipated to have a long-term net effect on surface water quantity in the receiving municipal drains/watercourses.

There is potential for project infrastructure (access roads, towers) to be located within ERCA/LTVCA regulated lands with the potential to result in impacts to natural hazard lands, wetlands and/or areas of interference. The location of project infrastructure will be determined during detail design. Net effects on surface water quantity in association with project infrastructure is addressed in the text above.

To avoid or minimize potential adverse effects of project infrastructure within ERCA/LTVCA regulated lands on surface water quantity, the following mitigation measures would be implemented:

- ERCA and LTVCA will be consulted during detailed design and construction planning.
- Design of the transmission line will avoid or minimize the extent to which transmission towers are located within regulated areas, to the extent practical.
- If necessary, a Permit for Development, Interference with Wetlands and Alteration to Shorelines and Watercourses will be obtained through the applicable Conservation Authority (ERCA and LTVCA) prior to construction.
- Construction work (e.g., tower construction) within Regulated Areas will be conducted during stable (frozen/dry) ground conditions, to the extent practical or isolated with appropriate sediment and erosion control and other environmental mitigation measures.
- Temporary construction access through regulated areas may involve additional ESC or other environmental mitigation measures.

At the end of construction, the work areas (i.e., tower foundation areas, access roads, pulling pads and temporary laydown areas) will be seeded/re-vegetate and the temporary laydown areas would be restored to their original condition to the extent feasible. The construction phase of the proposed Project is not anticipated to have a long-term net effect on surface water quantity.

Maintenance activities will be variable, are expected to be short-term in duration, and would occur periodically over the life of the proposed Project. Though short-term in duration, maintenance activities have the potential to result in soil rutting, disrupt sheet flow of surface water over agricultural lands, increase overland flow and mobilization/transportation of organic debris and sediment loading in nearby municipal drains and watercourses.

To avoid or minimize the potential adverse effects of maintenance activities on surface water quantity, the implementation of the mitigation measures outlined above for construction related activities (where applicable) would be implemented during maintenance activities. As a result, maintenance activities are not anticipated to have a long-term net effect on surface water quantity.

7.7.4.2 Potential Effects on Surface Water Quality

Project activities during the construction phase that have the potential to influence surface water quality conditions in nearby aquatic features (e.g., municipal drains, watercourses) include:

- Site preparation for the new transmission towers, construction of access roads, and temporary laydown areas.
- Earthworks associated with the construction of access roads, temporary laydown areas, puller pads, etc.
- Discharge of construction water from dewatering activities to nearby lands.
- Operation of vehicles and equipment throughout the construction phase.

Site preparation would 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 aquatic features. Site preparation would also result in the temporary accumulation of cleared vegetation with the potential for mobilization of organic debris and its transport to aquatic features during runoff events. Earthworks would consist of excavation, fill, and stockpiling activities, and would similarly result in disturbance and exposure of soil to wind and water erosion and the transport of sediment to aquatic features. It is expected that the transmission right-of-way associated with the proposed Project will be restored to similar grades at the various areas of disturbance.

Earthworks will also be required for the construction of temporary access roads, temporary laydown areas, and pulling pads within the various disturbed work areas along the transmission line ROW. Earthworks may also be required for the installation of temporary culverts, including excavation,

preparation of culvert pipe bedding, culvert pipe placement, and backfilling. Stockpiling of soil and aggregate materials will also be required in support of earthworks.

Earthworks for the construction of temporary laydown areas, pulling pads, etc., would similarly consist of excavation, fill and sub-grade preparation, followed by the installation of crushed stone overtop of geotextile fabric. Soil and aggregate materials would be stockpiled.

Earthworks would also potentially be required during foundation preparations, though, depending on the technology, this may not be required. Earthworks to support the above activities would include stockpiling of soil and aggregate materials.

The measures outlined above to avoid or minimize potential impacts the proposed Project may have on surface water quantity will also serve to avoid or minimize the potential adverse effects of site preparation and other earthwork activities on surface water quality in aquatic features.

In addition, and in support of site preparation and earthwork activities, the following ESC measures will be implemented as a mechanism to avoid and minimize impacts on surface water quality:

- An ESC plan will be developed prior to construction and ESC measures will be identified and implemented as required.
- Areas with high erosion potential will be identified and avoided, where possible.
- Construction activities near sensitive features or areas may be suspended during extreme wet weather events, and crews will review and consider weather forecasts in their planning of such work.
- ESC installations will only be removed after disturbed areas are restored, accumulated sediment has been disposed, and construction activities in the vicinity are completed.
- In an effort to reduce potential erosion, mechanical or vegetation erosion control measures will be employed, such as buffer strips, erosion control blankets and sedimentation fences, as required;
- Equipment operation on slopes adjacent to streams will be minimized to the extent practical.
- Disturbed areas near water features or sensitive environmental areas will be restored as soon as practical.
- ESC measures will be regularly inspected, including after each significant [>10 mm] rainfall event, and repaired where necessary to maintain functionality.

With the implementation of the mitigation measures described above, and the limited duration of the construction works, site preparation and earthwork activities are not anticipated to have long-term net effects on surface water quality conditions in aquatic features.

The removal and discharge of construction water may be required as a result of dewatering activities in holes or trenches related to foundations of transmission towers. The measures outlined above to avoid or minimize discharge of construction water on surface water quantity will also serve to avoid or minimize the potential adverse effects on surface water quality. As a result, dewatering activities are not anticipated to have long-term net effects on surface water quality in the receiving aquatic features.

7.7.5 Source Water Protection

During construction and maintenance activities, there is the possibility of contamination of surface water through spills or leaks from the release of oils and fuels from vehicles and equipment. There are a number of mitigation measures to reduce the risk of contamination of source water in the unlikely event that a spill or leak occurs. These measures include the following:

- Maintain an Emergency Response Plan and have readily accessible cleanup materials and equipment at all times during construction and maintenance activities.
- Remediate spills/leaks as soon as possible upon identification, and notify the MECP SAC as required.
- Refuelling will be conducted in designated areas with appropriate protective measures and equipment available.
- Refuelling areas will be located outside of SWP areas to the extent practical. If refuelling must occur within SWP areas, additional protective measures (emergency spill trays, etc.) may be employed as necessary.

Construction and maintenance activities also have the potential for impacts to designated surface water Intake and Wellhead Protection Areas and Significant Groundwater Recharge Areas. Similar to the above, there are a number of project specific mitigation measures which will be implemented as a mechanism to reduce potential impacts. These measures include the following:

- Identify and protect surface water intake protection zones during construction and maintenance activities, as required.
- Comply with relevant legislation and policies such as: Clean Water Act, Provincial Policy Statement, Official Plans, and Source Water Protection Plans.

- Provincially/locally designated Vulnerable Areas (namely Wellhead Protection Areas [WHPAs]; and Intake Protection Zones [IPZs]) will be avoided, where practical.
- Consult with ERCA and the LTVCA and/or the Municipality of Lakeshore/County of Essex and Municipality of Chatham-Kent during detailed design and construction planning on project specific mitigation measures.

7.7.6 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 excavation and construction dewatering, and changes in groundwater flow regime due to the installation of foundations for transmission line towers. It is not expected that there would be any effects on groundwater during the maintenance and operation phase.

Changes in groundwater due to project activities during construction could also affect the amount of groundwater discharged to nearby watercourses and natural environmental features (e.g. vegetation, fish habitat, wetlands, etc.).

Effects on groundwater due to dewatering would be ephemeral and have a zone of influence measured in the range of several tens of metres. This effect would be limited to the construction phase only.

7.7.6.1 Potential Effects on Groundwater Quality

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

No 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 previously outlined above, such as containment and removal of contaminated soils.

7.7.6.2 Potential Effects on Groundwater Quantity

Groundwater base flow (quantity) is seasonally important to nearby waterbodies and natural environment features, including vegetation, fish and aquatic habitat. The effects on groundwater quantity associated with construction of transmission towers 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 predominantly 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.

Though currently not anticipated, if detailed design suggests that construction dewatering of transmission tower foundation holes/excavations is required at a rate greater than 50,000 L/day, a PTTW or EASR would 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.

It is anticipated that the municipal wells and local private water wells within the area will not be significantly affected as a result of dewatering activities associated with transmission line tower foundation holes or excavations. 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 (i.e. bedrock aquifers; **Section 4.6.4**).

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 following the construction period. The nature of the subsurface 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.

7.7.7 Designated or Special Natural Areas

7.7.7.1 East Lake St. Clair Important Bird Area

The proposed project overlaps with portions of the Eastern Lake St. Clair Important Bird Area (IBA) which is identified as a critical feeding, resting and staging area for several species. The majority of the aforementioned IBA overlap contains an existing 115 kV idle transmission line corridor which will be repurposed to accommodate the proposed Project. Although IBAs are not legally protected in their own right, they promote conservation and stewardship of migratory stopover and staging

habitat for water birds along the eastern shoreline of Lake St. Clair, while ensuring recreational practices and hunting traditions are maintained.

While the IBA was identified as a mid-point between two migratory flyways (the Atlantic and Mississippi), it is noted that the migration routes differ among species. Telemetry data collected in support of scientific studies track the trajectory of some individual birds in Ontario during spring and fall migration. Through review of available data, flight paths for water bird species commonly associated with the IBA do not appear to extend through the eastern extents of the IBA that overlap with the proposed Project. While suitable habitat conditions for water birds within the IBA were not identified within the transmission ROW associated within the proposed Project, potential suitable habitat does exist adjacent to the transmission ROW. As a result, there is potential for birds to collide with the transmission line during the construction and operational phases associated with the proposed Project.

There are a number of mitigation measures to reduce the risk of bird collisions. These measures include the following:

- Reuse of the existing 115 kV idle transmission line corridor within the IBA.
- Incorporate visual mitigation measures (e.g., bird diverters and/or similar measures) during detailed design as a mechanism to improve visibility of the transmission line within the IBA.
- Towers and access roads will be located to avoid sensitive habitats, where practical.
- Vegetation removal will be completed outside of the migratory bird breeding season (i.e., April 5 to August 31, zone C1 as provided by ECCC 2018), where practical.
- In the event vegetation clearing is required during the breeding bird season, nest searches conducted by a qualified terrestrial/avian biologist will be completed.

7.7.7.2 Significant Woodlands

Significant woodlands were determined to occur in six locations within the PSA associated with the preferred Route Alternative based on a combination of the municipalities of Lakeshore and of Chatham-Kent Official Plan schedules, the 2020 field survey results, and the municipalities of Lakeshore and Chatham-Kent Official Plan criteria for woodland significance. Each of the significant woodland units were considered common or secure by the province of Ontario. Only three of the six significant woodlands fall within the transmission line ROW for the proposed Project; one of which is associated with the existing 115kV idle transmission line corridor. Significant woodlands will be taken into account during project planning as a mechanism to minimize adverse effects.

Vegetation clearing will be required for the portion of the significant woodlands within the new transmission line ROW to ensure the safe and reliable operation of the transmission line. These removals will be limited to the extent practical and will not represent a loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible (e.g. trees) with transmission line corridors, to vegetation that is compatible (e.g. shrubs, meadow species). Hydro One will undertake a Biodiversity Initiative to offset habitat loss or transition (e.g., from trees to compatible vegetation communities) that cannot otherwise be avoided or mitigated. This initiative will be conducted subsequent to completion of the Class EA and OEB Leave-to-Construct processes.

In addition to the above, there are a number of mitigation measures to reduce the proposed projects impact on significant woodlands. These measures include the following:

- Minimize the extent of vegetation clearing required for the Project.
- Incompatible vegetation will be salvaged or felled as appropriate.
- Refueling of vehicles and/or equipment will occur within a designated refuelling area located away from significant woodlands.
- Where practical, tree removals will be completed outside of the migratory bird breeding season (i.e., April 5 through August 31, nesting zone C1; ECCC, 2018) and the bat active season (i.e. April 1 through September 30), where practical.
- Where vegetation clearing is required during the breeding bird season, nest searches will be conducted by a qualified person in accordance with applicable provincial and federal requirements.
- In the event significant woodlands with the potential to support bats require tree removals, bat acoustic surveys will be completed during the month of June in accordance with agency approved protocols to determine SAR bat habitat use (or lack thereof). Where acoustic surveys confirm SAR bat habitat use, the MECP will be consulted regarding permitting/approvals next steps under the ESA.
- Snags (dead standing trees) and cavity trees that do not pose a risk to the operation of the transmission line will be identified and retained;

7.7.7.3 Conservation Areas

There are no Conservation Areas located within the PSA associated with the preferred alternative; therefore, no effects on Conservation Areas as a result of the proposed Project are anticipated.

7.7.7.4 Areas of Natural and Scientific Interest

There are no ANSI's located within the PSA associated with the preferred alternative; therefore, no effects on ANSIs as a result of the proposed Project are anticipated.

7.7.7.5 Valleylands

There are no valleylands located PSA associated with the preferred alternative; therefore, no effects on valleylands as a result of the proposed Project are anticipated.

7.7.7.6 Provincially Significant Wetlands

There are no PSWs located within the PSA associated with the preferred alternative therefore, no effects on PSWs as a result of the proposed Project are anticipated.

7.7.8 Natural Heritage Features

As mentioned previously in **Section 4.6.7**, while the majority of the PSA consists of active agricultural lands, the preferred alternative was identified to contain woodlands, unevaluated wetlands, wildlife habitat, as well as direct and/or seasonal fish habitat.

Construction associated with the proposed Project may induce both temporary and permanent disturbance to natural heritage features. Permanent adverse effects may include the potential removal of incompatible vegetation and associated wildlife habitat to accommodate the proposed double circuit 230 kV transmission line. With exception to incompatible vegetation removal requirements, it is anticipated that the impacts to natural heritage features can be avoided or mitigated through tower placements; the locations for towers will be determined during the detailed design phase. Temporary adverse effects include those from work operations that physically, or visually disrupt wildlife during active construction. No effects on natural heritage features are anticipated during the maintenance and operation phase.

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 addition, vegetation removal limits would be clearly demarcated. Prior to construction, a detailed construction plan would be developed and the Municipality of Lakeshore, the County of Essex, the Municipality of Chatham-Kent, and the ERCA and the LTVCA would be consulted for work in regulated areas.

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;
- Selectively cutting and retaining compatible vegetation to promote regeneration.
- Using geotextile and gravel for access, where feasible, to reduce compaction.
- Restoring compacted areas, as required.
- Retention of compatible vegetation.
- Installing barriers (e.g., silt fences) to promote protection of sensitive features.

Temporary construction access (e.g., access mats or geotextile and gravel) will be removed upon completion of construction. Temporary laydown areas will be constructed and these areas will be restored following removal of the laydown areas post-construction.

Most wildlife species that have the potential to occur within the Project work areas are habituated to human activities and are mobile. For the most part, 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 and transitory that little displacement of wildlife is anticipated. Therefore, the effect of the proposed Project on wildlife will be minimal.

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 (2018c), where feasible. With respect to buildings (residential or agricultural barns) impacted by the proposed Project, targeted surveys of these buildings should be completed in order to confirm or rule out the presence of potential breeding habitat for Barn Swallow. While Barn Swallow were observed within the PSA of the Preferred Alternative during breeding bird surveys, breeding behaviour and nesting habitat was not observed.

Removal of incompatible vegetation (trees) has the potential to impact SAR bats and potential Eastern Foxsnake habitat. In order to avoid impacts to SAR bats, tree removals should take place during the non-active bat period (October 1 to March 31). Trees that may be impacted by removal

activities should be evaluated for their potential to provide suitable bat maternity roost habitat. Similarly, habitat with the potential to support Eastern Foxsnake should be flagged and protected (where practical). In instances where incompatible vegetation with the potential to support Eastern Foxsnake requires removal, the vegetation will be removed/trimmed to the extent that it no longer poses a risk to overhead transmission lines while still maintaining their potential SAR habitat characteristics. Should SAR bat and/or Eastern Foxsnake habitat be confirmed in association with the new transmission right-of-way, the MECP should be consulted to determine if the aforementioned mitigation measures are sufficient to avoid contravention under the ESA

7.7.8.1 Wetlands

The new transmission line crosses three unevaluated wetland communities; shallow Marsh (MAS), White Elm Mineral Deciduous Swamp (SWDM4-2) and Thicket Swamp (SWT), respectively. Of the aforementioned wetlands, direct impacts are limited to the SWDM4-2 community given the community's association with incompatible vegetation. Tower locations and access roads will be located such that they will avoid wetlands; therefore, impacts to MAS and SWT communities are not anticipated. The limits of wetlands will be demarcated to limit construction activities within wetland communities, where practical.

Hydro One will undertake a Biodiversity Initiative to offset habitat loss that cannot otherwise be avoided or mitigated. This initiative will be conducted subsequent to completion of the Class EA and OEB Leave-to-Construct processes in consultation with ERCA. Where practical, incompatible vegetation within SWDM4-2 will be cut during firm soil conditions and will be allowed to re-establish naturally and/or seeded with compatible vegetation. Wetland areas impacted during construction (directly or indirectly) will be restored to pre-construction drainage patterns.

Generally, mitigation measures described in **Section 7.7.2, 7.7.4 and 7.7.7** would also be employed with respect to wetland areas. In general, the removal of trees and ground vegetation will be minimized during construction to the extent practical. In addition construction activities for the proposed Project will be restricted to designated work areas. Wherever practical, access to the construction areas for the proposed Project will utilize existing access roads. An erosion and sediment control plan will be employed to identify mitigation for wetland communities and will identify locations for protective fencing. In addition, no refuelling of vehicles and/or equipment would be permitted adjacent to wetlands (i.e., a 30 m buffer) to avoid potential spills (e.g., fuel, oil, lubricant) from migrating and entering aquatic habitats. Spill kits will be located at work areas to mitigate the effects of accidental spills or releases, should they occur during construction.

7.7.8.2 Fish and Aquatic Habitat

The proposed Project crosses several watercourses identified as direct fish habitat. Although transmission towers will be located to avoid impacts to fish and aquatic habitat, there is potential for fish and aquatic habitat to be affected during the construction phase of the proposed project as temporary watercourse crossings may be required to facilitate construction activities. In the event in-water works are required to support the construction of potential watercourse crossings, necessary permits and approvals from MECP, Conservation Authorities and DFO would be obtained before the commencement of work.

Other potential disturbances to fish and aquatic habitat resulting from construction activities near water would be minimized through the development of an ESC plan, which would include mitigation measures such as crossings during low flow conditions, retaining stream bank vegetation (where practical), and storing materials away from water features. In addition, no refueling or vehicles and/or equipment would be permitted near a watercourse to prevent potential spills (e.g. fuel, oil, lubricant) from entering aquatic features.

7.7.8.3 Woodlands

As previously mentioned, the proposed Project's transmission line ROW crosses three significant woodlands; one of which is associated with the existing 115KV idle transmission line corridor. Woodlands will be taken into account during project planning as a mechanism to minimize project impacts.

Section 7.7.7 describes project impacts on woodlands and associated mitigation measures that would be employed with respect to woodlands during construction.

7.7.8.4 Species at Risk

As noted in **Section 4.6.7**, species designated as either endangered or threatened under the ESA and SARA (specific to municipal drains and watercourses) are provided species and habitat protection. Generally, impacts to SAR habitat will be avoided during detailed design, where possible. In addition, construction personnel will be aware of the potential presence of, and able to identify, SAR with the potential to occur within work areas.

From a terrestrial perspective, the proposed Project was assessed as having the potential to provide habitat for Bank Swallow, SAR bats and Eastern Foxsnake. Habitat removal during the migratory bird breeding season (April 5 to August 31 in nesting zone C1: ECCC, 2018) and the bat active

period (April 1 to September 30) would be avoided to the extent feasible. With respect to birds, a non-intrusive nest survey would be undertaken by a qualified individual if habitat removal is required during the April 5 to August 31 period. In the event the proposed project is determined to impact Barn Swallow habitat, the activity is eligible for registration under Section 23 of Ontario Regulation 242/08.

With respect to bats, habitat with the potential to support SAR bats will be assessed for presence of habitat trees (snags, cavities) during detailed design. In the event potential SAR bat habitat requires removal in support of the proposed Project, bat acoustic surveys will be completed during the month of June in accordance with agency approved protocols to determine SAR bat use (or lack thereof).

Similarly, though the proposed project transmission line ROW is largely dominated by active agriculture, natural features (woodlands, wetlands, watercourses, etc.) have the potential to support regulated habitat for Eastern Foxsnake. In advance of construction, potential Eastern Foxsnake habitat will be demarcated and protected from impacts during construction, where practical.

Where acoustic surveys confirm SAR bat habitat use and/or impacts to potential Eastern Foxsnake habitat cannot be avoided, the MECP will be consulted regarding permitting/approvals next steps under the ESA.

From an aquatic perspective, the proposed Project was assessed as having the potential to provide habitat for Lake Chubsucker and Lilliput. The same impacts and associated mitigation measures outlined above under the Fish Habitat would be employed with respect to potential impacts to aquatic SAR. In the event the construction of watercourse crossings have the potential to impact habitat of Lake Chubsucker and Lilliput, necessary permits and approvals from MECP and DFO would be obtained before the commencement of work.

Construction personnel will be aware of the potential presence of, and able to identify, SAR with the potential to occur within the general work areas. Should SAR be encountered during construction activities, activities will be stopped until it has been determined that harm will not occur. The required activities will be assessed to determine whether the work/schedule can be modified, or mitigation measures employed, to avoid potential effects on SAR and their habitat.

7.7.8.5 Wildlife and Significant Habitat

Based on the results of the background review, ELC mapping, and results of the 2020 field investigations, the following confirmed and candidate SWH types were identified within the PSA for the proposed project:

- Candidate SWH for Bat Maternity Roosts.
- Candidate SWH for Turtle Wintering Areas.
- Confirmed SWH for Special Concern and Rare Wildlife Species:
 - Eastern Wood-pewee
 - Maple leaf
 - Spotted Sucker

During project construction activities, the following would be taken into consideration as a mechanism to avoid and/or mitigate impacts to wildlife habitat:

- Retention of snags and cavity trees with potential to support bats where feasible.
- Tree/vegetation clearing will be avoided during the breeding bird and bat active period, where possible.
- General avoidance of wildlife habitats, where practical;
- Promotion of wildlife habitat through vegetation control.
- Retention of natural vegetation, where possible.
- Use of native plant species where seeding or planting is completed.

7.7.8.6 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. Construction staff will be educated on the identification of invasive species and the importance of avoiding their spread to new areas. Additional measures that would be undertaken to reduce the spread of invasive species include:

- Utilizing native plant species during construction restoration.
- 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;
- Proper handling, containment and disposal of invasive plant material, where required.

- Inspecting and cleaning equipment and vehicles as necessary to reduce potential for spreading invasive species propagules.

7.7.8.7 Biodiversity Initiative

While Hydro One always strives to avoid and mitigate potential effects to the natural environment, and restore areas that are affected by the Project, Hydro One acknowledges that there may be adverse effects to natural habitats that cannot be avoided, or that occur even when appropriate mitigation and restoration measures are employed. Examples include the long-term transition of incompatible vegetation such as forest communities to compatible vegetation communities such as meadows or shrub thickets. Because these net effects cannot be further avoided or mitigated, they are typically compensated for by undertaking positive environmental activities (e.g. the creation of new natural habitats or enhancement of existing ones at other locations).

Hydro One has committed to undertaking a biodiversity initiative specific to this project to offset any habitat loss or transition (long-term change) that may occur as a result of the Project. The scope of the biodiversity initiative has not yet been fully determined but typically such initiatives involve the funding of third-party projects or proposals (opportunities), such as wetland and wildlife habitat creation and enhancement, or aquatic habitat restoration and enhancement activities, invasive species inventory or removal etc. Following completion of the Class EA and OEB Leave-to-Construction processes, Hydro One will engage with interested parties to discuss the implementation of the biodiversity initiative for the Project.

7.8 Anishnawbek and Haudenosaunee Lands and Territory

As indicated in **Section 4.4.3**, there are no Anishnawbek or Haudenosaunee Reserve Lands located in the PSA.

Hydro One is committed to developing and maintaining relationships of mutual respect with Anishnawbek and Haudenosaunee communities, and recognizes that Anishnawbek and Haudenosaunee 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 Anishnawbek and Haudenosaunee communities to provide regular project updates, and actively identify and avoid geographically defined areas which support current or past traditional use for the harvesting of wildlife or fish, the harvesting of traditional plants, or use as sites of spiritual or cultural significance. Similarly, Anishnawbek and Haudenosaunee communities will be provided opportunities to review the findings of archaeological field surveys and assessment reports.

Hydro One understands that Bald Eagles are considered sacred. Given that Bald Eagles occasionally build nests on transmission line structures, in the event there are eggs or young present in the nest, it is Hydro One protocol to leave the nest until the young have fledged unless there is an immediate safety concern.

Several communities have expressed a desire to protect and mitigate adverse effects to natural environment features such as SAR, wildlife, fish and aquatic habitat, and natural or naturalized areas with their traditional territory that could be used for hunting, gathering, harvesting or other traditional uses. Mitigation measures to address effects to these features are described elsewhere in this chapter. Some communities expressed interest in being involved with future archaeological and natural environment field work. Hydro One and its consultants will work with interested communities to include representatives from interested communities in archaeological and environmental fieldwork. Anishnawbek and Haudenosaunee communities will be provided opportunities to review the findings of archaeological field surveys and archaeological assessment reports.

Some communities are currently conducting Traditional Ecological Knowledge (TEK) studies. Should these communities wish to share some or all of the findings of these studies with Hydro One and the construction contractor, this information will be taken into consideration during the construction planning of the proposed Project to the extent practical. This may include working with private landowners to provide potential opportunities to harvest traditional use plant species ahead of construction, or to provide input into post-construction restoration plans for natural or naturalized areas.

Some communities have expressed an interest in participating in the Biodiversity Initiative that Hydro One is committing to for the proposed Project, which will seek opportunities to create or enhance habitats to offset any adverse effects to habitats as a result of the Project. Hydro One will involve interested communities in the Biodiversity Initiative, including potential incorporation of TEK where that information is willingly provided

Hydro One will continue to seek to identify community concerns and build appropriate actions into proposed Project plans to address expressed concerns, as described in **Section 3.6**.

7.9 Recreational Resources

There is potential that some recreational resources (e.g. CASO trail, Great Lakes Waterfront Trail) may be temporarily affected during the construction and maintenance phase of the proposed Project

due to the presence of construction laydown areas within the corridor, as well as construction equipment and presence of construction crew members. Impacts during the operations phase are not anticipated.

While there may be some temporary impacts to the enjoyment of recreational resources adjacent to the proposed Project, such impacts are expected to be short-term in nature. Advanced notice will be provided to nearby residences, farms, landowners and commercial operations, outlining the location of entry/exit points for the construction site (e.g., at Highway 401) as well as the schedule for construction work or construction related traffic in those areas. Clear and temporary road signage will also be created and installed to reflect this information.

Hydro One will commit to working with local Municipalities to identify community benefit opportunities to enhance the broader landscape.

7.10 Visual and Aesthetic Resources

The proposed Project is located within predominantly flat agricultural lands, providing views that are open and expansive. Existing vertical elements include traffic and light standards, existing transmission lines and wind turbines. The majority of sensitive receptors are residences with wide views into the horizon. Many of the properties have existing tree lined wind breaks and hedgerows that offer localized privacy from adjacent visual elements.

Location of transmission structures is one of the largest factors influencing the visual effects to specific receptors. Design of the transmission line (e.g., placement of structure locations) will be visible to nearby sensitive receptors.

During detailed design (selection of transmission structure placement), consideration will be given to proximity to nearby sensitive receptors, existing visual screening (e.g., vegetation), and existing infrastructure and other landscape characteristics, in order to mitigate the net visual change resulting from the new transmission structures.

While the new transmission structures will be of a greater height, the proposed Project will repurpose approximately 16 km of an existing idle 115 kV transmission corridor (including replacement of the existing structures), which will significantly reduce the net visual change for nearly 1/3 of the proposed Project's total length.

Hydro One will commit to working with local Municipalities to identify community benefit opportunities to enhance recreational resource opportunities within the broader landscape (see **Section 7.5.7**).

7.11 Technical Considerations

7.11.1 Wind Turbines

The Municipality of Chatham Kent and Municipality of Lakeshore are hosts to several wind energy generation projects including wind turbines and their associated infrastructure, as well as overhead and buried collector lines. Several wind turbines are located within the same landscape as the proposed Project. Effects to wind turbines or their collector transmission lines are not anticipated as a result of the proposed Project. Owners and operators of the adjacent wind energy facilities have been notified and consulted through the Class EA process, and contact will be maintained through design and construction to keep them apprised of the final design of the new transmission line, construction schedules and other items of interest.

7.11.2 Infrastructure Crossings

Construction of the proposed Project will require crossings of existing linear infrastructure; including provincial Highway 401, Highway 77 and Highway 40, constructed drains, railway line, as well as running parallel to existing highways, roadways and along and over several municipal roads. Permanent or long-term impacts to existing linear infrastructure are not anticipated. Rider poles, boom-tipped riders or similar protection will be utilized during conductor stringing. Disruption to traffic on roads and highways during construction is anticipated to be temporary and short in duration. Use of temporary or rolling closures of Highways may be required to facilitate stringing activities. Where the new transmission line parallels Highway 401, setback distances provided by MTO will be respected and adhered to. Work within MTOs highway ROW or permit control area (within 400 m of Highway 401) will require an Encroachment Permit and/or Land Use Permit as well as consultation with MTO during detailed design. Hydro One will obtain all necessary Encroachment Permits and Land Use Permits from MTO prior to the start of construction. To facilitate construction of the aerial crossings associated with railway lines, temporary flagging operations may be required. Lastly, Municipal drainage superintendents will be consulted during detailed design and construction planning to discuss effects to municipal drains.

7.12 Summary of Potential Environmental Effects, Mitigation Measures, and Net Effects

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

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

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
AGRICULTURAL RESOURCES			
Crop Loss	<p><u>Construction & Maintenance</u> Temporary removal of crops and soils supporting crop production, as well as permanent removal of land available for agricultural production as a result of project infrastructure (e.g. tower footings).</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Contact will be maintained with landowners and stakeholders regarding work schedules and other items of interest (e.g. access routes, minimizing disturbances to existing and planned farm operations, etc.); • Where practical, construction and maintenance activities will be scheduled to avoid the growing season or sensitive times of year (e.g., extreme wet periods). To the extent practical, activities will be scheduled to occur during non-growing seasons or during frozen conditions; • Access roads, staging areas, tower construction and stringing activities will be constructed to a minimum length and width required to accommodate the safe movement of construction equipment; • Existing farm lanes and other existing access routes will be used whenever practical. In the event farm lanes are absent, access will be focused along field edges, to the extent possible; • Work will be limited to the planned access roads, staging and work areas. If a later expansion to these areas is required, it will be discussed with the landowner in advance; • Where practical, towers will be located along property lines to minimize impediment on agricultural operations, to the extent possible; and • Lands will be restored following construction and maintenance activities (e.g., removal of temporary access roads, removal of erosion and sediment controls (ESC), disking of lands, aeration, and cultivation of soils to alleviate soils compaction where required), where feasible. 	<p>Net effects include permanent removal of land available for agricultural production as a result of project infrastructure (e.g. tower footings); not considered significant.</p> <p>Crop loss and lands out of production as a result of the proposed Project will be compensated.</p>
Soil Compaction	<p><u>Construction & Maintenance</u> Compaction of soil caused by movement of construction equipment or maintenance vehicles over agricultural lands.</p>	<p>In addition to the mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Equipment with low bearing capacity will be used, where practical; and • Where practical, temporary access roads and work pads will be built in agricultural fields using measures such as mats or, geotextile and crushed rock, or equivalent means, which can be easily removed when construction is complete to allow for re-cultivation of the area. 	<p>No significant net effects are predicted.</p>
Soil Mixing	<p><u>Construction</u> Potential for excavation activities to cause mixing of soil horizons, thus lowering the quality of soil.</p>	<p>In addition to the mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Augered tower footings or screw-pile foundations will be utilized to the extent feasible to minimize soil excavations; • Stripping or excavated soils will be minimized to the extent practical; • Where soil stripping is required, topsoil and subsoils will be removed and stockpiled separately; • Depths of soil being removed will be carefully monitored and minimized during stripping activities; • Volume of topsoil and subsoil salvaged will be maximized, where practical; 	<p>No significant net effects are predicted.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> • Soils will be stripped under generally dry conditions (not saturated), such that rutting, soil mixing, or other undesired ground disturbance is minimized to the extent practical; • Vegetation, stone piles, fencing and deleterious materials will be removed prior to stripping; • For backfilling operations, topsoil and subsoil will be replaced in reverse order of excavation to minimize the potential for admixing and maximizing future growing potential; and • Soil cover on exposed areas within agricultural areas will be discussed with the landowner, and if hydroseed application is used, it will be limited to annual rye or similar, and will not contain any weed species. 	
Disturbance to Farm Operations	<p><u>Construction</u> Potential to disturb farm operations including planting and harvesting schedules, spraying, tiling activities, etc.</p> <p><u>Operation</u> Impediments to the maneuverability of agricultural equipment.</p>	<p>The mitigation outlined above addresses these potential effects.</p>	<p>Some agricultural fields will have new transmission structures.</p> <p>No significant net effects are predicted.</p>
Vegetation Removal	<p><u>Operation</u> Partial removal or fragmentation of existing hedgerows and windbreaks between agricultural land parcels.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Vegetation that will not affect construction or line clearances will be retained, where possible; • Hedgerows and windbreak areas impacted by construction will be replaced with compatible vegetation post-construction, in consultation with the landowner; and • Hydro One will undertake a Biodiversity Initiative to offset vegetation loss or transition (e.g., from woodlot to a compatible vegetation community) that cannot otherwise be avoided or mitigated. This initiative will be conducted subsequent to completion of the Class EA and OEB Leave-to-Construct processes. 	<p>Net effects include permanent removal of incompatible vegetation (hedgerows/windbreaks) to ensure the safe operation of the transmission line; not considered significant.</p> <p>Incompatible vegetation removal will not represent a loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible with</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
			transmission line corridors, to vegetation that is compatible.
Contamination of Organic or Identity Preserved (IP) Crops	<p><u>Construction & Maintenance</u> Potential for activities, including use of herbicides to control noxious weeds or vegetation, to contaminate organic or IP crops or agricultural fields transitioning to organic/IP crop types.</p> <p>Potential for inadvertent movement of trace soils between agricultural fields which contain organic or IP crops.</p>	<p>In addition to the mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Contact will be made with landowners to determine if organic or IP operations are present which may require additional considerations during construction planning; • Field crews will be informed if working in organic or IP croplands; • Equipment and vehicle inspections and cleaning will be established during construction, to minimize the potential for inadvertent transport of trace soils between contaminated and non-contaminated agricultural fields; • Cleaning will be conducted using a risk-based approach, whereby vehicles and equipment that have come in contact with soils will be inspected and cleaned of dirt/debris/seeds; and • Cleaning will occur in a manner that ensures that runoff is contained and waste materials can be collected. • Work areas will be assessed during pre-construction activities to identify the presence of weed species, degree of infestation, and the distribution of weeds within the Project footprint and the immediately adjacent areas; • Work areas will be monitored for weeds throughout the Project and until the Project has been completed; • A project-specific Weed Control Plan will be developed in consultation with landowners prior to construction, as necessary; • The Weed Control Plan will be managed by an Ontario Professional Agrologist to meet the requirements of the municipal and land use authority; • The transmission ROW will be monitored for establishment of weeds until the Project is completed; • Corrective measures for managing weeds may include herbicide application, mowing, and hand pulling; and • Weed control during construction will be conducted by the construction contractor. 	No significant net effects are predicted.
Damage to Field Tiles	<p><u>Construction & Maintenance</u> Potential for equipment to damage or crush existing agricultural tile drains.</p>	<p>In addition to the mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Landowners will be consulted to determine existing field tile locations in support of avoidance/protection measures; • Tile drains will be avoided and/or protected (e.g., through tower locations, temporary construction access), to the extent practical; and 	<p>No significant net effects are predicted.</p> <p>If tile damage to tile drains occurs as a result of construction activities and/or maintenance activities, the tile</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> Where practical, temporary access roads and work pads will be built in agricultural fields using measures such as mats or, geotextile and crushed rock, or equivalent means. 	will be repaired by a licensed tile drainage contractor in consultation with affected landowner.
Livestock Stress, Loss or Injury	<p><u>Construction & Maintenance</u> Potential for activities to be required within livestock managed areas (grazing fields, pastures, etc.) resulting in potential for livestock stress, injury or loss. In addition, potential use of implosive splicing may scare or startle agricultural livestock.</p>	<p>In addition to the mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> Landowners will be informed in advance of upcoming work activities which may disturb or pose a risk to livestock, and consulted with respect to potential mitigation measures, such as moving or containing livestock, as necessary; Field crews will be informed about livestock in the vicinity of work areas to confirm they are aware of the need to secure gates, are cognizant of noise sensitivity controls, and to ensure clean-up of construction materials and debris at the end of each day to minimize potential livestock ingestion; If excavations cannot be closed immediately, exclusion fencing will be erected to protect livestock from entering; Vehicles/Equipment will be inspected and cleaned as necessary prior to entering onto designated lands to prevent the potential introduction of diseases; Existing gates and fences will be used as required. All fences and gates will be left in "as-found" condition following construction; Livestock access control gates and fencing will be installed during construction at roads and between fenced fields as necessary to prevent escape of livestock or movement of livestock into work areas; Prior to any use of implosive splicing, a Blasting Communication and Management Plan will be developed outlining proper storage, security, detonation, and notification requirements; Area residents, municipal authorities, police department, and other crews within 1.6 km will be notified about the use of implosive splicing, one week prior to the work commencing; Signs shall be posted on all roadways leading to a blasting area in accordance with government rules and regulations; and Maintain safe distances of the blasting site from other employees, vehicles, equipment, structures, and fire hazard sources. Perform blasts during pre-determined times. 	<p>No significant net effects are predicted.</p> <p>Compensation will be made for loss or injury to livestock directly resulting from activities associated with the proposed Project.</p>
Electric and Magnetic Interference	<p><u>Operation</u> Some farmers have raised concerns regarding potential for overhead transmission lines to interfere with automated or GPS-</p>	<p>Hydro One acknowledges the concerns raised, as well as insistence by some farmers currently working fields below transmission lines, that localized issues have been observed beneath the transmission lines. While we do not anticipate effects to communication systems in farm equipment, Hydro One will work with concerned farmers to collect information on the systems of concern, and contact manufacturers of these systems to gain further insight into potential concerns and possible solutions, if applicable.</p>	<p>No significant net effects are predicted.</p> <p>While obstructions such as buildings or trees are known to</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
	guided farm equipment, when said equipment is directly below the conductors.		block reception of GPS signals, published studies assessing these concerns indicate that overhead power line conductors are too thin to cause appreciable screening. Likewise, corona or sparking on a power line generates insufficient noise at frequencies used for GPS to interfere with its operation.
ARCHAEOLOGICAL RESOURCES			
Archaeological Resources	<u>Construction</u> Disturbance to lands with potential to support archaeological resources.	Prior to construction, a Stage 2 Archaeological Assessment will be completed within the identified areas of archaeological potential along the new transmission line corridor in accordance with Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) requirements. In the event the Stage 2 Archaeological Assessment identifies the need for further assessment, a Stage 3/4 Archaeological Assessment will occur as required and as outlined in the "Standards and Guidelines for Consultant Archaeologists", Ministry of Tourism, Culture and Sport (2011). Should archaeological artifacts be encountered during construction, work in the vicinity will cease and a licensed archaeologist will be engaged immediately to ensure compliance with the provincial <i>Heritage Act</i> . Likewise, should any human remains be encountered during construction, work in the vicinity will cease and the police and coroner notified immediately as well as the Registrar of Cemeteries to ensure compliance with the <i>Funeral, Burial and Cremation Services Act</i> .	No significant net effects are predicted. Additional archaeological investigations will be completed prior to construction, as required.
CULTURAL HERITAGE RESOURCES			
Cultural Heritage Resources	<u>Construction:</u> Based on the baseline findings of the Cultural Heritage Existing Conditions Report, there is the potential for project-related works to adversely affect known and potential built heritage resources within the study area. No cultural	Additional studies are required to confirm potential built heritage resources along the transmission line ROW for the proposed Project. To the extent practical, work will be planned in a manner that avoids adverse effects to identified built heritage resources. In the event a built heritage resources cannot be feasibly avoided and will be directly impacted through destruction, alternation, or disruption, a property specific Cultural Heritage Evaluation Report (CHER) and/or Heritage Impact Assessments (HIAs) will be completed to confirm the cultural heritage value or interest, and heritage attributes of the impacted built heritage resource and identify all adverse effects. All evaluation and	No significant net effects are predicted. Additional cultural heritage evaluations and/or heritage impact assessments will be completed prior to construction

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
	heritage landscapes were identified in the study area associated with the preferred route for the new transmission line.	assessments will be in compliance with the Hydro One <i>Cultural Heritage Identification and Evaluation Process</i> and MHSCTI Standards and Guidelines. Appropriate mitigation or conservation measures that reduce or avoid potential adverse effects will be recommended based on the understanding of the cultural heritage value or interest, and heritage attributes of potential affected built heritage resources.	where impacts to potential built heritage resources may occur.
LAND USE AND COMMUNITIES			
Business Operations	<u>Construction</u> Potential for activities to disrupt commercial or industrial operations.	In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects: <ul style="list-style-type: none"> ● Contact will be maintained with business owners regarding work schedule and other items of interest; ● Access to businesses will be maintained at all times during construction to the extent feasible. If existing access cannot be maintained, arrangements will be made for alternate access, including public signage as required; and ● Construction activities and equipment will be managed to avoid damage and disturbance to adjacent properties, structures and operations. 	No significant net effects are predicted.
Existing and Future Land Use Designations and Potential Future Development	<u>Operation:</u> While transmission lines can be largely compatible with development, its location within areas zoned to allow future commercial/industrial development, or otherwise targeted/identified for future development potential, will introduce certain restrictions to future uses within the lands occupied by the transmission line ROW.	The following mitigation is recommended to address these potential effects: <ul style="list-style-type: none"> ● Throughout the province, development (both residential and commercial/industrial) occurs around existing transmission line corridors and stations. Uses deemed to be compatible with overhead transmission lines are often approved within transmission line ROWs. Hydro One has existing departments and processes to review proposals for developments that are planned adjacent to or within transmission line ROWs, and facilitate compatible uses of these corridors; ● Typically there are no restrictions placed on development or new construction outside of the transmission line ROW itself; ● Where and when future development projects or initiatives are proposed to occur along or within the ROW for the new transmission line, Hydro One will apply its existing processes to review and facilitate these future developments, including potential compatible uses within the transmission line ROW; and ● Hydro One will work with Municipalities to consider potential means of accommodating potential future development during design of the transmission line, within the property fabric traversed by the line. 	No significant net effects are predicted. While there will be restrictions to future development within 2 m of the transmission line ROW, the Project will not impede development of adjacent lands, and there will be opportunities for compatible uses to be developed within the ROW. Hydro One will commit to working with local Municipalities to identify community benefit opportunities

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
			to enhance the broader landscape.
Local Roads and Traffic	<p><u>Construction</u> Potential for increased traffic, including heavy equipment, on local and regional roads. In addition, stringing of conductors across highways and roadways may require temporary road closures and detours.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> ● A pre and post-construction road survey will be completed to document impacts to local roads caused by heavy equipment and increased construction traffic during construction activities, and will be shared with Municipal staff in advance of construction work commencing; ● Adherence to seasonal load restrictions; ● Damage to local and regional roads as a direct result of construction activities associated with the proposed Project will be repaired; ● Where required, a Traffic Control Plan will be developed and shared with local municipalities, as necessary; ● Construction haul routes and schedule will be shared with local Municipalities in advance of construction, as necessary; ● Construction traffic will access the construction area from the existing road network at specified construction access/egress locations; ● Common parking areas will be established for construction crews; ● Conductor stringing will utilize rider poles, boom-tipped riders or other protective measures in an effort to avoid road closures and other disruptions during stringing, to the extent practical; ● If temporary road or highway closures (e.g., rolling closures) are required during stringing or other construction activities, the construction contractor will coordinate closely with the appropriate road authority to ensure that proper notice is provided and that required signage and traffic controls are utilized. The duration of any temporary closures will be minimized to the extent practical; ● Local advertisements (e.g. radio, newspaper, etc.) will be issued and road signage will be erected to provide notification / pre-construction information to area residents on timelines and construction routes, and potential detours, if required; and ● Traffic control officers or flag persons will be assigned to assist with construction entry/exit, as necessary. 	No significant net effects are predicted.
Mud and Construction Debris	<p><u>Construction & Maintenance</u> Potential for tracking of mud and migration of construction debris to areas outside of the construction zone.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> ● Roads will be cleaned/scraped to remove mud on an as needed basis; ● Mud mats will be installed (on an as need basis) as a mechanism to reduce the transport of mud; ● Vehicles / equipment will be inspected and cleaned , as necessary, Construction sites will be kept tidy at all times and waste bins will be available wherever solid wastes are generated; ● Waste materials will be collected and transported to a licensed or approved waste management facility on a regular basis; and 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> General clean site policies will be implemented requiring pick-up and disposal of refuse and construction waste on a regular basis. 	
Electric and Magnetic Fields (EMF)	<p><u>Operation</u> Potential exposure to increased EMF once the transmission line is energized.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> EMF levels associated with the proposed Project are anticipated to remain significantly lower than the general public exposure limits; and The proposed Project will be designed and operated in accordance with appropriate regulatory requirements. 	<p>No significant net effects are predicted</p> <p>Health Canada does not consider that any precautionary measures are needed regarding daily exposures to EMFs at extremely low frequencies. 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.</p>
Noise & Vibration	<p><u>Construction & Maintenance</u> Potential disturbance as a result of noise, including potential use of implosive splicing and their associated increased vibrations levels.</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> Construction will be completed in accordance with local noise control by-laws (Municipality of Lakeshore Noise By-Law 106-2007 and Municipality of Chatham-Kent Noise By-Law 178-2017), or applicable exemptions. 	<p>No significant net effects are predicted.</p>
NATURAL ENVIRONMENT RESOURCES			
Physical Environment			
Spills	<p><u>Construction & Maintenance</u> Potential inadvertent release of deleterious substances including oil, gasoline or other liquids.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> Refueling of vehicles and equipment will be completed in a designated location located away from sensitive receptors, such as designated source water protection areas, watercourses, surface drainage features, wetlands, etc.; Fuelling of vehicles/equipment will occur utilizing an emergency spill tray to capture any accidental release of fluids; 	<p>No significant net effects are predicted.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> ● Fuelling operations will require the operator to visually observe the fuelling process 100% of the time; ● If refuelling must occur outside of designated areas, additional containment or other mitigation and spill prevention measures will be utilized; ● An Emergency Response Plan and spill cleanup equipment will be maintained and be readily accessible at all times during construction and maintenance activities; ● Spills will be addressed and remediated as soon as possible after a spill; ● Areas impacted by a spill will be secured, and unauthorized personnel will be kept out of the affected area until further assessment and/or clean-up is conducted; ● Clean-up and the disposal of contaminated materials will be managed in accordance with provincial regulations and guidelines; ● Fuels, chemicals, lubricants or other deleterious substances will be stored on level ground in properly contained storage areas; ● Only approved aboveground petroleum storage tanks will be used during the construction phase of the Project, and will be stored in designated fuelling areas and with additional temporary containment measures; ● Work conducted near Provincially/locally designated Vulnerable Areas (namely Wellhead Protection Areas [WHPAs]; Intake Protection Zones [IPZs]; and Highly Vulnerable Aquifers [HVAs]) will be avoided or limited, where practical; ● ERCA, the LTVCA and/or the Municipality of Lakeshore/County of Essex and Municipality of Chatham-Kent will be consulted in order to undertake the proper action for managing the potential threats to source water protection areas; and ● The MECP Spills Action Centre (SAC) will be notified of all reportable spills. 	
Waste Generation	<p><u>Construction & Maintenance</u> Solid and/or liquid waste will be generated.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> ● Waste and recyclables will be sorted, segregated and removed to a licensed or approved waste management facilities site and/or recycling facility; ● Excess construction materials (i.e. waste, granular fill, clay) will be removed from construction sites and areas on an ongoing basis; ● Concrete wash water will not be discharged onto the ground at the Project site. All water from concrete chute washing activities will be contained in leak proof containers or in an approved settling pond; ● Liquid and solid sewage wastes held in portable tanks will be removed by a licensed contractor and taken to licensed or approved disposal areas; ● Waste materials will be contained and not allowed into sensitive receptors such as waterbodies, riparian areas, wetlands or agricultural fields; 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> ● Waste materials will be collected and transported to a licensed or approved waste management facility; and ● All testing, handling, storage, transport and disposal of waste will be completed in accordance with all applicable legislation. 	
Excess Materials Management	<p><u>Construction & Maintenance</u> Excess materials including topsoil and subsoil, may be produced during site excavations.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> ● All excess materials will be tested, if necessary, and managed in accordance with O. Reg. 406/19. All efforts will be made to manage soils onsite; ● Soil testing to meet the requirements of O. Reg. 406/19, will be completed, if necessary, during geotechnical investigations and prior to or during construction; ● If excess soil is deemed to be suitable, Hydro One will work with landowners to explore opportunities for re-use within the property; and ● Any excess soil required to leave the site will be taken to an approved facility licensed to accept the soil based on its characterization. 	No significant net effects are predicted.
Atmospheric Environment			
Climate Change	<p><u>Construction & Maintenance</u> Emissions will be generated from vehicles and equipment.</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> ● Equipment will be properly serviced and maintained; ● Idling of construction vehicles and equipment will be kept to a minimum and GPS or other navigation tools will be used in vehicles to optimize routing; and ● The transmission line will be designed to adequately withstand the effects of climate change. 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
Air Quality	<p><u>Construction & Maintenance</u> Potential for fugitive dust and impacts to air quality from vehicle emissions.</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Vehicles will not exceed posted speed limits; • Minimize and stabilize vehicular traffic and exposed soils in high traffic areas with suitable cover material; • Avoid excavation and other construction activities that have the potential to release airborne particulates during excessively windy and prolonged dry periods, to the extent practical; • If excavation or other construction activities with a potential to release airborne particulates must occur during windy conditions, dust controls will be utilized; • Cover or otherwise contain loose construction materials with the potential to release airborne particulates during transport, installation or removal; • Disturbed areas will be restored as soon as practical to minimize duration of soil exposure; and • Effective dust suppression techniques, such as on-site watering, will be implemented as necessary. 	No significant net effects are predicted.
Noise and Vibration	<p><u>Construction & Maintenance</u> Potential disturbance as a result of noise, including potential use of implosive splicing and their associated increased vibrations levels.</p>	Refer to the mitigation recommended for Noise and Vibration under Land Use and Communities above.	No significant net effects are predicted.
Surface Water Resources			
Soil Rutting & Vegetation Removals	<p><u>Construction & Maintenance</u> Potential for vehicles and equipment to create rutting in soils, creating ponding or channelization leading to additional erosion of soils.</p> <p>Vegetation removals have the potential for increases in both overland flow and water temperature, as well as</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Where practical, activities with potential to cause rutting, ponding/channelization or erosion will be planned during stable and dry ground conditions; • Existing watercourse crossings and constructed access routes will be utilized to the extent practical; • Where required, temporary crossing structures will be installed for construction access at watercourses and other low lying areas and will be removed upon completion of construction; • Existing, natural drainage patterns and flows will be identified and maintained to the extent possible; • Equalization culverts or similar methods may be used in construction of access roads; • Compatible vegetation will be retained and buffered to protect sensitive receptors, where practical. 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
	mobilization and transport of organic debris and sediment to nearby watercourses and municipal drains.	<ul style="list-style-type: none"> ● Machine clearing and grubbing will be restricted near sensitive environmental areas, hand clearing will be required within watercourse banks/riparian areas or in wetlands. ● Vegetation removals will be minimized to the extent possible, and replanted/seeded with compatible vegetation as required; ● Where erosion is of a concern, exposed soils in previously vegetated areas will be re-vegetated as practical, or have other ESC measures applied as necessary; ● Construction access and laydown areas will be restored following completion of construction; ● Cleared vegetation will be relocated to designated areas away from aquatic features; ● Equipment operation adjacent to water features will be minimized, where practical; ● Works adjacent or around watercourse banks will be conducted during appropriate conditions and times of the year (e.g., dry or frozen conditions), to the extent practical; ● ERCA and LTVCA will be consulted (specifically for ESC measures) during detail design. 	
Dewatering	<p><u>Construction</u> Potential increase in surface water flows resulting from dewatering activities.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> ● Construction water will be discharged in compliance with permits and/or approvals from MECP and the Municipality of Lakeshore/County of Essex and Municipality of Chatham-Kent, as required; ● A construction water management plan will be developed prior to construction and implemented appropriately (e.g., passing discharge water through a filter bag or drum before discharge to the environment to capture sediment and slow down the water velocity, etc.), as required; and ● Where practical, opportunities to maximize retention times and reduce surface flow velocities will be executed. 	No significant net effects are predicted.
Erosion and Sedimentation	<p><u>Construction</u> Potential for erosion, sedimentation and soil loss during site preparation and construction</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> ● An ESC plan will be developed prior to construction and ESC measures will be identified and implemented as required; ● Areas with high erosion potential will be identified and avoided, to the extent practical; ● Construction activities near sensitive features or areas may be suspended during extreme wet weather events, and crews will review and consider weather forecasts in their planning of such work; ● ESC installations will only be removed after disturbed areas are restored, accumulated sediment has been disposed, and construction activities in the vicinity are completed; ● In an effort to reduce potential erosion, mechanical or vegetation erosion control measures will be employed, such as buffer strips, erosion control blankets and sedimentation fences, as required; ● Equipment operation on slopes adjacent to streams will be minimized to the extent practical; 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> Disturbed areas near water features or sensitive environmental areas will be restored as soon as practical; and ESC measures will be regularly inspected (including after each significant rainfall event; >10 mm) and repaired where necessary to maintain functionality. 	
Construction work within areas regulated by Conservation Authorities	<p><u>Construction</u> Potential for infrastructure (towers, watercourse crossings) to be located within Conservation Authority regulated lands.</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> ERCA and LTVCA will be consulted during detailed design and construction planning; Design of the transmission line will avoid or minimize the extent to which transmission towers are located within regulated areas, to the extent practical; If necessary, a Permit For Development, Interference with Wetlands and Alteration to Shorelines and Watercourses will be obtained through the applicable Conservation Authority (ERCA and LTVCA) prior to construction; and Construction work (e.g., tower construction, temporary construction access) within regulated areas will be conducted during stable (frozen/dry) ground conditions, to the extent practical or isolated with appropriate ESC measures and other environmental mitigation measures. 	<p>No significant net effects are predicted.</p> <p>Permit for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses will be obtained in advance of construction, where necessary.</p>
Source Water Protection			
	<p><u>Construction and Maintenance</u> Potential for contamination of surface water through spills or leaks.</p>	Refer to the mitigation recommended for Spills under Physical Environment.	No significant net effects are predicted.
Source Water Protection (SWP)	<p><u>Construction and Maintenance</u> Potential for impacts to designated surface water Intake and Wellhead Protection Area(s) and Significant Groundwater Recharge Areas.</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> The Project will comply with relevant legislation and policies such as: Clean Water Act, Provincial Policy Statement, Official Plans, and Source Water Protection Plans 	No significant net effects are predicted.
	<p><u>Construction</u> Potential for impacts to private drinking water wells.</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> Municipal wells and local private water wells within the area are not anticipated to be affected in any measurable way by potential construction dewatering of tower foundation holes or excavations from tower construction; and The majority of wells exploit aquifer(s) that are at much greater depth than the proposed tower excavations. In the event dewatering activities create a minor radius of influence, shallow well aquifers, 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		groundwater levels and flows are expected to return to pre-construction conditions during the construction period.	
Groundwater Resources			
Groundwater Quality	<u>Construction</u> Disturbance of contaminated soil has the potential to contribute to groundwater contamination.	Refer to the mitigation recommended for Spills and Excess Materials Management under Physical Environment.	No significant net effects are predicted.
Groundwater Quantity	<u>Construction</u> Disturbance and compaction to soil has the potential to inhibit infiltration.	Refer to mitigation recommended for Soil Compaction under Agricultural Resources.	No significant net effects are predicted.
	<u>Construction</u> Dewatering activities / removal of groundwater have the potential to result in temporary lowering of aquifers.	Refer to mitigation recommended for Dewatering under Surface Water Resources. Additional mitigation recommended includes: <ul style="list-style-type: none"> ● If deemed necessary, a hydrogeological assessment will be conducted to inform construction planning, permitting and management; ● A construction water management plan will be developed prior to construction; and ● Groundwater resources within the area are not anticipated to be adversely affected by dewatering of tower foundation holes or excavations from tower construction. Such effects will cease upon the completion of construction dewatering. 	No significant net effects are predicted.
Designated or Special Natural Areas			
Important Bird Area (IBA)	<u>Construction and Operation</u> Potential for bird collisions within the Eastern Lake St. Clair IBA.	The following mitigation is recommended to address these potential effects: <ul style="list-style-type: none"> ● The majority of the area of the IBA that is traversed by the proposed Project will involve replacement of an existing idle 115 kV transmission line; ● Visual mitigation measures (e.g., bird diverters and/or similar measures) will be incorporated during detailed design as a mechanism to improve bird visibility of the transmission line within the IBA; ● In support of detailed design, a review of potential wildlife habitat associated with the transmission line ROW will be used to identify locations for potential visual mitigation measures; ● Towers and access roads will be located to avoid sensitive habitats, where practical. ● Conduct vegetation removal outside of the migratory bird breeding season (i.e., April 5 to August 31; zone C1 as provided by ECCC 2018), where practical; and ● In the event vegetation clearing is required during the breeding bird season, nest searches conducted by a qualified person will be completed in accordance with applicable provincial and federal requirements. 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
Significant Woodlands	<p><u>Construction</u> Removal of portions of woodlands (transition to compatible vegetation) within the ROW.</p> <p><u>Maintenance</u> Vegetation management within the ROW to ensure that incompatible vegetation does not threaten the safe and reliable operation of the transmission line.</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • The extent of clearing and vegetation removal required for the transmission line ROW within woodlands will be minimized to the extent practical; • Woodlands will be taken into account when planning access, and the footprint of work areas/access within woodlands will be minimized to the extent practical; • Incompatible vegetation will be salvaged or felled as appropriate; • Conduct tree removals associated with woodlands outside of the migratory bird breeding season (i.e., April 5 through August 31, zone C1 as provided by ECCC 2018) and the bat active season (i.e. April 1 through September 30), where practical; • In the event vegetation clearing is required during the breeding bird season, nest searches will be conducted by a qualified person in accordance with applicable provincial and federal requirements; • In the event woodlands with the potential to support bats require tree removals, bat acoustic surveys will be completed during the month of June in accordance with agency approved protocols to determine Species at Risk (SAR) bat habitat use (or lack thereof). Where acoustic surveys confirm SAR bat habitat use, the MECP will be consulted regarding permitting/approvals next steps under the Endangered Species Act, 2007 (ESA); and • Snags (dead standing trees) and cavity trees that do not pose a risk to the operation of the transmission line will be identified and retained. 	<p>Net effects include permanent removal of incompatible vegetation (portions of woodland) to ensure the safe operation of the transmission line; not considered significant.</p> <p>Incompatible vegetation removal will not represent a loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible with transmission line corridors, to vegetation that is compatible.</p> <p>Hydro One will undertake a Biodiversity Initiative to offset habitat loss or transition (e.g., from woodlot to a compatible vegetation community) that cannot otherwise be avoided or mitigated. This initiative will be conducted subsequent to completion of the Class EA and OEB Leave-to-Construct processes.</p>
Natural Heritage Features			
Vegetation	<p><u>Construction & Maintenance</u> Removal of vegetation within proposed activity work areas.</p>	<p>Refer to mitigation recommended for Hedgerows and Windbreak under Agricultural Resources and IBA and Significant Woodlands under Designated or Special Natural Areas. Additional recommended mitigation includes:</p> <ul style="list-style-type: none"> • Tree protection zones will be used to delineate and protect trees that do not require removal for construction activities or operation of the transmission line, as necessary; 	<p>Net effects include permanent removal of incompatible vegetation to ensure the safe operation of the transmission line; not considered significant.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> • Non-salvageable limbs will be disposed of by chipping or removal to designated areas; • Tree removals adjacent to watercourses will be cut such that their root systems remain intact to maintain soil stability, and compatible bank/riparian vegetation will be retained to the extent practical; • Isolated trees (i.e. not associated with woodlands) identified as having the potential to support bats will be removed outside of the bat active season (i.e. April 1 through September 30); and • In the event isolated trees with the potential to support bats require removal during the bat active season, exit surveys will be completed following agency approved protocols. Where surveys confirm no habitat use, the isolated tree(s) can be removed. In the event habitat use is confirmed, removals will be completed between October 1 and March 31. 	<p>Incompatible vegetation removal will not represent a loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible with transmission line corridors, to vegetation that is compatible.</p> <p>Hydro One will undertake a Biodiversity Initiative as outlined above.</p>
	<p><u>Construction</u> Accumulation of cleared vegetation.</p>	<p>In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> • Essex County and the Municipality of Chatham-Kent are designated areas by the Canadian Food Inspection Agency (CFIA) prohibiting the movement of Ash firewood and wood Ash products. As such, wood waste will be managed in accordance with federal requirements and best practices. 	<p>No significant net effects are predicted.</p>
<p>Fish and Fish Habitat</p>	<p><u>Construction & Maintenance</u> Potential disturbance to fish habitat as a result of vegetation loss, soil erosion, sedimentation, etc.</p>	<p>Refer to mitigation recommended for Spills under Physical Environment. Additional mitigation includes:</p> <ul style="list-style-type: none"> • The creation of new water crossings during construction will be avoided to the extent feasible by using existing access and crossings (e.g. bridges, culverts) and by accessing work areas from either side of watercourses/drains, where practical; • Construction access, laydown and work areas will be planned to avoid waterbodies and potential fish habitat to the extent practical (e.g., maintaining distance from watercourse banks except where crossings exist or are required); • Any disturbance to waterbodies, shorelines, riparian areas, etc. will be stabilized to prevent erosion immediately; • An ESC plan will be developed to include mitigation measures such as constructing watercrossings during low flow conditions, retaining compatible stream bank vegetation, use of ESC during construction and restoration, and storing materials away from sensitive receptors (e.g. watercourses, drains, wetlands); • Project wastes will be stored and/or removed from all riparian areas immediately; • Disturbed areas will be restored to a pre-disturbed state or better, upon completion of construction; 	<p>No significant net effects are predicted.</p> <p>Hydro One will undertake a Biodiversity Initiative as outlined above where there is opportunity to create and/or enhance aquatic habitat.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> • If permanent or temporary works are required below the high water mark of a watercourse with potential fish habitat, a Request for Review will be prepared and submitted to the DFO in support of a Letter of Advance and/or approvals under the <i>Fisheries Act</i>, • Transmission line structures will be set back from watercourse banks and located outside of regulatory floodplains, to the extent practical; and • Work will be conducted in accordance with a permit from the applicable Conservation Authority when working within their regulated area. 	
Woodlands	<p><u>Construction</u> Removal of woodlot (transition to compatible vegetation) within the transmission ROW.</p> <p><u>Maintenance</u> Vegetation management within the transmission ROW to ensure that incompatible vegetation does not threaten the safe and reliable operation of the transmission line.</p>	Refer to mitigation recommended for Significant Woodlands under Designated or Special Natural Areas.	<p>Net effects include permanent removal of incompatible vegetation to ensure the safe operation of the transmission line; not considered significant.</p> <p>Incompatible vegetation removal will not represent a loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible with transmission line corridors, to vegetation that is compatible.</p> <p>Hydro One will undertake a Biodiversity Initiative as outlined above.</p>
Wetlands	<p><u>Construction</u> Potential impacts to wetlands as a result of vegetation loss, soil erosion, sedimentation, etc.</p>	Refer to mitigation recommended for Spills under Physical Environment, Soil Rutting & Vegetation Removal under Surface Water Resources and Significant Woodland under Designated or Special Natural Areas.	<p>Net effects include permanent removal of incompatible vegetation to ensure the safe operation of the transmission line; not considered significant.</p> <p>Incompatible vegetation removal will not represent a</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
			<p>loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible with transmission line corridors, to vegetation that is compatible.</p> <p>Hydro One will undertake a Biodiversity Initiative as outlined above.</p>
<p>Species at Risk (SAR)</p>	<p><u>Construction & Maintenance</u> Potential disturbance or loss of SAR and/or SAR habitat.</p>	<p>Refer to mitigation recommended for Soil Rutting & Vegetation Removal under Surface Water Resources, Significant Woodland under Designated or Special Natural Areas and Vegetation under Natural Heritage Features. Additional mitigation includes:</p> <ul style="list-style-type: none"> ● Impacts to potential SAR habitat will be avoided, where possible. In the event impacts cannot be avoided, MECP will be consulted regarding permitting/approval requirements under the ESA during detailed design. ● Boundaries of SAR habitats will be identified and flagged off and protected; ● To the extent possible, incompatible vegetation/trees with the potential to provide SAR habitat will be removed/trimmed to the extent that they no longer pose a risk to overhead transmission lines while still maintaining their potential SAR habitat characteristics. Alternatively, incompatible vegetation will be replaced with compatible vegetation to maintain SAR habitat; ● Snags (dead standing trees) and cavity trees with the potential to provide SAR habitat that do not pose a risk to the operation of the transmission line will be identified and retained to the extent practical; ● Construction personnel will be aware of the potential presence of, and able to identify, SAR with the potential to occur within the general work areas; ● Should SAR be encountered during construction activities, activities will be stopped until it has been determined that harm will not occur. The required activities will be assessed to determine whether the work/schedule can be modified, or mitigation measures employed, to avoid potential effects on SAR and their habitat; ● In the event the proposed Project has the potential to impact Barn Swallow nesting habitat, the activity qualifies for registration under Section 23 of Ontario Regulation 242/08; 	<p>Net effects include permanent removal of incompatible vegetation to ensure the safe operation of the transmission line; not considered significant.</p> <p>Incompatible vegetation removal will not represent a loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible with transmission line corridors, to vegetation that is compatible.</p> <p>Permitting under the ESA, SARA and/or the Fisheries Act will be obtained in advance of construction, where necessary.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> • If avoidance of SAR and/or SAR habitat is not possible, MECP and/or DFO will be consulted to mitigate the impact of the activities and/or assess the need for permitting/approvals under the ESA, SARA or the <i>Fisheries Act</i>; • If as SAR is harmed or killed as a result of work activities, the MECP will be notified and the relevant work activities will cease within the immediate area until the species has been removed by personnel authorized to handle SAR; and • SAR observed during construction activities will be reported to the MECP. 	
Wildlife Habitat	<p><u>Construction & Operation</u> Potential disturbance or loss of wildlife habitat, including habitat fragmentation.</p>	<p>Refer to mitigation recommended for Significant Woodland under Designated or Special Natural Areas and Vegetation under Natural Heritage Features. Additional mitigation includes:</p> <ul style="list-style-type: none"> • Boundaries of important wildlife habitats will be identified and flagged prior to clearing; • Trees containing stick nests and areas where active animal dens or burrows are encountered will be left undisturbed until unoccupied, as determined by a qualified person; • Promotion of wildlife habitat through vegetation control and brush piles; • Birds of prey may construct stick nests on transmission structures. Osprey nests are most common on transmission structures, but Bald Eagle nests are occasionally encountered. If there are eggs or young in the nest, it is Hydro One protocol to leave the nest until the young have fledged unless there is an immediate safety concern to be addressed. If there are no eggs or young observed, the nest will be removed and replaced; and • Construction personnel will be aware of the potential for wildlife which may be encountered with the within the general work areas. 	<p>Net effects include permanent removal of incompatible vegetation to ensure the safe operation of the transmission line; not considered significant.</p> <p>Incompatible vegetation removal will not represent a loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible with transmission line corridors, to vegetation that is compatible.</p> <p>Hydro One will undertake a Biodiversity Initiative as outlined above.</p>
Invasive Species	<p><u>Construction</u> Potential for inadvertent spread of invasive species propagules through the movement of soil, debris and/or plant material via construction vehicles and equipment.</p>	<p>Refer to mitigation recommended for Agricultural Resource effects. Additional mitigation includes:</p> <ul style="list-style-type: none"> • Construction crews will be educated on the importance of avoiding inadvertent spread of invasive species, and to identify the invasive species that are known to occur or are likely to occur within work areas; • Areas identified as having invasive species present will be considered during access and construction planning. Stands of invasive plant species will be avoided to the extent practical during construction; • Equipment and vehicle inspections and cleaning will be established during construction, to minimize the potential for inadvertent transport of invasive species propagules; 	<p>No significant net effects are predicted.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> • Crews will be educated and informed of invasive species known or with potential to occur in work areas; and • Special treatment areas (e.g. invasive species) will be designated and tracked for future maintenance works. 	
ANISHNAWBEEK AND HAUDENOSAUNEE LANDS AND TRADITIONAL TERRITORY			
Anishnawbek and Haudenosaunee Lands and Territory	<p><u>All Phases</u> Potential to affect First Nations and Haudenosaunee interests.</p>	<ul style="list-style-type: none"> • Some communities expressed interest in being involved with future archaeological and natural environment field work. Hydro One and its consulting archaeologist will work with interested communities to include representatives from interested communities in archaeological and environmental fieldwork; • Anishnawbek and Haudenosaunee communities will be provided opportunities to review the findings of archaeological field surveys and archaeological assessment reports; • If archaeological artefacts are encountered during construction, work in the vicinity will cease and a licensed archaeologist will be engaged immediately to ensure compliance with the provincial Heritage Act; • Hydro One understands that Bald Eagles are considered sacred. Bald Eagles occasionally build nests on transmission line structures; if there are eggs or young in the nest, it is Hydro One protocol to leave the nest until the young have fledged unless there is an immediate safety concern to be addressed. If there are no eggs or young, the nest will be removed and replaced. • Should Hydro One become aware of a deceased Bald Eagle along the transmission line corridor, we will note their location and inform interested communities, in the event that they would like to provide a ceremony; • Several communities have expressed a desire to protect and mitigate adverse effects to natural environment features such as SAR, wildlife and aquatic habitat, and natural or naturalized areas with their traditional territory that could be used for hunting, gathering, harvesting or other traditional uses. Mitigation measures to address effects to these features are described above under Natural Heritage Features; • A community expressed concerns regarding potential effects to nearby projects which generate revenue for the community. Hydro One does not believe that these projects will be interrupted by the proposed Project, as the eventual in-servicing of the future Lakeshore TS will serve to avoid or mitigate any potential temporary outages required to the transmission circuits connecting these facilities as a result of construction of the proposed Project; • Some communities are currently conducting Traditional Ecological Knowledge (TEK) studies. Should these communities wish to share some or all of the findings of these studies with Hydro One and the construction contractor, this information will be taken into consideration during the construction planning of the proposed Project to the extent practical. This may include working with private landowners to provide 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<p>potential opportunities to harvest traditional use plant species ahead of construction, or to provide input into post-construction restoration plans for natural or naturalized areas; and</p> <ul style="list-style-type: none"> Some communities have expressed an interest in participating in the Biodiversity Initiative that Hydro One is committing to for the proposed Project, which will seek opportunities to create or enhance habitats to offset any adverse effects to habitats as a result of the Project. Hydro One will involve interested communities in the Biodiversity Initiative, including potential incorporation of TEK where that information is willingly provided. 	
RECREATIONAL RESOURCES			
Recreational Resources	<p><u>Construction & Maintenance</u> Potential for temporary disturbance to tourism and enjoyment of recreational resources (e.g., trails, etc.).</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> Disturbance to existing recreational resources will be avoided, to the extent practical; and Safety precautions will be utilized throughout the Project area to protect the public such as anti-climbing devices and appropriate signage, where necessary. 	<p>No significant net effects are predicted.</p> <p>Hydro One will commit to working with local Municipalities to identify community benefit opportunities to enhance the broader landscape.</p>
VISUAL AND AESTHETIC RESOURCES			
Visibility of the Project by Sensitive Receptors	<p><u>All Phases</u> Potential visual impacts to sensitive receptors with views of the Project.</p>	<p>Location of transmission structures is one of the largest factors influencing the visual effects to specific receptors. Design of the transmission line (e.g., placement of structure locations) will consider visibility to nearby sensitive receptors.</p>	<p>Construction of the new transmission structures will result in a visual change to the landscape.</p> <p>Hydro One will commit to working with local Municipalities to identify community benefit opportunities to enhance the broader landscape.</p>
TECHNICAL CONSIDERATIONS			
Wind Turbines	<p><u>Construction & Operation</u> The transmission line will be constructed and operated within</p>	<p>The following mitigation is recommended to address these potential effects:</p> <ul style="list-style-type: none"> Direct impacts to existing wind energy facilities or their transmission lines are not anticipated as part of the Project; and 	<p>No significant net effects are predicted.</p>

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
	proximity to adjacent established wind energy facilities, including turbines and overhead or buried collector lines.	<ul style="list-style-type: none"> Contact will be maintained with wind facility operators regarding work schedule and other items of interest. 	
Infrastructure Crossings	<u>All Phases</u> Permanent overhead crossing of Highway 401, Highway 77 and Highway 40 (Communication Road), as well as construction of a new transmission line parallel to Highway 401 and other highways, including municipal roads.	Refer to mitigation recommended for Local Roads & Traffic under Land Use Communities. Additional mitigation includes: <ul style="list-style-type: none"> Permanent impacts to Highway 401 or any other municipal road crossings are not anticipated as part of this project; Temporary or rolling closure of Highway 401 may be required to facilitate stringing, and duration of any temporary closures will be minimized to the extent practical; Where the new transmission line parallels the Highway 401, setback distances provided by the MTO will be respected; Work within the MTO Highway 401 ROW will require an Encroachment Permit and consultation and input from Ministry staff during design; and Works within 400m of a 400-series highway will require a Land Use permit from the MTO. Site specific traffic control plans will be developed to accommodate crossings. 	No significant net effects are predicted.
	<u>Construction</u> Underground utility crossing.	The following mitigation is recommended to address these potential effects: <ul style="list-style-type: none"> Equipment with low bearing capacity will be used, where feasible; Temporary access roads and work pads will be built using mats or geotextile and crushed rock, and/or other protective measures will be implemented as deemed necessary; and Contact will be maintained with applicable utility operators regarding work schedule and other items of interest. 	No significant net effects are predicted.
	<u>Construction and Operation</u> Permanent overhead crossing of the existing railway line ROWs.	The following mitigation is recommended to address these potential effects: <ul style="list-style-type: none"> Temporary flagging operations of railway lines may be required to facilitate construction of the aerial crossing; and Hydro One will work with applicable rail authorities during design. 	No significant net effects are predicted.
	<u>All Phases</u> Crossings of constructed drains.	Refer to applicable mitigation recommended for Fish and Fish Habitat under Natural Heritage Features and Spills under Physical Environment. Additional mitigation includes: <ul style="list-style-type: none"> Municipal drainage superintendents will be consulted during design and construction planning, to discuss any potential effects to municipal drains; Placement of transmission structures will avoid Municipal drains to the extent practical; 	No significant net effects are predicted.

ENVIRONMENTAL CONCERN	PROJECT PHASE & POTENTIAL EFFECTS	MITIGATION MEASURES	NET EFFECTS
		<ul style="list-style-type: none"> • The creation of new crossings during construction will be avoided to the extent practical by using existing access and crossings (e.g. bridges, culverts) and by accessing work areas from either side of drains, where feasible; and • Disturbed areas will be restored to a pre-disturbed state or better, where feasible. 	

8 Effects Monitoring

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

As previously noted in **Section 7**, a project-specific Environmental Management Plan will be prepared following the completion of the Class EA process and before start of construction. The Environmental Management Plan will:

- Summarize legislative requirements.
- Summarize environmental commitments set out in the final ESR, and terms and conditions of approval, if any.
- Ensure the documentation of pre-construction site conditions, where necessary.
- Provide specific directions to construction personnel on the implementation of environmental mitigation measures, response plans, and other information (e.g., identification of Species at Risk).
- Ensure that supporting protection plans have been implemented during construction.
- Describe the environmental monitoring process and frequency to be undertaken during construction;
- Outline steps to be taken when documenting monitoring and identify procedures for follow-up actions, as required; and
- Provide specific directions on the post-construction restoration of work areas and access locations.

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

9 Conclusion

Hydro One is seeking approval under the *Environmental Assessment Act* to construct a new 230 kV double-circuit transmission line based on direction provided by IESO in June 2019. The new 230 kV transmission line will be approximately 48 km in length and will connect the Chatham SS in the Municipality of Chatham-Kent to the future Lakeshore TS in the Municipality of Lakeshore. As the preferred Route Alternative will repurpose approximately 16 km of an existing idle 115 kV transmission corridor between Tilbury and Chatham, the Project will involve dismantling and removal of the existing transmission structures, conductor and associated components and equipment along this stretch of the idle transmission line. The Project will also involve an expansion of the Chatham SS to facilitate the connection of the new transmission lines.

The purpose of the Project is to increase the overall transfer capability of the bulk transmission system west of Chatham in order to reliably supply the forecast load growth in the Kingsville-Leamington area and the broader Windsor-Essex Region in the near-to mid-term; permit the resources and bulk facilities in this region to operate efficiently for local and system needs; and maintain existing interchange capability on the Ontario-Michigan interconnection between Windsor and Detroit. The proposed project was identified as a near- to mid-term initiative in the IESO's Need for Bulk Transmission Reinforcement in the Windsor-Essex Region (2019).

Following receipt of the IESO letter in June 2019, Hydro One conducted a preliminary assessment to identify viable Route Alternatives for the new 230 kV transmission line. As a result of this exercise, three viable Route Alternatives (including variations) were identified. Based on information obtained during the early stages of the Class EA process, Hydro One made four refinements to the Route Alternatives in October 2020.

Since the Notice of Commencement in January 2020, municipal, provincial and federal government officials, staff and agencies, Anishnawbek and Haudenosaunee communities, potentially affected and interested persons, and interest groups were consulted. Given the uniqueness of the ongoing public health emergency related to COVID-19, many of the traditional in-person meetings and Community Information Centres (CIC) were replaced with Virtual Open Houses and Virtual Information Sessions (VIS). A total of three VIS' for the general public and stakeholders were held (#1 - May 12 & 14, 2020, #2 - November 5, 2020 and #3 - March 11, 2021). An additional two rounds of VIS' were held separately for Anishnawbek and Haudenosaunee communities (Anishnawbek #1 - May 26, 2020 and #2 - March 22, 2021; Haudenosaunee #1 - May 25, 2021 and #2 - March 23, 2021). Similarly, as a mechanism to replicate a traditional CIC, two Virtual

Open Houses were held allowing the Anishnawbek and Haudenosaunee communities, interested members of the public and project stakeholders to view project specific information over an extended period of time (#1 - October 29, 2020, and #2 - February 25, 2021) in advance of VIS #2 and #3. Additionally, an interactive online mapping platform was hosted on the Project web page since the commencement of the Class EA process, with regular updates to reflect the progress of the Project and Class EA.

A Technical Advisory Committee (TAC) was established to help inform the comparative evaluation and route selection process used to identify the preferred Route Alternative for the new 230 kV transmission Line. The purpose of the TAC was to provide a platform for Hydro One to present information, hold discussions and draw upon the experience and knowledge of individuals and organizations. The TAC consisted of representatives from Anishnawbek and Haudenosaunee communities, government agencies, municipalities, and interest groups, and three virtual TAC workshops were held (#1 - June 2020, #2 - September 2020, and #3 - February 2021).

Feedback received from the various public engagement activities and the TAC was used to complete a Multi-Criteria Decision Making Analysis in support of the Class EA. The results of this analysis determined that Route Alternative 2A was selected as the preferred Route Alternative.

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 information collected, project design and implementation of the proposed mitigation measures, no significant net adverse environmental effects are expected.

This draft ESR is being made available for public review and comment for 60 days (extended from the typical 30-day review period), from June 11, 2021 to 4:30 PM on August 10, 2021. Hydro One will make best efforts to respond and resolve issues raised by concerned parties during the review period. Comments received during this period will be addressed and documented in the final ESR.

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

10 References

- Aboriginal Affairs and Northern Development Canada (AANDC), 2012. GeoViewer Interactive Map. Accessed from: <http://geo.aandc-aadnc.gc.ca/geoviewer-geovisualiseur/index-eng.html>.
- Agriculture and Agri-Food Canada, Canada Land Inventory, Soil Capability for Agriculture (2013). Available online:
<http://sis.agr.gc.ca/cansis/publications/maps/cli/1m/agr/index.html>.
- Barnett, P.J., Cowan, W.R. and Henry, A.P. 1991. Quaternary geology of Ontario, southern sheet; Ontario
- Bat Conservation International. 2016. Species profiles. Accessed from:
<http://www.batcon.org/resources/media-education/species-profiles>.
- Bird Studies Canada. 2009. Marsh Monitoring Program Participant's Handbook for Surveying Marsh Birds. 2009 Edition. 17 pages.
- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier [eds.]. 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 p.
- Camp Anjigami. 2019. Directions to Camp Anjigami. Available online:
<http://www.campanjigami.com/directions/>.
- Canadian National Railway Company (CN). 2020. Maps & Network – Interactive Maps. Available online: <https://www.cn.ca/en/our-services/maps-and-network/>.
- Canada Land Inventory (CLI). 1998. *National Soil DataBase, Agriculture and Agri-Food Canada*. Retrieved from:
http://sis.agr.gc.ca/cansis/publications/maps/cli/250k/agr/cli_250k_agr_40j_g.jpg.
- COSEWIC. 2008. COSEWIC assessment and update status report on the Lake Chubsucker *Erimyzon sucetta* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 29 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

- COSEWIC. 2011. COSEWIC assessment and status report on the King Rail. *Rallus elegans* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. X + 32 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
- COSEWIC. 2013. COSEWIC assessment and status report on the Lilliput *Toxolasma parvum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 57 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).
- Crins, W.J., Gray, P.A., Uhlig, P.W.C., Wester, M.C. 2009. The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions. Ministry of Natural Resources and Forestry. Science and Information Branch. Inventory, Monitoring and Assessment Section. Retrieved From: <https://files.ontario.ca/ecosystemspart1-accessible-july2018.pdf>
- Dobbyn, J. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Don Mills. ON 120 pp.
- Dillon Consulting Limited (Dillon), Golder Associates Limited (Golder). 2004. Essex Region/Chatham-Kent Region Groundwater Study Volume1: Geologic/Hydrologic Evaluation. Accessed from: <https://essexregionconservation.ca/wp-content/uploads/2019/01/Essex-Region-Chatham-Kent-GW-Study-Volume-1.pdf>.
- Dillon Consulting Limited (Dillon). 2020. Natural Environment Field Program Terms of Reference – draft. January 2020. pg 39.
- Environment and Climate Change Canada (ECCC). 2018. General nesting periods of migratory birds. <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html> Last Modified October 30, 2018.
- Environment and Climate Change Canada (ECCC). 2019. Species at Risk Public Registry. Accessed from: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>.
- Endangered Species Act (ESA), 2007, S.O. 2007, c. 6.
- Environment and Climate Change Canada (ECCC). 2018. General nesting periods of migratory birds in Canada. Retrieved from: <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html#toc0>.

Environment Canada (EC) 2019. Air Quality Health Index – Windsor Downtown and Chatham Stations. Retrieved from: https://weather.gc.ca/airquality/pages/onaq-010_e.html

Environment Canada. 2011. Recovery Strategy for the Least Bittern (*Ixobrychus exilis*) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada. Ottawa. v + 34 pp.

Essex Region Conservation Authority (ERCA). 2018. Essex Region Conservation Authority Public Interactive Mapping. Accessed from:
http://gisweb.countyofessex.ca/htmlerca2112/Index.html?configBase=http://gisweb.countyofessex.ca/Geocortex/Essentials/ERCA/REST/sites/ERCA__Public/viewers/htmlpublic/virtualdirectory/Resources/Config/Default.

Essex Region Conservation Authority (ERCA) March 2015. Essex Region Source Protection Area: Watershed Characterization (Updated Assessment Report). Essex Region Conservation Authority. Retrieved from: <https://essexregionconservation.ca/wp-content/uploads/2018/04/chapter-2-watershed-characterization.pdf>.

Essex Region Conservation Authority (ERCA). 2015. Essex Region Source Protection Area: Approved Source Protection Plan. Accessed from:
<http://www.ontla.on.ca/library/repository/mon/29009/331937.pdf>.

Essex Region Conservation Authority (ERCA). 2019. Source Water Protection: Vulnerable Areas. Accessed from: <https://essexregionconservation.ca/source-water-protection/vulnerable-areas/>.

Fisheries and Oceans Canada (DFO). (2017). Mapleleaf, *Quadrula quadrula* (Great Lakes - Western St. Lawrence population). Accessed from: <http://www.dfo-mpo.gc.ca/species-especes/profiles-profil/mappleleaf-feuillederable-gl-eng.html>.

Fisheries and Oceans Canada. (DFO). 2019. Aquatic Species at Risk Map. Accessed from:
<https://www.dfo-mpo.gc.ca/species-especes/sara-leg/map-carte/index-eng.html>.

Golder and Associates Ltd (Golder). 2020. Chatham to Lakeshore New Double-Circuit 230 kV Transmission Line Project. Culture Heritage Existing Conditions Report. pg. 231.

Government of Canada 2013. Canada Land Inventory Level-I Digital Data. Soil Capability for Agriculture. Accessed from: <http://sis.agr.gc.ca/cansis/nsdb/cli/class.html>

- Government of Canada. 2019a. Historical Weather Data. Windsor Airport and Chatham WPCP. Retrieved from: https://climate.weather.gc.ca/historical_data/search_historic_data_e.html
- Government of Canada. 2019b. Canadian Climate Normals 1981 – 2010. Retrieved from: http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?searchType=stnName&txtStationName=Windsor&searchMethod=contains&txtCentralLatMin=0&txtCentralLatSec=0&txtCentralLongMin=0&txtCentralLongSec=0&stnID=4716&dispBack=0.
- Grey Sauble Conservation Authority (GSCA). 2019. Source Protection Plan: Key Terms: Accessed from: <http://home.waterprotection.ca/source-protection-plan/key-terms/>.
- Hayman, D., M. Child and D. Hector. 2005. Fish habitat management plan for the Essex Region. Prepared by the Essex Region Conservation Authority, Ontario Ministry of Natural Resources and the Department of Fisheries and OceansHydro One Networks Inc. 2016. Class Environmental Assessment for Minor Transmission Facilities.
- Hydro One Networks Inc. (Hydro One). 2016. Class Environmental Assessment for Minor Transmission Facilities. pg. 161.
- Independent Electricity System Operator (IESO). 2019. Need for Bulk Transmission Reinforcement in the Windsor-Essex Region.
- Jones Consulting Group Ltd. 2014. County of Essex Official Plan; The County of Essex. Accessed from: https://www.countyofessex.ca/en/county-government/resources/Documents/Essex_County_Official_PlanACCESSIBLE.pdf.
- Kavanagh, R.J., Hoggarth, C.T. 2017. Guidance for Maintaining and Repairing Municipal Drains in Ontario. Central and Arctic Region Fisheries and Oceans Canada. Burlington, Ontario. Retrieved from: <https://www.dsao.net/images/Documents/Dart/General/Guidance-for-Maintaining-and-Repairing-Municipal-Drains-in-Ontario-March-7-2017-V1.0.pdf>.
- Lee, H. T., Bakowsky, W. D., Riley, J., Bowles, J., Puddister, M., Uhlig, P., & McMurray, S. 1998. Ecological land classification for southern Ontario: First approximation and its application. Ontario Ministry of Natural Resources, South Central Region, Science Development and Transfer Branch.

- Lee, H. 2008. Draft ecological land classification for Southern Ontario. London, Ontario: Ontario Ministry of Natural Resources.
- Ministry of Agriculture, Food and Rural Affairs (OMAFRA). 2019. Ontario Agricultural Land Atlas. Available online: <http://www.omafra.gov.on.ca/english/landuse/gis/portal.htm>.
- Ministry of Energy, Northern Development and Mines [ENDM]. 1991. Bedrock Geology of Ontario; Map 2544. Accessed from: <http://www.geologyontario.mndmf.gov.on.ca/mndmfiles/pub/data/imaging/M2544/M2544.pdf>.
- Ministry of Energy, Northern Development and Mines (ENDM). 2010. Surficial Geology of Southern Ontario. Accessed from: <https://www.ontario.ca/data/surficial-geology-southern-ontario>.
- Ministry of Energy, Northern Development and Mines (ENDM). 2019. Mining Lands Administration System (MLAS) Map Viewer. Available online: <https://www.gisapplication.lrc.gov.on.ca/Html5Viewer261/index.html?viewer=mlas.mlas&locale=en-US>.
- Ministry of Energy, Northern Development and Mines (ENDM). 2017. Abandoned Mines. Accessed from: <http://www.mndm.gov.on.ca/en/mines-and-minerals/applications/ogsearch/abandoned-mines>.
- Ministry of the Environment and Climate Change (MOECC). 2016a. Ontario's Ambient Air Quality Criteria (AAQC). Accessed from: <https://www.ontario.ca/document/ontarios-ambient-air-quality-criteria-sorted-chemical-abstracts-service-registry-number>.
- Ministry of Environment, Conservation and Parks (MECP). 2019. Map: Well Records. Accessed online: <https://www.ontario.ca/environment-and-energy/map-well-records>.
- Ministry of the Environment, Conservation and Parks (MECP). 2019. Air Quality Health Index (AQHI) Windsor West Station. Retrieved from: http://www.airqualityontario.com/aqhi/search.php?stationid=12016&show_day=0&start_day=2&start_month=10&start_year=2017&submit_search=Get+AQHI+Readings.
- Ministry of the Environment, Conservation and Parks (MECP). 2019. Air Quality Health Index (AQHI) Windsor Downtown. Retrieved from: <http://airqualityontario.com/history/station.php?stationid=12008>.

- Ministry of the Environment, Conservation and Parks (MECP). 2019. Air Quality Health Index (AQHI) Windsor West Station. Accessed from:
http://www.airqualityontario.com/aqhi/search.php?stationid=12016&show_day=0&start_day=2&start_month=10&start_year=2017&submit_search=Get+AQHI+Readings.
- Ministry of the Environment, Conservation and Parks (MECP). 2019. Air Quality Health Index (AQHI) Windsor Downtown. Accessed from:
<http://airqualityontario.com/history/station.php?stationid=12008>.
- Ministry of Natural Resources and Forestry (MNRF). 2000. Significant Wildlife Habitat Technical Guide. 151 p.
- Ministry of Natural Resources and Forestry (MNRF). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement 2005. 2nd Edition.
- Ministry of Natural Resources and Forestry (MNRF). 2013. Ontario Wetland Evaluation System – Northern Manual. 1st Ed. Ver 1.2. Queen’s Printer for Ontario, Toronto, ON. 288 p.
- Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. 48 p. Accessed from:
<http://docs.files.ontario.ca/documents/4813/schedule-3e-2015-final-s.pdf>.
- Ministry of Natural Resources and Forestry (MNRF). 2014. Ontario Wetland Evaluation System. Southern Ontario Manual. 3rd Edition, Vers. 3.3.
- Ministry of Natural Resources and Forestry (MNRF). 2017a. King Rail and Least Bittern Government Response Statement.
- Ministry of Natural Resources and Forestry (MNRF). 2017b. Survey Protocol for Species at Risk Bats within Treed Habitats, Little Brown Myotis, Northern Myotis & Tri-Colored Bat. April 2017. 13 pp.
- Ministry of Natural Resources and Forestry (MNRF). 2019. Bobolink General Habitat Description. Accessed from: <https://www.ontario.ca/page/bobolink-general-habitat-description#:~:text=Bobolinks%20depend%20on%20suitable%20grassland,2013>).
- Ministry of Natural Resources and Forestry (MNRF). 2019. Make a Natural Heritage Map. Accessed from:

https://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US [accessed March 2021].

Ministry of Natural Resources and Forestry (MNRF). 2019. Management Units and Forest Management Plan Renewal Schedules. Accessed from: <https://www.ontario.ca/page/management-units-and-forest-management-plan-renewal-schedules>.

Ministry of Natural Resources and Forestry (MNRF). 2019. Pits and Quarries Online. Accessed from: <https://www.ontario.ca/environment-and-energy/find-pits-and-quarries>.

Ministry of Natural Resources & Forestry (MNRF). 2019. Species at risk in Ontario. Accessed from: <https://www.ontario.ca/page/species-risk-ontario>.

Ministry of Tourism, Culture and Sport [MTCS]. 2010. Standards and Guidelines for Conservation of Provincial Heritage Properties. Accessed from: http://www.mtc.gov.on.ca/en/publications/Standards_Conservation.pdf.

Ministry of Tourism, Culture and Sport [MTCS]. 2011a. Standards and Guidelines for Consultant Archaeologists. Accessed from: www.mtc.gov.on.ca/en/publications/SG_2010.pdf.

Ministry of Tourism, Culture and Sport [MTCS]. 2011b. Engaging Aboriginal Communities in Archaeology: A Draft Technical Bulletin for Consultant Archaeologists in Ontario, MTCS.

Municipality of Chatham-Kent. 2018. Chatham-Kent Official Plan, Action Toward Sustainability. 358 pp.

Ontario Nature. 2016. *Reptiles and amphibians of Ontario*. Accessed from: http://www.ontarionature.org/protect/species/reptiles_and_amphibians/index.php.
Ministry of Northern Development and Mines. 1989. *Aggregate Resources Inventory of Essex County, Southern Ontario*. Ontario Geological Survey Aggregate Resources Inventory Paper 125.
Species at Risk Act [SARA] 2002. (S.C. 2002, c. 29) Available here: <https://laws-lois.justice.gc.ca/eng/acts/S-15.3/>.

Poisson, G., and M. Ursic. 2013. Recovery Strategy for the Butternut (*Juglans cinerea*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. v+12 pp. + Appendix vii + 24 pp. Adoption of the Recovery Strategy for the Butternut (*Juglans cinerea*) in Canada (Environment Canada 2010).

Provincial Policy Statement (PPS). 2020. Provincial Policy Statement, 2020. Under the Planning Act.

Railway Association of Canada. 2012. Maps/Rail Atlas. Map: Ontario Railways. Accessed from: <https://www.proximityissues.ca/reference/maps/>.

Richards, N.R., Caldwell, A.G., and Morwick, F.F. 1949. Soil Survey of County of Essex. Department of Agriculture and the Ontario Agricultural College. Accessed from: <http://sis.agr.gc.ca/cansis/publications/surveys/on/on11/index.html>.

Species at Risk Act (SARA). 2002. S.C. 2002, c. 29.

Statistics Canada. 2017. Town of Lakeshore census profile. Accessed from: <https://www12.statcan.gc.ca/census-recensement/2017/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3537064&Geo2=POPC&Code2=1033&Data=Count&SearchText=Windsor&SearchType=Begins&SearchPR=01&B1=All>.

Statistics Canada. 2017. County of Essex census profile. Accessed from: <https://www12.statcan.gc.ca/census-recensement/2017/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CD&Code1=3537&Geo2=PR&Code2=47&Data=Count&SearchText=Essex&SearchType=Begins&SearchPR=01&B1=All&TABID=1All>.

Statistics Canada. 2017. Municipality of Chatham-Kent census profile. Accessed from: <https://www12.statcan.gc.ca/census-recensement/2017/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CMACA&Code1=556&Geo2=PR&Code2=35&SearchText=Chatham-Kent&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=556&TABID=1&type=0>.

Timmins Martelle Heritage Consultants Inc. (TMHC). 2020. Stage 1 Archaeological Assessment. Class EA for Minor Transmission Facilities. Hydro One Networks Inc. (HONI). Chatham x Lakeshore New 230kV TL Project. November 2020. 123 pp.

Town of Lakeshore 2010. The Town of Lakeshore Official Plan. Retrieved from: <http://lakeshore.ca/lakeshore-2/official-plan>.

