Class Environmental Assessment for Transmission Facilities

February 2024

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APPENDICES

CLASS ENVIRONMENTAL ASSESSMENT HISTORY

The **Class Environmental Assessment for Transmission Facilities** (Class EA for TF) has been in use for more than four decades. It was originally developed by Ontario Hydro and first approved under the *Environmental Assessment Act* (EAA) by Order-in-Council No.3436/80 on December 27, 1980. Since then, the Class EA for TF has been re-evaluated and revised several times for continued use.

The revisions include:

- Revision 0 March 1978
- Revision 1 April 1979
- Revision 2 January 1984
- Revision 3 March 1986
- Revision 4 December 1989
- Revision 5 July 1991
- Revision 6 April 1992
- ToR for amending the Class EA for TF (Revision 6 April 1992) was approved by the Ministry of the Environment and Climate Change (now Ministry of the Environment, Conservation and Parks) on February 17, 2004. Along with outlining various updates, the ToR established Hydro One Networks Inc. as the Applicant. The amendment process was deferred to align with the release of the Ministry's **Code of Practice: Preparing, Reviewing and Using Class Environmental Assessment in Ontario** (Code of Practice), October 2009 and subsequently to January 2014, resulting in an updated (2016) version of the document.
- Revision 8 January 2022: Revision 8 amendments were implemented to reflect Ontario Regulation (O. Reg.) 852/21, which came into effect on January 1, 2022
- Revision 9 July 2022
- Revision 10 February 2024

Comprehensive EA Projects Regulation

The regulations under the EAA set out the projects designated as Part II.3 projects. These projects are subject to the requirements of Part II.3 of the EAA, including the requirement to prepare a comprehensive environmental assessment, unless the project is exempt from those requirements. Refer to the regulations under the EAA for details.

Ontario Reg. 116/01 (Electricity Projects) has been revoked.

Of note, more projects are now subject to the Class EA for TF than prior to the revocation of O.Reg. 116/01 (Electricity Projects).

The Guide to Environmental Assessment Requirements for Electricity Projects

MECP's Guide to Environmental Assessment Requirements for Electricity Projects, as amended, classifies projects into three distinct categories, each with different requirements as follows:

a. Category A projects are those which are expected to have minimal environmental effects. These projects are not designated as being subject to the EAA. Although projects in this category are not subject to EAA requirements they are required to comply with other applicable existing legislative requirements, such as the *Endangered Species Act, 2007*, the *Ontario Heritage Act* (e.g., a project in this category may cause a significant ground disturbance in areas of archaeological potential), etc. In addition, if Crown resources are needed to carry out a project, applicable requirements under the EAA related to the disposition of rights to Crown resources must also be fulfilled.

b. Category B projects are those which have potential environmental effects that can likely be mitigated. These projects are subject to the EAA and either fall under the Class EA for TF or require the completion of the Environmental Screening Process set out in Part B of the Guide to Environmental Assessment Requirements for Electricity Projects, as amended (for transmission projects that are associated with a Category B generation project). The Class EA for TF is equivalent to the Environmental Screening Process as described in the above-noted Guide.

c. Category C projects are major projects with known significant environmental effects that require a comprehensive EA and do not fall within the class of projects for which the Class EA for TF applies.

Ontario Regulation 231/08 - Transit and Rail Project Assessment Process. This regulation, referred to in the Class EA for TF as the "Transit Projects Regulation", sets out the EA requirements for rail and transit projects. The regulations under the EAA designate certain power supply infrastructure projects for the electrification of commuter rail corridors as Part II.3 projects. Proponents of these power supply infrastructure projects are subject to the process set out in the Transit Projects Regulation but have the option to instead proceed with their projects in accordance with the Class EA for TF if written notice of their intention to do so is provided to the appropriate MECP officials in accordance with the regulations under the EAA.

For more information, proponents should refer to the regulations under the EAA and MECP's **Guide to Environmental Assessment Requirements for Electricity Projects**, as amended.

Exemption Order OHK-11, known as the Parkway Belt exemption, was granted after the multi-year hearing process carried out by the Solandt Commission. Exemption Order OHK-11 was granted to permit the development of a variety of transmission line and station projects within the Parkway Belt (established in the early 1970s as a multi-use utility corridor that was to meet the expected need of the Greater Toronto Area). A list of specific projects is included in this Exemption Order (see **Appendix G**). While Exemption Order OHK-11 was revoked when Part II.3 of the EAA came into force, the projects to which it applied remain exempted by regulation under the EAA.

1.0 INTRODUCTION

The *Environmental Assessment Act* (EAA) provides for the "protection, conservation, and wise management" of the environment in Ontario. Part II.1 of the EAA sets out requirements for the approval of a class environmental assessment (Class EA). An approved Class EA permits the group of projects in the class to proceed without the need for an assessment under Part II.4 of the EAA, provided they proceed in accordance with the Class EA.

The purpose of the **Class Environmental Assessment for Transmission Facilities** (Class EA for TF) is to provide information that will enable the Minister of the Environment, Conservation and Parks (Minister) to approve, following a single review, an assessment process for certain types of frequently occurring transmission projects. The projects utilizing the Class EA for TF will have predictable environmental effects that can likely be mitigated and can be planned and constructed in accordance with a common process.

The Class EA for TF was developed taking into consideration the **Guide to Environmental Assessment Requirements for Electricity Projects** (2011), **O. Reg. 852/21**, **the Electricity Projects Regulation, the Transit Projects Regulation,** the Ministry of the Environment, Conservation and Parks' (MECP) **Code of Practice: Preparing, Reviewing and Using Class Environmental Assessment in Ontario**, 2014 (Code of Practice), and other Class EA documents. It was amended in 2022 and 2024 to allow more electricity transmission projects to follow the Class EA for TF instead of requiring a comprehensive EA.

The Class EA for TF is consistent with the mandate and accountabilities of Hydro One Networks Inc. (Hydro One) and other licensed transmitters, local distribution companies (LDCs), industrial customers, etc., who may design and construct transmission facilities and be responsible for their subsequent operation, maintenance and retirement.

Although Hydro One is the Applicant for approval of the Class EA for TF, the Class EA for TF must be used by all public and private transmission project proponents. All proponents are responsible for ensuring that they fulfill all EAA requirements for their projects.

1.1 Application of the Class EA for TF

The Class EA for TF applies to any project within the class of projects described in Section 1.2, including certain power supply infrastructure projects for the electrification of commuter rail corridors where the proponent provides written notice to MECP in accordance with the regulations under the EAA indicating that it will proceed with the project in accordance with the Class EA for TF.

Reference should be made to the regulations under the EAA to determine if there are any applicable exemptions or other provisions that may affect the application of this Class EA for TF. For example, a project to which this Class EA for TF applies is deemed to be a Part II.3 project and is not subject to Part II.1 of the EAA, being the part of the EAA related to class EAs, where, as of the day section 29 of Schedule 6 to the *COVID-19 Economic Recovery Act, 2020* came into force: (1) a terms of reference was given under section 6 (1) of the EAA in respect of the project, and (2) no decision has been made under section 9 or 9.1 of the Act in respect of an application for approval to proceed with the project. Such projects are subject to Part II.3 instead.

1.2 "Class" of Projects Subject to the Class EA for TF

Subject to **Section 1.2.1** below, the following are the projects to which the Class EA for TF applies:

1. Establishing a new or temporary transmission line that has a nominal operating voltage of greater than or equal to 115 kilovolts (kV) and is greater than 2 kilometres (km) in length.

2. Refurbishing an existing transmission line that has a nominal operating voltage of greater than or equal to 115 kV and is greater than 2 km in length.

3. Establishing a new transmission station that has a nominal operating voltage of greater than or equal to 115 kilovolts kV.

4. Expanding an existing transmission station, where the expansion involves the acquisition of land and the transmission station has a nominal operating voltage of greater than or equal to 115 kV.

The projects described in 3 and 4 above include establishing or expanding a telecommunication station as part of establishing or expanding the transmission station.

An environmental assessment under this Class EA for TF for the transmission line or transmission station projects described above will include an assessment of the design, construction, operation, maintenance, and retirement of the asset.

Where a transmission station has more than one voltage level, the highest level is used in determining the station's nominal operating voltage under this Class EA for TF.

1.2.1 Exclusions from the Class of Projects

The projects to which this Class EA for TF apply **do not include:**

(a) A project in respect of a transmission line or transmission station that is subject to the Class Environmental Assessment for Waterpower Projects, as amended from time to time;

(b) A project in respect of a transmission line or transmission station that is associated with:

(i) a generation facility that is constructed only for the purpose of providing electricity to the site where the generation facility is located in the event of a failure of a distributor to deliver electricity to the site; or

(ii) a generation facility that uses biogas, biomass, landfill gas, natural gas or waste biomass as its primary power source, if the facility has a name plate capacity of 25 megawatts or less, and,

a. the ratio of the facility's output energy to its input energy is more than 0.60, or

b. none of the electricity generated by the facility is sold by the generator through the IESO-administered markets and none of the electricity generated by the facility is sold by the generator directly to persons who use the electricity at a location other than the site on which the facility is located.

In this section, “associated with” means:

- With respect to a transmission line, a line that is used to transmit electricity at the generation facility or from the facility to the IESO-controlled grid.

- With respect to a transmission station, a station that is used to transform the voltage of electricity at the generation facility or on a transmission line associated with the facility.

Proponents are responsible for identifying and obtaining any other legislative or regulatory permits or approvals needed for a project. Where possible, the proponent is encouraged to coordinate approval processes.

Note: Secondary land uses on provincial Crown-owned corridors are not subject to the Class EA for TF.

1.3 Project Categories

The Class EA for TF sets out four project categories that determine the level of detail of assessment and consultation required to evaluate a project or whether a project is exempt from the EAA.

1.3.1 Emergency Situations

Pursuant to s. 15.3 (1) of the EAA, the EAA does not apply to immediate actions undertaken in response to emergency situations in respect of transmission facilities in respect of a type described in **Section 1.2**, provided that the requirements outlined in **Section 5.4** of the Class EA for TF are met. As such, these projects are exempt from the EAA under s. 15.3 (2) of that Act.

There are two types of emergencies that may arise:

a. Emergency situations not requiring notification (i.e., response actions where an outage has already occurred); or
b. Emergency situations requiring notification (i.e., response actions taken to address imminent risk).

1.3.2 Projects Eligible for Exemption Subject to the Archaeological Screening Process

The projects identified below, subject to the Archaeological Screening Process, may be exempt from the EAA as determined by the Archaeological Screening Process set out in *Appendix I – Archaeological Screening Process for Eligible Projects.* If the outcome of the Archaeological Screening Process is that the EAA does not apply to the project pursuant to ss. 15.3 (1) of the EAA and, as such, the project is exempt from the EAA pursuant to s. 15.3(2) of the Act, the proponent may proceed with the project without further requirements under the EAA. Projects subject to the Archaeological Screening Process that are not exempt may follow the Class EA Screening Process or the Full Class EA Process. If electing to proceed with the Class EA Screening Process, the proponent must demonstrate that the archaeological resource effects are not considered significant per criterion p) of the Class EA Screening Process.

Projects eligible for the Archaeological Screening Process are:

a. Establishing temporary transmission lines that:

i. have a nominal operating voltage of 115 kV and are greater than 2 km; or

ii. have a nominal operating voltage of greater than 115 kV and less than 500 kV and are greater than 2 km and less than 50 km.

b. Refurbishing transmission lines that have a nominal operating voltage equal to or less than 500 kV resulting in no increase in voltage.

Eligible refurbishments comprise additions, relocations, replacements, or upgrades of up to 45 poles or structures per project.

1.3.3 Projects Eligible for Exemption Subject to the Class EA Screening Process

The Class EA Screening Process, as described in **Section 3.3.3**, involves 16 screening criteria, all of which must be met for a project to pass the screening. If passed, the proponent may proceed with the project without further application of the EAA. However, if the Class EA Screening Process results in one or more of the 16 screening criteria not being met, the EAA continues to apply to the project and the proponent must complete the Full Class EA process as described in the Class EA for TF.

Any project to which the Class EA for TF applies is eligible for the Class EA Screening Process, except the following projects, which instead must be assessed under the Full Class EA Process:

a. Establishing a transmission line that has a nominal operating voltage of greater than 115 kV and less than 500 kV and is greater than or equal to 50 km.

b. Establishing a transmission line that has a nominal operating voltage of greater than or equal to 500 kV and is greater than 2 km.

c. Refurbishing an existing transmission line that has a nominal operating voltage of greater than or equal to 500 kV and is greater than or equal to 75km.

d. Establishing a new or expanding an existing transmission station that has a nominal operating voltage of greater than 500 kV.

For clarity, this does not mean that proponents should automatically use the Class EA Screening Process to plan projects below these thresholds.

The following are examples of projects to which the Class EA Screening Process is typically applied:

a. Refurbishing a transmission line that has a nominal operating voltage of equal to or less than 500 kV, resulting in no increase in voltage, and involving greater than 45 poles or structures along the existing RoW.

b. Establishing overhead transmission lines between 2 and 4 km in length that have a nominal operating voltage of less than 500 kV.

c. Establishing underground transmission lines in urban areas.

d. Expanding an existing transmission station that has a nominal operating voltage of greater than or equal to 115 kV and involves site acquisition of no more than four hectares (ha).

e. Establishing a transmission station that has a nominal operating voltage of greater than or equal to 115 kV and less than 500 kV.

The proponent should consult the examples provided to make a prudent determination as to whether to apply the Class EA Screening Process or instead proceed to the Full Class EA process.

1.3.4 Projects Subject to the Full Class EA

The Full Class EA applies to:

- projects that are ineligible for the Class EA Screening Process, as set out in **Section 1.3.3**;
- projects that are not exempted from the EAA under **Section 1.3.1** (emergency situation) or further to the Archaeological Screening Process or the Class EA Screening Process; or
- projects where the proponent chooses to complete the Full Class EA voluntarily.

The consultation and assessment process associated with the Full Class EA may address concerns that arise and further inform mitigation techniques.

1.4 Rationale for the Class Environmental Assessment

The Class Environmental Assessment Process (Class EA Process) has been in use over the past four decades, and has shown that the projects within the defined class occur frequently, have a predictable range of effects, and may be assessed using a common planning process. The Class EA for TF has shown to be an effective way of ensuring that the projects that fall within the Class EA for TF are planned and carried out in a manner that is efficient and environmentally acceptable, without subjecting projects which have a predictable range of environmental effects, to extensive individual reviews.

The Class EA for TF has proven to be both efficient and economical with respect to resources when compared with comprehensive EAs. It was also concluded that, in addition to being an effective way of meeting the requirements of good planning, it provided the best way of meeting the intent of the EAA. This conclusion was confirmed by government ministries during the previous reviews of the Class EA for TF.

1.5 Similarities and Differences Among Project Types

The following outlines the similarities and differences among the projects subject to the Class EA for TF.

Similarities:

a. All projects subject to the Class EA for TF have predictable environmental effects that can likely be mitigated.

b. Environmental effects tend to be construction-related. Long-term operating environmental effects are limited because there are no significant emissions to air or water, or waste production.

c. High voltage facilities have similar safety and security risks.

Many facilities share a common purpose: to provide reliable power to communities and commercial enterprises and/or connect generation sources with customers through the transmission network.

Differences:

a. Facilities are located throughout the province in a variety of geographic conditions, including urban and rural settings.

b. In general, refurbishing linear facilities tend to have smaller, incremental environmental effects; establishing new facilities has larger effects.

c. Effects of transmission lines can vary according to length and location.

d. Visual and property effects (e.g., size of towers and stations, and widths of RoWs) increase with operating voltages.

1.6 Applicant and Proponent

Applicants apply for approval of, or can propose amendments to, a Class EA, and proponents plan and develop projects in accordance with an approved Class EA.

Hydro One is the Applicant for the Class EA for TF. In its role as the Applicant, Hydro One may seek approval for amendments proposed to the Class EA for TF.

The Class EA for TF applies to all proponents of projects within the class of projects.

Hydro One, as a proponent, is the largest licensed electricity transmitter in Ontario (accounting for approximately 97% of the province's transmission capacity) and is responsible for the majority of projects within the class.

Other proponents may include, but are not limited to, LDCs, other licenced transmitters and industrial customers who are licensed to operate in Ontario.

2.0 PURPOSE OF PROJECTS COVERED BY THE CLASS ENVIRONMENTAL ASSESSMENT FOR TRANSMISSION FACILITIES

2.1 Transmission Lines

Generally, a project within the class consisting of - entirely or in part - a new, temporary or refurbished transmission line would have one or more of the following purposes:

- To transmit electrical energy to existing or proposed transmission or distribution stations.
- To connect parts of Hydro One's transmission network or to interconnect with neighbouring utilities to improve the transmission network's capability and/or reliability.
- To connect large electrical energy users (e.g., large industrial customers) to the transmission network.
- To improve the transmission network needed to connect new generation facilities.

2.2 Transmission Stations

Generally, a project within the class consisting - entirely or in part - of a new or expanded (requiring acquisition of land) transmission station would have one or more of the following purposes:

- To transform electrical energy from a transmission voltage (equal to or greater than 115 kV) to a sub-transmission or distribution voltage (less than 115 kV) for distribution to low-voltage customers. A station having this purpose can be referred to as a transformer station (TS).
- To transform electrical energy from one transmission voltage to a lower transmission voltage, or vice versa, to interconnect parts of Ontario's electricity transmission system to improve the system's capability and/or reliability. A station having this purpose can be referred to as a TS.
- To connect together, or bus, sections of the electricity transmission system through automatic switching devices, to improve the system's capability and/or reliability. A station having this purpose can be referred to as a switching station (SS).
- To regulate the voltage of a transmission line (or lines) within the electricity transmission system. A station having only this purpose can be referred to as a regulating station (RS).
- To provide reactive power compensation to improve the capability and/or reliability of Ontario's electricity transmission system. Compensation will take the form of one of the following:
    i. Parallel compensation (e.g., mechanically-switched compensation, static var compensation, static synchronous compensation);
    ii. Series compensation (e.g., fixed compensation, thyristor-controlled series compensation, synchronous series compensation).

- To interconnect with asynchronous power networks via the transformation of energy from alternate current (AC) to direct current (DC) and vice-versa. A station with only this purpose can be referred to as a high voltage direct current (HVDC) station.
- To provide telecommunication facilities with the purpose of the protection, control, and monitoring of the electricity transmission system and the facilities connected to it, as well as for maintenance communications.

Figure 1: A Typical Transmission Line Application (Conventional)

Figure 2: A Typical Transmission Line Application (Narrow Based)

Figure 3: A Typical 230 kV Transformer Station

Figure 4: A Typical 115 kV Transformer Station

Figure 5: A Typical Telecommunication Tower

3.0 CLASS ENVIRONMENTAL ASSESSMENT PROCESS

Projects that are subject to a class environmental assessment do not require approval under Part II.3 of the *Environmental Assessment Act.* These projects can proceed subject to complying with the applicable class environmental assessment, provided no Section 16 Order is made declaring that the project is a Part II.3 project and thereby requiring the proponent to apply for approval under Part II.3 to be able to proceed with the project.

This section describes two levels of assessment under this Class EA for TF: the Full Class EA Process and the Class EA Screening Process, which is determined based on the project types, complexity and extent of environmental effects.

The Class EA processes are illustrated in **Figure 6** and described in detail in this section. Each step in **Figure 6** corresponds to a subsection in this section. The Class EA for TF is consistent with the process described in Section 6.1.7 of the MECP Code of Practice.

The Class EA Screening Process has been developed to screen projects with minimal environmental effects (confirmed upon satisfying 16 screening criteria). per **Section 3.3.3** and as shown in **Figure 6**. The Class EA for TF Screening Process is not the same as "Environmental Screening Process for Electricity Projects" referenced in the regulations under the EAA and contained in Part B of the Guide to Environmental Assessment Requirements for Electricity Projects.

Both the Full Class EA Process and Class EA Screening Process involve consultation components that inform decision-making.

3.1 Establish Need

The need for new or improved/upgraded transmission facilities may be derived from the following:

- Forecasted increases in electricity demand.
- Limitations in capability of existing facilities of capacity and reliability.
- Facilities nearing end-of-life.
- Improvement of existing transmission network facilities to connect new generation facilities or address the impacts of generation retirements.
- Changes required by third party projects (e.g., highway expansions).
- Implementation of new technologies enabling efficiency or other improvements in electricity supply (e.g., series compensations facilities).
- Joint studies with other utilities which define future transmission improvements.

The need may be established by proponents, the provincial electricity planner (Independent Electricity System Operator [IESO]), or proponents' joint studies (i.e., Hydro One and LDCs). The IESO is tasked with ensuring a reliable and sustainable supply of electricity for Ontario. The IESO identifies areas of the Province where new or upgraded transmission facilities are required (e.g., to meet increasing demands for electricity and to connect new generation facilities). In these situations, the IESO will issue recommendations to proponents to carry out improvements to the transmission network.

At a local level, proponents and/or LDCs may carry out local area supply studies to assess the performance of existing facilities and the need for improvements to address the growth in local demand or improve the reliability of area supply. Hydro One's system sustainment programs can also identify facilities nearing end-of-life that require replacement, in part or in whole (e.g., the Hydro One Wood Pole Replacement Program).

In these situations, the Class EA for TF will rely on supporting technical studies from available sources. The consequences of taking no action will be described (i.e., do nothing alternative).

Specific determinants of the need for new transmission facilities are described below:

a. ***Proponent end-of-life and/or equipment testing studies***. Operators of existing transmission facilities and equipment perform regular tests to determine whether these assets will need to be replaced to maintain their reliability. These assets and associated equipment as applicable may be required to be replaced if so determined by these end-of-life tests.

b. ***Proponent-identified capacity constraints.*** Operators of existing transmission equipment may identify an area where to ensure the reliability of the supply of electricity to the area and/or to increase the capacity of the local system to enable future load growth, new transmission equipment must be installed, or the existing equipment must be upgraded.

c. ***IESO-identified enabling of generation resources.*** The IESO may identify an area where new transmission facilities or the reinforcement and/or upgrading of existing transmission equipment is required to enable the connection and/or transmission of future generation resources. Examples include areas with a high potential for wind power or hydroelectric generation where future generation facilities are planned to utilize this potential. The IESO may then provide proponents with one or a number of suitable transmission alternatives which will fulfill the need to provide grid connection and capacity to these resources.

d. ***IESO-identified capacity constraints.*** The IESO's load growth forecasting may identify an area where electricity demand growth is expected to exceed the available transmission capacity in the near future. In such cases, the IESO will examine supply alternatives and may recommend the installation of new transmission facilities or the refurbishment and/or upgrading of existing transmission equipment. The IESO may provide proponents with one or a number of suitable transmission alternatives that will provide the required electrical transmission capacity.

e. ***Customer-identified capacity constraints.*** LDCs may identify the need for new or upgraded transmission capacity in their service territory as they perform regular demand monitoring and load forecasting. The need for these new or upgraded transmission projects may arise through constant regular load growth or through a single independent event (e.g., the construction of a new large subdivision). The LDC will inform proponents and will often provide a study area for the project and/or a set of transmission alternatives.

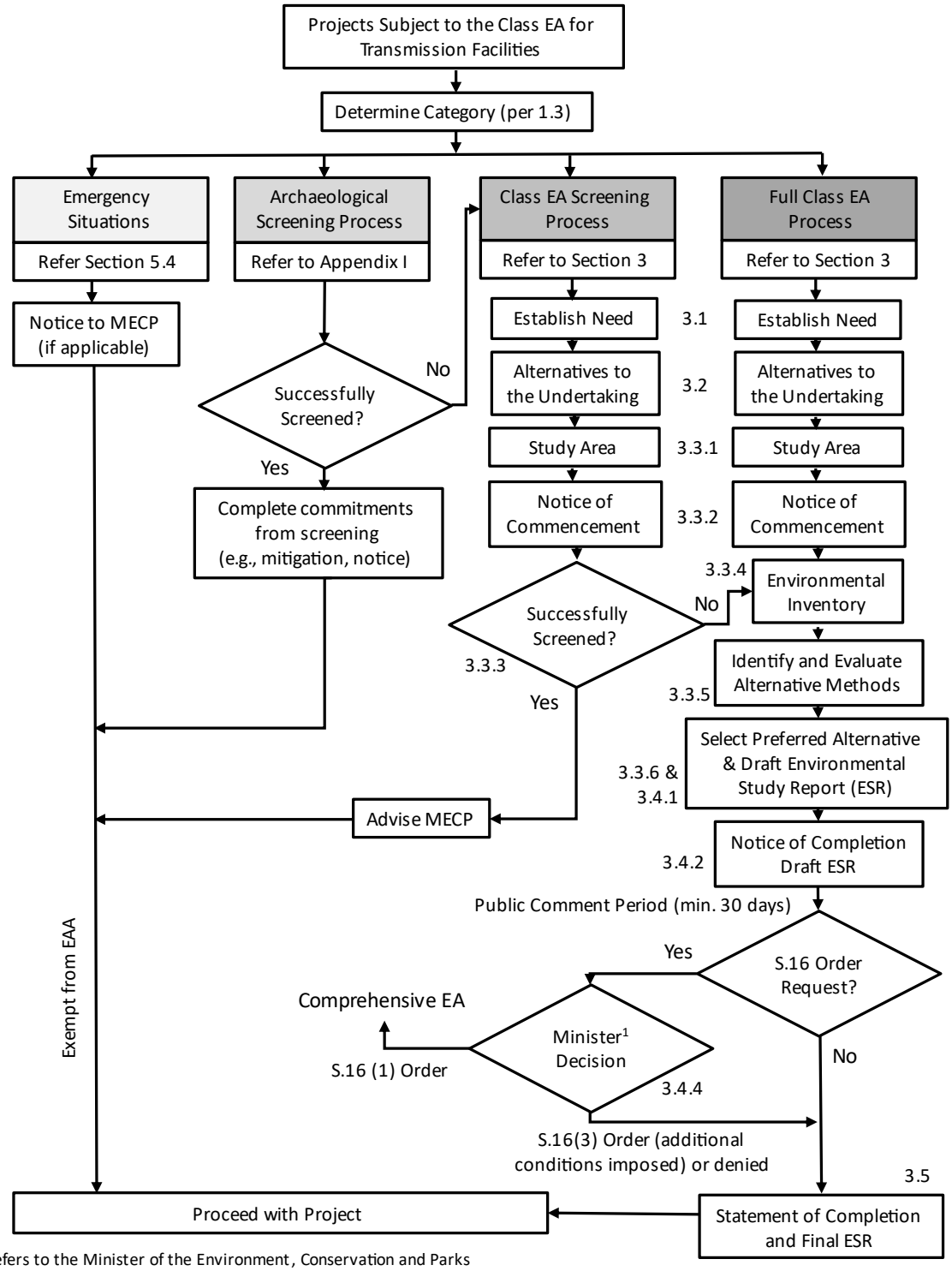
f. ***Large industrial customer connections.*** Industrial customers may either construct or upgrade facilities which have a significant operational electricity demand, in some cases great enough to justify direct connection to Ontario's transmission network. Such direct connections will often require the construction of new transmission facilities and/or the upgrading of existing transmission equipment. In these cases, the proponent must identify the transmission alternative which will meet the need of the industrial customer while

maintaining the integrity and reliability of the electricity supply to other customers in the area.

g. ***Provincial government priority initiatives.*** Projects may result from provincial government priority initiatives. In these cases, there may be limited alternatives as the actual project is often specifically defined by the initiative.

h. Transmission network improvement/upgrade needed to facilitate new generation facilities, not otherwise described above.

Class Environmental Assessment Process



[1]Refers to the Minister of the Environment, Conservation and Parks

Numbers in this figure refer to applicable sections of the Class EA for TF, which are to be considered in conjunction with each section.

Figure 6: Class Environmental Assessment Process

3.2 Alternatives to the Project

Alternatives to the project 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.

Recognition of Previous Planning Work

There are times when projects result from a provincial government priority initiative (see **Section 3.1**) or the recommendation of independent agencies such as the IESO. If this is the case, the project documentation will outline the rationale for selection of alternative(s), if any alternative can be considered, and the extent to which any previous planning supports the provincial government priority initiatives or recommendation of independent agencies.

The transmitter will accept the recommendations of an independent agency as a starting point for the Class EA for TF and will not revisit alternatives considered and rejected by the planning process (e.g., generation alternatives and other transmission alternatives).

Class EA projects may also be identified based on the planning process of generation proponents. Generation proponents will be responsible for approval of planned generation and associated transmission facilities (i.e., to the point of connection to the transmission network). Hydro One, or other proponents, may be required to expand or modify network facilities to accommodate the new and/or expanded generation facilities, including protection and control facilities. These facilities can include transmission line upgrades and switching station facilities; however, dedicated transmission facilities, designed with the single purpose of connecting a planned generation facility, would be excluded. Class EA alternatives would then include modifications or upgrades to network transmission facilities needed to connect the proposed generation/transmission facilities. Generation and associated transmission facilities will be approved through the Renewable Energy Approval process or subject to applicable EA processes such as the Class Environmental Assessment for Waterpower Projects.

3.2.1 Do Nothing Alternative

Consideration of the “do nothing” alternative will be addressed early in the Class EA for TF. The rationale for discarding this alternative will be directly related to the need for the project. Factors involved will typically be limited to technical and economic but will include environmental implications where appropriate. The proponent will be responsible for establishing the need and the rationale for discarding the “do nothing” alternative (as per **Section 3.1**).

The “do nothing” alternative will be included in the Environmental Study Report (ESR), which is prepared for the Class EA project, and will be discussed during consultation activities.

3.2.2 Transmission Alternatives

Under the Class EA for TF, once the need is established, technically viable alternatives to the project capable of addressing that need will be identified. Each alternative may have different technical, economic and environmental advantages and disadvantages.

The description and the rationale for selection or rejection of all alternatives to the project will be documented in the ESR.

3.3 Environmental Analysis

3.3.1 Study Area Definition

A study area will be delineated to encompass the potential area of project effects, including potential locations of proposed alternatives. The boundaries of the study area will be established by considering the proposed alternatives in relation to the occurrence of known potential environmental and technical constraints and constraints associated with all relevant legislation and land use policies. The environmental constraints may take the form of ecologically sensitive areas (e.g., rivers, lakes, wetlands) and significant human-made constraints (e.g., building, structures, cultural heritage resources, etc.).

Technical constraints may involve issues associated with construction and maintenance (e.g., flood plains, soil conditions) or interference with other facilities (e.g., microwave communication, radio transmission). Other boundary location opportunities may include such features as favourable property fabrics, existing land ownership patterns, and appropriate zoning.

The study area will be documented in the Notice. The ESR will present a rationale for the selection.

3.3.2 Notice of Commencement

In addition to the MECP (i.e., generic e-mail and relevant Regional Offices), municipal, provincial and federal government officials, government agencies, Indigenous communities, potentially affected and interested persons, and interest groups (see **Appendix D**) will be notified of the need for the project, the transmission alternatives being considered, the project study area and will be asked to provide comments. Each ministry, department or agency will be asked to provide comments with respect to potential concerns relating to their respective policies, mandates and/or jurisdictions. The proponent will also:

a. Issue a Notice of Commencement for the Class EA project.

b. Notify the Ministry of Municipal Affairs and Housing (MMAH) and local planning boards and all potentially affected and/or interested lower, upper or single-tier municipalities or separated cities and identify Official Plan provisions relevant to the project (such municipalities are to be considered as part of the public"). For potentially affected areas without municipal organization, notify local planning boards if they exist.

c. Notify any commissions or planning agencies where the study area includes any lands under their jurisdiction (e.g., Niagara Escarpment Commission) and comply with all applicable regulations or conservation plans.

d. Notify any conservation authority which has jurisdiction over watersheds that may be affected by the project.

e. Notify the Impact Assessment Agency of Canada (IAAC) or relevant federal department if federal lands, mandates or interests may be potentially impacted.

f. Notify any Indigenous communities or groups that may have lands or interests which may be potentially affected by the project.

g. Notify any property owners that may be potentially affected by the project and/or potentially interested.

The Notice of Commencement shall contain the following:

a. Name and brief description of the proposed Class EA project.
b. Need for the proposed project.
c. Geographical location of the study area with a map.
d. Name of the proponent of the project.
e. Name of the approved Class EA under which the project is being planned, including a link to where the Class EA for TF may be obtained.
f. An invitation to provide input.
g. Contact information (i.e., name, address, telephone, fax and e-mail address) and website address where project information is available.
h. Freedom of information (FOI) statement advising how written submissions will be handled for the purposes of freedom of information requests and for compliance with the Freedom of Information and Protection of Privacy Act. (see **subsection 4.3**)

For some projects eligible for the Class EA Screening Process (see **Section 3.3.3**), the level of engagement may be minimal (e.g., projects with little to no potential for environmental effects and no directly or indirectly affected properties). Any such consultation will respect the intent of the notification process and the proponent's commitment to public consultation.

The Notice of Commencement must be submitted to the following email addresses:

- Generic Class EA email address: ClassEAnotices@ontario.ca; and

Applicable Regional Class EA email address:

- Central Region – eanotification.cregion@ontario.ca
- Eastern Region – eanotification.eregion@ontario.ca
- Northern Region – eanotification.nregion@ontario.ca
- South West Region – eanotification.swregion@ontario.ca
- West Central Region – eanotification.wcregion@ontario.ca

3.3.3 Class Environmental Assessment Screening Process

At this point, the physical parameters of a proposed project will be defined sufficiently to determine the scope and the potential environmental effects of the project.

Based on experience with projects captured by the Class EA for TF, some projects do not have significant environmental effects and do not require following the Full Class EA Process, and rather, can follow the Class EA Screening Process (see **Figure 6**). Following the successful completion of the Class EA Screening Process, the proposed project will be exempt from the EAA.

The Class EA Screening Process has been developed to screen projects with minimal environmental effects confirmed upon satisfying 16 screening criteria. Projects are to be compared to the screening criteria on a case-by-case basis to determine if the projects have the suitable technical parameters and environmental situations to allow them to be planned following the Class EA Screening Process. The following list of project types and parameters provides some examples of projects that typically have insignificant environmental effects (i.e., would generally be subject to the Class EA Screening Process):

- Refurbishing an existing transmission line capable of operating at a nominal voltage equal to or less than 500 kV, resulting in no increase in voltage, and involving greater than 45 poles or structures along the existing RoW.
- Establishing overhead transmission lines between 2 and 4 km in length that are capable of operating at a nominal voltage less than 500 kV.
- Establishing underground transmission lines in urban areas.
- The expansion of an existing transmission station involving site acquisition of no more than four hectares (ha).
- Establishing a 115 kV transmission station.
- Establishing a 230 kV transmission station.

However, projects such as these cannot be grouped together arbitrarily and assessed under the Class EA Screening Process because, in some cases there could be environmental situations present which would warrant a detailed study. If these situations are significant and cannot be avoided (e.g., the presence of Species at Risk), the project will proceed under the Full Class EA Process. The screening criteria listed below will aid the proponent in making that determination.

If the proponent decides to proceed with the Class EA Screening Process, the proponent will follow the Class EA Screening Process in consultation with directly affected municipal, provincial and federal government officials, government agencies, Indigenous communities, potentially affected and interested persons, and interest groups to identify potential environmental concerns. The level of consultation will vary according to the scope and nature of the project.

Information regarding the scope and nature of the project, as well as the project study area, will be provided as part of the consultation process. Upon request, the proponent will provide a description of the screening results, including any information that led to the determination of potential environmental effects and/or documentation related to how the Class EA Screening Process was assigned.

For the Class EA Screening Process to be successfully completed, the screening criteria listed below, which consists of a set of questions, must be answered “no" in their entirety. If any of the questions are answered "yes" or "possibly", then the project should follow the Full Class EA Process described in this document. The screening criteria must be followed in its entirety.

Screening Criteria

Determine whether the proposed project would:

a. Conflict with written environmental goals, objectives, plans, standards, policy statements or guidelines approved or adopted by the Province of Ontario; municipal government or

local body within an unorganized territory as defined in the *Municipal Act, 2001* where the project is to be located;

b. Have significant effects on persons or property, including lands zoned to permit residential or other sensitive land uses;

c. Necessitate the irreversible commitment of any significant amount of non-renewable resources, including Prime Agricultural Lands, which includes Specialty Crop Areas (as defined in the Provincial Policy Statement under the *Planning Act*) and/or Canada Land Inventory Classes 1, 2 and 3 lands;

d. Pre-empt the use, or potential use, of a significant natural resource for any other purpose;

e. Result in a significant detrimental effect on air or water quality or on ambient noise levels for adjacent areas;

f. Cause significant interference with the movement of any resident or migratory fish, wildlife species, species at risk, or their respective habitats;

g. Establish a precedent or involve a new technology, either of which is likely to have significant environmental effects now or in the future;

h. Be a pre-condition to the implementation of another larger and more environmentally significant project that is subject to a comprehensive environmental assessment or Renewable Energy Approval that has not yet been approved at the issuance of the Notice of Commencement for the project;

i. Likely generate significant secondary effects, directly caused by the proponent's activities, which will adversely affect the environment;

j. Block pleasing views or significantly affect the aesthetic image of the surrounding area;

k. Significantly change the social structure or demographic characteristics of the surrounding neighbourhood or community;

l. Overtax existing community services or facilities (e.g., transportation, water supply, sanitary and storm sewers, solid waste disposal system, schools, parks and/or care facilities);

m. Result in undesired or inappropriate access to previously inaccessible areas;

n. Create the removal of a significant amount of timber resources;

o. Result in significant effects to natural heritage resources

p. Result in significant effects to cultural heritage resources (which may include built heritage resources, cultural heritage landscapes, and/or archaeological resources). Significant effects to cultural heritage resources are to be determined based on technical, cultural heritage studies prepared by qualified persons.

If an interested or affected party during the Class EA Screening Process identifies potential direct or indirect effects that cannot be mitigated, including potential adverse effects on Aboriginal or treaty rights, the proponent will subject the project to a Full Class EA Process as described in this document. Should the concern raised by an interested or affected party be later resolved, the proponent may revert back to the Class EA Screening Process.

Under this Class EA, the Ministry of Energy is the primary contact for the Crown's preliminary assessment of the duty to consult, while the MECP retains overall responsibility for the Class EA Process (as per **Section 4.1.1**) and the administration of the *Environmental Assessment Act* and

is the primary contact for questions regarding the consultation requirements of the Class EA for TF . If an Indigenous community identifies adverse effects on Aboriginal or treaty rights during the Class EA Screening Process, the proponent will consult with the Ministry of Energy on the most appropriate means of issue resolution.

The proponent will advise the MECP, in writing to the Director of the EAB and the Regional EA Coordinator at the applicable MECP Regional Office, of all projects that have been successfully screened.

Despite anything to the contrary in this section, **Section 1.3.3** identifies the projects that are not eligible for the Class EA Screening Process and instead must be assessed under the Full Class EA Process.

3.3.4 Environmental Inventory

This section follows from the Notice of Commencement stage per **Figure 6**. Environmental data is collected, summarized and mapped according to the following factors:

a. Agricultural resources
b. Forestry resources
c. Cultural Heritage resources (i.e., built heritage resources, cultural heritage landscapes and archaeological resources)
d. Land Use and Communities
e. Mineral resources
f. Natural environment resources (e.g., air, land, water, wildlife, etc.)
g. Recreational resources
h. Visual and aesthetic resources (i.e., appearance of the landscape)

Not all of the above factors may be applicable to certain projects (i.e., some factors may not occur within or adjacent to the project study area). Typical data types and sources within each of these factors are listed in **Appendix C**.

Based on past experience and studies, it has been determined that these environmental factors and data types address the key environmental issues associated with the planning of transmission facilities.

3.3.5 Identification and Evaluation of Alternative Methods

Identification and evaluation of alternative methods, such as routes and/or sites, will allow proponents flexibility to arrange for project-specific circumstances and involvement of only technically reasonable/feasible alternatives.

If a number of technically reasonable alternatives are identified, they will be assessed based on natural environment, socio-economic environment, technical and cost factors, and following the recommendations of the Provincial Policy Statement (e.g., the use of existing infrastructure and public service facilities should be optimized). The potential environmental effects of each alternative will consider all aspects of the environment (see **Appendix A** for the definition of “Environment”).

An environmental, technical and cost comparison will then be carried out based on the potential quantitative and qualitative effects associated with each of the alternatives identified. Net effects will be addressed in the environmental evaluation by considering residual effects after mitigation is taken into account. Examples of typical mitigation measures are described in **Appendix E**.

3.3.6 Selection of Preferred Alternatives

The alternatives will be compared by assessing the advantages and disadvantages in terms of the natural and socio-economic environment, technical and cost factors, including the availability of suitable property or property rights if the project had such requirements. The quantitative and qualitative analysis serves to highlight the range of relative differences among the potential effects for each alternative. The qualitative analysis describes the key issues or environmental concerns and outlines other information such as mitigation that could minimize potential environmental effects.

Subsequently, the preferred alternative selected should be the one with the most advantages and least disadvantages of all factors considered. The evaluation of alternatives should provide adequate or sufficient information to enable the reader to understand the rationale supporting the selection of the preferred alternative. The selection of the preferred alternative will be done in conjunction with the consultation process that is explained in detail in **Section 4.0**.

3.4 Project Acceptability

3.4.1 Draft Environmental Study Report

A draft ESR will be prepared for each project subject to the Full Class EA Process. The information will consist of the following:

a. Name and description of the proposed project.
b. A description of the need (justification) for the proposed project.
c. A description of the alternatives for the project, including maps.
d. A description of a study area for the project and the existing environment.
e. A description of the potential environmental effects (positive and negative).
f. A description of the preferred alternative.
g. A description of the consultation that was undertaken.
h. A description of other applicable permits and approvals required for the project.
i. A description of mitigation measures and predicted net effects.
j. A description of any required environmental monitoring.

As a minimum, the draft ESR shall be made available at a location that is a public facility (e.g., a library), and on the proponent's website.

Consultation throughout the Full Class EA Process will be documented to accurately represent planning and decision-making. This will include the schedule of events, methods used to consult, the list of consulted persons, the identification and resolution of concerns, commitments made by the proponent, and any outstanding concerns. A copy of all notification material will accompany the draft ESR.

3.4.2 Notice of Completion

Upon completion of the draft ESR, a Notice of Completion will be issued to inform municipal, provincial and federal government officials, government agencies, Indigenous communities, potentially affected and interested persons, and interest groups that the report is complete and the comment period is commencing.

This notice can be made available via direct mail, email, newsletter, newspaper advertisement, project website, etc. The notice will indicate where copies of the draft ESR can be viewed or obtained. A minimum of 30 days will be provided to review, comment and raise further concerns and issues with the proponent regarding the proposed project. Issues and concerns raised during the comment period will be recognized, considered, addressed and documented. The Notice of Completion shall include the following:

a. Name and description of the proposed project.
b. Name of the proponent for the project.
c. A description of the need (justification) for the proposed project.
d. Geographical location of the study area, with a map showing the project location and boundaries and extent of the study area.
e. Description of the Class EA for TF under which the project has been planned and a link to the Class EA for TF.
f. Name, telephone, and address of contact people within the proponent's organization who can provide further details on the project.
g. Advice that comments on the proposed project should be received within the specified time frame by a specified person in order to receive consideration.
h. Advice that the draft ESR is available for review at specific locations.
i. The start and end dates of the comment period.
j. The opportunities for public participation under the Class EA for TF, including the Section 16 Order requests.
k. A brief description of the opportunity for a Section 16 Order request.
l. The mailing and email address of the MECP where any Section 16 Order requests may be sent.
m. A statement that the proponent can legally proceed with the project under the EAA if no Section 16 Order requests are submitted during the comment period.
n. The date of publication of the notice.
o. FOI statement advising how written submissions will be handled for the purpose of freedom of information requests and for compliance with the *Freedom of Information and Protection of Privacy Act*. (see **subsection 4.3**)

The Notice of Completion must be submitted to the following email addresses:

- Generic Class EA email address: ClassEAnotices@ontario.ca; and

Applicable Regional Class EA email address:

- Central Region – eanotification.cregion@ontario.ca

- Eastern Region – eanotification.eregion@ontario.ca
- Northern Region – eanotification.nregion@ontario.ca
- South West Region – eanotification.swregion@ontario.ca
- West Central Region – eanotification.wcregion@ontario.ca

Refer to **Section 3.4.4** regarding Section 16 Orders.

3.4.3 Assess Acceptability

Once all expressed concerns have been addressed or Section 16 order requests resolved, the proposed project will have completed the requirements of the Class EA for TF. The final ESR and Statement of Completion form will be filed with the MECP and a copy sent to the Regional EA Coordinator at the appropriate Regional Office (see **Section 3.5**). The proponent can then proceed with the project subject to any other approval requirements.

If there are outstanding concerns identified about the proposed project the proponent will re-evaluate the rationale and will attempt to resolve concerns. If the expressed issues and concerns are subsequently resolved, then the proposed project will be considered acceptable. If all outstanding concerns cannot be addressed, the proponent will advise the MECP (Regional Office and EAB) of the following:

- Issues raised during the ESR comment period
- Explanation of action taken
- Explanation of why concerns cannot be resolved
- Recommended next steps

In the event a s.16 order request is made, refer to **Section 3.4.4** for requirements.

3.4.4 Review and Decision by the Minister / Section 16 Order Request

Under the EAA, the Minister has the authority to make two types of orders with respect to a project proceeding in accordance with a Class EA. This authority may be exercised by the Minister or their authorized delegate, if any.

The following summarizes the Minister's authority under Section 16 and 16.1 of the EAA and the prohibitions in s.15.1.1. To the extent that there is a conflict between what is set out below and the provisions in the EAA, the provisions in the Act prevail.

The Minister may order declare that a project is a Part II.3 project, or impose conditions on the project.

Section 16(1) and 16(3) Orders

The Minister may, on their own initiative, within a time limited period, declare a project to be a Part II.3 project (which would require the proponent to prepare a comprehensive environmental assessment to proceed with the project), referred to as a s.16(1) order, or impose conditions on a project, referred to as a s.16(3) order.

If the Minister is considering making an order on their own initiative, the Minister must make the order no later than 30 days after the end of the comment period set out in the Notice of Completion or Notice of Addendum, unless the Director provides a notice to the proponent, within the 30-day period, advising the proponent that the Minister is considering making a s. 16 order (Notice of Proposed Order). If the Director issues a Notice of Proposed the Minister may only make the s. 16 order within 30 days of the Director's notice being provided to the proponent unless the notice includes a request for information.

If the Notice of Proposed Order includes a request for information, the proponent must provide that information to the Director within the deadline contained in the notice. When the information is received, the ministry will review the information, and if the Director is satisfied that the proponent has provided the requested information, the Director will notify the proponent (Notice of Satisfactory Response). The Minister will then have 30 days to make a s. 16 order. In this case, the following outcomes could apply:

- If the Minister issues a s.16(1) order, the proponent cannot proceed with the project without first seeking and obtaining approval under Part II.3 of the EAA, which includes the preparation of a comprehensive environmental assessment).

- If the Minister issues a s.16(3) order, the proponent must meet the conditions outlined in the order in proceeding with their project.

- If the Minister does not issue an order within 30 days of the Director giving a Notice of Satisfactory Response, the proponent can proceed with their project.

If the Director is not satisfied with the information provided in response to a request for information in a Notice of Proposed Order or if the proponent fails to provide the information requested within the timeline provided in the Director's notice, the Director will issue a Notice of Unsatisfactory Response and the proponent will be required to issue a new Notice of Completion or Notice of Addendum. The new Notice of Completion or Notice of Addendum, providing for a new comment period of at least 30 days, must be issued within the time period and following any directions specified by the Director in the Notice of Unsatisfactory Response (e.g., post information to the proponent's website). In addition, the information specified in the Notice of Unsatisfactory Response must be provided to the Director for review. If the Director is satisfied with the information provided to the ministry with the new Notice of Completion or Addendum, the Director will issue a Notice of Satisfactory Response. Once the Notice of Satisfactory Response is given, the Minister will have 30-days to issue an order if the Minister chooses to do so. In this case, the following outcomes could apply:

- If the Minister issues a s.16(1) order, the proponent cannot proceed with the project without obtaining approval under Part II.3 of the EAA which involves the preparation of a comprehensive Environmental Assessment).

- If the Minister issues a s.16(3) order, the proponent must meet the conditions outlined in the order in proceeding with their project.

- If the Minister does not issue an order within 30 days of the Director giving a Notice of Satisfactory Response, the proponent can proceed with their project.

However, if the Director remains unsatisfied with the information provided when a new Notice of Completion or Notice of Addendum is issued or the proponent continues to not provide the

requested information, the Director will issue another Notice of Unsatisfactory Response, thereby requiring the proponent to again issue a new Notice of Completion or Notice of Addendum, as the case may be, in accordance any directions specified by the Director and provide the requested information to the Director.

Requests for s.16 orders on the grounds that the order may prevent, mitigate or remedy adverse impacts on Aboriginal or treaty rights.

In addition, the EAA, as amended through the *COVID-19 Economic Recovery Act, 2020,* allows a person to request under Section 16 of the *EAA* only on the grounds that the order may prevent, mitigate or remedy adverse impacts on Aboriginal or treaty rights. Requests that are not made on these grounds will not be considered by the Minister.

If a s.16 order request is received by the Minister, the proponent shall provide accurate and detailed information on the s.16 order request process to the public and to Indigenous Communities. At a minimum, proponents must include information on the s.16 order request process in the Notice of Completion and any Notice of Addendum. The information in the Notices should include what the grounds for a request must be (i.e., that the order may prevent, mitigate or remedy adverse impacts on Constitutionally protected Aboriginal or treaty rights), how to submit a request for a s.16 order, and timing for submission of the request, and information that must be submitted to the ministry in making a request. This includes:

a. requester contact information, including full name;

b. project name;

c. proponent name;

d. the type(s) of s. 16 order that is being requested;

e. specific reasons on how an order may prevent, mitigate or remedy potential adverse impacts on Aboriginal and treaty rights;

f. information about efforts to date to discuss and resolve concerns with the proponent; and

g. any other information in support of statements in the request.

If a request for a s.16 order is received by the ministry, the ministry will contact the proponent for a response to the concerns raised in the s.16 order request. The proponent must respond in a timely manner with complete information.

For more information on the Section 16 order process, please visit: https://www.ontario.ca/page/class-environmental-assessments-section-16-order

3.5 Statement of Completion

Once the comment period of the draft ESR is complete, the proponent will incorporate all comments raised during the comment period into the report and finalize the ESR. Once the ESR is finalized, a copy will be placed on the proponent's project website and sent to the EAB and the Regional EA Coordinator at the appropriate Regional Office for filing. The proponent will complete

and submit the Statement of Completion form to the MECP along with the finalized ESR. Once completed and submitted, the proponent is authorized under the EAA to proceed with the project in accordance with the final ESR, provided that at least 30 days or such other period as may be prescribed has passed since the end of the comment period specified in the Notice of Completion (see ss. 15.1.1 (5) of the EAA); unless authorized to proceed sooner further to an order issued under ss. 15.1.1 (5.1) of the EAA.

3.6 Subsequent Communication with Interested Parties

Being authorized to proceed with the project under the EAA does not end communications between the proponent and the interested and affected parties. Provisions for subsequent communication with interested parties and individuals whose property is affected by a project are detailed in **Appendix B.**

3.7 Effects Monitoring

The purpose of effects monitoring is to confirm the extent of the project's environmental effects by comparing the actual with the predicted effects, to verify the effectiveness of implemented mitigation measures, and to determine whether additional measures are warranted.

Potential monitoring requirement should be considered throughout the Full Class EA Process, and the level and duration required will vary depending on the project. Monitoring may be relevant at all stages of a project (e.g., site preparation, construction, commissioning, operation etc.) and may also be a condition of subsequent permits and approvals.

The ESR will describe the effects monitoring strategies required for the project. All proponents are expected to follow their own monitoring programs, which would be applied to their own projects. Monitoring programs may consider the following:

- The environmental component(s) and/or mitigation measure(s) being monitored;
- The rationale for the monitoring;
- The monitoring methods being used (e.g., techniques, equipment), and the timing, duration, and frequency; and
- Documentation of data collected, results and actions taken.

3.8 Addendum to the Environmental Study Report

As the Full Class EA Process is planned and carried out using preliminary/conceptual engineering design, it may be revealed later during detailed engineering design that it is not feasible to implement the project in the way originally planned and documented in the ESR. This may come about as a result of a change in conditions, the development of new technology or mitigation measures or the appearance of previously unidentified concerns.

Where a change to the project or to the commitments outlined in the ESR is proposed, affected parties will be consulted. If the changes are not considered significant, the MECP (Regional Office and EAB) will be notified, and changes will be described on website. If through such consultation, significant environmental implications are identified, an addendum will be prepared. This addendum will document the circumstances necessitating the change, the

potential environmental effects caused by the change and what can be done to mitigate any negative effects.

The addendum will be filed with the ESR, and a copy will be sent to the Regional EA Coordinator at the applicable MECP Regional Office and will be posted on the proponent's website. A Notice of Addendum will be provided to all interested and affected parties. A Notice of Addendum should also be placed in a local newspaper. This notice should provide for a public comment period of 30 days. A copy of the addendum will be available to interested and affected parties on the proponent's website, and a hard copy will be available upon request.

Thirty days will be allowed for interested and affected parties to review the addendum and register any objections or concerns. It may be requested that the change to the project, as documented in the addendum, be subject to a Section 16 Order, in accordance with the procedures set out in **Section 3.4.4** of the Class EA for TF. Until authorized to proceed under the EAA, no work will be undertaken which might adversely affect that part of the project under review. If there are no outstanding concerns, or Section 16 Order requests received during the comment period, the proponent can, subject to other required permits and approvals, proceed with the change to the project once 30 days have elapsed following the expiry of the comment period provided for in the Notice of Addendum, unless authorized under ss. 15.1.1 (5.1) of the EAA to proceed sooner. If a Section 16 Order request has been submitted, the proponent cannot proceed with the change to the project pending a decision by the Minister.

When a proposed change that would normally trigger an addendum is in response to an emergency during construction or where a delay in the implementation of the change would result in detrimental environmental effects, the change should be implemented without delay, and affected parties should be contacted within 30 days. An addendum would subsequently be prepared for significant changes and filed.

The Notice of Addendum must be submitted to the following email addresses:

- Generic Class EA email address: ClassEAnotices@ontario.ca; and

Applicable Regional Class EA email address:

- Central Region – eanotification.cregion@ontario.ca
- Eastern Region – eanotification.eregion@ontario.ca
- Northern Region – eanotification.nregion@ontario.ca
- South West Region – eanotification.swregion@ontario.ca
- West Central Region – eanotification.wcregion@ontario.ca

4.0 CONSULTATION

The purpose of consultation is to provide those who may be interested in, or potentially affected by, the proposed project with timely and adequate information and opportunities to participate in the planning process. Consultation also allows the proponent to gain information and knowledge related to social, cultural, economic and environmental considerations of direct relevance to the project, as well as the means to inform and explain the approach to and value of the proposed project.

Consultation is a two-way communication process to involve municipal, provincial and federal government officials, government agencies, Indigenous communities, potentially affected and interested persons, and interest groups in the planning, implementation and monitoring of a proposed project. Consultation is intended to:

i. Provide relevant and timely information to the Indigenous communities, public and all identified stakeholders early in the planning process and opportunities for meaningful input.

ii. Identify Indigenous communities and stakeholders that may potentially be affected by the project or who might have an interest in it. Stakeholders are defined as municipal, provincial and federal government officials; government agencies; potentially affected and interested persons, affected businesses and interest groups.

iii. Identify concerns that may arise from the project and determine how they could be avoided, resolved, or mitigated.

iv. Identify and collect relevant information which may contribute to the planning and decision-making process and the development of the project.

v. Identify relevant guidelines, policies and standards that pertain to the project.

vi. Facilitate the development of a list of all required approvals, licences or permits for the project.

vii. Ensure that relevant information is shared regarding the proposed project.

viii. Encourage the submission of requests for further information and analysis early in the Class EA process.

ix. Provide appropriate information to enable the MECP to make a fair and balanced decision on any s.16 order requests received.

x. Expedite decision-making through development of project plans that are likely to garner a high degree of public and community acceptance.

The Consultation section of the ESR will outline:

a. Consultation principles.

b. Information related to involvement of Indigenous communities, municipal, provincial and federal government officials, government agencies, potentially affected and interested persons, affected businesses, and interest groups in the consultation process.

c. Consultation methods.

d. Notification techniques.

4.1 Consultation Principles

The structure and extent of the communication and consultation program will vary depending on the specific nature of the project, the size of the study area and its geographical location. The proponent will tailor the consultation plan to the local context and follow a clear process for identifying potentially affected and interested persons, municipal, provincial and federal government officials, government agencies, Indigenous communities, affected businesses and interest groups.

Key principles should guide the proponent's approach to communication and consultation, such as:

a. Early, ongoing and timely communications and consultation.
b. Clear project information and documentation.
c. An open, transparent, and flexible consultation process.
d. Respectful dialogue with all Indigenous communities and stakeholders.
e. The provision of ongoing opportunities for all interested parties to provide meaningful input on the proposed project.
f. Full and fair considerations by the proponents of all input received during the consultation process and incorporation of such input into decision-making and project documentation.

4.1.1 Consultation with Indigenous Communities

Section 35 of the *Constitution Act, 1982* recognizes and affirms the existing Aboriginal and treaty rights of Indigenous peoples. The Crown's duty to consult and accommodate arises when the Crown contemplates an action or makes a decision that may have an adverse effect on Aboriginal or treaty rights.

The consultation requirements of the Class EA for TF apply to interested and affected Indigenous communities. Rights-based consultation may also be necessary to comply with the Crown's constitutional duty to consult and accommodate.

Many projects within the Class EA for TF are, routine and have predictable environmental effects that can be readily managed, so the potential for adverse environmental effects is generally low.

However, the duty to consult may arise for transmission projects with potentially greater impact, such as new transmission facilities or expanded RoWs. The Ministry of Energy is the primary contact for the Crown's preliminary assessment of the duty to consult, in respect of proposed transmission projects, while the MECP retains overall responsibility for the administration of the *Environmental Assessment Act* and is the primary contact for questions regarding the consultation requirements of the Class EA for TF.

If the proponent of a project to which the Class EA for TF applies is uncertain as to whether or not the Crown's duty to consult could arise, or if it appears that there may be a duty to consult, the proponent will write to the Ministry of Energy early in the project planning process and provide a description of the project's characteristics and location. The Ministry of Energy, on behalf of the Crown, will determine whether there may be a duty to consult. If so, the Ministry of Energy will identify the communities to consult and delegate to the proponent the procedural aspects of

consultation, and may provide additional direction on consultation requirements as part of it's delegation.

For projects in respect of which the duty to consult is engaged, consultation shall include notification, the provision of information about the proposed project, and opportunities to hear communities concerns. Where warranted, it may also include discussion of measures to avoid, minimize or mitigate potential effects on Aboriginal or treaty rights. Proponents will keep a detailed record of all consultation related activities, including efforts to address concerns or mitigate potentially detrimental effects, as well as any agreements. For projects subject to the Full Class EA Process, the ESR will document efforts to notify and consult with Indigenous communities. The consultation record will be made available to the Crown, upon request. Where the duty to consult is engaged, the proponent shall fulfill the responsibilities delegated to it by the Crown to the satisfaction of the Crown prior to concluding the Class EA Process.

If at any time, an Indigenous community asserts that the project could negatively affect its Aboriginal or treaty rights or that there has not been adequate consultation, the proponent will immediately report the assertion to the Ministry of Energy. The Ministry of Energy, working with the MECP, will then assess and advise the proponent on how best to proceed.

4.1.2 Consultation with Government Officials and Agencies

From the outset of the planning process, the proponent will seek to inform and receive input from provincial and federal government officials and government agencies with jurisdiction or interest related to the proposed project. Appendix B of the MECP Code of Practice lists Government Agencies and their areas of interest. Relevant contacts from the EA Government Review Team will be notified and consulted throughout the Full Class EA Process. The provincial and federal governments may become involved in the Full Class EA Process by providing feedback with respect to policies relevant to the proposed projects and study area. This may occur during meetings, by way of direct correspondence, phone calls and/or by reviewing and commenting on the draft ESR.

If appropriate, local Members of Provincial Parliament (MPPs) may be contacted in advance of all public notifications or consultation events so that they are able to respond to any inquiries or questions from their constituents. In addition, local Members of Parliament (MPs) should be notified if the project may have an effect on areas of federal interest or jurisdiction (e.g., interconnection facilities between provinces, navigable waterways, First Nations reserves, fisheries, etc.).

4.1.3 Consultation with Municipalities

Elected officials and senior municipal staff, including planners, will be informed about the proposed project early in the Full Class EA Process. The proponent will attempt to ensure that municipal officials are aware of the project and receive advance copies of any materials, which are to be distributed to the public so that the municipality may deal effectively with inquiries about the proposed project.

Municipal officials will have opportunities to actively participate in the Full Class EA Process and provide input with respect to municipal interests. This may occur during meetings, by way of direct correspondence, phone calls, and/or by reviewing and commenting on the draft ESR.

4.1.4 Consultation with the Public

Consultation opportunities will be provided to public groups and individuals, beginning with Notice of Commencement.

This can include:

a. Directly affected and adjacent property owners (i.e., residential, commercial, or industrial).
b. Property owners within the study area.
c. Interest groups (e.g., naturalist organizations, agricultural organizations, ratepayers associations, places of worship, legions, community centres, etc.).
d. Local businesses and business organizations (e.g., Chambers of Commerce, business improvement areas, etc.).
e. Schools, School boards and School Trustees within the study area.
f. Other utilities and infrastructure owners (e.g., LDCs, railways, airports, municipal assets, gas companies, owners of power generation facilities, renewable or other, etc.).

4.2 Consultation Methods

Potentially affected and interested persons, Indigenous communities, municipal, provincial and federal government contacts, government agencies, affected businesses, and interest groups may become involved in a process under the Class EA for TF by providing feedback. Consultation methods may include: completing comment forms at consultation events such as Public Information Centres (PICs) or workshops, corresponding or conversing with the proponent's designated contact person(s), and/or reviewing and commenting on the draft ESR and materials posted on the proponent's project website. Newsletters may also be used to ensure that the public is kept informed and has the opportunity to comment on the proposed project.

The consultation methods utilized by the proponent will be selected to ensure a comprehensive, transparent and sufficient consultation process and will vary according to individual project circumstances and complexity.

PICs are a frequently used consultation technique that allows members of the proponent's project team to discuss the proposed project one-on-one with members of the community in an informal manner and to receive their feedback. PICs are generally held in a community hall or other venue within or close to the project study area. Visitors to the PICs can review display panels, maps and other information to help them learn more about the proposed project and can discuss their questions or concerns with subject matter specialists. Comments received verbally and in writing on comment forms provided at the venue will be documented and summarized in the draft ESR.

The proponent will offer to meet with key stakeholders and will be available to meet with any interested individuals or groups upon request. Workshops can be a useful consultation method to explore a particular subject, issue or concern and to develop mutually-acceptable plans to resolve the issue. Where deemed beneficial, the proponent may engage an independent third party to facilitate the workshop and document the outcome. Where there is an on-going need to meet with a group of stakeholders on a particular subject, the proponent may decide to establish an external working committee comprised of representatives of organizations and groups with interests in the specific issue.

4.3 Freedom of Information and Protection of Privacy Act Notice Requirements

As stated in the MECP Code of Practice (subsection 6.1.6, page 56), to comply with *Freedom of Information and Protection of Privacy Act* requirements, all project notices must contain the following statement:

"All personal information included in your request – such as name, address, telephone number and property location – is collected, under the authority of Section 30 of the *Environmental Assessment Act* and is collected and maintained for the purpose of creating a record that is available to the general public. As the information is collected for the purpose of a public record, the protection of personal information provided in the *Freedom of Information and Protection of Privacy Act* (FIPPA) does not apply (s.37). Personal information you submit will become part of the available public record unless you request that your personal information remain confidential."

4.4 Notification Techniques

The notification of interested persons may take place in a number of ways, including newspaper advertisements, press releases, flyer delivery, direct mail, email, and via social media, if and when possible.

4.4.1 Newspaper Advertisements

Newspaper advertisements are one means of providing broad formal notice. The advertisements will provide essential information about the project need, study area, planning and approvals process, timelines and contact information for the proponent. They may also be used to invite the public to scheduled consultation events such as PICs. Newspapers, whether local or regional, should be selected for their ability to reach stakeholders and interested parties in the study area. The proponent should arrange publication dates for advertisements to provide sufficient advance notice of any upcoming consultation activities.

In areas where there are no local newspapers or very small/declining subscriber bases, alternative methods of notification will need to be determined. Even where local newspapers exist, the proponent should employ additional notification techniques, as not all residents necessarily read their local newspaper(s).

4.4.2 Direct Mail or Email

Direct mail or email is an effective and efficient way to provide formal notice of a project (e.g., Notice of Commencement and Notice of Completion) and to communicate other important information about project decisions or scheduled public consultation events. Direct mail communications, whether copies of newspaper ads, letters, newsletters, or postcard invitations to consultation events, will generally be sent to the owner/occupant at a specific address. Direct mail is an effective way to ensure that directly affected and potentially affected property owners are made aware of the proposed project and how they may provide their input.

Notifications must be submitted to the following MECP email addresses:

- Generic Class EA email address: ClassEAnotices@ontario.ca; and

Applicable Regional Class EA email address:

- Central Region – eanotification.cregion@ontario.ca
- Eastern Region – eanotification.eregion@ontario.ca
- Northern Region – eanotification.nregion@ontario.ca
- South West Region – eanotification.swregion@ontario.ca
- West Central Region – eanotification.wcregion@ontario.ca

4.4.3 Unaddressed Mail or Flyers

When the study area for a project is large, unaddressed mail or flyers can be a useful and cost-effective way of reaching people within the broader study area. Those who are interested in participating in the consultation process should be asked to identify their interest to the proponent and to place their name and address (mail or email) on the proponent's project contact list to receive all future project communications by direct mail/ email. Unaddressed mail can be arranged through Canada Post or private delivery services.

4.4.4 Project Website

All project communications should be posted to the proponent's website. This will ensure that interested parties have access to the full range of information available about the proposed project (e.g., notices, maps and documents, project status, dates for upcoming consultation events, etc.). The name and contact information for a designated contact person(s) will be posted on the website so that interested parties may contact the proponent at any time with questions or comments.

4.4.5 Other Notification Techniques

The proponent may also request that municipalities in the study area post project notices on their websites and that local community groups and organizations communicate project information through emails or newsletters to their members. In areas where it is difficult to reach potentially affected or interested parties, posters or notices can be posted on bulletin boards in heavily-frequented areas, such as marinas, grocery stores, or gas stations.

4.4.6 Social Media

As social media evolves, engagement through different social networking means will be assessed and possibly used as an effective way of communicating project information.

5.0 CLASS ENVIRONMENTAL ASSESSMENT ADMINISTRATION

5.1 Amending the Class Environmental Assessment

The following summarizes the process for requesting amendments to Class Environmental Assessments and the authority for the Director and Minister to make amendments to the Class Environmental Assessment. To the extent that there is a conflict between what is set out below and the provisions in the *EAA* in respect of the authority of the Minister or Director, the provisions in the Act prevail.

Section 15.4 of the EAA sets out the authority for the Minister of the Environment, Conservation and Parks (MECP) and the Director of the Environmental Assessment Branch (EAB) at MECP to amend the Class EA for TF. An amendment may be made at any time and may be initiated by the Minister or the Director or as a result of a request for an amendment.

The Minister may amend the Class EA for TF if the Minister is satisfied that the amendments are consistent with the purpose of this Act and the public interest. Examples of the types of amendments that the Minister may make include:

a. Improving the efficiency or the effectiveness of the process described in the document;
b. Adding new projects to the Class EA for TF;
c. Recategorizing existing projects in the Class EA for TF; and
d. Updating the Class EA for TF to be consistent with new or updated guidelines, policies, regulations or legislation.

The Director may amend the Class EA for TF to make any of the administrative changes set out in Section 15.4(5) of the EAA as described below**.**

a. Correcting errors that are editorial or typographical in nature;
b. Updating references to a guideline, Act or regulation, or provisions or other portions of an Act or regulation;
c. Updating references to bodies, offices, persons, places, names, titles, locations, websites or addresses; or
d. Clarifying the existing text of the Class EA for TF.

Written requests for amendments to a Class EA must be submitted to the Director of the EAB at the Ministry. In some cases, the Minister may not consider a requested amendment until the next review period, as described below.

If an amendment is made, the Applicant shall incorporate the amendment into a revised Class EA for TF. Amendments can be appended to the Class EA for TF or incorporated directly into the body of the document.

Amendment Process

The two types of amendments, Director and Minister, are described in the following sections.

Director Amendments

To request a Director's amendment, a formal written request must be submitted to the Director and must include details on the proposed amendment and the reason for the request.

Based on the information before the Director, the Director will decide whether to amend the Class EA for TF. The Director will notify the Applicant of any amendments so that the Applicant can update the Class EA for TF and make the amended document available.

The Director may also initiate an administrative amendment on their own initiative. The Applicant will be advised in writing if an administrative amendment is made by the Director. The amendment will come into effect upon publication of a notice of the amendment in the registry under the *Environmental Bill of Rights, 1993.*

Minister Amendments

Requests for Minister amendments should be made in writing to the EAB. The request should include the current text in the Class EA for TF, the proposed changes and rationale for the changes, and revised text. The ministry may request additional information regarding the requested amendment.

The Minister may also initiate an amendment on their own initiative. The Applicant will be advised by the ministry in writing if a Minister's amendment is being considered.

As part of the request for an amendment, a consultation plan must be submitted to the ministry. The consultation plan may outline the method for consultation on the proposed amendments and identify the persons, agencies, ministries, and Indigenous Communities to be consulted. The Applicant will undertake consultation in accordance with the plan and is required to address and respond to any concerns that are raised during the consultation and provide those concerns and responses to the ministry for consideration as the Minister is required to ensure adequate public notice and an opportunity for public comment has been given in respect of any proposed amendments.

The ministry will undertake consultation on any Minister initiated amendments and may undertake additional consultation on requested amendments.

Based on the information before the Minister, the Minister may:

a. amend the Class EA for TF, as requested or amend with changes to what was requested; or,
b. refuse to amend the Class EA for TF.

The Minister will give written reasons to the applicant of the Class EA and to any other persons the Minister considers advisable.

5.2 Potential Delay in Project Implementation

The completion of the Full Class EA Process and the filing of a project's ESR with the MECP are usually carried out by the proponent during their planning for the project or during the conceptual stage. The execution of the project, however, does not always follow immediately and may be delayed by a few months or a few years in certain instances. During such circumstances, changes may occur to the project site and immediate areas (e.g., environmental conditions change and the mitigation measures are no longer valid, new government policies or standards are in place or new engineering technology needs to be used) from those described in the project's ESR. If construction is not initiated within ten years of the filing of the Statement of Completion, the ESR will be reviewed to determine if any changes are required.

The review of the ESR will be documented, and if changes to the project or commitments are required, an addendum to the project's ESR will be prepared as detailed in **Section 3.8**.

If no changes to the project's ESR are required, the proponent can proceed with project implementation.

5.3 Phase-in Period

Phase-in of Amendments to the Class EA for TF

In some situations, during a review or amendment of the Class EA for TF, some projects may be in the process of being planned under the Class EA for TF. For the purpose of consistency and process flow, such projects will be broken into two categories: those for which the Notice of Commencement has not yet been issued and those for which the Notice of Commencement has been issued.

If the Notice of Commencement for the project has not been issued before the amendments to the Class EA for TF come into force, the project is not considered to be in progress and must follow the current (newly amended) Class EA for TF.

If the Notice of Commencement for a project has been issued before the amendments to the Class EA for TF come into force, the project is considered to be in progress. For these projects:

- If a statement of completion for the project has not yet been submitted to MECP as of the date of approval of the subject amendments to the Class EA for TF, the project will continue to be subject to the version of the Class EA that was in place at the time of the issuance of the Notice of Commencement.
- The current version of the Class EA for TF would apply in respect of any proposed change to the project or a commitment.

5.4 Emergency Situations

There may be emergency situations that take facilities out of service. They include but are not limited to ice and wind storms, tornadoes and flood conditions. In addition, emergency situations can arise when assets are at imminent risk of failure but are not yet out of service. These can include risks of a power disruption or safety or environmental hazards.

The Class EA for TF divides emergency situations into two groups:

a. Emergency situations not requiring notification (i.e., response actions where an outage has already occurred); or

b. Emergency situations requiring notification (i.e., response actions taken to address imminent risk).

Pursuant to s. 15.3 (1) and (2) of the EAA, all immediate actions undertaken in response to Emergency Situations in respect of transmission facilities are not subject to and exempt from the EAA (refer to **Section 1.3.1**).

Other legislation, such as the *Environmental Protection Act* and *Ontario Water Resources Act*, plus associated emergency response commitments, remain applicable. First priority will be to return facilities to service or implement measures/conduct work necessary to prevent possible power disruptions or safety or environmental hazards. If there are any associated effects of power restoration or follow-up remediation and monitoring requirements, this will be carried out in consultation with the MECP and other affected regulatory agencies.

When responding to emergency situations that arose from assets being at imminent risk of failure (i.e., work conducted to avoid power disruption or safety or environmental hazards), a "Notice of Intended Response to Emergency Situation" will be sent to the MECP's District and Regional offices as early as practicable. In addition, following completion of the work, a "Notice of Response to Emergency Situation" will be sent to the Director of the EAB as well as to the MECP's District and Regional offices.

5.5 Monitoring

The Applicant is responsible for monitoring the effectiveness of the Class EA for TF by ensuring that the document remains relevant and current. Annual monitoring of the Class EA for TF will aim for continuous improvement, as well as ensure that its proponents meet legislative and regulatory requirements. Hydro One, as the Applicant of the Class EA for TF, is responsible for producing an annual monitoring report for projects that are subject to the Class EA for TF, with the assistance of project proponents who use the Class EA for TF. The report will encompass the following:

a. Assessment of effectiveness of the Class EA for TF in providing an efficient planning process and in protecting the environment.

b. Identification of any changes to the Class EA for TF that would lead to its improvement or to improvements in the administration of the Class EA for TF.

c. Identification of any common problems experienced with the Class EA projects that may require changes to the Class EA for TF.

d. Confirmation of how Hydro One has complied with any conditions in the Notice of Approval of the Class EA for TF and the EAA.

e. A summary of Class EA projects planned and completed for which Section 16 Order requests were made (indicate if they were granted, denied, or denied with conditions).

f. Action(s) that the Applicant has or will be proposing to deal with problems, deficiencies, and non-compliance with the Class EA for TF.

g. A copy of the Notice of Approval and any approved amendments to the Class EA for TF.

h. A summary table listing all projects that have been carried out by proponents using the Class EA for TF during the previous annual period, categorized by project type. The summary table would include the following:
    i. Name and brief description of the project.
    ii. Name of contact person.
    iii. Location of the project.
    iv. Date started.
    v. EA Project status.
i. Information on how interested persons may obtain copies of the report.

All Class EA proponents will be required to provide an annual summary report describing Class EA processes completed in a calendar year. The reports will be submitted to Hydro One for consolidation into a single annual report. The consolidated report will contain all submissions received by the end of February each year. The onus is on each transmission proponent to conform to the deadline, and Hydro One will not assume responsibility for missing reports. The required format for each report is included in **Appendix H**.

Hydro One will submit the annual monitoring report to the MECP (EAB) by April 1st of each year.

5.6 Five-Year Review

The Class EA for TF is to be reviewed by Hydro One every five calendar years. A five year review report is to be prepared and submitted to MECP (EAB) every five years from the date of the Notice of Approval of the Class EA for TF. This process will ensure that the Class EA for TF remains compliant with applicable legislation, regulations and policies, and the EAA.

Hydro One (the Applicant) will provide results of the review to the Director of the EAB at the MECP. The results will include a summary of issues and amendments that were identified during the five year period and how those issues and amendments have been or will be, addressed. Any changes or updates can be made using the amending procedures described in **Section 5.1** of this document.

5.7 Coordination with Other Approval Processes

Some projects may be subject to multiple environmental assessment processes as well as other permits and approvals under federal and provincial legislation. In these situations, a coordinated process is planned. Coordination will help to avoid confusion and to ensure effective and efficient consultation.

Examples of other legislation are included in **Appendix A** and can include the *Impact Assessment Act* and *Niagara Escarpment Planning and Development Act*. As a rule, the Class EA for TF will be the first step in the authorization process for transmission projects, followed by permits and approvals under other legislation. For each project, the Full Class EA Process will identify these permits and approvals and indicate their relative timing.

5.7.1 Coordination with Federal Assessment

It is possible that a project subject to Class EA for TF is also subject to a federal assessment process. In this case it is likely a coordinated EA will be conducted. The intent of coordination is to avoid duplication in processes for the same project, address information and consultation requirements of both the Class EA for TF and the federal process, and to ensure that the project receives the appropriate level of review.

In such cases, the Class EA for TF process should be coordinated with other applicable formal approval processes as effectively as possible to avoid duplication. The intent of these coordinating efforts is to produce a single body of documentation of environmental impacts and mitigation measures that will meet the information needs of both the federal and provincial governments.

5.7.2 Coordination with other Class Environmental Assessments

There may be circumstances where the activity being planned for the project is subject to multiple environmental assessment processes. In these circumstances, efforts will be made to coordinate the respective processes to minimize duplication. A coordinated approach will be used when multiple environmental assessment processes apply. The process will be jointly developed with the MECP and other Class EA proponents on a case-by-case basis.

6.0 DESCRIPTION OF TRANSMISSION ASSETS AND FUNCTION REQUIREMENTS

This section provides a description of the physical components and activities associated with transmission projects, some of which may be subject to Class EA requirements. All proponents should consider establishing environmental guidelines and practices based on the relevant criteria set out in the Class EA for TF. **Appendix E** provides typical mitigation measures to assist proponents when developing their environmental guidelines and practices.

6.1 Transmission Lines

Electrical energy is usually transmitted via overhead lines (except in densely populated areas where underground transmission lines may be used) or submarine cables across large water bodies. The decision as to which will be used for a specific project is dependent on the overall environmental implications and/or cost of each alternative.

6.1.1 Overhead Transmission Lines

An overhead transmission line has six basic components, each of which may vary with respect to design and material depending on the specific requirements for the line and its intended location. The components, along with their function and material options, are as follows:

a. *Conductors:* provide continuous electrical pathways (circuits) between points of supply and loads. Conductors are manufactured using stranded aluminum steel-reinforced, stranded aluminum, or stranded copper.

b. *Shieldwires or Optical Ground Wires (OPGW):* Also termed skywires, shield conductors from lightning and carry fault current. Galvanized steel, copperweld, alumoweld. OPGW is a composite cable which acts as a shieldwire but also incorporates fibre optic telecommunication capability.

c. *Structures:* support conductors at a safe elevation above ground. Steel lattice, steel pole, wood pole, or composite pole.

d. *Foundations:* support structures. They consist of steel grillage, reinforced concrete pad and pier, spread, caisson, rock anchored, steel or wood piles with suitable cap.

e. *Insulators:* isolate conductors electrically from their supporting structure. They consist of porcelain, polymer or glass.

f. *Counterpoise: r*educe the susceptibility of the line to outages caused by lightning or fault current. They consist of galvanized steel or copper.

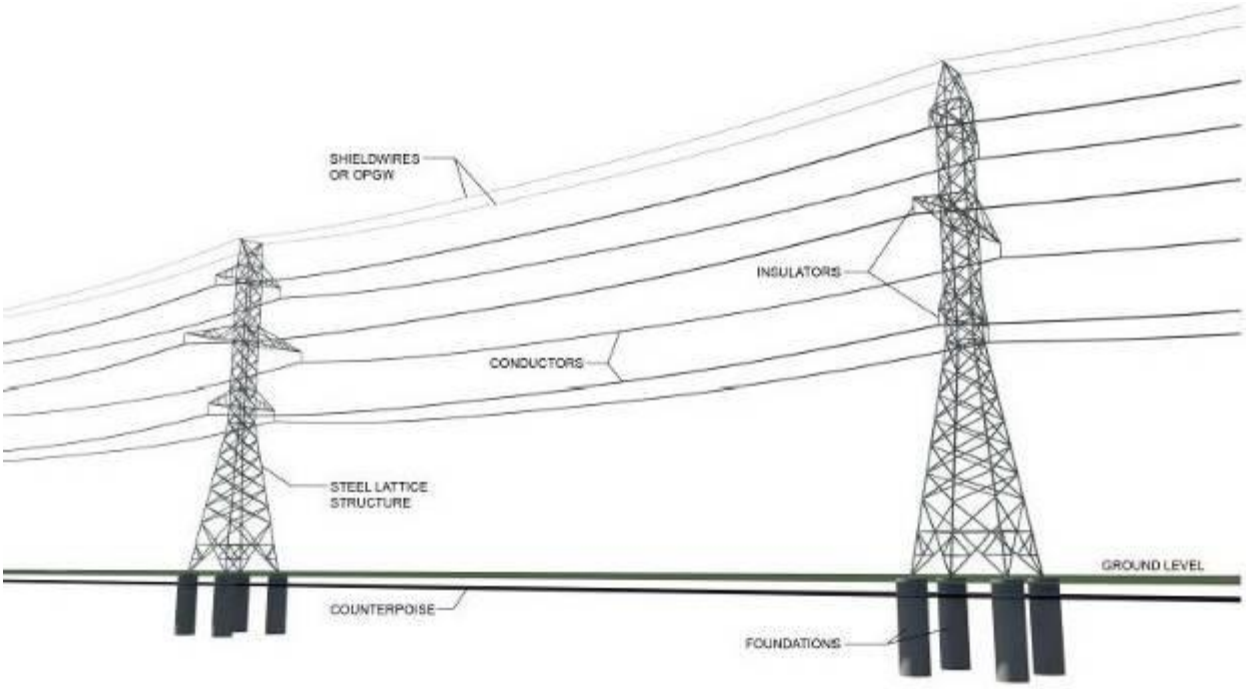


Figure 7: Component Parts of a Typical Transmission Line

Transmission lines in Ontario usually consist of aluminum conductors, steel-reinforced, steel lattice structures, reinforced concrete foundations, porcelain insulators and shieldwire or OPGW. **Figure 7** shows a span of a typical line and identifies its component parts.

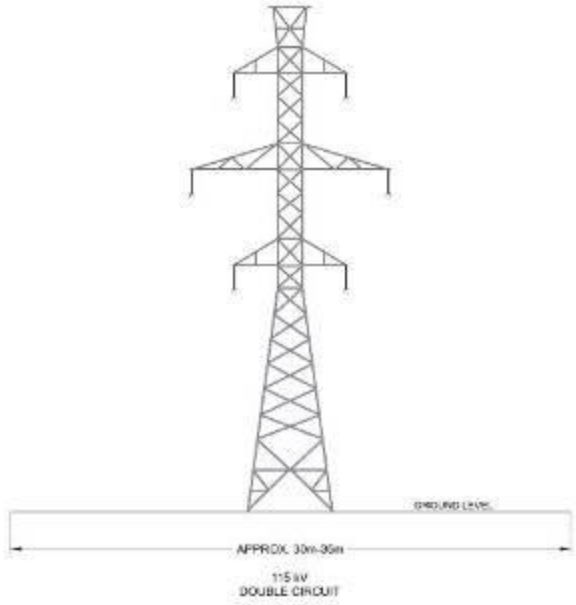


Figure 8: Typical Right-of-Way Width for a 115kV Two-Circuit Transmission Line

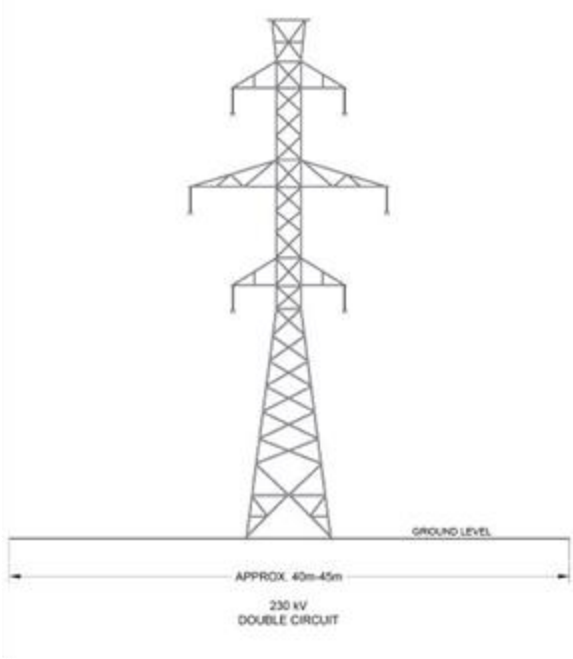


Figure 9: Typical Right-of-Way Width for a 230kV Two-Circuit Transmission Line

Right-of-Way Requirement

Examples of double circuit 115kV and 230kV transmission lines and their associated RoW widths are shown in **Figure 8** and **Figure 9**, respectively. The actual widths required for specific RoWs are dependent upon the electrical field at the RoW edge and other factors such as span length, conductor size and sag, the need for helicopter patrol or the need for fall-free spacing.

Right-of-Way Acquisition

RoWs for transmission facilities are acquired in accordance with the policy established for property acquisition. Under this policy, owners are given the full protection of the *Expropriations Act*. Easement rights are generally acquired for transmission line RoWs except where the fee (full ownership) is required by the proponent or where a severance is acceptable to the municipality. Acquisition of property rights will take into account the Provincial Policies in place, as well as First Nations Band lands and Traditional Territories.

Construction Activities

The construction of overhead transmission lines includes the selective cutting of vegetation along the RoWs, the establishment of construction access roads, the installation of tower foundations, the assembly and erection of towers, the stringing of conductors, the installation of counterpoise (if required), and the clean-up and restoration of the RoW.

All proponents should consider establishing their own detailed set of environmental guidelines and practices based on the relevant criteria set out in the Class EA for TF, which could then be followed and consistently applied to projects in order to satisfy the requirements of the Class EA for TF.

As part of the guidelines, specific instructions may be issued where environmentally sensitive situations are identified through the planning or construction phases as set out herein. In such cases, the specific instructions will govern:

Access Roads: To construct a transmission line, it is necessary to have access to the RoW for the construction equipment and line materials. Wherever possible, existing roads and lanes are used, and resulting damage is repaired when construction activities are completed. Where access roads have to be constructed, their location is determined in conjunction with the property owners and applicable authorities (e.g., conservation authorities, Niagara Escarpment Commission, etc.). The environmental effects caused by access roads will be considered as part of the study.

Tower Foundations: The type of foundation installed at any given site is dependent on both the type of soil and the type of tower to be built. Soil tests are carried out to determine soil strength for foundation designs. The majority of foundations in earth will be augered reinforced concrete. In weak soils, pad and pier, spread or piles may be required. Those in rock will have steel rods drilled and grouted into the rock and a small pad of concrete placed on top. Foundations for towers which will be used at angle or terminating positions are larger than those required for suspension towers.

Equipment such as augers, backhoes, concrete trucks and compressors may be used in foundation construction. Excavated material is either removed from the site or spread in a suitable location. Soil sampling is undertaken to ensure proper deposition of excavated materials.

Tower Assembly and Erection: Tower steel is delivered via access roads to the sites where it is assembled to form tower sections which are usually lifted into position by a crane.

Conductor Stringing: The stringing of conductors can be done in two ways: slack stringing in which the conductor is pulled along the ground and placed in travellers at each tower before being tensioned, or tension stringing, in which the conductors are pulled under tension through travellers and conductors are kept off the ground at all times. The first step in tension stringing is to install the insulator strings and travellers on the tower arms. That is followed by installing a light rope along the section of line to be strung. Stringing sections can be as long as 10 km.

A helicopter is normally used to fly the rope along the RoW for deposit in the travellers. This rope is then used to pull in larger ropes and steel cables until one of sufficient strength has been strung to pull through the conductors.

After all the conductors are pulled into place by this method, they are tightened to a specified tension. This tension ensures that the line maintains the correct ground clearance under the operating conditions for which the line is designed. The conductors are clamped at each tower, and damping devices are installed on them to limit vibration. Shieldwires are attached at the tower peak positions above the conductors and are strung in a similar manner.

Specialized equipment is required for tension stringing. The equipment is moved along existing roads wherever possible, thus avoiding the need to move heavy equipment along the full length of the RoW.

Counterpoise: To ensure that a transmission line will operate efficiently when in service, it is necessary that the electrical ground resistance at each tower be low. To accomplish this, a ground electrode is installed at each tower. If, because of soil conditions, the ground resistance is too high, additional grounding must be installed.

The normal procedure is to bury two continuous wires along the RoW, one on each side of the towers. These wires are normally buried to a depth of 460 mm in cultivated ground and 200 mm in bush areas and in rocky ground, if possible. The wires are installed by a tracked vehicle which carries the ground wire on reels and buries it by means of a plough attachment as it proceeds along the RoW. The wires are then connected to each tower.

Clean-up: The final stage of construction is the clean-up of the RoW to be sure that all construction materials have been removed. This is an ongoing procedure during the construction of the line, but a final clean-up is also carried out. In addition, any necessary restoration to the RoW (i.e., work sites, fences, roads, etc.) is completed, and the cleared woodlots are seeded. All erosion sites are stabilized, and screen plantings are established as required on the RoW.

Transmission Line Maintenance

Maintenance of transmission lines is required to ensure acceptable performance of the line components over time and to repair damage due to accidents or unusual climatic conditions. This involves periodic patrols and/or inspections. Specific maintenance programs have been developed and are carried out on a regular basis.

Routine Maintenance: Planned repairs of a localized nature, which usually take over one-half to one day to complete, are carried out to avert potential problems. These repairs may require trucks to be moved to the repair site. The frequency of such repairs is approximately once each year for every 160 km of line.

There are also major maintenance items such as conductor, shieldwire, pole, insulator replacement, etc. These items are usually of such a nature as to permit long-range planning, and they can usually be scheduled to minimize inconvenience to property owners.

Emergency maintenance: Emergency repairs are needed when assets are out of service or in response to an imminent risk of failure (but are not yet out of service) presenting the potential risk of a power disruption or safety or environmental hazards. Emergency repairs, which may include replacement of structures, must be carried out as quickly as possible. It may take several days to replace damaged structures. Heavy equipment and materials are usually required to replace structures during emergency situations, and mitigating measures will be taken as soon as possible to repair any damage.

Right-of-Way Management

RoW management practices reflect provincial legislative requirements and are designed to ensure the long-term safety and reliability of the line and protection of the environment. Management practices are carried out in accordance with general and site-specific management specifications, which identify the best treatment methods.

Management Activities

Line Clearing: Involves the pruning or removal of woody vegetation near the conductors so that a specified minimum clearance is maintained.

Patrols: Inspections done at regular intervals to identify and correct situations that cannot be left until the next regular maintenance operation.

Grounds Maintenance: Includes activities such as grass cutting, weed spraying and snow sloughing done in order to keep properties in a visually acceptable and safe condition.

Vegetation Control: Involves the control of woody vegetation to ensure that circuits are not interrupted, and public safety is maintained. Methods currently used are herbicides, hand cutting, and machine mowing. Selective removal of incompatible woody vegetation is practiced to promote the development of low growing stable plant communities.

Stabilizing or Restoring the Environment: Erosion sites are identified and controlled by vegetative or mechanical methods.

Proponents will implement and administer their own policies regarding all management activities.

6.1.2 Underground Transmission Lines

Underground transmission lines fall into one of three types: self-contained, low-pressure liquid-filled cable; high-pressure, liquid-filled pipe-type cable; and polymeric cable.

Self-contained, Low-pressure Liquid-filled Cable: Each underground circuit consists of three separate cables, each consisting of a concentric stranded copper or aluminum conductor with a hollow core, insulated with paper tapes and sheathed with either lead or aluminum. The cable insulation is thoroughly dried under vacuum to remove moisture and sheathed. The cable is then filled through its hollow core with a degassed liquid under vacuum, which fills any voids that might exist in the insulation. Reservoirs that exert a slight positive pressure on the cable liquid are connected to the cable. The cable sheath is protected against corrosion by a suitable covering. When the cable is heated by current flowing through it, the liquid expands and flows through the hollow core to the reservoirs at the cable terminals. When the cable cools and the liquid contracts, it is forced back into the cable by pressure on the reservoirs. Thus a positive pressure of moderate magnitude is kept on the liquid at all times, preventing the formation of voids in the insulation, which could ionize under electrical stress and result in breakdown of the cable insulation.

Self-contained, low-pressure, liquid-filled cables can be: a) directly buried and protected against mechanical damage by placing a concrete slab over them or b) encased in either a duct or pipe. It is necessary to surround the cables with a material that will permit uniform heat dissipation along the length of the cable to reduce the probability of hot spots developing and permit optimum utilization of the current-carrying capacity of the cable. Hydro One usually surrounds directly buried high voltage cables with an envelope of finely crushed stone. Cable splices are usually contained in permanent reinforced concrete manholes (underground vaults) that are positioned along the route in suitable locations.

High-pressure, Liquid-filled Pipe-type Cable: This type of cable relies on high pressure acting on the cable insulation to suppress the formation of voids that could ionize and result in electrical failure of the insulation. The cable consists of a stranded copper or aluminum conductor insulated with liquid-impregnated paper tapes and protected against installation damage by a skid wire helically wound over the cable. Three of such cables are pulled together into a steel pipe to form one three-phase circuit, which is then filled with degassed liquid and maintained at a constant pressure of approximately 1.4 megapascals (MPa). Since the three cables are close together in the pipe, mutual heating effects are more pronounced than with self-contained cables, and consequently, a larger conductor for the same current-carrying capacity is required.

(Note: Low and high pressure liquid-filled cable are currently only used where cable repair or relocation is required. All new circuits are polymeric cables.)

Polymeric Cable: These cables use solid polymeric insulation (e.g., cross-linked polyethylene). Their installation is very similar to direct-buried, self-contained, low pressure, liquid-filled cables. Each cable is directly buried or placed within a pipe that can either be directly buried or encased in concrete. Backfilling above the concrete is done with a material that will permit uniform heat dissipation along the length of the cable to reduce the probability of hot spots developing and permit optimum utilization of the current-carrying capacity of the cable. The back-fill material is generally stone screening or native soil of good quality. Sometimes uniform or graded sand is also used as back-fill material.

Right-of-Way Requirements

For cable circuits designed to operate at voltages of equal to or greater than 115 kV, the RoW requirement depends on the proposed location as follows:

a. *Community Streets:* Where a circuit is to be installed in a settlement area and will essentially be located within road allowances, sufficient working space for its installation is provided by the road allowance itself. Only physical space is required to install a circuit between or adjacent to other underground utilities, plus sufficient clearance to enable repair work to be carried out on either the cable circuit itself or the utilities adjacent to it. A clear space of 2 m will usually suffice to enable a single underground cable circuit to be installed regardless of the type of cable being used. Where more than one circuit is required, more space (> 2 m) is required depending on the number of circuits. RoW widths are subject to engineering design and will be verified before acquiring land.

b. *Private RoW:* The RoW required to accommodate a single-circuit, high-voltage cable circuit on a private RoW is dependent on the necessary working space for its installation and maintenance. In general, for single circuits utilizing one conductor per phase, a RoW width of 6 m will suffice. For multiple circuits, or for single circuits utilizing more than one conductor per phase, additional RoW width is required to provide for thermal independence of the circuits and varies according to the design of the circuits and the manner in which it is intended they be operated. Such RoW widths would be determined individually for specific cases. As an example: a two circuit 230 kV, high-pressure, pipe type installation equivalent in current carrying capability to a two circuit, 230 kV, overhead line with a single 1843 circular mils (kcmil) copper conductor per phase would require a RoW width of approximately 15 m. A two-circuit, 500 kV, low-pressure, liquid-filled cable installation to be equivalent to a two circuit 500 kV overhead line with a four-conductor bundle of 585 kcmil conductors per phase would require three 4000 kcmil conductors per phase and a RoW width of 30 m. RoW widths are subject to engineering design and will be verified before acquiring land.

Construction Methods

Self-contained, Low-pressure, Liquid-filled Cables Directly Buried: The general method of installing a directly buried, liquid-filled cable circuit involves opening a trench approximately 2-3 m wide by 1-2 m deep along the proposed route between predetermined jointing positions that are usually spaced approximately 300 m apart. Depending on the location of the trench and the soil characteristics, it may be necessary to either partly or completely shore the sidewalk of the trench to prevent collapse. As described above, a specific material is required to dissipate heat; therefore, excavated material is not reused. It is tested and disposed in a suitable landfill.

For cable installation, a cushion of crushed stone screening is then installed at the bottom of the trench and compacted by tamping. Cable rollers are then positioned along the bottom of the cable trench, and the three cables are installed one at a time. To install a cable, a winch truck is set up at one end of the trench and a reel containing the cable at the other. The steel winch cable is drawn along the trench over the cable rollers and fastened to a pulling eye at the end of the cable to be pulled into the trench. After the cable has been pulled into the trench, it is removed from the rollers and positioned into the trench, and the pulling operation is then repeated for the second and third cables. When all cables have been installed and tested for soundness, they are then covered with crushed stone screenings, which are compacted by tamping, and a precast or poured concrete cover is installed overall. An electronic cable marker is installed just above the cover for future location testing. During installation of the cables in the first section of trench, a second section is being opened and the jointing position prepared for cable splicing.

Therefore when installing directly buried cables, there is usually a trench length of approximately 900 m over which activity of some kind is taking place at any given time for a period of up to six weeks.

Self-contained, Low-pressure, Liquid-filled Cables Installed in Ducts: This type of cable system uses the same cable as those used for directly buried installations. Construction methods differ in that concrete enclosed ducts are constructed in the cable trench, and permanent concrete manholes are constructed at the jointing positions. When constructing the duct bank, it is not necessary to have such long sections of trench open at any given time. The equipment used for construction of the duct bank and installation of the cables is essentially the same as that used for directly buried cable, but there is not a requirement for a full length of trench between jointing positions to be open.

Polymeric cables that are directly buried or in a duct bank respectively follow similar construction methods described above.

High-pressure, Liquid-filled, Pipe-type Cable: This type of cable system involves installation of a steel pipe approximately 1 m below grade into which three insulated conductors are drawn. The length of conductor drawn into a section of pipe may be several hundred metres and is dependent on the conductor type and size, number and severity of the vertical and horizontal bends.

Construction procedures involve determining the proposed grade of the pipe between proposed manhole locations by digging test holes at strategic positions, construction of reinforced concrete manholes at jointing locations, installation of the pipe, installation of the cable, construction of a pressurization plant at one end of the cable circuit, jointing the cable and filling the pipe with degassed liquid.

The construction of a manhole necessitates excavation and shoring of a hole of sufficient size to accommodate the manhole. The length, width and depth of a manhole for a single circuit of pipe-type cable varies with site circumstances but typically approximates 6 m by 3 m by 3 m. After excavation, the manhole is installed, either cast-in-situ or pre-cast manhole placed over a sub-base.

Pipe installation requires a trench approximately 1-3 m wide by approximately 1-2 m deep. A bed of crushed stone screening is then placed in the trench and compacted. Coated steel pipe, in lengths up to 12 m, is then positioned in the trench on suitable supports (spacers), and the pipe lengths are welded together to form a continuous pipe. After welding, the supports are removed, and the pipe centered on the bed of crushed stone screenings. The pipe is then covered in layers

of approximately 150 mm crushed stone, screening the required depth. Excavated materials are tested and disposed of in a suitable landfill. Reinstatement of the trench at ground level to the condition which existed prior to excavation is then carried out.

After the pipe is installed and manholes constructed, cable installation takes place.

Three cables yoked together are pulled into each pipe section between manholes by a truck-mounted winch. The cable splices are then made in the manholes.

A prefabricated enclosed pressurization plant located at one end of the cable installation, either within a TS or on property acquired for it, is used to fill the pipe with liquid and to maintain a constant liquid pressure of approximately 1.4 MPa.

Construction equipment associated with pipe-type cable installations consists of trucks, backhoes, concrete trucks, pipe benders, generators, winches and other construction equipment normally associated with the construction industry.

Operating and Maintenance Procedures

Self-contained, Liquid-filled, Directly Buried Cable: Once this type of cable is installed, very little of it is visible or readily accessible. Operating and maintenance procedures are generally associated with checking the liquid reservoir pressure gauges and liquid piping at the cable terminations and inspecting cable joints in those cases where they are contained in permanent manholes. It is also customary to periodically patrol the cable route so that any new excavation work that might endanger the cable circuit can be watched closely and contractors made aware of the cable's precise location. In the event of a cable failure, the location of the fault is determined electrically, if necessary, and the cable is excavated and repaired. This is usually a very time consuming operation and may take several weeks to complete.

Self-contained, Liquid-filled Cable-duct and Manhole Installation: As with directly buried cables, routine operating and maintenance procedures involve the checking of components at the cable terminations and in the manholes. In the event of a cable fault, it may be possible to withdraw the faulted cable section, provided the duct has not been severely damaged by the fault. If the cable cannot be pulled out, it would be necessary to locate, excavate and repair the cable duct and repair or replace the cable.

Operating and maintenance procedures for polymeric cable are very similar to those for self-contained liquid-filled cable duct and manhole installations, with exception for liquid level and pressures.

High-pressure, Pipe-type Cable: The heart of a high-pressure, pipe-type cable system is the pumping plant that supplies and maintains the pressure necessary to prevent the formation of voids in the cable insulation where ionization of gases would result in insulation failure. The pumping plant is equipped with dual pumps, and in the event of a pump failure, the duty of the failed pump is automatically assumed by the second pump. There is also an automatic alarm system that alerts the controlling station whenever there are problems associated with the pumping plant.

Maintenance procedures require the periodic checking of all automatic systems to ensure they are functioning properly, a route check to spot any potential hazards to the cable system, and an inspection of the jointing manholes.

The electrical insulating fluid will be high viscosity polybutene for high-pressure, pipe-type cable, and dodecylbenzene or low viscosity-synthetic fluid for self-contained, liquid-filled cable, and be non-toxic, with a high flash point. It is also biodegradable over the long-term.

6.2 Transmission Stations

6.2.1 General

A TS of the type covered by the class definition usually has four basic components, namely:

a. One or more high-voltage areas (equal to or greater than 115 kV).
b. One or more transformer areas.
c. One or more low-voltage areas (less than 50 kV).
d. A control, meter and relay area.

Figure 10 and **Figure 11** illustrate schematically the interrelationship of the first three basic components. The fourth component, the control, meter and relay area, serves as an overall monitor and control for equipment in the three other types of areas in the TS.

6.2.2 Basic Operation

The basic operation of the typical TS shown in **Figure 10** is as follows:

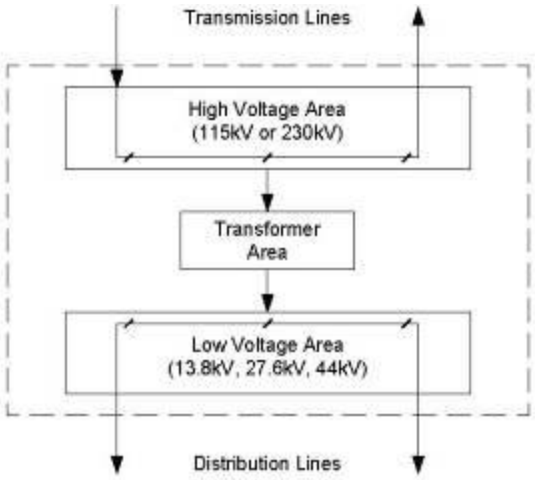


Figure 10: Components of a Typical Simple Transformer Station

Electrical energy enters the station from the power supply system through incoming transmission lines that terminate in the high-voltage area. Within this area are electrical conductors and electrical switches that connect the incoming lines to the transformers in the transformer area. In this simplest form of station, there could also be other conductors and switches that connect the lines together.

The electrical energy is directed to the transformer area where its voltage level is changed by transformers from 115 kV, 230 kV or 500 kV to a lower voltage. The electrical energy at the lower voltage is then directed through electrical conductors from the transformer area to the lower or

low voltage area (i.e., less than 50 kV). In the low-voltage area, the energy is directed through conductors and switching devices to subtransmission or distribution lines.

The flow of energy through the station is controlled and monitored by equipment located in the control, meter and relay area. Certain control functions are initiated by operation action, and others are initiated by automatic features designed to protect the station and/or line equipment in abnormal circumstances.

The operation of the complex station, shown in **Figure 11**, is essentially the same as the simple station, except that there are more conductors and switches to permit a flow of energy between the various lines connected to each high-voltage area and also between the high-voltage areas.

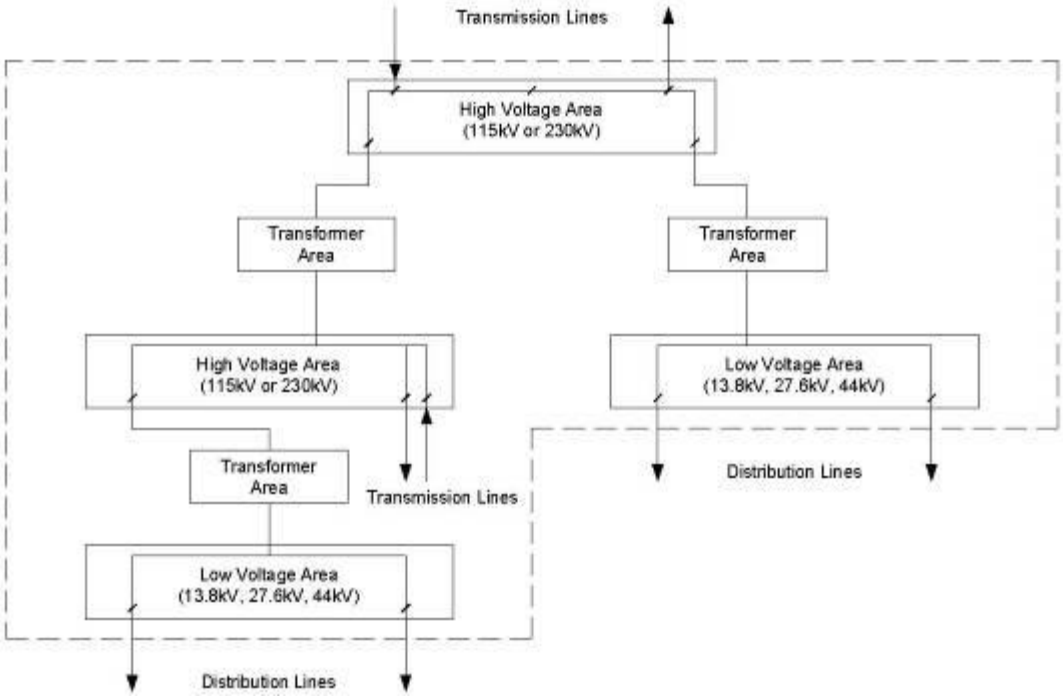


Figure 11: Components of a Typical Complex Transformer Station

6.2.3 Alternative Designs

TSs may be of either an outdoor design, where all or most of the major equipment is located in the open within a fenced-in area, or an indoor design, where the equipment is contained within one or more buildings.

With the outdoor design, the equipment in the high-voltage transformer and low-voltage areas is usually supported on concrete foundations and/or structural steel. The control, meter and relay area is contained within a single-storey building. In some cases, one or more of the high-voltage or low-voltage areas may be contained in a separate building within the fenced area.

There are two basic types of outdoor stations generally in use, one which uses lower structures but requires more land and one in which the structures are higher but less land is required.

All components of an indoor design are contained within one or more multi-storey buildings that are designed to be as compatible with the surrounding environment as possible.

The area outside a station is landscaped, as appropriate, to make it more aesthetically compatible with its surroundings. Lines connected to the station may be either overhead or underground.

6.2.4 Site Requirements

The site area needed for a simple regional supply TS (**Figure 10**) typically varies from 0.2 ha for an indoor urban station to 5 ha for an outdoor station.

The area needed for the more complex combined regional supply and system interconnecting TS is approximately about 25 ha.

The actual site size will vary depending on the availability of land, the type of station facilities installed, the number and orientation of the transmission lines, the character and use of adjacent properties, and the area of land required around the station for landscaping. The site size may also be affected by local by-laws governing the area.

Sufficient land is acquired to accommodate the maximum facilities foreseen for the particular station. The station is usually constructed in stages toward that maximum as the need develops.

A level, well-drained area with good soil bearing qualities is desirable for the station site. The station must be located such that heavy transformers can be transported to the site. It is desirable to locate complex stations with large transformers needed to interconnect high voltage switchyards adjacent to a road and/or build a spur line into the station.

6.2.5 Station Equipment

High-Voltage Area

The high-voltage area may contain circuit breakers (high interrupting capability switches), load interrupting switches, disconnect switches and interconnecting bus work, as well as auxiliary equipment such as current and voltage transformers, lightning arresters and spark gaps.

The circuit breakers are used to control the flow of energy by opening to interrupt or by closing to initiate the flow of electrical load current through particular conductors. Circuit breakers also have the capability to interrupt large currents that may be experienced under abnormal conditions.

The three common types of circuit breakers are:

a. A bulk-oil design with the electric current carrying and switching parts immersed in oil inside a grounded steel tank.

b. An air-blast design where the electrical parts are located in an air-filled pressure tank located on top of steel-supported porcelain insulators.

c. A gas circuit breaker where the current carrying and switching parts are located within a metal cylinder containing insulating gas such as sulphur hexafluoride (SF6).

The load interrupting switches are also used to interrupt and initiate load currents. However, they have only limited capability to interrupt abnormally high currents.

The disconnect switches, which have virtually no current interrupting capability, are used to isolate a piece of equipment from the system for maintenance purposes.

The load interrupting and disconnect switches may be of two types: an air-insulated unit with the electrical conductor and current-carrying parts mounted on steel-supported porcelain insulators to isolate it from the ground, or a gas-insulated (e.g., SF6) unit in which the conductor and the current-carrying parts are located within a grounded aluminum or steel cylinder containing the insulating gas.

The interconnecting bus work connects together the major components in an area and connects one area to another area. The bus work may be of either rigid or flexible conductors, mounted or suspended from steel-supported porcelain insulators or rigid conductors supported within a sealed metal cylinder filled with gas (e.g., SF6).

The auxiliary equipment (current and voltage transformers, surge arresters and spark gaps) are connected to the equipment or bus work and are used for the protection, control and monitoring of the station.

Outdoor stations contain a limited number of lightning protection towers to protect the station from lightning strikes.

Transformer Area

The transformer area contains one or more transformers that are used to change the voltage of the electrical power from one voltage level to another. Each transformer consists basically of a steel tank containing electrical windings immersed in an oil bath. The conductors enter the tank through porcelain bushings on top of the tank. The oil, which acts as an electrical insulator and as a coolant, circulates through the transformer, and cooling radiators are mounted adjacent to the transformer. Oil pumps may be used to circulate the oil, and fans are used to force air through the radiators to increase the amount of cooling. Pits are constructed under all power transformers to contain possible oil release. The pits are filled with gravel to restrict the oxygen to spilled oil to inhibit combustion in the event that the oil should be ignited.

All energized transformers produce a low-frequency sound. To ensure that the lowest ambient sound level at nearby residences will not be noticeably increased by the normal operation of the transformer, precautions are taken through the design of the transformers, their location within the station and the use of acoustical barriers where required.

The regional supply station usually starts with two power transformers in the first stage. As requirements develop, the station expands to a maximum of four or six units in the ultimate development. Each pair of transformers is usually connected to its own low-voltage area.

Low-Voltage Area

The low-voltage area contains disconnect switches and circuit breakers interconnected by rigid conductors supported on porcelain insulators and auxiliary equipment such as voltage and current transformers. The equipment may be located outdoors and supported on structural steel and/or concrete foundations or contained within an enclosure. The devices are used to perform the same general function as described for the high-voltage area.

Control, Meter and Relay Area

The control, meter and relay area contains all the control, meter and relay equipment required to operate and control the complete station. This equipment is connected by electrical cables to the specified devices (e.g., circuit breakers, disconnect switches and current transformers) located through the stations.

Washroom facilities are sometimes located in this area. The sewage disposal system is designed to local and provincial regulations and usually consists either of an on-site disposal system or a direct connection to a municipal system. Water supply is either from an on-site well or from a municipal source.

If the station is of the outdoor design, the control, meter and relay equipment is contained within one or more single-storey buildings. For indoor stations, this equipment is contained in a room within one of the station buildings.

6.2.6 Construction

The first step in the construction of a station is to grade the site to provide a level area for installation of structures and buildings. Top soil is removed and stockpiled at the site for landscaping purposes. Surplus soil is disposed of in an approved landfill area.

After the grade is established, drainage and septic systems are installed and a fence is erected around the construction area. In the case of outdoor stations, this may be a chain link fence which will form part of the permanent fencing. In the case of indoor stations, temporary fencing is erected to municipal requirements.

After fences are in place, excavation and placing of concrete for foundations follows. After completion of the foundations, the steel supporting structures and buildings are erected. Erection of the electrical equipment then begins. Most electrical power equipment is brought to the site by conventional road transport. The large power transformers are moved to the site using heavy load transportation equipment under the supervision of Hydro One and local road authorities. In some instances, transformers can be moved directly to the site using rail facilities where these are available or have been provided. Landscaping is carried out during and after construction as site constraints and seasons permit.

6.2.7 Operation/Maintenance

In most cases, TSs of the types covered by the Class EA for TF are unattended and are operated remotely from a district/provincial control centre. Maintenance personnel make periodic inspections and can be dispatched to the station in the case of an emergency. In stations where attendance is required, working facilities are provided within the control, meter and relay area.

6.3 Telecommunication Stations

Hydro One maintains an extensive telecommunication network consisting of radio and fibre optic links used for security, protection, control and monitoring of the electricity transmission system. This network allows continuous surveillance over major transmission facilities, and in the event of a malfunction on the system, it enables protective relay operation to automatically isolate the faulted system component. It also gives Hydro One operators continuous information on the

status of major lines and stations under their control and provides an additional means of communications for maintenance and administration activities.

Telecommunication towers are normally constructed of structural steel members and may be either self-supporting or guyed. Guyed towers may be used where land procurement or power station restrictions are not a problem. The height of the tower depends on the elevation of the site and the terrain that the radio signal must cross. Telecommunication poles, normally constructed of wood or composite material, may also be used depending on the application.

Telecommunication stations usually consist of a tower/pole and/or a specially designed building for telecom equipment. Site improvement, including landscaping, is undertaken as necessary at each site. Setback and severance is in accordance with Ontario and municipal regulations. An access road to the telecommunications site is also necessary if the telecommunication equipment is not located on a station site, but generally, a parcel of land measuring 30 m by 30 m is sufficient. For the most part, Hydro One telecommunications equipment is located on or adjacent to SS/TS sites.

The distance between two adjacent telecommunication stations may vary from a few kilometres to over 50 km depending on the operating frequency, tower height and the intervening topography. In order to reduce propagation loss between two stations, a line-of-sight radio path is required. In cases where the topography between two stations is too rugged, and the line-of-sight is obstructed, or the distance between the stations is too great, a repeater station is installed between them to relay communications. This requires additional land for a tower and building.

6.4 Consideration of Climate Effects

All proponents must consider the potential environmental effects of climate change (storms, flooding, drought or other severe weather events) in the design, siting, construction and operation of transmission facilities. Proponents are encouraged to consider provincial, national and international industry best practices in the design of transmission facilities as they relate to climate change and the increasing frequency of severe weather abnormalities.

6.5 Consideration of Cumulative Effects

All proponents will consider cumulative effects when planning projects. The assessment will include the proposed project and any other proposed projects in the immediate project area where documentation is available (e.g., other environmental assessments).

6.6 Decommissioning

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

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

6.7 Electric and Magnetic Fields

Electric and magnetic fields (EMF) are invisible lines of force produced by the flow of electricity in a wire or electrical device. The strength of these fields rapidly weakens from their source.

Electrical field strengths at the edge of Hydro One's high voltage transmission line RoW usually do not exceed 1 kilovolt per metre (kV/m). The lines are designed so that the field strength never exceeds 3 kV/m. The magnetic field strength at the edge of the high voltage transmission line RoW is generally less than 5 microtesla (μT). Hydro One's booklet entitled **Electric and Magnetic Fields** explains these fields and gives typical EMF values for transmission facilities, as well as typical values around the home and workplace. This booklet is available to the public.

Upon request, the following is available to anyone wanting more information on EMF in general or are interested in EMF levels at specific locations:

a. Information on the EMF issue prepared by independent government authorities (e.g., Health Canada).

b. EMF calculations and field measurement at specific locations.

To ensure information made available to the public is as up to date as possible, Hydro One will remain abreast of developments on the subject worldwide. More information on EMF is provided in **Appendix F**.

7.0 GLOSSARY OF TERMS, ACRONYMS, ABBREVIATIONS AND MEASUREMENT UNITS

GLOSSARY:

Access Road
A road built to a site or facility for the purpose of construction, operation and/or maintenance.

Alternative Methods
Alternative methods of carrying out the proposed project are different ways of doing the same activity.

Alternative methods could include consideration of one or more of the following: alternative technologies; alternative methods of applying specific technologies; alternative sites for a proposed project; alternative design methods; and alternative methods of operating any facilities associated with a proposed project.

Alternatives
Both alternative methods and alternatives to a proposed project.

Alternatives To
Alternatives to the proposed project are functionally different ways of approaching and dealing with a problem or opportunity.

Applicant
The person seeking approval of a Class Environmental Assessment. The Applicant for the purpose of the Class EA for TF is Hydro One.

Archaeological Resources
Include artifacts, archaeological sites, and marine archaeological sites. The identification and evaluation of such resources are based upon archaeological fieldwork undertaken in accordance with the *Ontario Heritage Act*; refer to Ontario Regulation 170/04 under the Act for definitions of the term “artifacts”, “archaeological site”, “marine archaeological site” and “archaeological fieldwork”.

Archaeological Screening Process
The Archaeological Screening Process set out in **Appendix I**. For those eligible projects identified in **Section 1.3.2**, the proponent may complete the Archaeological Screening Process to determine whether the project can proceed without further requirements under the EAA or the Class EA Screening Process of the Full Class EA Process is required to be completed.

Areas of Archaeological Potential
Areas with the likelihood to contain archaeological resources. Methods to identify archaeological potential are established by the Province. The *Ontario Heritage Act* requires archaeological potential to be confirmed through archaeological fieldwork.

Branch
Environmental Assessment Branch, Ministry of the Environment, Conservation and **Parks.**

Built Heritage Resources
One or more significant buildings (including fixtures or equipment located in or forming part of a building), structures, earthworks, monuments, installations, or remains that have cultural heritage value or interest.

Circular mil (kcmil)
The standard unit of a wire's cross sectional area, equal to the area of a circle with a diameter of one mil (one thousandth of an inch). The 'k' denotes kilo, meaning 1000.

Class Environmental Assessment (Class EA)
A document that sets out a standardized planning process for those classes or groups of activities for which the Applicant is responsible. It is also known as a "parent" document in some class environmental assessments. A class environmental assessment was approved under the *Environmental Assessment Act* and generally applies to projects that are carried out routinely and have predictable environmental effects that can be readily managed. Projects that are subject to a class environmental assessment do not require approval under Part II.3 of the *Environmental Assessment Act.* These projects can proceed subject to complying with the applicable class environmental assessment, provided no Section 16 Order is made declaring that the project is a Part II.3 project and thereby requiring the proponent to apply for approval under Part II.3 to be able to proceed with the project.

Class Environmental Assessment Screening Process (Class EA Screening Process)
One of the Class EA processes described in the Class Environmental Assessment for Transmission Facilities (in **Section 3.3.3**). This process provides a means of screening class environmental assessment projects with insignificant environmental effects according to 16 screening criteria.

Class Environmental Assessment Project
A project that does not require any further approval under the *Environmental Assessment Act* and is subject to a class environmental assessment.

Code of Practice
The Code of Practice: Preparing, Reviewing and Using Class Environmental Assessments in Ontario was published by the Ministry of the Environment, Conservation and Parks in January 2014 under the Legislative Authority: *Environmental Assessment Act*. The Code of Practice is intended to provide direction on procedural requirements to Applicants preparing and revising class environmental assessment and proponents of class environmental assessment projects. The Code of Practice also provides stakeholders with a reference document that can be consulted for an understanding of expectations associated with the application of the class environmental assessment process to a given project.

Comprehensive Environmental Assessment (Comprehensive EA)
An environmental assessment that is subject to the requirements set out in Part II.3 of the *Environmental Assessment Act*. Previously called Individual EA prior to the repeal of Part II of the *Environmental Assessment Act* and coming into force of Part II.3.

Consultation
A two-way communication process to involve interested persons in the planning, implementation and monitoring of a proposed project, or in the context of class environmental assessments, in the determination of the planning process itself. Consultation is intended to:

- Identify concerns;

- Identify relevant information;
- Identify relevant guidelines, policies and standards;
- Facilitate the development of a list of all required approvals, licences or permits;
- Provide guidance to the proponent about the preparation of the terms of reference and class environmental assessment;
- Ensure that relevant information is shared about the proposed project;
- Encourage the submission of requests for further information and analysis early in the class environmental assessment process; and,
- Enable the ministry to make a fair and balanced decision.

Cultural Heritage Landscape
A defined geographical area that human activity has modified and that has cultural heritage value. Such an area involves one or more groupings of individual heritage features, such as structures, spaces, archaeological sites, and natural elements, which together form a significant type of heritage form distinct from that of its constituent elements or parts. Heritage conservation districts designated under the *Ontario Heritage Act*, villages, parks, gardens, battlefields, main streets and neighbourhoods, cemeteries, trails, and industrial complexes of cultural heritage value are some examples.

Cultural Heritage Resources
Include built heritage resources, cultural heritage landscapes, and archaeological sites that have been determined to have cultural heritage value or interest for the important contribution they make to our project of the history of a place, an event, or a people. Criteria for determining significance have been established by the Province. While some significant cultural heritage resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation.

Director
Director of the Environmental Assessment Branch, Ministry of the Environment, Conservation and Parks.

Do Nothing Alternative
An alternative that is typically included in the evaluation of alternatives that identifies the implications of doing nothing to address the problem or opportunity that has been identified.

Electricity Projects Regulation (O. Reg. 116/01)
Ontario Regulation 116/01 – Electricity projects (2001), as amended, under the *Environmental Assessment Act*, which has been revoked.

Emergency Situations
Events or conditions that cause assets to be out of service or present imminent risk of failure but are not yet out of service. These can include risks of a power disruption or safety or environmental hazards.

Environment
Has the same meaning as under the *Environmental Assessment Act*, which is defined as meaning:

a) Air, land or water,

b) Land and animal life, including human life,

c) The social, economic and cultural conditions that influence the life of humans or a community,

d) Any building, structure, machine or other device or thing made by humans,

e) Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the human activities, or,

f) Any part or combination of the foregoing and the interrelationships between any two or more of them,

in or of Ontario.

Environmental Assessment (EA)
A study that assesses the potential environmental effects (positive or negative) of an individual project. Key components of an environmental assessment include consultation with government agencies and the public; consideration and evaluation of alternatives; and the management of potential environmental effects. Conducting an environmental assessment promotes good environmental planning before decisions are made about proceeding with a proposal.

Environmental Assessment Act (EAA)
A provincial statute that sets out a planning and decision-making process to evaluate the potential environmental effects of a proposed project.

Environmental Effects
The effects that a project has, or could potentially have, directly or indirectly on the environment at any stage in the project life cycle. Environmental effects may include, but are not limited to, the harmful alteration, disruption, destruction, or loss of natural features, flora or fauna and their habitat, ecological functions, natural resources, air or water quality, and cultural or heritage resources. Environmental effects may also include the displacement, impairment, conflict or interference with existing land uses, businesses or economic enterprises, recreational uses or activities, cultural pursuits, social conditions or the local economy.

Environmental Screening Process
A process described in the Guide to Environmental Assessment Requirements for Electricity Projects. It applies to Category B projects that are not subject to the Class Environmental Assessment for Transmission Facilities (e.g., transmission projects needed to connect new generation facilities). It should not be confused with the screening process described in this Class EA for TF (see Class Environmental Assessment Screening Process).

Environmental Study Report (ESR)
A component of the Class Environmental Assessment Process, whereby a report is prepared and completed for a class environmental assessment project. The report describes how the class environmental assessment project was planned to meet the requirements of the approved class environmental assessment.

Expansions
A type of change to a transmission station comprising an enlargement of the station for any purpose that requires the acquisition of land (i.e., extension of the site). **Expanding** has a corresponding meaning.

Full Class Environmental Assessment Process (Full Class EA Process)
One of the Class EA processes described in the Class Environmental Assessment for Transmission Facilities. The Full Class EA Process applies to the projects described in **Section 1.3.4** and involves the preparation of an Environmental Study Report.

Government Review Team
Staff from government ministries and agencies (federal; provincial, including local Conservation Authorities; and municipal, including local Boards of Health) who contribute to the review of environmental assessment documentation (terms of reference, environmental assessment and class environmental assessment) by providing comments from their mandated areas of responsibility. In the class environmental assessment context, there is no formal Government Review Team.

Indigenous Community
Indigenous collectives or communities with existing or asserted Aboriginal or treaty rights (legally protected under Section 35 of the *Constitution Act, 1982*) that may be adversely affected by proposed Crown conduct. “Indigenous” is the preferred collective name for the original peoples and their descendants and includes the First Nations, Métis and Inuit peoples of Canada.

Interest Groups
Organizations with an interest in a particular project within a project study area. Interest groups often include groups or clubs, naturalist organizations, agricultural organizations, sports or recreational groups, organizations from the local community, municipal heritage committees, ratepayers associations, cottage associations, and businesses.

Interested Persons/Parties
Interested persons are individuals with an interest in a particular project and live within a project study area. Persons with an interest in a particular project often include neighbours. Interested persons are not required to demonstrate that they will personally be affected by a particular project. Interested persons are often called stakeholders

Note: the onus is on interested persons/parties to identify their interest in a project as early as possible.

Kilovolt (kV)
One thousand volts. Used to describe “high voltage” electrical conductors, as in 115 kV.

Licensed Transmitters
Companies that must be licensed by the Ontario Energy Board (OEB) if they are interested in owning, building, operating and maintaining the transmission network (i.e., 115 kilovolts [kV], 230 kV and 500 kV lines and stations).

Maintenance
The regular, routine actions taken to retard the natural deterioration of a resource (or fixture and/or equipment). These actions are intended to keep the resource from premature loss due to failure, decline, wear or change attributable to normal use or the effect of the natural environment.

Minister
Minister of the Environment, Conservation and Parks.

Mitigation
Avoiding, eliminating, offsetting, or reducing to an acceptable level the potential effects of a project. It can also include rehabilitation, restoration, or enhancement where feasible. The means by which projects can be modified to minimize or eliminate potential negative effects.

Monitoring
The activities carried out by the Applicant/proponent after approval of a project to determine the environmental effects of the project ("effects monitoring") (**Section 3.7**). Monitoring can also refer to those activities carried out by the Ministry of the Environment, Conservation, and Parks to ensure that the Applicant/proponent complies with the conditions of approval of the class environmental assessment ("compliance monitoring").

Effectiveness monitoring is a third type of monitoring in which the Applicant/proponent evaluates how effectively its class environmental assessment is working in the planning and implementation of its class environmental assessment projects (**Section 5.5**).

Net Effects
Negative environmental effects of a project and related activities that will remain after mitigation and impact management measures have been applied.

Operation
Includes operations, maintenance and repair, rehabilitation, as well as upgrading and replacement, provided that the function or capacity of the facility remains similar.

Part II.3 Project
Has the same meaning as under the *Environmental Assessment Act*.

Potentially Affected Person
An individual or organization that may be directly affected by a particular project.

Project
Has the same meaning as the term "undertaking" under the *Environmental Assessment Act*.

Proponent
Has the same meaning as under the *Environmental Assessment Act*. The proponent is the person, agency, group, or organization that proposed to carry out a class environmental assessment project rather than the development of the class environmental assessment itself.

Proponents that may use the Class Environmental Assessment for Transmission Facilities to carry out class environmental assessment projects are described in Section 1.6 of the Class EA for TF.

Qualified Persons
Where used in respect of cultural heritage resources means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.

Refurbishment(s)
A change to a transmission line that includes an addition(s), relocation(s), replacement(s) or upgrade(s). Does not include maintenance. **Refurbishing** has a corresponding meaning.

Addition(s)
Any work undertaken to add poles or structures.

Relocation(s)
Any work undertaken to reposition or move poles or structures from their existing location.

Replacement(s)
Any work undertaken to replace poles or structures to achieve the same purpose, use, voltage and proximity.

Upgrade(s)
Any work resulting in operational improvements to any transmission line (such as increasing ampacity, raising tower heights) for a specific purpose beyond maintenance that is not an addition, relocation or replacement. This does not include increasing the voltage of a line.

Regulating Station
An electrical station containing at least one electrical power transformer arranged to only regulate voltage. Power voltage transfer occurs only at transformer, transmission or distribution stations. There is no power generation produced at the station.

Reliability
The degree of continuity of electricity supply.

Right-of-Way (ROW)
A strip of land over which a Licensed Transmitter has occupational rights to occupy and use for the purposes of an electricity transmission line or lines as defined by the *Ontario Energy Board Act.* Synonymous with “Transmission Corridor”.

Secondary Land Uses
While the primary purpose of hydro corridors is for transmitting electricity, secondary uses of the hydro corridor lands may be allowed subject to Hydro One Networks Inc.’s safety and technical requirements. Examples of secondary uses on corridor lands include: transportation (e.g., roads, transit etc.); infrastructure (e.g., water, sewage mains, pipelines, utilities cables etc.); recreational (e.g., playing fields, parks, walking trails, etc.); agricultural (e.g., pasture, cultivation, etc.); vehicular storage uses (e.g., parking lots); and horticulture (e.g., gardens and extensions of adjacent residential lots). Secondary uses on Crown owned corridor lands, which are administered and controlled by the Ministry of Infrastructure or the Ministry of Natural Resources and Forestry, are subject to the Ministry of Infrastructure Government Property Class Environmental Assessment or MNRF’s class environmental assessment. Public bodies or private land owners can apply to use Crown owned hydro corridor lands for a secondary use through the Provincial Secondary Land Use Program (PSLUP), jointly administered by Infrastructure Ontario and Hydro One Networks Inc. on behalf of the Ministry of Infrastructure.

Section 16 Order
An order issued by the Minister (or the Minister’s delegate) pursuant to Section 16 of the EAA.

Solandt Commission
Omond Solandt was appointed in 1972 to head a commission of public inquiry into the transmission of power from Nanticoke to Pickering. The following year the inquiry was extended to include an examination of the proposed route between Lennox and Oshawa. Dr. Solandt held public hearings in the affected municipalities between May, 1974 and January, 1975.

Stakeholders
For class environmental assessment purposes stakeholders are defined as municipal, provincial and federal government officials; government agencies;; potentially affected and interested persons; and interest groups who are involved in the planning and review of a class environmental assessment or class environmental assessment project.

Switching Station
An electrical station which interconnects transmission lines through automatic switching devices (e.g., circuit breakers). Its purpose is to permit subdivision of the transmission system to limit the amount of it that is lost as the result of a fault or to allow portions of the system to be removed from service for operating or maintenance purposes. There are no electrical power transformers or regulators located in the switching station. There is no power generation produced at the station.

Technical Cultural Heritage Studies
May include archeological assessments (Stage 1-4); historic research, site analyses and evaluations of cultural heritage value or interest; heritage impact assessments; heritage conservation plans; or studies of mitigation options appropriate to each.

Telecommunication Station
These usually consist of a communication tower and/or a communication building enclosed by a security fence with an access gate.

Telecommunication Tower
A telecommunication tower used for security, protection, control, and monitoring of the electricity transmission system. It is a tower built to support communications antennas and other equipment high enough above ground level so that the communication signals from antennas to distant antennas on towers are not obstructed by intervening curved terrain, buildings or vegetation.

Terms of Reference (ToR)
A document prepared by the proponent and submitted to the Ministry of the Environment, Conservation and Parks for approval. The terms of reference sets out the framework for the planning and decision-making process to be followed by the proponent during the preparation of a Comprehensive Environmental Assessment. In other words, it is the proponent's work plan for what is going to be studied and includes a consulting plan. If approved, the Comprehensive Environmental Assessment must be prepared according to the terms of reference.

Temporary Lines
Transmission lines that are constructed within an existing ROW and at the same voltage as the line it is temporarily replacing. Temporary lines are constructed to maintain an uninterrupted supply of electricity (transmission) during planned outages; and are retired thereafter.

Transformer Station
A group of electrical components or elements, including transformers arranged to transfer power from one voltage level to another. A transformer station may also function as a switching station at the various voltage levels and provide for an interchange or redistribution of power among the circuits at each voltage level.

Transmission Line

A line (including relevant structures and components, where applicable) for the transmission of electricity, that can be overhead, underground, or submarine.

Transmission Station
A station that is used in the transmission or transformation of electrical power and may comprise transformer stations, switching stations, compensation stations, regulating stations, terminal or tap stations, high voltage direct current stations or other types of stations.

For the purpose of the Class EA for TF, if a station is designed to operate at more than one voltage level, the nominal operating voltage of the station is the highest applicable voltage.

ACRONYMS, ABBREVIATIONS AND MEASUREMENT UNITS

AC	Alternate Current
Class EA	Class Environmental Assessment
Class EA for TF	Class Environmental Assessment for Transmission Facilities
DC	Direct Current
DS	Distribution Station
EA	Environmental Assessment
EAA	Environmental Assessment Act
EAB	Environmental Assessment Branch, Ministry of the Environment, Conservation and Parks
EEPS	Environmental Engineering and Project Support department at Hydro One Networks Inc.
EMF	Electric and Magnetic Fields
ESR	Environmental Study Report
HVDC	High Voltage Direct Current
Hydro One	Hydro One Networks Inc.
IAA	Impact Assessment Act
IAAC	Impact Assessment Agency of Canada
IESO	Independent Electricity System Operator
Comprehensive EA	Comprehensive Environmental Assessment
kcmil	Circular mil
kV	Kilovolt
LDC	Local Distribution Company
MNRF	Ministry Natural Resources and Forestry
MECP	Ministry of the Environment, Conservation and Parks (Ministry name as of February 2018)
MPa	megapascal
MPs	Members of Parliament

MPPs	Members of Provincial Parliament
OPG	Ontario Power Generation
OPGW	Optical Ground Wires
PIC	Public Information Centre
RoW	Right-of-Way
RS	Regulating Station
SF6	Sulphur Hexafluoride
SS	Switching Station
ToR	Terms of Reference
TS	Transmission Station

8.0 REFERENCES

Impact Assessment Act, (S.C. 2019, c. 28, s. 1). Retrieved from the Government of Canada, Justice Laws website: https://laws-lois.justice.gc.ca/eng/acts/I-2.75/

Constitution Act 1867, S. 35 Part II Rights of the Aboriginal Peoples of Canada. Retrieved from the

Government of Canada, Justice Laws website: http://laws-lois.justice.gc.ca/eng/Const/page-16.html#h-52

Environmental Assessment Act, R.S.O 1990 and regulations,.

Retrieved from the Service Ontario e-Laws website: Environmental Assessment Act, R.S.O. 1990, c. E.18

Hydro One Networks Inc. (2012). *Electric and Magnetic Fields*. (Internal document).

Ministry of the Environment, Conservation and Parks(2007). A Guide for Proponents and the Public: Federal/Provincial Environmental Assessment Coordination in Ontario, Facilitating Implementation of the Canada-Ontario Agreement on Environmental Assessment Cooperation. Retrieved from the Ministry of the Environment, Conservation and Parks website: http://www.ontario.ca/environment-and-energy/federalprovincial-environmental-assessment-coordination-ontario-guide

Ministry of the Environment, Conservation and Parks (2014). Code of Practice: Preparing, Reviewing and Using Class Environmental Assessments in Ontario.

Retrieved from the Ministry of the Environment, Conservation and Parks website: http://www.ontario.ca/environment-and-energy/preparing-reviewing-and-using-class-environmental-assessments-ontario

Ministry of the Environment, Conservation and Parks (2011). *Guide to Environmental Assessment Requirements for Electricity Projects*. Retrieved from the Ministry of the Environment, Conservation and Parks website: http://www.ontario.ca/environment-and-energy/guide-environmental-assessment-requirements-electricity-projects

APPENDICES

Appendix A: Other Legislation

Appendix B: Subsequent Communication with Interested Parties

Appendix C: Environmental Inventory

Appendix D: Initial Notification Requirements

Appendix E: Examples of Typical Mitigation Measures

Appendix F: Electric and Magnetic Fields

Appendix G: Exemption Order OHK – 11

Appendix H: Proponent Annual Summary Monitoring Report

Appendix I: Archaeological Screening Process Prior to Exempting Eligible Project

Appendix A

Other Legislation

Appendix A: Other Legislation

The information provided in the following table is for reference purposes and is not to be considered to be comprehensive; rather, it is the proponent's responsibility to ensure that all legislative requirements for the proposed project are met, and that the Acts and regulations to which the proposed project must comply are provided in the Environmental Study Report.

FEDERAL LEGISLATION

- Aeronautics Act
- Canada National Parks Act
- Canada Transportation Act
- Canada Water Act
- Canada Wildlife Act
- Explosives Act
- Fisheries Act
- Impact Assessment Act
- Indian Act
- International Boundary Waters Treaty Act
- Migratory Birds Convention Act
- National Energy Board Act
- Canadian Navigable Waters Act
- Railway Safety Act
- Species at Risk Act

PROVINCIAL LEGISLATION

- Aggregate Resources Act
- Building Code Act
- Cemeteries Act
- Clean Water Act
- Conservation Authorities Act
- Consolidated Hearings Act
- Crown Forest Sustainability Act
- Dangerous Goods Transportation Act
- Drainage Act
- Electricity Act
- Endangered Species Act
- Environmental Assessment Act
- Environmental Bill of Rights

- Environmental Protection Act
- Expropriations Act
- Far North Act
- Fish and Wildlife Conservation Act
- Forest Fires Prevention Act
- Greenbelt Act
- Lakes and Rivers Improvement Act
- Niagara Escarpment Planning and Development Act
- Oak Ridges Moraine Conservation Act
- Oak Ridges Moraine Protection Act
- Ontario Energy Board Act
- Ontario Heritage Act
- Ontario Planning and Development Act
- Ontario Water Resources Act
- Pesticides Act
- Places to Grow Act
- Planning Act
- Provincial Parks and Conservation Reserves Act
- Public Lands Act
- Public Transportation and Highway Improvement Act
- Technical Standards and Safety Act
- Weed Control Act

Appendix B

Subsequent Communication with Interested Parties

Prior to construction, a letter will be sent to each directly affected property owner, providing information about the planned construction schedule and the name and telephone number of the designated construction representative. This representative will be available for further discussion during the construction period. The letter may also include other project contacts, such as the land use agent and the community relations officer.

Where appropriate (i.e., as set out in the environmental study report) a public information centre (PIC) may be held to provide interested persons with information about upcoming construction activities. This includes tower locations, construction and restoration operation activities.

Each directly affected property owner will be contacted by a Hydro One Networks Inc. (Hydro One) representative. Permission will be requested to conduct any activities on private property including surveying, soil testing, property appraisals and woodlot evaluation as required. Where compensation applies, a property appraisal will be carried out and meetings arranged to discuss.

Where new land rights are required for a project, the proponent should make best efforts to reach a settlement for compensation with the affected property owners. In situations where settlements for required property rights cannot be reached, the proponent would follow the requirements of the *Expropriation Act* to acquire property rights through that process. This includes applying to the Ontario Energy Board (OEB) under Section 99 of the *OEB Act, 1998* (the Act) for authority to expropriate land for a project that has been granted Leave to Construct approval under Section 92 of the Act or has been granted exemption (Section 95). Where property is to be expropriated, a Notice of Application for Approval to Expropriate is delivered to each owner and the expropriation procedures explained. Once an expropriation has been approved, and if the owner has not yet settled, an offer of compensation under Section 25 of the *Expropriation Act* will be made. If agreement on compensation cannot be reached, after further negotiation the matter may be referred to the Board of Negotiations and the Ontario Municipal Board.

During construction, property owners and elected and appointed officials will be kept up-to-date on construction activities by project newsletters.

Appendix C

Environmental Inventory

The following is a list of the environmental factors or categories considered by Hydro One Networks Inc. when carrying out an environmental inventory for a route or site planning study. Accompanying each of the factors are examples of typical environmental data types and their sources.

AGRICULTURE

Description

This factor considers agricultural production and associated practices through analysis of the capability of the land for agricultural production along with the present use and productivity of that land.

Typical Data Types:

- Crops grown on perennial root stock (e.g., grapes, apples, tender fruit, asparagus, ginseng)
- Specialty Crop Areas as defined in the Provincial Policy Statement, 2014 under the *Planning Act*
- Prime Agricultural Lands as defined in the Provincial Policy Statement, 2014 under the *Planning Act*
- Soil type and relative sensitivity to damage from construction and installation of electricity facilities (e.g., susceptibility to compaction)
- Areas designated in municipal Official Plans as Prime Agricultural Areas (or their equivalent if not yet designated) as defined in the Provincial Policy Statement, 2014 under the *Planning Act*
- Potential for farm property fragmentation/severance by proposed right-of-way or transformer station
- Agricultural infrastructure (e.g., livestock facilities, drainage systems, irrigation systems, fencing, on-farm agricultural product storage and/or processing facilities)
- Agriculture-related infrastructure (e.g., grain drying facilities, cold/dry storage facilities for agricultural crops, wineries, roadside markets/stands, agricultural research facilities, agricultural biogas systems)
- Organic agriculture operations – crops and livestock (e.g., pesticide use within right-of-way)
- Agricultural field access from public roads and farm lanes
- Field size requirements for farm operational efficiency and flexibility (e.g., ability to plant and harvest crops with large equipment)

Typical Data Sources:

- Canada Land Inventory – Land Capability for Agriculture

  http://www.giscoeapp.lrc.gov.on.ca/web/OMAFRA/EMB/AIA/Viewer/viewer.html

  http://www.omafra.gov.on.ca/english/landuse/gis/portal.htm

http://www.omafra.gov.on.ca/english/landuse/gis/soil_data/nts.htm

- County soil maps

  http://sis.agr.gc.ca/cansis/publications/surveys/on/index.html?__utma=1.1020924616.1390858701.1390858701.1390858701.1&__utmb=1.8.10.1390858701&__utmc=1&__utmx=-&__utmz=1.1390858701.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none)&__utmv=1.|1=tag_visitor_type=internal=1&__utmk=94338333

- Census of Agriculture, Statistics Canada

  http://www.statcan.gc.ca/ca-ra2011/index-eng.htm

  http://www.omafra.gov.on.ca/english/stats/welcome.html#first

- Municipal official plan land use schedules
- Aerial photography and satellite imagery
- Municipal Property Assessment Corporation (MPAC) property mapping and assessment codes
- Roadside and field inspections
- Discussions with agricultural producer organizations (e.g., local Federations of Agriculture) to access data they may have and identify any site-specific concerns

FOREST RESOURCES

Description

This factor considers the resource use aspects of forest cover, both from the point of view of the use of existing forests and the capability to produce renewable forest resources.

Typical Data Types:

- Forest land productivity inventory
- Silvicultural treatment areas
- Forested land with the Ontario Land Inventory timber use capability of Classes 4 or 5
- Sustainable woodlots

Typical Data Sources:

- Ministry of Natural Resources and Forestry
- Conservation Authorities
- Forest Resource Inventory
- Aerial photography
- Topographic maps
- Landsat imagery

- Ontario Land Inventory and Primeland/Site Information System (OLIPIS)
- Forest management plans
- Forest resource inventory maps

CULTURAL HERITAGE RESOURCES

Description

This factor considers built heritage resources, cultural heritage landscape and archaeological resources.

Typical Data Types:

- Properties of cultural heritage value, as defined by Regulation 9/06 of the *Ontario Heritage Act*
- Properties designated, or subject to a notice of intention to designate, under Part IV or B of the *Ontario Heritage Act*
- Properties subject to an agreement, easement or covenant under the *Ontario Heritage Act*
- Properties designated as a historic site under Regulation 880 of the *Ontario Heritage Act*
- Provincial heritage properties
- Properties listed on a register or inventory of heritage properties maintained by the municipality
- Properties subject to a municipal, provincial or federal plaque
- National historic sites
- Known or reported burial sites
- Properties that contain structures over forty years old
- Properties situated on a parcel of land that contains or is part of a cultural heritage landscape (e.g., Indigenous trail, park, relationship to a Canadian Heritage River, designed garden, historic road or rail corridor, unique landforms, etc.)
- Properties that are considered a landmark in the local community or contain any structures or sites that are important to defining the character of the area (e.g., prominent buildings or landscape features, complexes of buildings, monuments, etc.)
- Properties that have special association with a community, person or historical event (e.g., Indigenous sacred site, traditional use areas, battlefield, birthplace of an individual of importance to the community, etc.)
- Properties designated as an archaeological site under Regulation 875 of the *Ontario Heritage Act*
- Known or reported archaeological sites
- Areas of archaeological potential
- Properties in the Canadian Register of Historic Places

- Properties in the Canadian Inventory of Historic Building
- Protected heritage properties as defined by the Provincial Policy Statement
- Municipal Register of Listed and Designated Properties

Typical Data Sources:

- Ministry of Citizenship and Multiculturalism
- Parks Canada
- Upper and lower tier municipalities, and single tier municipalities, including its municipal heritage committee (where one exists)
- Ontario Heritage Trust
- Archaeological assessment reports
- Archaeological management plans
- Cultural heritage evaluation reports
- Heritage Impact Assessment reports
- *Ontario Heritage Act* Part IV designation studies and by-laws
- *Ontario Heritage Act* Part V Heritage Conservation District designation studies, by-laws and plans
- Municipal Cultural Plan
- Historical county atlases of Ontario
- Survey plans of Ontario townships
- Local historical societies
- Local published and unpublished histories and academic studies
- Air photo interpretation
- Field inspection
- First Nations and Métis land use records, treaties and land claims

LAND USE AND COMMUNITIES

Description

This factor considers the existing and planned land use.

Typical Data Types:

- Existing land use
- Settlement areas – urban and rural; rural residential development
- Commercial development
- Military areas

- Industrial development
- Airports and airport path restrictions
- Infrastructure
- Proposed land use
- First Nations and Métis lands
- Municipal planning policies
- Traditional Use Studies

Typical Data Sources:

- Ministries of:
    - Indigenous Affairs
    - Environment
    - Government and Consumer Services
    - Municipal Affairs and Housing
    - Natural Resources and Forestry
    - Transportation
- Conservation Authorities
- Transport Canada
- Topographical maps
- Aerial photography
- Archaeological studies
- Upper and lower tier municipal departments and planning boards
- Municipal official plans and zoning by-laws
- Statistics Canada
- Geographic Information Systems (GIS) data sources
- Land Information Ontario (LIO)
- Minister's Zoning Orders

MINERAL RESOURCES

Description

This factor considers the mineral extraction industry through analysis of existing and planned extractive operations and potential reserves.

Typical Data Types:

- Active mines & associated facilities

- Proposed mines & development
- Oil and gas deposits and facilities
- Mine tailing areas
- Mining hazards

Typical Data Sources:

- Ministries of:
    - Mines
    - Transportation
- Ontario mineral maps
- Aggregate resources inventory reports
- Mineral potential survey
- Municipal official plans

NATURAL ENVIRONMENT RESOURCES

Description

This factor considers areas of environmental sensitivity: floral and faunal components of the terrestrial concentration area, designated environmentally sensitive areas, Source Water Protection Areas, spawning areas, and wetlands.

Typical Data Types:

- Prime winter deer yards and moose and caribou habitat
- Areas of Natural and Scientific Interest
- Environmentally Sensitive Areas
- Sensitive terrestrial and aquatic ecosystems
- Wildlife management areas
- Fisheries management plans
- Species at Risk (SAR) and habitat
- Wetlands
- Waterfowl staging and nesting areas and heronries
- Greenbelt lands
- Niagara Escarpment Commission lands
- Oak Ridges Moraine lands
- Lake Simcoe watershed
- Surface water bodies and ground water

- Source Water Protection Areas/Vulnerable Areas, including: Well Head Protection Areas, Intake Protection Zones, Aquifers vulnerability and Significant Groundwater Recharge Areas.
- Designated areas of provisional protection and designated protected areas in approved community based land use plans, under the *Far North Act*, *2010.*
- Approved community based land use plans, under the *Far North Act*, *2010*.
- Protected areas (e.g., provincial parks, conservation reserves)
- Natural heritage features (e.g., significant woodlands, significant wildlife habitat)
- Biodiversity

Typical Data Sources:

- Ministry of Natural Resources and Forestry
- Conservation Authorities (e.g., Source Water Protection Areas)
- Atlas of Rare Vascular Plants of Ontario
- Atlas of the Mammals of Ontario
- Atlas of the Breeding Birds of Ontario
- Ontario's Reptile and Amphibian Atlas
- Aerial photography
- Topographic maps
- Field surveys
- GIS data sources (e.g., Land Information Ontario [LIO], Southern Ontario Land Resources Information System [SOLRIS])
- Niagara Escarpment Commission
- Fisheries and Oceans Canada
- Federation of Ontario Naturalists
- Local naturalist organizations
- Local trappers
- Provincial Policy Statement[1]
- Local official plans
- Source Protection Plans[2] and available maps of Source Water Protection Areas

[1] For two non –Conservation Authority Source Protection Areas: Severn Sound and Northern Bruce Peninsula (i.e., *Clean Water Act* does not apply to these municipalities), the vulnerable areas are defined in the **Provincial Policy Statement.**

[2] 22 Source Protection Plans developed by Source Protection Committees (Local Municipalities and Conservation Authorities) in 19 Regions of Ontario

- Regional and municipal planners
- Approved community based land use plans, under the *Far North Act, 2010.*
- Natural heritage reference manuals, guidelines and databases (e.g., Natural Heritage Information Centre)

RECREATION RESOURCES

Description

This factor considers existing forms of recreation (e.g., parks, cottages, major waterways, etc.) along with extensive recreational activities (e.g., canoeing, hiking). Future recreational potential is also considered.

Typical Data Types:

- National, provincial and municipal parks, conservation reserves and conservation authority recreation areas
- Sensitive recreational waterways
- Sensitive linear areas (e.g., canoe routes, hiking trails, scenic roads and snowmobile trails)
- Areas of cottage and resort developments
- Areas identified as recreational in the Canada Land Inventory
- Community based land use plans, approved under the *Far North Act, 2010.*

Typical Data Sources:

- Ministries of:
    - Natural Resources and Forestry
    - Environment, Conservation and Parks
    - Citizenship and Multiculturalism
    - Transportation
- Conservation Authorities
- Parks Canada
- Outdoor Recreation Capability - Canada Land Inventory
- Topographic maps
- Aerial photography
- Municipal official plans
- Ontario Trails Map, Ontario Trails Council

VISUAL AND AESTHETIC RESOURCES

Description

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

Typical Data Types:

- Escarpments and mountains
- Crests
- Vistas
- Landscapes visually dominated by water
- Flat to gently rolling landscapes with little tree cover
- Remnant natural landscapes and natural river valleys

Typical Data Sources:

- Ministry of Natural Resources and Forestry (e.g., SOLRIS)
- Topographical maps
- Aerial photography
- Field interpretation
- Landsat imagery

Appendix D

Notice of Commencement Requirements

The following are the notification requirements that have been specified in the Ministry of the Environment, Conservation and Park's (MECP) Government Review Team List. While developing a consultation contact list, the proponent must refer to Appendix B in the Ministry of the Environment, Conservation and Park's Code of Practice: Preparing, Reviewing and Using Class Environmental Assessments in Ontario, 2014 to obtain a current list of Government Agencies and their areas of interest. The proponent will make sure to use the most updated version of this list, and will notify the agencies that may have interest in the specific project.

TABLE D-1
Notice of Commencement Requirements
"Class Environmental Assessment for Transmission Facilities" Projects

AGENCY/MINISTRY	APPLICABLE CLASS ENVIRONMENTAL ASSESSMENT PROJECTS
FEDERAL AGENCIES	
Impact Assessment Agency of Canada (IAAC)	It is possible that a project subject to the Class EA for TF is also subject to a federal assessment process. Refer to the IAA website for information.
Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and Indigenous Services Canada (ISC)	All projects.
Environment Canada	All projects affecting an area of federal interest or responsibility, and fall under the *Environmental Assessment Act*.
Fisheries and Oceans Canada (DFO)	Projects which may have a harmful alteration or destruction of fish or fish habitat.
Health Canada	Projects that are determined to require specific expert advice on matters not covered by provincial agencies, including electric and magnetic fields and radiation effects. They also have expertise on health risk assessment/management; federal air, water and soil quality guidelines/standards used in human health risk assessment; multi-media toxicology; air quality health effects; drinking and recreational water quality; and noise impacts.
Transport Canada	Projects that: • Involve tall structures; • Are located in the vicinity of a federal airport and may attract bird; • May cause electrical interference to navigational aids; • May affect a navigable waterway
Each federal authority with responsibility for federal lands	Projects that are on or abutting federal lands and require federal approvals or financing.

Appendix D: Notice of Commencement Requirements

AGENCY/MINISTRY	APPLICABLE CLASS ENVIRONMENTAL ASSESSMENT PROJECTS
PROVINCIAL AGENCIES & MINISTRIES	
Conservation Ontario	Province-wide Environmental Assessment matters.
GO Transit/Metrolinx	Projects with the potential to affect Go Transit/Metrolinx service or property, or projects in close proximity to GO Transit/Metrolinx facilities.
Infrastructure Ontario (IO)	Projects that will take place on the existing right-of-way owned by IO, projects that will be built on the IO land and projects where lands associated with the project are adjacent or proximate to lands that are managed by the IO, or if IO-managed lands are within the project's study area.
Ministry of Indigenous Affairs	Projects meeting any of following criteria: • Potentially affecting Indigenous Communities where land claims or litigation are involved. • Potentially affecting Crown land and resources usage. • Adjacent to Six Nations of the Grand River and Mississaugas of the New Credit in the Lower Grand River watershed. The area includes Haldimand and Brant.
Ministry of Agriculture, Food and Rural Affairs (OMAFRA)	Projects proposed to be located in Specialty Crop Areas as defined in the Provincial Policy Statement (PPS) under the *Planning Act*, or on Prime Agricultural Lands (Canada Land Inventory Classes 1-3 lands) also as defined in the PPS, or projects expected to affect agricultural operations throughout Rural Areas as defined in the PPS; except where the above lands have been designated as 'Urban" in a municipal Official Plan.
Ministry of Community Safety and Correctional Services (MCSCS)	Projects having direct physical impact on a MCSCS detachment, correctional centre, jail or a detention centre, including all projects within 1 km of such buildings.
Ministry of Economic Development, Job Creation and Trade	Projects which involve investments in the large-scale manufacturing facilities and co-generation projects, including large-scale expansions of existing manufacturing or co-generation facilities.
Ministry of Education: consult local school board	Projects that will impact a school/institution, building property, or staff and students.
Ministry of Energy	All projects.

Appendix D: Notice of Commencement Requirements

AGENCY/MINISTRY	APPLICABLE CLASS ENVIRONMENTAL ASSESSMENT PROJECTS
Ministry of the Environment, Conservation and Parks (MECP) generic email and Regional Environmental Assessment Coordinator at the applicable Regional Office(s)	Notice of Commencement, Completion and Addendum See text for other requirements (e.g., screenings, Statement of Completion)
Mines	All projects affecting an area of Mines interest or responsibility.
Ministry of Natural Resources and Forestry: relevant local or regional offices	All projects.
Ministry of Municipal Affairs and Housing	Projects that have one or more of the following: • Involve a municipal proponent; • Relate to municipal services; • Have federal involvement; • Located in unincorporated areas
Ministry of Colleges and Universities: contact local institution	Projects with the potential to affect a college/university, building property, or staff and students.
Ministry of Citizenship and Multiculturalism	All projects.
Ministry of Transportation	Projects that involve the preparation of stormwater management plans, or alterations to existing Watershed/Subwatershed Plans, which are in close proximity to a highway. Projects located within 400 m of a provincial highway plus those that are located outside built-up areas that involve any of the following: • Potential for creation of more than a minimal change in traffic volumes/patterns. • Requirement for direct access to a provincial transportation facility. • Requirement for access roads to areas where there were previously no roads.
Niagara Escarpment Commission	Projects with potential effects on the Niagara Escarpment Planning Area.

Appendix D: Notice of Commencement Requirements

AGENCY/MINISTRY	APPLICABLE CLASS ENVIRONMENTAL ASSESSMENT PROJECTS
Ontario Provincial Police (OPP)	Projects having a direct physical impact on an OPP correctional centre, jail or detention centre. In municipalities with own police service: projects having a direct physical impact on OPP detachments or impacting provincial highways. In municipalities without own police service: abovementioned projects, plus projects with potential to change demographics, traffic flow, or the need for police presence.
OTHER	
Hydro One Networks Inc.	Projects that could potentially directly have an impact on Hydro One facilities or plants (included transmission/distribution lines or transformer/distribution stations).
Local Conservation Authorities	Projects within area covered by the particular Conservation Authority.
Municipalities	All projects located within their respective applicable geographies.
Office of the Fire Marshall	Where fire department access might be affected, contact the local fire department and Fire Chief in the affected municipality (or municipalities).
Ontario Power Generation (OPG)	Projects within 2 km of an OPG generating site or that could potentially directly affect any OPG generating site.
Source Protection Authority under the *Clean Water Act*	Projects with the potential to affect: • A vulnerable area identified in the most recent local assessment report (or source protection plan) prepared for the local source protection area under the *Clean Water Act*, 2006, where the project involves one or more activities identified as a drinking water threat (the list of prescribed drinking water threats can be found in Section 1.1 of O. Reg. 287/07 or the Director may also approve a local drinking water threat activity in addition to those prescribed by regulation); • Municipal drinking water sources or other drinking water sources (for example, a drinking water source that serves a First Nation reserve that is prescribed by regulation) as identified in the most recent local assessment report prepared for the local source protection area where the project involves activities identified as prescribed drinking water threats.

Appendix E

Examples of Typical Mitigation Measures

TABLE E-1
Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
AGRICULTURE		
Loss of standing crop	Minimize width of access and size of construction work areas.	Planning and Design Construction and Maintenance
	Tower placement along fenceline where possible to minimize tower footprint.	Planning and Design
	Activities are scheduled to avoid growing season, if possible.	Planning and Design Construction and Maintenance
	Compensate for crop loss.	Construction and Maintenance
Soil compaction	Activities are scheduled to times of the year when soils are least susceptible to compaction, if possible.	Planning and Design Construction and Maintenance
	Activities may be stopped when ground conditions are conducive to compaction.	Construction and Maintenance
	Equipment with low bearing capacity is used if warranted.	Construction and Maintenance
	Access roads are located along existing routes, where possible.	Planning and Design Construction and Maintenance
	Temporary access roads and work pads may be built using geotextile and crushed rock, which may be easily removed when construction is complete.	Planning and Design Construction and Maintenance
Topsoil-subsoil mixing	Segregation of topsoil and subsoil.	Construction and Maintenance
Disturbance to farm operations	Maintain contact with landowner/tenant regarding scheduling of work, access, tiles, noise, remediation, etc.	Planning and Design Construction and Maintenance

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
Damage to field tiles	Tile beds are avoided, where possible.	Planning and Design
	Tile crossings are minimized.	Planning and Design
	Where possible, activities are scheduled to times of the year when the ground will support the equipment.	Construction and Maintenance
	Use of soft track equipment.	Construction and Maintenance
	Protection of tile crossings by the placement of heavy steel plate.	Construction and Maintenance
	Tile is repaired; compensate for damages.	Construction and Maintenance
Contamination of organic or Identity Preserved (IP) crops	Field crews are informed if working in organic or IP croplands and mitigation strategies are discussed.	Construction and Maintenance
	Vehicles are cleaned before entering organic IP farms.	Construction and Maintenance
Livestock loss or injury	Owner/tenant is consulted about possible mitigation measures.	Planning and Design Construction and Maintenance
	Field crews are informed about livestock in the vicinity work areas to ensure they are aware of need to secure gates, noise sensitivity controls, clean–up of construction material.	Construction and Maintenance
	Use of noisy equipment is avoided, if possible.	Construction and Maintenance
	Compensation is made for lost or injured livestock.	Construction and Maintenance
SOCIETAL IMPACTS		
Noise and vibration	Applicable municipal noise by-laws are followed.	Construction and Maintenance
	Noise and vibration is taken into account when deciding on equipment and work methods.	Construction and Maintenance
	Noise studies for new transformer stations are conducted to implement appropriate mitigation measures.	Planning and Design
Mud and dust	Wetting down dry soils.	Construction and Maintenance
	Roads are cleaned to remove mud if it is a concern.	Construction and Maintenance
Change in appearance - lines	Trees may be retained and/or planted to serve as a screen.	Planning and Design

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
	Topsoil and seed may be used to disguise access routes in urban areas.	Planning and Design Construction and Maintenance
Change in appearance - stations	Hoarding may be installed around construction sites to suit locale.	Construction and Maintenance
	Landscaping is done at new stations.	Planning and Design
Inconvenience	Select timing of construction.	Construction and Maintenance
	Access to construction site is designed to suit traffic conditions.	Planning and Design
Disturbance or destruction of archeological resources	Undertake archaeological assessment(s) to identify and evaluate resources.	Planning and Design
	Avoidance through alternative route and site selection. If the site cannot be avoided, excavation would occur as per “Standards and Guidelines for Consultant Archaeologists", Ministry of Tourism, Culture and Sport (2011).	Planning and Design
Displacement of built heritage resources and/or cultural heritage landscapes by removal and/or demolition and/or disruption	Identify, evaluate, and manage significant built and landscape heritage resources, on a project specific basis, as per O. Reg. 9/06, O. Reg. 10/06, and Standards and Guidelines for Conservation of Provincial Heritage Properties (2010).	Planning and Design
	Avoidance, where possible, through alternative route selection.	Planning and Design
	Prevent significant built heritage resources from undergoing demolition by neglect, with the consideration of property maintenance measures.	Operation and Maintenance
Disturbance to traditional land used by First Nations and Métis communities	Geographically defined areas which support current or past human use as a gathering area, spiritual site, place of worship or cemetery are identified and avoided to the extent possible.	Planning and Design
	First Nations and Métis are invited to participated in various stages of the project such as archaeology, project planning, construction, etc.	Planning and Design Construction and Maintenance
Disturbance to tourism and recreation resources	Disturbance is to be avoided, where possible.	Planning and Design
	Through site specific design and landscape, attempts are made to make facility less obtrusive or intrusive.	Planning and Design
	A landscape plan is developed and implemented if warranted.	Planning and Design

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
	Safety precautions are utilized to protect the public such as anti-climbing devices.	Planning and Design Construction and Maintenance
	Work is scheduled, when possible, to avoid peak use periods.	Construction and Maintenance
Electric and Magnetic Fields (EMF)	Facilities are designed, sited and operated in accordance with all regulatory requirements.	Planning and Design
	No/low cost measures are used to minimize EMF when designing and siting new facilities.	Planning and Design
NATURAL ENVIRONMENT		
AIR QUALITY		
Exhaust emissions from vehicles	Equipment is maintained to minimize exhaust.	Construction and Maintenance
	Fleet Services Environmental Program which includes anti-idling and GPS installation in vehicles.	Construction and Maintenance
Sulphur Hexafluoride (SF6) Emissions	Used SF6 is purified and returned to inventory for re-use.	Operation and Maintenance
	SF6 is tracked.	Operation and Maintenance
	Replacement of old carts is underway.	Operation and Maintenance
	A program is underway for the repair or replacement of chronic leaking equipment.	Operation and Maintenance
	Employees are trained on the proper handling of the equipment and gas.	Operation and Maintenance
	Work is done with industry to minimize emissions.	Operation and Maintenance
Emissions from diesel generators	Conditions on the Environmental Compliance Approvals are followed, along with Operations Manuals and Emergency Response Plans.	Operation and Maintenance
GEOLOGY		
Drilling and blasting	Noise and vibration are limited by proper maintenance and operation of drill rigs and noise baffling equipment as warranted.	Construction and Maintenance
	Drilling mud and rock cuttings are contained for appropriate disposal.	Planning and Design Construction and Maintenance
PHYSIOGRAPHY		
Changes in natural physiography	Wherever warranted, site is returned to the natural grade.	Construction and Maintenance

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
	Erosion control measures implemented if required.	Construction and Maintenance
SURFACE WATER		
Sedimentation of surface water	Where possible, buffers are retained around water.	Planning and Design Construction and Maintenance
	Equipment operation on slopes adjacent to streams is minimized.	Planning and Design Construction and Maintenance
	Use of sediment control devices and cover crops	Planning and Design Construction and Maintenance
	Develop site-specific erosion and sediment control plan as required (e.g., storm water drainage).	Planning and Design Construction and Maintenance
	Activities may be scheduled during drier or winter seasons.	Planning and Design Construction and Maintenance
Impedance of natural flow of streams and other surface waters	Installation of proper stream crossing devices as the situation warrants.	Planning and Design Construction and Maintenance
	Equalization culverts may be used in access roads in wetlands.	Planning and Design Construction and Maintenance
	Corduroy roads are used in wetlands, where practicable.	Planning and Design Construction and Maintenance
Ponding or channelization of surface waters caused by rutting	Time activities to stable ground conditions.	Planning and Design Construction and Maintenance
	Installation of proper stream crossing devices as the situation warrants.	Planning and Design Construction and Maintenance
	Use of gravel roads.	Planning and Design Construction and Maintenance
Contamination of surface water through spills or leaks	Emergency Preparedness Plans are developed for each project and staff are trained to respond to spills.	Construction and Maintenance

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
	Spill kits are on all work sites.	Construction and Maintenance
	Spills are cleaned up as soon as possible and the site remediated after a spill.	Construction and Maintenance
	Site selection for stations or construction staging away from surface water, where possible.	Planning and Design
Increase in water temperature due to vegetation removal at stream crossings	Retain shrubby stream bank vegetation and selectively cut/prune trees.	Planning and Design Construction and Maintenance
	Planting of compatible shrubs may be done if removals are significant.	Planning and Design
Stream bank erosion	Mechanical erosion control.	Construction and Maintenance
	Retain shrubby stream bank vegetation and selectively cut or prune trees.	Construction and Maintenance
Reduction in water storage capacity due to removal of vegetation or diversion caused by rutting	Selective removal of vegetation.	Planning and Design Construction and Maintenance
	Revegetation with compatible shrubs.	Planning and Design
Intake Protection	Surface water intake protection zones will be identified and protection implemented as required.	Planning and Design Construction and Maintenance
GROUNDWATER AND WATER SOURCE PROTECTION		
Disposal of waste water from dewatering activities	Various guidelines and legislation may apply to meet regulatory standards, including Provincial Water Quality Objectives, Ontario Drinking Water Standards or Guidelines and if appropriate, Regulation 153 and Regulation 347. .	Construction and Maintenance
	Discharge of wastewater from dewatering activities will be in compliance with required permits and approvals from the MECP	Planning and Design Construction and Maintenance
Contamination of groundwater through spills or leaks at station sites	Refueling activities are monitored.	Construction and Maintenance
	Fuels, chemicals and lubricants are stored on level ground in properly contained storage areas.	Construction and Maintenance
	Spill Containment and Oil-Water Separator	Planning and Design, and Operation

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
	Monitoring equipment and alarms are installed on equipment so that early detection of spills can be made.	Construction and Maintenance
Lowering of aquifer	A MECP Permit to Take Water (PTTW) is obtained if more than 50,000 L/day is withdrawn as a result of dewatering activities, to ensure the conservation, protection, management and sustainable use of Ontario's water. A PTTW addresses impacts to receptors by including hydrogeological modelling, monitoring and contingency plans.	Planning, Design and Construction
Temporary or permanent drinking water threat	Comply with all relevant legislation and policies such as: *Clean Water Act*, Provincial Policy Statement, Official Plans, and Source Water Protection Plans.	Planning, Design and Construction
	Provincially/locally designated Vulnerable Areas (namely Well Head Protection Areas [WHPAs]; Intake Protection Zones [IPZs]; and Highly Vulnerable Aquifers [HVAs]) are avoided where possible.	Planning and Design
	Consult applicable Conservation Authorities and/or applicable municipalities in order to undertake the proper action for managing the threat.	Planning and Design Construction and Maintenance
SOILS		
Wind/water erosion	Areas with high erosion potential are avoided, where possible.	Planning and Design Construction and Maintenance
	Timing activities to the most stable ground conditions.	Planning and Design Construction and Maintenance
	Mechanical or vegetation erosion control methods will be used for slope stabilization.	Planning and Design Construction and Maintenance
Soil Contamination	Soil is collected and tested to the Regulation 153/04 soil criteria. Clean soil may be re-used on site. Contaminated soil will be disposed in accordance with applicable legislation.	Construction
VEGETATION		
Loss of forested land	Forested land is taken into account when planning the line, station or off-corridor access.	Planning and Design

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
	Trees are retained, salvaged or felled as appropriate.	Construction and Maintenance
	Compensation is provided to property owners including replanting elsewhere on the same property.	Construction and Maintenance
	Reforestation and biodiversity program to ensure no net loss of habitat.	Planning and Design
Revegetation of right-of-way	Selective vegetation control methods are used.	Construction and Maintenance
	Special treatment areas are designated and tracked for future maintenance.	Construction and Maintenance
Clean-up and disposal of cleared vegetation	Disposal of all non-salvable limbs by chipping or removal to designated areas.	Construction and Maintenance
	Stumps are cut flush with the ground.	Construction and Maintenance
SIGNIFICANT NATURAL FEATURES		
Loss of natural features (e.g., wetlands, prairies)	Significant natural features, Areas of Natural and Scientific Interest, sensitive areas, and protected areas are avoided where possible.	Planning and Design
	Where appropriate, a site specific compensation and/or biodiversity plan is to be developed in consultation with the Ministry of Natural Resources and Forestry (MNRF) and/or the applicable Conservation Authority (i.e., to address the loss of natural features).	Planning and Design
	Towers and access roads are located to avoid the most sensitive locations.	Planning and Design
	Construction activities are restricted to designated work areas and protective barriers such as fencing are erected as required.	Construction and Maintenance
	The area is restored to pre-construction drainage patterns.	Construction and Maintenance
	A 120 m buffer is put around the feature and liquid storage and refuelling are not permitted within the buffer.	Construction and Maintenance
	Temporary geotextile and crushed rock or corduroy roads are constructed to minimize impact and allow for easy removal after completion of construction.	Construction and Maintenance
	If practical, vegetation is cut during firm soil conditions.	Construction and Maintenance
	Wetland vegetation is allowed to re-establish naturally or is seeded with native grasses.	Construction and Maintenance

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
FISH AND WILDLIFE		
Loss of habitat, breeding grounds and/or food source for wildlife, as well as fragmentation, due to vegetation removal	Tree clearing is avoided in wooded areas during nesting season, or a breeding bird survey is conducted and nests are protected.	Construction and Maintenance
	Promotion of wildlife habitat through vegetation control and brush piles.	Construction and Maintenance
	Natural vegetation is retained, where possible, and native species are used where seeding or planting is done.	Construction and Maintenance
	Snags are retained for wildlife management, where feasible.	Construction and Maintenance
	Implementation of Biodiversity Initiative.	Construction and Maintenance
	Removal of incompatible vegetation may be staged to provide protective cover until compatible species become established in sensitive areas.	Construction and Maintenance
	Environmental mapping to identify sensitive sites.	Construction and Maintenance
	Avoidance of areas containing Species at Risk.	Planning and Design Construction and Maintenance
	Consideration of landscape level impacts, including habitat fragmentation.	Planning and Design
Disturbance to fish habitat including spawning beds	Appropriate selection of crossing type and acquire all necessary permits and approvals prior to crossing construction and adherence to terms and conditions.	Planning and Design Construction and Maintenance
	Construction of access roads during low water flow conditions or as recommended by government.	Planning and Design Construction and Maintenance
	Retention of stream bank vegetation as long as possible prior to crossing construction and retaining shrubby bank vegetation and selective cutting of trees near watercourses.	Planning and Design Construction and Maintenance
	Material is stored or stockpiled away from water.	Construction and Maintenance
	Development of a site specific erosion and sediment control plan. Installation of sediment traps when necessary.	Planning and Design
	Restoration of disturbed areas to a pre-disturbed state or better.	Construction and Maintenance
BIODIVERSITY		

Appendix E: Examples of Typical Mitigation Measures

Environmental Concerns	Mitigation Measures	Project Phase
Loss of habitat including fragmentation of habitat	Implementation of Biodiversity Initiative developed in association with other stewardship organizations.	Planning and Design Construction and Maintenance
SPECIES AT RISK (SAR)		
Loss of SAR or Habitat	Avoidance of SAR and their habitat.	Planning and Design Construction and Maintenance
	If avoidance of SAR is not possible, collaborate with the MECP to mitigate the impact of transmission facilities. If required, an overall benefit permit will be obtained.	Planning and Design Construction and Maintenance
REMOTE ACCESS		
Opening normally remote areas to recreational activities	Work with stakeholders to develop a plan to prevent access to normally remote areas. Memorandum of Understanding may be required with the CMC.	Construction and Maintenance
	Use of helicopters to limit amount of ground vehicle access.	Planning and Design Construction and Maintenance
GENERAL WASTE MANAGEMENT (including Liquid Waste, Hazardous Waste, Non-Hazardous Waste)		
Appropriate disposal of waste	Minimize waste produced, and segregate and recycle where possible.	Construction and Maintenance
	Test, handle, store, transport and dispose of waste in accordance with Federal, Provincial and Municipal legislation as applicable.	Construction and Maintenance
	Manage wastes in accordance with Ontario *Environmental Protection Act*, Reg. 347.	Construction and Maintenance

Appendix F

Electric and Magnetic Fields

Since the 1960's, scientific studies have been conducted related to possible health effects from low frequency (such as 50-60 hertz [Hz]) electric and magnetic fields (EMFs). There have been three main areas of research on these fields:

- Laboratory studies which have exposed cells, plants and animals to EMFs to determine the effects and relevance, if any, to humans;
- Epidemiologic studies to examine the statistical relationship between the occurrence of disease and human exposure to these fields; and
- Exposure assessment to determine the amount of exposure that humans may encounter in home and work environments.

The Health Canada website (www.hc-sc.gc.ca/iyh-vsv/environ/magnet_e.html) provides important information on this topic. In summary, Health Canada states:

- "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" and
- "At present, there are no Canadian government guidelines for exposures to EMFs at extremely low frequencies. Health Canada does not consider guidelines necessary because the scientific evidence is not strong enough to conclude that typical exposures cause health problems."

Health Canada and the Federal Provincial Territorial Radiation Protection Committee (FPTRPC) have both examined potential health impacts associated with EMFs and have produced several documents on the subject. Quotes from recent documents indicate: "the FPTRPC concludes that adverse health effects from exposure to power-frequency EMFs, at levels normally encountered in homes, schools and offices, have not been established", (2005). "It is the opinion of the FPTRPC that there is insufficient scientific evidence showing exposure to EMFs from power lines can cause adverse health effects such as cancer. Therefore, a warning to the public to avoid living near or spending time in proximity to power lines is not required." (2008)

Several respected international organizations have reviewed the many studies that have been conducted on EMFs. It is acknowledged that some research findings are both controversial and contradictory. However, a mechanism or explanation of possible health effects has not been established. Although a web search can identify individual studies, independent national and international bodies have conducted reviews of the entire body of research, which are consistent with Health Canada's and the FPTRPC's positions. Hydro One Networks Inc. relies on the recommendations of national and international bodies and not the work or claims of individuals.

Appendix F: Electric and Magnetic Fields

Health Canada Santé Canada

Your health and safety… our priority. *Votre santé et votre sécurité… notre priorité.*

Electric and Magnetic Fields

Updated: November 2012

Original: November 2001

IT'S YOUR HEALTH

FOR INDUSTRY AND PROFESSIONALS

- The International Agency for Research on Cancer (IARC) Volume 80 – Non-Ionizing Radiation, Part 1: Static and Extremely Low-Frequency (ELF) Electric and Magnetic Fields at: http://monographs.iarc.fr/ENG/Monographs/vol80/volume80.pdf
- IARC Carcinogen classifications at: http://monographs.iarc.fr/ENG/Classification/index.php

RELATED RESOURCES

- Health Canada, *It's Your Health*:
  - Safety of Wi-Fi Equipment at: www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/wifi-eng.php
  - Safety of Cell Phones and Cell Phone Towers at: www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/cell-eng.php
- For safety information about food, health and consumer products, visit the Healthy Canadians website at: www.healthycanadians.gc.ca
- For more articles on health and safety issues go to the *It's Your Health* web section at: www.health.gc.ca/iyh

You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245*

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Canada

Appendix F: Electric and Magnetic Fields

Health Canada Santé Canada

Your health and safety… our priority. *Votre santé et votre sécurité… notre priorité.*

Electric and Magnetic Fields

Updated: November 2012

Original: November 2001

IT'S YOUR HEALTH

Electric and Magnetic Fields from Power Lines and Electrical Appliances

THE ISSUE

Some people are concerned that daily exposure to electric and magnetic fields (EMFs) may cause health problems.

ELECTRICITY AND ELECTRIC AND MAGNETIC FIELDS (EMFS)

Electricity delivered through power lines is important in today's society. It is used to light homes, prepare food, run computers and operate other household appliances, such as TVs and radios. In Canada, appliances that plug into a wall socket use electric power that flows back and forth at a frequency of 60 cycles per second (60 hertz). The frequency used with the distribution of electricity from power lines and electrical appliances is different than the frequencies used for Wi-Fi, cell phones, and smart meters.

Every time you use electricity and electrical appliances, you are exposed to electric and magnetic fields (EMFs) at extremely low frequencies (ELFs). The term "extremely low" is described as any frequency below 300 hertz. EMFs produced by the transmission and use of electricity belong to this category.

EMFs are invisible forces that surround electrical equipment, power cords, and wires that carry electricity, including outdoor power lines.

- *Electric Fields:* These are formed whenever a wire is plugged into an outlet, even when the appliance is not turned on. The higher the voltage, the stronger the electric field.
- *Magnetic Fields:* These are formed when electric current is flowing within a device or wire. The greater the current, the stronger the magnetic field.

EMFs can occur separately or together. For example, when you plug the power cord for a lamp into a wall socket, it creates an electric field along the cord. When you turn the lamp on, the flow of current through the cord creates a magnetic field. Meanwhile, the electric field is still present.

Canada

Appendix G

Exemption Order OHK – 11

OHK-11

THE ENVIRONMENTAL ASSESSMENT ACT, 1975

Exemption Section 30

Having received a request from Ontario Hydro that an undertaking, namely:

> The program of planning, designing, construction, operating and maintaining transmission lines, transformer stations and switching stations associated with the design of the Parkway Belt and which are listed in the attached schedule, be exempted from the application of the Act pursuant to Section 30; and

Having been advised that if the undertaking is subject to the application of the Act the following injury, damage or interference with the persons and property indicated will occur:

1. The public will be interfered with by the delay of facilities which are required to maintain an adequate power supply; and

2. Ontario Hydro will be interfered with and damaged by the undue delay and increased costs for these projects; and

Having weighed such injury, damage or interference with the betterment of the people of the whole or any part of Ontario by the protection, conservation and wise management in Ontario of the environment which would result from the undertaking being subject to the application of the Act;

I am of the opinion that it is in the public interest to order and do order, subject to the terms and conditions set out below, that the undertaking is exempt from the application of the Act for the following reasons:

1. The undertaking was well underway before the Act came into force and has reached a sufficiently advanced stage that interference with Ontario Hydro which would be caused by the application of the Act would be undue;

2. Most of the projects were studied and recommended by the Solandt Commission and approved by the Provincial Government; and

3. The Parkway Belt is the subject of separate public hearings;

This exemption is subject to the following terms and conditions:

1. That the construction and maintenance of the undertaking shall be carried out in accordance with construction and site restoration guidelines approved by the Approvals Branch of the Ministry of the Environment.

This order comes into force and has effect on and after the day upon which Section 5 of the Act is proclaimed in force.

Dated at Toronto this 14th day of October, 1976.

GEORGE A. KERR
Minister of the Environment

Approved by
O.C. No. 2887/76

Transmission Lines

Middleport TS to Milton TS

Milton TS × Trafalgar TS

Milton TS × Clairville TS

Claireville TS × Parkway TS

Parkway TS × Cherrywood TS

Trafalgar TS × T&NP R/Way × Oakville TS

Hanlan Jct. × Pleasant TS × Bramalea TS

Kleinburg TS × Clairville TS

Oakville TS × Clarkson GS/TS

Claireville TS × Richview TS

Transformer and Switching Stations

Middleport TS

Bramalea TS

Bronte TS

Oakville TS

Milton TS

Claireville TS

Trafalgar TS

Parkway TS

Cherrywood TS

Kleinburg TS

Clarkson GS/TS

Appendix H

Proponent Annual Summary Monitoring Report

Appendix H: Proponent Annual Summary Monitoring Report

General Information and Instructions

General Information:

Per **Section 5.5** of the Class EA for TF, all Class EA proponents are required to provide an Annual Summary Report (ASR) describing the Class EA projects that have been completed in a calendar year and providing feedback/comments on the effectiveness of the Class EA for TF. The ASRs will be submitted to Hydro One for consolidation into a single Annual Monitoring Report (AMR). Proponents are responsible for ensuring that ASRs are submitted to Hydro One by the end of February of each year.

Instructions:

1. Complete 'Proponent Information' form providing only **one** Contact Person for each ASR.
2. Complete 'Part A' of the form for each Class EA project in the subject calendar year (one form per project).
3. Complete the 'Part B' form (one form per ASR)..
4. Append additional attachments as needed.
5. Send an electronic copy of the ASR with relevant information in the subject heading: 'proponent name ASR year' (e.g., ABC ASR 2022') to ClassEA.AnnualMonitoringReport@HydroOne.com.
6. All forms must be accurately completed. Hydro One does not assume responsibility for missing, incomplete or inaccurate ASRs.

Appendix H: Proponent Annual Summary Monitoring Report

Proponent Information

Proponent Name (legal name of organization):				
Civic Address – Street Information (includes street number, name, type and direction, and suite number if applicable)				
Proponent Type: ☐ Corporation ☐ Federal Government ☐ Partnership ☐ Municipal Government ☐ Provincial Government ☐ Sole Proprietor ☐ Other *(describe):*				
Delivery Designator: if signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Deliver (i.e. RR#3)				
Municipality/ Unorganized Township	County/District	Province/State	Country	Postal Code

Contact Person

Name				
Address Same as Proponent Address? ☐ Yes ☐ No (if no, please provide address information below)				
Delivery Designator: if signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Deliver (i.e. RR#3)				
Municipality/ Unorganized Township	County/District	Province/State	Country	Postal Code
Telephone Number (including area code & extension)	Fax Number (including area code)		E-mail Address	

Appendix H: Proponent Annual Summary Monitoring Report

Part A: Project Overview

Project Name

Project Location

Site Address – Street Information (used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory) NOTE: Do not complete "B" if you completed "A"					Unit Identifier (identifies type of unit, such as suite & number)
Survey Address (used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)					
Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number.	Lot	Conc.	Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan.	Part	Reference Plan
Non Address Information (includes any additional information to clarify clients' physical location)					
Geo Reference					
Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing
Municipality/Unorganized Township		County/District		Postal Code	

Project Description

Brief Project Description
Class EA Start Date (date of Notice of Commencement submitted to MECP)
Were any Elevation Requests Received? ☐ Yes ☐ No If **Yes**, how were they resolved?
Class EA Completion Date (filing date with MECP)

Part B: Class EA for TF

As per **Section 5.5** of the Class EA for TF, provide the following information.

An assessment of the effectiveness of the Class EA for TF in providing an efficient planning process and in protecting the environment.

Identify any changes to the Class EA for TF that would lead to its improvement (in process or administration).

Identify any common problems experienced with the Class EA projects that may require changes to the Class EA for TF.

Appendix I

Archaeological Screening Process for Eligible Projects

The following projects are eligible for exemption from the EAA subject to completion of the Archaeological Screening Process outlined below:

Transmission Lines

a. Establishing temporary transmission lines that:
    i) have a nominal operating voltage of 115 kV and greater than 2 km; or
    ii) have a nominal operating voltage of greater than 115 kV and less than 500 kV and are greater than 2 km and less than 50 km.
b. Refurbishing transmission lines that have a nominal voltage equal to or less than 500 kV resulting in no increase in voltage.

Eligible refurbishments comprise additions, relocations, replacements, or upgrades of up to 45 poles or structures per project.

In order to proceed with the projects identified above, a proponent must complete the Archaeological Screening Process and follow the directions set out below. If the outcome of the Archaeological Screening Process is that the project will not have negative impacts on archaeological resources or have impacts that are appropriately mitigated, then the Archaeological Screening Process is considered to have been successfully completed. As such, the project is not subject to the EAA pursuant to s. 15.3(1) of the EAA and is, therefore, exempt from the EAA under s. 15.3(2) of that Act. The proponent may proceed with the project without further requirements under the EAA for the project.

The Archaeological Screening Process consists of three questions with links to various tools and criteria under the *Ontario Heritage Act*. Proponents must carry out the specified research and consultation to accurately respond to each applicable question. This includes, but is not limited to, consultation with Indigenous communities, municipal governments, and Ministry of Citizenship and Multiculturalism, and may require the assistance of a licensed archaeologist. Proponents will not be able to accurately and properly answer the questions without the knowledge and assistance of other parties.

The ministry recognizes that some proponents have an established relationship with Indigenous communities and may have regular meetings to share information about upcoming projects and initiatives. It is appropriate to use these meetings to discuss information on archaeological resources to respond to the checklists required by question 1 of the Archaeological Screening Process. A consultation record must be maintained as part of the documentation for the project.

If a proponent does not fully and properly complete the Archaeological Screening Process in accordance with the questions set out below and the checklists/instructions referred to in those questions or mischaracterizes their project or the impacts associated with the project, the project would not be exempt and, as such, the proponent could not proceed with their project until authorized to proceed under the EAA. A project is not exempt unless the Archaeological Screening Process is completed as required, project documentation maintained and all mitigation measures that are identified through the screening process are implemented. Projects that are not exempt may follow the Class EA Screening Process (if eligible) or the Full Class EA Process.

An exemption from the EAA for a project further to the Archaeological Screening Process is not an exemption from any permits and approvals required under other legislation.

All other applicable permits and approvals continue to be required for the project.

1. Does the project area include known or potential archaeological resources?

- Proponents must complete the Criteria for Evaluating Archaeological Potential Checklist (form 021-0478E) and/or the Criteria for Evaluating Marine Archaeological Potential Checklist (form 021-0503E) if your project is located in or by the water. The marine licensing program is different from the land-based system. The checklists can be accessed at: https://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/?OpenDatabase&ENV=WWE
- Instructions:
    - Fill out the Criteria for Evaluating Archaeological Potential Checklist beginning at question 2.
    - If your project is located in or by the water, fill out the Criteria for Evaluating Marine Archaeological Potential Checklist beginning at question 2.
    - To answer this question and complete the associated checklists, proponents need to contact:
        - The Ministry Citizenship and Multiculturalism at archaeology@ontario.ca
        - Appropriate Indigenous communities *
        - Local municipal staff
        - Research known burial sites or cemeteries

* You can contact the Ministry of the Environment, Conservation and Parks for guidance on which Indigenous communities should be contacted.

- Responses:
    - If the checklist(s) identifies that there are known archaeological sites on or within 300 metres of the project area, or that the project area has potential for archaeological resources, then an archaeological assessment shall be undertaken by an archaeologist licensed under the *Ontario Heritage Act*. Please proceed to question two.
    - If the checklist identifies that the project area does not include known or potential archaeological resources, the *Environmental Assessment Act* does not apply to the project pursuant to s. 15.3(1) of the EAA, provided that the notification/documentation process is followed, as set out below. Such a project is exempt from the *Environmental Assessment Act* pursuant to ss. 15.3 (2) of the EAA.
- Notification/Documentation:
    - The screening checklists must be filed as project documentation and made available upon request of the Ministry of the Environment, Conservation and Parks and/or any interested parties.
    - Proponents should also consider posting the screening checklists and/or relevant supporting documentation on the project's website.

2. Based on the archaeological assessment(s), will the proposed project have negative impacts (effects) to archaeological resources?

- Instructions:
    - To respond to this question, archaeological assessment(s) must be undertaken by a licensed archaeologist. There are various stages of archaeological assessments, which your licensed archaeologist will be able to advise you on. For more information on archaeological assessment and their requirements, please refer to www.ontario.ca/archaeology.
    - Indigenous communities should be engaged throughout the archaeological assessment process and any traditional knowledge that is shared should be considered and/or incorporated, as appropriate, into the assessment of potential impacts associated with the project.
        - Proponents should reference the following bulletin which is intended to help consultant archaeologists engage Indigenous communities in archaeology as effectively as possible. http://www.mtc.gov.on.ca/en/publications/AbEngageBulletin.pdf
    - Archaeological concerns have not been addressed until a report(s) has been entered into the Ontario Public Register of Archaeological Reports where those reports recommend that:
        - the archaeological assessment of the project area is complete and
        - all archaeological sites identified by the assessment are either of no further cultural heritage value or interest (as per Section 48(3) of the *Ontario Heritage Act*) or that mitigation of impacts has been accomplished through excavation or an avoidance and protection strategy.
    - Proponents cannot proceed with any ground disturbing activities before receiving a letter from Ministry of Citizenship and Multiculturalism indicating that the above criteria have been met.
- Responses:
    - Based on the archaeological assessment(s), if it has been determined that the proposed project may have negative impacts to archaeological resources, proceed to question 3.
    - Based on the archaeological assessment(s), if it has been determined that the project will not have negative impacts to archaeological resources, the *Environmental Assessment Act* does not apply to the project pursuant to s. 15.3(1) of the EAA, provided that the notification/documentation requirements are met, as set out below. Such a project is exempt from the *Environmental Assessment Act* pursuant to ss. 15.3 (2) of the EAA.
- Notification/Documentation:
    - The archaeological assessment must be submitted to the Ministry of Citizenship and Multiculturalism. That ministry may review the report to ensure that the licensed archaeologist met the terms and conditions of their licence, including requirements for fieldwork and reporting, and to ensure that concerns for any archaeological sites found were properly addressed.
    - A Notice of Project Screening must be provided to the ministry's regional email account, provided in **Section 3.3.2** documenting that the proponent has followed the Archaeological Screening Process.

- The archaeological assessment(s) must be filed with other project documentation.
- Proponents should also consider posting the Notice of Project Screening and relevant supporting documentation on the proponent's website.

3. Based on the archaeological assessment(s), will any negative impacts (effects) be appropriately mitigated?

- Instructions:
  - To respond to this question, archaeological assessment(s) must be undertaken by a licensed archaeologist. There are various stages of archaeological assessments, which your licensed archeologist will be able to advise you on. For more information on archaeological assessment and their requirements, please refer to www.ontario.ca/archaeology.
  - Indigenous communities should be engaged throughout the archaeological assessment process and any traditional knowledge that is shared should be considered and/or incorporated, as appropriate, into the assessment of potential impacts associated with the project.
    - Proponents should reference the following bulletin which is intended to help consultant archaeologists engage Indigenous communities in archaeology as effectively as possible. http://www.mtc.gov.on.ca/en/publications/AbEngageBulletin.pdf
  - Archaeological concerns have not been addressed until a report(s) has been entered into the Ontario Public Register of Archaeological Reports where those reports recommend that:
    - the archaeological assessment of the project area is complete and
    - all archaeological sites identified by the assessment are either of no further cultural heritage value or interest (as per Section 48(3) of the *Ontario Heritage Act*) or that mitigation of impacts has been accomplished through excavation or an avoidance and protection strategy.
  - Proponents cannot proceed with any ground disturbing activities before receiving a letter from Ministry of Citizenship and Multiculturalism indicating that the above criteria have been met.
- Responses:
  - Based on the archaeological assessment(s), if it has been determined that the proposed ***project will have negative impacts on archaeological resources*** that cannot be appropriately mitigated, the project remains subject to and ***is not exempt*** from the *Environmental Assessment Act*.
  - Based on the archaeological assessment(s), if it has been determined that ***the impacts to archaeological resources can be appropriately mitigated***, the *Environmental Assessment Act* does not apply to the project pursuant to s. 15.3(1) of the EAA, provided that the notification/documentation requirements are met, as set out below, and the proponent implements all necessary mitigation measures that were identified in the archaeological assessments. Such a project is exempt from the *Environmental Assessment Act* pursuant to s. 15.3(2) of the EAA.
- Notification/Documentation:

- The archaeological assessment must be submitted to the Ministry of Citizenship and Multiculturalism. That ministry may review the report to ensure that the licensed archaeologist met the terms and conditions of their licence, including requirements for fieldwork and reporting, and to ensure that concerns for any archaeological sites found were properly addressed.
- A Notice of Project Screening must be provided to the ministry's regional email account, provided in **Section 3.3.2**, documenting that the proponent has followed the Archaeological Screening Process.
- The archaeological assessment(s) must be filed with other project documentation.
- Proponents should also consider posting the Notice of Project Screening and relevant supporting documentation on the project website.

Projects subject to the Archaeological Screening Process that are not exempt may follow the Class EA Screening Process or the Full Class EA Process. If electing to proceed with the Class EA Screening Process, the proponent must demonstrate that the archaeological resource effects are not considered significant as per criterion p) of the Class EA Screening Process.