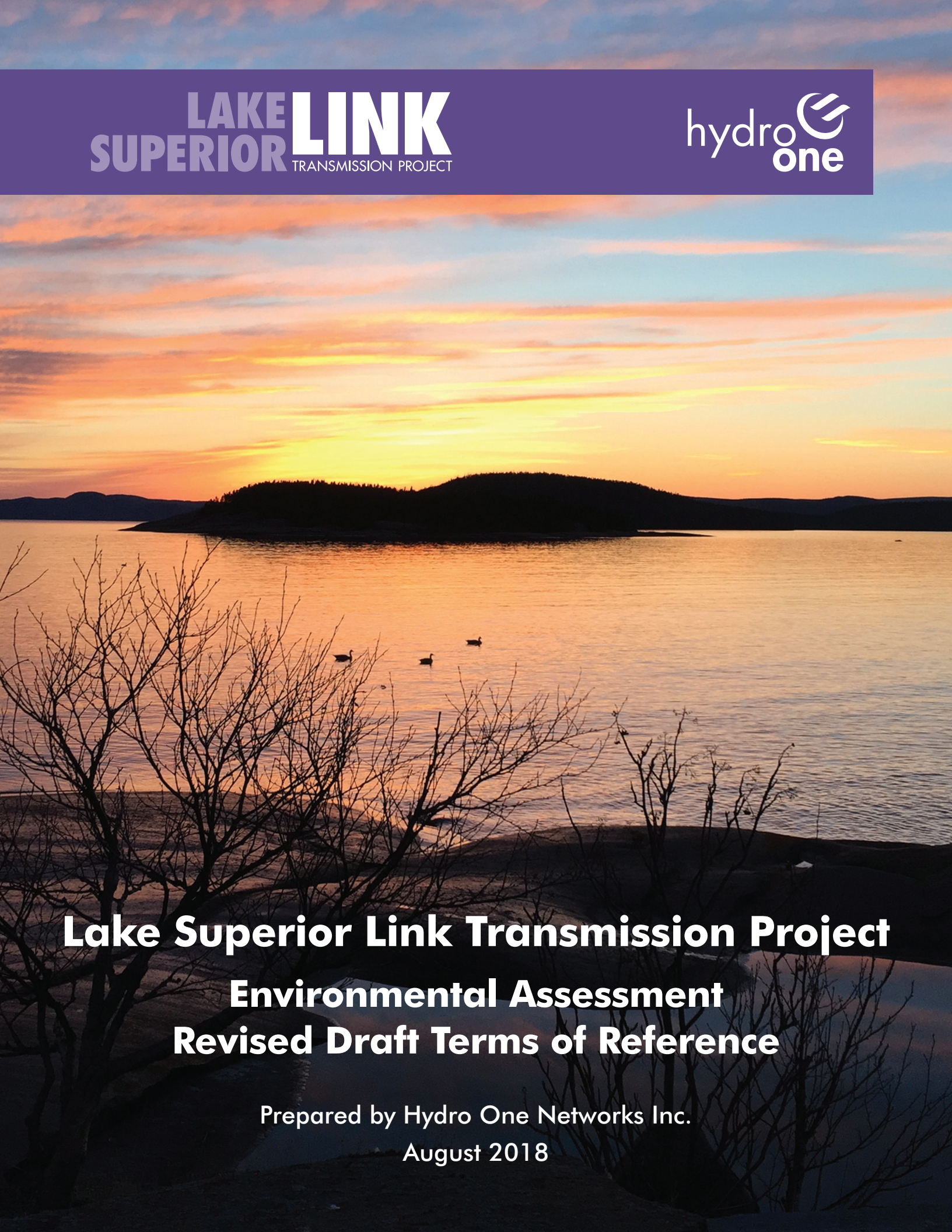
LAKE SUPERIOR LINK TRANSMISSION PROJECT

hydro one



Lake Superior Link Transmission Project

Environmental Assessment
Revised Draft Terms of Reference

Prepared by Hydro One Networks Inc.

August 2018

Lake Superior Link Transmission Project

Individual Environmental Assessment

Revised Draft Terms of Reference

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Executive Summary

Hydro One Networks Inc. (Hydro One) is the proponent of the Lake Superior Link **P**roject which consists of a new, approximately 400 kilometre double-circuit 230 kilovolt (kV) transmission line that generally parallels an existing double-circuit 230 kV transmission line corridor (the existing East-West Tie) connecting the Wawa Transformer Station (TS) to the Lakehead TS near Thunder Bay (with a connection at the Marathon TS), which is referred to as the Reference Route. The Lake Superior Link Project is required to ensure an adequate, safe, reliable and affordable supply of power to enable future growth and development in Northwestern Ontario.

The purpose of the Terms of Reference (ToR) is to provide the overall study framework for the planning and decision making process that will be followed during the Environmental Assessment (EA). The public, Indigenous communities, government agencies and other interested individuals are provided with opportunities to comment. Should the ToR be approved by the Minister of the Environment, Conservation and Parks, it will be used by Hydro One to guide the completion of the EA to ensure that it fulfills the requirements of the EA Act and any other applicable requirements. The results of the EA process will then be documented in an EA Report to be submitted to the MECP for review and approval.

There are two key documentation requirements for approval to proceed with an undertaking under subsection (1) of the EA Act:

- the development, submission, review and approval of the ToR; and,
- the preparation, submission, review and approval of the EA document in accordance with the framework set out in the MECP approved ToR.

The assessment of natural, socio-economic, cultural/built and technical environment is integral to the EA process. These natural features include physical environment, water resources, environmentally significant areas, wildlife and habitat, vegetation, forests and wetlands, aquatic ecosystems, species at risk, and acoustics. The socio-economic and cultural/built assessments will include cultural heritage, regional planning, commercial and industrial activities, demographics and community profile, traditional and Indigenous land use, human health, visual quality, archaeology, infrastructure and services, and property value. Technical considerations will include safety, constructability, budget, location, access and interactions with other infrastructure.

Effective consultation for both the ToR and EA is a vital part of the Project lifecycle. Consultation and engagement with various stakeholders and Indigenous communities is expected to be on-going throughout the EA process and into the project implementation phase. Interested parties can raise concerns about the Project during the ToR and EA process so that issues can be addressed. Consultation can result in mitigation of effects to individuals and communities, fewer conflicts and delays and helps to improve transparency around the ToR, EA and Project planning process. Interactions with stakeholders will be compiled and consultation commitments will be recorded in the Record of Consultation. There are a wide range of Project interests and the consultation portion of the EA allows groups to participate in meaningful ways.

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Acronyms

AACI	Accredited Appraisal Institute of Canada
ACSR	Aluminum Conduit Steel Reinforced
ANSI	Areas of Natural and Scientific Interest
BMPs	Best Management Practice(s)
CEAA	Canadian Environmental Assessment Agency
CEAA 2012	*Canadian Environmental Assessment Act 2012*
CHAR	Cultural Heritage Assessment Report
CHER	Cultural Heritage Evaluation Report
CIC	Community Information Centre
CLI	Canada Land Inventory
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EAPB	Environmental Assessment and Permissions Branch
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
EMF	Electric and Magnetic Fields
ESA	Environmentally Significant Areas
GIS	Geographic Information System
HEPCO	Hydro-Electric Power Commission of Ontario
HIA	Heritage Impact Assessments
IEA	Individual Environmental Assessment
IESO	Independent Electricity System Operator
ISC	Indigenous Services Canada
IPSP	Integrated Power System Plan
Km	Kilometre
kV	Kilovolt
LACP	Land Acquisition Compensation Principles
LIO	Land Information Ontario
LTEP	Long-Term Energy Plan
MAH	Ministry of Housing
MDS	Minimum Distance Separation
MMA	Ministry of Municipal Affairs
MMAH	Ministry of Municipal Affairs and Housing
MENDM	Ministry of Energy, Northern Development and Mines
MNRF	Ministry of Natural Resources and Forestry
MECP	Ministry of the Environment, Conservation and Parks
MOU	Memorandum of Understanding
MTO	Ministry of Transportation
ONERC	North American Electric Reliability Corporation
NHIC	Natural Heritage Information Centre
OBBA	Ontario Breeding Bird Atlas
OEB	Ontario Energy Board
OGCC	Ontario Grid Control Centre

OHA	*Ontario Heritage Act*
OLID	Ontario's Land Information Directory
OM&A	Operation, Maintenance and Administration
OPA	Ontario Power Authority
OPGW	Optical Ground Wire
PNP	Pukaskwa National Park
PSA	Project Study Area
PSW	Provincially Significant Wetlands
ROM	Royal Ontario Museum
ROW	Right-of-way
SAR	Species at Risk
SARA	*Species at Risk Act*
SARO	Species at Risk in Ontario
ToR	Terms of Reference
TRCA	Toronto and Region Conservation Authority
TS	Transformer Station

1. Introduction

Administered by the Ontario Ministry of Environment, Conservation and Parks (MECP), the Terms of Reference (ToR) is a document that establishes the framework for the Environmental Assessment (EA) process. This document is submitted by the proponent to the Minister of the Environment, Conservation and Parks for approval. The ToR serves to assist in planning and informing the decision-making process during the EA report. Alongside the ToR document, material to be submitted includes the Record of Consultation and other supporting documentation. The Record of Consultation is a written record that outlines the consultation, feedback, comments, meetings and concerns of government agencies, Indigenous (First Nation and Métis) communities, public, and other stakeholders during the development of the ToR.

Projected growth in industrial activities in the northwest of Ontario is expected to require additional electricity resources. Based on this projected growth, the Independent Electricity System Operator (IESO) has forecast a need for new supply in Northwestern Ontario. The IESO determined that expanded transmission capacity of the existing East-West Tie 230kV line, rather than additional regional generation, was the preferred alternative to ensure the long-term reliability of the electricity supply in Northwestern Ontario (OPA 2011). In addition, the IESO has identified the expansion of the East-West Tie as a priority to meet Ontario's electrical transmission needs. This recommendation is contained in a series of Ontario Long-Term Energy Plan (LTEP) documents (OPA/IESO 2010, 2013, 2017a), that outline specific energy projects and other initiatives. Criteria to determine the priority status of the Project was based on technical, economic and other considerations. The need for the project was recently confirmed in the *Updated Assessment of the Need for the East-West Tie Expansion* (IESO 2017b), with a specified a targeted in-service date of the end of 2020 for the new line.

The Lake Superior Link transmission project is a new approximately 400 km, double-circuit 230 kilovolt transmission line between Lakehead Transformer Station (TS) near Thunder Bay and Wawa TS near Wawa. As shown on Figure 1, the reference route is generally adjacent to Hydro One's existing East-West Tie transmission corridor with the exception of a new section of corridor creating a bypass near Dorion and a section through Pukaskwa National Park where existing infrastructure would be modified. Alternative reference route sections have been identified around Pukaskwa National Park and, based on comments on the initial draft Terms of Reference, along the existing transmission corridor through the Township of Dorion. Based on the length, voltage and scale of the Project, O. Reg. 116/01 stipulates that an Individual EA be completed and has triggered the requirement for approval of an EA under the Ontario *Environmental Assessment Act, 1990 (EA Act)*.

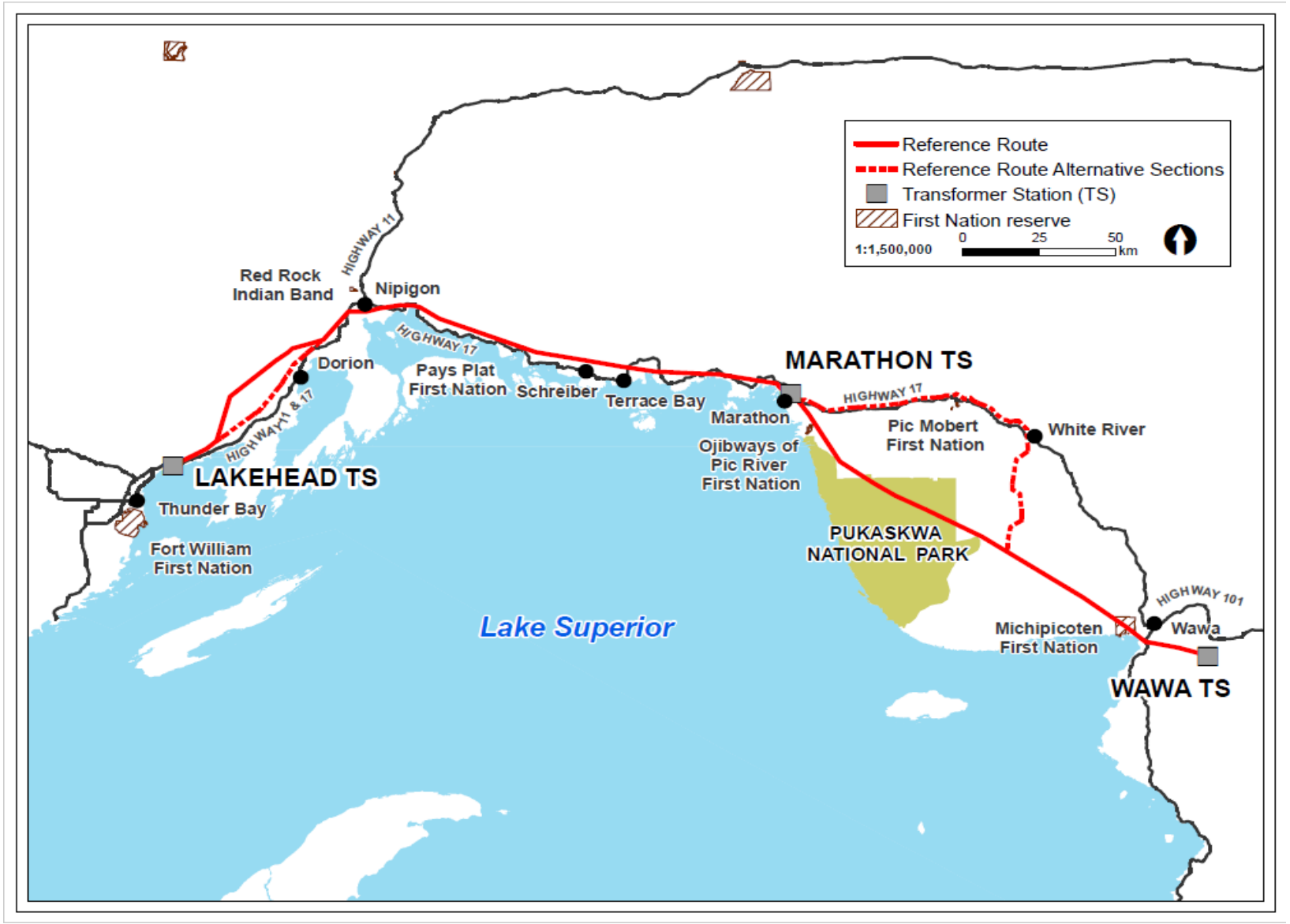

Figure 1 – Proposed Lake Superior Link transmission line reference route and reference route alternative sections

In preparing this ToR, Hydro One has initiated the process for the Lake Superior Link Project Individual EA for consideration and approval by the Minister of Environment, Conservation and Parks. Hydro One will prepare the EA in accordance with the framework laid out in the ToR document, the *Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario* (MECP 2014), and other applicable legislative requirements.

1.1 Background on the Electricity Sector in Ontario

This section summarizes the background of the electricity sector planning in Ontario and its relation to the current Project.

Over the past two decades the electricity sector in Ontario has changed significantly due to a number of key pieces of legislation. In October 1998, the Ontario Legislature enacted the *Energy Competition Act*, *1998,* authorizing the restructuring of Ontario Hydro with the aim of introducing competition in the wholesale and retail electricity markets in Ontario. Of note, the *Energy Competition Act, 1998* changed the landscape of the electricity market in Ontario and introduced market deregulation. On April 1, 1999, in accordance with the *Energy Competition Act, 1998,* Ontario Hydro was restructured principally into three separate entities:

- Ontario Power Generation Inc. (OPG) with the mandate to generate electricity for Ontarians. OPG generates almost half of the electricity that Ontario homes, schools, hospitals and businesses rely on each day;
- Ontario Hydro Services Company Inc., later renamed Hydro One Inc. Hydro One is Canada's largest electricity transmission and distribution service provider which transmits and distributes electricity across Ontario, home to 38 per cent of Canada's population; and,
- the Independent Electricity Market Operator, later renamed Independent Electricity System Operator (IESO) which operates the power system in real time, oversees Ontario's electricity market, promotes conservation and plans for Ontario's future energy needs.

Through the Electricity Restructuring Act, 2004, the Ontario government also established the Ontario Power Authority (OPA) This legislation established the OPA as the province's long-term energy planner. The OPA was given direction to develop long term electricity plans to provide sustainable electricity to all Ontarians.

In 2007, the OPA prepared the Integrated Power System Plan (IPSP), a 20-year energy plan and, together with subsequent public policy initiatives such as the *Green Energy and Green Economy Act, 2009*, transformed how Ontario plans its electricity usage and generation. This plan was triggered due to a looming supply-demand imbalance and serves to inform regulatory decisions on Ontario's electrical network. Implementation of the IPSP was planned through developing transmission solutions, conservation measures, and electricity generation procurement. This regulatory body has the ability to

determine the supply mix, that is, the combination of amount and types of generation, electricity conservation, transmission, distribution, and demand management which make up the electricity usage of Ontarians. The IPSP's goal was of ensuring that whether Ontarians want to turn on a light at home or initiate a large scale resource extraction operation, the electrical network would have been properly planned to have the necessary capacity. On January 1, 2015 the OPA merged with the IESO to create a new organization that combines the OPA and IESO mandates. The IESO is now directly responsible for establishing the need for new transmission facilities. As part of the ongoing updates to the IPSP, the IESO publishes updated LTEPs to provide direction to energy stakeholders and regulators.

The Ontario Energy Board (OEB) is Ontario's independent energy regulator. This board sets the rules for energy companies in Ontario such as electricity and gas providers, establishes the rates consumers pay for energy, licenses the aforementioned providers of energy, monitors the electricity market and companies and develops new energy policies in consultation with government. Through these responsibilities, the Lake Superior Link Project would be regulated by the OEB.

The OEB issued a policy document titled Framework for Transmission Project Development Plans on August 26, 2010, which sets out the policy of the OEB for a framework for new transmission investment in Ontario (OEB 2010). This framework assists transmitters to move forward on development work in a timely manner, provide competition and resources for new entrants to transmission, and further support economic efficiency for the benefit of ratepayers. This framework is leveraged in the planning of the Project.

1.2 Background on the East-West Tie Expansion

The existing East-West Tie line, built in the 1960s, is a 230kV double-circuit line connecting Wawa TS to Marathon TS, and then from Marathon TS to Lakehead TS. The width of the corridor varies but is generally approximately 47m. This line has reliably supplied the Northwest of Ontario with electricity for more than 50 years. The East-West Tie Expansion Project is required to ensure an adequate, safe, reliable and affordable supply of power to enable future growth and development in Northwestern Ontario and to build upon the successes of the past 50 years.

As discussed in Section 1.1, the OPA prepared the IPSP in 2007 to plan how electricity is created and used in Ontario. This energy plan assessed the province transmission system and subsequent LTEPS published by the IESO/OPA have served to update the planning document in light of recent development, changing demographics and updated technologies. The 2010 LTEP was published by the Ministry of Energy (now known as Ministry of Energy, Northern Development and Mines) as an update to the 2007 IPSP and provided recommendations on transmission planning. The report outlined five transmission projects and recommended that work proceed on them immediately. The East-West Tie Expansion project is one of the five identified transmission projects. The LTEP was updated again in 2017 and the East West Tie project was cited as a major project under development.

In 2011, the then Minister of Energy (Now Minister of Energy, Northern Development and Mines) wrote to the OEB to begin the process to select a designated electricity transmitter for the Project. Shortly afterward, the OEB then requested a report from the OPA to determine the need for the Project. In response to the OEB request, the OPA penned the "Long-Term Electricity Outlook for the Northwest and Context for the East-West Tie Expansion" (OPA 2011) which outlined the background and rationale for the Project. The document provides insight and recommendations for Project planning, in-service date requirements, scope of the Project and insight on potential electrical supply scenarios in Northwestern Ontario. These letters can be found in the Record of Consultation and links to the reports can be found in Section 10.

The OPA analysis identified two potential alternatives – increased local generation in the North or added capacity for transmission of supply via an expanded East-West Tie. During the regulatory and technical planning phase of the Project, the IESO provided guidelines for the capabilities of the new line. Technical specifications for the new line indicate two-way (east and west) movement of electrical capacity in the order of 650MW. On August 18, 2011, the feasibility study "An Assessment of the Westward Transfer Capability of Various Options for Reinforcing the East-West Tie" assessed various alternatives to provide the required westward electrical capacity. Based on the OPA selection criteria of cost, flexibility, and reliability, and the IESO feasibility study, the expansion of a double-circuit 230kV East West Tie was chosen as the preferred alternative for the Project (OPA 2011, IESO 2011).

Based on the aforementioned IESO and OPA reports, on August 22, 2011, the OEB invited "All Licensed Electricity Transmitters, All Applicants and Potential Applicants for an Electricity Transmitter License, All Interested Parties" to file interest in developing the Project. The OEB provided the *Information Package on the East-West Tie Line* to the interested parties to inform technical requirements and a Project description (OEB 2011).

In 2012 the OEB initiated a competitive process to designate an electricity transmitter (successful bidder of the competitive project development process to which award costs to) to develop a 230kV high voltage transmission line between Thunder Bay and Wawa. This request for proposal process drew on all the previous information packages, needs assessments and long-term energy planning documents to inform design and scope of the Project.

On October 8, 2013, the OPA released a report titled *Updated Assessment of the Rationale for the East-West Tie Expansion* to further assess the need for the Project. The Ministry of Energy's 2013 LTEP notes that the project is a priority project and that engineering and engagement should commence on the East-West Tie Expansion project to meet anticipated electricity supply needs in Ontario's northwest (IESO 2013).

In August 2013, the OEB, through a designation process, awarded Upper Canada Transmission Inc. (NextBridge Infrastructure L.P. or NextBridge, "the designated electricity transmitter") the development phase of the East-West Tie project. Hydro One, as the owner of the existing stations, is responsible for connecting the new East-West Tie transmission lines by upgrading the associated transmission station infrastructure. The designation for the development phase is the initial engineering, engagement, design

and environmental portion of the Project. The construction, maintenance, operation and decommissioning of the Project remains to be awarded through the 'Leave to Construct' process.

Further to the 2013 needs assessment, The *Updated Assessment of the Need for the East-West Tie Expansion* (IESO 2017b) states that a new transmission line "…continues to be the recommended alternative to maintaining a reliable and cost-effective supply of electricity in Northwestern Ontario for the long term."

On July 31, 2017, the designated electricity transmitter applied to OEB for Leave to Construct for the line portions of the project. On August 4, 2017, the Minister of Energy addressed a letter to the President and CEO of the IESO expressing concerns of the scale of cost increases of the designated electricity transmitter's budget estimates of $777.2 million, up from the original estimate of $419 million. In response, the Minister of Energy directed the IESO to review all options to ensure that ratepayers are protected and to update the need assessment for the project based on the latest costs and system needs. Previously, in the 2017 LTEP the government had stated the following regarding the cost of the East-West Tie transmission project:

> "As the project has moved through development, estimates on its total cost have increased. This is a concern, as Ontario is focused on making the electricity system more cost-effective. The government will review all options to protect ratepayers as the project continues to be developed."

Appendix 2 contains a compilation of energy regulator documents and correspondence related to the development of the Project and assessment of need. In response to the concerns regarding the cost of the project, as well as its environmental impacts, Hydro One is proposing its expansion of the East-West Tie corridor project, called "Lake Superior Link". A brief summary of the proposed expansion of the East-West Tie corridor project chronology to date is presented below:

- In 2007, the IPSP was developed by the OPA to outline plan how electricity is created and used in Ontario;
- In 2012 the OEB initiated a competitive process to designate an electricity transmitter to develop a 230kV high voltage transmission line between Thunder Bay and Wawa;
- In 2013 a designated electricity transmitter was chosen by the OEB for the development phase of the project;
- In May 2014, the designated electricity transmitter's Amended Individual EA Terms of Reference was issued;
- In 2016, through an Order-in-Council, the East-West Tie was declared a priority project;
- Summer 2017, the designated electricity transmitter's Leave to Construct updated construction cost projections substantially exceeded the costs submitted in the designation proceeding;
- In August 2017 the Minister of Energy asked the IESO to explore options and update the Needs Assessment of the project. The IESO reconfirmed the project as the preferred alternative to meet the needs of long-term electricity supply for the northwest on December 1, 2017;

- On February 15, 2018 Hydro One filed a Section 92 Leave to Construct application with the OEB for a new transmission facility - "Lake Superior Link". Relative to the proposed alternative, the Lake Superior Link reference route provides savings in excess of approximately $140 million of capital costs and over $3 million in operations, maintenance and administration costs.
- The updated need assessment June 29, 2018 concludes that the new transmission line is still needed required.

1.3 Proponent

Hydro One is the proponent for Lake Superior Link and is responsible for the development of the ToR and subsequent EA document. Hydro One is a wholly-owned subsidiary of Hydro One Inc., and is Ontario's largest electricity transmission and distribution provider with more than 1.3 million valued customers, $25 billion in assets and 2017 annual revenues of nearly $6 billion. With a team of over 7,400 skilled and dedicated regular and non-regular employees Hydro One proudly and safely serves suburban, rural and remote communities across Ontario through our 30,000 circuit km of high-voltage transmission and 123,000 circuit km of primary distribution networks. Hydro One is committed to the communities we serve, and has been rated as the top utility in Canada for its corporate citizenship, sustainability, and diversity initiatives. Hydro One is one of only five utility companies in Canada to achieve the Sustainable Energy Company designation from the Canadian Electricity Association. Hydro One also provides advanced broadband telecommunications services on a wholesale basis utilizing an extensive fibre optic network. The common shares of Hydro One Limited, the parent corporation of Hydro One Inc., are listed on the Toronto Stock Exchange (TSX: H).

1.4 Purpose of the Study and Undertaking

The purpose of the EA study is to assess the natural, socio-economic, cultural/built, and technical environments within the Project area as the Project may have potential effects on these environmental conditions. The EA study has been triggered under the *Environmental Assessment Act* to assess the baseline state of the environment, potential effects and mitigation measures to eliminate or minimize these potential effects. As one of the first steps of the EA process, the ToR provides the framework for the EA and discusses the major aspects of the EA and how it will be approached.

The purpose of the undertaking is to ensure an adequate, safe, reliable and affordable supply of power to enable future growth and supply in Northwestern Ontario. The need for the Project and its priority status has been clearly identified in a number of regulatory documents outlined throughout Section 1. Successfully implementing the Project would increase capacity of the electrical supply to Northwestern Ontario and satisfy the priority project status of the transmission line.

1.5 Outline of the Terms of Reference

This ToR sets out the detailed requirements for the preparation of the EA document for the Lake Superior Link Project in accordance with the requirements of the *EA Act*. If approved by the MECP, the EA must be prepared in accordance with the detailed requirements set out in the approved ToR. In accordance with the *MECP Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario*, (MECP 2014) the ToR contains the following information:

- Identification of the proponent;
- Indication of how the environmental assessment will be prepared;
- Purpose of the study or undertaking;
- Description of and rationale for the undertaking;
- Description of and rationale for alternatives;
- Description of the existing environment and potential effects of the undertaking;
- Assessment and evaluation;
- Commitments and monitoring;
- Consultation plan for the environmental assessment;
- Flexibility to accommodate new circumstances; and,
- Other approvals required.

The ToR document is organized into the following sections in order to satisfy the requirements under Section 6(2)(c) and 6.1(3) of the EA Act:

- Regulatory Framework for the Project (Section 2)
- Indication of how the EA will be Prepared (Section 3)
- Description of the Undertaking (Section 4)
- Existing Environmental Conditions in the Study Area (Section 5)
- Identification and Evaluation of Alternative Methods (Section 6)
- Potential Environmental Effects Assessment and Mitigation Measures (Section 7)
- Commitments and Monitoring (Section 8)
- Consultation (Section 9)

2. Regulatory Framework for the Project

The following sections outline the framework for regulatory approvals in Ontario for electricity transmission projects and how they apply to the Project. It is preliminary list of federal and provincial approvals and permits that may be necessary for the Project. This list is subject to change as the Project is further developed and refined. All permits and approvals that are necessary for the Project to proceed will be outlined in the EA document. It may not be practicable to complete all required surveys in relation to other approvals prior to submission of the EA document, but Hydro One will commit to continue and complete all information collection following the completion of the EA.

2.1 Provincial Regulatory Framework

The following sections identify the pieces of provincial legislation and regulations that may be applicable to the Project.

2.1.1 Ontario's Environmental Assessment Act

In Ontario, new and expanded transmission lines are subject to the *EA Act*. Ontario's Electricity Projects Regulation (O. Reg. 116/01), formed under the *EA Act*, outlines the EA requirements for electricity projects in Ontario on the basis of the project type (e.g., transmission lines, transformer stations, power generation plants, etc.) and, in the case of transmission lines, the voltage of the line and distance traversed. The voltage of the line and length of the Lake Superior Link Project (a Category C undertaking under O. Reg. 116/01) requires that an Individual EA application be prepared and submitted under Section 5 of the *EA Act* to the Minister of the Environment, Conservation and Parks for approval, which includes preparation, submission and approval of a ToR and an EA Report.

The Guide to Environmental Assessment Requirements for Electricity Projects (MECP 2011) differentiates between Class EAs and Individual Environmental Assessments (IEA). Class EAs are EAs approved under the *EA* Act to pre-approve certain classes of projects that have predictable and mitigable environmental effects. IEA is a term used to differentiate an EA performed under subsection 5(1) of the EAA from Class EA projects and generally have more uncertainty or potential for greater environmental impacts.

Approval under the EA Act comes first and approval under one piece of legislation does not guarantee approval under another. To reduce timelines, permit or approval applications may be submitted concurrently with the EA; however, these will not be approved until the EA process is complete. Hydro One will consult with other government agencies to coordinate documentation that could meet both the EA and other applicable approvals as needed.

Figure 2 outlines the EA process and the first step is the development of a ToR. The ToR provides a framework for the planning and decision making process that will be followed during the EA is outlined in the ToR document. The public, Indigenous communities, stakeholders and government agencies are provided with opportunities to comment throughout the process.

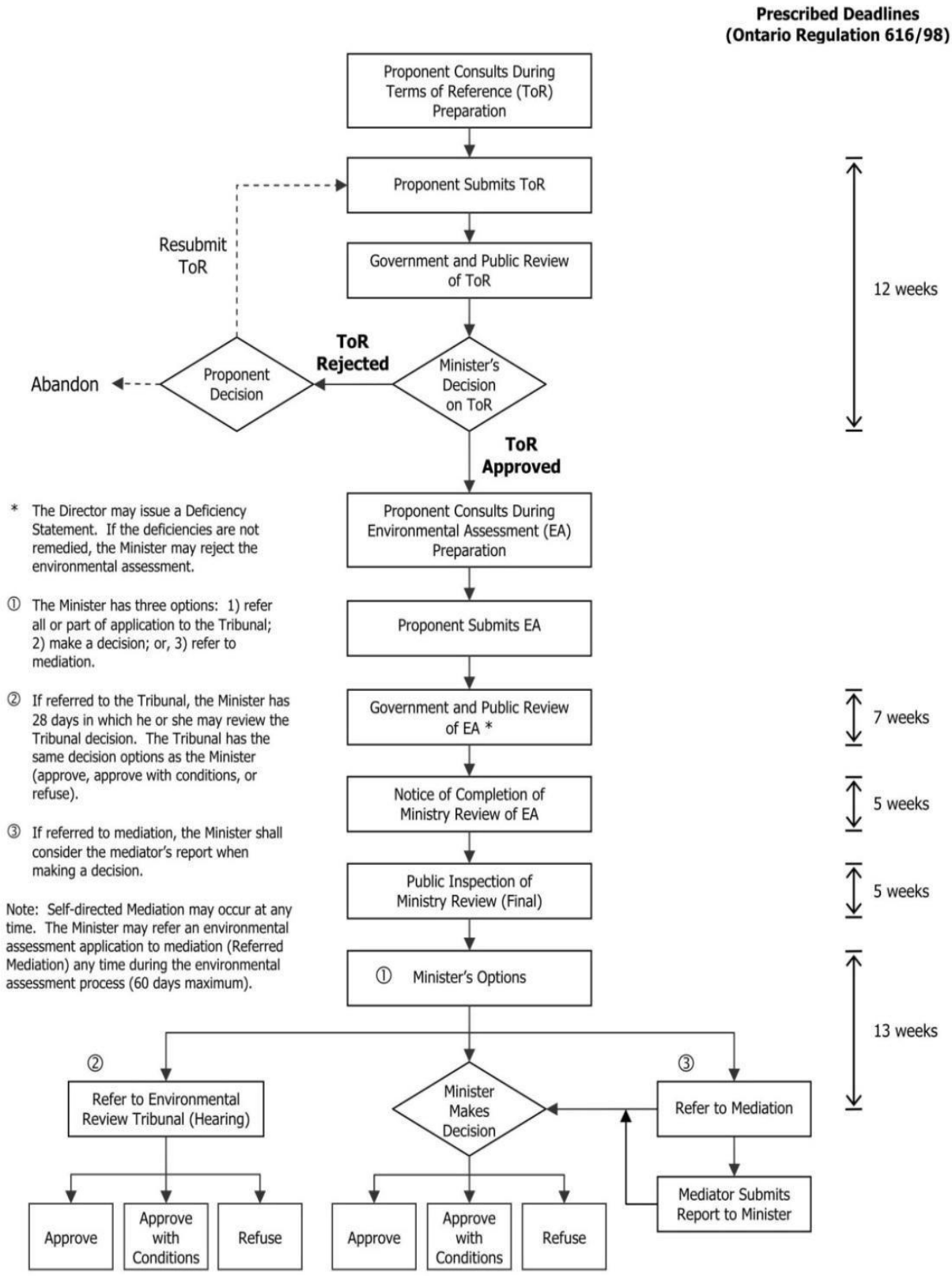

Figure 2 – Environmental assessment timeline. Source: MECP 2016

The ToR will be submitted for reviewed and approved by the Minister of the Environment, Conservation and Parks. If approved, the ToR will then be used by Hydro One to direct the EA process to fulfill the requirements of the *EA Act* and other regulatory requirements. The resulting EA process will be then documented in an EA Report to be submitted to the MECP for review and approval.

There are two key documentation requirements for approval to proceed with an undertaking under subsection (1) of the *EA Act*:

- the development, submission, review and approval of the ToR; and,
- the preparation, submission, review and approval of the EA document in accordance with the framework set out in the MECP approved ToR.

2.1.2 Other Applicable Provincial EA Processes

Portions of the Project within Crown lands are subject to the Ministry of Natural Resources and Forestry (MNRF) EA requirements for MNRF Class EA for Resource Stewardship and Facility Development Projects and the MNRF Class EA for Provincial Parks and Conservation Reserves. Consultation with MNRF will continue throughout the EA process to facilitate disposition of Crown land for the Project and to satisfy MNRF EA requirements.

In addition, public land transactions under the jurisdiction of Infrastructure Ontario are subject to the requirements of the Ministry of Infrastructure Public Work Class EA. It is Hydro One's intention that these other EA process requirements will be met through the Individual EA process for the Project.

2.1.3 Ontario Energy Board Act

The Lake Superior Link Project requires OEB approval. The OEB regulates Ontario's natural gas and electricity industries and is responsible for ensuring construction and operation of proposed transmission facilities are in the public interest. The OEB's role is to review a transmission project's effect on consumers with respect to prices, reliability and quality of electricity service. The OEB operates as an adjudicative tribunal and carries out its functions through oral or written public hearings. There are potentially two applications with the OEB related to the Project:

- Leave to Construct - The Project is subject to "Leave to Construct" approval under Section 92 of the *OEB Act*. The OEB review of Hydro One's application for Leave to Construct approval examines technical aspects, consumer protection and also includes provisions for engagement/consultation. Hydro One submitted a section 92 Leave to Construct application to the OEB on February 15, 2018.

- Early Access to Land (subsection 98 (1.1) of the *OEB Act*). Early access allows Hydro One employees and representatives to access private properties affected by the proposed Project in order to undertake a limited number of activities (including biological and archaeological field studies, data collection, legal surveys and soil testing) while the Section 92 application is under consideration by the OEB. This early access is required to gather seasonal data for the EA and other approvals and to bring the project in-service by the required due date.

The OEB considers adequate stakeholder and Indigenous consultation as part of the process for review of the application. The OEB reviews material and makes it public for opportunity for interested parties to provide input on proceedings.

2.1.4 The Expropriation Act

Hydro One's goal is to secure voluntary property settlements with affected property owners ("Property Owners") in a timely manner, to the extent practicable, for the portion of properties to be utilized for the Project. Property Owners will be offered the choice of Hydro One acquiring either an easement or the fee simple interest (ownership of the land and any improvements to the land in perpetuity) in the lands required for the Project. Hydro One's offers will be based upon appraisal reports prepared by external, independent Accredited Appraisal Institute of Canada (AACI) appraisers retained by Hydro One.

Hydro One's primary intent is to negotiate easement rights with landowners. In some cases, it will be necessary to purchase entire properties where current uses are incompatible with a transmission corridor e.g., a permanent structure or residence under a transmission line.

These project-specific land acquisition compensation principles are founded upon Hydro One's past experience pertaining to land acquisition matters for new transmission projects. Hydro One's central consideration has been the need for Property Owners to have flexibility and choice while balancing Hydro One's desire to achieve timely acquisition of property interests and its obligation to ensure that expenditures are fair and reasonable to ratepayers.

Should voluntary property settlements meet an impasse, Chapter E.26 under the *Ontario Expropriations Act*, outlines the conditions and restrictions under which a claim for expropriation can be submitted, and the rights of residents facing the claim. The expropriation plan must be approved and registered under both the *OEB Act* and the *Expropriations Act* prior to commencement of construction of the new line. Expropriations would also need to be approved by the OEB under s.99 of the *OEB Act.*

2.1.5 Other Relevant Provincial Legislation, Permits and Policies

Based on current information, a number of permits, licences and approvals under Provincial legislation may be required. In some cases, a final determination cannot be made until the detailed design phase for the project. Table 1 lists provincial approvals which may include, but are not limited to, the following:

Table 1 – Provincial permits and approvals

Regulator	Permit/Works	Act
Ministry of Energy, Northern Development and Mines	Withdrawal of staking rights or lands from prospecting	*Mining Act*
Ministry of Environment, Conservation and Parks	Authorizations for Endangered Species (Section 17)	Endangered Species Act
Ministry of Environment, Conservation and Parks	Permits under the *Section* 53 for water taking or discharge, dewatering	*Ontario Water Resources Act*
Ministry of Environment, Conservation and Parks	Approvals under the Section 9 on airborne emissions, noise, hazardous waste and sewage/waste management.	*Environmental Protection Act*
Ministry of Environment, Conservation and Parks	Permits for application of pesticides for vegetation management during the operation phase;	*Pesticides Act*
Ministry of Labour	Compliance with industrial design/construction safety regulations, including filing notice of project before construction commences	*Public Health Act*
Ministry of Natural Resources and Forestry	Approval to undertake work on shore lands and works within a water body (Consolidated Work Permit)	*Lakes and Rivers Improvement Act*
Ministry of Natural Resources and Forestry	Approval for ownership/easement of land on which structures are built	*Public Lands Act*
Ministry of Natural Resources and Forestry	Site alteration on Crown lands or infrastructure on or over Crown lands	*Public Lands Act*
Ministry of Natural Resources and Forestry	Work permit controls, at all times of the year, for clearing within 300 m of a forest or woodland	*Forest Fires Prevention Act*
Ministry of Natural Resources and Forestry	Aggregate extraction approval within Crown lands	*Aggregate Resources Act*

Ministry of Natural Resources and Forestry	Forest Resource License to harvest timber on Crown lands	*Crown Forest Sustainability Act*
Ministry of Natural Resources and Forestry	Fish Scientific Collectors Permits and Wildlife Scientific Collection Authorizations	*Fish and Wildlife Conservation Act*
Ministry of Natural Resources and Forestry	Approvals to work within provincial parks	*Provincial Parks and Conservation Reserves Act*
Ministry of Natural Resources and Forestry	Authorization to impact wildlife	*Fish and Wildlife Conservation Act*
Ministry of Tourism, Culture and Sport	Archaeological assessment clearance	*Ontario Heritage Act*
Ministry of Tourism, Culture and Sport	Heritage and heritage landscape compliance	*Ontario Heritage Act*
Ministry of Transportation	Approval of new structures, encroachment entrances or construction that may affect existing and planned highways	*Provincial Transportation and Highway Improvement Act*

Other guidelines and policies include:

- Provincial Policy Statement [Ministry of Municipal Affairs and Ministry of Housing (MMA, MAH), 2014}; and,
- Water Management Policies and Guidelines (MECP), Policy 1 and 2; and,

Hydro One will identify all necessary approvals that may be required during project planning and construction. Where appropriate, Hydro One will initiate other permit and approval activities and applications concurrent with the EA process. It will be necessary to initiate some permit and approval activities or applications during the EA process including any required consultation activities with members of the public, municipalities, government agencies, and Indigenous communities.

It should be noted that some permits and approvals typically rely on more detailed engineering and design information than is available during the EA process. In this event, Hydro One will carry out required studies necessary to support those approvals following the completion of the EA.

Table 1 provides a preliminary list of other provincial permits and approvals that may be necessary for the Project. This list is subject to change as the Project is further developed and refined. All provincial permits and approvals that are necessary for the Project to proceed will be outlined in the EA document. It may not be practicable to complete all required surveys in relation to other approvals prior to submission of the EA document, but Hydro One will commit to continue and complete all information collection following the completion of the EA.

2.2 Federal Regulatory Framework

The following sections identify the pieces of federal legislation that may be applicable to the Project. Hydro One will consult with CEAA and will work closely with federal authorities to provide specific details about the location and extent of the project, including potentially providing a project description, to enable a determination of any permit or authorization requirements.

2.2.1 Canadian Environmental Assessment Act

An electricity project subject to the *EA Act* may also be subject to the *Canadian Environmental Assessment Act 2012* (*CEAA 2012*). CEAA 2012 includes a list of projects or activities (also known as Regulations Designating Physical Activities), which identify major projects with the greatest potential for significant adverse environmental impact and thus require a federal EA under *CEAA 2012*.

The Lake Superior Link Project is not considered a "designated project" as the Project does not meet the requirements as stipulated in the regulation designating physical activities. These designated physical activities are the following:

1 The construction, operation, decommissioning and abandonment, in a wildlife area or migratory bird sanctuary, of a new

(a) electrical transmission line;

39 The construction, operation, decommissioning and abandonment of a new electrical transmission line with a voltage of 345 kV or more that requires a total of 75 km or more of new right of way.

2.2.2 Section 67 of CEAA 2012

Although the Lake Superior Link Project is not a designated project, it is acknowledged that Section 67 approval under CEAA 2012 will apply to the Project. The Project will require federal approvals or authorizations where the transmission route crosses federal lands. Federal lands include two First Nation reserves (Michipicoten First Nation Reserve and Pays Plat First Nation) under Indigenous Services Canada (ISC) jurisdiction (formerly Indigenous and Northern Affairs Canada) and one National Park (Pukaskwa National Park) under Parks Canada jurisdiction.

Section *67 of CEAA 2012 for p*rojects carried out on federal lands details the following:

67 An authority must not carry out a project on federal lands, or exercise any power or perform any duty or function conferred on it under any Act of Parliament other than this Act that could permit a project to be carried out, in whole or in part, on federal lands, unless

(a) the authority determines that the carrying out of the project is not likely to cause significant adverse environmental effects; or
(b) the authority determines that the carrying out of the project is likely to cause significant adverse environmental effects and the Governor in Council decides that those effects are justified in the circumstances under subsection 69(3).

2012, c. 19, s. 52 "67", c. 31, s. 431(E).

Authorization for works within Pukaskwa National Park will be required from Parks Canada. Hydro One currently has a License of Occupation for its existing infrastructure within Pukaskwa National Park and this license is currently being renewed, remaining in effect until such renewal is complete. Upgrades to infrastructure within the Park to quad-circuit towers as part of the Lake Superior Link Project are allowable within the existing license agreement. The completion of a Detailed Impact Assessment will be necessary to fulfill Section 67 of the CEAA 2012 legal requirement for the section of the Reference Route which passes through Pukaskwa National Park. Environment and Climate Change Canada (ECCC) has also advised that Section 67 of CEAA 2012 would also apply should the project require ECCC to issue a SARA permit, and will also be required by Indigenous Services Canada (ISC) to support their authorization for the use of First Nation reserve lands.

2.2.3 Indian Act

As the usage of First Nation reserve land would require ISC authorization, requirements to this end may be via Project Description Report and/or through a Land Use Permit such as authorization under Section 28(2) of the *Indian Act* or equivalent. Consultation with local First Nations is ongoing throughout the lifecycle of the project and will include further determination of approvals for use of reserve land.

2.2.4 Species at Risk Act

A permit may be required from ECCC under the *Species at Risk Act* for the works occurring on the First Nation reserve lands.

2.2.5 Other Relevant Federal Legislation, Permits, and Policies

Table 2 outlines other relevant federal legislation and policies which include, but are not limited to:

Table 2 – Federal permits and approvals

Permit/Works	Regulator	Act
Migratory bird permit	Environment and Climate Change Canada	*Migratory Birds Convention Act*
Species at Risk permit	Environment and Climate Change Canada	*Species at Risk Act*
Fisheries Act authorization or request for review	Fisheries and Oceans Canada	*Fisheries Act*
Navigation Protection Program Application	Transport Canada	*Navigation Protection Act*
Aeronautics Act authorizations	Transport Canada	*Aeronautics Act*
Railway Safety Act authorizations	Transport Canada	*Railway Safety Act*
Canada Transportation Act authorizations	Transport Canada	*Canada Transportation Act*
Indian Act authorizations	Indigenous Services Canada	*Indian Act*
Canada National Parks Act authorizations	Parks Canada	*Canada National Parks Act*

Federal policies regarding species and habitat protection include:

- Policy on Wetland Conservation;
- Canadian Biodiversity Strategy;
- Convention on Biological Diversity; and
- Wildlife Policy for Canada.

3. Indication of how the EA will be Prepared

Following an extensive engagement and consultation process, the EA study will comply with requirements set out in the *EA Act*. Hydro One will submit the EA for review and approval to the Minister of Environment, Conservation and Parks. The MECP states: "A proponent should use subsections 6(2)(c) and 6.1(3) if there is a more defined planning process and more details of the proposal are already known (for example, the potential alternatives it wishes to evaluate)." Based on the previously conducted needs assessment and the prioritization of the project from regulatory bodies, a more focused approach to the EA will be utilized. A more fulsome explanation of the previously conducted needs assessment and rationale for the project can be found in Section 1.

The EA will consist of the following components:

- a description and purpose of the Project;
- a description of and statement of the rationale for the Project;
- the EA will include a description and rationale for the 'Do Nothing' alternative ;
- the EA will not include a description and rationale of alternatives as it has already been extensively studied by the OPA and IESO and the preferred alternative has already been identified. However, the EA will include a description of and statement of rationale for the alternative methods of carrying out the undertaking such as route alignment, design considerations and location refinements;
- a description of the environment that will be affected, or might reasonably be expected to be affected directly or indirectly by the Project and the alternative methods of carrying out the undertaking;
- a description of the effects that will be caused or that might reasonably be expected to be caused to the environment
- a description of the actions necessary or that may be reasonably expected to be necessary to prevent, change, remedy or mitigate any effects;
- an evaluation of the advantages and disadvantages to the environment as a result of the Project, and the alternative methods of carrying out the Project;
- description and documentation of the public, government agency, stakeholder, and Indigenous community engagement and consultation undertaken during the EA process;
- environmental monitoring plans, follow-up programs and commitments; and,
- supporting documents, maps, or any other documents as required under the *EA Act* and its regulations, such as O. Reg. 334.

An outline of the ToR and its contents can be found in Section 1.5 which will contribute to the overview of the EA process and requirements for the proposed Project. The project as a whole will be assessed using the best information available with levels of detail tailored to maximize the clarity of the process.

Under the *EA Act*, an EA can proceed under section 6.1(2) which includes an assessment of "alternatives to" the undertaking and "alternative methods of carrying out the undertaking or it can proceed in

accordance with subsections 6(2)(c) and 6.1(3) of the *EA Act* which allow focusing of the EA. The following excerpts document the Sections quoted from the *EA Act*.

Section 6.1(2) of the *EA Act*

6.1(2) Subject to subsection (3), the environmental assessment must consist of,

(a) a description of the purpose of the undertaking;
(b) a description of and a statement of the rationale for,
(i) the undertaking,
(ii) the alternative methods of carrying out the undertaking, and
(iii) the alternatives to the undertaking;
(c) a description of,
(i) the environment that will be affected or that might reasonably be expected to be affected, directly or indirectly,
(ii) the effects that will be caused or that might reasonably be expected to be caused to the environment, and
(iii) the actions necessary or that may reasonably be expected to be necessary to prevent, change, mitigate or remedy the effects upon or the effects that might reasonably be expected upon the environment, by the undertaking, the alternative methods of carrying out the undertaking and the alternatives to the undertaking;
(d) an evaluation of the advantages and disadvantages to the environment of the undertaking, the alternative methods of carrying out the undertaking and the alternatives to the undertaking; and,
(e) a description of any consultation about the undertaking by the proponent and the results of the consultation. 1996, c. 27, s. 3.

Section 6.1(3) of the EA Act

6.1(3) The approved terms of reference may provide that the environmental assessment consist of information other than that required by subsection (2). 1996, c. 27, s. 3

Section 6(2) of the *EA Act*

6(2) The proposed terms of reference must,

(a) indicate that the environmental assessment will be prepared in accordance with the requirements set out in subsection 6.1 (2);
(b) indicate that the environmental assessment will be prepared in accordance with such requirements as may be prescribed for the type of undertaking the proponent wishes to proceed with; or
(c) set out in detail the requirements for the preparation of the environmental assessment. 1996, c. 27, s. 3

A proponent will generally move forward with an EA under Section 6.1(2) and 6(2)(a) if the planning phase of the project is in the early stages or details regarding the need for the undertaking, undertaking, potential environmental effects and alternatives are not fully fleshed out. The reason for proceeding with this undertaking has been established by the IESO and is documented in Section 1. The

IESO concluded that a new transmission line is the most practical and cost-effective method of bolstering electricity capacity in Northwestern Ontario. As such, this ToR proposes that the method and purpose planning for the Project has been established and the EA be prepared in accordance with subsections 6(2)(c) and 6.1(3) of the *EA Act*. The EA will not assess 'alternatives to' and not reexamine the 'purpose of the undertaking' but will include a 'Do Nothing' alternative. Table 3 provides a comparison of Section 6 requirements and the proposed Lake Superior Link EA documentation.

Table 3 – EA and ToR requirements.

Section of EAA 6.1(2)	Described in Terms of Reference	To be Described in EA Document
(a) description of the purpose of the undertaking.	The ToR describes the purpose and alternative methods of carrying out the undertaking (Section 1).	The EA will describe the purpose of the undertaking and alternative methods of carrying out the undertaking. .
(b) description of and statement of the rationale for (i) the undertaking; and, (ii) alternative methods of carrying out the undertaking. (iii) alternatives to the undertaking	i) The ToR provides a description of and rationale for the undertaking (Section 1). ii) The EA will assess alternative methods of carrying out the undertaking (Section 6) iii) The ToR provides a rationale for a focused EA that considers a 'Do Nothing' alternative and contemplates alternatives to the undertaking (Section 6).	i) The EA will provide a description of and rationale for the undertaking. ii) The EA will assess alternative reference routes. iii) The EA will reiterate the rationale for a focused EA that was presented in the ToR.

Section of EAA 6.1(2)	Described in Terms of Reference	To be Described in EA Document
(c) description of (i) environment that will be affected or that might reasonably be expected to be affected, directly or indirectly (ii) the effects that will be caused or that might reasonably be expected to be caused to the environment; and, (iii) the actions necessary or that may reasonably be expected to prevent, change, mitigate or remedy the effects upon or the effects that might reasonably be expected upon the environment by the undertaking	i) The ToR generally describes the environment that will be affected or that might reasonably be expected to be affected by the Project either directly or indirectly. (Section 5) ii) The ToR describes the framework of how the EA will assess and identify any effects on the environment that will be affected or that might reasonably be expected to be affected by the Project. (Section 6.5) iii) The ToR describes how the EA will address any identified effects either through prevention, change or mitigation. (Section 7)	i) The EA will describe, in greater detail, the environment that will be affected or that might reasonably be expected to be affected, directly or indirectly by the Project. ii) The EA will assess and identify any effects that will be caused or that might reasonably be expected to be caused to the environment. iii) The EA will evaluate any effects identified and address them through prevention, change or mitigation. iv) The EA will include a detailed description of the environment to be affected by the project, identification and assessment of any effects to the environment, and addressing any effects through prevention, change or mitigation, be conducted and documented for those portions of the project that cross First Nation reserve lands
(d) an evaluation of the advantages and disadvantages to the environment of the undertaking.	The ToR provides a commitment to describe advantages and disadvantages of the undertaking and alternative methods in the EA document (Section 6).	The EA will provide an evaluation of the advantages and disadvantages to the environment of the undertaking.
(e) a description of the consultation about the undertaking by the proponent and the results of the consultation.	The ToR describes the Indigenous, public and stakeholder consultation that was conducted for the development of the ToR. (Section 9) The ToR provides a list of contacts and a record of	The EA will provide a description of the Indigenous, public and stakeholder consultation that was conducted throughout the EA process. The EA will identify a list of contacts consulted with and provide a record of consultation, status of

Section of EAA 6.1(2)	Described in Terms of Reference	To be Described in EA Document
	consultation developed through the ToR process. (Section 9) The ToR also describes the consultation framework that will be undertaken during the EA process to consult with Indigenous communities, the public and stakeholders. (Section 9).	consultation, summary of issues and summary of issue resolution.

In accordance with Section 5.2.10 of the Ministry's *Code of Practice*, it is important that flexibility be incorporated when preparing the ToR document. The lifecycle of a complex and geographically extensive and diverse project from the conceptual stage to operation may be subject to project changes. In addition, the time gap between a ToR and a successful EA submission potentially allows for new circumstances to arise. To address these potential changes, there is a requirement for flexibility within the ToR document. Project design updates, study area refinements, novel information, and implementation of input from the consultation process are examples of new circumstances arising during a project lifecycle. Flexibility allows proponents reasonable measures to address unforeseen circumstances but still maintain regulatory compliance throughout the project phases without starting the ToR and EA process anew. Hydro One has prepared this ToR with the most complete state of knowledge at the time of its preparation but acknowledges the Project need to adapt to new circumstances. If significant changes to the Project are being considered, Hydro One will consult with the MECP to determine if the proposed changes can be accommodated within the framework of the ToR.

3.1 EA Document Preparation and Submission

The EA will be prepared in accordance with the requirements in the EA Act and in accordance with Section 4.3 of MECP's *Code of Practice on Preparing and Reviewing Environmental Assessments in Ontario (Code of Practice)*. The EA will include:

- an Executive Summary;
- list of studies and reports;
- Terms of Reference requirements;
- identification of the proponent;
- commitments and monitoring;
- other approvals;

- consultation summary; and,
- appendices.

In addition, commitments to post-approval actions including project notification, remedial action plans, etc. will also be described. The EA will document need, the purpose for the undertaking, alternative routes, engagement/consultation undertaken, a description of and rationale for the undertaking, environmental baseline, environmental effects and proposed mitigation measures associated with the undertaking, commitments to compliance monitoring, and future commitments to be satisfied at subsequent design stages. Further information will be included if warranted.

In addition to the EA, detailed technical studies completed in support of the EA will be prepared at appropriate stages of the EA to document technical work that is undertaken to support the decision-making process. These detailed technical studies completed in support of the EA will be included as technical appendices to the EA as described in Section 4.3 of the MECP *Code of Practice*.

A draft EA will be made available to the public, federal and provincial government agencies, municipalities and Indigenous communities and groups for review prior to formal submission to the MECP. The documentation will be available at government offices, public libraries and on the project web site. Hard copies will be made available to the Indigenous communities to allow for comments by their members.

Subsequent to the pre-submission review and consideration of any comments received, the EA will be formally submitted to the MECP for an approval decision.

The EA will provide a comprehensive list of all relevant commitments made during the preparation of the ToR and the EA to guide future environmental work and engagement/consultation as well as effects and compliance monitoring. All monitoring will be consistent with MECP requirements.

4. Description of the Undertaking

This section provides a general description of the undertaking. A more detailed description of the undertaking will be provided in the EA. The description within the EA will be sufficiently detailed to enable the identification and assessment of potential effects for all phases of the project.

The project consists of a new approximately 400 km long double-circuit 230kV transmission line connecting the Lakehead TS to the Wawa TS, with a connection at the Marathon TS. The majority of the new transmission line will be constructed on a new right-of-way (ROW) that is largely on or adjacent to the existing Hydro One transmission corridor (the existing East-West Tie, or EWT). There are two exceptions to this routing. The first is the section of approximately 35 km in the Reference Route through Pukaskwa National Park where existing infrastructure will be renewed and replaced, with no corridor widening required. Two new circuits and the two existing circuits would be installed on new quad-circuit structures. The second exception is in both the Reference Route and Reference Route Alternative and includes the routing of the line around the communities of Dorion and Loon Lake (approximately 57 km in length) within the section between Nipigon and Lakehead TS, which deviates from the existing EWT. See Figure 1 for further details on these route alternatives. Temporary and permanent access roads, storage and laydown yards, will be form part of the project facilities and are discussed further in this section.

4.1 Study Area

The Project is located in the Province of Ontario and extends from the Municipality of Shuniah near the City of Thunder Bay to east of the Municipality of Wawa. A key map showing the location of the Project and routing of the transmission line is presented in Figure 1. The majority of the Project is located on provincial Crown land, with some sections within easements acquired from private landowners. The EA will study both reference route and reference route alternative study areas.

The Study Area can generally be broken up into three components: the Project Study Area (PSA), Local Study Area (LSA) and Regional Study Area (RSA). For the general purposes of Lake Superior Link, PSA is 500 m on either side of the ROW for reference route and alternative routes; LSA is 1 km from Reference Route boundary/ROW; and the RSA is approximately 5 km from the boundary of LSA. However, LSAs and RSAs aren't always consistent for each environmental factor. For example, study areas for the socio-economic assessment will be defined by criterion-specific LSAs and RSAs. A more detailed description of the study area and how the study area boundaries were determined will be provided in the EA.

Where studies have been conducted on the proposed corridor and they apply to the project, Hydro One will not be duplicating these studies, but use publicly available information to inform assessment efforts. Hydro One will conduct the appropriate studies where information is needed to satisfy the EA requirements.

4.2 Technical Overview of the Undertaking

The general location of the Project and certain technical specifications has been determined by the OEB. Specifically, on December 20, 2011, the OEB issued an Information Package on the East-West Tie Line to Electricity Transmitters that registered to participate in the bid process for the Project. The information package provided a definition of the Project for designation purposes, as well as the minimum technical requirements for the Project which identified a double-circuit 230kV line running from Wawa to Thunder Bay with a connection in Marathon. This process to identify the need and scope of the Project has been clearly identified Section 1.

The project will comply with North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council, Inc., and IESO reliability standards. Climate change will be taken into account during the design of the Project. The following sections outline the technical portions of the Project.

4.2.1 Design Considerations

The project will enhance safety and security of electrical supply and design considerations will be evaluated consistent with this purpose. Alternative design considerations involving span length, tower height, alignment of access roads, timing of construction and tower design will be evaluated based on site-specific environmental and technical considerations and stakeholder input. The criteria and principles defined above will also be used to evaluate design considerations. Changes to project design will be made to accommodate landowner concerns if it is practicable to do so without negatively affecting other landowners, environmental features or significantly negatively affecting overall project costs. Hydro One will document landowner issues, how these decisions were made, and the results. Design considerations are applicable to all alternative methods of carrying out the undertaking.

Alternative design considerations available to mitigate potential effects include:

- span length between the towers to avoid environmental features (such as ANSIs, ESAs, hazard lands, or crossing water bodies), where required;
- tower height to avoid environmental features, where required;
- access road specifics, including alignment, location, and removal or possible retention after construction is complete, if required;
- site-specific vegetation management regimes;
- construction timing (seasonal) and staging along the ROW to minimize potential effects on the natural environment and farming operations; and,
- tower siting and placement for specific applications to minimize aesthetic effects on the local public and the traveling public or disturbances to farming operations.

4.2.2 Transmission Line

The transmission line will be designed to be an overhead 230 kV Alternating Current (AC) double-circuit transmission line. The transmission line will consist of transmission structures, insulators, conductors, overhead shield wires (OHSW), optical ground wire (OPGW) and grounding.

Where the proposed route is adjacent to the existing East-West Tie Transmission Line the ROW will typically be up to 37 metres (m) wide. New ROWs not adjacent to the existing East-West Tie corridor, typically up to 46 m wide, will be cleared of vegetation to accommodate the transmission line. For any alternative routes where quad-circuit towers would be proposed as a design consideration, the corridor will not be widened and as such no vegetation removals would be required outside the existing ROW. The ROW width for the line has been determined primarily through consideration of the design of the structures to be constructed, the span between structures, the sag of the conductor, and ability to utilize areas within the existing EWT corridor during construction. During construction, the requirement for additional permanent ROW easements may be identified to accommodate tower assembly and erection; and conductor stringing and tensioning, angles in the route, or long spans.

Where the Lake Superior Link Project crosses other transmission lines (such as T1M), some existing transmission towers may require relocation to accommodate the Project. Areas that may be impacted due to these relocations will be assessed as part of the EA process.

4.2.3 Transmission Line Structures

Three (3) different transmission structure types will be used, depending on the line location, which may include guyed towers and self-supporting structures. Figure 3 shows the different types of proposed structures. The actual number of structures and type of foundation will depend on span distances between the structures, turning points and as determined by topographic, meteorological, technical environmental and socio-economic constraints. This will be further discussed in the EA.

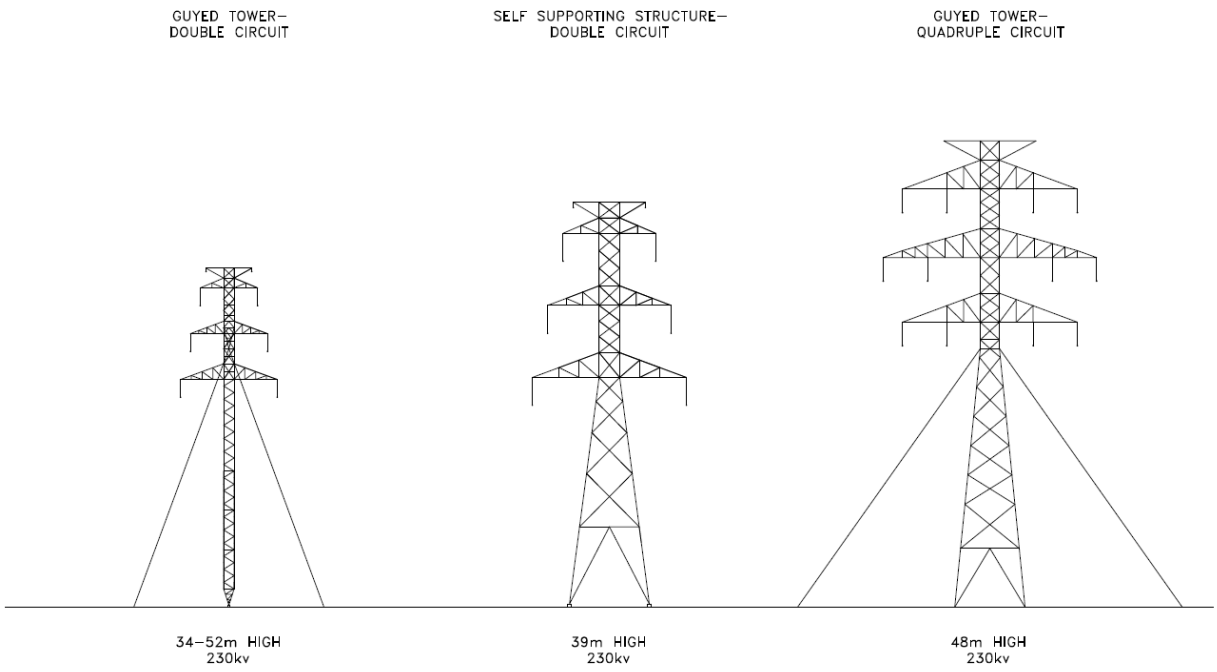

Figure 3 – Proposed typical structure types and heights.

4.2.4 Access Roads

Temporary and permanent access roads will be required for the construction and operation phases of the Project. The access requirements for construction and operation are different. Construction requires temporary access to the ROW for clearing and site preparation, construction of each tower with heavy equipment and for cleanup and site restoration. The operation phase requires permanent access to the ROW for lighter vehicles conducting inspections, maintenance, emergency repairs, and vegetation management.

It is Hydro One's preference to use the Project ROW and build access roads within the ROW, as required. Where travel in the ROW with heavy equipment is not possible due to terrain, ground conditions or environmental sensitivities, Hydro One will use existing roads and/or trails that connect to the Project ROW, which in some cases may require upgrades or improvements. In the event there are no existing roads or trails that connect to the ROW, Hydro One will build new access roads.

The specific number, location, and characteristics of existing and proposed new access roads to be used for the Project will be finalized as part of design, with input from Hydro One's construction contractor and stakeholders. Temporary access roads that are required only for construction will be restored following construction, including those within the Project ROW.

4.2.5 Storage, Laydown and Fly Yards

Storage, laydown and fly yards will be required to receive and distribute materials and equipment needed for construction of the transmission line. The EA will assess sites for potential usage as yards and it is expected that these yards will be established in strategic locations near the Project and communities. Materials, equipment and supplies from the storage yards will be transported by truck to laydown yards or to structure locations within the ROW, as required. The contractor may choose to transport materials by helicopter to structure locations not accessible by ground vehicle, and more specifically to those tower locations within PNP. Permits and/or authorizations for the storage and fly yards will be obtained prior to their use, where applicable. Further details on number and size of yards will be determined later in the EA process.

4.2.6 Construction Offices

The contractor will establish temporary construction offices and communications. The exact locations and number of offices will be determined by Hydro One's contractor. Typically, these facilities are leased or rented and may be located in the City of Thunder Bay, Township of Nipigon, Town of Marathon and/or Municipality of Wawa or near laydown yards, storage yards, or other temporary facilities. The construction offices will be decommissioned and/or returned to existing uses following completion of construction activities.

4.2.7 Temporary Construction Easements

Temporary construction easements are anticipated to be required at select locations along the corridor such as at dead-end structures to provide adequate space for equipment and materials to enable conductor pulling/tensioning. Once construction has been completed, all temporary construction easement areas will be decommissioned and restored as required.

4.2.8 Transformer Station Expansions

When the designated electricity transmitter was awarded the development phase of the East-West Tie Corridor Expansion project in 2013, the portion of the Project to modify Lakehead TS, Marathon TS, and Wawa TS to accommodate the additional capacity of the new transmission line remained within the accountability of Hydro One as the asset owner.

The modification required at each of the station needed the station footprint be expanded in order to accommodate the necessary electrical equipment to connect the new line. The Lakehead TS expansion is on Hydro One-owned land and did not trigger an environmental assessment, while the Marathon TS expansion is on Crown land and Wawa TS expansion is on privately-owned land, both triggering the

Class EA for Minor Transmission Facilities (2016). After a discussion and agreement of the MECP, two separate Class EAs were undertaken for the station expansions at Marathon and Wawa.

With an expansion of approximately 0.5 hectare, the Class EA for the Wawa TS expansion was assessed under the Screening Process as described in s.3.3.3 of the Class EA parent document.

Since the Marathon TS expansion required the acquisition of Crown land, it also triggered the MNR Class EA for Resource Stewardship and Facilities Development Projects (2002), Hydro One followed the Class EA for Minor Transmission Facilities Full Process while coordinating closely with the MNRF Nipigon District to ensure that requirements under both Class EAs were met.

The initiation of the Individual EA process for the Lake Superior Link Project occurred much later than the respective EA processes of the TS. Based on this timeline Hydro One continues to maintain the line and TS components as separate applications. These TS expansions are reliant upon the approval of the transmission line, and it is expected that a Minister's decision will be withheld until such a time as a decision is made on the East-West Tie Corridor Expansion Individual EAs.

4.2.9 Construction Camps

The need for construction camps during the execution of the project is expected. These camps are anticipated to be located in Nipigon, Marathon and White River in areas that are in proximity of the laydown yards and have easy access to the fly yards and major access points. Accommodations will also be sought in both Thunder Bay and Wawa, however we anticipate that the local infrastructure would be able to accommodate the anticipated labour force.

4.3 Project Phases

The project includes the planning, design, construction, and operation and maintenance of the above project components.

4.3.1 Construction

The construction and commissioning of the Project is expected to occur over an approximately 30-month period, after acquiring all the necessary approvals, permits and clearances to construct. Construction activities will continue year-round, with some construction activities being staged and implemented to avoid or minimize potential effects on environmentally sensitive areas or life cycle periods of wildlife, such as avoiding clearing of vegetation during the migratory bird nesting season. The detailed construction staging and sequencing of the Project will be determined by Hydro One in discussion with its construction contractor. Construction activities will typically occur during the working hours of 07:00 to 19:00 from Monday to Friday. However, regularly scheduled night-time work and/or weekend work may be required to address schedule delays caused by weather or other unexpected conditions. Project commissioning and start-up is expected to occur shortly after construction and testing is completed. The main construction activities that have the potential to affect the natural environmental and socio-economic features include the following, in sequential order:

- surveying, staking and geotechnical investigations;
- clearing and grubbing of vegetation;
- construction of supportive infrastructure (e.g., access roads, watercourse crossings, laydown yards, and construction camps);
- material delivery/distribution to sites;
- foundation installation for transmission structures;
- assembly and erection of transmission structures;
- tower replacement within Pukaskwa National Park;
- conductor installation (pull, sag and clip);
- tie-in to existing transformer stations (Lakehead, Marathon and Wawa);
- clean-up and restoration; and,
- testing and commissioning.

4.3.2 Operation and Maintenance

Activities such as vegetation maintenance and transmission line assessments would be regularly performed on the transmission line. Vegetation management activities are performed to manage and mitigate safety and reliability risks due to vegetation growing both on and off the ROW. A Transmission Vegetation Management Program developed within Hydro One will apply to the operation and maintenance of the corridor.

The operating and maintenance services to be conducted include:

- structure climbing and helicopter inspections;

- line hardware and insulator thermography;
- ROW inspections;
- visual ground patrol;
- Vegetation management; and,
- Repairs and maintenance.

4.3.3 Decommissioning

The Project will be operated for an indeterminate time period and retirement (or decommissioning) is not anticipated. Should decommissioning activities eventually be considered for some or all Project components, decommissioning will be planned and conducted in accordance with the relevant standards and regulatory requirements in effect at that time. If decommissioning activities are required, a detailed review of the potential environmental effects and mitigation measures will be provided.

5. Existing Environmental Conditions in the Study Area

The biophysical and socio-economic baseline environmental conditions of the reference route alternative and much of the reference route have been recently extensively studied and these results are publicly available. Where there is an overlap of the study areas, Hydro One is generally not duplicating these studies, but using the information available publicly through existing environmental studies already funded by the ratepayers of Ontario.

Hydro One performed a gap analysis of the existing environmental study information to identify the need of verification or collection of data to complete the environmental description and include the area of the reference route through Pukaskwa National Park and the Park approaches as well as the corridor section near Dorion, west of Nipigon through Lakehead TS.

Hydro One is conducting field surveys to characterize the biophysical environment in the areas identified in the gap analysis as mentioned in the above paragraph, in compliance with the requirements of the MECP, Parks Canada, MNRF and other government agencies to complete the Individual EA Study.

This section describes the existing natural and socio-economic environments existing in the project study area. A more detailed description of the environment and the baseline conditions for all environmental components will be provided in the EA. A list of preliminary assessment criteria and indicators can be found in Appendix 1.

5.1 Data Collection Methodology

Overall data collection methodology will vary from study to study and will be refined further under respective subheadings under Section 5.2 and Section 5.3. This section will describe overarching data collection methodology goals and processes to develop a fulsome understanding of natural, socio-economic and cultural/built environments.

Desktop studies will be utilized to determine the state and pertinence of knowledge of the listed environmental factors. This knowledge will serve to inform preliminary Project design and direct efforts for further assessment of the environment. Information used for the purpose of documenting existing natural heritage conditions will be gathered from background information provided by government agencies and other stakeholders, as well as published and unpublished data sources.

Information collected is structured around the following environmental features. These secondary source desktop studies will draw upon secondary sources such as the following:

- previously conducted environmental studies;
- regulatory databases;

- aerial photographs;
- GIS databases;
- academic literature; and,
- information obtained through consultation with stakeholders and Indigenous communities.

If necessary, primary sources of information such as field work will be conducted to supplement the data gathering effort. Field work will focus on the identified reference route and reference route alternatives. Additional effort will be made to conduct further studies within areas of potential local design considerations and route refinements may occur. The scope and intensity of study and its associated data collection methodology will be further refined during the EA process throughout consultation with stakeholders, Indigenous communities, data gap analysis, in response to novel information and Project refinements.

These primary field methods will include, but are not limited to, the following:

- Winter aerial wildlife surveys;
- Bat hibernaculum screening;
- Maternity roost habitat;
- Bat acoustic surveys;
- Breeding bird point counts;
- Marsh bird inventories;
- Crepuscular bird surveys;
- Amphibian call counts;
- Vegetation plot surveys;
- Soil classification;
- Aquatic habitat surveys;
- Fish sampling; and,
- Species at risk surveys.

Further information on natural and social environments can be found in Section 5.2 and Section 5.3.

5.1.1 Published Sources of Information

Table 4 outlines the published sources of information to be used to determine existing conditions of each environmental component.

Table 4 – Published sources of information

Source of Information	Document
Banton et al.	Ecosites of Ontario: Boreal Range (2009)
Birds Ontario (Bird Studies Canada, OFO, ECCC,	Ontario Breeding Bird Atlas (OBBA) (2007)

Ontario Nature, MNRF)	
Committee on the Status of Endangered Wildlife in Canada (COSEWIC)	Wildlife Species Assessments
Committee on the Status of Species at Risk in Ontario (COSSARO);	Ontario Species at Risk (May 2000)
Committee on the Status of Species at Risk in Ontario (COSSARO);	Species at Risk in Ontario (SARO) List
ECCC	Species at Risk in Canada (SARA) List
Federation of Ontario Naturalists	Ontario Mammal Atlas (1994)
Knight Piesold	Eagle's Nest Project Terrestrial Baseline Studies – Vegetation
MECP	Environmental assessments, registry and approvals database.
MECP	Model Municipal Noise Control By-Law Noise Pollution Control Guideline (NPC) Construction Equipment, Publication NPC-115 (NPC-115) (1978)
MECP	Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning, Publication NPC-300 (NPC-300) (2013)
Ministry of Transportation (MTO), Fisheries and Oceans Canada (DFO), MNRF	Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings (2013)
MNRF	Significant Wildlife Habitat Technical Guide (2000)
MNRF	Significant Wildlife Habitat Ecoregion Criteria Schedules (2012)
MNRF	Ontario's Woodland Caribou Conservation Plan (2009)
MNRF	Bat Survey Protocol for Treed Habitats (2017)
MNRF	Wildlife Monitoring Programs and Inventory Techniques for Ontario (1997)
MNRF	Land Information Ontario (LIO) (2016)
MNRF	Survey Protocol for Eastern Whip-poor-will in Ontario (2014)
NHIC	Biodiversity Explorer Database
NHIC	Rare Vascular Plants (1999)
NHIC, MNRF	Ontario Herpetofaunal Summary Atlas (2000)
Ontario Nature	Ontario Nature Reptile and Amphibian Atlas
Ontario Parks	Datasheets for Vegetation Plot Layers, and Groundcover/Substrate Plot Information
Ontario Parks	Provincial Park Management Plans and Life Science Reports
Phair, C., Henson, B.L., and Brodribb, K.E.	Great Lakes Conservation Blueprint for Aquatic Biodiversity. Volume 2: Tertiary Watershed Summaries (2005)
Royal Ontario Museum (ROM)	Field Guide to Freshwater Fishes of Ontario (2008)

5.2 Natural Environment

The following sections document the natural environment present in the proposed project study area. The specific study area sizes will be determined through the EA process. All information collected as part of the natural environment field programs will be used in the EA, to identify potential effects and practicable mitigation measures, and to fine tune the locations of towers, access roads and water crossings (where appropriate). Information will also be used for any approvals that may be required prior to construction.

5.2.1 Geology, Soils and Physical Environment

The Ontario Shield is part of the broader Boreal Shield and is the largest ecozone of the province at 61% of the landmass. This is named after the intersection of the boreal forest and the Canadian Shield and is typified by the exposed Precambrian granite bedrock which is routinely exposed. Glaciers have regularly shaped the landscape over the eons and have created the rolling hills, wetlands and lakes of the region. These processes and physical geography influence the formation of soils, and subsequently, vegetation and animal assemblages (Ontario Biodiversity Council 2010).

The EA will provide a description of the geological characteristics including tectonics, structural features and stratigraphic units and the effects of glaciation on Northern Ontario physiography based on Ontario Geological Survey information, as well as mapping and descriptions of the Lake Superior Link project. Regional soils and physical geology of the project study area will be assessed using existing knowledge bases and mapping resources. Geophysical structure will be considered as a potential indicator for physical environment.

The description will be conducted via desktop studies and supplemented with field work, where required, for visual identification or characterization of geological formations or structures, terrain or soil characteristics.

5.2.2 Groundwater and Surface Water

The Lake Superior Link Project is situated solely in the Great Lakes-St. Lawrence primary watershed. The project study area contains many of the 500+ watercourses within the primary watershed, all of which flow toward Lake Superior (Environment and Climate Change Canada 2017). The Lake Superior secondary watershed contains seven tertiary watersheds, which span the breadth of the project study area. Lake Superior is charged by over 200 rivers, including several larger rivers in the project study area: Black Sturgeon River, Nipigon River, Pic River, and White River.

Black Sturgeon Tertiary Watershed (2AC)
This watershed empties into Black Bay on the northwestern side of Lake Superior. Over 80% of the watershed is comprised of stream systems (Phair et al. 2005).

Nipigon Tertiary Watershed (2AD)
This watershed contains the Nipigon, Kopka, and Ombabika rivers. A quarter of its surface area is covered by Lake Nipigon. Approximately 70% of the watershed is comprised of stream systems (Phair et al. 2005).

Jackpine Tertiary Watershed (2AE)
Significant features of this watershed include: a large portion of the north-central Lake Superior coastline, part of the Lake Superior archipelago, Nipigon Bay, and Vert Island. The watershed drains into north-central Lake Superior. Approximately 85% of the watershed is comprised of stream systems (Phair et al. 2005).

Little Pic Tertiary Watershed (2BA)
This watershed contains the Aguasabon, Steel, and Little Pic Rivers, and it drains into north-central Lake Superior. Over 85% of the watershed is comprised of stream systems (Phair et al. 2005).

Pic Tertiary Watershed (2BB)
Significant features within this watershed include the Black and Pic Rivers, which drain into northern Lake Superior. Over 90% of the watershed is comprised of stream systems (Phair et al. 2005).

White Tertiary Watershed (2BC)
This watershed contains the White and Pukaskwa Rivers, and drains into northeastern Lake Superior. Over 85% of the watershed is comprised of stream systems (Phair et al. 2005).

Michipicoten-Magpie Tertiary Watershed (2BD)
The primary feature in this watershed is the Magpie River. The watershed drains into eastern Lake Superior. Approximately 85% of the watershed is comprised of stream systems (Phair et al. 2005).

The description will be conducted via desktop studies and supplemented with field work, where required, for flows or water quality characterization of streams or water bodies. Should fisheries surveys of watercourses designated as potential temporary crossings be required, hydrologic, surficial sediment type, and surface water parameters will be measured and recorded on-site. The hydrologic data will be provided in the post-EA applications for watercourse crossing permits.

The EA will also provide a description of groundwater resources including groundwater levels, yields and quality based on MECP water well records and Permit to Take Water published information. A questionnaire will be provided which requests information on the location of any wells near the construction areas. Consultation will include information on construction activities which will take place on each individual property. This site-specific information will be used to augment the information provided by MECP in their wells database.

Wellhead protection areas, intake protection zones, highly vulnerable aquifers and significant groundwater recharge areas, source water protection documentation and relevant policies will be

reviewed. The description will be conducted via desktop studies and supplemented with field work, where required, for characterization of groundwater quality, or measurements of water levels or drawdown of water wells.

5.2.3 Environmentally Significant Areas

Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), Regional Environmentally Sensitive Areas (ESAs) may be crossed by the proposed transmission corridor. As the names suggest, these areas provide sensitive and significant ecological functions for both wildlife and humans alike.

The reference route currently runs through an existing transmission corridor within Pukaskwa National Park. The Lake Superior Link Project also crosses several other Provincial Parks and ANSIs. Figure 4 and Figure 5 outline the route and its interaction with ESAs. The reference route intersects through or near the following Provincial Parks, Nature Reserves, regulated waterways, and recreational areas:

- Black Sturgeon River
- Cavern Lake Provincial Park
- Craig's Pit Nature Reserve
- Gravel River Provincial Park
- Kama Hills Provincial Park
- Neys Provincial Park
- Michipicoten Provincial Park
- Nimoosh Provincial Park
- Ouimet Canyon Provincial Park
- Prairie River Mouth Provincial Park
- Pukaskwa River Provincial Park
- Rainbow Falls Provincial Park
- Red Sucker Point Provincial Park
- Ruby Lake Provincial Park
- White Lake Provincial Park
- White Lake Provincial Park

The study area also intersects or is situated nearby the following ANSIs

- Jimmy Kash River Candidate ANSI
- Kama Hill ANSI
- Makwa River Candidate ANSI

Figure 4 – Solid line (reference route) and dotted line (reference route alternative sections) intersecting provincial parks and ANSIs (light green)

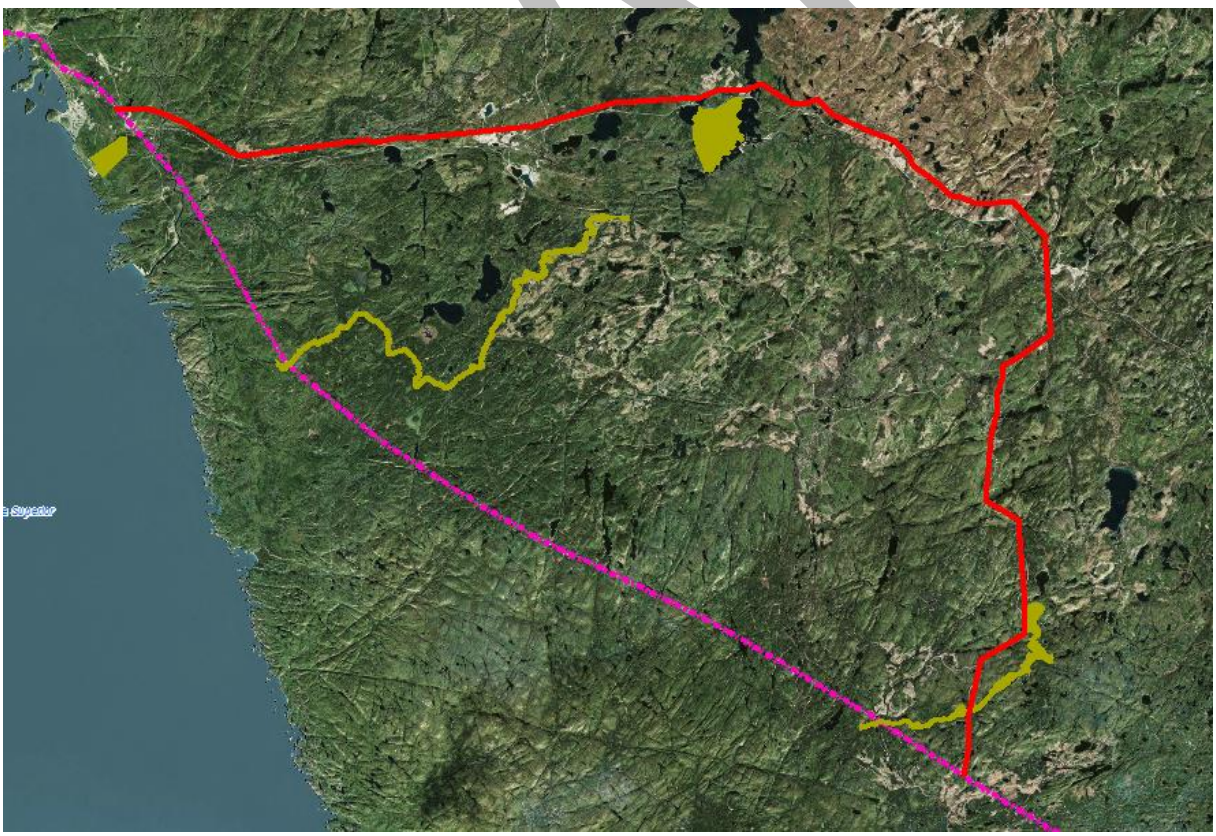

Figure 5 – Reference route (pink) and reference route alternatives (red) traversing provincial parks (light green polygons).

5.2.4 Terrestrial Wildlife and Habitat

Lands within the study area provide agricultural, woodland, wetland and riparian habitat for wildlife. Birds, mammals, insects, reptiles and amphibians inhabit these ecosystems along the Lake Superior coastline within the Ontario Shield Ecozone. Preliminary desktop studies to assess current levels of knowledge will be conducted for wildlife and wildlife habitat to better understand species incidences.

A terrestrial wildlife field program will be undertaken with the purpose of characterizing species diversity and composition throughout the Study Area as well as identifying and quantifying terrestrial wildlife habitat therein. The baseline data resulting from this field program will be used to support baseline studies for this Project, conduct an environmental impact assessment as part of the EA process for the Project and will inform potential permitting.

Wildlife surveys to be undertaken as part of the wildlife field program will include a winter aerial survey, breeding bird point count surveys, crepuscular bird surveys, marsh bird surveys, amphibian call counts, hibernaculum screening, maternity roost habitats, bat habitat assessment, and bat acoustic surveys. Studies of migratory birds and species at risk with respect to the First Nation reserve lands (specifically Pays Plat and Michipicoten First Nations) proposed to be crossed by the Project will be conducted based on a gap analysis of available data and consultation agreement with First Nations. The data gathered would be used to satisfy CEAA 2012 and ISC requirements. These surveys are designed with the purpose of sampling wildlife diversity and composition within the Project Study Area (PSA) as well as informing the presence of the significant wildlife habitats. Data collected during each survey is likely to contribute to the assessment of multiple significant wildlife habitats types, as well as the presence/absence of SAR and species of Special Concern that use those specialized habitat types

5.2.5 Vegetation, Forest Resources, and Wetlands

The study area includes forested areas, woodlots, open fields, wetlands, and other vegetated habitats. For the study area, the EA will describe and map vegetation communities and delineate plant species in all natural areas, such as ESA's, ANSI's, wetlands, and municipally-designated significant woodlands, valleylands and wildlife habitat, based on the NHIC database, published information, and field studies. Existing aerial/satellite imagery, along with other information such as Forest Resource Inventory (FRI) database polygons will be used to establish locations for survey plot locations prior to execution of the field program. Their selections will also be informed by previous studies. Should it be necessary, field surveys will also be undertaken in semi-natural communities within the study area.

Ecological Land Classification (ELC) will be used by qualified biologists during field studies to characterize the vegetation communities within portions of the study area. This information will be used to confirm aerial photography and published data and boundaries of natural features. During the vegetation surveys, any significant or specialized wildlife habitat including odonates and butterflies will be identified and any casual observations of wildlife species recorded.

Plots will be assessed following the Ontario Parks datasheets for Vegetation Plot Layers, and Groundcover/Substrate Plot Information. Key vegetation information collected for each layer (canopy, sub-canopy, understory tree/shrubs, dwarf shrubs, herbaceous, moss/lichen etc.) will include: percent cover, species composition, species percent cover, and any other comments. For those plots where tree height exceeds 10 m a diameter at breast height (DbH) measurement will be taken for a representative tree of each dominant or co-dominant species. No ages of trees will be recorded.

At each sampling point a soil sample will be taken using a hand auger to establish whether soils are organic, or mineral, as well as the texture of any mineral soils. Mottling of soils, or presence of gley will be noted along with depth to bedrock and water table where applicable.

In order to characterize and assess impacts to vegetation communities along the proposed sections of the PSA, vegetation classification field surveys will be carried out in order to characterize the vegetative communities within 1 kilometer of the proposed works. The objectives and key considerations of the field program will be to:

- Survey vegetation community types (forest, wetland, riparian) within the Study Area;
- Conduct a detailed inventory of the communities sampled;
- Define vegetation community function (e.g. wildlife habitat);
- Identification of sensitive vegetation communities; and,
- Identification of any listed SAR plant species.
- Targeting of a representative cross section of community types based on their distribution within the Project area;
- Rare/listed plants or critical landform with specific vegetation community associations; and
- Accessibility.

The study area passes through 4 ecodistricts (Kakabeka 4W-2, Black Sturgeon 3W-3, Schreiber 3W-5, and Tip Top Mountain 3E-4) and 7 (2AB, 2AC, 2AE, 2BA,2BB, 2BC,2BD) tertiary watersheds within those districts. The majority of these ecodistricts and are heavily forested with depressions resulting in open fens and bogs (Phair et al. 2005). Below is a summary of tertiary watersheds as outlined previously in Section 5.2.2.

Dog Tertiary Watershed (2AB)

The majority of vegetation within this watershed is deciduous or mixedwood forests with small pockets of coniferous stands and patches of treed fens and open bogs occur in the northern reaches. Some rare species that may be in this watershed include: Auricled Twayblade *(Neottia auriculata)*, Creeping Rush (*Juncus repens*), and Ram's head Lady Slipper (*Cypripedium arietinum*) (Phair et al. 2005).

Black Sturgeon Tertiary Watershed (2AC)

Mixed forests are the predominant forest cover within the watershed but pure conifer and deciduous stands are scattered throughout. Wetlands in the form of open and treed bogs and fens can be found here as well. The Auricled Twayblade (*Neottia auriculata*), is documented in this area as well (Phair et al. 2005).

Nipigon Tertiary Watershed (2AD)

This watershed contains a relatively even mix of mixedwood, conifer and deciduous forests. There are no records of rare or significant vegetation species in this area (Phair et al. 2005).

Jackpine Tertiary Watershed (2AE)

Mixedwood forests are characteristic in the watershed with pure stands of deciduous and coniferous forests abundant. There are no records of rare or significant vegetation species in the area (Phair et al. 2005).

Little Pic Tertiary Watershed (2BA)

Fires in the not too distant past have affected the area but mixed coniferous and coniferous forests are the majority of forest cover in the area. Wetlands are primarily treed bogs when they do occur. No rare or significant vegetation species have been recorded in the area (Phair et al. 2005).

Pic Tertiary Watershed (2BB)

Open fens and bogs can be found commonly in this area as they are interspersed with large swaths of coniferous and mixed coniferous forest. No documented rare vegetation communities in the watershed. (Phair et al. 2005).

White Tertiary Watershed (2BC)

Coniferous and mixed coniferous forests are common, deciduous forests are sparse. Few wetlands are present and represented by open and treed fens and open bogs. No rare vegetation or significant vegetation species have been recorded in the area (Phair et al. 2005).

Michipicoten-Magpie Tertiary Watershed (2BD)

The dominant forest type is mixed deciduous forest with a few scattered wetlands in the form of treed and open bogs and open fens. No rare vegetation or significant vegetation species have been recorded in the area (Phair et al. 2005).

5.2.6 Water Bodies, Fish Habitat and Aquatic Ecosystems

The primary purpose of the aquatic study program will be to characterize the aquatic habitat that could potentially be affected by the construction of the transmission line and to provide baseline information to support the EA process. Most of the larger watercourses within the study area provide fish habitat. The EA will map known coldwater and warm water watercourses, as well list fish species present in the watercourses in the study area based on previous regional EA studies, MNR Field Collection Records, Conservation Authority databases, published information, and supplemental field surveys, where required. Any significant fish habitat (e.g., Sanctuary Areas) will be identified and described. Representative watercourse locations will be field inspected prior to construction to confirm presence/absence of fish habitat and fish species present in areas where gaps within existing knowledge bases are found. Detailed assessments will also be conducted on those watercourses that will be crossed by construction access roads where required.

Existing aerial/satellite imagery, along with other background information will be used to establish survey locations prior to execution of the field program. Their selection will also be informed by previous studies. Sample locations will be determined as design progresses and specific focus will also be on areas where clearing is required. Consideration of any new temporary or permanent access roads will also be included in the survey plans in order to characterize impacts associated with construction staging requirements, or ancillary infrastructure required for long term maintenance of the line. Sampling may also be conducted at selected points along the Project to identify potential sensitivities.

Key considerations in establishing aquatic habitat sampling locations will include:

- Targeting of a representative cross section of aquatic habitat community types based on their distribution within the Project area;
- Aquatic Species at Risk; and,
- Accessibility.

Table 5 outlines a list of the species of fish that are expected based on aquatic features of the study area:

Table 5 – Fish species that are expected based on aquatic features of the study area.

Family	Scientific Name	Common Name	Presence		Provincial		Federal
			Expected	Documented	Provincial S-rank	SARO Status	SARA Status
Acipenseridae	*Acipenser fulvescens*	Lake Sturgeon	✓	✓	S2	Threatened	No Status
Anguillidae	*Anguilla rostrata*	American Eel	✓	✓	S1	Endangered	No Status
Catostomidae	*Catostomus catostomus*	Longnose Sucker	✓	✓	S5	n/a	n/a
	Moxostoma macrolepidotum	Shorthead Redhorse	✓	✓	S5	n/a	n/a
	Moxostoma anisurum	Silver Redhorse	✓	✓	S4	n/a	n/a
	Catostomus commersonii	White Sucker	✓	✓	S5	n/a	n/a
Centrarchidae	*Pomoxis nigromaculatus*	Black Crappie	✓	✓	S4	n/a	n/a
	Lepomis macrochirus	Bluegill	n/a	✓	S5	n/a	n/a
	Micropterus salmoides	Largemouth Bass	✓	✓	S5	n/a	n/a
	Lepomis gibbosus	Pumpkinseed	✓	✓	S5	n/a	n/a
	Ambloplites rupestris	Rock Bass	✓	✓	S5	n/a	n/a
	Micropterus dolomieu	Smallmouth Bass	✓	✓	S5	n/a	n/a
Clupeidae	*Alosa pseudoharengus*	Alewife	✓	✓	SNA	n/a	n/a
Cottidae	*Myoxocephalus thompsonii*	Deepwater Sculpin	✓	✓	S3	No Status	Threatened
	Cottus bairdii	Mottled Sculpin	✓	✓	S5	n/a	n/a
	Cottus cognatus	Slimy Sculpin	✓	✓	S5	n/a	n/a
	Cottus ricei	Spoonhead Sculpin	✓	✓	S4	n/a	n/a
Cyprinidae	*Notropis heterodon*	Blackchin Shiner	✓	✓	S4	n/a	n/a
	Rhinichthys atratulus	Blacknose Dace	✓	✓	S5	n/a	n/a
	Notropis heterolepis	Blacknose Shiner	✓	✓	S5	n/a	n/a
	Pimephales notatus	Bluntnose Minnow	✓	✓	S5	n/a	n/a
	Hybognathus hankinsoni	Brassy Minnow	n/a	✓	S5	n/a	n/a
	Cyprinus carpio	Common Carp	✓	✓	SNA	n/a	n/a
	Luxilus cornutus	Common Shiner	✓	✓	S5	n/a	n/a

	Semotilus atromaculatus	Creek Chub	✓	✓	S5	n/a	n/a
	Notropis atherinoides	Emerald Shiner	✓	✓	S5	n/a	n/a
	Pimephales promelas	Fathead Minnow	✓	✓	S5	n/a	n/a
	Chrosomus neogaeus	Finescale Dace	✓	✓	S5	n/a	n/a
	Notemigonus crysoleucas	Golden Shiner	✓	✓	S5	n/a	n/a
	Carassius auratus	Goldfish	✓	✓	SNA	n/a	n/a
	Couesius plumbeus	Lake Chub	✓	✓	S5	n/a	n/a
	Rhinichthys cataractae	Longnose Dace	✓	✓	S5	n/a	n/a
	Notropis volucellus	Mimic Shiner	✓	✓	S5	n/a	n/a
	Margariscus nachtriebi	Northern Pearl Dace	✓	✓	S5	n/a	n/a
	Chrosomus eos	Northern Redbelly Dace	✓	✓	S5	n/a	n/a
	Notropis rubellus	Rosyface Shiner	n/a	✓	S4	n/a	n/a
	Notropis stramineus	Sand Shiner	n/a	✓	S4	n/a	n/a
	Notropis hudsonius	Spottail Shiner	✓	✓	S5	n/a	n/a
Esocidae	*Esox masquinongy*	Muskellunge	✓	✓	S4	n/a	n/a
	Esox lucius	Northern Pike	✓	✓	S5	n/a	n/a
Gadidae	*Lota lota*	Burbot	✓	✓	S5	n/a	n/a
Gasterosteidae	*Culaea inconstans*	Brook Stickleback	✓	✓	S5	n/a	n/a
	Apeltes quadracus	Fourspine Stickleback	✓	✓	SNA	n/a	n/a
	Pungitius pungitius	Ninespine Stickleback	✓	✓	S5	n/a	n/a
	Gasterosteus aculeatus	Threespine Stickleback	✓	✓	S4	n/a	n/a
Gobiidae	*Neogobius melanostomus*	Round Goby	✓	✓	SNA	n/a	n/a
	Proterorhinus semilunaris	Tubenose Goby	n/a	✓	SNA	n/a	n/a
Ictaluridae	*Ameiurus melas*	Black Bullhead	n/a	✓	S4	n/a	n/a
	Ameriurus nebulosus	Brown Bullhead	✓	✓	S5	n/a	n/a
Lepisosteidae	*Lepisosteus osseus*	Longnose Gar	✓	✓	S4	n/a	n/a
Osmeridae	*Osmerus mordax*	Rainbow Smelt	✓	✓	S5	n/a	n/a
Percidae	*Etheostoma exile*	Iowa Darter	✓	✓	S5	n/a	n/a
	Etheostoma nigrum	Johnny Darter	✓	✓	S5	n/a	n/a

	Etheostoma microperca	Least Darter	✓	✓	S4	n/a	n/a
	Percina caprodes	Logperch	✓	✓	S5	n/a	n/a
	Gymnocephalus ceruna	Ruffe	✓	✓	SNA	n/a	n/a
	Sander canadensis	Sauger	✓	✓	S4	n/a	n/a
	Sander vitreus	Walleye	✓	✓	S5	n/a	n/a
	Perca flavescens	Yellow Perch	✓	✓	S5	n/a	n/a
Percopsidae	*Percopsis omiscomaycus*	Trout-Perch	✓	✓	S5	n/a	n/a
Petromyzontidae	*Lethenteron appendix*	American Brook Lamprey	✓	✓	S3	n/a	n/a
	Ichthyomyzon fossor	Northern Brook Lamprey	✓	✓	S3	Special Concern	Special Concern
	Petromyzon marinus	Sea Lamprey	✓	✓	SNA	n/a	n/a
	Ichthyomyzon unicuspis	Silver Lamprey	✓	✓	S3	Special Concern	No Status
Salmonidae	*Coregonus hoyi*	Bloater	n/a	✓	S4	n/a	n/a
	Salvelinus fontinalis	Brook Trout	✓	✓	S5	n/a	n/a
	Salmo trutta	Brown Trout	✓	✓	SNA	n/a	n/a
	Oncorhynchus tshawytscha	Chinook Salmon	✓	✓	SNA	n/a	n/a
	Coregonus artedi	Cisco	✓	✓	S5	n/a	n/a
	Oncorhynchus kisutch	Coho Salmon	✓	✓	SNA	n/a	n/a
	Salvelinus namaycush	Lake Trout	✓	✓	S5	n/a	n/a
	Coregonus clupeaformis	Lake Whitefish	✓	✓	S5	n/a	n/a
	Oncorhynchus gorbuscha	Pink Salmon	✓	✓	SNA	n/a	n/a
	Prosopium coulterii	Pygmy Whitefish	✓	✓	SU	n/a	n/a
	Oncorhynchus mykiss	Rainbow Trout	✓	✓	SNA	n/a	n/a
	Prosopium cylindraceum	Round Whitefish	✓	✓	S4	n/a	n/a
	Coregonus zenithicus	Shortjaw Cisco	✓	✓	S2	Threatened	Threatened
	Coregonus reighardi	Shortnose Cisco	n/a	✓	SH	Endangered	Endangered
	Coregonus kiyi kiyi	Upper Great Lakes Kiyi	✓	✓	S3	Special Concern	Special Concern

Sciaenidae	*Aplodinotus grunniens*	Freshwater Drum	✓	✓	S5	n/a	n/a
Umbridae	*Umbra limi*	Central Mudminnow	✓	✓	S5	n/a	n/a

5.2.7 Species at Risk

The EA document will map the general locations of known incidences of species at risk (SAR), endangered and threatened species, and species of special concern in the study area. This information will be based on the MNRF's "Species at Risk in Ontario List", the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) list, Environment Canada species at risk search tool (http://www.registrelep-sararegistry.gc.ca/), and Environment Canada, CWS and NHIC databases, as well as known locations based on published and unpublished information and personal communications.

In addition to desktop studies, field work will be used to supplement SAR information in tandem with other studies such as vegetation and wildlife assessments to identify rare plants and at risk wildlife. All general locations within the study area that would be directly affected by construction activities will be screened to confirm presence/absence of any species at risk (if practicable) and evaluate habitat potential to support species at risk. Regionally and locally rare species will be considered as an indicator for the EA, based on information obtained from NHIC, MNR, local conservation authorities and field observation.

A preliminary list of SAR and potentially found within the Project area can be found in Table 6.

Table 6 – Species at Risk status, habitat characteristics, and preliminary presence/absence determination

Species		Status in Canada[1]	Status in Ontario[2]	S-RANK[3]	Information Source[4]	Potential Habitat in Local Study Area	Rationale
Scientific Name	Common Name						
Myotis leibii	Eastern Small-footed Myotis	No Status	Endangered	S2, S3	Species at Risk in Ontario Public Registry	No	The study area includes forests that could have hollow trees or rocks. However, Eastern Small-footed Myotis' northern range tends to stop at Lake Superior Provincial Park.
Myotis lucifugus	Little Brown Myotis	Endangered	Endangered	S4	Atlas of the Mammals of Ontario	Yes	Atlas of the Mammals of Ontario records indicate that this species has been observed within the study area.
Myotis septentrionalis	Northern Myotis	Endangered	Endangered	S3	SAR Public Registry	Yes	The study area includes forests that could have hollow trees or loose bark.
Puma concolor couguar	Eastern Cougar	No Status	Endangered	SU	Atlas of the Mammals of Ontario	Yes	The habitat within the study area is not considered remote enough for cougars. Forested habitats may not support enough White-tailed Deer for cougars.
Canis lycaon	Eastern Wolf	Special Concern	No Status	S4	Atlas of the Mammals of Ontario	Yes	The habitat within the study area could support eastern wolves, but population trend information outside of Algonquin Park is not well known.
Rangifer tarandus	Woodland Caribou, Boreal Population	Threatened	Threatened	S4	Atlas of the Mammals of Ontario	Yes	Caribou have been observed on the northern shores and islands of Lake Superior in the past. However, due to human development causing habitat fragmentation, populations have become isolated and have receded. Caribou have not been observed within Pukaskwa National Park since 2011.
Haliaeetus leucocephalus	Bald Eagle	No Status	Special Concern	S2N, S4B	OBBA	Yes	OBBA records indicate that this species has been found breeding within the study area.

Species		Status in Canada[1]	Status in Ontario[2]	S-RANK[3]	Information Source[4]	Potential Habitat in Local Study Area	Rationale
Scientific Name	**Common Name**						
Riparia riparia	Bank Swallow	No Status	Threatened	S4B	OBBA	Yes	OBBA records indicate that this species has been found breeding near the study area.
Hirundo rustica	Barn Swallow	No Status	Threatened	S4B	OBBA	Yes	OBBA records indicate that this species has been found breeding near the study area.
Chlidonias niger	Black Tern	Not at risk	Special Concern	S3B	OBBA	Yes	OBBA records indicate that this species has been found breeding near the study area.
Dolichonyx oryzivorus	Bobolink	Threatened	Threatened	S4B	OBBA	Yes	OBBA records indicate that this species has been found breeding near the study area.
Cardellina canadensis	Canada Warbler	Threatened	Special Concern	S4B	OBBA	Yes	OBBA records indicate that there is confirmed breeding evidence for this species within the study area.
Chaetura pelagica	Chimney Swift	Threatened	Threatened	S4B, S4N	OBBA	Yes	OBBA records indicate that there is probable breeding evidence for this species near the study area. Hollow trees and rock cliff crevices are present throughout the study area.
Chordeiles minor	Common Nighthawk	Threatened	Special Concern	S4B	OBBA	Yes	OBBA records indicate that there is possible breeding evidence for this species within the study area.
Sturnella magna	Eastern Meadowlark	Threatened	Threatened	S4B	OBBA	Yes	OBBA records indicate that there is possible breeding evidence for this species near the study area.
Antrostomus vociferous	Eastern Whip-poor-will	Threatened	Threatened	S4B	OBBA	Yes	OBBA records indicate that there is probable breeding evidence for this species near the study area.

Species		Status in Canada[1]	Status in Ontario[2]	S-RANK[3]	Information Source[4]	Potential Habitat in Local Study Area	Rationale
Scientific Name	**Common Name**						
Contopus virens	Eastern Wood-Pewee	Special Concern	Special Concern	S4B	OBBA	Yes	OBBA records indicate that this species has been found breeding near the study area.
Contopus cooperi	Olive-sided Flycatcher	Threatened	Special Concern	S4B	OBBA	Yes	OBBA records indicate that there is possible breeding evidence for this species near the study area.
Falco peregrinus anatum/ tundrius	Peregrine Falcon anatum/tundrius	Special Concern	Special Concern	S3B	OBBA	Yes	OBBA records indicate that this species has been found breeding near the study area.
Euphagus carolinus	Rusty Blackbird	Special Concern	No Status	S4B	OBBA	Yes	OBBA records indicate that this species has been found breeding near the study area.
Asio flammeus	Short-eared Owl	Special Concern	Special Concern	S2N, S4B	OBBA	Yes	OBBA records indicate that there is probable breeding evidence for this species near the study area.
Hylocichla mustelina	Wood Thrush	Threatened	Special Concern	S4B	OBBA	Yes	OBBA records indicate that there is possible breeding evidence for this species near the study area.
Coturnicops noveboracensis	Yellow Rail	Special Concern	Special Concern	S4B	OBBA	Yes	OBBA records indicate that there is possible breeding evidence for this species near the study area.
Anguilla rostrata	American Eel	No Status	Endangered	S1	Holm et al., 2009	No	American Eel is found within the Great Lakes that are connected to the Atlantic Ocean through the St. Lawrence River and the Welland Canal. Lake Superior is considered outside of the study area.
Myoxecephalus thompsonii	Deepwater Sculpin	Threatened	No Status	S3	Holm et al., 2009	Yes	Lakes in the study area are known to support Deepwater Sculpin.
Acipenser fulvescens	Lake Sturgeon	No Status	Threatened	S2	NHIC, Scott and Crossman, 1998, Holm et al., 2009	Yes	Rivers and lakes in the study area are known to support Lake Sturgeon.

Species		Status in Canada[1]	Status in Ontario[2]	S-RANK[3]	Information Source[4]	Potential Habitat in Local Study Area	Rationale
Scientific Name	**Common Name**						
Ichthyomyzon fossor	Northern Brook Lamprey	Special Concern	Special Concern	S3	Scott and Crossman, 1998, Holm et al., 2009	Yes	Rivers and lakes in the study area are known to support Northern Brook Lamprey.
Ichthyomyzon unicuspis	Silver Lamprey	No Status	Special Concern	S3	Holm et al., 2009	Yes	Silver Lamprey is found on the northern shores of Lake Superior.
Coregonus kiyi kiyi	Upper Great Lakes Kiyi	Special Concern	Special Concern	S3	SAR Public Registry	Yes	Upper Great Lakes Kiyi can be found near shore in Lake Superior as they move to shallower water depths (50 m) at night. However, they are most abundant at depths of 150 m.
Chelydra serpentina	Snapping Turtle	Special Concern	Special Concern	S3	Reptile and Amphibian Atlas	Yes	Reptile and Amphibian Atlas indicates sightings of this species have been recorded within the study area.
Iris lacustris	Dwarf Lake Iris	Special Concern	Special Concern	S3	SAR Public Registry	Yes	Largest populations occur up to several kilometers from Lake Huron
Leptogium rivulare	Flooded Jellyskin	Threatened	No Status	S3	Ontario SAR Public Registry	Yes	Flooded Jellyskin is found mainly between the 45°N and 60°N parallels where the study area is.
Danaus plexippus	Monarch	Special Concern	Special Concern	S2N, S4B	SAR Public Registry	Yes	Grasslands are located along the right-of-way in the study area.
Coccinella novemnotata	Nine-spotted Lady Beetle	No Status	Endangered	SH	Ontario SAR Public Registry	Yes	The study area includes a mix of deciduous and coniferous forests.

[1] Federal Species at Risk Act

[2] Species at Risk in Ontario List. (2014, August 11). Ministry of Natural Resources and Forestry. Retrieved September 12, 2014, from http://www.ontario.ca/environment-and-energy/species-risk-ontario-list

[3] Conservation Ranking

[4] Various sources

[5] MNRF Significant Wildlife Habitat Technical Guide Appendix G (MNRF, 2000) Ontario Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. 151p.

5.2.8 Air Quality

Air Quality metrics are published in annual Air Quality in Ontario Reports published by Ministry of Environment, Conservation and Parks. The closest two air quality monitoring stations operated by the province of Ontario are in Sault Ste. Marie and Thunder Bay. In general, these two stations report lower than average concentrations of air pollutants as compared to other parts of Ontario and are generally lower than Canadian Ambient Air Quality Standards (MECP 2015). The project will evaluate existing studies of air quality, potential project emission sources and identification of receptors. Potential Project emission sources will be evaluated against regulatory standards in the EA.

5.2.9 Acoustic Environment

The acoustic environment (sound/noise) is an important component of atmospherics. The major sources of noise in the rural environment are road traffic and the resource industry such as forestry, mining and associated support industries. The EA will characterize baseline or background noise conditions, based on published information or noise surveys, as required. It will also identify sensitive receptors to noise emissions such as recreational areas and communities within the Preliminary Study Area. Information for the acoustic environment baseline and assessment of potential impacts will involve the review of the data sources listed in Section 5.1.1.

A noise "receptor" or Point of Reception (POR) is a location where an assessment, measurements, or predictions of noise levels are made. The potential PORs in the acoustic environment will be identified in general accordance with the MECP NPC-300 noise guideline (MECP 2013). The NPC-300 guideline defines PORs as sensitive land uses with human activity, including dwellings, campsites or campgrounds, sensitive institutional uses (e.g., educational, nursery, hospital, healthcare, community centre, place of worship or detention centre), or sensitive commercial uses (e.g., hotel or motel). From the preliminary review of the MNRF LIO spatial data set (MNRF 2016) there is a significant number of structures that have been conservatively considered as "potential" PORs, but it is anticipated that most of these structures will not qualify as PORs as defined by the MECP and therefore not be considered noise sensitive spaces. Existing noise sensitive land uses will be verified in the EA, including through ground-truthing methods, if required. Existing baseline noise levels in the acoustic environment at PORs will be described using the MECP NPC-300 noise guideline that is based on a classification system. Noise level measurements, studies and/or mitigation measures may be required in some areas depending on the proximity to sensitive receivers. Potential effects, appropriate mitigation measures, and predicted net Project effects for the acoustic environment will be described in accordance with appropriate MOECP guidelines and standards.

5.3 Socio-economic and Cultural/Built Environment

The following sections outline the socio-economic environments within the project study area. The sections will establish the baseline conditions and the information required to characterize socio-economic components.

5.3.1 Regional Planning

Northern Ontario is subject to a number of planning initiatives both provincially and regionally. The majority of the project is located on Crown Land and will be subject to provincial regulation and land use policy. Other portions of the project are privately owned. Under the *Planning Act*, the 2014 Provincial Policy Statement (PPS) outlines the framework for development, land use and approved developments. The goals of the PPS are as follows:

"The Provincial Policy Statement, 2014 applies province-wide. Its policies set out the government's land use vision for how we settle our landscape, create our built environment, and manage our land and resources over the long term to achieve livable and resilient communities" (MMAH 2014). In addition, the Ministry of Municipal Affairs has published two 'Places to Grow, Growth Plan for Northern Ontario" which documents the plan for the region for the next 25 years. Of note, the plan has a goal of strengthening the economy of Northern Ontario through the following (MMA 2011):

- Diversifying the region's traditional resource-based industries
- Stimulating new investment and entrepreneurship
- Nurturing new and emerging sectors with high growth potential.

The region has varying levels of development with the highest density near Thunder Bay and less development further east. Owing to the length of the transmission corridor, the project will pass through many current land uses such as mining, forestry, trapping, hunting, fishing, residential, commercial, industrial, and agriculture, among others. In addition to these previously mentioned official plans, crown land use policies, district land use guidelines, forestry management, land claims and rights, and other land uses will be assessed in the EA document.

5.3.2 Economy, Resource, Commercial and Industrial Activities

Northern Ontario communities rely on a resource extraction economy with a focus on forestry and mining. These sectors are dominated by large industrial employers in the region. These industrial complexes rely on a consistent supply of electricity. The project may cross mining claims and forestry

management units which will be identified during the EA process and the potential effects the project may have.

In addition to resource extraction, Northern Ontario communities provide a gateway for recreation and tourism, and outdoors guiding and outfitting activities. The communities cater to visitors to local parks and activities such as hunting, fishing and camping are all important aspects of the Northern Ontario experience.

The EA document will assess existing commercial, recreational, and industrial activities in the region and address potential effects on these sectors. Leaseholders, claim owners, Indigenous communities and other stakeholders will be consulted as part of the EA process. Indicators used to describe the economy and employment will be detailed (employment, income, etc.). The EA will also address economic development and economic sectors, businesses, governmental finances, and housing characteristics. Consultation with Indigenous communities and potential employment economic benefits is an important aspect of meaningful participation in the Project. Where appropriate, Hydro One will work with Indigenous communities to discuss economic participation throughout the EA process where appropriate.

5.3.3 Population, Demographics and Community Profile

Northern Ontario's population has generally been on a decline since at least 2001, with the age bracket of 15 to 34 having the largest out-migration of the region. This exodus of young people in the region has, in turn, increased the average age of communities. Industries such as pulp and paper mills shutting down or relocating, a general slowdown in forestry and depressed mineral prices since 2011 have impacted employment prospects in the region and, relatedly, the demographics that tend to serve in these sectors. Projects such as Lake Superior Link may provide skilled and unskilled workers in the area employment opportunities (Northern Policy Institute 2014).

The EA document will detail the existing state of communities and potential effects on the population and demographics in relation to the project. This information will be documented through government statistics, plans, stakeholder engagement, and other sources.

5.3.4 Human Health

Human Health concerns will be addressed in the EA. In addressing potential health issues, Hydro One looks to the scientific expertise of Health Canada to assess the scientific studies and provide advice and guidance. Potential changes in surface water, air quality and noise due to Project activities can act as pathways to potential effects on human health. These criteria will be drawn upon to inform human health concern assessments in the EA.

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 away from their source. Everyone is exposed daily to EMF from many sources, including household wiring, power lines and appliances. As part of its mission to set public health policy, Health Canada continues to monitor the scientific research on EMF and human health.

Hydro One recognizes the public concerns over potential health effects from exposure to EMF and takes seriously its responsibility to understand, appropriately address and communicate the scientific data/developments on this issue. Therefore, Hydro One will address the following in the EA document:

- continue to communicate accurate and timely information to its employees and customers;
- continue to provide, upon request, EMF measurement services at no cost to direct customers of Hydro One and individuals and/or organizations whose property is adjacent to Hydro One distribution and/or transmission facilities;
- monitor worldwide scientific research, judicial decisions and regulatory requirements relating to EMF, and make necessary adjustments to its policies, programs and practices;
- support collaborative research; and,
- consider EMF research when sitting, designing, and communicating about new and upgraded facilities and when operating its facilities.

5.3.5 Visual

During the EA, the Project team will prepare a description of the landscape character within the study areas, identifying landscape settings and features of importance. This assessment will focus on valued viewpoints by the public and those identified by the project team as contributing to the aesthetic character of an area (e.g., ESA's and river valleys). Ongoing consultation has also identified potential areas of visual assessment that will be considered. The team will review available models for this assessment. In addition to desktop studies, visual assessments of key viewpoints will occur to assess visual quality of the Project.

5.3.6 Infrastructure and Services

The proposed transmission corridor crosses varying levels of infrastructure and services, from remote fly-in only access to sophisticated large towns and cities. Some of the communities along the route can provide, waste management, municipal and community services, emergency services, police, and many other ancillary services. The construction portion of the Project will generate some galvanized steel waste (estimated at 500 MT) and other construction waste. Preliminary inquiries to local waste management companies indicate that sufficient capacity for waste management exists along the proposed corridor.

The EA document will describe infrastructure and services which have a potential to interact with the proposed project. Other infrastructure in the area may include pipelines, transmission and distribution lines, roads and highways (including traffic counts), rails, air transportation, and utilities, etc. In addition to this, the project may also have the potential to interact with communities and services such as police and fire stations, hospitals, schools, churches and other religious buildings, local businesses, and residential areas.

5.3.7 Property Value

During the consultation process, landowners have raised the issue of potential effects on property values. Contacts have been initiated with all landowners who may be directly affected by the project crossing their property (i.e. those affected by the reference route and the route refinement options identified to date). Compensation will be available to those whose property will be crossed by the approved undertaking. For all other properties which are directly affected by the proposed ROW widening, independent appraisals will be conducted and offers based on market value for an easement in the area of the proposed widened corridor will be made to the landowners. If it is determined to be appropriate to relocate a structure on a farm property, the Minimum Distance Separation (MDS) formulae. The Hydro One Land Acquisition Compensation Principles (LACP) will be sent out to property owners detailing the method of land acquisition and compensation Hydro One employs.

LACP are Project-specific principles are founded upon Hydro One's past experience pertaining to land acquisition matters for new transmission projects. Hydro One's central consideration has been the need for Property Owners to have flexibility and choice while balancing Hydro One's desire to achieve timely acquisition of property interests and its obligation to ensure that expenditures are fair and reasonable to ratepayers. Hydro One is committed to fair, open and consistent treatment of all affected landowners. Hydro One will consult with municipal stakeholders as part of our efforts to minimize any inconveniences caused by the project and will consult with municipalities to understand and address their concerns.

5.4 Cultural/Built Environment

The following sections outline the cultural/built environments within the project study area. The sections will establish the baseline conditions and the information required to characterize cultural/built environmental components.

5.4.1 Cultural Heritage Environment

To describe and assess potential effects on heritage resources and archaeology in the study area, the EA will draw upon the results of archaeological assessments and cultural heritage resource studies. Archaeological assessments will be undertaken by an archaeologist licensed under the *Ontario Heritage Act (OHA)*. Chance-find protocols will be implemented within the archaeological assessment and Indigenous communities will be engaged in the archaeological studies. As part of the archaeological assessment, the Project will leverage existing Stage I and Stage II archaeological studies completed in the region. Additional Stage I and Stage II studies are planned for additional areas as a result of a gap analysis performed to identify missing datasets for the proposed transmission corridor. Results from these studies will be incorporated into impact assessment, EA decision-making and construction planning.

A cultural heritage resource study, including built heritage resources and cultural heritage landscapes, will be undertaken of the municipalities along the transmission route to describe their development history and the transmission route development history. A Cultural Heritage Evaluation Report (CHER) and/or Heritage Impact Assessment (HIA) may be conducted for cultural heritage resources not previously assessed. In both a CHER and HIA, the cultural heritage value or interest of listed properties or newly identified resources will be evaluated using Ontario Regulation 9/06 Criteria for Determining Cultural Heritage Value or Interest (Government of Ontario 2006). CHER and HIA report where applicable will be circulated to local municipalities who express interest and submitted to MTCS for review and comment. If human remains are identified during the EA study or during the construction phase of the project, Hydro One will cease work in the immediate area, notify the MTCS as required under the Cemeteries Act and simultaneously notify Indigenous communities with an interest in the area. All technical cultural heritage studies and their recommendations are to be addressed and incorporated into the EA.

A cultural heritage resource study, including built heritage resources and cultural heritage landscapes, will be undertaken of the municipalities along the transmission route to describe their development history and the transmission route development history. Cultural Heritage Assessment Reports (CHAR), A Cultural Heritage Evaluation Report (CHER) and/or Heritage Impact Assessment (HIA) may be conducted for cultural heritage resources not previously assessed. In both a CHER and HIA, the cultural heritage value or interest of listed properties or newly identified resources will be evaluated using Ontario Regulation 9/06 Criteria for Determining Cultural Heritage Value or Interest (Government of Ontario 2006). CHER and HIA report where applicable will be circulated to local municipalities who express interest and submitted to MTCS for review and comment. If human remains are identified during the EA study or during the construction phase of the project, Hydro One will cease work in the immediate area, notify the MTCS as required under the Cemeteries Act and simultaneously notify Indigenous communities with an interest in the area. All technical cultural heritage studies and their recommendations are to be addressed and incorporated into the EA.

5.4.2 Traditional/Indigenous Land Use

First Nations and Métis communities in the area have expressed interest in participation in the project and assisting in the identification of effects it is projected to have on traditional land usage. The 18 communities identified by the Ministry of Energy, Northern Development and Mines have a history of traditional land usage in the region since time immemorial, many aspects of which continue today. Mapping indicates that the study area overlaps with many traditional use territories. Information sharing will also be an important aspect of EA studies between Hydro One and Indigenous communities. As part of ongoing consultation, criteria and indicators of relevance to Indigenous communities will be developed in consultation with Indigenous communities.

Based on consultation with the Indigenous communities, the EA will document concerns and identify opportunities raised with regards to land and resource use, or other relevant socio-economic aspects. The EA will also describe how Hydro One proposes to address these concerns and opportunities. The EA document will describe Indigenous communities, their traditional uses of the land and their established and asserted claims. Section 9 details the consultation process with Indigenous communities in greater detail and lists the 18 identified communities.

6. Identification and Evaluation of Alternative Methods

The *EA Act* requires proponents to identify and evaluate alternatives to the Project. According to the *EA Act*, the differentiation between alternative methods and alternatives to the Project is as follows. Alternative methods of carrying out the proposed undertaking 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 undertaking; alternative design methods; and, alternative methods of operating any facilities associated with a proposed undertaking. Alternatives to the proposed undertaking are functionally different ways of approaching and dealing with a problem or opportunity.

6.1 Alternatives to the Undertaking

The *Environmental Assessment Act* requires proponents under Section 6.1 (2) to conduct an alternatives assessment to demonstrate the advantages and disadvantages of the preferred alternative in comparison to other alternatives considered. The East-West Tie Corridor Expansion project has been identified by the Ministry of Energy, Northern Development and Mines, the OEB and the IESO as a priority project, as per an Order-in-Council issued by the Lieutenant Governor in Council on March 4, 2016. As such, this ToR proposes a focused EA will be prepared. An extensive alternatives assessment process has been previously performed by these government agencies in the needs assessments and rationale for the East-West Tie Corridor Expansion project conducted by OPA and IESO. Section 1 further outlines these needs assessments and scoping of the Project. In these assessments, other alternatives to the undertaking, such as increased local generation and other transmission solutions were assessed and the proposed East-West Tie Corridor Expansion transmission project was identified as the preferred option (IESO).

In accordance with subsections 6(2)(c) and 6.1(3) of the EA Act, a focused EA will be prepared. The assessment of alternatives to the undertaking will take into account the IESO and OPA planning processes. As such, the need and method for the goals of the project has been clearly identified and the EA will not contain an assessment of alternatives to the undertaking.

6.2 'Do Nothing' Alternative

The 'Do Nothing' alternative represents what is expected to happen if none of the alternatives being considered is carried out (MECP 2014). It is the starting point of the comparison of alternatives. Despite the documented need for the project, it is important to consider the 'Do Nothing' alternative which will take into account the identified potential impacts of the absence of the Project in light of natural and

socio-economic terms. The EA will focus on the comparative advantages and disadvantages of the proposed reference route and reference route alternatives as well as provide a 'Do Nothing' alternative.

6.3 Alternative Methods of Carrying out the Undertaking

The evaluation of alternatives to the Project will assess alternative methods for carrying out the undertaking such as alternative routes between Thunder Bay and Wawa, local refinements to the reference route, alternative infrastructure designs and siting, revised ancillary infrastructure (access roads, fly yards, etc.) and others. Alternative methods of carrying out the undertaking will be identified, evaluated and assessed in the EA. A reference route will be evaluated against an alternative reference routes to compare the advantages and disadvantages of each option in the context of the natural environment, socio-economic environment and technical-administrative and cost considerations.

6.3.1 Alternative routes

Hydro One has put forward route alternatives for assessment between Thunder Bay and Wawa. Each of the proposed routes fulfills the connection criteria outlined by the government and have been developed to be located adjacent to existing transmission corridors, where possible, in accordance with the Provincial Policy Statement. Figure 6 shows the reference route (solid line) and identified reference route alternatives (dotted lines). A full consideration of alternatives assessment and rationale for reference route and reference route alternatives will be undertaken which will include an understanding of the origin of the reference route and reference route alternatives.

The reference route travels from the Wawa TS through Pukaskwa National Park to the Marathon TS along the existing Hydro One ROW. From there, it follows the shore of Lake Superior until Dorion where it travels north of the existing ROW and connects to the Lakehead TS. The reference route alternative sections follow the same route as the reference route, except that, prior to entering Pukaskwa National Park from the east, it travels north to White River and follows Highway 17 west to the Marathon TS to avoid the area through Pukaskwa National Park. Based on regulatory feedback, a reference route alternative section twinning the existing East-West Tie through the Dorion area was proposed.

There are a number of existing linear corridors between Thunder Bay and Wawa which would satisfy the connection criteria for the Project. The identified route alternatives have been presented due to cost, construction, operation, maintenance, reliability, stakeholder consultation and environmental concerns. Large portions of the proposed corridor have been recently studied and significant public and Indigenous consultation has gone into identifying the proposed route alternatives. Section 5.2.5 of the *Code of Practice* states the ToR should provide justification for limiting the examination of alternatives

and a statement of the rationale for the alternatives that will be examined the EA. A thorough screening of route alternatives will be provided in the EA.

The sections below identify the transmission route that will be assessed and will describe the local refinement and design considerations.

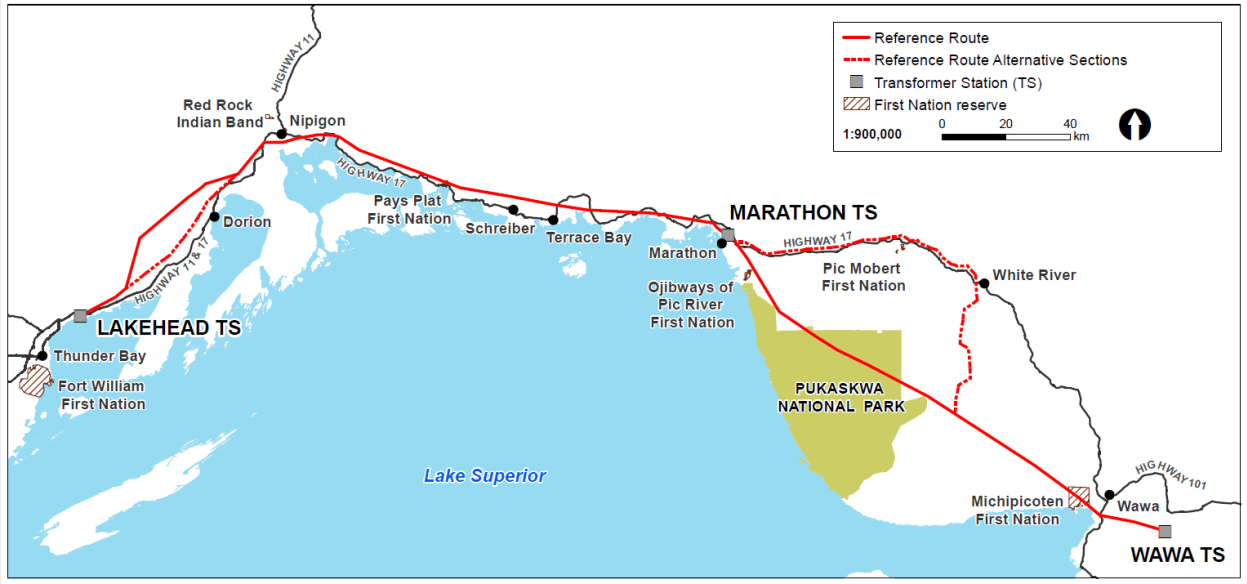

Figure 6 – Reference route (solid red line) and reference route alternative sections (dotted red line).

6.3.2 Alternative Designs

Alternative designs to the Project will be examined on a case-by-case basis based on feedback received or through the assessment of natural and socio-economic environments. These alternative designs may be used to accommodate stakeholder and Indigenous community concerns or as a mitigation measure for a particular environmental component. These alternative designs could be different tower structures, heights, alignment on a property, modification to access roads or other Project infrastructure, or other identified design concerns.

6.3.3 Local Refinements of the Reference Route

The Project team, in consultation with affected/interested persons and, will highlight specific areas where the reference route could be refined if an alternative will result in potentially significant benefits, all factors considered. Local refinements to the reference route might be required as a result of consultation, to avoid sensitive environmental features (natural, socio-economic, cultural etc.), technical

considerations, and request of landowners. The need for local refinements to the reference route and final siting will be determined and evaluated during the EA process.

As a result of consultation, the EA will work to seek other local route refinements and evaluate them. The evaluation will examine the differences in net effects and costs associated with local alignment configurations. After engagement/consultation with landowners, agencies, municipalities, Indigenous communities, and interest groups, the project team may refine the reference alignment. Hydro One acknowledges that consideration of local refinements may require additional and timely notification of new potentially affected landowners. The decision-making process will be clearly documented and presented to stakeholders and Indigenous communities for input and comment, and to ensure that issues have been addressed.

6.4 Evaluation of Alternative Methods

The purpose of this section is to describe the approach to be taken in the assessment and evaluation of the alternatives in the EA. At the heart of the EA planning process in Ontario is the comparative analysis of alternatives, assessing advantages and disadvantages and determining the best alternative that is appropriate to address the problem or opportunity. In accordance with Section 5.2.7 of the Ministry's *Code of Practice*, the ToR will identify the evaluation methods to be used and the reason for its selection or outline the general parameters that will be used to identify the evaluation methods in the EA.

When alternative methods are being considered, a local study area will be established. Data will be collected for environmental features within the study area to identify the preferred alternative method. This data is intended to assist in determining the overall effect of the ROW alignment on the natural, socio-economic and cultural/built environments to develop appropriate mitigation measures. These evaluation criteria and indicators may be subject to refinement and modification during the EA process based on study findings, consultation and provincial policy. Technical, administrative and cost criteria will also be considered in this process.

The evaluation methods are based on a set of criteria and indicators. Sufficient information about the criteria and indicators and how they will be developed, is presented in the ToR to ensure that they can be understood by interested persons who are then able to provide informed comments. A preliminary list of criteria and indicators can be found in Appendix 1. Appendix 1 details the rationale for the selection of each of the proposed criteria and indicators, and an explanation about how each criteria and indicator may be further developed during the EA process. More detail will be provided in the EA. The criteria, indicators and evaluation methods will be further developed and refined during the EA process, in consultation with the public, government agencies, Indigenous communities, and any other interested persons.

Alternative method selection will be evaluated in a comparative manner by different factor groups (natural environment, socio-economic environment, technical-administrative-cost); criteria (human and

natural components of the environment that potentially could be affected by the project); and indicators (direct quantitative measures that can be used to represent the measurements of potential effects for each criterion). Data sources will be identified for each indicator. For consistency and reliability, data sets will be limited to secondary source data readily available to Hydro One, for example, in a consistent Geographic Information System (GIS) format for the various options. Some examples of indicators to be used for each criterion include the following:

- Natural Environment (proximity to known Species At Risk);
- Socio-economic environment (number of properties crossed);
- Cultural/built environment (effect on natural heritage values)
- Technical, Administrative and Cost Criteria (total route distance and area)

The methods chosen will produce an assessment that is clear logical and traceable. The alternatives evaluation will also examine the differences in net effects and costs associated with alignment configurations. These following general principles will be applied by Hydro One during the EA process in the development and evaluation of alternative methods:

- maximizing paralleling existing infrastructure corridors;
- minimizing the affected land area;
- minimizing negative effects on existing and designated land uses;
- minimizing negative effects on agricultural lands and operations;
- minimizing negative effects on natural systems, with particular emphasis on natural features, functions and communities (including treed lots and vegetation);
- minimizing negative effects on built-up areas that provide a cultural, recreational, social and economic benefit;
- minimizing negative effects on businesses, farmers and landowners; and,
- maximizing opportunities to enhance positive effects on the natural and socio-economic environment.

Other factors will be considered depending on stakeholder and Indigenous community input. For consistency and reliability, data sets will rely on secondary source data readily available to Hydro One, supplemented, as appropriate, by primary data collected from interest groups, agencies, utilities, members of the public, Ministries, Indigenous communities and field studies. Published secondary source data for the evaluation of alternative methods, such as aerial photos and GIS data, will be obtained from agencies and municipal Official Plans. The analysis and results of the methodology described above will be prepared and documented in the EA and its appendices. Appendix 1 contains a list of criteria and their indicators. Avoidance and protection considerations of known values of significant interest and protected areas will also inform local refinements of the reference route.

The principles for evaluating alternative methods are intended to minimize significant environmental effects. Modifications to the project design will occur throughout the project planning in conjunction with discussions with stakeholders and Indigenous communities. Evaluation methodologies will be fully documented within the EA. The EA will consider climate change adaptation and mitigation and cumulative effects in the evaluation and assessment of alternatives and the preferred undertaking.

6.5 Evaluation of Potential Effects on the Natural Environment

The following section identifies the potential effects evaluation and associated mitigation measures to avoid or minimize negative effects. Construction activities associated with the Lake Superior Link Project that may have an effect on the natural environment include:

- brushing, clearing and grading;
- staging and stockpiling areas;
- construction of access roads including stream crossings;
- delivery of equipment and materials;
- delivery, assembly and installation of new towers;
- stringing of conductors; and,
- rehabilitation/restoration.

Potential negative effects of the proposed undertaking on the natural environment, e.g., soils, surface water and groundwater resources, vegetation, wildlife, fisheries resources and environmentally significant areas, will be assessed and appropriate redesign, mitigation/remedial measures will be recommended to reduce or eliminate those effects will be outlined in the EA. Aligning a new ROW adjacent to an existing ROW will reduce potential negative effects on environmental features by reducing ROW widening requirements relative to a greenfield ROW. The reference route will also use existing ROWs in areas where widening is not possible in Pukaskwa National Park.

A list of potential Project effects on the natural environment is listed in Table 7 below:

Table 7 – Project activities and potential effects on the natural environment

Project Activity	Potential Effects
• brushing, clearing and grading; • staging and stockpiling areas; • construction of access roads including stream crossings; • delivery of equipment and materials; • delivery, assembly and installation of new towers; • stringing of conductors; • Operation and maintenance; and, • rehabilitation/restoration	• soil compaction and erosion; • loss of vegetation from clearing and associated loss of wildlife habitat; • displacement of wildlife or effects to nesting birds and species at risk; • habitat fragmentation; • incidental spills of oil, • gasoline and other chemicals; • water quality and fish habitat degradation due to temporary stream crossings; • degradation of environmentally significant areas. • impact to water supply wells • potential contaminant discharges • disturbing pre-existing shallow contaminated soils • leaching of herbicides

	• managing precipitation and runoff • effects from dewatering • Blasting; and, • artesian conditions

Transmission towers will not be constructed in streams, rivers, etc. Similarly, no dewatering, filling in, and/or relocating of watercourses are anticipated. Efforts will be made to prevent any short term stream flow interference (i.e. culvert crossing installations) which could cause adverse effects. The construction plan will minimize or avoid any direct works in water bodies and most construction will occur at appropriate setbacks from water bodies. The potential for these effects will be addressed in the EA and on a site specific basis, through the permitting processes.

Hydro One will consider opportunities for habitat improvements including streamside buffers within the proposed reference route including any selected route refinements. This will be done in consultation with affected property owners, interested Indigenous communities, conservation authorities, provincial ministries and affected municipalities.

The issue of soil compaction and measures to mitigate effects on soil permeability, drainage and hydraulic balance will be addressed in the EA. The potential for soil contamination will be considered and the Guide on Site Assessment, the cleanup of Brownfield Sites and the Filing of Record of Site Condition will be consulted to determine the most appropriate course of action.

The EA should include a spill prevention and response plan, a waste management plan, and a blast management should blasting be required. The use of ammonium nitrate explosive in the vicinity of water supply wells should be avoided. Should blasting be required, best management practices (BMPs) and mitigation measures specific to explosives management and use will

Dust and noise from construction are controlled with appropriate mitigation measures and environmental best management practices. Potential air quality effects from construction activities, especially for the potential receptors near the transmission line will be considered. Air quality impact assessment will be conducted and included in the environment assessment.

Sediment and erosion control measures will be identified and addressed in the EA document. This includes identification of areas where soil or other factors could affect the effectiveness of those measures. Trigger/threshold values will be established for suspended sediment and turbidity be followed where bankside, in-stream and/or dewatering work is required. Sampling will occur in potential sensitive receivers before, during and after such work is undertaken.

6.5.1 Guidelines and Best Management Practices

To reduce or eliminate potential negative environmental effects associated with the construction and operation of the proposed facilities, proven environmentally sound guidelines and BMPs will be implemented using:

- "Environmental Guidelines for the Construction and Maintenance of Transmission Facilities" (Hydro One 2009);
- "Best Management Practices for Wetland Crossings" (Morissette 2014);
- Crown Land Bridge Management Guidelines (MNR 2008)
- Northern Land Use Guidelines – Access: Roads and Trails (INAC 2010)
- Fish-Stream Crossing Guidebook (B.C. Ministry of Forests, Lands and Natural Resource Operations, B.C. Ministry of Environment, and Fisheries and Oceans Canada 2012)
- Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guideline for the Protection of Aquatic Life
- Ontario Provincial Standard Specification (OPSS 805) – Construction Specifications for Temporary Erosion and Sediment Control Measures
- Ontario Provincial Standard Specification (OPSS 182) – General specifications for Environmental Protection for Construction in Waterbodies and on Waterbody Banks
- Ontario Provincial Standard Specification (OPSS 518) – Construction Specifications for Control of Water from Dewatering Operations
- "Overhead Line Construction" (DFO 2007);
- "Riparian Zone Protocol" (Fitzsimmons 2010);
- "Debris Removal for Culvert Maintenance" (TRCA 2014);
- "Environmental Guidelines for Access Roads and Water Crossings" (MNR 1990);
- "Guidelines for Evaluating Construction Activities Impacting on Water Resources" (MECP 1995);
- "Utility Vegetation Management" (Cieslewicz 2004); and
- "Management Approaches for Industrial Fugitive Dust Sources" (MECP 2017).

In addition, all other relevant environmental requirements and policies will be identified and taken into account in the EA.

6.6 Evaluation of Potential Effects on the Socio-economic Environment

Socio-economic impacts can be positive or negative; and can occur at various units of social order: individuals, businesses, communities, economic sectors; however, the objective of the Lake Superior Link Project is to provide an overall benefit to the Province of Ontario. The socio-economic impact assessment will identify positive and negative effects of the project locally and to the Province. Appendix 1

Potential effects of the proposed undertaking on the socio-economic features identified will be assessed and appropriate mitigation/remedial measures will be recommended to reduce or eliminate the significant negative effects. The assessment of effects will be based on data collected from primary and secondary sources. A broad assessment of potential socio-economic considerations of the alternative methods both during and after construction on existing land use, potential development, businesses and community features shall be prepared and will identify proposed mitigation measures. The data collected as part of the baseline environmental description will be provided in the EA document and will form the basis for measuring effects of the project. This includes data from supporting technical studies, surveys and environmental inventories collected from within the study area.

6.7 Effects on the Cultural and Built Environment

The Project may have potential effects on the cultural/built environment, including, but not limited to, the following:

- Archaeological sites and areas of archaeological potential;
- cultural heritage resources (archaeological, built heritage, cultural heritage landscape); and,
- churches and cemeteries.

To assess the potential effects of project on heritage, archaeology and cultural resources, the EA will draw upon the available results of a Stage I and Stage II archaeological assessment and future archaeological work, subject to availability. A Cultural Heritage Evaluation Report (CHER) and/or Heritage Impact Assessment (HIA) may be conducted for cultural heritage resources not previously assessed. Information and data will also be obtained from Municipal Heritage Groups, heritage planners, Indigenous communities, secondary source information, and discussions during the engagement/consultation process. Appendix 1 provides additional information on development of criteria and indicators for effects on the cultural and built environment.

6.7.1 Effects on Traditional / Indigenous Land Use

Indigenous communities may have an interest in a project in addition to or apart from any potential effects on Indigenous interests and treaty rights. Through discussions with Indigenous communities, Hydro One will attempt to determine the extent and nature of any interests in the project as well as any potential effects on Indigenous interests and treaty rights.

Hydro One is currently undertaking consultation activities with the 18 First Nation and Métis communities identified by the Ministry of Energy, Northern Development and Mines to gain information on traditional values as they relate to the project. As part of the EA process, Hydro One will provide to

Indigenous communities who wish to receive it, species information which is gathered from the field studies. Hydro One will also consider any information Indigenous communities provide on protection of plant and animal species which have traditional value. Information obtained through consultation will be used in developing indicators and measures for effects on all criteria and indicators. Appendix 1 provides additional information on development of criteria and indicators for effects on traditional / Indigenous land use.

6.8 Technical, Administrative and Cost Considerations

The technical, administrative and cost considerations will be used to evaluate the alternatives, including the considerations for development of criteria and indicators in the bullet points below.

- system safety and reliability;
- constructability and feasibility analysis;
- duration and impacts of line outages to enable connections for the new line;
- availability of tower and other infrastructure materials;
- timely regulatory and agency approvals;
- material differences or design changes arising from the EA or other approvals;
- design changes to accommodate requirements from Alternative Methods analysis;
- poor or contaminated soil conditions;
- unexpected site drainage requirements;
- adverse weather conditions;
- conflicts with other utility ROW's that intersect or parallel the proposed facilities.
- land costs;
- construction capital costs; and
- operations and maintenance costs

Appendix 1 provides additional information on development of criteria and indicators for effects on the technical environment.

7. Potential Environmental Effects Assessment and Mitigation Measures

Once the assessment and comparative evaluation of the alternatives is completed, a preferred undertaking will be identified. The purpose of this section is to describe the approach to be taken in the evaluation of the environmental effects of preferred undertaking. The intent is to allow the additional details developed on the preferred undertaking (i.e. design, operations etc.) to be assessed. It also allows for the evaluation of impact management measures and net effects within the context of a more comprehensive description for the preferred undertaking.

The evaluation methods will be refined during the EA process to assess the undertaking on the environment during all phases of the project (i.e. construction, operation, maintenance etc.) are:

- Potential environmental effects;
- Impact management measures;
- Net effects; and,
- Advantages and disadvantages.

Table 8 identifies the preliminary environmental features and technical criteria that will be assessed in the evaluation of potential environmental effects. Preliminary criteria and indicators have been developed for the effects evaluation utilizing the general principles detailed in Section 6.5 and further expanded upon in Appendix 1. Hydro One will collect relevant raw data from the indicators and use them in the assessment of the effects evaluation. The preliminary list of criteria and indicators will be developed and refined during the EA process in consultation with the public, government agencies, Indigenous communities, and any other interested persons.

Table 8 – Preliminary environmental and criteria during Project planning

Environment	Criteria
Natural Environment	• Wetlands, Watercourses and Water bodies • Fish and Aquatic habitat • Areas of Natural and Scientific Interest (ANSIs) • Species at risk (SAR) • Terrestrial wildlife and wildlife habitat • Significant valleylands • Forests, vegetation and woodlands • Hazard lands • Migratory birds • Air Quality • Traditional Knowledge
Socio-economic Environment	• Existing land use and development • Commercial activities • Potential effect on Mineral and aggregate resources • Community profile

Environment	Criteria
	• Community services • Landscape and visual assessment • Parks and Conservation areas • Recreational facilities (camp ground, park, sport field, golf course)
Cultural/Built Environment	• Cultural Heritage Resources • Traditional/Indigenous Land Use
Technical considerations	• Safety and Reliability • Constructability • Budget • Location • Access • Interactions with other infrastructure

7.1 Mitigation Measures

Mitigation measures will be developed and described in the EA to avoid or minimize negative effects due to construction and operation of the project. The EA will recommend construction and operational monitoring programs designed to verify effects prediction, the effectiveness of mitigation measures and the need for any remedial measures, should they be necessary. The EA will also consider climate change adaptation and mitigation and cumulative effects in the evaluation and assessment of alternatives and the preferred undertaking.

8. Commitments and Monitoring

Hydro One is committed to environmental protection and responsible environmental management. This project will be carried out in compliance with environmental legislation, Hydro One corporate policies, BMPs, and corporate environmental procedures. The EA document will provide information so that facilities will be designed, constructed and operated in a manner that makes efficient use of resources, prevents pollution and reduces environmental effects to the extent that is reasonably achievable. Hydro One strives for the continual improvement in its management system, processes, activities and services. The EA document will provide information to address commitments and monitor the Project in the following ways:

- identify, assess, and manage potentially significant environmental risks and integrate environmental considerations into decisions;
- inform employees and contractors so that they understand their roles, responsibilities and Hydro One's environmental requirements and have the skills, knowledge and resources necessary to perform their duties;
- promote continual improvement by setting environmental objectives and targets, monitoring performance and taking corrective and preventive actions when required;
- work cooperatively with governments, customers, suppliers and other stakeholders to develop programs that contribute to the achievement of Hydro One's environmental objectives and targets; and,
- support the investigation and use of new methods of environmental protection that will help achieve Hydro One's business objectives.

The Hydro One Environmental Policy and Environmental Commitment form the overarching foundations for commitments made in the EA. An Environmental Specification will be prepared to guide project construction. An environmental specialist will be assigned to support and monitor construction activities. As noted, construction and operational studies will be carried out to confirm project compliance, the accuracy of environmental effects predictions, the effectiveness of mitigation measures and the need for any remedial action. In accordance with Section 5.2.8 of the Ministry's Code of Practice, a monitoring framework will be developed during the EA and will consider all phases of the proposed undertaking.

8.1 Project Effects Monitoring

Effects monitoring are activities carried out by the proponent after approval of the undertaking to determine the environmental effects of the undertaking. During the later stages of the EA process, an effects monitoring program will be developed. The effects monitoring program (to be included in the EA) will describe the project environmental management system that will ensure compliance with all

commitments set out in this assessment made during the EA process, plus other environmental requirements (e.g., terms and conditions of EA approval and other legislation).

Construction and operational monitoring will identify actual effects, assess the effectiveness of the mitigation/restoration/enhancement measures to reduce or eliminate these effects, and evaluate the need for any additional action to ensure commitment realization.

8.2 EA Process Monitoring

Compliance monitoring is the assessment of whether an undertaking had been constructed, implemented and/or operated in accordance with commitments made during the EA and the conditions of EA approval. During the planning and design processes, compliance with EA process commitments outlined in the ToR will be regularly reviewed prior to project implementation. External notification and engagement/consultation will be consistent with EA commitments. Hydro One will provide a monitoring strategy that sets out how and when all commitments made in the EA will be fulfilled and how Hydro One will report to the Ministry of Environment, Conservation and Parks about compliance.

The EA process monitoring program (to be included in the EA) will describe the project environmental management system that will ensure compliance with all commitments set out in this assessment made during the EA process, plus other environmental requirements (e.g., terms and conditions of EA approval and other legislation).

Appropriate commitments to compliance monitoring will be reflected in study documentation. The duration of the monitoring and follow-up programs will vary and will depend on the conditions of permits and approvals granted by regulatory agencies.

8.3 Commitments

In accordance with Section 5.2.8 of the Ministry's *Code of Practice*, the EA will include a comprehensive list of commitments made by Hydro One during the ToR process, and where or how they have been dealt with in the EA. Furthermore, the EA will include a comprehensive list of commitments made by Hydro One during the EA process; including all commitments relating to impact management measures, additional works and studies to be carried out, monitoring, consultation and contingency planning, and documentation and correspondence.

9. Consultation

Effective consultation for both the ToR and EA is a vital part of the Project lifecycle. Interested parties can raise concerns about the project during the ToR and EA process so that Project planning can resolve issues before they arise. Consultation can result in mitigation of impacts to individuals and communities, fewer conflicts and delays and helps to improve transparency around the ToR, EA and Project planning process.

The objectives of the consultation plans are to:

- consult with all potentially affected and interested stakeholders and Indigenous communities;
- provide sufficient information in a user-friendly format;
- provide opportunities for input before decisions are made;
- provide appropriate, flexible and convenient opportunities for consultation that meet the needs of stakeholders and Indigenous communities;
- be responsive by listening to comments, giving them careful consideration, making changes to Project proposals where appropriate and providing a rationale where no change is made;
- document the consultation program as well as the issues raised by stakeholders and Indigenous communities and provide written responses to key issues; and,
- evaluate the effectiveness of the program on an ongoing basis and make changes for improvement.

Meaningful consultation lasts the life of the Project. Figure 2 outlines the EA process and consultation activities are available throughout. Specific consultation activities are described below.

9.1 Principles and Approach

Consistent with the MECP Code of Practice and best practices in Indigenous community, public and stakeholder consultation and engagement, a number of key principles underpin the approach, for this project, including:

- early, ongoing, clear, timely and respectful communication and dialogue with all stakeholders and Indigenous communities;
- a 'no surprises' for elected officials by providing advance copies of information being circulated in the public domain;
- provision of multiple and ongoing opportunities for all affected and interested parties to communicate with members of the project team and to provide input in a way that meets their needs;
- open, transparent, and flexible planning and decision-making processes; and,

- thorough documentation of input received during the consultation process and follow-up with all participants on how their input was incorporated into project plans, or an explanation of why it could not be incorporated.

The Lake Superior Link team will approach communication and consultation with:

- a focus on building local relationships by communicating with the residents and officials, media and interest groups in the immediate project area and identifying opportunities for face-to-face meetings;
- a commitment to ongoing conversations with communities along the route, including Indigenous communities, about what tangible benefits we can bring to the region; and,
- dedicated property agents to communicate personally with property owners adjacent to the proposed corridor (two agents for the permanent rights and one for temporary rights).

9.2 Duty to Consult with Indigenous Peoples

It is the responsibility of the Crown to determine whether a Duty to Consult has been triggered and, if so, the appropriate depth of consultation to be undertaken. Ministry of Energy, Northern Development and Mines, on behalf of the Crown, formally delegated procedural aspects of consultation to Hydro One and provided a list of communities to be consulted for the environmental assessment process on March 2, 2018. The Ministry of Energy, Northern Development and Mines also notified the communities of this delegation.

If the Crown has determined that consultation is required with respect to the Project, then the Crown will:

- Advise Hydro One in a timely manner of the Indigenous communities to be consulted and the depth of necessary consultation with respect to each community; and,
- Notify the identified Indigenous communities that it has delegated procedural aspects of consultation on the Project to Hydro One; and Undertake any preliminary and ongoing assessment of the depth of consultation required for each identified community.

The courts have established that the constitutional duty to consult rests with the Crown. However, government can delegate some of the procedural aspects of the duty to consult upon project proponents. Also, government may coordinate consultation activities of agencies and proponents. Project proponents are obliged under the *EA Act* to consult with all interested parties. In addition, the public consultation process is also open to the Indigenous communities. The list of the 18 identified First Nation and Métis communities are:

- Animbiigoo Zaagi'igan Anishnaabek First Nation ;
- Biinjitiwaabik Zaaging Anishinaabek First Nation;

- Biigtigong Nishnaabeg;
- Bingwi Neyaashi Anishinaabek
- Pic Mobert First Nation;
- Fort William First Nation;
- Ginoogaming First Nation;
- Long Lake #58 First Nation;
- Michipicoten First Nation;
- Missanabie Cree First Nation;
- Ojibways of Batchewana;
- Ojibways of Garden River;
- Pays Plat First Nation;
- Red Rock Indian Band (Lake Helen);
- MNO (Métis Nation of Ontario) Greenstone Métis Council;
- Red Sky Métis Independent Nation;
- MNO Superior North Shore Métis Council; and,
- MNO Thunder Bay Métis Council.

Hydro One acknowledges that there may be additional Indigenous communities, not included in the preceding list that may come forward with information on the potential effects of the Project upon their section 35 rights. Hydro One will advise the Crown and seek a determination as to whether the Duty to Consult has been triggered and if so, the depth of required consultation.

Hydro One is committed to working closely with the Crown to ensure that the duty to consult Indigenous communities is fulfilled. Engagement and relationship between Indigenous communities and Pukaskwa National Park will be considered. Engagement and relationship between Indigenous communities, provincial and federal agencies will also be considered. Hydro One will develop an engagement and consultation plan for executing its responsibilities during the course of the Environmental Assessment and other processes undertaken by the Crown. Hydro One will work directly with Indigenous leadership to disseminate clear and concise information to their communities. Consultation on a draft Indigenous consultation plan for the EA will occur with all identified Indigenous communities

9.3 Consultation on the ToR

Hydro One has a detailed consultation plan for the ToR. It involves keeping all potentially interested stakeholders and Indigenous communities informed of the project and soliciting their input at key points. The following describes the public and Indigenous consultation activities undertaken or to be undertaken in relation to the preparation of the ToR.

9.3.1 Government Agency and Public Consultation

Community Information Centres (CICs) were held in March and June 2018 in nine communities to introduce the project and to let people know that Hydro One was applying for OEB Section 92 approval to build the transmission line between Lakehead TS and Wawa TS.

Hydro One published the Notice of Commencement of ToR and invitation to Community Information Centres in French and English the week of May 28 and June 4, 2018 in the Thunder Bay Source, Nipigon Red Rock Gazette, Terrace Bay Schreiber News, Marathon Mercury, Wawa Algoma News Review, mywawa.ca and the Thunder Bay Chronicle.

A community flyer, double-sided in French and English, was delivered to 39,000 subscribers and non-subscribers of the Thunder Bay Chronicle. Over 5,000 households in communities east of Thunder Bay to Wawa received the flyer via Canada Post unaddressed Ad mail.

Radio advertisements publicizing the project and CICs ran the week of June 4 and June 11 on the following radio stations CFNO (Marathon, also covering Red Rock and Nipigon); CJSD, CKPR, CKTG and CJUK (Thunder Bay, also covering Schreiber and Dorion); and WJWA (Wawa, covering White River and Wawa).

Government Review members and stakeholders were sent the NoC and the draft ToR. Property owners were sent letters to notify them of the NoC, the CIC and the draft ToR.

A series of nine CICs were held the week of June 11, 2018. The sessions are as follows:

Monday June 11, 2018
Thunder Bay
5 p.m. - 7:30 p.m.
Valhalla Inn – Viking Room
Nipigon
5 p.m. -7:30 p.m.
Royal Canadian Legion Branch 32

Tuesday June 12, 2018
Red Rock
12 p.m. – 2 p.m.
Royal Canadian Legion Branch 226
Dorion
5 p.m. - 7:30 p.m.
Dorion Community Centre
Terrace Bay
5 p.m. - 7:30 p.m.
Terrace Bay Cultural Centre

Wednesday June 13, 2018
Schreiber
5 p.m. - 7:30 p.m.
Schreiber Municipal Gym
Marathon
2 p.m. – 7 p.m.
Marathon Centre Mall

Thursday June 14, 2018
White River
5p.m. - 7:30 p.m.
White River Community Centre
Wawa
5p.m. - 7:30 p.m.
Royal Canadian Legion
Branch 429

The draft ToR was available for review and comment at the CICs, at the local Municipal offices and on the Hydro One website from June 11 to July 26, 2018. A revised and proposed ToR will be submitted to MECP for approval and made available for review in the summer of 2018.

On-going meetings have been held with a number of government agencies including MECP, MNRF and Parks Canada. Government Agencies that were identified as being potentially interested in the project were phoned on June 8, 2018 and asked if they would like to discuss the Project and notified that the Draft ToR was being released for comments on June 11. This was followed up on June 11 by an e-mail to the stakeholder list with a link to the draft ToR on the Hydro One Projects webpage.

9.3.2 Indigenous Communities

Hydro One acknowledges the importance of conducting consultation through a process that is in alignment with community values, culture and protocols and is prepared to work with Indigenous communities to make necessary revisions to this Plan to ensure that it is respectful of community consultation protocols. Hydro One commits to ensuring that all regional and community protocols will be respected.

Hydro One recognizes the importance of engaging the Indigenous communities regarding the Project. In delegating procedural aspects of consultation, the Ministry of Energy, Northern Development and Mines has identified fourteen First Nations and four Métis Groups as having a potential interest in the project which are listed in Section 9.2. All eighteen Indigenous communities that were in the delegation letter from the Ministry of Energy, Northern Development and Mines were sent the NoC. Follow-up phone calls were, and continue to be, made offering to meet and discuss the project.

Consultation on the development Draft ToR has been undertaken with Indigenous communities. The administration offices of all eighteen Indigenous communities received a hard copy of the draft ToR for their review and comment between June 11 and July 26 2018. Hydro One has attempted to contact each office to arrange to meet and discuss the Project and the ToR. As of July 31, 2018, the following Indigenous communities have responded with written comments on the ToR:

- Biigtigong Nishnaabeg (Ojibways of the Pic River First Nation)
- Biinjitiwaabik Zaaging Anishinaabek First Nation (Rocky Bay)
- Pic Mobert First Nation
- Red Rock Indian Band
- Red Sky Métis Independent Nation

Throughout consultation with communities, Indigenous communities have been solicited for comments on the ToR, the Project as a whole, as well as asked to provide specific criteria and indicators important to their communities. These criteria and indicators have been incorporated into Appendix 1 and Indigenous consultation has identified as an information source. CICs have been scheduled in Indigenous Communities to provide community members with Project details, inform them of the ToR, and provide an opportunity for comment. Past CIC schedule includes:

Wednesday June 13, 2018
Biinjitiwaabik Zaaging Anishinaabek First Nation
1p.m. -5 p.m.

Red Rock Indian Band
5p.m. - 8 p.m.

9.3.3 Record of Consultation

Hydro One has maintained a comprehensive record of consultation and track issues to document all stakeholder, public, government agency and Indigenous engagement activities material to the ToR. The records have been used to:

- document concerns and follow-up actions and responses;
- maintain a current record of staff and community representatives; and,
- maintain a record of all communications (including phone calls and e-mails) and information provided to interested parties as well as consultation events/activities with each community.

The consultation log has been updated to reflect each communication and activity. A copy of the aggregate consultation record will be provided to regulators as required by the regulator and each Indigenous community will be provided with a copy of the consultation record pertaining to that community concurrent with the submission to regulators. The consultation database has included the following information relating to each engagement and consultation event or activity:

- date on which the communication, event or activity occurred;
- method of communication: e.g. letter, e-mail, phone call, face-to-face;
- identification of initiator and recipient of communication or in the case of a meeting, organizer and participants attending at the meeting;
- copy of or link to communication in the case of written communication as well as copy of/or link to any other relevant documentation provided or generated as part of the communication, including all regulatory information provided, notices for community meetings, draft versions of all materials prepared for EA, summary of any resources and/or funding offered, requested/provided to the Indigenous community by Hydro One;
- summary of communication or in the case of a meeting, meeting notes; and,
- identification of issues raised or discussed and any follow-up action or undertaking.

9.4 Consultation Plan for the EA

The Consultation Plan for the EA will apply the same consultation principles as used in the ToR and will take into account feedback from Indigenous communities, stakeholders, and the public

9.4.1 Public Consultation

The following outlines the specific consultation activities that are planned for the EA:

- **Notice of Commencement of the EA –** The Notice will announce the initiation of the EA. The Notice of Commencement will be published in local newspapers and include a brief explanation of the project, key contact information. This activity is a mandatory requirement of the ToR and EA process.
- **Community flyers** – Community flyers will continue to be produced at key decision points to keep stakeholders up to date on the progress of the EA and to invite them to consultation opportunities. Community flyers will be made available on the project website and will be mailed to directly affected property owners within the project routing area and others on the contact list. Community flyers will be produced and distributed via newspaper insert and unaddressed ad mail.
- **Issues Workshops** – Workshops provide an opportunity for interested members of the public to assist in the EA process. Workshops may be held as appropriate with property owners to confirm and develop design alternatives, apply evaluation criteria and establish the relative importance of criteria. If specific issues are identified during the EA process, workshops may be utilized to address the issues.
- **Community Information Centres (CICs)** – The purpose of the CICs will be to provide an opportunity for face-to-face discussion among municipal officials, affected property owners, interested individuals, interest groups and the project team. A series of CICs will be held in the fall of 2018 in the same communities as for the ToR. These CICs will be widely advertised with

similar methods used for the ToR. Comment forms will be distributed at the CICs to acquire responses to specific questions and to allow an opportunity for participants to provide further comments on the proposal. CIC panels and any handouts available at the CICs will also be posted on the project web site for review by those unable to attend the CICs. This series of CICs will allow members of the public to provide input on the proposed project, design (towers design and location, access road location and construction), mitigation and effect management, as well as review draft EA documents.

- **Meetings with trappers -** meetings with trappers to discuss potential impacts the project may have on traplines, as well as mitigation and avoidance measures. Where the impacts to trapping can be demonstrated as a result of the Project, Hydro One will consider a damage/compensation claim or alternative resolution where applicable.
- **Meetings with property owners** – Property agents and EA team members will meet with directly affected property owners where environmental effects have been identified to provide updated information on the project, identify issues and discuss the property acquisition process. This will provide another opportunity for affected property owners to meet face-to-face with project staff and identify any outstanding issues and concerns. Property owners will also be notified directly of upcoming CICs and that the draft EA document is available for review through a mailing. The mailings will include a project newsletter informing affected landowners of dates and locations of scheduled CICs and where and when they can review the draft EA and EA.
- **Interest group meetings** –Key interest groups may request meetings with the project team during the EA process and Hydro One will discuss the project and take into account the feedback from these meetings. Key interest groups will also be provided with a copy of the draft EA and EA for review.
- **Presentations to Councils and municipal organizations** – Upon request, members of the Hydro One project team will appear before local Councils and municipal organizations to share project information, seek feedback on what tangible benefits mean to each community, and continue in a meaningful dialogue with each municipality.
- **Public Notice of Submission of EA to MECP** – Hydro One will notify affected property owners and others on the mailing list by mail that the EA document has been submitted to the Minister of the Environment, Conservation and Parks for approval. The Notice will be published in local newspapers along the route. The Notice will also indicate that a government and public review has been initiated, the length of the minimum review period, and the date that comments are to be submitted to the MECP Environmental Assessment and Permissions Branch (EAPB) contact.
- **Review of a Draft EA document –** Hydro One will notify stakeholders, government agencies, Indigenous communities and other interested parties on the contact list that the Draft EA document is available for review.

It is important to keep people up-to-date about what is happening on the project and inviting input from stakeholders. The following on-going consultation activities are planned for the project:

- **Website** – A dedicated project website will continue to be updated throughout the EA process and will offer visitors access to project information and the opportunity to comment on the proposal. The purpose of the website is to provide a widely accessible venue for a large number of stakeholders to obtain and download a wide range of information in a timely manner

throughout the life of the project. However, internet access is not universally available and thus, alternative options for obtaining information will be available. The website can be found at https://www.hydroone.com/lakesuperiorlink. An email address community.relations@hydroone.com is available on the website for comments and questions to be submitted to the project team;

- **Hotline** – The project hotline, 1-877-345-6799, will provide 24 hour voicemail access throughout the life of the project. This will give stakeholders another opportunity to leave comments or request information regarding the project;
- **Frequently Asked Questions (FAQs)** – A list of FAQs has been posted to the project web site and will be updated periodically to reflect new issues and concerns;
- **Media** – Media will be provided with project information, including a letter, contact card, newsletter, FAQs and technical briefings if needed; and,
- **Documents distributed and posted in public places** –Hydro One will make documents available locally for review by members of the public, government agencies and Indigenous communities. Documents will also be available for download from the project website for those with internet access.

9.4.2 Indigenous Community Consultation

The standalone Consultation Plan is intended to enable Hydro One to carry out its responsibility as described under section 4.1(a) of a Memorandum of Understanding (MOU) signed with the Provincial Crown (Ministry of Energy, Northern Development and Mines) on the legal duty to consult. In addition, the standalone document, the Consultation Plan, is also intended to satisfy any consultation requirements which may be imposed on a proponent through the operation of legislation or policy, including those contained in the provincial *Environmental Assessment Act*, the applicable Policies and Codes of Practice issued by MECP and Hydro One's Indigenous Relations Policy. Hydro One will advise the relevant Crown representatives/agencies of the results of the ongoing engagement with the Indigenous communities and will work cooperatively with all involved to reach appropriate solutions.

The Consultation Plan will also provide a process to facilitate constructive Project-related consultation dialogue between Hydro One and potentially affected Indigenous communities. Such a process will assist in the identification of potential adverse effects of the Project upon the asserted and established Indigenous and treaty rights (hereinafter 'section 35 rights') of Indigenous communities as identified from the Crown and enable Hydro One to work together with those communities to develop avoidance and mitigation measures to address the potential adverse effects. The Consultation Plan will be aligned with the EA process in order to ensure meaningful opportunities for review and comment by the Indigenous communities throughout the development and construction of the Project.

The EA consultation plan for Indigenous communities will clearly set out the steps Hydro One intends to take with respect to consultation activities. This document will include, but is not limited to, consideration of the following:

- How Indigenous communities will be notified and consulted. This includes a description of the consultation activities planned (i.e. notifications, information sharing opportunities, open houses, individual meetings with the community etc.).
- Points in the EA process when Indigenous communities will be consulted.
- Methods that will be used to consult with Indigenous communities.
- Identify the decisions that Indigenous communities can provide input to and what role Indigenous communities play when the proponent makes decisions.
- How traditional knowledge will be incorporated.

Hydro One acknowledges the importance of conducting consultation through a process that is in alignment with community values, culture and protocols and is prepared to work with Indigenous communities to make necessary revisions to this Plan to ensure that it is respectful of community consultation protocols. Hydro One commits to ensuring that all regional and community protocols will be respected. In addition to the tailored consultation approach for Indigenous communities, all public consultation processes and specific consultation activities outlined in Section 9.3.1 and throughout Section 9 will be available to Indigenous communities

Consultation undertaken by Hydro One pursuant to this Plan will be guided by the following principles:

- Ensuring that the consultation process is culturally appropriate and developed and implemented in collaboration with the Indigenous communities;
- Ensuring that potentially affected Indigenous communities are provided with relevant, understandable and accessible Project-related information in a timely and culturally appropriate manner;
- Ensuring that potentially affected Indigenous communities have sufficient opportunity to identify and formulate and express their views on the potential adverse impacts of the Project upon their section 35 rights; and
- Ensuring that Hydro One takes every reasonable step to avoid or mitigate/accommodate, as appropriate, the adverse effects of the Project upon section 35 rights.

Hydro One's process for Indigenous communities is designed to provide information on the project to the Indigenous communities in a timely manner. Hydro One will respond to and address issues, concerns or questions raised by the Indigenous communities in a clear and transparent manner throughout the completion of the regulatory approval processes (e.g., the EA process). The process with Indigenous communities will address the following objectives:

- to provide opportunities for information sharing between Hydro One and potentially affected Indigenous communities as identified by the Crown, including information about the Project and associated review and regulatory processes;
- to identify the potential adverse impacts of the Project (including social, environmental, economic, health and culture) upon section 35 rights;
- to work with potentially affected Indigenous communities as identified by the Crown to identify measures to mitigate or avoid those potential adverse effects;

- provide project-related information which is comprehensive and accessible to assist Indigenous communities to effectively identify their concerns, and any possible effects of the project on their existing or asserted treaty or Aboriginal rights;
- advise of the various provincial approvals that may be required;
- seek information from the Indigenous communities that may be applicable to the study area, including information on Aboriginal interests and treaty rights including archaeological sites, and sacred sites and burial grounds;
- seek input from Indigenous communities on environmental studies to be conducted by Hydro One in the course of the project;
- offer information centers or meetings with Indigenous communities to provide project-related information and to address any concerns, issues or questions about the project;
- provide information, where requested, on the OEB regulatory process and the EA process regarding the project;
- address all issues and concerns raised by Indigenous communities and to how the project may affect these interests;
- consider any potentially affected interests, and clearly communicate the results;
- address issues in relation to project land usage within First Nation Reserves;
- focus consultation on areas not already assessed and verifying publicly available information; and,
- Hydro One will also work with Indigenous communities along the route to explore benefits and opportunities including, but not limited to, capacity building to participate in the engagement process, procurement and sub-contracting opportunities, job training, employment and equity participation; and,
- record all forms of engagement with Indigenous communities, including the creation of a list of concerns and issues raised regarding the project and Hydro One's responses.

Indigenous communities may have different approaches and preferences for the sharing of Traditional or Indigenous Knowledge, and this will be honoured by Hydro One. Indigenous Knowledge is an input to most physical, biological and human components of the environment. Hydro One will consider, and incorporate as appropriate, Indigenous consultation and knowledge in:

- methodology for and description of baseline conditions (e.g., study areas; environmental components; resources, species, other values of importance; timing of baseline studies, etc.);
- evaluation of alternatives and assessment of the preferred undertaking (e.g., criteria and indicators of relevance to Indigenous communities for all environmental components);
- development of mitigation measures and monitoring commitments; and
- the conclusions of the EA, including any residual adverse effects on Aboriginal and treaty rights

In order to achieve the consultation objectives, Hydro One will:

- provide Indigenous communities with timely notice of the Project so that they can consider possible impacts on their section 35 rights;

- provide Indigenous communities with information about the Project and the applicable regulatory and approval processes on an ongoing basis;
- meet with and take into consideration any communications from Indigenous communities in order to identify any concerns that the communities may have regarding the potential adverse impacts of the Project upon section 35 rights;
- where appropriate, discuss with an Indigenous community measures to address potential adverse impacts of the Project upon its section 35 rights;
- maintain a timely, open and transparent dialogue with potentially affected Indigenous communities through phone calls, face to face meetings, e-mails, correspondence and other means as appropriate to ensure understanding at each step in the Project's progress;
- offer Indigenous communities assistance, including capacity assistance, where appropriate for the purpose of participating in consultation on the Project;
- provide support for community liaisons; and,
- document and respond to the issues and concerns which have been expressed by Indigenous communities to Hydro One during the EA and other regulatory processes.

9.4.3 Stakeholder Identification

There are a wide range of project interests, Indigenous communities and stakeholders. Interactions with stakeholders and Indigenous communities will be compiled and consultation commitments will be tracked. The following stakeholders and Indigenous communities will be consulted throughout the EA process:

- owners and occupants (tenants) of property within the proposed transmission corridor;
- residents within the area of the transmission line route;
- non-government organizations and groups with an interest in the project;
- government agencies with an interest in the project including the Government Review Team;
- municipalities affected by the project;
- trappers;
- Indigenous communities as identified by the Crown via the Ontario Ministry of Energy, Northern Development and Mines;
- Visitors to Pukaskwa National Park; and,
- interested members of the public.

Early in the Project planning stage a Government Review Team Master Distribution List was obtained from the MECP. This list is used to ensure that the distribution of Project materials is directed to the appropriate Federal, Provincial and Municipal government agencies.

Stakeholders, interest groups, Indigenous communities and members of the public have been identified in various ways. Geographical Information System data was used to identify directly and potentially

impacted property owners. A third party realty team was used to gather names, addresses and contact information through publicly available sources. Stakeholders and interest groups were identified through research and previously completed publicly available environmental assessment information. In delegating procedural aspects of consultation, the Ministry of Energy, Northern Development and Mines has identified fourteen First Nations and four Métis Groups as having a potential interest in the Project. The duty to consult is discussed further in Section 9.2.

A comprehensive contact list is being maintained from the outset of the Project. Hydro One is committed that the comprehensive project contact list is continually reviewed and updated during the EA process as contacts change and new contacts are identified through consultation activities.

9.4.4 Government Agency Consultation Plan

The purpose of the government agency consultation is to:

- identify concerns and opportunities and collect information related to the project;
- identify issues related to the project, and where appropriate, proposed mitigation;
- identify provincial and federal government agency jurisdiction;
- facilitate the development of a list of all required approvals, licenses or permits;
- identify relevant guidelines, policies and standards; and,
- list all the commitments/obligations and responsibilities of the proponent.

Following the Notice of Commencement of the EA, a government agency consultation package will be sent to all government agency stakeholders from the federal, provincial and municipal governments and conservation authorities soliciting their input and feedback on the Project. The consultation package will include a letter describing the project, a map of the project area and a feedback form for completion.

Follow-up communications will occur with those government agencies that request further meetings/involvement to discuss their input. Hydro One will be available to meet with government agencies regularly to discuss issues that arise and provide progress reports as requested. The feedback forms will capture general comments, while the meetings, if necessary, would allow probing of specific issues in greater detail. Government agencies will also be notified when the draft EA is available for review.

Other consultation activities are as follows:

- **Newsletter –** Newsletters will be made available on the project web site and will be e-mailed to all government agency stakeholders;
- **Issues Workshops –** Workshops may be held as appropriate with agencies, interest groups and municipal staff to confirm and develop design alternatives, apply evaluation criteria and establish the relative importance of criteria. If specific issues are identified during the EA process, workshops may be utilized to address the issues;

- **Review Draft EA and EA**- Government Agencies and the Government Review Team will be given copies of the Draft and EA for review; and,
- **Notice of Submission of EA to MECP –** Hydro One will notify government agencies by e-mail that it has submitted the EA to the Minister of Environment, Conservation and Parks for approval.

Aside from the arranged meetings/interviews, government agency consultations will also dovetail with CIC events as avenues for further input to the process. Engagement with the various stakeholders is expected to be ongoing throughout the EA and into the project implementation process. All government agency submissions and meetings will be documented and included in the Record of Consultation.

9.4.5 Consultation Record

Hydro One will maintain a comprehensive consultation record and track issues to document all stakeholder, public, government agency and Indigenous engagement activities. The records will be used to:

- document concerns and follow-up actions and responses;
- document and track mitigation measures developed by the Proponent to prevent, mitigate or otherwise address potential effects of the Project upon s. 35 rights;
- maintain a current record of staff and community representatives; and,
- maintain a record of all communications (including phone calls and e-mails) and information provided to interested parties as well as consultation events/activities with each community.

The consultation record will be updated to reflect each communication and activity. A copy of the aggregate consultation record will be provided to regulators as required by the regulator and each Indigenous community will be provided with a copy of the consultation record pertaining to that community concurrent with the submission to regulators. The consultation record will include the following information relating to each engagement and consultation event or activity:

- date on which the communication, event or activity occurred;
- method of communication: e.g. letter, e-mail, phone call, face-to-face;
- identification of initiator and recipient of communication or in the case of a meeting, organizer and participants attending at the meeting;
- copy of or link to communication in the case of written communication as well as copy of/or link to any other relevant documentation provided or generated as part of the communication, including all regulatory information provided, notices for community meetings, draft versions of all materials prepared for EA, summary of any resources and/or funding offered, requested/provided to the Indigenous community by Hydro One;

- summary of communication or in the case of a meeting, meeting notes; and,
- identification of issues raised or discussed and any follow-up action or undertaking.

The Record of Consultation for the ToR and EA will be submitted under separate cover.

9.5 Documentation and Issues Resolution Strategy

Consultation/engagement with the various stakeholders and Indigenous communities is expected to be on-going throughout the EA and into the project implementation phase. All comments and input received from the public, government agencies, and Indigenous communities will be documented in a summary table and included in the EA document as part of the Record of Consultation. The summary table will provide a response to each issue. Where resolution of issues has not been possible, this will be noted along with a record of all attempts to resolve the issue. Hydro One will develop an issues resolution strategy for the EA. The EA will also include a consultation summary and a detailed record of comments received, and their resolutions, as well as materials and documentation distributed to stakeholders.

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Appendix 1 – List of Preliminary Criteria and Indicators

Environment	Criteria	Indicators	Preliminary Potential Effects	Rationale for Selection of Indicator	Data Source
Natural Environment	Wetlands, Watercourses and Water bodies	Area of Provincially Significant, Non-provincially significant and Unevaluated Wetlands crossed	Sedimentation / Erosion Fish injury and mortality Changes to habitat connectivity Riparian habitat degradation Changes to hydrology	Provincial designation Potential for short and long-term effects on wetland habitats	MNRF NHIC Desktop studies Indigenous consultation Field studies if required
Natural Environment	Fish and Aquatic habitat	Number of coldwater streams crossed Species types	Sedimentation / Erosion Fish injury and mortality Changes to habitat connectivity Riparian habitat degradation Changes to hydrology	Potential for short and long-term effects on aquatic habitats	MNRF NHIC Desktop studies Indigenous consultation Field studies if required
Natural Environment	Areas of Natural and Scientific Interest (ANSIs)	Area of Provincially Significant ANSIs crossed	Alteration or degradation of habitat quality Contravention of regulator policy	Provincial designation Potential for short and long-term effects on natural features	MNRF NHIC Desktop studies Indigenous consultation Field studies if required
Natural Environment	Species at risk (SAR)	Number and type of SAR including regionally and locally rare species	Changes to SAR populations Loss of important SAR habitat	Provincial designation Potential for short and long-term effects on SAR or their habitat	MNRF NHIC Desktop studies Indigenous consultation Field studies if required.

Natural Environment	Terrestrial wildlife and wildlife habitat	Area of significant wildlife habitat crossed	Changes to wildlife populations Loss, availability and fragmentation of wildlife habitat Changes to movement corridors Injury, mortality or displacement of wildlife	Potential for short- and long-term effects on significant wildlife habitat	MNRF NHIC Desktop studies Indigenous consultation Field studies if required
Natural Environment	Significant valleylands	Area of significant valleylands crossed	Alteration of existing scenic views. Alteration of significant valleylands	Potential for short- and long-term effects on significant valleylands	MNRF Municipalities Indigenous consultation Desktop studies
Natural Environment	Forests, vegetation and woodlands	Areas of forest management units, woodlots, and vegetation assemblages.	Changes to vegetation community assemblages Changes to fringe habitat areas Invasive species in succession areas Reduction of treed areas	Potential for short- and long-term effects on forests, vegetation and woodlands	MNRF NHIC Desktop studies Indigenous consultation Field studies if required
Natural Environment	Hazard lands	Area of Hazard Lands crossed	Damage to assets Danger to individuals	Potential for project effects on natural heritage features	Lakehead Region Conservation Authority MNRF Indigenous consultation Desktop studies Field studies if required

Natural Environment	Migratory birds	Areas of migratory bird flyways, feeding habitat and resting areas.	Reduction of habitat for migratory birds Changes to migratory bird flyways Interaction between Project infrastructure and migratory birds	Potential for short- and long-term effects on migratory birds and their habitat	NHIC MNRF MECP Bird Studies Canada ECCC Desktop studies Indigenous consultation Field studies if required.
Natural Environment	Air Quality	Vehicle emissions Dust emissions Greenhouse gas emissions	Changes to local air quality Cumulative effects on air-quality	Potential for short and cumulative effects on air quality	MECP Desktop studies
Socio-Economic Environment	Existing land use and development	Existing uses and types Sub-division and development plans	Land use compatibility.	Land use compatibility. Compatibility with sub-division and development plans	Municipal planning and zoning information Stakeholder consultation MNRF MMAH MTCS Parks Canada Desktop studies
Socio-Economic Environment	Commercial activities	Tourism related activities Local employment	Disruption to commercial activities Increased commercial activity due to construction Increased employment opportunities	Potential to disrupt or displace tourist attractions and remote tourism businesses Potential to increase competition for skilled employees	Stakeholder engagement Indigenous consultation MNRF MTCS Business Operators MMAH Parks Canada Desktop studies

Socio-Economic Environment	Potential effect on Mineral and aggregate resources	Area of significant aggregate deposits Area of mines within the study area (Ha) Number of mining claims within the study area Area of pits/quarries within the study area (Ha)	Availability of electricity for mining and aggregate industries Disruption to mining and aggregate operations	Potential effects may occur on existing aggregate deposits Potential effects may occur on mining operations Potential effects may occur on the mineral exploration industry. Potential effects may occur on pits/quarries operation	Ministry of Energy, Northern Development and Mines (MENDM) MNRF Ontario's Land Information Directory (OLID) database Owners Desktop studies
Socio-Economic Environment	Community profile	Number of potential property removals (buyouts) Number of potential diagonal severances of properties Number of potentially affected properties	Displacement of people Displacement of businesses Disruption of property usage	Hydro One Policy prohibits homes or family residences from being located within the proposed widened ROW. Diagonal crossings are considered more disruptive because they limit other uses of land Crossings of properties are disruptive to family residences and businesses	Hydro One Real Estate GIS shape files Desktop studies Site visits if required

Socio-Economic Environment	Community services	Number of health care facilities Number of educational facilities Number of other important community facilities	Increased usage of community servicesUsage of waste management services	Potential for project to disrupt or displace facilities Potential for project to disrupt or displace educational facilities Potential for project to disrupt or displace facilities.	Local health department School boards Local road mapping Site visits if required Desktop studies
Socio-Economic Environment	Landscape and visual assessment	Number of residences, farm residences within EA prescribed distance from the ROW or as required for viewscape analysis. Number of trails, waterways, and roads crossed	Impacts to visual quality	Proximity of the widened ROW to residents and recreational users (of scenic landscapes/features) could potentially affect viewer expectations in the vicinity of the lines.	MNRF Lakehead Region Conservation Authority Municipalities Heritage Advisory Committees Indigenous Consultation Stakeholder Consultation Site visits if required Desktop studies
Socio-Economic Environment	Parks and Conservation areas	Area of Federal, Provincial Parks and reserves Area of local parks Number and area of conservation areas	Disruption of recreational users Compatibility with park and conservation policies.	Identify and protect natural and recreational features	MNRF MECP Parks Canada Indigenous consultation Municipalities Lakehead Region Conservation Authority Desktop studies

Socio-Economic Environment	Recreational facilities (camp ground, park, sport field, golf course)	Number of trails (segments)Number of recreational facilities	Disruption of recreational usersDisruption of recreational facilities and lands	Identify and protect natural recreational features	MNRF MECP MunicipalitiesLakehead Region Conservation Authority Desktop studies
Cultural and Built Environment	Cultural Heritage Resources	Archaeological assessments Built heritage Cultural heritage landscape Churches and cemeteries	Damage or loss to cultural heritage resources.	MTCS requirements Potential effects on cultural heritage resources.	MTCS database Existing cultural heritage assessments Indigenous consultation Archaeological report Municipal heritage groups Heritage planners Desktop studies
Cultural and Built Environment	Traditional/Indigenous Land Use	Use and identification of traditionally important land uses by Indigenous communities Number of First Nation reserves crossed	Disruption to traditional land uses Disruption of First Nation reserve lands	Potential effects on traditional and indigenous land use.	Indigenous consultation
Technical Considerations	Safety and Reliability	Duration and impacts of line outages Compliance with codes Compatibility with existing network	Duration and impacts of line outages Safety of new infrastructure	Safety and reliability are primary technical and social concern for all infrastructure	Hydro One safety standards Energy regulators

Technical Considerations	Constructability	Linearity Terrain and soil stability Local design considerations	Potential effects on construction timeline Potential effects on construction budget Potential effects on construction design and feasibility	Constructability is a key technical consideration for the Project	Engineering and design Industry standards Energy regulators
Technical Considerations	Budget	Land costs Construction capital costs Operations and maintenance cost	Potential effects on cost	Providing value to ratepayers is a significant technical consideration.	Hydro OneEnergy regulators
Technical Considerations	Location	Alternative methods to the undertaking Utilization of existing ROWs Length of route Minimizing direction changes	Potential effects on environment Potential effects on budget	Location impacts people, environment and business.	Hydro One Energy regulators Stakeholder consultation
Technical Considerations	Access	Access roads Aerial access Property rights	Potential delays in schedule and additional cost Potential impacts to material and labour supply	Access informs constructability, budget, location and operations and maintenance.	Hydro One Engineering and design

Technical Considerations	Interactions with other infrastructure	Number of natural gas pipelines Number of roads crossed Number of railways crossed (segments) Number of airports within EA prescribed distance of the ROW centerlineNumber of transmission circuits crossed	Increased crossings of Infrastructure Disruptions to infrastructure during construction Infrastructure compatibility	Potential effects on utility pipelines operations and maintenance Potential effects on the driving public, aesthetic and visual Potential effects can occur on railway lands and crossings due to the widened ROW towers, span and overhead clearance Transport Canada requirements for distance separation between transmission routes and runways	Utility companies GIS shape files Rail company Municipalities Site visits if required Local municipalities Private airport operators Transport Canada

Appendix 2 – Supporting Documentation from Energy Regulators