WAASIGAN
TRANSMISSION LINE

hydro one

WAASIGAN TRANSMISSION LINE
DRAFT TERMS OF REFERENCE

JUNE 2020

Acronyms

AC	alternating current
ANSI	Area of Natural and Scientific Interest
CAA	Connection Assessment and Approval
CHC	Cultural Heritage Committee
CHEC	Cultural Heritage Existing Conditions
CHER	Cultural Heritage Evaluation Report
CIC	Community Information Centre
CLUPA	Crown Land Use Policy Atlas
CNR	Canadian National Railway
CPR	Canadian Pacific Railway
DFO	Fisheries and Oceans Canada
EA	environmental assessment
EA Act	*Environmental Assessment Act, 1990*
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
EMF	electric and magnetic fields
END	Endangered
EPRI-GTC	Electric Power Research Institute-Georgia Transmission Corporation
ESA	*Endangered Species Act, 2007*
GIS	geographic information system
HADD	Harmful Alteration, Disruption, or Destruction
HIA	Heritage Impact Assessment
Hydro One	Hydro One Networks Inc.
IAA	*Impact Assessment Act, 2019*
IESO	Independent Electricity System Operator
IK	Indigenous Knowledge
IO	Infrastructure Ontario
ITLP	Indigenous Transmission Limited Partnership
IRRP	Integrated Regional Resource Plan
IPSP	Integrated Power System Plan
km	kilometre
kV	kilovolt

LTEP	Long-Term Energy Plan
m	metres
MECP	Ministry of the Environment, Conservation and Parks
ENDM	Ministry of Energy, Northern Development and Mines
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MMAH	Ministry of Municipal Affairs and Housing
MNO	Métis Nation of Ontario
MNRF	Ministry of Natural Resources and Forestry
MOU	Memorandum of Understanding
MTO	Ministry of Transportation
MW	megawatt
NERC	North American Electric Reliability Corporation
NHIC	Natural Heritage Information Centre
OBBA	Ontario Breeding Bird Atlas
OEB	Ontario Energy Board
OEB Act	*Ontario Energy Board Act, 1998*
OPA	Ontario Power Authority
PPS	Provincial Policy Statement
ROW	right-of-way
RRSSA	Refined Route Selection Study Area
RSSA	Route Selection Study Area
SAR	Species at Risk
SARA	*Species at Risk Act, 2002*
SARO List	Species at Risk in Ontario List
SC	Special Concern
SFL	Sustainable Forest Licence
SWHTG	Significant Wildlife Habitat Technical Guide
THR	Threatened
ToR	Terms of Reference
TS	Transformer Station

Executive Summary

Hydro One Networks Inc. (Hydro One), the proponent, is completing an environmental assessment (EA) for the Waasigan Transmission Line (the Project or undertaking), a proposed new double-circuit 230 kilovolt (kV) transmission line between Lakehead Transformer Station (TS) in the Municipality of Shuniah and Mackenzie TS in the Town of Atikokan, and a new single-circuit 230 kV transmission line between Mackenzie TS and Dryden TS in the City of Dryden. Depending on the preferred route determined through the EA process, the length of the new transmission line will be approximately 350 kilometres (km). The Terms of Reference (ToR) is a document prepared by the proponent that establishes the framework for the planning and decision-making process to be followed by the proponent during the preparation of the EA.

The Project was identified as a priority project by the Independent Electricity System Operator (IESO) based on technical, economic and other considerations. The IESO's assessment of northwestern Ontario's electricity forecast has identified that additional capacity will be required in the region, and the Project is critical to meet Ontario's future electricity delivery needs, and in particular, to support growth and maintain a reliable electricity supply to areas west of Atikokan and north of Dryden (Ministry of Energy, Northern Development and Mines, 2017). Industrial activities in northwestern Ontario, particularly in the mining sector, are expected to drive strong electricity demand growth in the coming decades. Coupled with changes in the region's supply and the connection of remote communities currently relying on diesel generation to the electricity grid, the IESO forecasts a need for new supply to meet future demand in northwestern Ontario (IESO, 2018).

The Project falls within Category C of the Electricity Projects Regulation (Ontario Regulation 116/01) and requires EA approval under the Ontario *Environmental Assessment Act, 1990* (EA Act). The first step of the EA process is the preparation of a ToR for review by Indigenous communities, government officials and agencies, and interested persons and organizations. Ultimately, approval is required by the Minister of the Environment, Conservation and Parks (the Minister) for the Project to proceed. The ToR is prepared by Hydro One to establish the framework for the planning of the EA, including the studies and consultation activities that will be carried out, and decision-making process to be followed. Supporting materials, as well as the Record of Consultation, are submitted separately. The Record of Consultation outlines consultation and engagement undertaken with Indigenous communities, government officials and agencies, and interested persons and organizations during the development of the ToR. This document presents the draft ToR for the Project and was prepared based on the requirements provided in the Ministry of the Environment, Conversation and Parks' (MECP) Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (2014).

Upon approval of the ToR by the Minister, Hydro One will undertake the EA in accordance with the framework laid out in the ToR, and consistent with provincial direction and applicable legislative requirements. The purpose of the EA will be to confirm the preferred route and conceptual design for the Project. Potential effects to the natural and/or socio-economic environment that could result from the construction, operation, maintenance, and retirement of the Project will be identified, and appropriate and necessary mitigation measures to eliminate, minimize, or avoid potential adverse Project-related effects will be documented.

Preliminary baseline environmental conditions were established as part of the development of this draft ToR to gain a contextual understanding of the Project as well as an understanding of the potential environmental effects that should be assessed. Establishing baseline environmental conditions also assists with determining a pre-construction benchmark for future monitoring programs. The baseline conditions described in this draft ToR are based on available secondary sources. A more detailed assessment of baseline conditions will be explored and described during the EA and will be used for the determination of potential Project-related effects.

In general, the area between the Municipality of Shuniah and the City of Dryden is part of the Canadian Shield and is generally characterized by rugged topography, productive forest, several waterbodies, and wetlands. The area also consists of various land uses, including provincial parks, conservation reserves, enhanced management areas, resource and tourism development/activities, and built-up areas, including small towns and cities.

Pre-consultation was completed as part of the Project prior to the release of the Notice of Commencement of the ToR. This included letters to Indigenous communities with an invite to meet. Pre-consultation meetings and community visits took place with several Indigenous communities. In addition, pre-consultation with municipalities and a conference call with government agencies were held prior to the Notice of Commencement of the ToR to discuss the Project, including the general area, study process and overall schedule.

Engagement and consultation completed during development of this draft ToR included meetings, workshops, letters, phone calls and email correspondence with Indigenous communities, government officials and agencies, and interested persons and organizations, and will continue during the subsequent EA.

Hydro One conducted two separate consultation and engagement programs as part of the draft ToR, one for Indigenous communities and another for government officials and agencies, and interested persons and organizations. Indigenous communities were also provided with the information prepared and released for the public program and were invited to, and in some

cases did participate in public consultation activities, such as attendance at Community Information Centres (CICs).

One round of public CICs was held during preparation of this ToR. Indigenous communities, government officials and agencies, and interested persons and organizations, were invited to attend the CICs, designed to introduce the Project and to provide a forum to receive and respond to feedback on a variety of aspects of the Project. Several Indigenous communities had CICs held in their communities as well.

Corridor Workshops were held with government officials and agencies, and interested persons and organizations, as well as with some Indigenous communities, during the development of the ToR to provide input into the routing. In the interest of making the route identification and selection process more transparent and allowing for input to be incorporated early in the planning process, Hydro One elected to use the Electric Power Research Institute-Georgia Transmission Corporation (EPRI-GTC) Electric Transmission Line Siting Methodology as a framework. The EPRI-GTC process for the Project included a series of in-person Corridor Workshops with interested representatives of Indigenous communities, government officials and agencies, interested persons and organizations, with input from the public provided during CICs and ongoing comment submission. The key benefit of this methodology is the ability to gather input from stakeholders through meetings and workshops and quantitatively consider it early on in the alternative route identification and selection process.

Comments and input received to date were incorporated into the EPRI-GTC alternative route selection process. It also played a role in the refinement of the study area and development of the preliminary criteria and indicators to be used for the comparative alternative route evaluation in the EA. Additional CICs and workshops and other engagement opportunities will continue to be held following the release of the draft ToR and into the EA phase to gather further input on alternative route selection and the evaluation process. Feedback received will continue to be incorporated into the evaluation.

The inclusive and consensus-based Corridor Workshops and results from the broader engagement and consultation programs and other activities completed as part of the Project (e.g., baseline conditions) have all played a valuable role in identifying the alternative methods to be assessed and evaluated as part of the EA (e.g., alternative routes between Lakehead TS and Dryden TS).

In addition to the requirements under the EA Act, the Project will also be subject to other permits, approvals and authorizations which will be confirmed during the EA and acquired prior to construction, as applicable.

Table of Contents

Figures

Tables

Appendices

1.0 Introduction and Background

1.1 Introduction

Hydro One Networks Inc. (Hydro One), the proponent, is completing an environmental assessment (EA) for the Waasigan Transmission Line (the Project or undertaking), a proposed new double-circuit 230 kilovolt (kV) transmission line between Lakehead Transformer Station (TS) in the Municipality of Shuniah and Mackenzie TS in the Town of Atikokan, and a new single-circuit 230 kV transmission line between Mackenzie TS and Dryden TS in the City of Dryden. Depending on the preferred route determined through the EA process, the length of the transmission line will be approximately 350 kilometres (km). The location of the Project is shown in **Figure 1-1**.

The Project was identified by the Independent Electricity System Operator (IESO) as a priority project based on technical, economic and other considerations and is one of several identified by the IESO to meet Ontario's future electricity delivery needs, in particular, to support growth and maintain a reliable electricity supply to areas west of Atikokan and north of Dryden (Ministry of Energy, Northern Development and Mines [ENDM], 2017). Industrial activities in northwestern Ontario, particularly in the mining sector, are expected to drive strong electricity demand growth in the coming decades. Coupled with changes in the region's supply and the connection of remote communities currently relying on diesel generation to the electricity grid, the IESO forecasts a need for new supply to meet future demand in northwestern Ontario (IESO, 2018).

The EA will be carried out in accordance with the requirements of the Ontario *Environmental Assessment Act*, *1990* (EA Act). An EA is designed to assess the existing environment and mitigate potential effects before decisions are made about proceeding with a project. The first step of the EA process is the preparation of a Terms of Reference (ToR) for review and decision by the Minister of the Environment, Conservation and Parks (the Minister). The ToR is a document prepared by the project proponent (Hydro One) to establish the framework for the planning, including an outline of studies and consultation activities that will be carried out, and decision-making process to be followed by the proponent during the EA. Supporting material, as well as the Record of Consultation, is submitted separately. The Record of Consultation outlines consultation and engagement undertaken with Indigenous communities, government officials and agencies, and interested persons and organizations, during the development of the ToR. This document presents the draft ToR for the Project and has been prepared based on the requirements provided in the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014).

Upon approval of the ToR by the Minister, Hydro One will undertake the EA in accordance with the framework laid out in this document, and consistent with provincial direction and applicable legislative requirements.

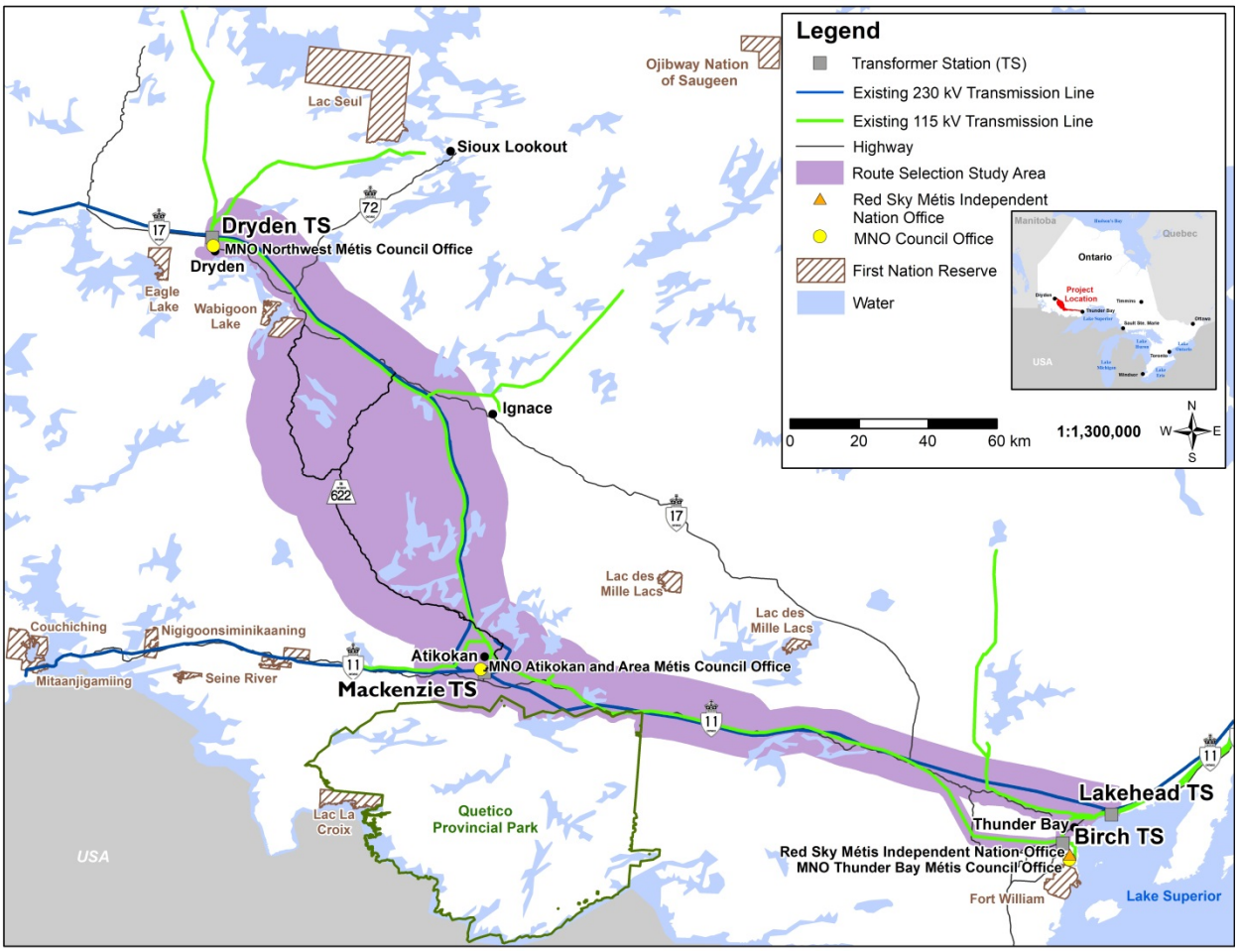


Figure 1-1: Project Location

1.2 Background on the Electricity Sector in Ontario

Legislative changes over the past two decades have led to significant changes to the electricity sector in Ontario. 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. This Act 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:

(1) Ontario Power Generation Inc., which has the mandate to generate electricity for Ontarians and generates almost half of the province's electricity;

(2) Ontario Hydro Services Company Inc., later renamed Hydro One Inc., whose subsidiary Hydro One Networks Inc. (the proponent of this Project), transmits and distributes electricity across Ontario; and,
(3) The Independent Electricity Market Operator, later renamed the Independent Electricity System Operator, which operates the power system in real time, oversees Ontario's electricity market, promotes conservation and plans for Ontario's future energy needs.

The Ontario government established the Ontario Power Authority (OPA) through the *Electricity Restructuring Act, 2004* (the OPA merged with the IESO in 2015). This legislation made changes to the institutional arrangements of the electricity sector in Ontario and established the OPA as the province's long-term energy planner. Specifically, the OPA was given the mandate to develop integrated electricity plans, with the purpose of providing sustainable electricity solutions to Ontarians into the future.

The OPA was also given the mandate to develop an Integrated Power System Plan (IPSP) and address the supply-demand imbalance in Ontario.

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, among other things.

The Ontario Energy Board (OEB) is Ontario's independent energy regulator. The OEB sets rules and guidelines for energy companies in Ontario, such as electricity and gas providers, establishes the rates consumers pay for electricity, licenses the aforementioned providers of energy, monitors the electricity market and companies, and develops new energy policies in consultation with government.

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, provides competition and resources for new entrants to transmission, and further supports economic efficiency for the benefit of ratepayers.

1.3 Background on the Project

The Ministry of Energy (now ENDM) released a series of energy plans that address technology, demographic and economic trends and growth in the renewable energy sector. In 2013, the Ministry of Energy published "Achieving Balance: Ontario's Long-Term Energy Plan" (LTEP), which was designed to balance cost-effectiveness, reliability, clean energy, community engagement and

conservation and demand management before building new generation. The Project, referred to as the Northwest Bulk Transmission Line, was noted as a key transmission project in the 2013 LTEP. An Order-in-Council was issued December 11, 2013 directing the OEB to amend the Hydro One Electricity Transmission Licence to require Hydro One to develop and seek approvals for the Project in accordance with the scope and timing recommended by the IESO (**Appendix A**).

In January 2014, Hydro One's transmission licence was amended by the OEB ordering Hydro One to work with the IESO to establish the scope and timing of the Project, and to develop and seek approvals. In 2016 and 2017, the Ministry of Energy and IESO reassessed the scope and schedule of the Project and reconfirmed the need for the Project to support growth and maintain reliable electricity supply in northwestern Ontario. It was determined that the Project will proceed in phases with development work for the first two phases to proceed at the same time (ENDM, 2017). The phases are as follows:

- Phase One – a line from Thunder Bay to Atikokan;
- Phase Two – a line from Atikokan to Dryden; and,
- Phase Three – a line from Dryden to the Manitoba border, to enable the better integration of provincial electricity grids.

Following this, the IESO issued a letter to Hydro One dated October 24, 2018 (**Appendix A**) which provided an update on the need and scope for the Project, and a recommendation for Hydro One to proceed with development work on Phases One and Two of the Project.

In this letter, the IESO indicated that the updated forecast considered new loads from potential industrial developments (e.g., mines), the connection of remote communities and the cancellation of the Energy East pipeline conversion project. Based on the forecast, the area west of Thunder Bay and north of Dryden is adequately supplied today; however, a need for additional capacity will arise in the mid-2030s (IESO, 2018). In addition under the IESO's high growth scenario, which considers development of the Ring of Fire mineral deposit area with electricity supplied by the Ontario transmission system, a capacity need could potentially arise in the early 2020s (IESO, 2018).

Given the risks associated with load forecast uncertainty and the potential for large industrial projects to add significant load to the area utilizing the remaining capacity margin sooner than anticipated, the IESO recommended Hydro One begin development work on Phases One and Two of the Project to shorten the lead time required should the need materialize. The scope of development work includes preliminary design/engineering, cost estimation, engagement and consultation, routing and siting, and the EA. The IESO did not commit to a timeline for the

construction of the Project; however, it was indicated that developments will be monitored to determine when construction of the transmission line should begin.

To supply the area under the high growth scenario, the IESO indicated the Project must meet the following specifications (IESO, 2018):

a) Consist of a new double-circuit 230 kV line between Lakehead TS and Mackenzie TS (Phase One) with a thermal capacity that is equal to or greater than the existing double-circuit 230 kV transmission line between these stations;
b) Consist of a new single-circuit 230 kV line from Mackenzie TS to Dryden TS (Phase Two) with a thermal capacity that is equal to or greater than the existing single-circuit 230 kV transmission line between these stations; and,
c) Separate the necessary sections of F25A and D26A to ensure the circuits do not share a common structure over a distance that exceeds 1.6 km.

These specifications would achieve the westbound transfer of at least 350 megawatts (MW) into and out of Mackenzie TS and Moose Lake TS in Atikokan. If additional transfer capability beyond 350 MW is needed in the future, which could arise from expanded mining and other developments in the region, the existing and proposed transmission lines indicated above, with the installation of new dynamic reactive facilities, such as Static Var Compensators, could provide westbound transfer capability of up to 550 MW.

1.4 Purpose and Rationale of the Proposed Undertaking and EA Study

The purpose of the undertaking, or Project, is to ensure an adequate, safe, reliable and affordable supply of power to enable future growth in northwestern Ontario. In particular, the Project will support growth and maintain reliable electricity supply to areas west of Atikokan and north of Dryden, recognizing the need and rationale/justification for the Project as previously established by the Province through analysis and decisions, including the LTEPs and the IESO's 2018 need assessment, as summarized in **Sections 1.1**, **1.2** and **1.3.**

The development of this Project would implement the Ministry of Energy's and IESO's recommendation to construct a new double-circuit and a new single-circuit 230 kV overhead transmission line from Thunder Bay to Dryden.

The purpose of the study is to undertake an EA to select and confirm the preferred route and conceptual design for the Project and to identify potential environmental effects that could result from the construction, operation, maintenance, and retirement of the Project. The EA will also

recommend and document appropriate and necessary mitigation measures to eliminate, minimize, or avoid potential adverse Project-related effects.

1.5 Proponent

Hydro One is the proponent of the Project and is responsible for the development of the ToR and subsequent EA. Hydro One Limited, through its wholly-owned subsidiaries, is Ontario's largest electricity transmission and distribution provider with approximately 1.4 million valued customers, approximately $27.1 billion in assets as at December 31, 2019, and annual revenues in 2019 of approximately $6.5 billion.

Hydro One's team of approximately 8,800 skilled and dedicated employees proudly build and maintain a safe and reliable electricity system which is essential to supporting strong and successful communities. In 2019, Hydro One invested approximately $1.7 billion in its transmission and distribution networks and supported the economy through buying approximately $1.5 billion of goods and services.

Hydro One is committed to the communities they serve, through community investment, sustainability and diversity initiatives. Hydro One is designated as a Sustainable Electricity Company by the Canadian Electricity Association. Hydro One is also committed to working with and developing respectful and positive relationships with Indigenous communities in a spirit of cooperation and shared responsibility. Hydro One owns and operates transmission assets on 23 First Nation reserves and provides distribution services directly to 88 First Nation communities.

Hydro One Limited's common shares are listed on the Toronto Stock Exchange (TSX: H) and certain of Hydro One Inc.'s medium term notes are listed on the New York Stock Exchange (NYSE). Additional information can be accessed at: www.HydroOne.com; www.Sedar.com; or, www.Sec.gov.

1.6 Outline of the Terms of Reference

In accordance with the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014), this draft ToR contains information relating to the following:

- Purpose of the study or undertaking (**Section 1.4**);
- Identification of the proponent (**Section 1.5**);
- Indication of how the EA will be prepared (**Section 3.0**);
- Flexibility to accommodate new circumstances (**Section 3.3**);
- Description of the existing environment and potential effects of the undertaking (**Section 4.0**);

- Description of and rationale for the undertaking (**Section 5.0**);
- Description of and rationale for alternatives (**Section 6.0**);
- Assessment and evaluation (**Sections 6.0** and **7.0**);
- Commitments and monitoring (**Section 8.0**);
- Consultation plan for the EA (**Section 10.0**); and,
- Other approvals required (**Section 11.0**).

Taken together, the following sections of the ToR are intended to satisfy the requirements under Sections 6(2)(c) and 6.1(3) of the EA Act:

- Project approvals framework (**Sections 2.0** and **11.0**);
- Indication of how the EA will be completed (**Section 3.0**);
- Description of existing natural and socio-economic environment (**Section 4.0**);
- Preliminary potential effects (**Section 4.0**);
- Description of the undertaking (**Section 5.0**);
- Identification and evaluation of alternatives (**Section 6.0**);
- Preliminary potential mitigation measures (**Section 7.0**);
- Commitments and monitoring (**Section 8.0**); and,
- Consultation (**Sections 9.0** and **10.0**).

2.0 Overview of the EA Process

This section outlines the framework for EA regulatory approvals in Ontario for electricity transmission projects and how they apply to the Project.

2.1 Ontario *Environmental Assessment Act, 1990*

The Project is subject to the provincial EA approval process under the EA Act. Under the EA Act, the Electricity Projects Regulation (Ontario Regulation 116/01) sets out the requirements for a variety of electricity projects in Ontario, including transmission lines, and classifies electricity projects based on the type of fuel to be used, the size and, in some cases, the efficiency of the planned facility.

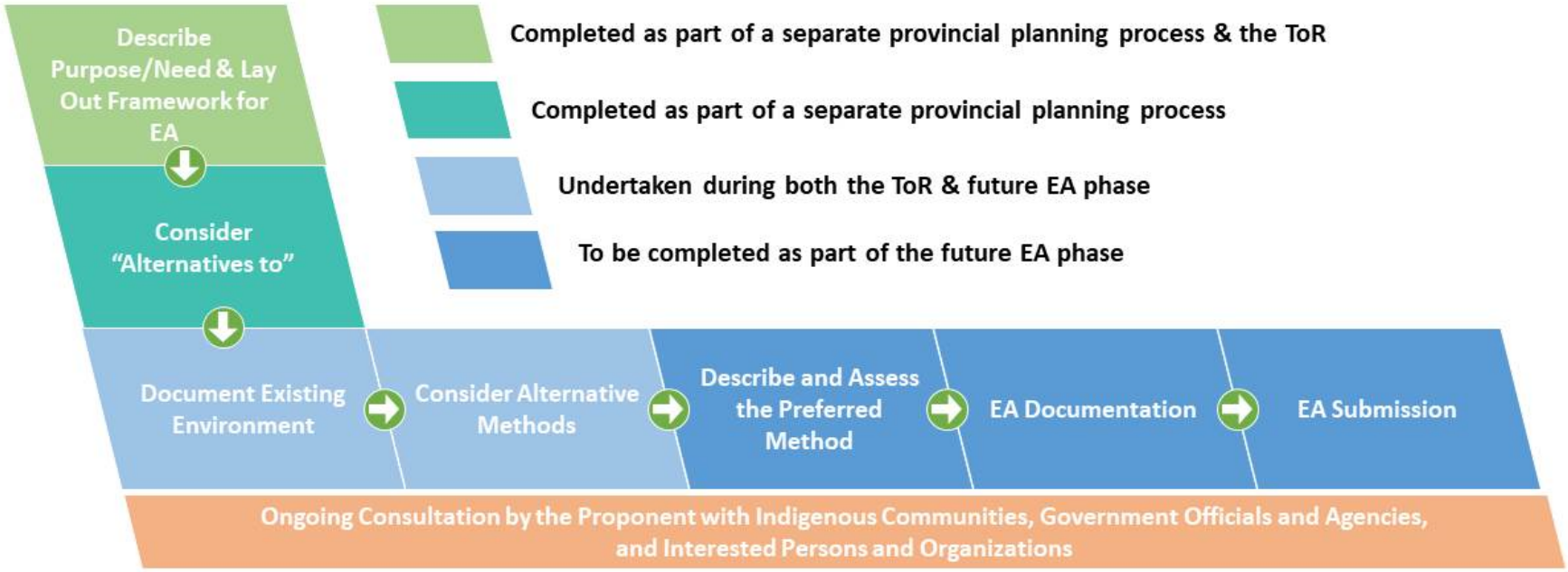
The Project is classified as a Category C project based on Ontario Regulation 116/01. Category C projects are large-scale, complex projects which generally have the potential for significant environmental effects and require the completion of an EA. Category C projects include transmission lines which are greater than 115 kV and less than 500 kV and are greater than, or equal to, 50 km in length.

Since the Project meets the above criteria, Hydro One is required to submit an application under Section 5 of the EA Act to the Minister which includes the preparation, submission and approval of a ToR as shown in **Figure 2-1**. The ToR provides the overall study framework that will be followed during the EA. Indigenous communities, government officials and agencies, and interested persons and organizations, are provided with opportunities to comment during this process. The draft ToR will be posted on the Project website for electronic viewing, USB flash drives containing the document will be available at public locations, depending on restrictions due to the public health situation. It will also be provided to Indigenous communities. Following the review, a proposed ToR document is formally submitted to the MECP for a decision by the Minister.

Once approved by the Minister, the ToR will be used to guide the completion of the EA to ensure it meets the intent of the EA Act and other applicable requirements. The results of the EA process will then be documented in an EA to be submitted to the Minister for review and decision.

There are two key documentation requirements for approval to proceed with an undertaking under subsection 5(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.



** This figure provides a high-level overview of the EA process, including the components of the EA process that have been completed as part of a previous planning process (as described in **Sections 1.1**, **1.2** and **1.3**, as well as the components completed, or to be completed, as part of the ToR and EA phases.*

Figure 2-1: Overview of the Environmental Assessment Process

3.0 Environmental Assessment Approach

This section provides Hydro One's EA approach for the Project, including a rationale for conducting a "focused" EA in accordance with subsections 6(2)(c) and 6.1(3) of the EA Act, as well as an overview of other EA requirements related to the Project.

According to subsection 6(2) of the EA Act, the ToR must state how the EA will be prepared and either:

a) Indicate that the EA will be prepared in accordance with the general requirements in subsection 6.1(2);
b) Indicate that the EA will be prepared in accordance with such requirements as may be prescribed for the type of undertaking the proponents wishes to proceed with; or,
c) Set out in detail the requirements for the preparation of the EA.

Generally, a proponent uses subsections 6(2)(a) and 6.1(2) if it is early in the planning process and is not sure of the details of its proposal, such as the undertaking, alternatives or potential environmental effects[1]. EAs that are completed in accordance with subsection 6.1(2) typically establish the need and rationale for a project and include an assessment of both "alternatives to" and "alternative methods" for carrying out the undertaking. Submission under subsection 6(2)(b) is not possible as no requirements for any types of undertakings have been prescribed in the EA Act (MECP, 2014). Proponents use subsections 6(2)(c) and 6.1(3) if there is a more defined planning process and more details of the project are already known, e.g., the potential alternatives (MECP, 2014)[2].

The EA for this Project is proposed to be completed in accordance with subsections 6(2)(c) and 6.1(3) of the EA Act. Projects completed in accordance with subsections 6(2)(c) and 6.1(3) of the EA Act are referred to as "focused" EAs. The EA for this Project will meet the requirements of subsection 6.1(2), and will not re-examine the "purpose of the undertaking" (need for the Project) as this has been established by provincial agencies over the past several years, and will be

[1] Subsection 6.1(2) outlines the generic requirements of what an EA should include, such as the identification and evaluation of alternatives.
[2] Subsection 6.1(3) is an exception and indicates that the ToR may provide that the EA consist of information other than what is required by subsection (2).

addressed as part of the Leave to Construct application. Further, the EA will not include an assessment of "alternatives to" with the exception of the "do nothing" alternative. In accordance with the EA Act, "alternative methods" (e.g., alternative routes identified in this draft ToR [**Section 6.0**]) will be evaluated through the EA process.

The rationale for proceeding in this manner is that a previous planning process has already been undertaken by provincial agencies which led to the identification and justification for the Project. In accordance with the EA Act, the EA will include the evaluation of alternative methods that have been identified in this draft ToR (**Section 6.0**). The EA will also include an assessment and evaluation of the advantages and disadvantages of proceeding with the undertaking (the Project) compared to the "do nothing" or null alternative.

Subsection 6.1(2) of the EA Act

Hydro One will conduct the EA in accordance with the general requirements of subsection 6.1(2) of the EA Act, with the exception of the "purpose of the undertaking" and "alternatives to" the undertaking; however, the "do nothing" alternative will be considered. As such, the EA will consider the following (**Figure 3-1**):

- A description of, and statement of, the rationale for the undertaking and alternative methods of carrying out the undertaking (alternative routes) as described in **Section 6.0** of this draft ToR);
- A description of:
    - The environment that will be affected, or that might reasonably be expected to be affected, directly or indirectly, by the undertaking and the alternative methods of carrying out the undertaking;
    - The effects that will be caused, or that might reasonably be expected to be caused to the environment, by the undertaking and the alternative methods of carrying out the undertaking;
    - 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 and the alternative methods of carrying out the undertaking;
- An evaluation of the advantages and disadvantages to the environment of the undertaking and the alternative methods of carrying out the undertaking; and,
- A description of consultation and engagement about the Project undertaken by the proponent and the results of the consultation and engagement.

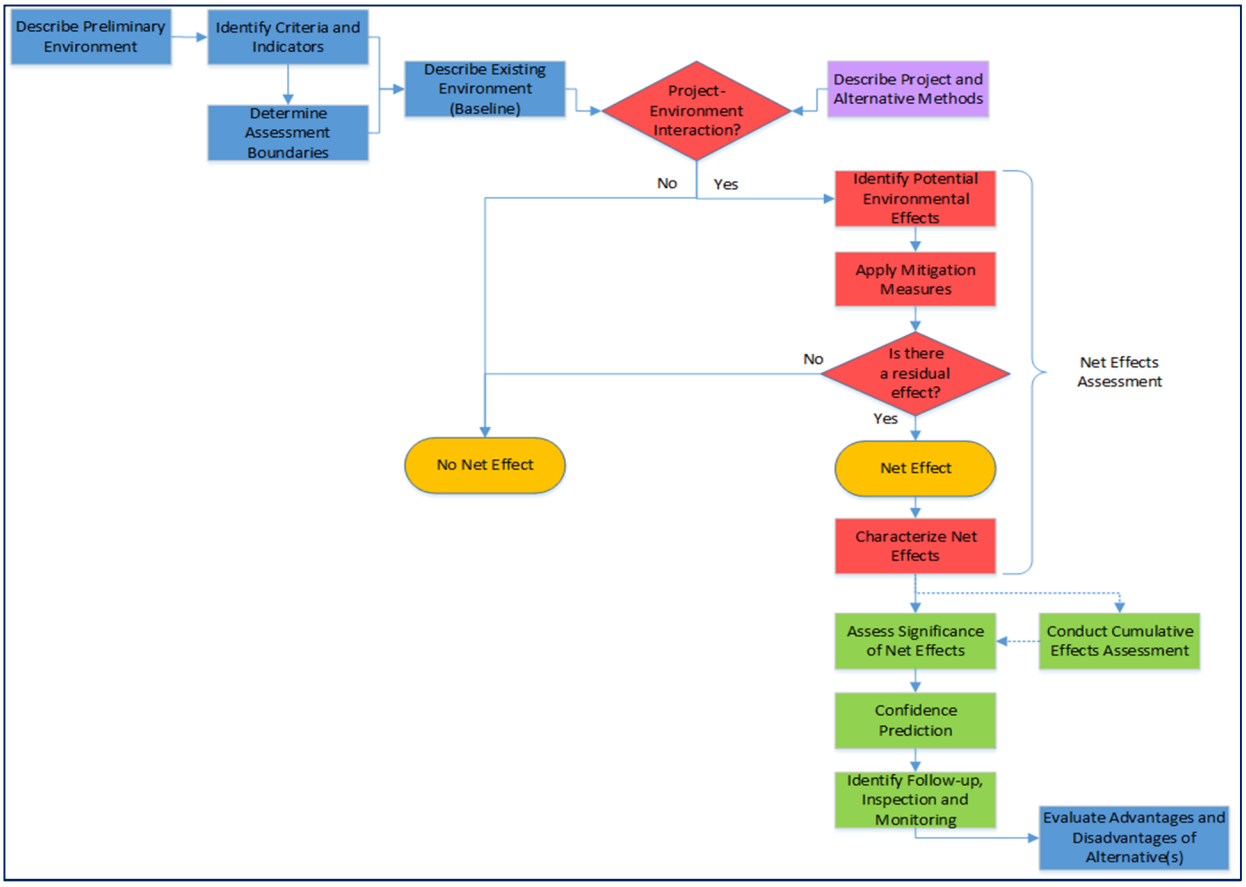


Figure 3-1: Effects Assessment Process

3.2 Environmental Assessment Preparation and Submission

The EA will be prepared in accordance with the requirements of the EA Act, and as outlined in the approved ToR. Upon completion of the EA, Hydro One will submit it for review and approval to the Minister. As per the MECP's Code of Practice: Preparing and Reviewing Environmental Assessments in Ontario (2014a), the EA will generally include the following elements:

- Executive Summary;
- List of Studies and Report;
- ToR Requirements;
- Identification of the Proponent;
- Commitments and Monitoring;
- Other Approvals;
- Consultation and engagement summary; and,
- Appendices.

The EA will include the following components:

- Description of the purpose of and need for the Project (reference to the applicable section in the approved ToR where this is described);
- Description and statement of the rationale for the undertaking;
- Description of alternative methods of completing the Project;
- Identification of the advantages and disadvantages of the Project;
- 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;
- Identification and assessment of potential positive and negative environmental Project effects (including net effects) on existing conditions and the development of mitigation measures to eliminate or minimize adverse effects;
- Description and documentation of the results from the EA consultation and engagement program;
- Monitoring, follow-up programs and commitments; and,
- Supporting documentation that includes technical reports completed to support the Project.

A Draft EA will be prepared and made available for review by Indigenous communities, government officials and agencies, and interested persons and organizations. Copies of the Draft EA are expected to be placed in local municipal offices and other public venues, as well as be posted on Hydro One's website, and will be provided to Indigenous communities. Following the draft review, the EA will be formally submitted to the MECP for a decision by the Minister.

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 and consultation, as well as effects and compliance monitoring.

3.3 Environmental Assessment Principles

The EA will be conducted in a manner consistent with the MECP's EA principles, including:

- Consult with potentially affected and other interested persons;
- Consider a reasonable range of alternatives (including alternative methods and the "do nothing" alternative);
- Consider all aspects of the environment;
- Systematically evaluate net environmental effects; and,
- Provide clear, complete documentation.

In addition, the EA will be guided by the MECP's project management principles to assist in navigating the EA process successfully, including:

- Timeliness;
- Clarity and consistency;
- Openness and transparency;
- Coordination of approvals;
- Best available information;
- Appropriate level of detail; and,
- Minimize potential harm and enhance benefits to the environment.

3.4 Providing Flexibility to Accommodate New Circumstances

This ToR provides flexibility in the event that unforeseen circumstances arise that could prevent the commitments in the ToR from being met and to allow for minor adjustments to the EA process that may differ slightly from the ToR, without having to restart the ToR and EA process. This is in accordance with Section 5.2.10 of the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014).

Due to the complexity and physical expanse of this Project, flexibility is primarily required to account for changes resulting from updated Project design or other aspects of the Project, including receiving new information, and to allow for the consideration of input received from the consultation and engagement program. This will be determined in the EA as the details of the Project are confirmed and finalized.

Although the Project, as described in this draft ToR, is accurate and realistic at the time of its preparation, the ToR has generally been developed based on preliminary design and preliminary baseline data, as well as early input. Additional consultation and engagement with Indigenous communities, government officials and agencies, and interested persons and organizations will be undertaken during the EA, specifically with respect to facility routing, as well as the approach used to evaluate alternative routes. If significant changes to the Project are considered, Hydro One will consult with the MECP to determine how they can be accommodated within the framework of the ToR.

4.0 Existing Environment and Potential Effects

This section provides an overview of the study areas identified for the Project, a general description of the existing environment and how it will be further described during the EA, and a high-level overview of potential effects of the Project.

4.1 Study Area

The following provides a summary of the process followed to develop and identify a suitable study area for the Project.

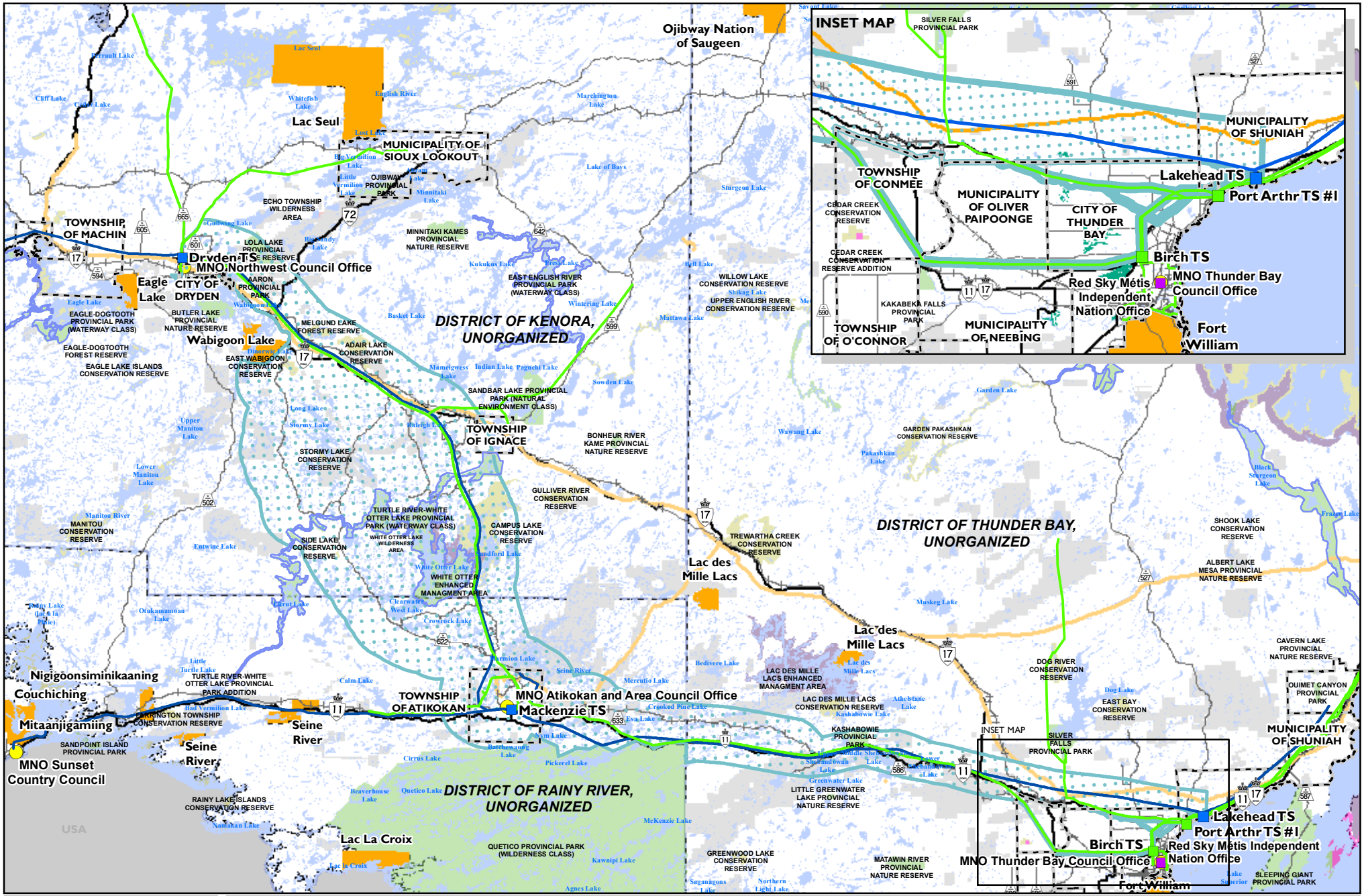
Preliminary Study Area

A preliminary study area, referred to as the Study Area, was first established for the purposes of the ToR during the pre-consultation phase of the Project which began in early 2019, prior to the public release of the Notice of Commencement of ToR in April 2019 (**Figure 4-1**). The Study Area included a large area generally between the Municipality of Shuniah in the east and the City of Dryden in the west and was used for desktop baseline data collection during the development of the ToR.

The determination of appropriate Study Area boundaries was based on several factors, including pre-determined start and end points (connection points) as specified by the IESO in their 2018 letter to Hydro One, having sufficient geographical area that would allow for the collection of applicable baseline information, and identification of a range of potential alternative routes.

The Study Area boundaries were also based on the need to capture areas most likely to be directly, or indirectly, affected by the Project, and to avoid areas with known significant natural and/or socio-economic constraints, such as heavily populated areas in the City of Thunder Bay and Municipality of Oliver Paipoonge, Quetico Provincial Park, and Wabigoon Lake. The Study Area also included a portion of the southern area of Thunder Bay to account for a potential connection to Birch TS.

Hydro One held internal workshops to further understand some of the limitations of the Study Area in relation to ongoing operational constraints associated with their existing transmission lines in the area.



hydro one

Waasigan Transmission Line

Figure 4-1: Preliminary Study Area

115 KV Transformer Station (TS)	230 kV Transmission Line	Local Roads	First Nation Reserves	Preliminary Study Area	Provincial Park	Enhanced Management Area	Recommended Provincial Park
230 kV Transformer Station (TS)	Natural Gas Pipeline	Arterial Roads	First Nation Treaty Boundaries	Active Mining Claims	Provincial Park Waterway Class	Recommended Conservation Reserve	Provincially Significant Wetland
115 kV Transmission Line	Railway	Highway	Municipalities	Forest Reserve	Conservation Reserve	Wilderness Area	Waterbody

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF

MAP CREATED BY: SFG
MAP CHECKED BY: JF/JC
MAP PROJECTION: LAMBERT CONFORMAL CONIC

0 5 10 20 km

SCALE 1:1,300,000

FILE LOCATION:
G:\cad\GIS\199676 - Waasigan Transmission Line\GIS\MXDs\Field\Route Selection Study Area Maps FN\Preliminary Study Area 8_5x11 052120.mxd

PROJECT: 199676 STATUS: DRAFT DATE: 2020-06-01

The Study Area was presented and made available for comment to Indigenous communities, municipalities, and government agencies during the pre-consultation period (see Record of Consultation for more information related to specific activities). Pre-consultation activities included a multi-agency conference call held on March 29, 2019 to discuss the Project and review the Study Area. Several agencies were invited, including the following:

- ENDM
- Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)
- Ministry of Municipal Affairs and Housing (MMAH)
- Infrastructure Ontario (IO)
- Lakehead Region Conservation Authority
- Ontario Parks
- Ministry of Natural Resources and Forestry (MNRF)
- MECP
- Ontario Power Generation
- Environment and Climate Change Canada (ECCC)
- Canadian Nuclear Safety Commission
- Ministry of Transportation (MTO)
- Transport Canada
- Canadian National Railway (CNR)
- Canadian Pacific Railway (CPR)

Following the initial pre-consultation activities, the Study Area was renamed as the Route Selection Study Area (RSSA) and was used for the purpose of identifying route alternatives. More information on this is provided in **Section 6.0**.

Alternative Route Assessment and Evaluation Study Areas

The alternative transmission line routes identified in **Section 6.0** of this draft ToR will be subject to further data collection activities and an alternative route evaluation as part of the EA. The potential areas of effects and specific data collection areas during the EA will vary by environmental component and associated requirements, as well as assessment criterion. In a general sense, it is anticipated that the study areas to be used during the EA would include the following:

- Project Footprint – lands covered by the transmission line right-of-way (ROW), access roads and supporting infrastructure (e.g., laydown areas) to be considered in completing fieldwork and identifying direct environmental effects;

- Local Study Area – lands within approximately 500 m on each side of the Project Footprint to be used for background data collection and identifying direct and indirect environmental effects; and,
- Regional Study Area – lands generally up to approximately 5 km or more from the Project Footprint to be used for determining more generalized baseline data collection (e.g., watershed information, socio-economics, etc.) and for the prediction of indirect environmental effects.

The study areas considered in the EA for baseline data collection, alternative route evaluation and preferred route assessment will be refined and confirmed during the EA based on continued input from Indigenous communities, government officials and agencies, and interested persons and organizations and predicted Project-related environmental effects. In some cases, study areas may need to be adjusted to allow for a more comprehensive description of baseline conditions, potential Project effects and/or development of mitigation measures.

4.2 Description of Existing Environment and Data Collection Methodology

A preliminary desktop review was undertaken as part of this draft ToR to determine baseline environmental conditions within the Study Area. The preliminary desktop review was based primarily on records published through secondary data sources, including existing literature, as well as geographical information system (GIS) data and other information received from the consultation and engagement program (e.g., meetings and conference calls with government agencies, Community Information Centres [CICs], Corridor Workshops, etc.) undertaken during the development of the ToR.

The purpose of establishing baseline environmental conditions is to gain a contextual understanding of the Project as well as an understanding of the potential environmental effects that should be assessed during the EA. Establishing baseline environmental conditions also assists with determining a pre-construction benchmark for future monitoring programs.

Baseline environmental conditions are described in **Sections 4.2.2** and **4.2.3** and are organized based on the following:

- Natural environment:
  - Physiography, geology, surficial geology and soils;
  - Surface water;
  - Groundwater;
  - Provincial parks, conservation reserves, and Areas of Natural and Scientific Interest (ANSI);
  - Fish and fish habitat;

  - Vegetation and wetlands;
  - Terrestrial wildlife and wildlife habitat;
  - Species at risk;
  - Air quality and greenhouse gases; and,
  - Acoustic environment.
- Socio-economic environment:
  - Provincial and municipal policy;
  - Community well-being;
  - Economy, land and resource use;
  - Aesthetics;
  - Infrastructure and community services;
  - Indigenous community use of land and resources for traditional purposes; and,
  - Cultural heritage resources.

The characterization of existing baseline environmental conditions will continue to be developed and refined as part of the EA and will serve as the baseline for the alternative route evaluation and for assessing potential Project-related effects. The characterization of environmental baseline conditions will also be supplemented with field studies completed during the EA, and continued input received from Indigenous communities, government officials and agencies, and interested persons and organizations, as applicable. The EA will also consider new secondary information sources (e.g., published data sources, electronic databases, aerial photographs, published literature and journals, map interpretation, etc.), as well as primary sources, such as field reconnaissance and surveys, as necessary. IK received from Indigenous communities will be incorporated into aspects of the EA, in consultation with Indigenous communities.

Fieldwork may be undertaken to support the alternative route evaluation during the EA. An aerial reconnaissance of the alternative routes is planned for 2020 to collect data for surface water, fish and fish habitat and the terrestrial environment (e.g., vegetation and wildlife) to support the alternative route evaluation. Further, a ground-based survey is planned for fall 2020 to evaluate the physical characteristics of historic mine workings identified in the Abandoned Mine Information System spatial data layer to determine if they have potential to support bat hibernaculum and may be a constraint to development.

Field work is planned for 2021 and 2022 once a preferred route is determined and additional Project planning is underway. Field studies will generally consist of spring, summer and fall floral and faunal investigations, as well as surveys at representative watercourse crossings. These field studies are expected to provide an appropriate level of detail for use in the EA (e.g., for the

assessment of the preferred route). Field workplans will be developed for the 2020 and 2021-2022 programs in consultation with applicable agencies to confirm the type, location, timing and methodologies of field studies to be completed as part of the EA. As a result, field studies mentioned in this draft ToR are subject to change. Indigenous communities will also be engaged during development of the field work program.

4.2.1 Records Reviewed as Part of the Terms of Reference

Table 4-1 outlines some of the key secondary source information used in preparation of this draft ToR (references are included at the end of this document). These sources, as well as any new sources identified during the EA, will be included in the EA Report, as appropriate.

Table 4-1: Key Records Reviewed

Record Source	Records Reviewed
MINISTRY OF NATURAL RESOURCES AND FORESTRY	
MNRF Restricted Datasets requested and/or accessed June 2019	Data obtained includes: • Cultural heritage values • Mineral licks • Nesting sites • Fish nursery areas • Fish spawning areas • Wildlife wintering areas
Land Information Ontario data requested and/or accessed June 2019	Data obtained includes: • Active aggregate pit • ANSIs • Aquatic feeding areas • Aquatic Resource Area water line/water polygon segment • Crown Land Use Policy Atlas (CLUPA) • Waterbody • Wetlands • Woodlands • National parks • Provincial parks
Natural Heritage Information Centre (NHIC) data accessed June 2019	Data obtained includes: • Species at risk • Plant community occurrences • Provincially tracked species

Record Source	Records Reviewed
MNRF Species at Risk in Ontario List (SARO List), accessed June, 2019	• Accessed to determine the status of wildlife or plant species as a species of conservation concern or a species at risk
Significant Wildlife Habitat Technical Guide (MNR, 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 3W (MNRF, 2017)	• Significant Wildlife Habitat Criteria
The Ecosystems of Ontario, Part I: Ecozones and Ecoregions (Crins et al., 2009).	• Ecozones • Ecoregions
OTHER RESOURCES	
Canadian Geographic, 2019	• Watershed summaries
Great Lakes Conservation Blueprint for Terrestrial Biodiversity, Volume 2: Ecodistrict Summaries (Henson and Brodribb, 2005)	• Ecodistrict summaries
Great Lakes Conservation Blueprint for Aquatic Biodiversity, Volume 2: Tertiary Watershed Summaries (Phair et al., 2005)	• Watershed summaries
Ontario Breeding Bird Atlas (OBBA) online data, 2019	• Digital data files of species' range distributions
Important Bird Areas - online data, 2019	• Digital data files of Important Bird Areas
Mammals of the Western Hemisphere v3.0, accessed via NatureServe, 2019	• Digital data files of species' range distributions
Ontario Nature Reptile and Amphibian Atlas, 2019	• Digital data files of species' range distributions
Statistics Canada	• Relevant community and regional profiles
MHSTCI	• Ontario Heritage Toolkit
Canadian Index of Well-being	• Profile of northern Ontario
MMAH	• Growth Plan for northern Ontario
Ontario Mining Association	• Mapping of current and planned mining operations
ENDM	• CLAIMaps
IESO	• Integrated Regional Resource Plans (IRRP)

4.2.2 Natural Environment

This section provides an overview of the natural environment within the Study Area based on the preliminary desktop review, and describes the data collection methodology that will take place during the EA.

4.2.2.1 *Physiography, Geology, Surficial Geology and Soils*

The Study Area is located within the Ontario Shield Ecozone, Ontario's portion of the national Boreal Shield Ecozone. The Ontario Shield Ecozone, which occupies more than half of the province, includes both the boreal forest and the Great Lakes – St. Lawrence forest regions (Crins et al., 2009). With a few exceptions, this Ecozone contains the Precambrian bedrock in the province. These rocks are typically granite and gneiss, but basalt, greenstone, and many other mineral types also occur. The surficial geology and substrates are diverse across the Ecozone; however, exposed bedrock also constitutes a significant portion of the Ecozone. Topography varies based on both the local bedrock and surficial deposits (Crins, et. al., 2009).

The Study Area is located within three Ecoregions: Lake Nipigon (3W), Lake Wabigoon (4S), and Pigeon River (4W). These Ecoregions are further subdivided into Ecodistricts based on more finely resolved abiotic data (Crins, et. al., 2009). The Study Area spans six Ecodistricts: Savanne (3W-2), Manitou (4S-5), English River (4S-3), Dryden (4S-4), Quetico (4W-1), and Kakabeka (4W-2) (Henson and Brodribb, 2005).

A summary of the physiography, geology, surficial geology and soils of each Ecoregion and Ecodistrict within the Study Area, derived from *The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions* (Crins et al., 2009) and *The Ecosystems of Ontario, Part 2: Ecodistricts* (Wester et al., 2018), is provided below.

Lake Nipigon Ecoregion (3W)

This Ecoregion is underlain by granite bedrock as well as basalt and other volcanic rocks, greenstone, siltstone, and shale. The landscapes vary from strongly broken in the southern portion to weakly broken, more subdued topography in the north and west. Major substrate types characterizing this Ecoregion include Humo-ferric Podzols, Dystric Brunisols, acidic rock outcrops, and Mesisols. This Ecoregion contains the Savanne Ecodistrict (3W-2).

- *Savanne Ecodistrict (3W-2)*

  The Savanne Ecodistrict is dominated by morainal deposits and bedrock outcrops. The landscape of the Ecodistrict is gently rolling and includes features, such as faults, moraines and associated glaciofluvial materials, and eskers.

Lake Wabigoon Ecoregion (4S)

The Lake Wabigoon Ecoregion is primarily composed of gneissic, granitic, and metavolcanic Precambrian bedrock, with substantial areas of bedrock exposures with limited unconsolidated

matter. Ground moraine and lacustrine deposits are present in the east, a large clay plain is present near Dryden, and localized pockets of clay and silt are scattered throughout the region. This Ecoregion contains the English River (4S-3), Dryden (4S-4), and Manitou (4S-5) Ecodistricts.

- *English River Ecodistrict (4S-3)*

  The English River Ecodistrict is hilly and characterized by shallow to deep acidic morainal material over bedrock. Three large moraines occur in the Ecodistrict, as well as a series of faults and glaciofluvial eskers.

- *Dryden Ecodistrict (4S-4)*

  The Dryden Ecodistrict has gently rolling to hilly topography and is primarily covered by calcareous glaciolacustrine deposits. Moraines, exposed bedrock or bedrock with a shallow layer of morainal material, glaciofluvial deposits, and limited alluvial, organic and aeolian deposits, also occur within the Ecodistrict.

- *Manitou Ecodistrict (4S-5)*

  The Manitou Ecodistrict is dominated by bedrock covered with a very shallow to shallow layer of acidic mineral material. The landscape is hilly and includes features such as faults, valleys with deeper pockets of glaciolacustrine material, moraines, river systems, and lakes.

Pigeon River Ecoregion (4W)

The Pigeon River Ecoregion is located on the Precambrian Shield and the bedrock is dominated by very low-base granites, with bands of base-rich, ultramafic and greenstone minerals. The terrain is irregular and rugged in the central and northern portions of the Ecoregion. Numerous lakes as well as several large, steep-walled cuestas are present within the region. This Ecoregion contains the Quetico (4W-1) and Kakabeka (4W-2) Ecodistricts.

- *Quetico Ecodistrict (4W-1)*

  The majority of the Quetico Ecodistrict is characterized by exposed bedrock or bedrock with a very shallow layer of acidic, coarse-textured mineral material. The topography is rolling and also contains moraines and associated morainal material, as well as glaciofluvial and glaciolactustrine deposits.

- *Kakabeka Ecodistrict (4W-2)*

  The Kakabeka Ecodistrict has a generally undulating to rolling landscape, overlain by a variable layer of coarse-textured, acidic, morainal material. The Ecodistrict, which includes the islands east and south of the City of Thunder Bay, is further described as having upland sites with irregular surface topography, flat-topped ridges with broad valleys and escarpments, and level area of deeper lacustrine and morainal materials. Bedrock ridges are present adjacent to the Lake Superior shoreline and the Great Lake islands. Significant faults exist near Kakabeka Falls and through Loch Lomand. The Ecodistrict also contains moraines, areas of deep, level morainal deposits, bedrock covered with very shallow to shallow mineral material, and colluvial debris.

The EA will document existing conditions for the physical environment, including physiography, geology, soils and surficial geology, based on desktop studies. Ontario Geological Survey, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and MNRF mapping and reports as well as other existing databases, such as the Northern Ontario Engineering Terrain Studies and the Canadian Soil Information Service, will be consulted during the EA. Areas identified as potentially contaminated will be noted. Desktop studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.2.2 *Surface Water*

The Study Area lies within the Hudson Bay and Great Lakes primary watersheds; the Rainy, English, and Northwestern Lake Superior secondary watersheds; and within six tertiary watersheds: Black Sturgeon (2AC), Dog (2AB), Upper Rainy (5PA), Central Rainy (5PB), Upper English (5QA) and Wabigoon (5QD) (Phair et. al., 2005). Tertiary watershed information is available for the Black Sturgeon and Dog watersheds only, which are described further below. Some of the larger surface water features in the Study Area include Wabigoon Lake, Mamegweiss Lake and Dinorwic Lake (Aquatic Resource Area, accessed June 2019).

Rainy Secondary Watershed (05P)

This watershed flows into the Lake of the Woods Secondary Watershed. No other watersheds flow into this watershed. It contains the Upper Rainy and Central Rainy tertiary watersheds (Canadian Geographic, 2018).

English Secondary Watershed (05Q)

This watershed is fed by the Root River Diversion and flows into the Winnipeg Secondary Watershed. It contains the Upper English and Wabigoon tertiary watersheds (Canadian Geographic, 2018).

Northwestern Lake Superior Secondary Watershed (02A)

This watershed flows into Northwestern Lake Superior and includes the Black Sturgeon River and the City of Thunder Bay. Stream systems occupy significant sections of this largely undisturbed watershed (Phair, et. al., 2005). It contains the Black Sturgeon and Dog tertiary watersheds.

Black Sturgeon Tertiary Watershed (2AC)

This watershed flows into northwestern Lake Superior, and includes the Black Sturgeon River. Stream systems occupy over 80% of the watershed (Phair, et. al., 2005).

Dog Tertiary Watershed (2AB)

This watershed flows into northwestern Lake Superior and includes the City of Thunder Bay. Most of the watershed is undisturbed (Phair, et. al., 2005).

Baseline conditions for surface water conditions will be documented as part of the EA using published data, GIS mapping and field surveys (as applicable). The potential for effects to surface water will also be reviewed. Desktop studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.2.3 *Groundwater*

The Study Area consists of a bedrock aquifer made up of granite and gneiss rock. This bedrock is continuous over the region and is thought to be a moderate to poor aquifer. The surficial aquifer system, consisting of sediments deposited by glaciers or glacial melt water, extends discontinuously across the area. Generally, the glacial deposits are thin, having been lost to erosion. Where a bedrock aquifer is present below the surficial aquifer system, the two are usually connected hydraulically. Bedrock aquifers may be exposed at the surface in rock outcrops or road cuts but also extend below the surface to varying extents and depths, where wells can tap their water supplies (Grannemann, et. al., 2000).

Baseline conditions for groundwater will be documented as part of the EA using published data, including MECP water well records and reports, ECCC's Water Survey of Canada, and GIS mapping. Wells in proximity to the preferred route that could potentially be affected by the Project

will also be identified and provided in the EA using the MECP water wells records and input received from landowners. The potential for groundwater effects will also be reviewed using historical data (e.g., existing MECP water well records and reports, source water protection plans, etc.). Desktop studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.2.4 *Provincial Parks, Conservation Reserves and Areas of Natural and Scientific Interest*

There are no national parks located within the Study Area; however, there are provincial parks, conservation reserves, and ANSIs located in, or in proximity to, the Study Area. A preliminary list of these areas is provided in **Table 4-2** and shown in **Figure 4-1**.

Table 4-2: Provincial Parks, Conservation Reserves, and ANSIs

Category	Natural Heritage Feature
Provincial Parks	• Kashabowie Provincial Park • Kakabeka Falls Provincial Park • Aaron Provincial Park • Turtle River-White Otter Lake Provincial Park • Quetico Provincial Park • Lola Lake Provincial Park
Conservation Reserves	• East Wabigoon Conservation Reserve • Melgund Lake Conservation Reserve • Stormy Lake Conservation Reserve • Pyatt Lake Conservation Reserve • Airport Road Conservation Reserve • Campus Lake Conservation Reserve • Side Lake Conservation Reserve • Adair Lake Conservation Reserve
Area of Natural and Scientific Interest	• Swamp River Earth Science ANSI • Thunder Bay Lookout Earth Science ANSI

The EA will identify and provide baseline conditions through desktop and field work for those sections of provincial parks, conservation reserves, ANSIs, and other environmentally sensitive areas that have the potential to be affected by the Project. Potential Project effects and mitigation will also be developed and provided in the EA Report. Refinement to the preferred route to avoid protected areas will also be evaluated, where possible, during the EA.

4.2.2.5 *Fish and Fish Habitat*

The Study Area contains many aquatic features, including streams, rivers, lakes and wetlands (Crins et al., 2009) which have the potential to provide direct and indirect habitat for fish. Based on Aquatic Resource Area mapping, the majority of watercourses in the Study Area are classified as coldwater. Characteristic fish species found within the Ecoregions within the Study Area, namely Lake Nipigon Ecoregion (3W), Lake Wabigoon Ecoregion (4S) and Pigeon River Ecoregion (4W), are provided below (Crins et al., 2009).

Lake Nipigon Ecoregion (3W)

- Lake whitefish (*Coregonus clupeaformis*), fathead minnow (*Pimephales promelas*), burbot (*Lota lota*), brook stickleback (*Culaea inconstans*), yellow perch (*Perca flavescens*), lake trout (*Salvelinus namaycush*), brook trout (*Salvelinus fontinalis fontinalis*), and mottled sculpin (*Cottus bairdi*).

Lake Wabigoon Ecoregion (4S)

- Lake trout, northern pike (*Esox lucius*), northern redbelly dace (*Phoxinus eos*), goldeye (*Hiodon alosoides*), muskellunge (*Esox masquinongy*), pumpkinseed (*Lepomis gibbosus*), and river darter (*Percina shumardi*).

Pigeon River Ecoregion (4W)

- Lake trout, northern pike, burbot, lake chub (*Couesius plumbeus*), golden shiner (*Notemigonus crysoleucas*), bluntnose minnow (*Pimephales notatus*), and rock bass (*Ambloplites rupestris*).

In addition, several federally and provincially protected fish species at risk (SAR) have the potential to be found within the Study Area, including Lake Sturgeon (*Acipenser fulvescens*), American Eel (*Anguilla rostrate*), Shortjaw Cisco *(Coregonus zenithicus),* Northern Brook Lamprey *(Ichthyomyzon fossor)*, and Silver Lamprey (*Ichthyomyzon unicuspis*). SAR are discussed further in **Section 4.2.2.8**.

Datasets provided by the MNRF identify three walleye (*Sander vitreus vitreus*) and twenty-four smallmouth bass (*Micropterus dolomieu*) nursery areas, and 364 fish spawning areas within the Study Area.

The EA will identify and document aquatic features, as well as fish species and fish habitat, which have the potential to be affected by the Project. Aquatic features and species information will be gathered using desktop (including GIS mapping) and field studies, as necessary. Desktop and

field studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.2.6 *Vegetation and Wetlands*

An overview of the vegetation and natural cover of each Ecoregion within the Study Area, derived from The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions (Crins et al., 2009) and The Ecosystems of Ontario, Part 2: Ecodistricts (Wester et al., 2018), is provided below. Additional Ecodistrict information is available and included for the Kakabeka area only.

Lake Nipigon Ecoregion (3W)

The land cover of the Lake Nipigon Ecoregion is primarily forest, with 23.5% mixed forest, 23% coniferous forest, 17.1% water, 15.1% sparse forest, 9.0% deciduous forest, and 5.7% cutovers. Vegetation found within the Ecoregion includes tree species such as black spruce (*Picea mariana*), white spruce (*Picea glauca*), balsam fir (*Abies balsamea*), trembling aspen (*Populus tremuloides*), tamarack (*Larix laricina*), and jack pine (*Pinus banksiana*). In addition, the warmer, more southerly portions of the Ecoregion contain Great Lakes-St. Lawrence forest species such as eastern white pine (*Pinus strobus*) and red pine (*Pinus resinosa*). In areas of more rich, fine-textured soils associated with river valleys, species such as black ash (*Fraxinus nigra*), American elm (*Ulmus americana*), and balsam poplar (*Populus balsamifera*) occur. The cold, rocky shores of Lake Superior also provide habitat for arctic and alpine plants (Crins et al., 2009).

- *Savanne Ecodistrict (3W-2)*

  The Savanne Ecodistrict is primarily composed mixed forest, with coniferous forests scattered throughout the Ecodistrict. Sparse forests, deciduous forest, bog and fen complexes, and red pine and white pine old growth forests also occur.

Lake Wabigoon Ecoregion (4S)

The land cover of the Lake Wabigoon Ecoregion is also primarily forest, with 25.2% mixed forest, 24% water, 23.8% sparse forest, 14.3% coniferous forest, 4.9% cutovers, and 2.0% deciduous forest. In the western portion of the Ecoregion there is a large area dominated by bedrock with bare and sparse vegetation only, due to an intense fire regime, dry climate, and shallow substrate. Vegetation within this Ecoregion is characterized by a rapid ecological transition. Vegetation includes boreal tree species, such as jack pine, black spruce, balsam fir, trembling aspen, tamarack and white spruce. Species such as American elm, ironwood (*Ostrya virginiana*), bur oak (*Quercus macrocarpa*), large-tooth aspen (*Populus grandidentata*), eastern white pine, and red pine are relatively abundant in the warmer and drier sites in the central and southern

portions of the Ecoregion. The southern portion of the Ecoregion also contains scattered red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), and American basswood (*Tilia americana*). In the western portion of the Ecoregion, drier woodlands provide suitable habitat for species associated with prairies, such as bur oak, nodding onion (*Allium cernuum*) and big bluestem (*Andropogon gerardii*) (Crins et al., 2009).

- ***English River Ecodistrict (4S-3)***

  Mixed forests cover nearly half of the English River Ecodistrict. Coniferous forests are present on drier, deep mineral material and rocky uplands, while very shallow substrates generally support sparse forests. Deciduous forests are more common in the eastern portion of the Ecodistrict, and a small portion of the Ecodistrict is comprised of bog and fen complexes, marshes, and exposed bedrock. The Ecodistrict is an area of transition between the temperate and boreal vegetation zones; therefore, both temperate and boreal species occur. White pine and red pine old growth forests are also present.

- ***Dryden Ecodistrict (4S-4)***

  The Dryden Ecodistrict is dominated by mixed forests and includes temperate, boreal, and grassland species. Sparse forests generally occur on very shallow substrates and coniferous forests occur throughout the Ecodistrict. Deciduous forest is common north of Wabigoon Lake, and bog and fen complexes may occur adjacent to lakes and rivers. Grassland species which occur include Bur Oak (*Quercus macrocarpa*), Norwegian Cinquefoil (*Potentilla norvegica*) and Richardson's Alumroot (*Heuchera richardsonii*).

- ***Manitou Ecodistrict (4S-5)***

  The Manitou Ecodistrict is dominated by mixed forest. Sparse forests, which generally occur on bedrock, and coniferous-dominated forests also cover a significant portion of the Ecodistrict. Several red pine and white pine old growth forests are present within the Ecodistrict. Grassland species, such as Prairie Buttercup (*Ranunculus rhomboideus*), Big Bluestem (*Andropogon gerardii*), and Slender Beardtongue (*Penstemon gracilis*) may occur on warmer-than-normal slopes or on bedrock ridges.

Pigeon River Ecoregion (4W)

The land cover of the Pigeon River Ecoregion is 33.2% mixed forest, 19.3% sparse forest, 17.5% water, 11.5% coniferous forest, 10.6% deciduous forest, and 3.6% cutovers. Vegetation communities in this Ecoregion are a mixture of boreal and Great Lakes-St. Lawrence species,

which vary based on the environmental conditions. For example, species such as eastern white pine, white spruce, jack pine, and red pine are found on well-drained sites. Pure or mixed stands of jack pine, trembling aspen, large-tooth aspen, balsam fir, white spruce, and/or black spruce are present in areas disturbed by fire or logging. Low-lying areas contain species such as black spruce, white spruce, balsam fir, tamarack, and eastern white cedar (*Thuja occidentalis*), black ash, American elm, and red maple. Warmer sites, particularly in the southern areas of the Ecoregion, contain species such as sugar maple, yellow birch (*Betula alleghaniensis*), American basswood, ironwood, box elder (*Acer negundo*), and bur oak (Crins et al., 2009).

- Quetico *Ecodistrict* (4W-1)

  The Quetico Ecodistrict is primarily composed of mixed forests, which contain both temperate and boreal species. Coniferous forests occur throughout the Ecodistrict, while sparse forests are more common in the southern portion of the Ecodistrict, in areas of discontinuous mineral material and exposed bedrock. Red and white pine old growth forests are present in the north and south. A small portion of land cover is comprised of fen and bog complexes which are scattered throughout the ecodistrict; marshes are limited to lake bays and river mouths.

- Kakabeka *Ecodistrict* (4W-2)

  The Kakabeka Ecodistrict is primarily composed of sparse forest. Mixed forests also occur throughout the ecodistrict, but in particular south of Whitefish Lake. Deciduous forests also comprise a large portion of land-cover, while coniferous forests are limited in this area. Bog and fen complexes are restricted to low-lying poorly drained areas, and marshes occur in bays and adjacent to rivers and lakes. In the north-central area of the Ecodistrict, a small portion of land cover is agricultural.

The MNRF provided NHIC Sensitive Datasets which identify the location of several communities of "Medium" Sensitivity within the Study Area, such as Bur Oak Basic Treed Rock Barren Type, Great Lakes Arctic-Alpine Basic Open Bedrock Shoreline Type, and Dry Fescue Mixedgrass Prairie Type. Similarly, the MNRF NHIC Sensitive Datasets identify occurrence records of provincially rare (S1, S2, S3) species within the Study Area, including Pale Moonwort, Drummond's Thistle, Plains Rough Fescue (*Festuca hallii*), Long-leaved Arnica (*Arnica lonchophylla*), and Ryegrass Sedge (*Carex loliacea*).

The EA will contain a description of vegetation potentially affected by the Project using desktop and field studies, as required. Anticipated field studies to be completed during the EA include Ecological Land Classification (ELC) and botanical surveys, and are subject to consultation with

regulatory agencies and Indigenous communities. ELC and botanical surveys will be completed to establish vegetation communities and species. Natural heritage information obtained from these surveys will be used to verify secondary source data. Desktop and field studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

Based on a preliminary desktop review, many wetlands are present within the Study Area. Wetland types which occur include marshes, bogs, swamps, and fens (MNRF wetland data, provided July 2019). The majority of these wetlands are unevaluated; however, seven provincially significant wetlands have been identified within the Study Area:

- Basin A;
- Kivikovski;
- Little Falls;
- McVicars Creek;
- Neebing River;
- Sawmill Bay; and,
- William's Bog.

In addition, two locally significant wetlands are identified, Mud Lake and Mud Lake – Pete Lake.

The EA will identify and document wetlands potentially affected by the Project using desktop studies (including GIS mapping) supplemented with field studies, as necessary. Desktop and field studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.2.7 *Terrestrial Wildlife and Wildlife Habitat*

Based on a preliminary desktop review, a wide variety of birds, mammals, and herpetological fauna have the potential to occur within the Study Area. Characteristic wildlife in this region include, but are not limited to, moose (*Alces americanus*), American black bear (*Ursus americanus*), snowshoe hare (*Lepus americanus*), fisher (*Martes pennanti*), American mink (*Mustela vison*), bald eagle (*Haliaeetus leucocephalus*), common raven (*Corvus corax*), hermit thrush (*Catharus guttatus*), ruffed grouse (*Bonasa umbellus*), blue-spotted salamander (*Ambystoma laterale*), spring peeper (*Pseudacris crucifer*), wester painted turtle (*Chrysemys picta bellii*), and northern red-bellied snake (*Storeria occipitomaculata occipitomaculata*) (Crins et. al., 2009).

Datasets provided by MNRF identify bird nesting sites (e.g., bald eagle, osprey [*Pandion haliaetus*], great blue heron [*Ardea herodias*], great gray owl [*Strix nebulosa*], red-tailed hawk [*Buteo jamaicensis*], and eastern whip-poor-will [*Caprimulgus vociferous*]), mineral licks, and early and late moose wintering areas within the Study Area. With respect to significant wildlife habitat, the Significant Wildlife Habitat Technical Guide (Significant Wildlife Habitat Technical Guide or SWHTG; MNRF, 2000) provides descriptions, information and criteria of wildlife habitat that are to be considered for significance in Ontario. However, due to Ontario's large size and biodiversity, significance criteria vary across the province. As a result, Significant Wildlife Habitat Criteria Schedules for specific Ecoregions were created to complement the SWHTG. To date, a draft Schedule for Ecoregion 3W (MNRF, 2017) represents the only criterion schedule developed for the area, in which the Study Area is located (Environmental Registry of Ontario, 2019). A preliminary desktop review of aerial photography, information provided by the MNRF (and other secondary sources), and review of the draft Significant Wildlife Habitat Criteria Schedules for Ecoregion 3W (MNRF, 2017), was undertaken to determine the potential for Significant Wildlife Habitat to occur within the Study Area. Some of these potential habitats include, but are not limited to, bat maternity colonies, amphibian breeding habitat, turtle wintering areas, snake hibernaculum, bald eagle and osprey nesting habitat, woodland raptor nesting habitat, turtle nesting areas, and mineral licks.

Wildlife and wildlife habitat information will be provided in the EA based on desktop analysis and field study, as necessary. Wildlife and wildlife habitat with the potential to be affected by the Project will be identified. In the absence of Ecoregion 4S and 4W Criteria Schedules, the draft Significant Wildlife Habitat Criteria Schedules for Ecoregion 3W (MNRF, 2017) will be referenced to evaluate the presence and significance of wildlife habitat, as applicable. Field studies to be completed for the EA may include breeding bird surveys, incidental wildlife surveys, and other seasonal surveys, subject to consultation with applicable regulatory agencies and Indigenous communities. Desktop and field studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.2.8 *Species at Risk*

Based on a review of existing background information and datasets provided by MNRF, several terrestrial and aquatic SAR have been known to occur, or have the potential to occur, within and/or adjacent to the Study Area as outlined in **Table 4.3.**

Table 4-3: Species at Risk Present or Potential to be Present in Study Area

Scientific Name	Common Name	Federal SARA Registry Status1	Ontario ESA SARO List Status	Provincial Conservation Rank (SRank)2	Source
BIRDS					
Asio flammeus	Short-eared Owl	SC	SC	S2N,S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Caprimulgus vociferus	Eastern Whip-poor-will	THR	THR	S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Cardellina canadensis	Canada Warbler	THR	SC	S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Chlidonias niger	Black Tern	–	SC	S3B	NHIC Sensitive Datasets - Provincially Tracked Species
Chordeiles minor	Common Nighthawk	THR	SC	S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Contopus cooperi	Olive-sided Flycatcher	THR	SC	S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Contopus virens	Eastern Wood-pewee	SC	SC	S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Coturnicops noveboracensis	Yellow Rail	SC	SC	S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Dolichonyx oryzivorus	Bobolink	THR	THR	S4B	NHIC Sensitive Datasets - SAR; NHIC Sensitive Datasets - Provincially

Scientific Name	Common Name	Federal SARA Registry Status1	Ontario ESA SARO List Status	Provincial Conservation Rank (SRank)[2]	Source
					Tracked Species
Falco peregrinus	Peregrine Falcon	SC	SC	S3B	NHIC Sensitive Datasets - Provincially Tracked Species
Haliaeetus leucocephalus	Bald Eagle	–	SC	S2N,S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Hirundo rustica	Barn Swallow	THR	THR	S4B	NHIC Sensitive Datasets - SAR; NHIC Sensitive Datasets - Provincially Tracked Species
Ixobrychus exilis	Least Bittern	THR	THR	S4B	NHIC Sensitive Datasets - Provincially Tracked Species
Pelecanus erythrorhynchos	American White Pelican	–	THR	S2B	NHIC Sensitive Datasets - Provincially Tracked Species
Podiceps auritus	Horned Grebe	–	SC	S1B,S4N	NHIC Sensitive Datasets - Provincially Tracked Species
Rallus elegans	King Rail	END	END	S2B	NHIC Sensitive Datasets - Provincially Tracked Species
Riparia riparia	Bank Swallow	THR	THR	S4B	NHIC Sensitive Datasets - SAR; NHIC Sensitive Datasets - Provincially Tracked Species

Scientific Name	Common Name	Federal SARA Registry Status1	Ontario ESA SARO List Status	Provincial Conservation Rank (SRank)[2]	Source
HERPTILES					
Chelydra serpentina	Snapping Turtle	SC	SC	S3	NHIC Sensitive Datasets - Provincially Tracked Species
MAMMALS					
Myotis lucifugus	Little Brown Myotis	END	END	S4	NHIC Sensitive Datasets - SAR; NHIC Sensitive Datasets - Provincially Tracked Species
Myotis septentrionalis	Northern Myotis	END	END	S3	NHIC Sensitive Datasets - Provincially Tracked Species
Urocyon cinereoargenteus	Gray Fox	THR	THR	S1	NHIC Sensitive Datasets - Provincially Tracked Species
Gulo gulo	Wolverine	SC	THR	S2S3	NHIC Sensitive Datasets - Provincially Tracked Species
FISH AND OTHER AQUATIC SPECIES					
Acipenser fulvescens pop. 1	Lake Sturgeon (Northwestern Ontario population)	–	THR	S2	NHIC Sensitive Datasets - Provincially Tracked Species
Acipenser fulvescens pop. 3	Lake Sturgeon (Great Lakes - Upper St. Lawrence River population)	–	END	S2	NHIC Sensitive Datasets - Provincially Tracked Species
Anguilla rostrata	American Eel	–	END	S1?	NHIC Sensitive Datasets - Provincially Tracked Species

Scientific Name	Common Name	Federal SARA Registry Status1	Ontario ESA SARO List Status	Provincial Conservation Rank (SRank)[2]	Source
Coregonus zenithicus	Shortjaw Cisco	THR	THR	S2	NHIC Sensitive Datasets - Provincially Tracked Species
Ichthyomyzon fossor	Northern Brook Lamprey (Great Lakes - Upper St. Lawrence populations)	SC	SC	S3	NHIC Sensitive Datasets - Provincially Tracked Species
Ichthyomyzon unicuspis pop. 1	Silver Lamprey (Great Lakes - Upper St. Lawrence populations)	—	SC	S3	NHIC Sensitive Datasets - Provincially Tracked Species
INSECTS					
Bombus terricola	Yellow-banded Bumble Bee	SC	SC	S5	NHIC Sensitive Datasets - Provincially Tracked Species

1 END = Endangered, THR = Threatened, SC = Special Concern; — = no status.
2 S1 - Extremely rare in Ontario; usually five or fewer occurrences in the province, or only a couple remaining hectares; S2 - Very rare in Ontario; usually between six and 20 occurrences in the province, or only a few remaining hectares; S3 - Rare to uncommon in Ontario; usually between 21 and 80 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining; S4 - Considered to be common in Ontario. It denotes a species that is apparently secure, with over 80 occurrences in the province; S5 - Indicates that a species is widespread in Ontario. It is demonstrably secure in the province. ? - A question mark following the rank indicates that there is some uncertainty with the classification due to insufficient information.

For the purposes of EA, SAR identified will be those designated as Threatened or Endangered under Schedule 1 of the *Species at Risk Act, 2002* (SARA), last amended on May 22, 2019, as well as those listed as Threatened or Endangered under the SARO List (Ontario Regulation 230/08) of the *Endangered Species Act, 2007* (ESA), last amended August 1, 2018. Species listed as Special Concern under the SARA and/or the ESA will also be identified; however, general prohibitions of the SARA (e.g., Section 32 and33) and the ESA (e.g., subsections 9 and 10) do not apply to these species. Consultation with the MECP will be undertaken to determine the need for SAR field studies to be completed in support of the EA. Desktop and field studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.2.9 *Air Quality and Greenhouse Gases*

Air quality in the Study Area is generally influenced by local sources as well as long-range transport of contaminants from other regions. Potential air emission sources include mining and other industrial operations, as well as vehicular traffic. Data used to characterize current air quality and climate conditions in the area is anticipated to be obtained from ECCC National Air Pollution Surveillance Program (NAPS) air monitoring stations (e.g., Thunder Bay Station). Air quality criteria, standards and objectives in Ontario have been established by MECP and federally by ECCC. The purpose of air quality objectives and standards is to protect against adverse effects on health and the environment.

The EA will document general baseline conditions for air quality in the area and climate normals using secondary information and the data from representative air quality monitoring. Given the nature of this Project, only temporary construction-related air emissions are anticipated. A quantitative assessment of air quality emissions is not anticipated to be required for the EA.

Like air quality, greenhouse gases (GHGs) in the Study Area are influenced by local sources as well as long-range transport of GHGs from outside the Project Footprint. Due to the long-lived nature of GHGs and long-range transport, GHGs will be considered at a provincial and national level. Data used to characterize current GHG emission levels is anticipated to be obtained from the National Inventory Report 1990 – 2017 developed by ECCC and will be used to document the baseline conditions for GHGs in the area. For similar reasons to air quality, a quantitative assessment of GHG emissions is not anticipated to be required for the EA.

Desktop studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.2.10 *Acoustic Environment*

The existing acoustic environment within the Study Area and the surrounding lands is typical of a rural area and largely characterized by sounds of nature, vehicular traffic, and noise from industrial activities (e.g., mining, quarrying, and forestry). The sound environment in the City of Thunder Bay may however be more typical of an urban area with louder background noise levels due to high-volume roadway use and other noise sources. The Study Area includes several communities, recreational areas and other potentially sensitive receptors.

The general acoustic environment will be further described in the EA using readily available desktop data, including the identification of any sensitive receptors; however, specific acoustic/noise studies are not anticipated to be required as potential effects are likely to be

confined primarily to the construction period (e.g., vibration) and to be temporary and transitory in nature. If long-term noise effects are identified from the addition of station equipment, noise emission levels will be determined through modelling and evaluated against regulatory guidelines. It is anticipated that noise modelling work will be undertaken only if required modifications to existing transformer stations will result in ongoing increased noise emissions. Desktop studies will be supplemented by information from stakeholders and IK gathered through engagement with Indigenous communities.

4.2.3 Socio-Economic Environment

This section provides an overview of the socio-economic environment within the Study Area and describes the data collection methodology that will take place during the EA.

4.2.3.1 *Provincial and Municipal Policy*

Land use planning occurs at the provincial, municipal and regional levels in northern Ontario. Land use planning direction within the Study Area is taken from the Provincial Policy Statement (PPS) (MMAH, 2020), the Growth Plan for Northern Ontario (2011) and the Crown Land Use Policy Atlas (CLUPA).

The PPS sets forth a vision for Ontario's land use planning system by managing and directing land use to achieve efficient development and land use patterns, wise use and management of resources, and protecting public health and safety. The PPS identifies the need for planning authorities to plan for and protect ROWs for infrastructure facilities to meet current and projected needs.

The PPS classifies the Project as infrastructure and describes that infrastructure should be provided in a coordinated, efficient and cost-effective manner, and that before consideration is given to developing new infrastructure, the use of existing infrastructure should be optimized. Section 1.6.8.5 of the PPS states "the co-location of linear infrastructure should be promoted, where appropriate."

The Growth Plan for Northern Ontario (2011) guides decision-making and investment planning in northern Ontario until 2036. The Growth Plan for Northern Ontario recognizes that investment in regional energy generation and transmission infrastructure supports the growth and development of the energy sector, while providing reliable energy supply for the sectors of the northern economic base.

The majority of the Study Area is comprised of Crown land. The CLUPA is a source of area-specific land use policy maintained by the Ontario government for Crown lands. CLUPA contains land use policies consolidated from a variety of planning documents, such as District Land Use Guidelines (1983 as revised); local land use area plans; Ontario's Living Legacy Land Use Strategy (1999) and the Guide to Crown Land Use Planning (2011). CLUPA will be used to understand the applicable land use designations for the portions of the alternative routes that are located on Crown land. Additional consideration of activities on Crown land will include forest management plans and other Crown land users, such as mining claim holders, trapline holders and other tenure holders.

Additional policy direction is provided by the *Provincial Parks and Conservation Reserve Act, 2006*, which provides the framework for the creation, removal and alteration of provincial parks (Government of Ontario, 2014) and by the Ontario Parks Planning Management Policies (1992, Update), which aims to protect the natural, cultural and recreational values for which provincial parks are regulated (Golder Associates Limited, 2018). Land use designations for provincial parks, conservation reserves and other protected areas identified within, and in proximity to, the Study Area include:

- Provincial parks, including Kashabowie Provincial Park, Kakabeka Falls Provincial Park, Aaron Provincial Park, Turtle River-White Otter Lake Provincial Park, Quetico Provincial Park, and Lola Lake Provincial Park; and
- Conservation reserves, including East Wabigoon Conservation Reserve, Melgund Lake Conservation Reserve, Stormy Lake Conservation Reserve, Pyatt Lake Conservation Reserve, Airport Road Conservation Reserve, Campus Lake Conservation Reserve, Side Lake Conservation Reserve, and Adair Lake Conservation Reserve.

The Study Area is also comprised of privately-owned and other public lands (e.g., municipal lands) that contain existing, approved and planned land uses. Existing land uses identified in the area include residential, commercial, industrial, natural areas, recreation, small-scale agricultural, and resource extraction.

Official Plans and other strategic policy direction regarding land use and economic development will be reviewed as part of the EA. The EA will provide additional data relating to sensitive land uses and requirements of provincial land use policy. Engagement with Indigenous communities, government officials and agencies, and interested persons and organizations will be undertaken as part of the EA to assist with identifying and confirming secondary data and potential effects.

4.2.3.2 *Community Well-Being*

The Study Area includes the Thunder Bay, Red River and Kenora Districts of northwestern Ontario. These districts are roughly captured by the Northwest Economic Region, which the Project is also located within. Larger communities within, or in close proximity to, the Study Area include Thunder Bay, Atikokan, Ignace and Dryden. The population of the Northwest Economic Region was 231,691 as of 2016. The population increased by 3.4% between 2011 and 2016. There are 114,959 private dwellings within the region with approximately 83% occupied by their usual residents. Median age is 42.6 years which is slightly higher than the provincial average of 41.3 (Statistics Canada, 2017a).

Northwestern Ontario has an aging population, driven by the baby boomer cohort, demographic changes related to longer life expectancy, fewer children and out-migration. Net out-migration has occurred consistently in northwestern Ontario since 2001 and is most prevalent among those entering the workforce (ages 15 to 34; Cuddy, 2014). Out-migration, while not the sole driver of the aging population, is common for many rural areas in Ontario. The aging population and out-migration may be driven by the types and number of economic opportunities available and have implications for the economy, infrastructure and community services within the region.

The City of Thunder Bay (Census Metropolitan Area) is the most populous municipality in the Study Area, with a population of 121,621, representing 52.5% of the Northwest Economic Region population. The population in Thunder Bay did not change significantly between 2011 and 2016 (0.02% increase). Thunder Bay contains 49.7% of the dwellings in the Northwest Economic Region with approximately 91.9% of those occupied by their usual residents. Median age in Thunder Bay is older than the Northwest Economic Region at 44.8 years of age (Statistics Canada, 2017b).

Other municipalities within the region have much smaller populations, such as Atikokan (2,753), Ignace (1,202) and Dryden (7,749; Statistics Canada, 2017c,d,e). Dryden is the only community which experienced a growing population between 2011 and 2016 (1.7%). Ignace does not have a changing population and Atikokan's population declined by 1.2% (Statistics Canada, 2017c,d,e).

The EA will document additional detail relating to population, demographics and other components of the social environment, such as housing and educational attainment. This assessment will include a characterization of existing municipalities and communities in the area using primary and secondary sources, including Statistics Canada census data, government publications and reports, and input received from stakeholder consultation.

4.2.3.3 *Economy, Land and Resource Use*

Northern Ontario has differing economic circumstances than other parts of Ontario as agricultural and opportunities related to finance, insurance and real estate are less available, and there is an additional focus on primary resource-based sectors, such as mining and forestry.

Within the Northwest Economic Region, the labour force participation rate is 60.4% which is 4.3% below the provincial average of 64.7%. The unemployment rate of 9.2% in the Northwest Economic Region is higher than the provincial average of 7.4% (Statistics Canada, 2017a). Despite the fewer economic opportunities, median income in the Northwest Economic Region is $34,573, which is higher than the provincial average of $33,539 (Statistics Canada, 2017a). Individual communities within the Study Area have varying income and employment levels, though these are generally similar to the regional norms (Statistics Canada, 2017b,c,d,e).

The main commercial and industrial activities in northwestern Ontario are forestry, mining (mineral and aggregate), and tourism, all of which are vital to Ontario's economy. The EA will document the predominant economic activities in the area, including positive and negative Project-related effects and associated mitigation measures.

The EA will include a general economic narrative on the communities in the area potentially affected by the Project with discussions of the regional economy, economic development, government finances, and labour force, including income and employment. For each of the economic and resource use sectors below, the EA will document the existing conditions governing the sector. This will include primary data collection, such as key informant interviews (as possible) and stakeholder engagement. Secondary data will also be used to document the existing conditions within the sector. The EA will include statistics, planning information, non-government sources and, if applicable, geospatial data. This information will be used to profile the general economy and its key sectors.

Key sectors for northwestern Ontario's economy are described below. It is likely these sectors provide important economic and recreational opportunities to individuals within the Study Area.

Energy and Regional Planning

The Study Area fits into two IRRPs: the West of Thunder Bay IRRP and the Thunder Bay IRRP. Within the West of Thunder Bay IRRP area, 491 MW of electricity is generated through hydroelectric, biomass and solar generation (IESO, 2016). There are a number of hydroelectric generation facilities, but the largest are Caribou and Whitedog Generating Stations (IESO, 2016). Additional facilities in the region include the Atikokan biofuel plant and the Rainy River

solar operation (IESO, 2016). In the Thunder Bay IRRP area, more than 60% of electricity is generated through five major hydroelectric generating stations (IESO, 2016).

Forestry

Forestry management units are a geographic planning area that establishes boundaries for wood harvesting under a Sustainable Forest Licence (SFL; Government of Ontario, 2013). There are seven forest management units (under MNRF jurisdiction) in the Study Area, including:

- Lakehead Forest;
- Dryden Forest;
- Dog River-Matawin Forest;
- Boundary Waters Forest (formerly the Sapawe and Crossroute Forests);
- Wabigoon Forest; and,
- English River Forest.

The management of forest area is the joint responsibility of the MNRF and forest product companies through forest management planning. Forest management planning is governed by the *Crown Forest Sustainability Act, 1994* and the EA Act (MNRF, 2019). The Ontario government notes "through forest management planning, forest managers provide for healthy forests now and in the future and provide a range of sustainable benefits (e.g., timber and commercial products, wildlife habitat and recreational opportunities)" (MNRF, 2019). As these considerations are identified through forest management planning, the Project's potential effects to these plans will be identified and considered.

Hunting, Fishing and Trapping

Resource harvesting is a common practice for Indigenous and non-Indigenous peoples in the region. Common resource harvesting practices in northern Ontario include fishing, hunting and trapping. Ontario regulates these activities for non-Indigenous people under the *Fish and Wildlife Conservation Act, 1997*, which outlines restrictions on hunting and fishing, presents licensing and safety requirements, and defines permitted methods. Access for these activities is available through roadways, boat launches and float planes. Recreational fishing and hunting are popular activities in northern Ontario, drawing in tourists and local harvesters.

Mining

There are several companies and individuals with mining claims in the Study Area. Mining claims are located on Crown land and can be used to carry out exploration activities and development under the *Mining Act, 1990*. There is the potential for these claims to be developed during the Project lifecycle, including construction or operation.

Within the vicinity of the Study Area, there are a variety of mining operations at various stages of development. North of the Project is North American Palladium's Lac des Iles operation. Most recent information suggests this mine will continue producing until 2027 (North American Palladium, 2019).

The main projects in advanced stages of development in the region include: Treasury Metal's Goliath Gold Mine (south of Dryden, north of Stormy Lake and east of Wabigoon Lake), Agnico Eagle Mines and Yamana Gold's Hammond Reef (north of Atikokan), Ambershaw Metallics' Bending Lake Iron Ore (southwest of Ignace near Highway 622), First Mining Gold Corp's Cameron Mine (southeast of Kenora) and Rio Tinto and Panoramic Resources' Thunder Bay North Platinum Group Metals Mine (north of Thunder Bay) (Ontario Mining Association, 2019).

The historical Caland and Steep Rock Mines are also in the Study Area. These mines have been abandoned and are being monitored by regulators as the pits on these sites have the potential to overflow over the next several years.

Pit and Quarry Operations/Active Aggregate Sites

Aggregate resources are present in the Study Area (MNRF, 2019a, 2019b). Aggregate resources in Ontario are regulated under the *Aggregate Resources Act, 1990*, which requires an Aggregate Permit for extraction on Crown land, and an Aggregate Licence for extraction on private land if the land is within an Aggregate Designated Area (MNRF, 2019a, 2019b). The exception is Category 14 pits which are exempt from the *Aggregate Resources Act, 1990* (MNRF, 2017). These pits are regulated under the *Crown Forest Sustainability Act, 1990* for use by the forestry industry for the construction and maintenance of forest access roads (MNRF 2017a). Aggregate resources may also be required for Project infrastructure, such as construction access roads.

Tourism and Outfitter Operations

The Project occurs within the MHSTCI's Tourism Region 13c where $108 million was spent in 2013 on pleasure tourism (MHSTCI, 2017). Tourism in the region is generally resource-based with outfitting as the primary tourism activity with 661,000 tourists participating in an outdoor activity as the main purpose of their trips (MHSTCI, 2017). Most of these tourists come from within Ontario. Outfitting involves hunting, fishing or canoeing in remote locations with, or without, a guide. These tourist activities rely on their remote and wilderness setting to attract clients. As a result, access to these services may be provided through road, boat or air. These users are often sensitive to changes in access. Approximately 20 tourism operators have been identified as potentially having overlapping operating areas within the Study Area.

Additional non-consumptive tourism also occurs in the region, including hiking, canoeing and snowmobiling. These activities rely on waterways and trails. Formal Ontario Federation of Snowmobile Club snowmobile trails are present within the Study Area and snowmobiling takes place within the region on these trails and on other trails (Ontario Federation of Snowmobile Clubs, 2019). The Project transects a variety of trails and waterways used for recreation and tourism in the region, including Path of the Paddle canoe routes from Thunder Bay to Dryden.

4.2.3.4 *Aesthetics*

The remote wilderness aesthetics are important components of the visual environment in the area of the Project as related to the tourism industry and residents of the local communities. Visual aesthetics of the area are largely influenced by natural processes, such as wildfires and human influences, including the existing local communities and linear infrastructure.

Visual illustrations, where possible and appropriate, will be developed to illustrate the anticipated location, height and design of the Project in key areas, including any identified sensitive landscape areas. The focus of the exercise will be existing viewpoints that are valued by the public, Indigenous communities, and those identified through consultation activities as playing a main role in the aesthetic appeal and character of a specific area. Data used as part of this exercise may include aerial images and digital data (frames). A description of the existing environment, an assessment of potential effects as a result of the Project, as well as mitigation measures will be developed and provided in the EA.

4.2.3.5 *Infrastructure and Community Services*

The Study Area contains a variety of existing infrastructure, including transmission lines, roads, highways, rail lines and pipelines. Infrastructure is provided by a combination of the provincial government, private sector and local municipalities. Linear infrastructure is used for the transport of goods and services throughout the Study Area.

There are also several community services in the area, often provided by the municipality or a provincial or regional authority. These include emergency services, such as police, fire and ambulance, recreational facilities and other public services, such as waste management facilities. While community services are provided within all communities in the Study Area, Thunder Bay is considered the regional service centre for communities due to the concentration of community services (Northern Policy Institute, 2019).

The provision of community services and infrastructure, as well as other social factors that contribute to community health and well-being, will be further reviewed in the EA. Northern

Ontario faces unique challenges, including having the lowest percentages of people in the province with good overall health and good mental health (Smale, 2016).

The EA will consider existing infrastructure and local community services in the area and within each community that could potentially be affected by the Project. The EA will also consider community well-being and social determinants of health. Existing infrastructure will include transmission lines, roads, highways, pipelines, rail lines and other features. Community services may include schools, medical and emergency services facilities, residential settlement areas, public institutions, places of worship, and community gathering areas as well as municipal and provincial parks. Hydro One is currently consulting with stakeholders to better understand existing facilities and potential Project effects. The EA will also comment on overall community well-being, including information from primary and secondary sources.

4.2.3.6 *Indigenous Community Use of Land and Resources for Traditional Purposes*

The Project is located within the boundaries of the Treaty #3 (1905-1906) and the Robinson-Superior Treaty (1850). Aboriginal and treaty rights are recognized under Section 35 of Canada's *Constitution Act, 1982* (also referred to as Section 35 rights), which includes recognition of existing Aboriginal and treaty rights to hunt, trap, fish, gather and manage the lands for all First Nation, Inuit and Métis people of Canada. As part of these rights, the Government of Canada has the Duty to Consult Indigenous communities for this Project. Hydro One is currently engaging with Indigenous communities to better understand the communities' interests and to begin to identify potential Project effects.

Potentially affected First Nation communities include Couchiching First Nation, Eagle Lake First Nation, Fort William First Nation, Mitaanjigamiing First Nation, Nigigoonsiminikaaning First Nation, Ojibway Nation of Saugeen, Lac des Mille Lacs First Nation, Lac La Croix First Nation, Lac Seul First Nation, Seine River First Nation, and, Wabigoon Lake Ojibway Nation (**Figure 4-1**).

Métis Nation of Ontario (MNO) communities that may be potentially affected by the Project include Atikokan and Area Métis Council, MNO Northwest Métis Council, and MNO Thunder Bay Métis Council. Four additional MNO communities have expressed an interest in this Project – MNO Kenora Métis Council, MNO Sunset Country Métis Council, MNO Superior North Shore Métis Council and MNO Greenstone Métis Council.

Red Sky Métis Independent Nation may also be potentially affected by the Project.

Traditional territory has been used by Indigenous people for trapping, hunting, trade and socializing preceding European contact (Grand Council of Treaty #3, 2019). Common land use activities include resource harvesting, such as hunting, fishing, trapping and gathering. These activities may take place throughout the year and are not bound by the provincial harvest seasons and regulations. Ecologically important areas, such as calving or fish spawning areas, are important to traditional land and resource use due their role in producing the harvested resources. These harvested resources are also utilized for cultural practices.

Transportation pathways and features (e.g., trails and waterways) may be used to support traditional use of the land. Trails and paths within the area of the Project may be used to access harvesting areas by Indigenous community members within and beyond the area of the Project. Trails may be accessed on foot or by using all-terrain vehicles, trucks or snowmobiles. In addition, waterways are used as linear transportation features and can be accessed by canoe/portaging or boat. Specific sites, such as cabins and camps, may also be used to contribute to land and resource use. These features are likely connected to communities by transportation features. Camps and cabins may provide locations important for resource harvesting or travel throughout and beyond traditional territory.

Cultural activities and practices and sacred sites may occur or be present throughout the area of the Project at specific sites or may occur independent of a specific location.

IK will be used to support and strengthen the EA as it has relevance to all aspects of the environment and, as a result, obvious linkages to the assessments of all disciplines (e.g., fish and wildlife, water, culture, archaeology, etc.). IK will be used, as applicable and available, to identify cultural or heritage uses and will assist in determining health, abundance and distribution of species and their habitats, including seasonal variations and historical fluctuation. IK will also help to establish the current use of land and resources for traditional purposes by Indigenous communities. IK will be particularly valuable as it will help to supplement and inform the data gathered through Western scientific means. The collection and use of IK is extremely sensitive in nature and will be guided by the direction and values of the Indigenous communities who participate. Hydro One will continue to engage Indigenous communities to determine their interest in participating in the IK Program. Project timelines will proactively be communicated with Indigenous communities so that IK information can be received in a timely manner for proper consideration in the EA.

The EA will document identified features and traditional land use activities in proximity to the alternatives routes, to the extent possible. This will include a consideration of traditional use,

current uses and other relevant socio-economic aspects of the community. Hydro One supports each interested Indigenous community conducting their own IK Study or utilizing Project consultants to assist them in this undertaking. It is anticipated that the Project-specific IK studies will be governed by IK sharing agreements and could involve the following tasks:

- Literature review (e.g., discussion on existing data, etc.);
- Confirmation of the IK study areas;
- Establishing IK categories (e.g., Animal Harvest, Spiritual or Sacred, Habitation, Travel, etc.);
- IK gathering workshops and/or one-on-one interviews;
- Validation sessions;
- Reporting;
  - IK baseline information;
  - IK effects assessment;
  - Proposed mitigation; and,
- Sharing of IK mapping in GIS format (where permitted by the communities).

Collection and Use of IK

Hydro One believes that the Project will benefit greatly with the active engagement of Indigenous communities since they hold IK, including traditional knowledge and land use information, for the area. Hydro One will work with Indigenous communities to obtain such information. This may include IK that has been previously collected and Project-specific IK information that would be collected during the EA.

IK includes traditional ecological knowledge and traditional land and resource use. Traditional ecological knowledge will be provided to other disciplines for incorporation into their baseline and effects assessment and mitigation sections, as applicable. Traditional land and resource use reporting from the communities will be incorporated into the EA. It is recognized that there are strong linkages between IK and the studies undertaken by other disciplines (e.g., fish, wildlife, vegetation, etc.). Hydro One supports each interested Indigenous community collecting their own IK information, using resources provided in Capacity Funding Agreements.

IK information will be considered and used in the EA in the following ways:

- To establish and describe baseline conditions (to identify areas of concern that are physical, biological, social or cultural in nature);
- In the review of alternatives and selection of the preferred route;
- To identify other required project components (e.g., access roads, etc.);
- To identify potential effects that could arise from the Project; and,

- To aid in the development of measures to avoid or reduce any potential adverse effects and monitoring requirements.

IK is considered to be a holistic body of knowledge containing information and records collected by Indigenous communities that is of social, economic, cultural, spiritual, and/or historical significance to its members. Much of this knowledge may have been passed on from generation to generation. Each Indigenous community will have its own approach to collecting, recording, sharing and using this knowledge. Hydro One is willing to enter into IK sharing agreements with Indigenous communities that are willing to share their information. The IK sharing agreements will acknowledge and respect the sensitive and confidential nature of IK collection and its use.

Methodology for Obtaining and Incorporating IK

Hydro One recognizes that the definition of what IK comprises is unique to each Indigenous community. Similarly, it is the Indigenous community that decides what information will be shared and how it should be applied.

The following describes the proposed steps and methods Hydro One intends to undertake to collect and use IK information in the EA. These steps are a starting point for further discussion and dialogue with interested Indigenous communities who may have their own individual processes and protocols. As such, the approach outlined here is intended to be preliminary and subject to revision.

1. Establishing an IK Framework and Identifying IK that has been Recorded by Indigenous Communities

The first step would be to establish an appropriate IK framework for the EA through discussions with Hydro One and Indigenous communities. It is recognized that some, but not all, Indigenous communities have formally collected and recorded IK information. It is also recognized that not all Indigenous communities will be willing to share the information that they have collected. Some previously collected IK information may be deemed as being project-specific and not necessarily relevant to this Project which Indigenous communities may choose not to share. Discussion will be held with Indigenous community members, leadership and elders, to determine if information is available and if they are willing to share the information, and any associated conditions with sharing the information per the terms of an information sharing agreement that would be established (see below). Hydro One will work with these Indigenous communities to determine how existing information would be used and documented in the EA.

2. Identifying Community Protocols for Sharing and Using IK

It is recognized some Indigenous communities may request an IK sharing agreement and/or non-disclosure (confidentiality) agreement. Each Indigenous community may have its own protocols and procedures, either formal or informal, to be followed in transferring IK to outside parties, such as Hydro One (either information that already exists or Project-specific information to be collected). Hydro One respects these protocols and will work with each Indigenous community to understand how the information will be transferred, applied and documented. Hydro One respects that IK is "owned" and controlled by the Indigenous community. Hydro One will be sensitive to the conditions of the information sharing agreement established with each interested Indigenous community.

3. Determining the Resources or Capacity Required to Collect, Record and Share IK

Some Indigenous communities may be interested in participating in a Project-specific IK collection exercise. It is anticipated that to undertake these exercises that some amount of support will be required, such as funding and/or technical assistance, to complete the collection and recording of IK.

Hydro One is providing financial assistance through community-specific Capacity Funding Agreements to assist in the gathering and recording of IK and participation in other aspects of the EA process.

4. Working with Indigenous Communities that do not have IK Formally Recorded

It is recognized that some communities may:

- Not have formal IK records;
- Prefer oral methods of sharing information rather than written records;
- Wish to share only a summary or portion of the IK information they have gathered that is pertinent to the EA in order to protect sensitive information; and/or,
- Wish to formally record IK, but may not be ready or may not have sufficient time to record the information within the schedule for the EA, even if the community has accessed the capacity funding process to obtain financial assistance.

Where an Indigenous community does not have, or is not likely to have formal records, but is willing to share IK information orally or by some other means, Hydro One will discuss with Indigenous community members the most appropriate way to facilitate this method of sharing. This could involve meetings with community members, such as land users, elders, and trappers. Sitting

together, Hydro One would provide community members the opportunity to share information and stories that would then be recorded by Hydro One for use in the EA effects assessment. The records developed from these meetings would be verified with the Indigenous community who will have the opportunity to add any necessary information, details or perspective before the information is incorporated. It is acknowledged that these records, similar to more formal IK records, are in the ownership of the Indigenous community, and will only be used, shared and published under the terms outlined in any IK sharing agreements.

Hydro One fully respects those Indigenous communities which choose not to share their IK and how they choose to participate in the EA process will be discussed with the leaders of these Indigenous communities during engagement and consultation.

5. Utilizing IK in the EA

IK may be provided in a variety of formats, such as maps, written descriptions or oral stories. Often mapping is provided in a GIS computer-based mapping format. However, where information has not been recorded in GIS format, and hard-copy mapping must be shared, Hydro One understands that these maps must be treated with respect and must remain in the ownership of the community.

In addition to respecting ownership of the information, it is understood that IK provided by Indigenous communities must be protected. For example, where a sacred site has been identified, the Hydro One database will not provide a specific map reference that could lead a third party to the specific location. Typically this type of information is also "buffered" by applying an area of protection around the feature so that the specific location cannot be identified. Such buffers will be used where identified as necessary and as specified by Indigenous communities. Hydro One will also refrain from specifically identifying or labelling an area of community importance that could be of interest to outside parties and could affect the Indigenous community, such as high-quality harvest areas and areas with traditional medicines.

In addition to receiving guidance from the Indigenous community as to how the information will be used and published, Hydro One commits to incorporating input into the development of the analysis framework and addressing effects through mitigation and accommodation, as appropriate, through the EA process.

It is recognized that physically avoiding an area may not be enough to eliminate effects. Areas and sites that may be affected will be discussed with Indigenous community members and

measures that could be applied to mitigate the effect, or where appropriate accommodate for the effect, will be identified.

It is recognized that IK may not be limited to physical or spatial features. Information about using the land and Indigenous community culture will also be an important aspect. This information will be treated similar to physical or spatial features. The potential for effects from the Project will be discussed with Indigenous community members, as well as measures to mitigate, and/or where appropriate, accommodate for the effect. It is also important that Indigenous community values and respect for the land are incorporated into the effects assessment, as well as Project design and operations.

6. Reconciling Differences between IK and Western Science

Western science and IK approach environmental evaluation differently. Where Western science often relies on deduction and inference to reach conclusions, information from IK adds an experiential understanding of the land that goes back many, many generations. Where Western science relies on gauges and modelling, it is often based on limited historical data. Indigenous community members have generations of historical knowledge that may be shared. This information is extremely helpful. IK will be used to enhance Western science. Where IK is found to conflict with Western science both will be brought forward for consideration in the evaluation of criteria and indicators and treated with equal weight.

7. Reconciling Differences in IK between Communities

Differences between IK information from one Indigenous community to another will be addressed between Hydro One and the affected Indigenous communities, as they are identified. It is recognized that experiential information may be somewhat different between Indigenous communities for a common parcel of land, and that there are overlaps in traditional territories.

Hydro One recognizes the importance of acknowledging, reconciling and addressing any differences that are identified. Hydro One would aggregate the information and assess effects and mitigation acknowledging both records. Whether the differences are discussed between the Indigenous communities would be at the discretion and the direction of members from each of the Indigenous communities. As mentioned earlier, sacred or significant sites or areas are typically not labelled, and are typically "buffered" with a protection zone to ensure confidentiality where this is considered important by the Indigenous community members. Where differences are considered to conflict, Hydro One will work with each of the Indigenous communities to identify a

collaborative process for working through the differences towards an outcome for EA analysis that is acceptable to both communities.

8. Identifying, Discussing and Confirming Mitigation Measures and Accommodation

An important aspect of the EA effects assessment and the incorporation of IK information is the identification and confirmation of mitigation measures and, where appropriate, accommodation.

Using Western science and IK information, Hydro One will conduct an initial analysis of potential effects and identify initial measures to avoid or reduce them. The initial conclusions of this analysis will be discussed with the Indigenous communities. From input received by the Indigenous communities during subsequent engagement, measures will be changed or additional measures added, resulting in a refinement of the effects assessment. It is understood that the process of discussing and resolving differences and the potential of a mutually acceptable resolution is a fundamental aspect of consultation and the EA process.

Hydro One recognizes that not all Indigenous communities have the resources or capacity available to conduct a detailed review of the EA effects assessment they feel is necessary to adequately reflect and incorporate Indigenous community values and IK. Hydro One is offering financial assistance through a community-specific Capacity Funding Agreement process whereby funding is provided to communities to assist with capacity development, gathering and recording of IK, EA review, and participation in other aspects of the EA process.

4.2.3.7 *Cultural Heritage Resources*

The EA will consider potential effects to built heritage, cultural heritage landscapes and archaeological resources. To do this, the EA will draw on archaeological assessments and cultural heritage resource studies, IK gathered from Indigenous communities and information from stakeholders. Results from these studies will be incorporated into the assessment, EA decision-making and construction planning. Indigenous communities will also be consulted for information on any archaeological, built heritage or cultural heritage landscape resources in the area.

Archaeology

A Stage 1 archaeological assessment is anticipated to be completed for the Project as part of the EA to identify areas of archaeological potential. The Stage 1 assessment is expected to include information about the geography, history, and previous archaeological fieldwork of the area, as well as an overview of current land conditions. This information will be obtained through the review of existing historical and recent mapping, previous archaeological assessments in

proximity to the area, MHSTCI Archaeological Sites Database, and IK pertaining to land use during both pre- and post-contact periods. The Stage 1 assessment will also provide recommendations for additional assessment (e.g., Stage 2 assessment) for areas that display archaeological potential. Additional study (e.g., Stages 3 and 4 assessments) may also be required, but will depend on the conclusions made in the Stage 1 archaeological assessment.

Archaeological assessments will be undertaken by a licensed archaeologist under the *Ontario Heritage Act, 1990*. The locations for assessment will be determined using the Standards and Guidelines for Consultant Archaeologists for work within northern Ontario.

Built Heritage and Cultural Heritage Landscapes

It is anticipated that cultural heritage study reports will document known and potential built heritage and cultural heritage landscapes that may be affected by the Project. Results from these studies will be documented in the EA and used for planning and design purposes. Further, information available from Indigenous communities, municipal officials and/or interested stakeholders (e.g., municipal heritage committees) will also be sought and taken into account as part of the EA.

Cultural heritage assessment activities will be undertaken by a qualified person, as required. A Cultural Heritage Existing Conditions (CHEC) report will be conducted to document any known and potential cultural heritage resources. Also, a preliminary Heritage Impact Assessment (HIA) will be completed that may include additional recommendations for further property-specific Cultural Heritage Evaluation Reports (CHERs) and/or property-specific HIAs. The requirements for the development of these additional heritage reports will be identified early in the EA process. All completed draft CHERs will be submitted to the Hydro One Cultural Heritage Committee (CHC) for review. MHSTCI will be consulted, as necessary, throughout the process. All technical heritage reports pertaining to built heritage and cultural heritage landscapes can be made available for review by MHSTCI.

4.2.4 Summary of Study to be Completed during the Environmental Assessment

Table 4-4 provides a brief overview of the anticipated additional study that will be carried out to better define existing environmental conditions during the EA. This table is subject to change based on data availability, ongoing engagement and any new information received during the EA.

Table 4-4: Study to be Completed during the Environmental Assessment

Baseline Component	Studies to be Completed During the EA
Natural Environment	
Physiography, Geology, Surficial Geology and Soils	• Document based on additional desktop study. • Review Ontario Geological Survey, OMAFRA and MNRF mapping and reports as well as other existing databases, such as the Northern Ontario Engineering Terrain Studies and the Canadian Soil Information Service. • Areas identified as potentially contaminated will be noted. • Desktop and field studies will be supplemented by IK gathered through Indigenous engagement and information from stakeholders.
Surface Water	• Document based on additional desktop study and field study (if warranted). • Desktop and field studies (if warranted) will be supplemented by IK gathered through Indigenous engagement and information from stakeholders.
Groundwater	• Document based on additional desktop study. • Review national Water Survey of Canada data, MECP water well data, input received from landowners and GIS mapping. • Wells in proximity to the preferred route that could potentially be affected by the Project will also be identified and provided in the EA. • The potential for groundwater effects will be reviewed using historical data (e.g., existing MECP water well records and reports, source water protection plans, etc.). • Desktop and field studies (if warranted) will be supplemented by IK gathered through Indigenous engagement and information from stakeholders.
Provincial Parks, Conservation Reserves and Areas of Natural and Scientific Interest	• Document based on additional desktop study and field study based on sections of provincial parks, conservation reserves, ANSIs, and other environmentally sensitive areas that have the potential to be affected by the Project.
Fish and Fish Habitat	• Document based on additional desktop study and field study. • Aquatic features and species information will be gathered using desktop (including GIS mapping) and field studies, as necessary. • Desktop and field studies will be supplemented by IK gathered through Indigenous engagement and information from stakeholders.
Wetlands	• Document based on additional desktop study and field study using available data and GIS mapping. • Desktop and field studies will be supplemented by IK gathered through Indigenous engagement and information from stakeholders.

Baseline Component	Studies to be Completed During the EA
Terrestrial Wildlife and Wildlife Habitat	• Document based on additional desktop study and field study, as necessary. • In the absence of Ecoregion 4S and 4W Criteria Schedules, the draft Significant Wildlife Habitat Criteria Schedules for Ecoregion 3W (MNRF, 2017) will be referenced to evaluate the presence and significance of wildlife habitat, as applicable. • Field studies to be completed may include breeding bird surveys, incidental wildlife surveys, and other seasonal surveys, subject to consultation with regulatory agencies and Indigenous communities. • Desktop and field studies will be supplemented by IK gathered through Indigenous engagement, and information from stakeholders.
Vegetation	• Document based on additional desktop study and field study, as necessary. • Anticipated field studies to be completed include ELC and botanical surveys, and are subject to consultation with regulatory agencies and Indigenous communities. ELC and botanical surveys will be completed to establish vegetation communities and species present in the area. Information obtained from these surveys will be used to verify secondary source data. • Desktop and field studies will be supplemented by IK gathered through Indigenous engagement, and information from stakeholders.
Species at Risk	• Document based on additional desktop study and field study, as necessary. • SAR identified will be those designated as Threatened or Endangered under Schedule 1 of the SARA, last amended on May 22, 2019, as well as those listed as Threatened or Endangered under the SARO List (Ontario Regulation 230/08) of the ESA, last amended August 1, 2018. • Species listed as Special Concern under the SARA and/or the ESA will also be identified; however, general prohibitions of the SARA (e.g., Section 32 and 33) and the ESA (e.g., subsections 9 and 10) do not apply to these species. • Consultation with the MECP and Fisheries and Oceans Canada (DFO) will be undertaken to determine the need for SAR field studies to be completed in support of the EA. • Desktop and field studies will be supplemented by IK gathered through Indigenous engagement, and information from stakeholders.
Air Quality and GHGs	• Document based on additional desktop study for climate normals and ambient air quality data taken from representative NAPS air quality monitoring stations close to the Project (e.g., Thunder Bay Station). • Document based on additional desktop study using published emission inventories at a provincial and national level.
Acoustic Environment	• Document the potential noise effects of the Project on the ambient noise

Baseline Component	Studies to be Completed During the EA
	environment using available desktop data by characterizing the existing baseline noise environment and assessing potential noise levels from the Project. Detailed acoustic studies are not anticipated to be required as noise is expected to be temporary and transitory and mainly confined to the construction period. • If long-term noise effects are identified from the addition of station equipment, noise emission levels will be determined through modelling and evaluated against regulatory guidelines, as applicable.
Socio-Economic Environment	
Provincial and Municipal Policy	• Document based on additional desktop study using official plans and other strategic policy direction regarding land use and economic development. • Additional data relating to sensitive land uses and requirements of provincial land use policy will also be provided.
Community Well-being	• Document based on additional desktop study using federal (Statistics Canada) and local municipal data to define population, demographics and other components of the social environment, such as housing and educational attainment. This assessment will include a characterization of existing municipalities and communities in the area using primary and secondary sources, including Statistics Canada census data, government publications and reports, and input received from stakeholder consultation. • Document based on additional desktop study and will consider community well-being and social determinants of health.
Economy, Land and Resource Use	• Document based on additional desktop study, including a general economic narrative of the communities in the area with discussions of the regional economy, economic development, government finances, and labour force, including income and employment. • This will include primary data collection, such as key informant interviews (as possible) and stakeholder engagement. This includes provincial parks management and users. Secondary data will also be used to document the existing conditions within the sector. The EA will include statistics, planning information, non-government sources and, if applicable, geospatial data.
Aesthetics	• Visual illustrations using photos taken in the field will be developed to illustrate the anticipated location, height and design of the Project in key areas, including any identified sensitive landscape areas. The focus of the exercise will be on existing viewpoints that are valued by the public and those identified through consultation activities as playing a main role in the aesthetic appeal and character of a specific area.

Baseline Component	Studies to be Completed During the EA
	• Data used as part of this exercise may include aerial images and digital data (frames), as well as GIS data, such as land cover, land use and regulatory boundaries.
Infrastructure and Community Services	• Existing infrastructure will include transmission lines, roads, highways, pipelines, rail lines and other features. Community services may include schools, medical and emergency services facilities, residential settlement areas, public institutions, places of worship, and community gathering areas, as well as municipal and provincial parks.
Indigenous Community Use of Land and Resources for Traditional Purposes	• Document based on additional desktop study through traditional land and resource use studies by or with Indigenous communities. • Secondary sources may be used to supplement these studies, particularly concerning socio-economic aspects of these communities.
Cultural Heritage Resources	• A Stage 1 archaeological assessment is anticipated to be completed for the Project. The Stage 1 assessment will provide information about the geography and history of the area, previous archaeological fieldwork and an overview of current land conditions within the area. The Stage 1 assessment will also provide recommendations for additional surveys for all areas that display high archaeological potential. Additional study (e.g., Stage 2, 3 and 4 assessments) may also be required but will depend on the conclusions made in the Stage 1 archaeological assessment. • A cultural heritage study reports will document built heritage and cultural heritage landscapes that may be affected by the Project. Results from this assessment will be documented in the EA and used for planning and design purposes. Further, information available from Indigenous communities, municipal officials and/or interested stakeholders (e.g., municipal heritage committees) will also be sought and taken into account. • Cultural heritage assessment activities will be undertaken by a qualified specialist, as required. CHER and/or HIAs will be conducted for specific cultural heritage resources, if present.

4.3 Potential Project Effects

This section provides a high-level overview description of potential effects of the Project. The EA will include a more detailed and thorough description of potential effects that will be caused, or that might reasonably be expected to be caused, to the natural and socio-economic environment as a result of the Project, as more detail will be available at that time. The effects assessment will consider the proposed Project location and conceptual design, once determined, as well as the

input obtained from Indigenous communities, government officials and agencies, and interested persons and organizations.

Climate change adaptation (potential effects of climate on the Project) will be considered as part of the assessment.

4.3.1 Preliminary Potential Effects to the Natural Environment

Project activities throughout the lifecycle of the Project (e.g., construction, operation and maintenance, and retirement) have the potential to affect the natural environment. Potential effects to the natural environment features described in **Section 4.2.2** (e.g., soils, surface and groundwater, wetlands, terrestrial wildlife and wildlife habitat, fish and fish habitat, SAR, etc.) resulting from Project activities will be identified and evaluated in the EA. Potential effects to the natural environment may be positive, negative, neutral, short-term, long-term, and/or cumulative. The EA will propose mitigation measures to address potential effects to the natural environment, as applicable.

The potential effects to the natural environment as a result the Project are summarized in **Table 4-5** and further described below. The potential effects described below are preliminary and will be further defined during the EA.

Table 4-5: Summary of Preliminary Potential Effects to Natural Environment

Environmental Feature	Potential Effect
Physiography, Geology, Surficial Geology and Soils	• Increased potential for soil compaction, mixing and rutting • Increase potential for soil erosion • Potential for loss of soil productivity • Increased potential to unstabilize slopes (e.g., rock fall, debris slides, etc.) • Increased potential for Acid Rock Drainage (ARD)
Surface Water	• Reduced shade, increased thermal loading of watercourses and increased algae growth • Increased downstream erosion and sedimentation • Collapse of stream banks and downstream sedimentation • Alteration of surface water drainage systems
Groundwater	• Short-term disruption or alterations to natural groundwater levels and flow patterns • Interference with water wells and septic tanks • Potential for contamination due to accidental release of deleterious

Environmental Feature	Potential Effect
	substances
Provincial Parks, Conservation Reserves and ANSIs	• Alteration, degradation, and fragmentation of natural heritage features, including provincial parks, conservation reserves, and ANSIs • Potential for the Project to affect the values being protected as reflected in the site-specific goals and objectives of each protected area, including natural and cultural features, maintenance of biodiversity and provision of opportunities for recreation
Fish and Fish Habitat	• Riparian and in-stream habitat alteration • Habitat fragmentation • Changes to habitat availability or use • Fish injury or mortality • Blockage of fish movement • Introduction and/or spread of aquatic invasive species
Vegetation and Wetlands	• Changes to native vegetation community composition, diversity and structural complexity • Potential loss of rare vegetation species or rare vegetation communities • Creation of new woodland edge • Woodland fragmentation • Invasive species and/or weed introduction and spread • Alteration of wetland habitat function • Alteration of wetland hydrologic function • Change in wetland plant community composition • Introduction and/or spread of wetland associated invasive species • Fragmentation of wetland habitat
Terrestrial Wildlife and Wildlife Habitat	• Loss and alteration of wildlife populations and/or habitat • Habitat fragmentation • Changes in habitat distribution, including the effects on wildlife movement and habitat connectivity • Loss and/or alteration of habitat • Changes to habitat availability or use • Qualitative changes to animal populations as a result of altering survival and recruitment • Increase in mortality risk • Displacement of wildlife
Species at Risk	• Loss and/or alteration of SAR populations and/or habitat, including trees and or/ vegetation • Fragmentation to SAR habitat and/or communities

Environmental Feature	Potential Effect
	• Changes in habitat distribution, including the effects on wildlife (including fisheries) movement and habitat connectivity • Loss and/or alteration of habitat • Changes to habitat availability or use • Qualitative changes to animal/fish populations as a result of altering survival and recruitment • Increase in mortality risk
Air Quality and Greenhouse Gases	• Increase of localized fugitive dust emissions during construction • Increase in air contaminant and greenhouse gas emissions from construction equipment
Acoustic Environment	• Temporary and transitory increase in noise emissions at human receptors during construction

4.3.2 Preliminary Potential Effects to the Socio-Economic Environment

This section outlines potential Project activities and the effects they may have on the socio-economic environment. The Project has the potential to result in socio-economic benefits and negative effects to the communities and land users in the area. However, it is anticipated that the Project will have an overall net benefit on the socio-economy of northwestern Ontario and of the province as a whole. The socio-economic effects assessment will consider the socio-community, human health, economy, land use, cultural heritage resources and traditional land use. The socio-economic effects assessment will identify the positive and negative effects of the Project.

The socio-economic effects assessment will consider these Project activities and their interactions with identified socio-economic features. Potential effects, such as those listed in **Table 4-6,** will be identified and mitigation measures will be recommended. The mitigation measures will seek to enhance the potential socio-economic benefits or reduce negative effects of the Project. The assessment of potential effects will be based on the socio-economic profile of the area, including data collected from primary and secondary sources. The assessment will also consider changes to environmental factors, such as potential effects to wildlife populations, where relevant. The potential effects described below are preliminary and will be further defined during the EA.

Table 4-6: Summary of Preliminary Potential Effects to Socio-Economic Environment

Discipline	Potential Effect
Provincial and Municipal Policy	• Compatibility of the Project with existing land uses • Changes to the use of provincial parks and protected areas, including access and environmental conditions
Community Well-being	• Change to community well-being from nuisance effects, such as noise or visual changes.
Economy, Land and Resource Use	• Increase in employment and income during construction • Increase in skilled trades in the area due to training opportunities • Change to the regional economy • Increased government revenues • Increased government expenditure • Changes to key economic and resource use sectors, including changes to access and resource availability • Changes to tourism and recreation land users, including access and environmental conditions
Aesthetics	• Change to the perceived visual aesthetics of the area
Infrastructure and Community Services	• Temporary increase in population and changes to demographic profile of the community during construction • Change in availability and use of public services and infrastructure • Increased demand for temporary housing • Change to community well-being
Indigenous Community Use of Land and Resources for Traditional Purposes	• Change in ability to access and use of land and resources for traditional purposes • Changes to community social and economic attributes resulting from changes to access to resources
Cultural Heritage Resources	• Damage to, or the loss of, archaeological or cultural heritage resources

Preliminary Potential Effects to Indigenous Community Use of Land and Resources for Traditional Purposes

The Project has the potential to result in effects to the natural environment, including wildlife, vegetation and water resources. Potential effects to the natural environment may affect the Aboriginal and treaty rights of communities. The potential effects to Aboriginal and treaty rights include, but are not limited to, the following:

- Changes to access to resource harvesting and cultural sites within and beyond the area of the Project from effects on features, such as trails and waterways and camps/cabins;

- Changes to subsistence hunting, trapping, fishing and gathering as protected under Aboriginal and treaty rights;
- Changes to Indigenous landscape features, such as Place Names, Boundary Markers and Orientation Points, through disturbances to the land within the area of the Project;
- Changes to the environmental conditions, such as vegetation, wildlife, fish and water resources, that may influence traditional activities within the area of the Project; and
- Change to spiritual and cultural sites, such as ceremonial, grave, sacred, gathering and worship areas, that may occur in the area of the Project.

During the EA, respecting cultural protocols and governance structures, Indigenous communities will be engaged with to inform the natural and social environment criteria and indicators so that IK perspectives are considered in routing decisions and the effects assessment. IK can provide different perspectives on the natural and socio-economic environmental components that may be affected by the Project. Indigenous communities will be encouraged to share IK on key topics, issues and concerns to further identify, inform, and refine the criteria and indicators.

Indigenous communities will also be engaged during the effects assessment to help Hydro One better understand whether the Project will have an effect on a particular feature of importance from an IK perspective, or changes to lifestyle. Hydro One will engage Indigenous communities to identify potential Project effects and significance. By using IK and collaborating with Indigenous communities, Hydro One will be in a better position to document concerns and have Indigenous communities participate directly and effectively in the effects prediction and assessment. The manner in which this input and information is collected is expected to vary by community. Information sharing protocols will be established with the interested Indigenous communities to guide the manner in which information is collected and used in the EA.

5.0 Description of the Undertaking

This section provides a general description of the undertaking, or the Project, including the anticipated activities associated with all phases of the Project. This description should be considered preliminary and subject to change as detailed design, including detailed surveys, additional studies and ongoing consultation, has not yet been completed. A more detailed description of the undertaking will be provided in the EA and will be sufficient to allow for the identification and assessment of potential effects for the Project.

5.1 Description of the Undertaking (Project)

Hydro One is proposing to construct a new double-circuit 230 kV transmission line between Lakehead TS in the Municipality of Shuniah and Mackenzie TS in the Town of Atikokan, and a new single-circuit 230 kV transmission line between Mackenzie TS and Dryden TS in the City of Dryden. The transmission line length is anticipated to be approximately 350 km depending on the preferred route selected through the EA process. The Project also includes the separation of approximately 1 km of the double-circuit section of the existing 230 kV transmission line outside of Mackenzie TS in Atikokan (circuits F25A and D26A) into two separate single-circuit transmission lines. Upgrades will be required to the existing Hydro One stations that serve as connection points for the undertaking.

5.1.1 Preliminary Facility Design

The connection locations and technical specifications for the Project (e.g., number of circuits, capacity, etc.) was determined by the IESO (**Appendix A**). The Project will comply with North American Electric Reliability Corporation (NERC) and IESO reliability standards. The following sections describe the key components of the Project which are subject to confirmation based on outcomes of the EA, subsequent detailed design work, and Project constructor methods.

5.1.1.1 *Transmission Line*

The new transmission line will be designed to be an overhead 230 kV alternating current (AC) double-circuit (between Lakehead TS and Mackenzie TS) and single-circuit (between Mackenzie TS and Dryden TS). It will consist of transmission structures, conductors, insulators, overhead shield wires/optical ground wire and grounding.

The proposed ROW for the Project is expected to be approximately 40 m to 76 m in width. This width will vary depending on the specific location of the new line, the local terrain and distance between the transmission structures. Additional ROW width may be required where there are

angles in the route, crossings of existing lines, for general construction access, temporary working space and laydown areas, access roads, and where the landscape/topography requires additional lands for access (e.g., in areas with steep slopes or other challenging terrain). The ROW width will be confirmed based on the final route, design of the structures, the sag and span between structures, and location of the ROW (e.g., greenfield route or adjacent to an existing, previously disturbed ROW).

Typical construction activities would include site preparation, such as vegetation removal, grading, building temporary and permanent access roads and laydown areas, installation of temporary fences, entrances, and concrete foundations, installation of transmission line structures, stringing, sagging and site restoration.

Different types of steel lattice transmission structures and wood pole structures may be used for the Project (**Figure 5-1**). The final structure type and number of structures required will be dependent on the final Project location/siting identified during detailed design. Towers are expected to be approximately 30 m high for single-circuit towers (typical) and 40 m high for double-circuit towers, depending on the structure used. Typical tower spacing is approximately 300 m for single-circuit towers and 270 m for double-circuit towers. Longer spans may be possible with larger towers.

Concrete foundations are anticipated for each structure; however, this will be dependent on structure type, site and soil conditions, including topography, sensitive features, and span length, and will be determined during detailed design.

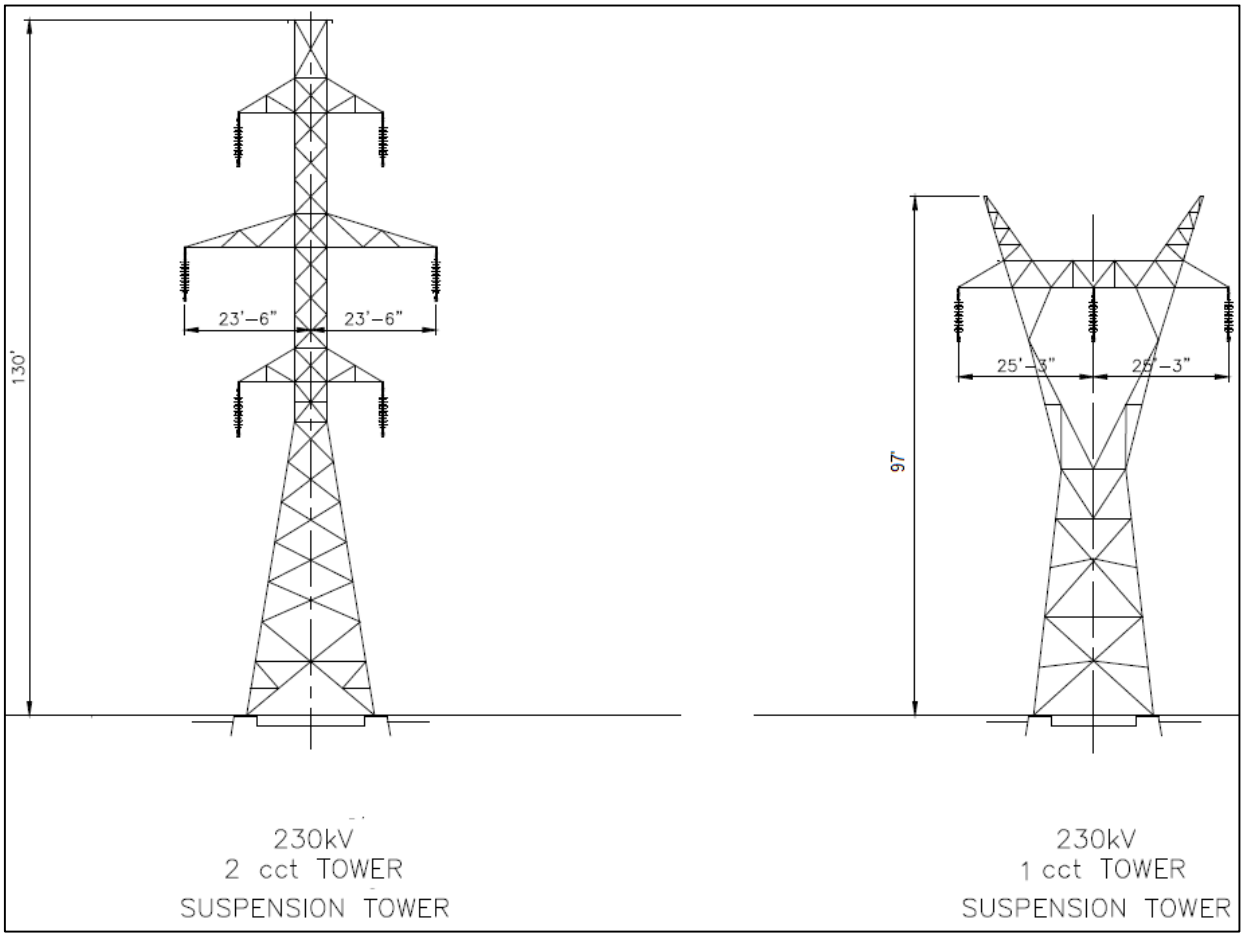


Figure 5-1: Typical Structure Types and Heights

5.1.1.2 *Access Roads*

Temporary and permanent access roads are anticipated to be required for the construction and operation phases of the Project. The access requirements for construction and operation are different. During construction, temporary access is required 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. Temporary and/or permanent watercourse crossings may also be required.

Hydro One's preference will be to use the Project ROW for access and build access roads within the ROW, where possible. Where travel in the ROW with heavy equipment is not possible due to terrain, ground conditions or environmental sensitivities, Hydro One may 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 may need to build new access roads.

The number, location, and characteristics of existing and proposed new access roads to be used for the Project will be refined through technical design work and through consultation with Indigenous communities, government officials and agencies, and interested persons and organizations. Access roads will be included in the Project footprint to be assessed during the EA. Temporary access roads required only for construction will typically be restored following construction, including those within the Project ROW.

5.1.1.3 *Equipment/Material Laydown Areas*

Equipment and material laydown areas, as well as fly yards, construction/stringing pads, and staging areas, may be required to receive and distribute material during Project construction. The preference will be to use previously disturbed areas or the ROW for these areas where possible. These areas will be included in the Project footprint to be assessed during the EA, as available.

It is anticipated that construction material and equipment from the storage yards will be transported by truck to laydown areas or to specific locations within the ROW. Materials and/or equipment may also be transported by helicopter to areas not accessible by ground. Permits and/or authorizations for these areas will be obtained prior to their use, as applicable. Storage yards will be included in the Project footprint to be assessed during the EA, as available.

5.1.1.4 *Construction Offices*

Temporary mobile offices may be required during the construction period. It is anticipated that these temporary offices will be located in developed areas near the ROW, such as the City of Thunder Bay, Town of Atikokan, Township of Ignace, City of Dryden or near laydown areas, storage yards, or other temporary facilities, if available. The construction offices are anticipated to be decommissioned following Project construction. Construction offices will be included in the Project footprint to be assessed during the EA, as available.

5.1.1.5 *Temporary Land Rights*

Temporary land rights may be required at some locations along the ROW to accommodate construction activities, such as providing additional working space, stockpiling, and equipment/material laydown or to facilitate conductor pulling/tensioning. These sites, if required, are anticipated to be decommissioned and restored following construction.

5.1.1.6 *Upgrades to Existing Transformer Stations*

Connections to existing transformer stations will be required for the Project, including at Lakehead TS, Mackenzie TS, and Dryden TS. The type and extent of station work will be determined and confirmed during detailed design and after detailed requirements are identified by the IESO's

connection assessment and approval (CAA) process; however, may generally include the following:

- Expansion of the fenced-in area of Lakehead TS, Mackenzie TS, and Dryden TS;
- Installation of new line terminations, bus-work extensions, circuit breakers, disconnect switches, and associated protection, control and telecommunication facilities at all three of the above-mentioned stations; and,
- Installation of shunt reactors and other reactive devices, as may be required by the IESO's CAA at the three above-mentioned stations.

No new transformer stations are required for the Project at this time.

5.1.1.7 *Separation of Existing Transmission Lines*

The Project also includes the separation of two existing 230 kV transmission circuits out of Mackenzie TS in Atikokan (circuits F25A and D26A). Approximately 2.5 km of these two circuits currently share one set of structures. Approximately 1 km of this double-circuit section of transmission line needs to be separated into two single-circuit sections (without sharing structures), as required by the NERC transmission planning standard. The type and extent of work associated with this activity will be determined and confirmed during detailed design; however, may generally include the following:

- Expansion of the existing F25A/D26A ROW;
- Installation of new single-circuit structures; and,
- Removal of the existing conductors and their insulators of one of the circuits (D26A or F25A) from the existing common structures and installation of new conductors/insulators and required shield wires on the new structures.

5.2 Project Activities

The Project can be broken down into three phases: construction, operation and maintenance, and retirement. Activities associated with these phases are described below.

5.2.1 Construction

The construction of the Project is expected to occur over an approximate three-year period (to be confirmed upon contractor selection), following successful receipt of required permits, approvals, and authorizations. Specific timing, sequencing and staging will be determined during the detailed design phase.

Construction activities are expected to occur throughout the year with staging to avoid and/or minimize potential effects on environmentally sensitive areas or wildlife breeding cycles (e.g., breeding bird period, fisheries windows, etc.), where possible.

The main construction activities anticipated for the Project include the following:

- Surveying and staking;
- Clearing, grubbing and grading the ROW;
- Construction of access roads, watercourse crossings, laydown areas, and construction camps;
- Equipment and material delivery;
- Tower structure foundation installation;
- Tower structure assembly and erection;
- Conductor stringing and installation;
- Clean-up and restoration; and,
- Testing and commissioning.

Potential Employment/Procurement Opportunities and Economic Spin-Offs

The Project is expected to generate both local and regional employment and procurement opportunities, as well as economic spinoffs during the construction period, including, but not limited to, the following:

Equipment and Related Rentals

- Truck and car rentals;
- All-terrain vehicle rental (e.g., Argos, side-by-sides, quads/4-wheelers, snowmobiles, boats, etc.);
- Construction equipment and supplies (e.g., helicopters, aggregates, etc.);
- Storage facilities;
- Outdoor gear; and,
- Health and safety equipment and field camp supplies.

Accommodations and Food

- Restaurants and/or fast food chains;
- Catering services;
- Hotels; and,
- Event venues.

Labour Services

- Heavy equipment operators; and,
- General labourers.

Technical and Professional Services

- Engineers, planners, biologists, archaeologists, geologists, construction monitors, communication liaisons, etc.

5.2.2 Operation and Maintenance

The operation and maintenance phase would include transmission line condition assessments and vegetation maintenance, which would be completed on a regular basis. Ongoing vegetation management activities are required to manage and mitigate safety and reliability risks by maintaining clearances between transmission lines and vegetation on, and along, the ROW. The anticipated operating services include:

- Structure climbing and helicopter inspections;
- Line hardware and insulator thermography;
- ROW inspections;
- Visual ground patrol;
- Vegetation management; and,
- Ongoing repairs and maintenance activities.

Electric and Magnetic Fields

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

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

5.2.3 Retirement

The Project will be operated for an indeterminate time period and retirement, or decommissioning, is not anticipated. Should a decision be made to decommission the Project at a future point in time, a detailed review of the potential effects and mitigation measures existing at

that time will be completed and decommissioning will be planned and conducted in accordance with the relevant standards and regulatory requirements in effect at the time. Activities that would typically be completed to facilitate the decommissioning of a project of this type would include removing towers and transmission line cables, insulators and other hardware, and ground reclamation.

6.0 Identification and Evaluation of Alternatives

This section describes the approach to the identification of alternatives, including alternative routes, during the ToR. It also describes the steps to be completed during the EA, including the evaluation of alternative routes and determination of a preferred route.

Proponents are typically required to assess two types of alternatives: 1) "alternatives to" the undertaking (the Project), and 2) "alternative methods" of carrying out the undertaking. "Alternatives to" are functionally different ways of approaching and dealing with a problem, or opportunity, while "alternative methods" are different ways of doing the same activity.

As previously mentioned in **Section 3.0**, the EA will be "focused" and thus completed in accordance with subsections 6(2)(c) and 6.1(3) of the EA Act. With the exception of the "do nothing" alternative, the EA will not include an evaluation of "alternatives to."

The "do nothing" alternative will be compared against the Project to confirm the recommended undertaking (preferred alternative). "Alternative methods" of carrying out the Project will be considered, assessed and evaluated in the EA.

6.1 Alternatives to the Undertaking

The Province (i.e., ENDM and IESO) established the anticipated need and justification for the Project as previously described in **Sections 1.1**, **1.2** and **1.3**. The EA will not re-examine these past planning processes and decisions, but will include an assessment and evaluation of the "do nothing" alternative compared against the recommended undertaking (the Project).

The comparative evaluation of the Project against the "do nothing" alternative will provide a final confirmation that, on balance, the advantages of proceeding with the Project exceed those of not proceeding with it and thus will confirm the rationale for the Project.

6.2 Alternative Methods Identification

Draft alternative routes have been identified as part of the ToR. Feedback received to date during the development of this draft ToR was incorporated into the identification of the siting criteria and indicators, and the identification of the alternative routes for the proposed transmission line.

It is anticipated that the identified alternative routes will be further refined as part of draft ToR review along with input on the criteria and indicators to be used to evaluate the alternative routes to select the preferred route in the EA. **Section 10.0** of this draft ToR describes the planned consultation and engagement activities to be undertaken during the EA that will inform the alternative route evaluation and preferred route effects assessment.

The main steps completed to identify alternative routes during the ToR phase, include the following:

Step 1: Identification of Alternative Corridors
Step 2: Alternative Route Identification

The main steps to be completed during the EA phase include the following:

Step 1: Confirmation of Alternative Routes
Step 2: Comparative Alternative Route Evaluation and Selection of a Preferred Route
Step 3: Net Effects Assessment of Preferred Route

6.2.1 Identification of Alternative Corridors

As previously described in **Section 4.1**, the RSSA was identified based on several factors. These factors include pre-determined start and end points (connection points) as specified by the IESO in their 2018 letter to Hydro One, having sufficient geographical area that would allow for a range of potential alternatives and consideration of key physical, and natural and socio-economic features in the area. The RSSA extends from Lakehead TS in the Municipality of Shuniah to Mackenzie TS in the Town of Atikokan and then to Dryden TS in the City of Dryden.

Baseline data collection activities were undertaken for all relevant components of the environment within the RSSA in order to feed into the identification of alternative corridors (further discussed in **Section 6.2.1.3**). Alternative corridors are areas within the RSSA considered to be more suitable for a future transmission facility and provided an area of focus for the identification of alternative routes. The results of this work are described in **Section 4.0**. A focus of this effort was on the collection of spatial or GIS-based data that was used in the route identification process. Various

provincial datasets were accessed for this information and discussions were held with agencies regarding accessing the data that was in their possession. While primary data collection was not undertaken to support alternative corridor identification, air photo interpretation was undertaken to identify building locations within the RSSA.

The following sub-sections describe the process followed to identify the alternative corridors.

6.2.1.1 *EPRI-GTC Overhead Electric Transmission Line Siting Methodology*

In the interest of making the route identification process more transparent, consensus-based, and allow for input to be taken into account early in the process, Hydro One elected to use the Electric Power Research Institute-Georgia Transmission Corporation (EPRI-GTC) Overhead Electric Transmission Line Siting Methodology as a framework.

GTC is a transmission cooperative based in the southeastern United States. EPRI is an international non-profit industry organization that provides leadership, industry expertise, and collaborative value to help the electricity sector identify issues, technology gaps, and broader needs that can be addressed through effective research and development programs for the benefit of society (Utility Arborist Association, 2018). In 2003, EPRI and GTC co-sponsored a research project to develop a standardized method for siting transmission lines based on the GIS-based siting process being used at GTC. In 2006, EPRI published a report describing this methodology. Since that time, the methodology has been implemented on several electric transmission siting projects throughout the United States and Canada.

Hydro One selected the EPRI-GTC Siting Methodology as the basis for identification and selection of alternative routes because it is a proven methodology that offers a structured decision-making process and allows transparent documentation of the reasons for the decisions that were made, as well as input from Indigenous communities, government officials and agencies, and interested persons and organizations, to be factored in early on in the planning process.

In order to implement the EPRI-GTC Siting Methodology, input-gathering sessions, called Corridor Workshops, were held with Indigenous communities, government agency and municipal representatives, and organizations, in order to identify and consider the suitability of specific values when siting a transmission line. This input was then compiled into a GIS-based siting model, along with other desktop data, including secondary source information, such as official plans, mapping (including Land Information Ontario), orthophotos, and data provided by government agencies and other existing published literature. The siting model would be used to guide the identification of alternative routes.

The following describes the process that was followed to develop and calibrate the siting model to date.

6.2.1.2 *Calibrating the Siting Model with Internal and External Input*

The EPRI-GTC Siting Methodology requires input for the purposes of calibrating the Project siting model. An initial internal (Hydro One) workshop session was held to receive input from Hydro One regarding the technical requirements of the proposed facility. Input from this session was used to develop preliminary model siting criteria to be used as a starting point for stakeholder and Indigenous community input. The main activity held to receive external input on the siting model were the Corridor Workshop sessions held in the City of Thunder Bay over three days in June 2019. Government agency and municipal representatives, and organizations and Indigenous communities were invited to these workshops. Further detail on these external sessions is provided below.

In addition to the June 2019 workshops, Hydro One has also offered to hold supplementary "siting model calibration" sessions in each interested Indigenous community. As described further below, sessions have been held in some of the Indigenous communities and Hydro One will continue to offer these sessions during the draft ToR review period. As such, the results of the siting model to date are preliminary and subject to revision during the ToR process should additional input be received.

June 2019 Corridor Workshops

The main activity held to calibrate the siting model was a three-day workshop (June 24 to 26, 2019). The workshops were hosted by Hydro One and held in the City of Thunder Bay. Each day of the workshop was focused on a different perspective: Natural Environment, Socio-Economic (Built), and Technical (Engineering).

To plan for the workshops, following a Project introduction conference call and presentation with provincial agencies in late March 2019, Hydro One and the consulting team identified the key technical knowledge holders to be invited to the workshops to represent the draft model siting criteria list. An invitation package was prepared and distributed to invitees in May 2019 which provided a description of the Project, an outline of the workshop and its purpose, and a draft model siting criteria list. A list of invitees is provided in **Table 6-1.**

Table 6-1: June 2019 Workshop Invitees

• Canadian Nuclear Safety Commission • CPR • City of Dryden • City of Thunder Bay • CNR • Fisheries and Oceans Canada • Fort William First Nation • Grand Council Treaty # 3 • Infrastructure Ontario • Lac des Mille Lacs First Nation • Lac La Croix First Nation • Lac Seul First Nation • Lakehead Region Conservation Authority • Lakehead Roads Board • Métis Nation of Ontario – Region 1 • Métis Nation of Ontario – Region 2 • Migisi Sahgaigan (Eagle Lake First Nation) • Ministry of Agriculture, Food and Rural Affairs • Ministry of Energy, North Development and Mines • Ministry of the Environment, Conservation and Parks • Ministry of Municipal Affairs and Housing	• Ministry of Natural Resources and Forestry • Ministry of Heritage, Sport, Tourism and Culture Industries • Ministry of Transportation Ontario • Municipality of Oliver Paipoonge • Municipality of Shuniah • Nigigoonsiminikaaning First Nation • Nuclear Waste Management Organization • Ontario Federation of Snowmobile Clubs • Ontario Mining Association • Ontario Parks • Ontario Power Generation • Red Sky Métis Independent Nation • Ojibway Nation of Saugeen • Seine River First Nation • Town of Atikokan • Township of Conmee • Township of Ignace • Township of O'Connor • TransCanada Pipelines • Union Gas • Wabigoon Lake Ojibway Nation

Follow-up calls were then made to invitees to answer questions and to confirm if they would be interested in sending representatives to the sessions. Conference calls were also held with MNRF and the MECP who had more detailed questions about the sessions. Once interest was confirmed, specific calendar invites were sent to the individuals. Invitees were given the option of being either participants (e.g., actively provide input into the session) or observers (e.g., attend but would not provide input) for the sessions.

Representatives that attended the workshop are listed in **Table 6-2**, and it is indicated whether they were a participant or observer. It is noted that the MNRF was not comfortable in providing

input to the relative weights among the values groupings and, as such, they provided input to the values related to their legislated mandate only.

Table 6-2: June 2019 Workshop Attendees

Technical Perspective* (June 24, 2019)	Socio-economic Perspective* (June 25, 2019)	Natural Environment Perspective* (June 26, 2019)
• City of Dryden (P) • Eagle Lake First Nation (O) • Grand Council Treaty 3 (P) • Lakehead Region Conservation Authority (P) • Ministry of Energy and Northern Development and Mines (P) • Ministry of Natural Resources and Forestry (P) • Ministry of the Environment, Conservation and Parks (O) • Ministry of Transportation (P) • TC Energy (TransCanada) (P) • Township of Ignace (P) • Township of O'Connor (P) • Wabigoon Lake Ojibway Nation (P)	• City of Dryden (P) • Eagle Lake First Nation (O) • Grand Council Treaty 3 (P) • Métis Nation of Ontario – Region 2 (O) • Ministry of Energy and Northern Development and Mines (P) • Ministry of Municipal Affairs and Housing (P) • Ministry of Natural Resources and Forestry (P) • Nuclear Waste Management Organization (P) • Ontario Federation of Snowmobile Clubs (P) • Ontario Parks (P) • Red Sky Métis Independent Nation (O) • Township of Ignace (P) • Wabigoon Lake Ojibway Nation (P)	• Eagle Lake First Nation (O) • Grand Council Treaty 3 (P) • Lakehead Region Conservation Authority (P) • Ministry of Energy and Northern Development and Mines (O) • Ministry of Natural Resources and Forestry (O) • Ministry of the Environment, Conservation and Parks (P) • Ontario Nature (O) • Ontario Parks (P) • Wabigoon Lake Ojibway Nation (P)

**Those who participated are indicated with a "P" and those who observed are indicated with an "O."*

Web hosting facilities were also available during the sessions for representatives to observe workshop proceedings through online viewing portals. Representatives from the MHSTCI and MECP also observed the workshop remotely. MHSTCI provided preliminary comments via email following the workshop sessions for consideration into the routing process.

Corridor Workshop Process

Corridor Workshop session participants first reviewed the preliminary list of model siting criteria and indicators which the Project team had developed prior to the workshop. As an example, for the criterion "Slope", three indicators were identified ranging from 0% to 30% slope. The model

siting criteria and indicators represent valued features within the study area. The participants provided input and the list of model siting criteria were modified and confirmed. The participants then completed exercises to develop a relative weight for the model siting criteria and indicators which is represented by a percentage. The higher the percentage the more important the feature (model criteria and indicator) is to the siting of the transmission line.

The participants then discussed the results and, at times, made a case for the group to assign importance to model siting criteria differently based on their point of view. After the group discussion, the participants completed another survey and the results were reviewed by the group and dialogue was encouraged to achieve a higher level of consensus on the model siting criteria weightings. Ultimately, the average scores of the participants input from the final round was used in the siting model.

June 2019 Workshop Results

For each perspective (Natural, Socio-economic and Technical), a set of model siting criteria that represent values deemed important by the participants and their relative importance was developed. For the Technical perspective, the model siting criteria determined to be of most importance are the paralleling of existing linear infrastructure (35.7%) and geotechnical considerations (30.5%). For the Socio-economic perspective, the model siting criteria determined to be of most importance are the paralleling of existing linear infrastructure (24%) and land use (18.8%). And for the Natural Environment perspective, the model siting criteria determined to be of most importance are the paralleling of existing linear infrastructure (28.8%) and designated natural areas (20.6%).

Indigenous Community Workshop Sessions

In addition to the input received at the June 2019 workshops, Indigenous communities are being offered the opportunity for Hydro One to hold community-specific sessions. Input from these supplemental sessions is being integrated with the June 2019 workshop inputs. These sessions will continue to be offered to Indigenous communities during the draft ToR review period.

First Nation Corridor Workshop Sessions

To date, a workshop has been held with the Mitaanjigamiing First Nation. An initial session was held with members of Chief and Council on December 10, 2019 and then a second session was held with the members of the larger community on January 26, 2020. Both sessions were held in the community. At each of the workshops, the participants first discussed the various types of places that the transmission line could be located. They reviewed the preliminary siting model

(siting criteria) that was generated from the June 2019 workshops. Participants then made a list of model siting criteria that are important to the community. At the second January 2020 session, participants recommended two additional siting model criteria (Trapping Lines and Spawning Areas) and provided input on the relative importance of the siting criteria.

Métis Nation of Ontario Workshop Sessions

The MNO facilitated their own sessions to provide input to the siting model. MNO Region 1 and Region 2 provided Hydro One with workshop summary reports (September 2019) that documented the results of sessions that were held in Atikokan (Region 1), Dryden (Region 1) and Thunder Bay (Region 2) with the MNO's consultant MNP Consultants facilitating the process. This input was considered in the process to identify alternative routes for the new transmission line.

These reports provided data that outlined areas of interest, value and/or concern, as well as recommended siting criteria. Using the input in these reports, Hydro One's consulting team developed a set of siting criteria and assigned relative importance of these criteria. Some interpretation of the data was required. A report was prepared to explain this and submitted to the MNO for their review. At the time of draft ToR preparation, a follow-up call is planned with the MNO to receive comments on how the inputs were interpreted by Hydro One.

Summary of Developed Siting Model

Considering the input of the various interests as previously described, a siting model was developed which specifies the siting criteria and their relative importance. **Table 6-3** provides an overview of the siting model for the Natural, Socio-economic and Technical perspectives presenting the siting criteria for each perspective and their relative importance or weight.

Input received to date from Indigenous communities has identified a variety of values of importance. These have included a variety of types of natural features/habitat, waterbodies, areas used for harvesting purposes, and areas of cultural interest. The siting model results presented in this draft ToR, including the alternative routes identified, have considered this information received to date. It is the expectation that additional sessions will be held with Indigenous communities during the draft ToR review period, and this section will further detail the Indigenous perspective subject to any confidentiality requests from the communities. Once these additional sessions are held, an Indigenous Perspective will be presented along with the three perspectives noted in **Table 6-3**.

Table 6-3: Siting Model Summary

Natural Environment		Socio-Economic Environment		Technical	
Wildlife Habitat and Occurrences	6.4%	Proximity to Buildings	12.9%	Linear Infrastructure	35.7%
Linear Infrastructure	28.8%	Building Density	10.9%	Geotechnical Considerations	30.5%
Species at Risk	17.3%	Future Development	4.5%	Slope	10.2%
Land Cover	4.5%	Linear Infrastructure	24%	Spannable Waterbodies	23.6%
Aquatic Habitat	7.2%	Land Use	18.8%		
Designated Natural Areas	20.6%	Land Ownership	9.8%		
Biodiversity Gap Analysis	4.7%	Non-Indigenous Known Cultural Resources	11.10%		
Wildlife Connectivity Index	6.3%	Landscape Character (Viewshed)	8%		
Abandoned Mines of Environmental Concern	4.2%				

Overall, the preliminary results of the workshops completed to date indicate that there is a strong preference to co-locate the new transmission facility close to existing infrastructure. The preference to locate the new transmission facility close to existing infrastructure corridors is also supported in Section 1.6.8.5 of the recently updated PPS (2020) released under the *Planning Act* (1990) which states that "the co-location of linear infrastructure should be promoted, where appropriate." The preference for co-location has been further supported based on past environmental hearing decisions by the OEB, such as the East-West Tie Transmission line (currently under construction), Wataynikaneyap Transmission Project (currently under construction), and the Bruce to Milton Transmission Reinforcement (December, 2008).

Co-locating with existing linear facilities has the potential to offer several advantages that were identified by stakeholders and Indigenous communities as part of the engagement activities held during the development of the ToR. Many of these advantages are greater if co-locating with a transmission line, and in particular, offer the potential to minimize:

- New access to previously inaccessible natural areas, such as undisturbed lakes and/or other natural areas, by using existing ROWs and access roads;
- Disturbance to potentially sensitive interior forest wildlife and/or habitat;
- The amount of new ROW required (as overlap with the existing ROW may be possible);
- Overall line length and angles (corners) as existing transmission lines are generally shorter and straighter than other types of infrastructure and greenfield routes;
- Visual effects; and,
- Overall operational costs as there may be efficiencies in ROW maintenance if two transmission lines are located together.

6.2.1.3 *Alternative Corridor Identification*

Considering the developed siting model and the collected GIS data, a suitability map representing the simple average of all perspectives was created. As presented in **Figure 6-1**, lands in green followed by those in yellow are most suitable and lands in red are least suitable based on the Project siting model that considers input received to date from stakeholders and Indigenous communities.

The generated suitability map was used to develop alternative corridors for each perspective which were created by calculating the top three percent of all routes to connect the three transformer station sites. The alternative corridors are presented in **Figure 6-2**.

More current and detailed building information was also collected to support corridor identification.

During the corridor identification process, Hydro One identified that there is a potential long-term need to provide an additional transmission connection to Birch TS, which is located in the City of Thunder Bay. As a result, the initial study area as described in **Section 4.1** included areas that would enable the Project to be brought closer to Birch TS. The areas near Birch TS were examined. Through this process it was determined that connecting the transmission facility to Birch TS would require a route that passes in close proximity to dense residential development and would add about 15 km to the overall route length, adding cost and potential effects. Considering the additional cost, potential effects, and that the connection to Birch TS is not an immediate requirement, an alternative corridor extending southwest to the vicinity of Birch TS was not identified.

Considering the generated suitability map and alternative corridors, a Refined Route Selection Study Area (RRSSA) was identified to present to the public as an update to the route selection process prior to the release of the draft ToR. The RRSSA excludes some designated sensitive areas that were previously included in the RSSA (e.g., Turtle River-White Otter Lake Provincial Park, Campus Lake Conservation Reserve, White Otter Enhanced Management Area, etc.) and includes additional egress/ingress routes from Lakehead TS (e.g., TransCanada/TC Energy pipeline north of Lakehead TS).

In general, the RRSSA includes those lands considered to be more suitable for a new transmission facility and, as noted previously, is focused on the high importance placed on co-location with existing infrastructure by workshop participants. The RRSSA map that was released to the public on the Project website in May 2020 is available in the Record of Consultation.

Figure 6.1: Simple Average Suitability Map

- 115 kV Transformer Station (TS)
- 230 kV Transformer Station (TS)
- Existing Transmission Lines
- Provincial Highway
- Natural Gas Pipeline
- First Nation Reserve

Simple Average Suitability

Less Suitable

More Suitable

N W E S 0 10 20 Kilometres

Dryden TS
Eagle Lake First Nation
BUTLER LAKE PROVINCIAL NATURE RESERVE
Wabigoon Lake Ojibway Nation
HIGHWAY 17
SNAKE BAY ROAD
HIGHWAY 622
MacKenzie TS
HIGHWAY 11
HIGHWAY 17
Lac des Mille Lacs First Nation
Lac des Mille Lacs First Nation
QUETICO PROVINCIAL PARK (WILDERNESS CLASS)
Lac La Croix First Nation
HIGHWAY 11 & 17
HIGHWAY 102
Lakehead TS
Thunder Bay
KAKABEKA FALLS PROVINCIAL PARK
Fort William First Nation
Gull River First Nation
Gullwing Lake
Big Sandy Lake
Kukukus Lake
Press Lake
Basket Lake
Barrel Lake
Indian Lake
Paguchi Lake
Sowden Lake
Wintering Lake
Mattawa Lake
Bell Lake
Shikag Lake
Sturgeon Lake
Seseganaga Lake
Harmon Lake
Obonga Lake
Kashishibog Lake
Menonga Lake
Holinshead Lake
Garden Lake
Wawang Lake
Pakashkan Lake
Upper Manitou Lake
Lower Manitou Lake
Entwine Lake
Eltrut Lake
Otukamamoan Lake
Calm Lake
Cirrus Lake
Quetico Lake
Beaverhouse Lake
Batchewaung Lake
Pickerel Lake
Mercutio Lake
Bedivere Lake
Athelstane Lake
Greenwater Lake
McKenzie Lake
Kawnipi Lake
Agnes Lake
Saganagons Lake
Northern Light Lake
Muskeg Lake
Dog Lake
Lake Superior
Lake Nipigon

Figure 6.2: Composite Alternatives Corridors Map

- 115 kV Transformer Station (TS)
- 230 kV Transformer Station (TS)
- Existing Transmission Lines
- Composite Alternate Corridor
- Provincial Highway
- Natural Gas Pipeline
- First Nation Reserve

Simple Average Suitability

- Less Suitable
- More Suitable

N W E S 0 10 20 Kilometres

Dryden TS
MacKenzie TS
Lakehead TS
Thunder Bay
Eagle Lake First Nation
Wabigoon Lake Ojibway Nation
Lac des Mille Lacs First Nation
Lac des Mille Lacs First Nation
Lac La Croix First Nation
Fort William First Nation
Gull River First Nation
BUTLER LAKE PROVINCIAL NATURE RESERVE
QUETICO PROVINCIAL PARK (WILDERNESS CLASS)
KAKABEKA FALLS PROVINCIAL PARK
HIGHWAY 17
HIGHWAY 17
HIGHWAY 622
HIGHWAY 11
HIGHWAY 11 & 17
HIGHWAY 102
SNAKE BAY ROAD
Gullwing Lake
Big Sandy Lake
Wabigoon Lake
Eagle Lake
Eagle Lake
Upper Manitou Lake
Lower Manitou Lake
Entwine Lake
Eltrut Lake
Otukaniamoan
Minnitaki Lake
Lake of Bays
Bays
Kukukus Lake
Press Lake
Basket Lake
Wintering Lake
Barrel Lake
Indian Lake
Paguchi Lake
Sowden Lake
Sturgeon Lake
Bell Lake
Shikag Lake
Mattawa Lake
Seseganaga Lake
Seseganaga Lake
Harmon Lake
Obonga Lake
Kashishibog Lake
Menonga Lake
Holinshead Lake
Garden Lake
Wawang Lake
Pakashkan Lake
Muskeg Lake
Lake Nipigon
Lake Nipigon
Lake Nipigon
Bedivere Lake
Lac des Mille Lacs
Athelstane Lake
Dog Lake
Mercutio Lake
Calm Lake
Batchewaung Lake
Pickerel Lake
Cirrus Lake
Quetico Lake
Beaverhouse Lake
Greenwater Lake
McKenzie Lake
Kawnipi Lake
Lac la Croix
Agnes Lake
Saganagons Lake
Northern Light Lake
Lake Superior
Lake Superior

6.2.2 Alternative Route Identification

Once the alternative corridors were identified, the next step was to identify alternative routes within them. To characterize the preliminary alternative routes, it was assumed that, for modelling purposes, an average 45 m ROW would be required for a greenfield route and an average 40 m ROW when paralleling an existing transmission line would be required.

Decisions related to identifying alternative routes were based on a variety of factors, including consultation, input and data received during the Corridor Workshops (e.g., overwhelming consensus to co-locate with existing similar infrastructure in the area in all three perspectives), the general character of the area (e.g., land use and location of sensitive features), the type and location of existing, previously disturbed ROWs that could potentially be paralleled (e.g., many are located very close to each other thus not providing any material difference), and a preference for co-location with existing infrastructure when possible, as outlined in the PPS (2020).

Also considered in alternative route identification (and to be further considered during the EA, as warranted), as referenced in the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014), were the following screening criteria:

- Do they provide a viable solution to the problem or opportunity to be addressed?
- Are they proven technologies?
- Are they technically feasible?
- Are they consistent with other relevant planning objectives, policies and decisions (e.g., PPS)?
- Are they consistent with provincial government priority initiatives (e.g., waste diversion, energy efficiency, source water protection, reducing greenhouse gas emissions)?
- Could they affect any sensitive environmental features (e.g., provincially significant wetlands, prime agricultural area, endangered species habitat, floodplains, archaeological resources, built heritage)?
- Are they practical, financially realistic and economically viable?
- Are they within the ability of the proponent to implement?
- Can they be implemented within the study area?
- Are they appropriate to the proponent doing the study?
- Are they able to meet the purpose of the EA Act?

The Project team also took into account several general routing considerations when identifying alternative routes organized on the basis of: natural environment, socio-economic, technical (including constructability and typical costs) and Indigenous considerations. These considerations were developed using input received from the Corridor Workshops and other engagement

activities as well as technical expertise of the Project team. Natural environment routing considerations generally included those that minimize effects to natural environment features, such as avoidance of wetlands, waterbodies, wildlife and protected areas, to the extent possible. Socio-economic routing considerations included those that minimize effects to land use features, such as residences, camps, recreational properties, commercial and industrial developments, built-up areas, mines and other infrastructure, and constrained infrastructure ROWs. Technical routing considerations included those that minimize the overall length of the transmission facility, minimize crossing of existing transmission facilities which reduces overall system security, reduce the number of angles or corners which require larger and more specialized tower structures, and avoidance of rugged topography which may be unstable, challenging to access and result in higher cost. Indigenous routing considerations include those that would minimize potential effects on features such as cultural/spiritual areas and landscapes of importance. These considerations, among others, contributed to the identification of potential alternative routes.

Table 6-4 provides the general routing considerations that were taken into account when identifying potential routes and selection of alternative routes.

Table 6-4: General Routing Selection Considerations

Factor	Rule
Natural	Minimize potential disturbance to significant natural features (e.g., ANSIs, SAR, environmentally sensitive areas, wetlands and waterbodies), critical Landform/Vegetation types and adhere to appropriate setback requirements.
	Minimize watercourse crossings and reduce potential for effects to woodlands, wetlands, fish and wildlife habitats, and natural areas. Minimize use of areas with unstable slopes.
Socio-Economic	Maximize the distance from cultural heritage resources (i.e., archaeological, built heritage and cultural heritage landscapes).
	Minimize incompatibility with existing sensitive land uses (e.g., First Nation reserves, residences and built-up areas, agricultural lands, forest management areas, mining claims).
	Minimize the use of private properties (e.g., use of existing ROW is favoured to minimize disruption to property owners, primarily dwellings).
	Minimize potential disturbance to adjacent residences (and known traditional lands) which may be affected by construction activities.
	Minimize potential disturbance to adjacent commercial and industrial properties which may be affected by construction activities.
	Minimize potential disturbance to adjacent institutional and recreational properties which may be affected by construction activities, including tourism areas.
	Maximize conformity with local land use policy.
	Minimize potential disruption to local traffic.
	Minimize potential effects to water wells, aquifer recharge areas and active mining/aggregate operations.
Technical	Find the shortest and most direct routes.
	Minimize rail and road crossings.
	Minimize use of areas with an insufficient amount of construction work space or uneven terrain.
	Minimize the number of overhead transmission line crossings.
	Select the best topographical/terrain areas for the route (dry, flat and stable ground is favourable).
Indigenous	Minimize effects to traditional use of land and resources.
	Minimize potential disturbance to cultural and/or spiritual areas and sites.
	Minimize potential disturbance to landscapes of importance.

Other considerations taken into account in the identification of alternative routes are described below.

In regards to the paralleling of pipelines, the proximity of transmission lines to a pipeline has the potential to cause increased corrosion on metal. As a result, increased corrosion protection is generally required for pipelines located near transmission lines, and retrofitting an existing pipeline can be more difficult than installing cathodic protection on a new pipeline.

Rail lines typically have curves and bends that are not conducive to the straight lines that are favourable for electric transmission lines. Electrical effects associated with transmission lines could also create issues for the electrical switching used by rail lines. From an infrastructure security standpoint, transmission lines should be setback some distance from rail lines in the event of an incident, or collision, to minimize potential interference and/or facility damage.

Similarly, MTO requires that new transmission lines be setback from provincial highways to accommodate future highway expansions and to protect travellers from incidents and collisions (minimum distance of 14 m). In cases to accommodate expansion plans, the setback distance could be greater. As well, the highways in the RSSA also have several curves and bends that are not generally favourable for transmission line routing which tend to prefer straighter runs.

Generally, the more a transmission line meanders, the less technically feasible it becomes. Meandering transmission lines are also less practical, financially realistic and economically viable as this typically increases their total length and design complexity, and requires more dead-end structures, angle towers or corners, which generally increases overall cost and potential effects to the natural and socio-economic environment.

Finally, greenfield routes tend to have greater potential for increased natural and socio-economic effects, primarily during the construction period when compared to widening an existing, previously disturbed ROW. Required new access for construction can also adversely affect the natural and socio-economic environment.

Considering the above, draft alternative routes have been identified for the following study area sections and are described below.

- Section 1 – City of Thunder Bay (Lakehead TS) to the Town of Atikokan (Mackenzie TS)
- Section 2 – Town of Atikokan
- Section 3 – North Atikokan to Wabigoon Lake
- Section 4 – Wabigoon Lake to the City of Dryden (Dryden TS)

6.2.2.1 *Section 1 – City of Thunder Bay (Lakehead TS) to the Town of Atikokan (Mackenzie TS)*

The area between the City of Thunder Bay and Town of Atikokan is generally characterized by rugged topography, waterbodies and watercourses, wetlands, forested areas, protected areas (e.g., Kashabowie Provincial Park, Quetico Provincial Park) and sporadic residential and commercial development. Some of the more densely settled areas in the RSSA are located immediately west of the City of Thunder Bay.

There are also several existing, previously disturbed ROWs in this area that are all located in close proximity to each other, including an existing 230 kV transmission line, a 115 kV transmission line, Highway 11/17, a small section of a natural gas pipeline (TransCanada/TC Energy) and a CNR rail line.

The following alternative routes, as illustrated in **Figures 6-3** to **6-5**, have been identified.

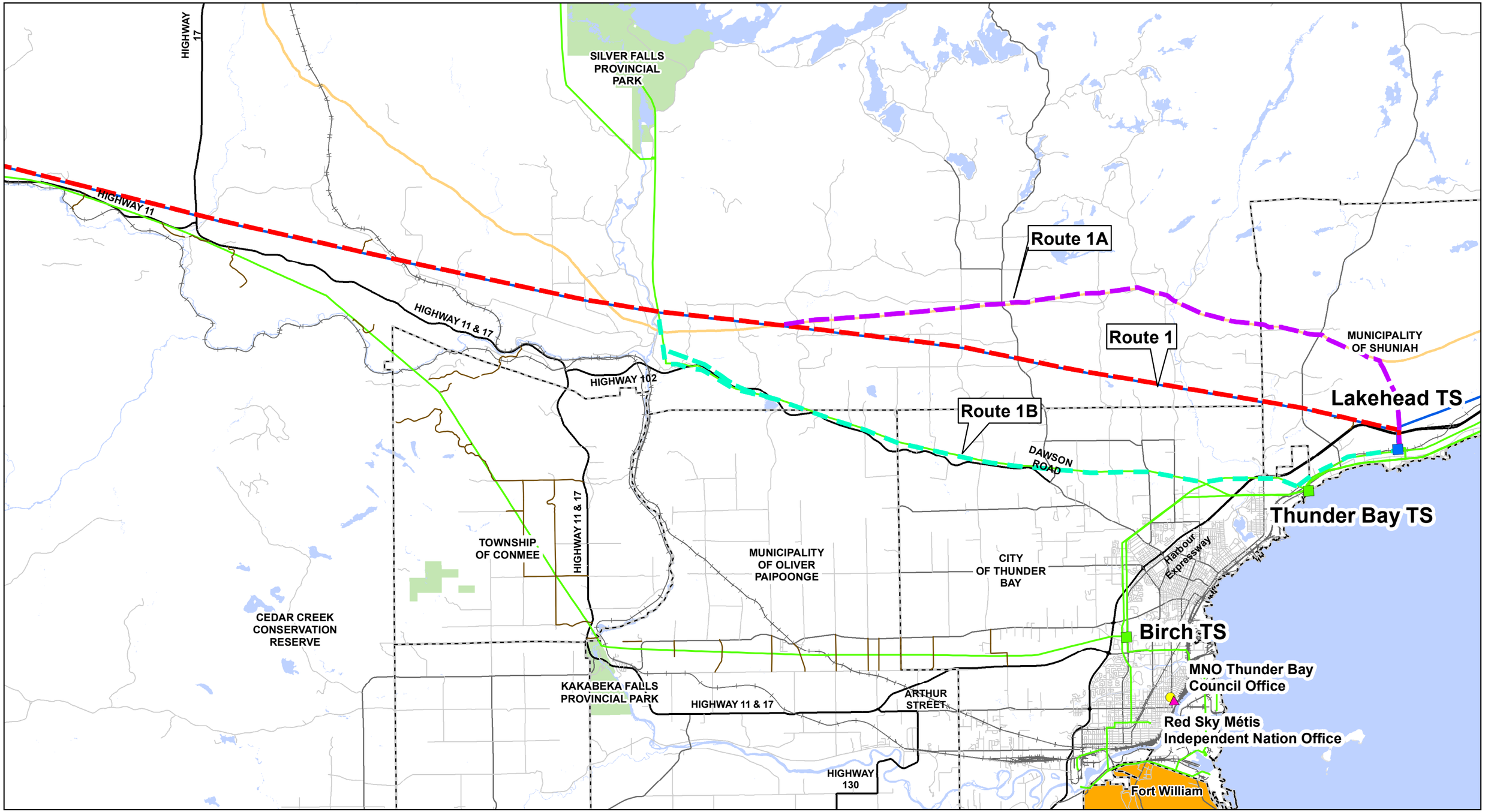
- *Alternative Route 1, 230 kV Transmission Line* (**Figure 6-3**)
  - This route starts at Lakehead TS in the Municipality of Shuniah and travels northwest along the existing 230 kV transmission line before terminating at Mackenzie TS in the Town of Atikokan. Both sides of the existing 230 kV transmission line ROW will be considered in the EA.

- *Alternative Route 1A, TransCanada/TC Energy Pipeline* (**Figure 6-3**)
  - As an alternative to following the 230 kV transmission line directly out of Lakehead TS, this route follows the existing TC Energy (TransCanada) pipeline for a distance of approximately 35 km before joining the 230 kV transmission line and then continuing along it in a westerly direction. Both sides of the existing pipeline will be considered in the EA.

- *Alternative Route 1B, 115 kV Transmission Line* (**Figure 6-4**)
  - As an alternative to following the 230 kV transmission line directly out of Lakehead TS, this route follows the existing 115 kV line for a distance of approximately 40 km. Both sides of the existing 115 kV transmission line ROW will be considered in the EA.

- *Alternative Route 1C, 115 kV Transmission Line* (**Figure 6-5**)

  At the west end of this section, this route runs to the north of Alternative Route 1 (which follows the 230 kV Transmission Line) to follow an existing 115 kV line starting south of Eva Lake and then extends into Mackenzie TS. Based on information collected to date, this route appears to come into proximity to a greater number of buildings and recreation properties than Alternative Route 1 but there may be opportunities to reduce this. Both sides of the existing 115 kV transmission line ROW will be considered in the EA.



hydro one

Waasigan Transmission Line

Figure 6.3: Section 1: Lakehead TS to Mackenzie TS: Eastern Section

Route 1 | Route 1A | Route 1B

Natural Gas Pipeline | 115 kV Transformer Station (TS) | 230 kV Transformer Station (TS)

Highway | 115 kV Transmission Line | 230 kV Transmission Line

Local Roads | Railway | Arterial Roads

MNO Atikokan and Area Council Office | Red Sky Métis Independent Nation Office | First Nation Reserves

Provincial Park/Conservation Reserve | Municipal Boundary

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF

MAP CREATED BY: SFG
MAP CHECKED BY: JF
MAP PROJECTION: LAMBERT CONFORMAL CONIC

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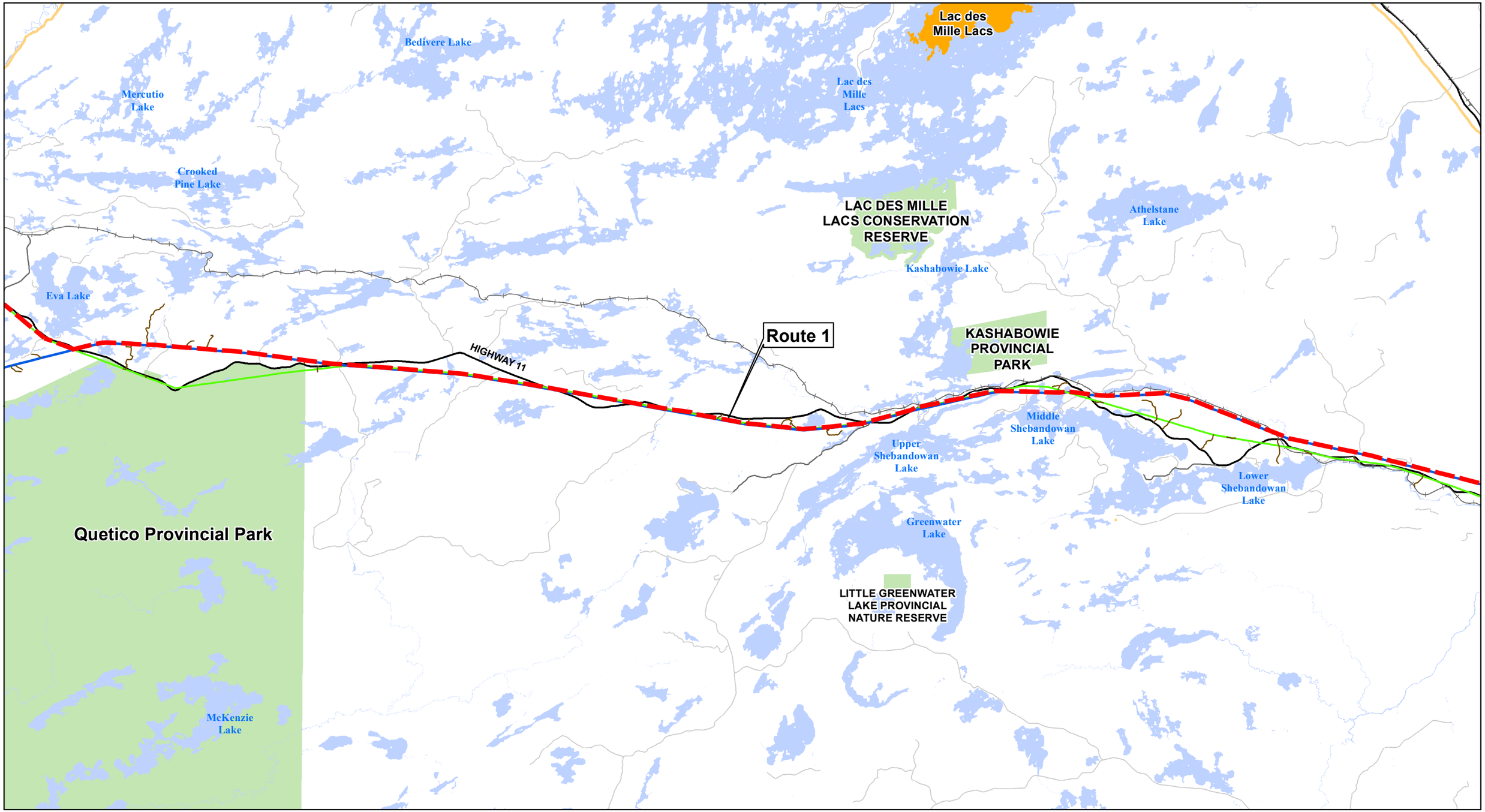
PROJECT: 199676 STATUS: DRAFT DATE: 6/2/2020



hydro one

Waasigan Transmission Line

Figure 6.4: Section 1: Lakehead TS to Mackenzie TS: Centre Section

Route 1
230 kV Transmission Line
Railway
Provincial Park/Conservation Reserve
Natural Gas Pipeline
Local Roads
Highway
115 kV Transmission Line
Arterial Roads
First Nation Reserves

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MAP CREATED BY: SFG
MAP CHECKED BY: JF
MAP PROJECTION: LAMBERT CONFORMAL CONIC

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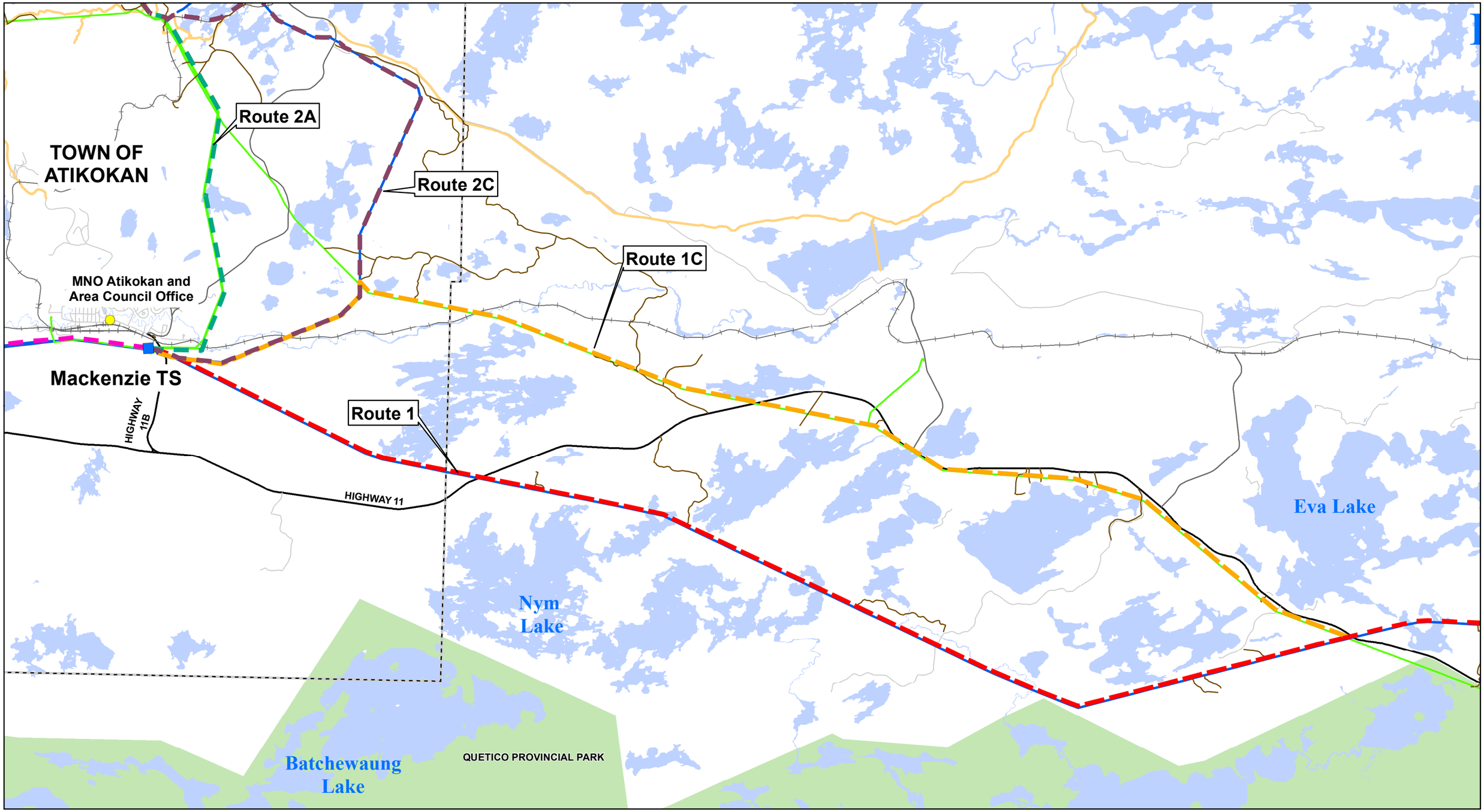

hydro one

Waasigan Transmission Line

Figure 6.5: Section 1: Lakehead TS to Mackenzie TS: Western Section

Route 1 | Route 1C | Natural Gas Pipeline

230 kV Transformer Station (TS) | Local Roads | Arterial Roads

115 kV Transmission Line | 230 kV Transmission Line | Railway

Highway | Municipal Boundary | Provincial Park/Conservation Reserve

MNO Atikokan and Area Council Office

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF

MAP CREATED BY: SFG
MAP CHECKED BY: JF
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PROJECT: 199676 STATUS: DRAFT DATE: 6/2/2020

6.2.2.2 *Section 2 – Town of Atikokan*

The Town of Atikokan includes a populated area located close to the south end of the town limits near the Mackenzie TS and Highway 11, a small municipal airport, as well as natural features, such as waterbodies and watercourses, and forested areas.

The Atikokan Generating Station is located along Highway 622 at the northeast limit of the town with a 230 kV transmission line connection south to Mackenzie TS, a 230 kV transmission line along the west end of the towns limit, as well as several 115 kV transmission lines located along the east end of the town limit and another that bisects it. A CNR rail line and a natural gas line cross through the centre of the town. The Atikokan pellet plant operated by BioPower Sustainable Energy Corporation is located at the west end of Atikokan.

The Caland and Steep Rock Iron Mines are located just north of the populated area of Atikokan near the CNR rail line. According to information provided by the Town of Atikokan, these mines were first opened in 1943 and supplied raw materials for everything from World War Two Hawker Hurricanes (made in Thunder Bay) to toasters and nails in the late 1970s. Since their closure, the MNRF has been working to stabilize and remediate the area.

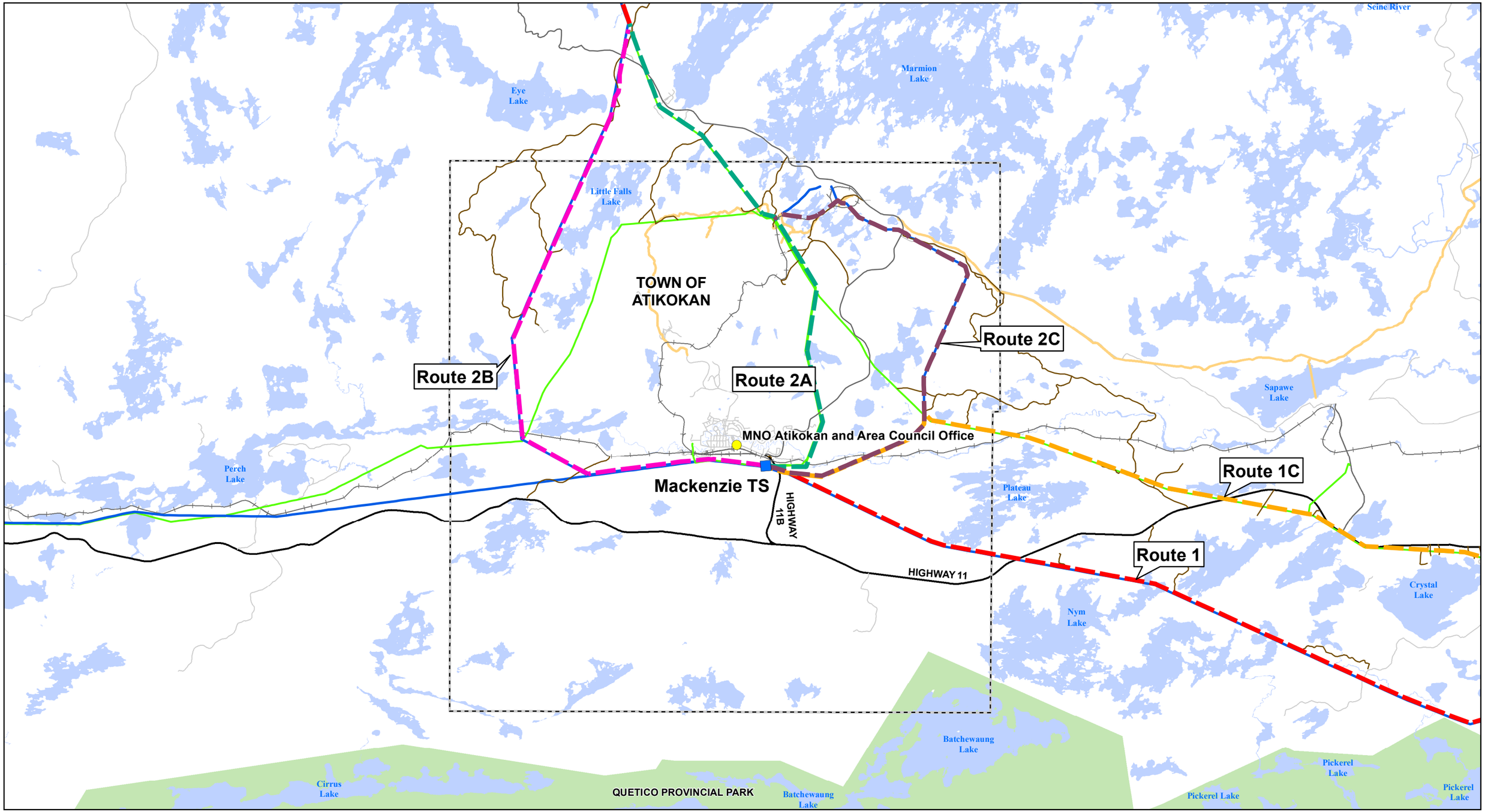
The alternative routes identified in Section 2 are discussed below and illustrated in **Figure 6-6.**

- *Alternative Route 2A, 115 kV Transmission Line*
  - This route starts at the south end of the Town of Atikokan at Mackenzie TS and travels north along an existing 115 kV transmission line to the north end of the town where it terminates. This route avoids the more heavily populated areas and abandoned mines in the area. Both sides of the existing 115 kV transmission line ROW will be considered in the EA.

- *Alternative Route 2B, 230 kV Transmission Line*
  - This route starts at the south end of the Town of Atikokan and travels west along the existing 230 kV transmission line and then north to the north end of the town where it terminates. This route avoids the more heavily populated areas and abandoned mines in the area. Both sides of the existing 230 kV transmission line ROW will be considered in the EA.

- *Alternative Route 2C, 230 kV Transmission Line (Atikokan Generating Station)*
  - This route follows the existing 230 kV transmission line ROW that extends to the Atikokan Generating Station and would require an approximate 500 m greenfield

section to connect back with the existing main 230 kV transmission line ROW. Both sides of the existing 230 kV transmission line ROW will be considered in the EA.



hydro one

Waasigan Transmission Line

Figure 6.6:
Section 2:
Atikokan

Route 2A
Route 2B
Route 2C
230 kV Transformer Station (TS)
Natural Gas Pipeline
Railway
Municipal Boundary
115 kV Transmission Line
230 kV Transmission Line
Local Roads
Arterial Roads
Highway
MNO Atikokan and Area Council Office
Provincial Park/Conservation Reserve

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF

MAP CREATED BY: SFG
MAP CHECKED BY: JF
MAP PROJECTION: LAMBERT CONFORMAL CONIC

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PROJECT: 199676 STATUS: DRAFT DATE: 6/2/2020

6.2.2.3 *Section 3 – North Atikokan to Wabigoon Lake*

This section includes the area between the north end of the Town of Atikokan and Wabigoon Lake to the north. The area is characterized primarily by rugged topography, waterbodies and watercourses, wetlands, forested areas, protected areas (e.g., Turtle River-White Otter Lake Provincial Park, Campus Lake Conservation Reserve, White Otter Enhanced Management Area, East Wabigoon River Conservation Reserve, etc.), and includes mines in various stages of development, areas with mining claims, and logging and tourism-based activities (e.g., outpost camps).

Existing, previously disturbed ROWs in this area that travel north from the Atikokan area to Wabigoon Lake include a 230 kV transmission line and a 115 kV transmission line. Non-transmission line ROWs, including Highway 622 and Snake Bay Road, are also present west of the 230 kV and 115 kV transmission lines that avoid some of the protected areas mentioned above, but still cross the Turtle River-White Otter Lake Provincial Park. Farther north of this section, additional ROWs are present in close proximity to each other and the 230 kV transmission line, including Highway 17, a natural gas pipeline, and a CPR rail line.

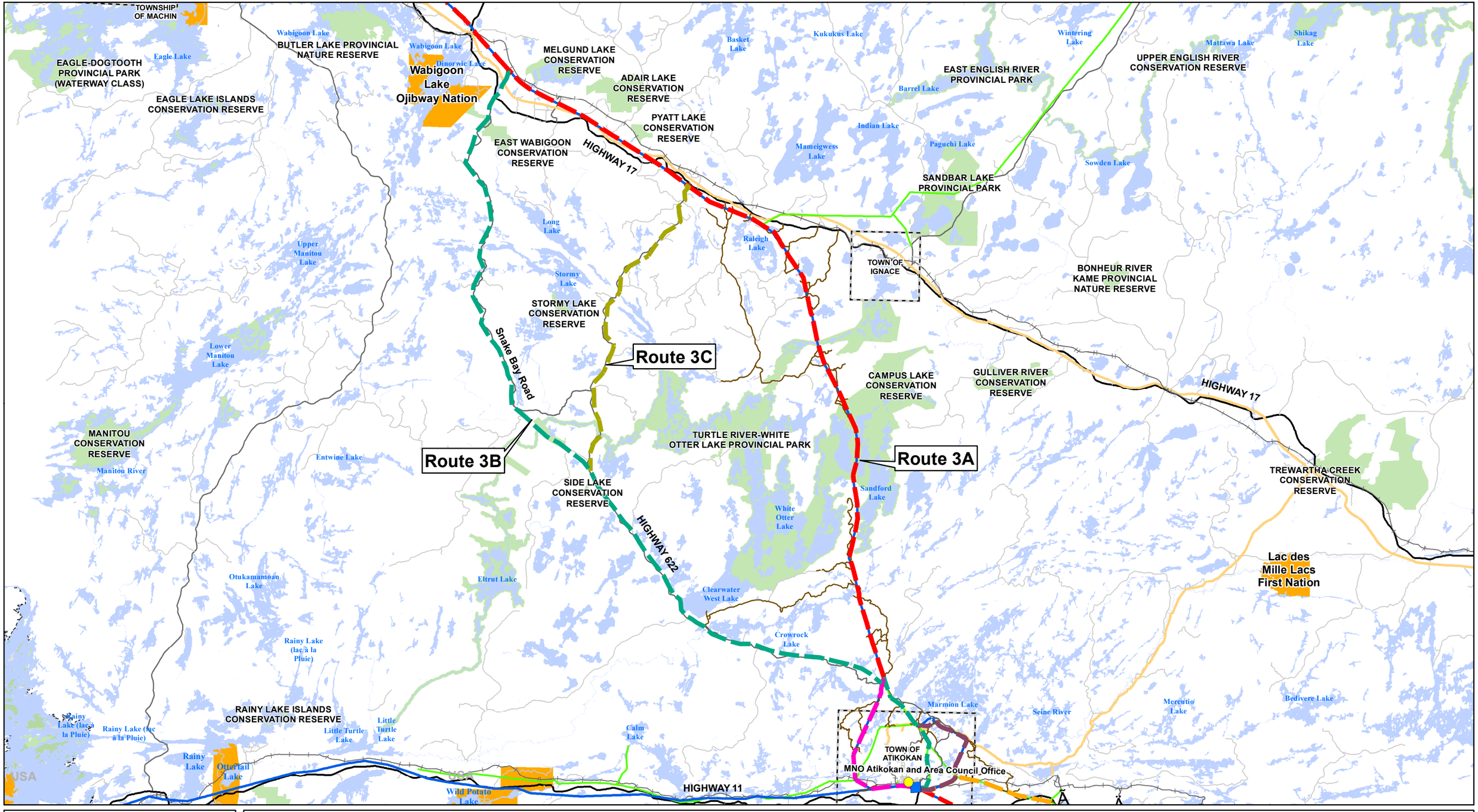
The alternative routes identified in Section 3 are discussed below and illustrated in **Figure 6-7**. It is noted that for this section, some alternative routes were identified that are located outside of the corridor presented previously in **Figure 6-2.** The corridors represent the top 3% of all possible routes that the siting model generates. The corridors are intended to be used as a starting point to guide the Project team in route identification and selection. While the Highway 622/Snake Bay Road corridor did not show up in composite corridor map, it did present strongly from a natural heritage perspective. As such, and to offer additional route alternatives for consideration through this section, alternative routes along this road system were identified as described below.

- *Alternative Route 3A, 115/230 kV Transmission Line*
  - This route starts at the north end of the Town of Atikokan and travels in a northwestern direction along the existing 115/230 kV transmission line ROW to the Wabigoon Lake area where it terminates. The 115/230 kV transmission line ROW was identified as an existing, previously disturbed ROW that is direct and could take advantage of existing access roads. Both sides of the 115/230 kV transmission line ROW will be considered in the EA.

- *Alternative Route 3B, Highway 622/230 kV Transmission Line*
  - This route starts at the north end of the Town of Atikokan and travels in a northwestern direction along Highway 622 until it reaches the existing 230 kV

transmission line where it continues until terminating in the Wabigoon Lake area. This route provides an additional crossing alternative of the Turtle River-White Otter Lake Provincial Park, and avoids crossing the Campus Lake Conservation Reserve and White Otter Enhanced Management Area. Both sides of the highway/transmission line will be considered in the EA.

- *Alternative Route 3C, Highway 622/Snake Bay Road*
  - This route starts at the intersection of Highway 622 and Snake Bay Road and follows Highway 622 until it terminates in the Wabigoon Lake area. This route provides an additional crossing alternative of the Turtle River-White Otter Lake Provincial Park, and avoids crossing the Campus Lake Conservation Reserve and White Otter Enhanced Management Area; however, would require a crossing of the East Wabigoon Conservation Reserve. Both sides of Highway 622 will be considered in the EA.



hydro one

Waasigan Transmission Line

Figure 6.7:
Section 3:
North of Atikokan

- Route 3A
- Route 3B
- Route 3C
- 115 kV Transmission Line
- 230 kV Transmission Line
- Highway
- Railway
- Local Roads
- Natural Gas Pipeline
- Arterial Roads
- Provincial Park/Conservation Reserve
- Municipal Boundary
- MNO Atikokan and Area Council Office
- First Nation Reserves

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF

MAP CREATED BY: SFG
MAP CHECKED BY: JF
MAP PROJECTION: LAMBERT CONFORMAL CONIC

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PROJECT: 199676 STATUS: DRAFT DATE: 6/2/2020

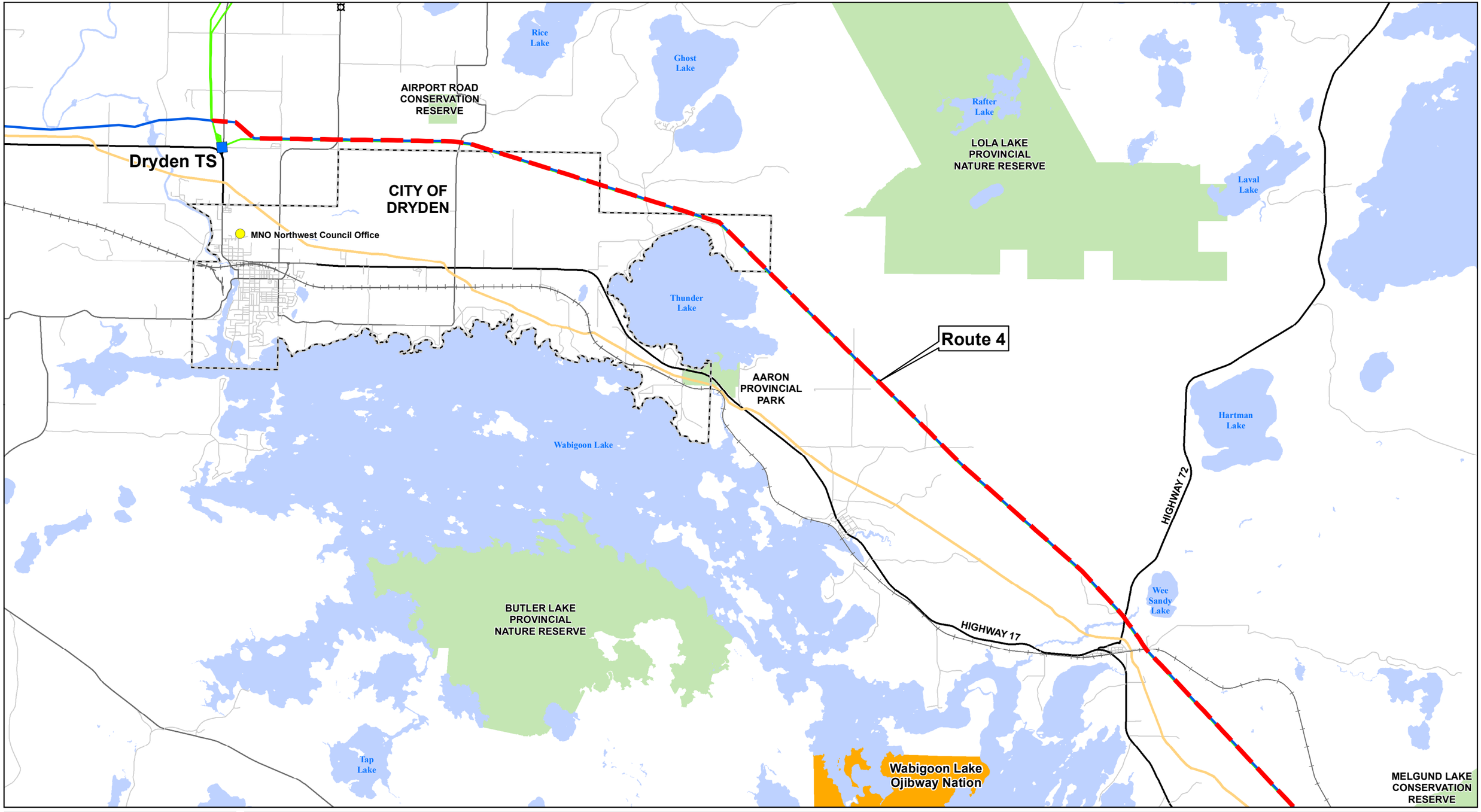
6.2.2.4 *Section 4 – Wabigoon Lake to the City of Dryden (Dryden TS)*

This section includes the area from north Wabigoon Lake to the City of Dryden. The area is characterized primarily by rugged topography, large waterbodies (e.g., Wabigoon Lake, Thunder Lake), watercourses, wetlands, and forested areas.

There are several existing, previously disturbed ROWs in this area that are grouped in two distinct areas. The first is an existing side-by-side 230 kV and 115 kV transmission line ROW that travels northwest towards Thunder Lake and then west to the City of Dryden. The second area of infrastructure ROWs is located on the south side of Thunder Lake (between Thunder Lake and Wabigoon Lake) and contains a CPR rail line, natural gas pipeline, and Highway 17; however, this area is fairly congested (both from an infrastructure and residential perspective), travels directly towards the City of Dryden, and infrastructure is significantly less linear than the 230/115 kV transmission lines on the north side of Thunder Lake. For these reasons, an alternative route was not identified for this second area located south of Thunder Lake.

The alternative route identified in Section 4 is discussed below and illustrated in **Figure 6-8**.

- *Alternative Route 4, 115/230 kV Transmission Line*
  - This route starts in the Wabigoon Lake area and travels northwest along the existing 115/230 kV transmission line ROW until it terminates at Dryden TS. This route was identified as an existing, previously disturbed ROW in this area and could take advantage of existing access roads. Both sides of the 115/230 kV transmission line ROW will be considered in the EA.



hydro one

Waasigan Transmission Line

Figure 6.8:
Section 4:
Wabigoon Lake to the City of Dryden (Dryden TS)

Route 4
230 kV Transformer Station (TS)
Natural Gas Pipeline
Railway
115 kV Transmission Line
230 kV Transmission Line
Local Roads
Arterial Roads
Highway
Municipal Boundary
MNO Atikokan and Area Council Office
First Nation Reserves
Provincial Park/Conservation Reserve

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF

MAP CREATED BY: SFG
MAP CHECKED BY: JF
MAP PROJECTION: LAMBERT CONFORMAL CONIC

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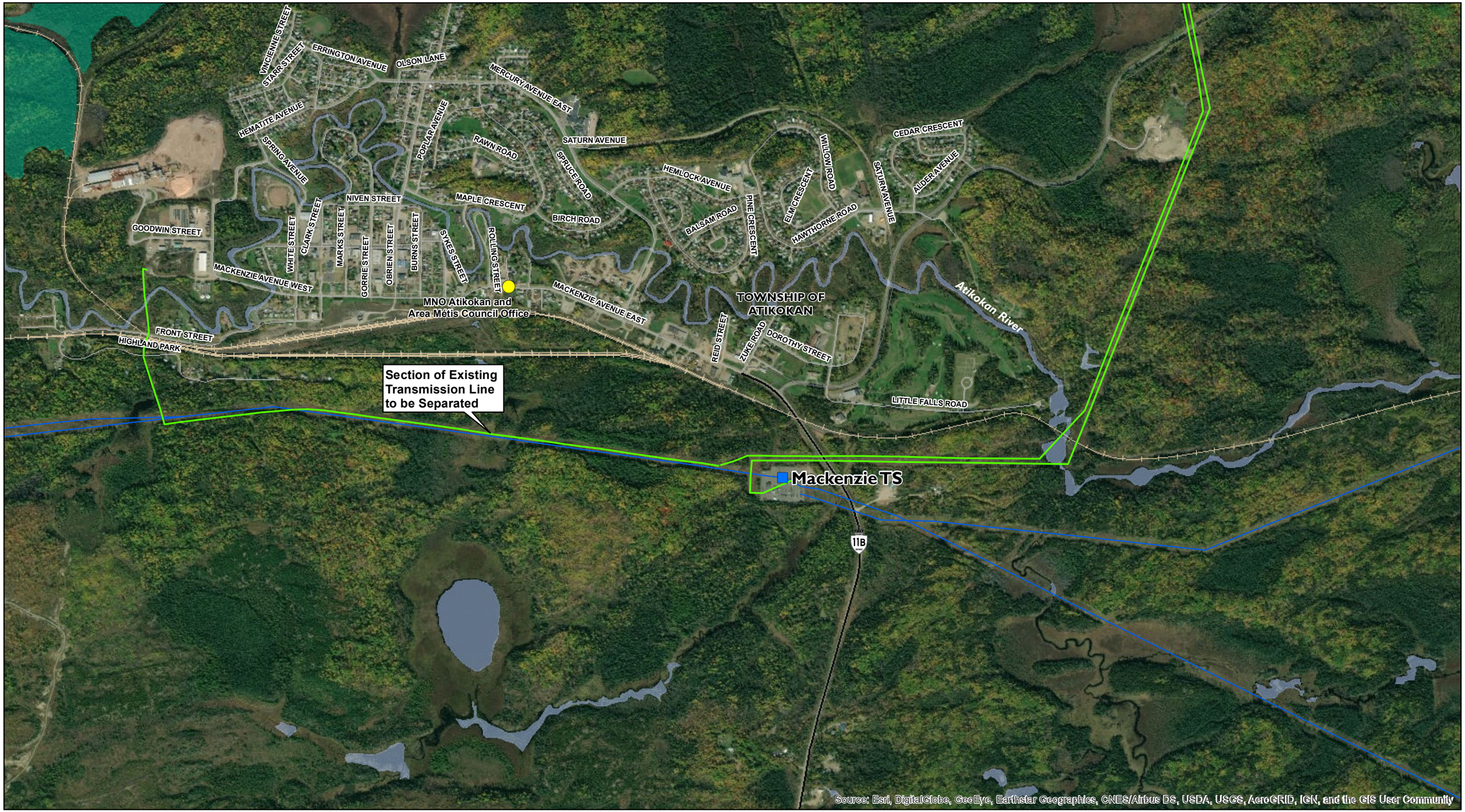
PROJECT: 199676 STATUS: DRAFT DATE: 6/2/2020

6.2.2.5 *Separating Circuits F25A and D26A*

As previously noted, the Project includes the separation of two existing 230 kV transmission circuits out of Mackenzie TS in Atikokan (circuits F25A and D26A). Approximately 2.5 km of these two circuits located west of Mackenzie TS currently share one set of structures. Approximately 1 km of this double-circuit section of transmission line will need to be separated into two single-circuit sections (without sharing structures), as required by the NERC transmission planning standard. **Figure 6-9** illustrates the location and extent of the line to be separated. It is anticipated that the existing ROW will be widened to accommodate the new single-circuit line and support towers. The side of the ROW that is to be widened will be determined in the EA, taking into account natural and socio-economic features, as well as technical and Indigenous considerations.



hydro one

Waasigan Transmission Line

Mackenzie TS Circuit Separation

Figure 6-9: Separating Circuits F25A and D26A

230 kV Transformer Station (TS)
230 kV Transmission Line
115 kV Transmission Line
Railway
Local Roads
Arterial Roads
Highway
MNO Council Office

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF/ESRI IMAGERY

MAP CREATED BY: SFG
MAP CHECKED BY: DM
MAP PROJECTION: LAMBERT CONFORMAL CONIC

0 0.125 0.25 0.5 km

SCALE 1:10,000

N W E S

FILE LOCATION:
G:\cad\GIS\199676 - Waasigan Transmission Line\GIS\MXDs\Field\Mackenzie TS\Mackenzie TS ver 2.mxd

PROJECT: 199676 STATUS: DRAFT DATE: 2020-06-02

6.3 Alternative Route Evaluation in the EA

The alternative routes identified in this draft ToR are considered preliminary and will be refined and confirmed based on feedback received during the ToR process. The alternative routes will be assessed and evaluated in the EA to select, on balance, the route alternative that has more advantages than disadvantages. The evaluation of alternative methods (routes) will take into account the general routing principles as described in **Section 6.2.2**, as well as the preliminary evaluation criteria and indicators as provided in **Appendix B.** The specific side of existing infrastructure ROWs that the alternative routes should follow will also be considered. Opportunities to crossover to the other side of an existing infrastructure ROW to avoid sensitive or valued features will be examined, as possible. The alternative route evaluation criteria and indicators in **Appendix B** will be confirmed during the course of the EA and may include additions or deletions based on new information that is obtained by the Project team in relation to the areas of the route being evaluated. It is noted that during the ToR phase, MNO Regions 1 and 2 conducted an internal workshop on the route assessment criteria and submitted a report (January 2020) to Hydro One documenting the results of the workshop. This report has been considered in the development of the preliminary criteria and indicators in **Appendix B**. The comparative route evaluation of the alternatives may also be supported by information collected though planned field studies, as applicable.

In regards to the approach to the alternatives evaluation, it is reasonable to assume that the type and effectiveness of mitigation that can be applied to avoid or minimize effects will be the same for all the alternative routes being evaluated; however, the need for site-specific mitigation measures will be evaluated and applied to the Project, as required. While potential mitigation to be implemented will be described in the EA Report, a full net effects assessment is not proposed to be completed to support the alternative route evaluation. As such, the evaluation of the alternative routes will be based on measurements of potential effects (e.g., area of habitat removed, number of watercourses crossed, number of buildings in proximity to the route, etc.) that consider available and collected data, including field data and IK. A full net effects assessment will be completed for the preferred route/recommended undertaking as described in **Section 7.0**.

6.4 Refinement of the Preferred Route

Once a preferred route is identified, it is expected that some further local refinements to it may be required during the EA stage to avoid sensitive natural and/or socio-economic features, and for technical reasons (e.g., to avoid existing infrastructure, reduce the number of transmission line crossovers, address specific landowner concerns, avoid designated natural areas). Local route refinements requested by landowners or other stakeholders to avoid their property will be reviewed on a case-by-case basis as switching from one side of an existing transmission line to

another is not necessarily feasible. Crossovers reduce overall system security, require a larger area of land and will increase overall costs.

Refinement of the preferred route may be made on the basis of any field data that may be collected to support the alternative route evaluation and effects assessment. **Section 4.2** provides a commitment to prepare a field work plan with agency and Indigenous community input.

Some of the existing transmission lines and other infrastructure in the RSSA were constructed prior to the designation of features in the area, such as the Turtle River-White Otter Lake Provincial Park, Campus Lake Conservation Reserve, East Wabigoon River Conservation Reserve, and White Otter Enhanced Management Area between the City of Thunder Bay and City of Dryden. Although these park management plans and reserve management statements do not explicitly forbid new transmission lines, with the possible exception of the East Wabigoon River Conservation Reserve, alternative routes were identified to avoid these areas, if needed. The assessment during the EA will determine if it is more environmentally, socially, economically and technically feasible for the Project to detour around these areas. This process will include consultation with Indigenous communities, government officials and agencies, and interested persons and organizations during the EA. Criteria and indicators will be used for this evaluation with a discussion on the advantages and disadvantages of each.

7.0 Identification of Project Effects

The purpose of this section is to describe the approach to be taken on the preferred route to identify potential Project-related effects, identify appropriate mitigation measures to avoid and/or minimize adverse effects, and the approach to evaluating Project net and cumulative effects.

7.1 Potential Effects Assessment

Once a comparative evaluation of the alternative routes is undertaken and a preferred route is identified, as described in **Section 6.0**, a net effects assessment of the Project, including the preferred route, will be completed. This will further define the preliminary potential Project effects to the natural and socio-economic environment as described in **Section 4.3.**

The net effects assessment will assess all major project components and will identify both potential positive and negative effects to the natural and socio-economic environments potentially caused by the Project, and will identify mitigation measures to eliminate, or minimize, the negative effects. The assessment of effects will be clear, logical and traceable. Both short-term project construction activities and long-term operations and maintenance activities will be assessed. Activities associated with the construction and operation/maintenance of the Project are described in **Section 5.0**. Project components expected to be assessed in the net effects assessment include: the preferred transmission line route, transformer station upgrades, the separation of existing circuits connecting with the Mackenzie TS, and major infrastructure required for Project construction (e.g., access roads and watercourse crossings).

Table 7-1 presents a preliminary list of the natural and socio-economic features that will be considered in the EA and that will be used to develop the criteria and indicators used in the net effects assessment. Both the list of features in **Table 7-1** and the criteria and indicators to be developed for the net effects assessment in the EA will consider new information received and ongoing consultation and engagement inputs with stakeholders and Indigenous communities.

Table 7-1: List of Key Natural and Socio-Economic Environment Considerations

Factor	Feature
Natural Environment	• Physiography, geology, surficial geology and soils • Surface water • Groundwater • Provincial parks, conservation reserves, and Areas of Natural and Scientific Interest • Fish and fish habitat • Vegetation and wetlands • Terrestrial wildlife and wildlife habitat • Species at risk • Air quality and greenhouse gases • Acoustic environment
Socio-Economic Environment	• Provincial and municipal policy • Community well-being • Economy, land and resource use • Aesthetics • Infrastructure and community services • Indigenous community use of land and resources for traditional purposes • Cultural heritage resources

The net effects assessment for the Project and the preferred route will generally follow the process outlined below and shown on **Figure 3-1 (Section 3.0)**:

- Review the Project's characteristics, including construction, operation and maintenance activities;
- Consider the baseline environmental conditions that would be affected by Project activities;
- Identify the potential interactions between the Project and the environment, and describe potential effects to natural and socio-economic features considering the extent, duration, interrelationships and magnitude (considerations to be finalized during the EA) of the potential direct and indirect effects (adverse and positive). This step will include using prediction techniques, for example component specific evaluations, field study, and reviewing input received during consultation;
- Identify, develop and describe mitigation measures to eliminate, or minimize, potential effects. This work would be undertaken using utility best management practices, including Hydro One's environmental policies and operational statements of provincial and federal regulators;
- Determine the net effects that are likely to remain once prescribed mitigation measures are implemented;
- Determine the net effects that overlap temporally and spatially with effects from all other past, present and reasonably foreseeable developments and activities which then result in cumulative effects;

- Determinate the significance of net effects and cumulative effects;
- Identify follow-up, inspection, and monitoring programs that will be completed during and after construction to verify predication of the effects assessment and the effectiveness of mitigation measures; and,
- Identify the overall advantages and disadvantages against the "do nothing" alternative.

Climate change adaptation (i.e., potential effects of climate on the Project) will be considered as part of the assessment.

7.2 Mitigation Measures

The EA will include both standard and site-specific mitigation measures based on industry best practices to avoid, or minimize, potential adverse Project-related effects on the natural and/or socio-economic environments.

Mitigation measures will be developed in consultation with Indigenous communities, government officials and agencies, and interested persons and organizations, as necessary, and will be provided in contract specifications to be adhered to by Hydro One staff and contractors.

8.0 Environmental Commitments and Monitoring

Hydro One is committed to environmental protection and responsible environmental management. The Project will be undertaken in compliance with current environmental legislation, best management practices, and corporate environmental procedures and programs, and will be designed to have the least potential for effects on the natural and socio-economic environments, to the extent possible.

8.1 Environmental Commitments

In accordance with Section 5.2.8 of the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014), the EA will include a list of environmental commitments made by Hydro One with respect to the following:

- Development and implementation of mitigation measures;
- Completion of additional field studies (if required), and receipt of regulatory approvals, prior to construction;
- Development and implementation of an environmental monitoring program that considers all phases of the Project; and,
- Continued consultation with Indigenous communities and interested parties.

Hydro One will also take the following into account when completing the EA and subsequent works:

- Identify, assess, and manage potentially significant environmental risks and integrate environmental considerations into decisions;
- Indigenous community consultation;
- 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.

8.2 Project Effects and Compliance Monitoring

In accordance with Section 5.2.8 of the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014), a monitoring framework will be developed during the EA and will consider all phases of the Project.

A construction and post-construction monitoring plan will be developed and included in the EA to ensure environmental commitments are met. The primary objective of the environmental monitoring program will be to confirm that the assumptions used in the assessment were correct and the effectiveness of mitigation measures; and, determine compliance with applicable environmental legislation, regulations, industry standards, Project permits and commitments made by Hydro One in both the ToR and EA.

Monitoring during the construction and operation/maintenance phase will focus on confirming that the assumptions used in the assessment were correct, assessing the effectiveness of the mitigation measures implemented to reduce these effects and evaluating the need for any modified or new measures. The required duration of monitoring and/or follow-up programs will be established during the EA and will be based on environmental features and any conditions associated with approvals and/or permits received.

Hydro One will also employ the services of an Environmental Inspector(s) during construction of the Project to assist with monitoring. The Environmental Inspector(s) will be familiar with transmission line construction techniques, best management practices, and applicable legislation. The inspector(s) will also be familiar with the commitments made in this ToR and the EA and will identify actual Project-related environmental effects, and the effectiveness of mitigation and reclamation measures. To further strengthen both the monitoring of Project-related effects and compliance monitoring, Hydro One will aim to:

- Integrate Indigenous community, public, government agency and stakeholder feedback and concerns received during the ToR and EA into the monitoring program and identify and manage potential environmental effects resulting from the Project;
- Implement a worker training program to ensure the construction team and contractor(s) are aware of applicable legislated requirements and Hydro One's corporate environmental policies, programs and practices; and,
- Establish and achieve Project environmental objectives and targets, and ensure corrective action is taken when required.

9.0 Consultation on the Terms of Reference

As per Section 5.1 of the EA Act, during the development of the draft ToR, Indigenous communities, government officials and agencies, and interested persons and organizations, were engaged to obtain input on the Project. Section 6(3) of the EA Act also requires a proponent to describe and record this engagement and consultation in a document known as the Record of Consultation which has been prepared as an accompanying document to this draft ToR. Please refer to this Record of Consultation for information on the engagement and consultation activities undertaken to date and the input received.

The Record of Consultation will be updated following the review of the draft ToR to reflect additional input received. Should the proposed ToR be approved by the MECP and the Project progresses to the EA, a separate EA Record of Consultation will document the additional consultation and engagement activities and input received.

A draft EA Consultation Plan is provided in **Section 10.0**.

10.0 Environmental Assessment Consultation Plan

This section describes Hydro One's proposed draft EA consultation plan. Several documents were considered in developing this draft consultation plan, including Section 5.1 of the EA Act, the Code of Practice for Consultation in Ontario's Environmental Assessment Process (MECP 2014b) and Code of Practice on Preparing and Reviewing Environmental Assessments in Ontario (MECP 2014a). In addition, this draft plan was informed by input received to date as part of the ToR development from Indigenous communities, government officials and agencies, and interested persons and organizations.

While this draft plan lays out a proposed framework for engagement and consultation during the EA, it is to be considered a "living document" and thus subject to change based on ongoing consultation efforts and feedback, including any comments received on this draft ToR, as well as future consultation efforts to be completed as part of the EA. As such, this draft plan is expected to be refined and updated to reflect comments and input received during the remaining portion of the ToR phase and EA. Feedback and comment on this draft consultation plan is encouraged as it will be incorporated into the proposed ToR.

It is also acknowledged that there may be a need to further tailor and update this draft plan to meet individual Indigenous community needs, including how communities wish to be engaged. It is anticipated that ongoing engagement with Indigenous communities will result in additional guidance and information on this and will be incorporated herein.

The term "engagement" is used in this plan to represent activities Hydro One will undertake to inform and receive input from Indigenous communities. These activities may contribute to the consultation activities that the Crown may undertake to fulfill its "Duty to Consult" obligations. Activities undertaken with participating Indigenous communities that Hydro One has already carried out, and will continue to be carrying out, to fulfill the requirements of the provincial EA process will adhere to the MECP's expectations for Indigenous community consultation as described in the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014). These activities have included, and will continue to include, relationship-building activities that extend beyond the procedural requirements of consultation, as described in the Code of Practice, and are therefore called "engagement" activities.

Given the unique interests of the various persons to be engaged during the EA, this draft plan includes, 1) a Stakeholder Consultation Plan (e.g., government officials and agencies, and other interested persons and organizations, including members of the public and landowners) (**Section 10.2**), and, 2) an Indigenous Community Engagement Plan (**Section 10.5**). The Indigenous Community Engagement Plan includes the engagement of both First Nations and Métis communities. For information related to the collection of IK, please refer to **Section 4.2.3.6**.

10.1 Purpose of the Environmental Assessment Consultation Plan

Hydro One is fully committed to working and consulting with Indigenous communities, government officials and agencies, and interested persons and organizations, in a manner that is open and honest, clear, accessible (e.g., provide information in an easy to understand format) and mutually respectful throughout the Project.

Under the EA Act, consultation is required as part of an EA. The purpose of consultation, as noted in the MECP's Code of Practice: Consultation in Ontario's Environmental Assessment Process (MECP, 2014b), is to:

- Provide information to the public;
- Identify persons and Indigenous communities who may be affected by, or have an interest in, the undertaking;
- Ensure that government agencies and ministries are notified and consulted early in the EA process;
- Identify concerns that might arise from the undertaking;
- Create an opportunity to develop proponent commitments in response to local input;
- Focus on and address real public concerns rather than regulatory procedures and administration;
- Provide appropriate information to the ministry to enable a fair and balanced decision; and,
- Expedite decision-making.

Based on the above, the purpose of this draft consultation plan is to provide the framework for how consultation with government officials and agencies, and other interested persons and organizations, including members of the public and landowners, will take place and how Indigenous communities will be engaged with during the EA. Specifically, the plan covers the following:

- Methods that will be used to consult with government officials and agencies, and interested persons and organizations, including members of the public and landowners, and Indigenous communities during the EA;
- How input is expected to be obtained;

- General timing of key consultation milestones;
- Identification of a strategy for documentation and issues resolution; and,
- Identification of a strategy for monitoring the effectiveness of the consultation program during the EA and making changes to it as new information becomes available.

10.2 Stakeholder Consultation Plan

Community engagement and consultation is of upmost importance to Hydro One. Hydro One will be transparent, proactive, and engage in two-way communication with potentially affected individuals and/or organizations and welcomes collaborative consultation relationships.
This EA Stakeholder Consultation Plan focuses on consultation activities related to potentially interested and/or affected government officials and agencies, and other interested persons and organizations, including members of the public and landowners, with the objectives to:

- Create an understanding and general awareness of the Project, and provide ongoing online and in-person opportunities for interested parties to learn about the Project and provide meaningful input;
- Gather input and respond to inquiries or concerns, and provide full and fair consideration and documentation of all input received during the consultation process and incorporation of such input, where feasible, into Project decision-making;
- Learn about community interests and perspectives; and,
- Better understand how the Project may affect stakeholders so that potential effects can be addressed and minimized, as feasible.

This EA Stakeholder Consultation Plan was designed to align, and integrate, with consultation activities and the main steps of the EA process (**Figure 10-1**). Hydro One acknowledges there may be a need to refine this based on any comments and/or feedback received during the review of the draft ToR or as part of the EA process. More detail is provided in **Section 10.3.11**.

Regulatory Process	Consultation Activities
EA Initiated	• Notice of Commencement of EA published, mailed, and posted to website.
EA Prepared	• Ongoing meetings with government officials and agencies, and interested persons and organizations. • Notice of CIC Round #1 published, mailed and posted to website (potentially combined with the Notice of Commencement of EA). • CIC Round #1 – Present methods for the evaluation of alternative routes, planned field studies, and proposed study areas and criteria and indicators. • Notice of CIC Round #2 published, mailed and posted to website. • CIC Round #2 – Present results of field studies, route selection evaluation and results, preferred route, effects assessment and mitigation measures for the preferred route, preliminary construction activities and commitments and monitoring.
Draft EA Review	• Notice of Submission of Draft EA Report (review) published, mailed, and posted to website. • Draft EA Report distributed for review, including viewing locations and posted on website.
EA Submission and Review	• Notice of intent to submit Final EA Report to the MECP and submission of the EA Summary Form • Notice of Submission of Final EA Report (review) published, mailed and posted to website. • Final EA Report distributed for review, including viewing locations and posted on website. • Minimum seven-week public comment period.
MECP Review	• MECP review taking into account any comments received during the comment period.
Notice of Completion and Inspection of Ministry Review	• Notice of Completion published, mailed, and posted on website. • Five-week MECP inspection and public comment and hearing request period. Additional MECP inspection to be held, as required.
Final MECP Evaluation and Minister's Decision and Lieutenant Governor in Council Approval and Decision Notification	• Notice of approval issued and posted on the MECP website. • Thirteen-week MECP decision period.

Figure 10-1: Overview of the EA Regulatory Process and High-Level Consultation Activities

10.2.1 Stakeholder Identification

Hydro One has identified stakeholders who may have an interest in the Project as part of the development of the ToR, and will continue to consult with them in a manner that is respectful of their needs and anticipated level of interest. The following stakeholders are anticipated to be consulted as part of the EA process:

- Any member of the public with an interest in the Project;
- Residents, or landowners, potentially affected along the alternative routes to be considered in the EA;
- Local municipalities that the alternatives routes may pass through;
- Any government official (e.g., elected representatives) or agency with an interest in the Project; and,
- Any other stakeholders (e.g., local businesses, such as mining and forestry operators, mining claim holders, non-government organizations, tourism establishments, recreational users, etc.) with a potential interest in the Project.

A Project Contact List has also been developed as part of the work being undertaken for the ToR phase and this list will form the basis for consultation outreach made during the EA and will be updated on an ongoing basis.

The specific engagement and consultation activities related to these stakeholders are described in **Section 10.3**.

10.2.1.1 *Government Officials and Agencies*

Government officials and agencies anticipated to be included in consultation as part of the EA are expected to be similar if not the same as those included as part of the ToR, including the Government Review Team and local municipalities. The Government Review Team will be provided the opportunity to provide comment and advice during the EA for topics that fall within their mandated areas of responsibility.

If additional government agencies or officials come forward during the EA, they will be added to the Project Contact List.

Government agencies, including the Government Review Team, will be included in applicable project-related circulations, including statutory notices. It is anticipated that agencies with a regulatory role or Project interest will review and provide comment on the Draft and/or Final EA Report. As well, meetings and conference calls may be held during the EA to discuss any issues or concerns that may arise and to provide ongoing guidance on regulatory requirements and expectations. As an example, it is expected that meetings with the MNRF and the MECP will be

held on the natural environment field study program to receive their input in advance of the field program being implemented.

10.2.1.2 *Interested Persons, Organizations and Other Stakeholders*

A list of interested persons (e.g., members of the public, landowners), organizations and other stakeholders was developed during the ToR phase and will be updated during the EA. Key stakeholders will include those who have potential to be directly affected by the Project, such as landowners.

Members of the public may request to be included in consultation through the various communication tools, such as the Project website, Hydro One's Community Relations phone line and email, or by attending and signing into public CIC events. These individuals will be added to the Project Contact List on an ongoing basis during the EA and remaining portion of the ToR phase, as requested.

Other stakeholders may include interested individuals and/or groups with potential commercial interests related to trapping, outfitting, forestry, or mineral tenure, or recreational users like hunters, campers or snowmobilers. Several of these individuals/organizations have been contacted as part of the ToR and consultation will be ongoing throughout the EA.

The Project Contact List that was developed during the ToR phase will continue to be updated throughout the EA and will be the main tool for documenting those with an interest in the Project.

10.3 Anticipated Consultation and Engagement Activities

The following activities are proposed to facilitate a two-way exchange of information throughout the EA with government officials and agencies, and other interested persons and organizations, including members of the public and landowners.

The key consultation related milestones anticipated as part of the EA that will guide overall engagement efforts include the following:

- Notice of Commencement of the EA;
- Notice of EA CIC Round #1 (potentially combined with the Notice of Commencement of the EA);
- EA CIC Round #1 (present planned field studies, methods for the evaluation of alternatives, proposed study areas, and criteria and indicators);
- Ongoing discussions with and presentations to interested municipal councils;
- Ongoing meetings, discussions and newsletters related to comparative route evaluation and effects assessment, including possible workshops to support alternative route evaluation;

- Notice of EA CIC Round #2;
- EA CIC Round #2 (present results of field studies, effects assessment, mitigation measures, monitoring program);
- Notice of Submission of Draft EA Report (submission of Draft EA Report for review and comment); and,
- Notice of Submission of Final/Proposed EA Report (submission of Final EA Report for review and comment).

Depending on the public health situation, virtual components will be considered for all public consultation activities.

The following sections provide a description of the main consultation tools and activities to be completed as part of the EA. A more detailed breakdown is provided in **Section 10.3.11**.

10.3.1 Statutory Project Notices

Statutory public notices will be published in local newspapers that cover the alternative routes during the EA. Notices will comply with the requirements in the MECP's Code of Practice: Preparing and Reviewing Environmental Assessments in Ontario (2014a).

A total of five notices are anticipated as part of the EA, including a Notice of Commencement of the EA, Notice of EA CIC Round #1 (potentially combined with Notice of Commencement of the EA); Notice of EA CIC Round #2; Notice of Submission of Draft EA Review; and, Notice of Submission of Proposed EA.

The newspapers to be used for advertising the notice include:

- Atikokan Progress;
- Fort Frances Times;
- Sioux Lookout Wawatay News;
- Thunder Bay Chronicle; and,
- Thunder Bay Source.

Other local print, radio and/or electronic media, including use of social media, may be identified and used during the EA. Notices will also be distributed via Canada Post to residents and businesses in the Project Study Area, and/or emailed to the Project Contact List, including directly affected landowners, once determined. French language materials will also be available, if requested.

10.3.2 Project Website

A dedicated website, www.HydroOne.ca/Waasigan, was created during the development of the ToR and will continue to be used during the EA. The website provides the most up-to-date information and mapping, and details on opportunities for review and comment.

Similar to the ToR phase, applicable Project-related notices, updates, newsletters/information sheets, maps, CIC display panels, and Project contact information will be uploaded in a timely manner. Usage of the website will be tracked to monitor its effectiveness.

10.3.3 Project Email

Hydro One's Community Relations email (Community.Relations@HydroOne.com) was used during the development of the ToR and will continue to be used during the EA. Messages and comments received will continue to be reviewed regularly and forwarded to relevant members of the Project team for appropriate action. Project-related comments and inquires made through email will be documented in the Record of Consultation.

10.3.4 Community Relations Project Phone Line

Hydro One's Community Relations toll-free phone line, 1-877-345-6799, was advertised throughout the development of the ToR. This number will remain active during the EA. The phone line will continue to be monitored during regular business hours throughout the EA and any Project-related comments and inquires made to the phone line will be forwarded to the relevant individuals within Hydro One for appropriate action and documented accordingly.

10.3.5 Information Sheets and Newsletters

Project information sheets and newsletters will be created at key decision points and will provide information about the EA process. Information sheets will be available in print form at CICs and available to download on the Project website. Information sheets and newsletters may also be distributed to the Project Contact List and residents within the Project area, and are generally expected to align with the issuance of the statutory notices.

10.3.6 Presentations and Meetings

Hydro One met with municipal staff and elected officials of all applicable municipalities, as well as government agencies, as part of the development of the ToR and intends to continue during the EA. Information received will be incorporated into Project planning, as relevant.

During the EA phase, Hydro One will offer to present to all applicable municipal Councils, including the City of Thunder Bay, Municipality of Shuniah, Township of Conmee, Township of O'Connor, Municipality of Oliver Paipoonge, Town of Atikokan, Township of Ignace, and the

City of Dryden. These presentations will provide updates on the Project and provide the opportunity for municipalities to provide feedback.

In addition, Hydro One is committed to engaging with relevant organizations and stakeholders, including the following who were met with as part of the ToR phase: Confederation College, Lakehead University, Ontario Mining Association, Thunder Bay Chamber of Commerce, Thunder Bay Community Economic Development Commission and Northwestern Ontario Municipal Association board.

Hydro One is planning to establish a Community Roundtable for the Project to ensure a continuous feedback loop between Hydro One and municipal officials and staff, industry, businesses, educational institutions, and Indigenous communities throughout all stages of the Project. Members of the Community Roundtable will act in an advisory capacity to Hydro One to ensure that local developments, knowledge, interests and values are considered throughout the various stages of the project.

Hydro One will also consider requests for meetings and/or presentations from other stakeholders, including affected landowners or those with interests related to mining and/or mineral exploration, forestry operations, trappers, outfitters, recreationalists and others.

10.3.7 Land Agents

Hydro One will make available a team of land agents that will provide personal, one-window contact with directly affected landowners and tenants. Hydro One will aim to be as responsive as possible to landowner and tenant needs. Land agents will be familiar with the Project and overall approval process so that they can respond to specific questions. It is expected that these land agents will continue to work with affected landowners post-EA (as applicable), during the Leave to Construct process, construction, and reclamation phases of the Project. French speaking individuals will also be made available, as needed.

10.3.8 Community Information Centres

Two rounds of in-person and/or virtual CICs are expected to be held during the EA in the same locations as those held as part of the development of the ToR, including in the City of Thunder Bay, Kakabeka Falls (Municipality of Oliver Paipoonge), Township of Ignace, Town of Atikokan, and the City of Dryden. The CICs are expected to be advertised through the same means and methods as completed as part of the ToR, including notice publications in local newspapers, direct mail and unaddressed Canada Post Admail, and email invitations.

The purpose of the CICs will be to provide a forum for anyone interested in the Project to learn more about it, provide feedback and ask questions of the Project team. The format will depend

largely on the public health situation at that time. Information presented will be made available on the Project website in a timely manner.

Anticipated discussion topics for each round of CICs are expected to be as follows:

- EA CIC Round #1 – Present the planned field studies, study areas, methods for the evaluation of alternatives, including proposed criteria and indicators; and,
- EA CIC Round #2 – Present the results of the assessment, including identification of the preferred route, results of the field studies, effects and related recommended mitigation, and monitoring commitments.

The number and location of venues for the CICs to be held during the EA may be revisited based on the level of participation and feedback received.

CIC attendees will have the opportunity to submit comment forms either in-person or directly to Hydro One via email or mail. Verbal comments received at the CICs will be documented and attendees will be encouraged to submit written feedback, such as completing comment forms.

10.3.9 Review of Draft and Final EA Report

The Draft and Final EA reports will be made available for review and notice will be advertised and distributed to those on the Project Contact List. The documents will be made available for review on the Project website and, depending on the public health situation at that time, USB flash drives and/or hard copies may be available for review at selected public locations. Report copies will also be provided to applicable members of the Government Review Team. Comments on the reports are anticipated to be accepted via phone, email, and mail.

Comments received on the Draft EA Report will be incorporated into the Final EA Report (as applicable) that will be prepared for submission to the MECP and a Notice of Submission will be advertised and distributed to those on the Project Contact List. A formal review period of the Final EA Report will commence at that time providing a second review period and opportunity to submit comments to the MECP. Copies will be made available in a similar manner as the draft review process.

10.3.10 Record of Consultation

Similar to the ToR phase, a Record of Consultation will be developed to document consultation efforts during the EA. The Record of Consultation will document the same type of information as completed during the ToR and will be submitted as a supporting document to the EA Report. The Record of Consultation will document all consultation events, including CICs, meetings and conference calls, incoming and outgoing communication, and will provide an overview of the comments received, Project team responses and, if applicable, how the comment was considered in the EA.

Hydro One will develop an issues resolution strategy for the EA. Consultation and engagement with the various stakeholders is expected to be ongoing throughout the EA and into the Project implementation phase. All communications and issues will be documented and tracked in the Project consultation software tracker. All comments and input received from government officials and agencies, and interested persons and organizations, 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 and how the issue was addressed. Where resolution of issues has not been possible, this will be noted along with a record of all attempts to resolve the issue. The Project consultation software will continue to be used throughout the EA to document all Project communications. The EA will also include a consultation summary and a detailed record of comments received, and how Hydro One proposes to reasonably address any issues raised, how the relevant community/individual proposes to address it, the extent to which Hydro One and such community/individual agree on how to address the issue, and any measures taken to date to address the issue.

10.3.11 Summary of Stakeholder Consultation Activities

Table 10-1 provides an outline of the anticipated consultation activities, milestones and general timing for the public and stakeholders. We note that these activities, and in particular the estimated timing, is subject to change based on new information received, and Hydro One and provincial priorities.

Table 10-1: Stakeholder Consultation – Anticipated Milestones, Activities, Input and Timing

EA Milestone	Purpose of Engagement	Consultation Activities	Type of Input Anticipated	Anticipated Timing
Notice of Commencement of EA	• Advise that the EA has started • Provide introductory information on the Project, and EA process • May provide invitation to CICs	• Publish Notice of Commencement of EA • Post notice to website • Distribute notice to contact list • Email notifications • Discussions with government officials and agencies and interested persons and organizations	• General questions about the Project, EA process and approach to consultation and engagement • Level of interest in providing comment and in participating in the engagement and consultation process	Winter/Spring 2021
Baseline Data Collection	• Request input on study area and baseline data	• Discussions with government officials and agencies and interested persons and organizations	• Input related to: baseline studies to be completed and available data that can be integrated into the EA • Key values, resources, and species of importance	2020-2022
Approach to the Evaluation of Alternatives, including Confirmation of Study Areas, and Criteria/ Indicators	• Provide information related to the evaluation and receive feedback on the process	• EA CIC Round #1 • Publish Notice of CIC (may be combined with Notice of Commencement of EA) • Post notice to website • Circulate notice and letters to Contact List • Newsletters and email notifications • Discussions with government officials and agencies and interested persons and organizations	• Data and information related to the approach to the evaluation of alternative routes, study areas and criteria/ indicators for confirmation	Winter/Spring 2021
Alternatives Evaluation and Identification of Preferred Route	• Provide information related to the evaluation and receive input on the Preferred Route	• Post notice to website • Circulate notice and letters to Contact List • Newsletters and email notifications • Routing workshops with government officials and agencies	• Data and information related to the identification and selection of the Preferred Route	Spring-Summer 2021

EA Milestone	Purpose of Engagement	Consultation Activities	Type of Input Anticipated	Anticipated Timing
Results of baseline field studies, Effects Assessment, Mitigation Measures, Monitoring	• Provide information related to the results of the field studies, effects assessment process, mitigation measures and monitoring program for the Preferred Route	• EA CIC Round #2 • Publish Notice of CIC • Discussions with government officials and agencies and interested persons and organizations	• Data and information related to the effects assessment, proposed mitigation measures and monitoring program	Fall 2022
Review of Draft EA Report	• Provide an opportunity to review the Draft EA Report prior to it being finalized	• Publish Notice of Draft EA Report • Post notice and report to website • Circulate notice and letters to Contact List • Newsletters and email notifications • Make Draft EA Report available on Project website and, if possible, at public review locations • Make follow-up calls to recipients of Draft EA Report	• Receive input and comment on Draft EA Report	Winter 2022 – 2023
Review of Final EA Report	• Provide an opportunity to review the Final EA Report	• Publish Notice of Submission of EA • Post notice and report to website • Circulate notice and letters to Contact List • Newsletters and email notifications • Make Final EA Report available at public review locations • Ministry review and inspection • Final Ministry evaluation and decision	• Input and comment on Final EA Report submitted to MECP	2023

10.4 Monitoring and Follow-Up

Hydro One will monitor consultation efforts and periodically reflect on the consultation tools being used to ensure they are effective, working as planned and may adjust them accordingly during the EA.

Hydro One will measure the effectiveness of their program by reflecting on the number and type of comments received through the various tools that are being made available (e.g., Project email, website, phone line, etc.), attendance at CICs and other community meetings, and the number of individuals and groups requesting to be added to the Project Contact List.

Following review of these activities, Hydro One will make a determination on the effectiveness of this consultation program and will make any adjustments, as needed.

10.5 Indigenous Engagement Plan

The following sections describe the draft Indigenous Engagement Plan to be followed during the EA. As previously noted, the Indigenous Engagement Plan includes the engagement of both First Nations and Métis communities.

This draft plan is to be considered as an initial plan for review and discussion with interested Indigenous communities during the draft ToR review period. This draft engagement plan will be updated as necessary throughout the EA, and as new information becomes available, including input from Indigenous communities as the plan is implemented.

The term "engagement" is used in this plan to represent activities that Hydro One will undertake to inform and receive input from Indigenous communities. These activities may contribute to the consultation activities that the Crown may undertake to fulfill its "Duty to Consult" obligations. Activities undertaken with participating Indigenous communities that Hydro One has already carried out, and will continue to carry out, to fulfill the requirements of the provincial EA process will adhere to the MECP's expectations for Indigenous community consultation as described in the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014). These activities have included, and will continue to include, relationship-building activities that extend beyond the procedural requirements of consultation, as described in the Code of Practice, and are therefore called "engagement" activities.

Based on the above, this draft plan outlines how Hydro One intends to carry out its consultation responsibilities as described in the Memorandum of Understanding (MOU) with the ENDM. In addition, this draft plan is also intended to accommodate consultation requirements as required by legislation or policy, including those contained in the EA Act, the applicable policies and

Codes of Practice issued by MECP and Hydro One's Indigenous Relations Policy. Hydro One will advise the appropriate Crown representatives and agencies of the results of engagement with Indigenous communities during the EA and will work cooperatively with all involved to reach appropriate solutions.

Hydro One intends to engage with identified and interested Indigenous communities (**Section 10.5.1**) during the EA in a manner that is respectful, transparent, and provides opportunities for meaningful input. It is the intent of Hydro One to provide a sufficient amount of information that will allow communities to identify any potential concerns and/or issues, and to work with them to develop measures to avoid, eliminate or mitigate any adverse effects upon their interests and rights.

This draft plan establishes a process that will be continually enhanced and updated as more information becomes available during the remaining ToR phase and future EA. Hydro One will work with Indigenous communities during the EA to collectively identify and consider any potential concerns and/or issues raised by any of the communities. The intent of Hydro One is to provide Indigenous communities with an opportunity to provide meaningful input into the EA. Hydro One will engage Indigenous communities and organizations at a level consistent with their anticipated level of interest in the Project and potential for effects. Hydro One anticipates a fluid and collaborative process requiring both parties to engage in honesty and in good faith with a view to achieving an optimal outcome for both sides.

Hydro One understands and recognizes that the amount and type of engagement may vary by Indigenous community and is likely to evolve during the EA through ongoing meetings and discussion that will provide further insight into how each community would like to be engaged and consulted during the EA (e.g., Indigenous community-specific engagement plans). As such, this plan is to be considered a "living document" and any guidance or comment on its contents provided by Indigenous communities at any point during the remaining portion of the ToR phase or future EA will be considered and incorporated, as applicable.

Hydro One's guiding principles for engaging the identified Indigenous communities include the following:

- *Working with and Understanding the Indigenous Communities* - Hydro One will collaborate with Indigenous communities to better understand their rights and asserted rights as well as their concerns for the people affected by work in the areas where Hydro One may operate. Hydro One will show respect for traditional ways and land, cultural heritage resources, the environment, and traditional knowledge.

- *Commitment to Hydro One's Indigenous Policy* - Hydro One will follow internal policies with respect to working with Indigenous communities.
- *Open, Transparent and Respectful Communication and Transparency* - Hydro One will act and encourage open dialogue and communication on Project events and details, and be attentive and responsive to Indigenous community concerns.

10.5.1 Indigenous Communities to be Engaged

The Crown has a duty to consult, and where appropriate, accommodate Indigenous communities whenever a Crown decision or activity could impact established or asserted Indigenous and treaty rights. Procedural aspects of the Crown's Duty to Consult Indigenous communities can be delegated by the Crown to Hydro One. 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. 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;
- Notify the identified Indigenous communities 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 Indigenous community.

On behalf of the Crown, ENDM, in a letter dated October 25, 2018, provided Hydro One with a list of Indigenous communities to be consulted for the purpose of the Crown's constitutional Duty to Consult. The letter indicated that the Crown has delegated certain procedural aspects of consultation through a MOU signed between Ontario (represented by the former Minister of Energy) and Hydro One in September of 2016 and that these communities be consulted on the basis that they have, or may have, constitutionally protected Aboriginal or treaty rights under Section 35 of the *Constitution Act, 1982*, that may be adversely affected by the Project. A follow-up letter was received from the ENDM, dated April 15, 2020, as an amendment to the original letter identifying two additional Indigenous communities that have, or may have, constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project. The list of communities identified in these two letters includes the following:

- Eagle Lake First Nation;
- Fort William First Nation;
- Nigigoonsiminikaaning First Nation;
- Ojibway Nation of the Saugeen;
- Lac des Mille Lacs First Nation;
- Lac La Croix First Nation;

- Lac Seul First Nation;
- Seine River First Nation;
- Wabigoon Lake Ojibway Nation
- MNO Atikokan and Area Métis Council;
- MNO Northwest Métis Council;
- MNO Thunder Bay Métis Council;
- Red Sky Métis Independent Nation;
- Mitaanjigamiing First Nation; and,
- Couchiching First Nation.

In addition, the Crown (ENDM) also requested that Hydro One copy Grand Council Treaty #3 and the MNO head office on correspondence.

Also, while not listed in the October 25, 2018 letter, other Indigenous communities asserted their rights on the Project and will also be included as part of engagement for the Project:

- MNO Sunset Country Métis Council;
- MNO Kenora Métis Council;
- MNO Greenstone Métis Council; and,
- MNO North Superior Métis Council.

Hydro One is committed to engaging and consulting with these identified Indigenous communities and to developing collaborative working relationships with each of these groups through the EA process and until the Project in-service date and beyond. Should additional Indigenous communities come forward and assert their rights with regards to the Project, Hydro One will engage them and also notify ENDM of the assertion.

Further to the above, at the time of preparing this draft ToR, some First Nation communities organized a commercial entity called the Indigenous Transmission Limited Partnership (ITLP). The ITLP is a partnership of seven First Nations which was formed to facilitate discussions around engagement and participation related to the Project. At the time of the release of this draft ToR, the ITLP is made up of the following First Nations communities: Eagle Lake First Nation, Fort William First Nation, Lac La Croix First Nation, Lac Seul First Nation, Nigigoonsiminikaaning First Nation, Seine River First Nation, and Wabigoon Lake Ojibway Nation. It is anticipated that the ITLP will provide comments on this draft ToR, including this draft Indigenous Engagement Plan.

10.5.2 Proposed Approach to Indigenous Engagement

A project of this type may operate for a long period of time and thus it is Hydro One's intention to engage Indigenous communities based on foundations of respect, cooperation and open communication on a long-term basis with the intent of building mutually beneficial relationships.

Hydro One is currently engaging with the Indigenous communities identified above as part of the ToR preparation and will continue to do so during the EA, as per the level of interest expressed. Communities will be provided with information, and will be engaged in a direct dialogue, in order to allow both Hydro One and each Indigenous community to understand the potential effects (if any) of the Project on any Aboriginal and treaty rights or interests. The results of the engagement activities and feedback received will be documented in the EA Record of Consultation as described in **Section 10.5.5**.

As engagement is completed as part of the ToR and future EA, Hydro One expects that some Indigenous communities will take greater interest in the Project than others, and seek more engagement, or potentially accommodation, and this is typically dependent on several factors, including those described below:

- *Proximity to the Project* - this can be especially true of long linear projects which are expected to have minimal, if any, potential effects to air, water or migratory species beyond the very narrow project footprint.
- *Rights Claims of Indigenous Community* - Hydro One would expect those Indigenous communities with outstanding claims related to the Project area to seek deeper engagement.
- *Expressed Interest of the Indigenous Community* - this may be expressed in meetings or in writing by an Indigenous community during the consultation process, or it may be a factor taken into account in an Indigenous community's consultation protocol or similar type of document.
- *Work Completed as Part of the EA* - during the EA, further information will be gained about Indigenous rights, interests and traditional uses in the Project area, as well as the potential effects of the Project.

Hydro One's process for Indigenous engagement 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 and 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 engagement process with Indigenous communities will focus on the following objectives:

- To provide opportunities for information sharing between Hydro One and potentially affected Indigenous communities as identified by the Crown, or others that have asserted their rights, including information about the Project and associated review and regulatory processes;

- To identify the potential adverse effects of the Project upon Section 35 rights;
- To identify the potential adverse effects of the Project upon other interests, including social, environmental, economic, health and culture; and,
- To work with potentially affected Indigenous communities as identified by the Crown, or other that have asserted their rights, to identify measures to mitigate or avoid those potential adverse effects.

Hydro One understands that there may be additional factors affecting engagement and will engage in good faith with Indigenous communities to better understand Indigenous views on the Project as well as the appropriate mitigation and/or accommodation. It will be the Crown's responsibility to assess the adequacy of engagement on rights-based impacts, as well as any necessary accommodation, and the MECP will determine the adequacy of engagement in accordance with the EA Act.

Community-Specific Engagement Plans

Hydro One acknowledges the importance of conducting engagement through a process that is in alignment with the values, culture and protocols of Indigenous communities, and is prepared to work and adapt, and make necessary revisions to this plan to ensure that it is respectful of any specific engagement protocols and/or other requirements.

Hydro One also understands that some Indigenous communities have internal consultation protocols and procedures in place. Hydro One will work with the Indigenous communities to follow their individual internal protocols and procedures to the extent reasonably possible, provide capacity funding as appropriate and will respect the confidentiality aspects of any information provided to Hydro One. In addition to the tailored engagement approach for Indigenous communities, all public consultation processes and activities outlined in **Section 10.3** will be available to Indigenous communities.

A tailored engagement plan for an individual Indigenous community may include, but is not limited to, the following elements:

- How Indigenous communities will be notified and engaged; this includes a description of the engagement activities planned (e.g., notifications, information sharing opportunities, open houses, individual meetings with the Indigenous community, etc.);
- Milestones during the EA process when rounds of engagement with Indigenous communities will occur;
- How Hydro One will provide opportunities for Indigenous participants to communicate with Hydro One about any issues or concerns about the Project during the period of engagement;
- Methods that will be used to engage with Indigenous communities; and,

- Identify the decisions that Indigenous communities can provide input to (e.g., routing, potential effects assessment, mitigation measures, etc.) and what role Indigenous communities play when the proponent makes decisions.

In an effort of consulting in good faith and respect, Hydro One will also undertake the following activities, among others:

- Hiring of Community Consultation Coordinators for each interested Indigenous community to assist in the organization, facilitation and documentation of engagement activities, events and inputs;
- Conduct training activities related to the EA (see further details below);
- Work with the Community Consultation Coordinators in the making of arrangements for engagement activities that encourage the participation of youth, elders, and other interested Indigenous community members, including the IK collection program;
- Schedule meetings outside of traditional cultural windows/period;
- Use local vendors and caterers when meeting on Indigenous lands;
- Facilitate and make arrangements for Indigenous community involvement in any EA studies (e.g., fieldwork, archaeology, etc.); and,
- Translate consultation materials into a form acceptable to Indigenous communities (e.g., reports, meeting materials, letters, notices, etc.).

Hydro One will respect each Indigenous community's interests and understands that this may change during the course of the EA and, as such, will provide all identified Indigenous communities with statutory notices, such as the Notice of Commencement of EA and Notice of CICs, as well as ongoing updates and opportunities for providing comments on routing and reports produced as part of the EA.

10.5.3 Indigenous Community Engagement and Capacity Building Activities

The following provides an overview of the key engagement and capacity building activities that Hydro One plans to use to engage Indigenous communities during the EA.

EA Notifications and Announcements

Indigenous communities will be sent the same Project notifications as identified in **Section 10.3.1** of the EA Stakeholder Consultation Plan and will include all relevant information, including the name of the proponent, description and location map of the Project, a statement that the Project is subject to the requirements of the EA Act, an invitation to participate in the Project (depending on the nature of the notice), contact information for comments submission, a summary of any additional opportunities to be informed, and dates, times and locations for any events.

A dedicated website, www.HydroOne.ca/Waasigan, was created during the development of the ToR and will continue to be used during the EA. The website provides ongoing updates and information on the Project and details opportunities for review and comment.

Similar to the ToR phase, applicable Project-related notices, updates, newsletters/information sheets, maps, CIC display panels, and project contact information will be uploaded in a timely manner. Usage of the website will be tracked to monitor its effectiveness.

Hydro One's Community Relations email (Community.Relations@HydroOne.com) was used during the development of the ToR and will continue to be used during the EA. Messages and comments received will continue to be reviewed regularly and forwarded to relevant members of the Project team for appropriate action. Project-related comments and inquires made through email will be documented in the Record of Consultation.

Hydro One's Community Relations toll-free phone line, 1-877-345-6799, was advertised throughout the development of the ToR. This number will remain active during the EA. The phone line will continue to be monitored during regular business hours throughout the EA and any Project-related comments and inquires made to the line will be forwarded to the relevant individuals within Hydro One for appropriate action and documented accordingly.

Hydro One will also prepare and release information sheets and newsletters that will be posted to the website and distributed to the Indigenous communities.

Meetings

Hydro One is open to holding targeted meetings with Indigenous community leadership, elders and youth, and applicable staff (e.g., Community Consultation Coordinators) to discuss any specific issues of concern, and to facilitate discussion and understanding of whether, and if so, to what extent, the Project may potentially affect them. The information shared by the Indigenous communities will be collected and incorporated, where appropriate, in the planning for the Project, and any required regulatory processes. Measures related to information/data sensitivity will be taken, as appropriate. Meetings will be documented and included in the Record of Consultation, with the exception of any sensitive information or data.

Community Information Centres and Routing Workshops

Indigenous communities will be made aware of, and invited to, all public CICs to be held during the EA (**Section 10.3.8**) similar to what was done as part of the development of the ToR. These events allow anyone to ask questions, request additional information or express concerns.

In addition to the public meetings, Hydro One will also seek to hold CICs and workshops (as applicable) in each identified Indigenous community. These meetings will likely also include Indigenous youth and elders. The intent will be to hold these meetings and/or workshops as a forum tailored to each individual Indigenous community's needs with the following information to be provided on large poster boards in easily understandable language (information to vary depending on the stage of the Project at the time):

- Introduction to Hydro One and its consultants;
- Overview of the Project, including study area, criteria and indicators and alternatives;
- Alternatives assessment and evaluation;
- Outline of the EA regulatory process;
- Outline of the transmission development process, including the Leave to Construct process;
- Effects assessment, mitigation, monitoring;
- Next steps; and,
- How to provide input, such as a question or a comment.

Training and Skills Development Program

Hydro One recognizes the importance of providing Indigenous communities with the appropriate tools, training and information to help them better understand the EA process and how input is collected and used as part of the Project. To this effect, Hydro One has created and will make available a training and skills development program during the EA for use by communities and it includes the following:

Module 1: Environmental Assessment Preparation and Review

- Information on the EA process; and,
- Comprehensive training on the EA and ToR processes, tools for meaningful participation, permitting requirements and planned studies.

Module 2: General Natural Environment, Field Studies and Monitoring

- Train individuals who are interested in participating in field studies during the EA, as well as a knowledge-building exercise for Indigenous participants; and,
- Technical overview of the natural environmental components being considered for the Project, including hands-on practical field exercises.

Table 10-2 provides the anticipated Indigenous community engagement activities, milestones and general timing for the EA. We note that these activities, and in particular the estimated timing, is subject to change based on inputs received, the potential development of Indigenous community-specific engagement plans, and Hydro One and provincial priorities and funding availability.

Table 10-2: Indigenous Community Engagement – Anticipated Milestones, Activities, Input and Timing

EA Milestone	Purpose of Engagement	Potential Engagement Activities	Type of Input Anticipated	Anticipated Timing
Notice of Commencement of EA	• Advise that the EA has started • Provide introductory information on the Project and EA process • May provide invitation to CICs	• Publish Notice of Commencement of EA • Post notice to website • Distribute notice to Indigenous communities • Discussions with interested Chiefs and Councils, Métis leadership, staff (e.g., Community Consultation Coordinators) and/or Indigenous communities (e.g., youth and elders) • Training and skills development program for Indigenous communities (e.g., EA preparation and review)	• General questions about the Project, EA process and approach to consultation and engagement • Information related to how Indigenous communities would like to be consulted • Level of interest in providing comment and in participating in the engagement and consultation process • Aboriginal or treaty rights potentially adversely affected by the Project • Existing Indigenous community consultation protocols • Interest in capacity building opportunities and/or benefits	Winter/Spring 2021
Baseline Data Collection	• Request input on study area and baseline data	• Discussions with interested Chiefs and Councils, Métis leadership, staff (e.g., Community Consultation Coordinators) and/or Indigenous communities (e.g., Youth and Elders) • Presentation and review of proposed data collection activities and work programs • Involvement with IK	• Input related to: baseline studies to be completed and available data that can be integrated into the EA • Approaches to meaningfully integrating IK into the EA • Key values, resources, and species of importance	2020-2022

EA Milestone	Purpose of Engagement	Potential Engagement Activities	Type of Input Anticipated	Anticipated Timing
		collection program (**Section 4.2.3.6**) • Training and skills development program for knowledge building and fieldwork monitoring participation		
Approach to the Evaluation of Alternatives, including Confirmation of Alternative Routes, Study Areas, and Criteria/ Indicators	• Provide information related to the route evaluation and receive feedback on the process	• EA CIC Round #1 • Publish Notice of CIC (may be combined with Notice of Commencement of EA) • Post notice to website • Circulate notice and letters to Contact List • Newsletters and email notifications • Meetings with interested Chiefs and Councils, Métis leadership, staff (e.g., Community Consultation Coordinators) and/or community meetings • Route evaluation criteria workshops	• Refinement of the alternative routes presented in the ToR • Input on the approach to the evaluation of alternative routes, study areas and evaluation criteria/ indicators and their relative importance • Identification of community-specific interests and values • Input on Aboriginal or treaty rights potentially affected (for consideration in evaluation criteria)	Winter/Spring 2021
Alternatives Evaluation and Identification of Preferred Route	• Provide information related to the evaluation and receive input on the Preferred Route	• EA CIC Round #2 • Publish Notice of CIC • Post notice to website • Circulate notice and letters to Contact List • Newsletters and email notifications • Meetings/routing workshop with interested Chiefs and Councils, Métis leadership, staff (e.g., Community Consultation	• Input on draft evaluation results and selection of the preferred route • Input on other project components (e.g., construction access roads) • Review of how IK has been integrated and considered	Spring-Summer 2021

EA Milestone	Purpose of Engagement	Potential Engagement Activities	Type of Input Anticipated	Anticipated Timing
		Coordinators) and/or community meetings		
Effects Assessment, Mitigation Measures, Monitoring	• Provide information related to the effects assessment process, mitigation measures and monitoring program for the Preferred Route	• Community information meetings/workshops with interested Chiefs and Councils, Métis leadership, staff (e.g., Community Consultation Coordinators) and/or groups (e.g., youth and elders)	• Comments on the draft effects assessment, proposed mitigation measures and monitoring program • Review of how IK has been integrated and considered	Fall 2022
Review of Draft EA Report	• Provide an opportunity to review the Draft EA Report prior to it being finalized	• Publish Notice of Draft EA Report • Post notice and report to website • Circulate notice and letters to Contact List • Newsletters and email notifications • Provide copies of the Draft EA Report to First Nation Band Offices, Métis Offices • Prepare and circulate plain language summary of the Draft EA Report • Make follow-up calls to recipients of Draft EA Report	• Receive input and comment on Draft EA Report and its recommendations	Winter 2022 - 2023
Review of Final EA Report	• Provide an opportunity to review the Final EA Report	• Publish Notice of Submission of EA • Post notice and report to website • Circulate notice and letters to Contact List • Newsletters and email notifications	• Input and comment on Final EA Report submitted to MECP	2023

EA Milestone	Purpose of Engagement	Potential Engagement Activities	Type of Input Anticipated	Anticipated Timing
		• Provide copies of the Final EA Report to First Nation Band Offices, Métis Offices • Make follow-up calls to recipients of Final EA Report • Prepare plain language summary of the Final EA Report • Discussion on any other element of the OEB Section 92 application process		

10.5.4 Consultation and Capacity Funding Agreements for Indigenous Communities

Hydro One will offer Capacity Funding Agreements to Indigenous communities to support their engagement on the Project. The Capacity Funding Agreement is meant to address the following aspects with Indigenous communities:

- Provide capacity funding to Indigenous communities to facilitate effective consultation by Hydro One, including consultation and engagement on the EA;
- Outline an agreed-upon method of consultation and engagement, taking into account community protocols and practices;
- Outline a jointly agreed-upon work plan and budget for each Indigenous community to be meaningfully consulted, including adequate capacity and resourcing to participate;
- Identify a Community Consultation Coordinator or similar position; and,
- Outline a process for the sharing of information regarding the project and associated studies and regulatory processes.

Hydro One recognizes that each Indigenous community may wish to amend aspects of the agreement to reflect community consultation protocols that may already be established. Indigenous communities were provided draft agreements and requested to review the document and share revisions with Hydro One. Hydro One is providing capacity support to the ITLP to participate in this Project, including the hiring of its own legal advisors and technical advisors.

Copies of Indigenous correspondence are provided in the Record of Consultation.

10.5.5 Record of Consultation

The Record of Consultation described in **Section 10.3.10** also includes a record of communications with Indigenous communities.

Hydro One will maintain a comprehensive communications record and issues-tracking database to document all Indigenous engagement activities. The database will be used to:

- Document Indigenous concerns and follow-up actions and responses;
- Document and track mitigation measures developed by Hydro One to prevent, mitigate or otherwise address potential effects of the Project upon Section 35 rights;
- Maintain a current record of staff and community representatives; and,
- Maintain a record of all communications (including phone calls and emails) and information provided to each Indigenous community as well as consultation events/activities with each community.

The communications 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, email, phone call, face-to-face conservation);
- 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 will be maintained for all applicable phases of the Project from planning to implementation, as applicable, and will also be used to fulfill the delegated Duty to Consult requirements and to support permit approvals in accordance with the direction provided by the permitting agency.

Hydro One will develop an issues resolution strategy for the EA. Engagement with Indigenous communities is expected to be ongoing throughout the EA and into the Project implementation phase. All communications and issues will be documented and tracked in the Project consultation software tracker. All comments and input received from 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 and how the issue was addressed. Where resolution of issues has not been possible, this will be noted along with a record of all attempts to resolve the issue. The Project consultation software will continue to be used throughout the EA to document all Project communications. The EA will also include a consultation summary and a detailed record of comments received, and how Hydro One proposes to reasonably address any issues raised, how the relevant community/individual proposes to address it, the extent to which Hydro One and the community/individual agree on how to address the issue, and any measures taken to date to address the issue. Such issues will include any potential effects on established or asserted Indigenous or treaty rights, as well as materials and documentation distributed to stakeholders.

10.6 Summary of Communications and Engagement Activities

Hydro One will use several engagement and consultation tools during the EA to share information in an efficient and effective way, and to make the process of providing input more convenient while fostering positive relations with stakeholders. The EA will provide an overview of the input that was received and how it was considered.

Hydro One's approach to engagement and consultation during the EA will be flexible and adaptable as the Project is expected to evolve and some communities may wish to be consulted in specific ways. It is also anticipated that some individuals and/or groups (e.g., those that may be directly affected) may require more consultation than others. Hydro One will monitor engagement and consultation efforts and reflect on the tools being used to ensure that they are effective, working as planned and may adjust them accordingly during the EA.

Table 10-3 provides an overview of the planned engagement and consultation activities noted in this consultation plan.

Table 10-3: Anticipated Stakeholder and Consultation Activity Interaction

Activity	Government Officials and Agencies	Interested Persons and Organizations	Landowners	Indigenous Communities
Statutory Project Notices	✓	✓	✓	✓
Project Website	✓	✓	✓	✓
Project Email Address	✓	✓	✓	✓
Community Relations Phone Line	✓	✓	✓	✓
Information Sheets and Newsletters	✓	✓	✓	✓
Presentations and Meetings	✓	✓	✓	✓
Land Agents			✓	
Community Information Centres	✓	✓	✓	✓
Review of the Draft and Final EA Report	✓	✓	✓	✓
Chief and Council, Métis leadership and/ or Community Meetings				✓
Community Member Discussions/ Meetings/Workshops				✓
Indigenous Youth and Elder Meetings				✓
Community Consultation Coordinators				✓
Community Involvement in Field Studies (monitoring) to Support the EA				✓
Involvement in IK Collection Program				✓

11.0 Other Permits, Approvals and Authorizations

In addition to the EA Act, the Project is also subject to other approvals further described in this section. These should be considered preliminary and will be refined and confirmed during the EA.

Hydro One will identify all necessary approvals that may be required during Project planning and construction. Where appropriate, Hydro One will initiate permit applications concurrent with the EA process. Based on Project timelines, it may be necessary to initiate some permit and approval activities or applications during the EA process, including any required consultation activities with Indigenous communities, government officials and agencies, and interested persons and organizations. 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. While permit and approval activities or applications may be initiated during the EA, Hydro One understands that regulators cannot issue permits that would authorize the Project to proceed until Project approval is received under the EA Act.

11.1 Other Provincial Approvals

This section provides an overview of any other provincial approvals that may be required for the Project.

11.1.1 Other Provincial Environmental Assessment Processes

The Project may also be subject to the MNRF's Class EA for Resource Stewardship and Facility Development Projects (2015) for the disposition of rights to Crown resources for sections of the Project that traverse public lands, as well as the Class EA for Provincial Parks and Conservation Reserves (2015a) for crossings of provincial parks and/or conservation reserves.

In addition, public lands transactions under the jurisdiction of IO may also be subject to the requirements of the Ministry of Infrastructure's Public Work Class EA (2012).

Discussions with MECP, MNRF and IO have commenced and will continue throughout the Project, including the applicability of the above-noted Class EAs given the introduction of the *More Homes, More Choices Act, 2019* (Bill 108) which exempts specified categories of undertakings/activities from Class EAs and the EA Act, as well as any undertakings in respect of government property that consists of a disposition of any interest in land (IO, 2019). Should any of the above-noted requirements be determined to be applicable, it is Hydro One's intention that

they will be met through the EA process for the Project. Hydro One will consult with the applicable agencies to confirm how their Class EA requirements will be met in the EA, if applicable.

11.1.2 *Ontario Energy Board Act, 1998*

The Project requires OEB "Leave to Construct" approval under Section 92 of the *Ontario Energy Board Act, 1998* (OEB Act) prior to the start of construction activities. The OEB regulates Ontario's electricity and natural gas 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 reviews applicable material, makes the information available to the public, and provides an opportunity for interested parties, including Indigenous communities, to provide input. The OEB operates as an adjudicative tribunal and carries out its functions through oral, or written, public hearings. It is anticipated that Hydro One will potentially file three applications with the OEB related to the Project, including the following:

- 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 (the Leave to Construct 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 commissioning date.
- Leave to Construct – The Project is subject to "Leave to Construct" approval under Section 92 of the OEB Act. The OEB's review of Hydro One's application for Leave to Construct approval is performed with consideration of price, reliability, the quality of electrical service, and in doing so examines technical aspects and consumer protection.
- Expropriations – Hydro One's primary intent is to negotiate easement rights with landowners. In some cases, it may be necessary to purchase entire properties where current uses are incompatible with a transmission line ROW, e.g., a permanent structure or residence under a transmission line. Expropriations, if required, need to be approved by the OEB under Section 99 of the OEB Act.

11.1.3 *Ontario Expropriations Act, 1990*

Hydro One's goal is to secure voluntary property settlements with affected property owners in a timely manner, to the extent practicable, for the portion of properties to be utilized for the Project. Hydro One's offers will be based upon appraisal reports prepared by external, independent Accredited Appraisal Institute of Canada appraisers retained by Hydro One.

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

The project-specific land acquisition compensation principles for this Project 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 expenditures are fair and reasonable to ratepayers.

Should voluntary property settlements meet an impasse, Chapter E.26 under the Ontario *Expropriations Act, 1990*, 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, 1990* prior to commencement of Project construction. Expropriations would also need to be approved by the OEB under Section 99 of the OEB Act.

11.1.4 *Ontario Endangered Species Act, 2007*

The Project, depending on the preferred route selected, has the potential to affect SAR and their habitat. In June 2008, the ESA came into effect in Ontario. The purpose of the ESA is to identify SAR based on the best available scientific information, protect SAR and their habitats, promote the recovery of SAR, and promote stewardship activities to assist in the protection and recovery of SAR in Ontario. There are two applicable regulations under the ESA: the SARO (Ontario Regulation 230/08); and, the General Regulation (Ontario Regulation 242/08). These regulations serve to identify which species and habitats receive protection as well as provide direction on the current implementation of the ESA.

As of April 1, 2019, the administration of SAR under the ESA in Ontario was transferred from MNRF to MECP. Consultation for SAR information and permitting requirements under the ESA are now being carried out with MECP. Bill 108, which included several changes to provincial Acts, including the ESA, received Royal Assent on June 6, 2019. A permit under the ESA may be required for potential effects to SAR and their habitats.

11.1.5 Other Relevant Provincial Legislation, Permits, Approvals and Authorizations

Depending on the Project routing and design, other permits, approvals, or authorizations under provincial legislation may be required (**Table 11-1**). Final determination will be made during the detailed design phase and, as such, this list is subject to change as Project design is further refined and government agency input is received and considered. A final list will be provided in the EA.

Table 11-1: Other Relevant Provincial Legislation, Permits, Approvals and Authorizations

Agency	Other Relevant Provincial Legislation, Permits, Approvals and Authorizations
Ministry of the Environment, Conservation and Parks	• Permit to Take Water as per the *Ontario Water Resources Act, 1990*, if greater than 50,000 litres per day of dewatering is required for construction purposes (if water is taken from a natural source). • Environmental Compliance Approvals per the *Environmental Protection Act, 1990*, for the following: ▪ Transportation of waste from the site; ▪ Stormwater management; ▪ Temporary on-site sewage and water treatment facilities; and ▪ Electrical transformers (noise). • Generator Registration per Ontario Regulation 347 of the *Environmental Protection At, 1990*, for hazardous wastes that could potentially be generated during construction. • Permit to allow for the application of pesticides under the *Pesticides Act, 1990*, for vegetation maintenance during operation and maintenance.
Ministry of Natural Resources and Forestry	• Consolidated Work Permit as per the *Lakes and Rivers Improvement Act, 1990*, for work planned on shore land and within water bodies, including work and burn authorization for clearing and burning of cleared vegetation. • Work permit controls, at all times of the year, for clearing within 300 m of a forest or woodland from the MNRF Forest Management Branch under the *Forest Fires Prevention Act, 1990.* • Licence to Collect Fish and Wildlife Scientific Collection Permit under the *Fish and Wildlife Conservation Act, 1997*, to allow for the taking and transferring of fish or wildlife. • Research Authorization for provincial parks and conservation reserves (for work to be completed in provincial parks). • *Fish and Wildlife Conservation Act, 1997*, authorization should the Project affect nesting areas, beavers or black bears. • Forest Resource Licence to harvest timber on Crown lands as per the *Crown Forest Sustainability Act, 1994.* • Crown Lease or Land Use Permit for rights to Crown land in order to locate towers/access facilities or for new easements/ownership rights under the *Public Lands Act, 1990.* • Permit under the *Aggregate Resources Act, 1990*, for the extraction of aggregate on Crown land. • Approval to work within, or cross, provincial parks as per the *Provincial Parks and Conservation Reserves Act, 2006.* • Amendment to management direction for applicable provincial parks and conservation reserves.
Ministry of	• Land Use and Building Permit for construction within, or adjacent to, provincial

Agency	Other Relevant Provincial Legislation, Permits, Approvals and Authorizations
Transportation	highways as per the *Public Transportation and Highway Improvement Act, 1990.* • Entrance Permit for proposed entrances onto provincial highways as per the *Public Transportation and Highway Improvement Act, 1990.* • An Encroachment Permit is required to place, alter or erect any power line, pole line, or other transmission line within 400 m of any limit of a controlled access highway (e.g., Highway 11/17) as per the *Public Transportation and Highway Improvement Act, 1990* and 45 m for other highways.
Ministry of Heritage, Sport, Tourism and Culture Industries	• Archaeological and built heritage and cultural heritage landscapes clearance under the *Ontario Heritage Act, 1990.*
Ministry of Labour, Training and Skills Development	• Compliance with safety regulations as per the *Occupational Health and Safety Act, 1990,* including the filing of a notice of Project prior to construction.
Ministry of Health	• Adhere to health regulations as per the *Health Protection and Promotion Act, 1990.*
Ministry of Energy, Northern Development and Mines	• Withdrawal of lands from prospecting, etc. under the *Mining Act, 1990.* • Permanent withdrawal of staking rights under the *Mining Act, 1990.*

11.2 Other Federal Approvals

This section provides an overview of any federal approvals that may be required for the Project.

11.2.1 *Impact Assessment Act, 2019*

An electricity project subject to the Ontario EA Act may also be subject to the new federal *Impact Assessment Act, 2019* (IAA) that came into effect on August 28, 2019. The federal IAA creates the new Impact Assessment Agency of Canada and repeals the *Canadian Environmental Assessment Act, 2012.* To support the federal IAA, regulations were developed, including the Physical Activities Regulations (SOR/2019-285) which sets out the types of projects that may be subject to a federal impact assessment (known as designated projects).

Based on a review of the Physical Activities Regulations and current Project details, it has been determined that the Project is not considered a "designated project," and does not meet the requirements or threshold as stipulated in the regulation designating physical activities. In the event that the Project is modified and meets the criteria at a future date, thereby becoming a "designated project" under the IAA, Hydro One will notify the Impact Assessment Agency of Canada. The federal IAA does not apply to this Project.

11.2.2 *Species at Risk Act, 2002*

The federal SARA, protects SAR and their habitat on federal lands, First Nation reserve lands (where a land management act does not exist) and protects aquatic species within waterbodies. The purpose of the SARA is to prevent wildlife species from disappearing, provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity, and to manage species of special concern to prevent these species from becoming endangered or threatened (Government of Canada, 2016). Section 32 of the SARA prohibits the killing, harming, harassing, possession, collection, etc. of SAR listed under Schedule 1 of the SARA. In addition, Section 33 of the SARA prohibits the damage or destruction of the residence (e.g., a species habitat) of a SAR listed under Schedule 1 of the SARA. Administered by ECCC for terrestrial species, and DFO for aquatic species, a permit under the SARA may be required for potential effects to species and habitat (listed under Schedule 1) on federal lands, First Nation reserve lands, and/or within waterbodies.

11.2.3 Other Relevant Federal Legislation, Permits, Approvals and Authorizations

Based on current information, other permits, approvals, and/or authorizations under federal legislation may be required (**Table 11-2**). Similar to other provincial approvals that may be required, this list is subject to change as design is refined and new information is received and considered. A final list of all federal permits and approvals that are necessary for the Project to proceed will be included in the EA.

Table 11-2: Other Relevant Federal Legislation, Permits, Approvals and Authorizations

Agency	Other Relevant Federal Legislation, Permits, Approvals and Authorizations
Environment and Climate Change Canada	• Permit to affect migratory birds per the *Migratory Bird Convention Act, 1994.*
Transport Canada	• Notification of work as per the *Railway Safety Act, 1985*, for the crossing of federally-regulated rail lines. • Adherence to Canadian Aviation Regulations lighting and marking requirements should the Project affect air navigation (Aeronautical Obstruction Clearance for Height Hazards) per the *Aeronauticals Act, 1985.* • Approval for crossing navigable waters as per the *Navigable Waters Act, 1985.*
Fisheries and Oceans Canada	• The Fish and Fish Habitat Protection Provisions of the new *Fisheries Act* came into force on August 28, 2019. • For work being completed near waterbodies, a *Fisheries Act* Request for Review Form may need to be submitted to DFO. If DFO concludes that the project is likely to cause death of fish or the Harmful Alteration Destruction or Disruption (HADD) of fish habitat, they may request an application for a *Fisheries Act* Authorization.

Agency	Other Relevant Federal Legislation, Permits, Approvals and Authorizations
Natural Resources Canada	• Permitting under the *Explosives Act*.

11.3 Other Local Approvals

Based on current information, other permits, approvals and/or authorizations under relevant local legislation and regulations and requirements of utility companies may be required (**Table 11-3**). This list is subject to change as design is refined and new information is received and considered. A final list will be included in the EA document.

Table 11-3: Other Relevant Local Legislation, Permits, Approvals and Authorizations

Agency	Other Relevant Local Legislation, Permits, Approvals and Authorizations
Local Municipalities	• Building Permit as per the Ontario *Building Code Act, 1992*. • Permit to Injure or Remove Trees (woodlands/woodlots), as applicable. • Noise By-Law exemptions (if work is to be completed outside of permitted hours specified in the Noise By-Law). • Conformance with local land use policy and zoning (e.g., road use agreements).
Rail Companies, including Canadian National Railway and Canadian Pacific Railway	• Permit to cross rail lines.
Lakehead Region Conservation Authority	• Permit to cross watercourses and work within regulated areas (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation).
Other Utilities	• Permit to cross other utilities (e.g., existing pipelines, fibre optics, etc.).
Mining Claim Holders	• Identification and treatment (e.g., including consent) from existing claim holders.

Glossary

The following provides a glossary which has been adapted primarily from the MECP's Glossary: Terms Commonly Used in Ontario Environmental Assessments (2014), as well as applicable MECP Codes of Practice and other applicable documents as referenced below.

Term	Description
Alternative methods	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 the proposed undertaking.
Alternatives	Both alternative methods and alternatives to a proposed undertaking.
Alternative Routes	Alternative transmission line routes identified by the Project team.
Alternatives to	Alternatives to the proposed undertaking are functionally different ways of approaching and dealing with a problem or opportunity.
Application	An application for approval to proceed with an undertaking under subsection 5(1) of the EA Act.
Archaeology (Archaeological Resources)	The study of past human cultures through the investigation of archaeological sites. An object, material or physical feature that may have cultural heritage value or interest. The term may also refer to artifacts and archaeological sites. While all archaeological resources contribute to our understanding of Ontario's past, only a licensed archaeologist is qualified to analyze a specific resource to determine whether or not it meets the definition of an archaeological site under the *Ontario Heritage Act* and therefore warrants protection under the *Act* (MHSTCI, 2017a).
Archaeological Potential	Areas of archaeological potential are areas of a property which may contain archaeological resources. The ministry has established criteria and a checklist for determining areas of archaeological potential. Some municipalities have also chosen to prepare archaeological management plans in which areas of archaeological potential within that municipality are identified and mapped (MHSTCI, 2017a).
Built Heritage	A building, structure, monument, installation or any manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. Built heritage resources are generally located on property that has been designated under Parts IV or V of the *Ontario Heritage Act*, or included on local, provincial and/or federal registers (MMAH, 2020).
Commitment	Represents a guarantee from a proponent about a certain course of action. Proponents acknowledge these guarantees by documenting obligations and responsibilities, which

Term	Description
	they agree to follow, in EA documentation (ToR or the EA Report). Once the Minister approves the documents, the commitments within the document are often made legally binding as a condition of approval.
Consultation	A two-way communication process to involve interested persons in the planning, implementation, and monitoring of a proposed undertaking.
Cultural Heritage	While all archaeological resources contribute to our understanding of Ontario's past, to warrant protection under the *Ontario Heritage Act* they must meet the Act's definition of artifact or archaeological site. In order to be considered an artifact or archaeological site, the resources must have cultural heritage value. This means one must value them for the important contribution they make to our understanding of the history of a place, an event or a people. Typically includes archaeological resources, built heritage resources, and cultural heritage landscapes.
Cultural Heritage Landscapes	A defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may involve features such as structures, spaces, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association (MMAH, 2020).
Do Nothing alternative	An alternative that is typically included in the evaluation of alternatives that identifies the implications of doing nothing to address the problem or opportunity that has been identified.
Engagement	Activities undertaken with participating Indigenous communities that Hydro One has already carried out, and will continue to be carrying out, to fulfill the requirements of the provincial EA process will adhere to the MECP's expectations for Indigenous community consultation as described in the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MECP, 2014). These activities have included, and will continue to include, relationship-building activities that extend beyond the procedural requirements of consultation, as described in the Code of Practice, and are therefore called "engagement" activities.
Environment	As defined in the EA Act as: (a) air, land or water, (b) plant and animal life, including human life, (c) the social, economic and cultural conditions that influence the life of humans or a community, (d) any building, structure, machine or other device or thing made by humans, (e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or (f) any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.

Term	Description
Environmental Assessment Act, 1990	The EA Act (and amendments and regulations thereto) is a provincial statute that sets out a planning and decision-making process to evaluate the potential environmental effects of a proposed undertaking. Proponents wishing to proceed with an undertaking must document their planning and decision-making process and submit the results from their EA to the Minister for approval.
Environmental Assessment or EA	EA is a study, which assesses the potential environmental effects (positive or negative) of an individual proposal. Key components of an EA include consultation with government agencies and the public; consideration and evaluation of alternatives; and, the management of potential environmental effects. Conducting an EA promotes good environmental planning before decisions are made about proceeding with a proposal. This is also referred to as an "individual" EA.
Environmental Effect	The effect that a proposed undertaking or its alternative has, or could potentially have, on the environment, both positive and negative, direct and indirect, short and long-term.
Environmental Assessment Report (EA Report)	Any report or documentation prepared that describes how the EA was planned to meet the requirements of the EA Act.
Electric Power Research Institute-Georgia Transmission Corporation	Electric Power Research Institute-Georgia Transmission Corporation (EPRI-GTC) Electric Transmission Line Siting Methodology is a framework used for the route selection process. The process included a series of Corridor Workshops to provide a transparent and consensus-based approach to route identification and selection.
Indigenous Communities	Those communities identified in the *Constitution Act, 1982*, including Indian, Inuit and Métis Groups of Canada.
Interested Persons	Individuals or organizations with an interest in a particular undertaking and may include neighbors and individuals, environmental groups or clubs, naturalist organizations, agricultural organizations, sports or recreational groups, organizations from the local community, municipal heritage committees, ratepayers association, cottage associations, Indigenous communities.
Leave to Construct	An application to be filed with the OEB by Hydro One to allow the Project to proceed.
Minister	Minister of the MECP.
Ministry Review	The Ministry (MECP) review is a document which is prepared by the Ministry during the review and approval process for the EA. The Ministry review outlines whether the proponent of a project or EA process is in compliance with its approved ToR; how the proponent has met the requirements under the EA Act, including public consultation; and, the Ministry's analysis of public, Indigenous, and government agency comments received by the Ministry on the EA. Once the Ministry review is published and a notice of

Term	Description
	completion is issued, all interested parties have a final opportunity to submit their comments to the Ministry. Requests to the Minister to consider sending the application for a hearing on significant outstanding environmental issues can also be submitted at this time.
Mitigation Measures	Measures which can be applied to lessen potential negative environmental effects or enhance positive environmental effects.
Monitoring	The activities carried out by the applicant after approval of an undertaking to determine the environmental effects of the undertaking ("effects monitoring"). Monitoring can also refer to those activities carried out by the Ministry of the Environment, Conservation and Parks to ensure that an applicant complies with the conditions of approval of the class environmental assessment ("compliance monitoring").
Native Species	A species presence in a particular ecosystem due to the result of natural processes, with no human intervention.
Negative Environmental Effects	The negative effects that a project has, or could potentially have, directly or indirectly on the environment at any stage in the project life cycle. Negative environmental effects may include, but are not limited to, the harmful alteration, disruption, destruction, or loss of natural features, flora or fauna and this habitat, ecological function, natural resources, air or water quality, and cultural or heritage resources. Negative environmental effects may also include the displacement, impairment, conflict or interference with existing land uses, businesses or economic enterprises, recreational uses or activities, cultural pursuits, social conditions or the local economy.
Net Effects	Negative environmental effects of a project and related activities that will remain after mitigation measures have been applied.
Proponent	A person, agency, group or organization who carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking (Hydro One).
Record of Consultation	A supporting document submitted with the ToR that describes the consultation carried out during the preparation of the ToR and results. This document also includes engagement with Indigenous communities (First Nations and Métis).
Right-of-Way or ROW	A type of easement granted or reserved over the land.
Study Areas	Preliminary Study Area: referred to as the Study Area in this ToR, was established for the purposes of baseline data collection and for the pre-consultation phase of the Project which began in early 2019. The Study Area included a large area generally between the Municipality of Shuniah in the east and the City of Dryden in the west. Following the initial pre-consultation activities, the Study Area was renamed to the Route Selection Study Area (RSSA) and was used for the purpose of identifying corridor/routing alternatives.

Term	Description
	Additional study areas have been conceptualized for use during the EA and these include the following: Project Footprint – lands covered by the transmission line right-of-way (ROW), access roads and supporting infrastructure (e.g., laydown areas) to be considered in completing fieldwork and identifying direct environmental effects; Local Study Area – lands within approximately 500 m on each side of the Project Footprint to be used for background data collection and identifying direct and indirect environmental effects; and, Regional Study Area – lands generally up to approximately 5 km or more from the Project Footprint to be used for determining more generalized baseline data collection (e.g., watershed information, socio-economics, etc.) and for the prediction of indirect environmental effects.
Species at Risk	Plant or animal species identified as being of special concern, threatened, or engendered in Ontario.
Supporting Documentation	Documentation that is submitted to the MECP, in addition to the ToR, which provides further information on issues discussed in the ToR. Information contained in the supporting documentation should support the proponent's request that the ToR be approved by providing justification for the choices made and details of processes or methodologies to be used. These are routinely submitted as stand-alone documents.
Terms of Reference	The ToR sets out the framework for the planning and decision-making process to be followed by the proponent during the preparation of an EA. In other words, it is the proponent's work plan for what is going to be studied and includes a consultation plan. If approved, the EA must be prepared according to the ToR.
the Project	Refers to the Waasigan Transmission Line, a proposed new double-circuit 230 kilovolt (kV) transmission line between Lakehead Transformer Station (TS) in the Municipality of Shuniah and Mackenzie TS in the Town of Atikokan, and a new single-circuit 230 kV transmission line between Mackenzie TS and Dryden TS in the City of Dryden, including any ancillary works as described herein. This is one of several projects identified by the IESO to meet Ontario's current and future electricity delivery needs. Also referred to as the "undertaking" for the purposes of the ToR.
Undertaking	An enterprise, activity or a proposal, plan or program that a proponent initiates or proposes to initiate, e.g., the Project.

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Appendix A

Letters of Direction and Order-in-Council

Ontario
Executive Council
Conseil des ministres

Order in Council
Décret

DEC 1 1 2013

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and concurrence of the Executive Council, orders that:

Sur la recommandation du soussigné, le lieutenant-gouverneur, sur l'avis et avec le con- sentement du Conseil des ministres, décrète ce qui suit:

WHEREAS the Ontario Government finds it prudent to initiate development work to expand Ontario's transmission system in order to better serve the expected growth in the area west of Thunder Bay given anticipated growth in electrical load, to promote the use of clean and renewable energy sources from Ontario's supply mix, and to enhance opportunities for the development and connection of new renewable generation facilities over the long term;

AND WHEREAS the electricity transmission network in the area west of Thunder Bay is composed of the high-voltage circuits connecting Thunder Bay to Kenora, through Atikokan, Dryden, and Fort Frances;

AND WHEREAS it is intended that the development work focus on the expansion or reinforcement of a portion or portions of that electricity transmission network in the area west of Thunder Bay (the "Northwest Bulk Transmission Line Project");

AND WHEREAS it is anticipated that the Ontario Power Authority ("OPA") would make recommendations concerning the specific scope and timing of the above-noted project in accordance with its statutory mandate, objects and responsibilities pursuant to the *Electricity Act, 1998*, and as a function of its ongoing electricity resource planning activities;

AND WHEREAS the Government has determined that the preferred manner of proceeding is to require Hydro One Networks Inc. to undertake the development of the Northwest Bulk Transmission Line Project including to undertake any and all steps which are deemed to be necessary and desirable in order to seek required approvals;

AND WHEREAS the Minister of Energy has, with the approval of the Lieutenant Governor in Council, the authority to issue Directives pursuant to section 28.6 of the *Ontario Energy Board Act, 1998,* which relate to the connection of renewable energy generation facilities to a transmitter's transmission system or to a distributor's distribution system;

NOW THEREFORE the Directive attached hereto, is approved.

Recommended: _____
Minister of Energy

Concurred: _____
Chair of Cabinet

Approved and Ordered: NOV 2 7 2013
Date

_____
Lieutenant Governor

O.C./Décret 1701/2013

Certified to be a true copy
Anna Valeros
Deputy Clerk, Executive Council

MINISTER'S DIRECTIVE

TO: THE ONTARIO ENERGY BOARD

I, Bob Chiarelli, hereby direct the Ontario Energy Board ("Board") pursuant to section 28.6 of the *Ontario Energy Board Act, 1998* as follows:

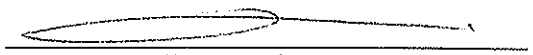
1. The Board shall amend the licence conditions of Hydro One Networks Inc.'s ("Hydro One") electricity transmission licence to include a requirement that Hydro One proceed to do the following related to the expansion or reinforcement of its transmission system, in order to accommodate load due to forecast demand growth over the long term, to promote the use of clean and renewable energy sources from Ontario's supply mix, and to enhance opportunities for the development and connection of new renewable generation facilities over the long term:

    (i) Develop and seek approvals for the Northwest Bulk Transmission Line Project, which shall be composed of the expansion or reinforcement of a portion or portions of the electricity transmission network in the area west of Thunder Bay.

    (ii) Immediately work in co-operation with the Ontario Power Authority ("OPA") to establish the scope and timing for the Northwest Bulk Transmission Line Project. The scope and timing of the project to be carried out by Hydro One shall accord with the recommendations of the OPA.

    It is anticipated that the OPA's recommendations will be made in the course of the OPA's transmission planning activities, conducted in accordance with its statutory mandate, objects and responsibilities under the *Electricity Act, 1998*, including with any transmission planning activities identified in any direction issued, or to be issued, by the Minister of Energy to the OPA pursuant to Part II.2 of that Act.

2. The Board shall make the amendments to the electricity transmission licence of Hydro One without holding a hearing.



Minister of Energy

ieso
Connecting Today.
Powering Tomorrow.

Independent Electricity System Operator
1600-120 Adelaide Street West
Toronto, ON M5H 1T1
t 416.967.7474
www.ieso.ca

October 24, 2018

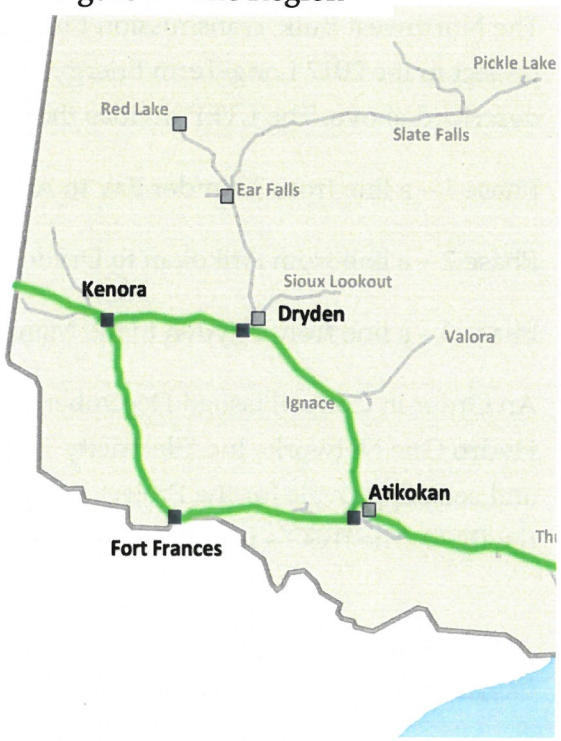
Mr. Robert Reinmuller
Director, Transmission Planning
Hydro One Inc.
483 Bay Street, 13th Floor, North Tower
Toronto, Ontario M5G 2P5

Dear Robert,

Update on the Need and Scope for the Northwest Bulk Transmission Line

The Independent Electricity System Operator (the "IESO") recently updated its electrical load forecast and completed an assessment of the need for additional capacity to supply the West of Thunder Bay and North of Dryden areas (together, the "Region"), shown in Figure 1. The purpose of this letter is to describe the supply needs for the Region and the IESO's recommended next steps for meeting those needs.

Figure 1 – The Region



Supply Needs in the Region

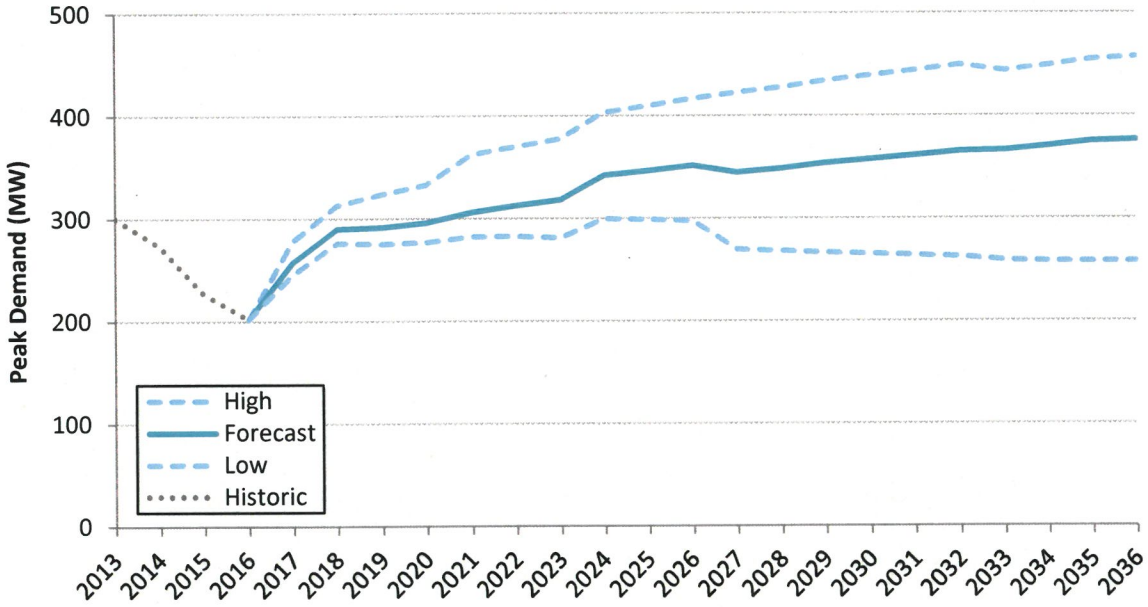
Figure 2 below shows an updated electrical load forecast for the Region. The updated forecast considers new loads from potential mining developments, the connection of remote communities and the removal of loads from the cancelled Energy East pipeline conversion project.

Based on the forecast the Region is adequately supplied today; however, a need for additional capacity will arise in the mid-2030s.

The IESO's updated electrical load forecast also includes high and low growth scenarios to capture the uncertainty around industrial developments. Under the high growth scenario, which considers

development of the Ring of Fire with electricity supplied by the Ontario transmission system, a capacity need could potentially arise in the early 2020s.

Figure 2 - Electrical Load Forecast – the Region



Addressing the Need

The Northwest Bulk Transmission Line Project (the "Project") was identified as a priority project in the 2017 Long-Term Energy Plan (the "LTEP") and can address the capacity needs described above. The LTEP divides the Project into three phases:

Phase 1 – a line from Thunder Bay to Atikokan;

Phase 2 – a line from Atikokan to Dryden; and

Phase 3 – a line from Dryden to the Manitoba border.

An Order in Council issued December 11, 2013 directed the Ontario Energy Board to amend the Hydro One Networks Inc. Electricity Transmission License to require Hydro One to develop and seek approvals for the Project in accordance with the scope and timing recommended by the IESO. The IESO's recommended scope and timing is outlined in the following paragraphs.

Scope and Timing

Since the capacity need is not likely to materialize until the mid-2030s, a commitment for additional supply to the Region is not required at this time. However, the IESO recognizes the

risks associated with load forecast uncertainty and the potential for large industrial projects to add significant load to the Region utilizing the remaining capacity margin sooner than anticipated.

Therefore, to shorten the Project lead time if the need for additional capacity materializes earlier than expected, the IESO recommends that Hydro One begin development work on Phase 1 and Phase 2 of the Project as soon as possible. The scope of development work is to include preliminary design/engineering, cost estimation, public engagement/consultation, routing and siting, and Environmental Assessment. At this time the IESO is not committing to a timeline for the construction of the line. The IESO will continue to monitor developments in the Region to determine when construction of the transmission line should begin.

To supply the Region under the high growth scenario, the Project must meet the following specifications:

a) Consist of a new double circuit 230 kV line between Lakehead TS and Mackenzie TS (Phase 1) with a thermal capacity that is equal to or greater than the existing double-circuit 230 kV transmission between Lakehead TS and Mackenzie TS. This would achieve the required westbound transfer of at least 350 MW into Mackenzie TS and Moose Lake TS.

b) Consist of a new single circuit 230 kV line from Mackenzie TS to Dryden TS (Phase 2) with a thermal capacity that is equal to or greater than the existing single-circuit 230 kV transmission line between Mackenzie TS and Dryden TS. This would achieve the required westbound transfer of at least 350 MW from MacKenzie and Moose Lake.

c) Separate the necessary sections of F25A and D26A to ensure the circuits do not share a common structure over a distance that exceeds one mile.

Hydro One should consider various routing options as appropriate. Since requirements for switching and reactive facilities would depend on the configuration and line options, they are not specified at this time.

The 2014 letter from the Ontario Power Authority (the "OPA") to Hydro One indicated that the Project must be capable of 550 MW transfer west from the Thunder Bay area. At the time the letter was written, the OPA's electrical load forecast was significantly higher and included potential mining developments and the Energy East pipeline conversion project. If in the future additional transfer capability beyond 350 MW is needed, the solution would be to install dynamic reactive facilities in addition to the transmission lines indicated above.

The IESO will provide support to Hydro One as required, including discussion of possible routing alternatives. As well, the IESO will continue to monitor developments in the Region and confirm the best course of action to address supply needs, and will keep Hydro One apprised of this work.

Sincerely,

Ahmed Maria
Director - Transmission Planning
Independent Electricity System Operator

cc: Ms. Darlene Bradley, Hydro One
Mr. Leonard Kula, IESO
Mr. Terry Young, IESO
Mr. Alex Merrick, IESO

Appendix B

List of Preliminary Evaluation Criteria and Indicators

Preliminary List of Evaluation Criteria and Indicators				
Factor	**Criteria**	**Indicator(s)**	**Rationale for Selection**	**Possible Data Source(s)**
Natural Environment	Soils	Area (ha) of agricultural lands in the ROW	Minimize adverse effects to soils and incompatibilities with existing agricultural operations	• Desktop review including technical and background reports • GIS and LIO database and mapping • Canada Land Inventory • MAFRA • Local municipalities • Local commerce organizations/ businesses
	Wetlands	Number and area (ha) of unevaluated wetlands within the ROW	Provincially and municipally designated features	• Desktop review including technical and background reports • GIS and LIO database and mapping • MNRF • Local municipalities and conservation authority • Aerial reconnaissance
		Number and area (ha) of previously evaluated non-provincially significant wetlands in the ROW	Provincially and municipally designated features	• Desktop review including technical and background reports • GIS and LIO database and mapping • MNRF • Local municipalities and conservation authority • Aerial reconnaissance
		Number and area (ha) of Provincially Significant Wetlands in the ROW	Provincially designated features	• Desktop review including technical and background reports • GIS and LIO database and mapping • MNRF • Aerial reconnaissance

Preliminary List of Evaluation Criteria and Indicators				
Factor	**Criteria**	**Indicator(s)**	**Rationale for Selection**	**Possible Data Source(s)**
	Areas of Natural and Scientific Interest	Number and area (ha) of candidate Areas of Natural and Scientific Interest (Earth and Life Science) in the ROW	Provincially designated feature	• Desktop review including technical and background reports • GIS and LIO database and mapping • MNRF
		Number and area (ha) of Areas of Natural and Scientific Interest (Earth and Life Science) in the ROW	Provincially designated feature	• Desktop review including technical and background reports • GIS and LIO database and mapping • MNRF
	Waterbodies and Watercourses	Number and area (ha) of waterbodies in the ROW	• Could form part of provincially designated features • May provide habitat for aquatic species or potable/non-potable water sources	• Desktop review including technical and background reports • Environment Canada's Water Survey of Canada • GIS and LIO database and mapping • MNRF • Local municipalities and conservation authority • Aerial reconnaissance
		Number and area (ha) of watercourses in the ROW	• Could form part of provincially designated features • May provide habitat for aquatic species or potable/ non-potable water sources	• Desktop review including technical and background reports • Environment Canada's Water Survey of Canada • GIS and LIO database and mapping • MNRF • Local municipalities and conservation authority • Aerial reconnaissance

Preliminary List of Evaluation Criteria and Indicators				
Factor	**Criteria**	**Indicator(s)**	**Rationale for Selection**	**Possible Data Source(s)**
		Number of water wells in the ROW	Some communities use groundwater and water wells as a source of potable and non-potable water	• Desktop review including technical and background reports • Environment Canada's Water Survey of Canada • GIS and LIO database and mapping • MECP water well records • Local municipalities
	Forests, Woodlands and Vegetation	Area (ha) of previously logged lands in the ROW	Previously disturbed areas, such as logged lands, could potentially be more suitable for the Project	• Desktop review including technical and background reports • GIS and LIO database and mapping • MNRF • Local municipalities • Sustainable license holders • Forest management plans and inventory mapping • Aerial reconnaissance
		Number and area (ha) of Forest Management Units or woodlands in the ROW	• Could be provincially protected • Could contribute to the local economy	• Desktop review including technical and background reports • GIS and LIO database and mapping • MNRF • Local municipalities • Sustainable license holders • Forest management plans and inventory mapping • Aerial reconnaissance
	Species at Risk	Number and type of Species at Risk potentially affected in the ROW	Provincially and federally protected	• Desktop review including technical and background reports • GIS and LIO database and mapping • NHIC • MNRF

Preliminary List of Evaluation Criteria and Indicators				
Factor	Criteria	Indicator(s)	Rationale for Selection	Possible Data Source(s)
				• MECP • Environment Canada's Species at Risk databases
		Area (ha) of mapped Species at Risk habitat in the ROW	Provincially and federally protected	• Desktop review including technical and background reports • GIS and LIO database and mapping • NHIC • MNRF • MECP • Environment Canada's Species at Risk databases • Aerial reconnaissance
	Wildlife and Wildlife Habitat	Number and type of species potentially affected in the ROW	Minimize adverse effects to wildlife	• Desktop review including technical and background reports • GIS and LIO database and mapping • NHIC • MNRF • Aerial reconnaissance
		Area (ha) of mapped significant wildlife habitat in the ROW	Minimize adverse effects to wildlife habitat	• Desktop review including technical and background reports • GIS and LIO database and mapping • NHIC • MNRF • Aerial reconnaissance
	Fish and Fish Habitat	Area (ha) and type of fish and/or fish habitat identified in the ROW	Minimize adverse effects to fish and/or habitat	• Desktop review including technical and background reports • GIS and LIO database and mapping • NHIC • MNRF • Aerial reconnaissance

Preliminary List of Evaluation Criteria and Indicators				
Factor	**Criteria**	**Indicator(s)**	**Rationale for Selection**	**Possible Data Source(s)**
	Air Quality	Potential for air emissions in the PF (low, medium, high)	May affect nearby residents and/or other sensitive land uses	• MECP • Local municipalities
	Acoustics	Potential for increased noise in the PF (low, medium, high)	May affect nearby residents and/or other sensitive land uses	• MECP • Local municipalities
Socio-Economic Environment	Land Use	Number and area (ha) of settlement/built-up areas in the ROW	Minimize adverse effects to populated areas	• Statistics Canada • MMAH • Official plans • Local municipalities
		Number and area (ha) of provincial parks in the ROW	Identification and protection of existing park values and activities	• Desktop review including technical and background reports including Crown Land Use Policy Atlas • Park management plans • GIS and LIO database and mapping • MNRF • Ontario Parks
		Number and area (ha) of conservation reserves in the ROW	Identification and protection of existing reserve values and activities	• Desktop review including technical and background reports, including Crown Land Use Policy Atlas • Reserve management statements • GIS and LIO database and mapping • MNRF • Ontario Parks
		Number and area (ha) of enhanced management areas in the ROW	Identification and protection of existing values and activities	• Desktop review including technical and background reports including Crown Land Use Policy Atlas • Applicable elements of park/reserve management plans and/or statements

Preliminary List of Evaluation Criteria and Indicators				
Factor	Criteria	Indicator(s)	Rationale for Selection	Possible Data Source(s)
				• GIS and LIO database and mapping • MNRF • Ontario Parks
		Number and area (ha) of mining claims in the ROW	Protect and maintain access for significant exploration activities	• Desktop review including technical and background reports • GIS database and mapping • Local commerce organizations • ENDM • MNRF
		Number and area (ha) of active mines in the ROW	Protect and maintain access to significant mining activities	• Desktop review including technical and background reports • GIS database and mapping • Local commerce organizations • ENDM • MNRF • Mining companies
		Number and area (ha) of inactive (abandoned) mines in the ROW	Abandoned mines could pose human health and/or constructability issues	• Desktop review including technical and background reports • GIS database and mapping • ENDM • MNRF
		Number and area (ha) of aggregate pits in the ROW	Protect and maintain access to significant aggregate activities	• Desktop review including technical and background reports • GIS database and mapping • ENDM • MNRF • Local municipalities
		Number and area (ha) of high potential for aggregate resources in the	Protect and maintain access to significant aggregate resources	• Desktop review including technical and background reports • GIS database and mapping

Preliminary List of Evaluation Criteria and Indicators				
Factor	Criteria	Indicator(s)	Rationale for Selection	Possible Data Source(s)
		ROW		• ENDM • MNRF • Local municipalities
		Area (ha) of lands designated for purposes other than mining (e.g., industrial, commercial) in the ROW	Minimize adverse effects and incompatibilities with existing land use and businesses	• Local municipalities • Local commerce organizations • Local businesses
		Planned developments (ha) in the ROW (development applications)	Identification of potential land use conflicts with planned developments	• Local municipalities • Local commerce organizations
		Conformity with local and provincial policy	Conformity with provincial policy and official plans	• MMAH • Local municipalities
	Community Services	Number and area (ha) of active waste management facilities in the ROW	Minimize adverse effects to facilities and related activities or to the Project	• Ministry of Health • MECP • Official plans • Local municipalities
		Number and area (ha) of inactive (closed) waste management facilities in the ROW	Minimize adverse effects to facilities and related activities or to the Project	• Ministry of Health • MECP • Official plans • Local municipalities
		Number and area (ha) of proposed (new) waste management facilities in the ROW	Identification of potential land use conflicts with planned waste management facilities	• Ministry of Health • MECP • Official plans • Local municipalities
		Number of healthcare facilities in the PF (e.g., hospitals, clinics, etc.)	Minimize adverse effects/disturbances to facilities and related activities	• Ministry of Health • Local municipalities
		Number of educational facilities in the PF (e.g.,	Minimize adverse effects/disturbances to facilities and	• Ministry of Health • Local municipalities

Preliminary List of Evaluation Criteria and Indicators				
Factor	Criteria	Indicator(s)	Rationale for Selection	Possible Data Source(s)
		schools, colleges, universities, etc.)	related activities	• Local school boards
		Number of community-based recreational facilities in the PF (e.g., community centres, libraries, etc.)	Minimize adverse effects/disturbances to facilities and related activities	Local municipalities
	Recreation and Tourism	Number and area (ha) of outpost camps in the PF	Minimize adverse effects/disturbances to tourism related businesses and activities	• Local municipalities • Local commerce organizations • Local business and/or organizations
		Number and area (ha) of recreational trails in the PF	Minimize adverse effects/disturbances to recreational trails and related activities	• Local municipalities • Local commerce organizations • Local business and/or organizations
		Number and area (ha) of campgrounds in the PF	Minimize adverse effects/disturbances to campgrounds and/or users	• Local municipalities • Local commerce organizations • Local business and/or organizations
		Number and area (ha) of golf courses in the PF	Minimize adverse effects/disturbances to golf courses and users	• Local municipalities • Local commerce organizations • Local business and/or organizations
	Visual Landscape (Aesthetics)	Number of mapped/known public scenic viewpoints in the LSA	Minimize effects to existing scenic views	• Local municipalities • Heritage advisory organizations
	Private Property	Number of potential dwelling displacements, including permanent and seasonal	Dwellings are not generally permitted directly within a transmission line ROW	Local municipalities

Preliminary List of Evaluation Criteria and Indicators				
Factor	Criteria	Indicator(s)	Rationale for Selection	Possible Data Source(s)
	Cultural Heritage Resources (including archaeology, and built and cultural heritage landscapes)	Number of archaeological sites and/or built/cultural heritage sites or landscapes in the ROW	Identification and protection of significant heritage resources	• Desktop study • Archaeological/ heritage assessments • Local municipalities • Provincial and federal heritage databases • Historical mapping • Heritage advisory organizations
		Area (ha) of ROW with archaeological potential	Identification and protection of significant archaeology resources	• Desktop study • Archaeological/ heritage assessments • Local municipalities • Provincial and federal heritage databases • Historical mapping • Heritage advisory organizations
		Number of known cemeteries in the ROW	Identification and protection of cemeteries	• Desktop study • Archaeological/ heritage assessments • Local municipalities • Provincial and federal heritage databases • Historical mapping • Heritage advisory organizations

Preliminary List of Evaluation Criteria and Indicators				
Factor	**Criteria**	**Indicator(s)**	**Rationale for Selection**	**Possible Data Source(s)**
Indigenous Communities	Indigenous Community Use of Land and Resources for Traditional Purposes	• Number and area (ha) of animal harvesting sites in the ROW • Number and area (ha) of plant harvesting sites in the ROW • Number and area (ha) of waterbody features used to harvest fish in the ROW • Number and area (ha) of habitation sites (cabins/camps /village/trading posts) in the ROW • Number of trap line crossings in the ROW • Number and area (ha) of travel routes (trail/canoe/ walking) in the ROW	• Minimize adverse effects to known traditional land uses • Criteria and indicators may be adjusted based on ongoing engagement with communities	• Indigenous communities • IK studies that is shared with Hydro One
	Cultural and Spiritual Areas and Sites	Number and area (ha) of culturally sensitive sites and areas in the ROW, including: • Ceremonial sites • Graves • Sacred sites • Gathering areas • Spiritual sites	• Minimize use of lands identified as having cultural and/or spiritual sites • Criteria and indicators may be adjusted based on ongoing engagement with communities	• Indigenous communities • IK studies that is shared with Hydro One • Archaeology/heritage studies

Preliminary List of Evaluation Criteria and Indicators				
Factor	**Criteria**	**Indicator(s)**	**Rationale for Selection**	**Possible Data Source(s)**
		• Points of interest • Worship areas		
	Landscapes of Importance	• Number and significance of Place Names in the PF • Number of Orientation Points in the PF	• Minimize use of lands identified as having specific purpose to Indigenous landscapes • Criteria and indicators may be adjusted based on ongoing engagement with communities	• Indigenous communities • IK studies that is shared with Hydro One • Archaeology/heritage studies
	Other Applicable Criteria/ Indicators Identified by Communities	n/a	Placeholder to include other specific criteria identified by Indigenous communities	n/a
Technical	Project Size	Total length (km) of ROW	Shorter routes tend to have fewer environmental effects and lower overall cost	• Hydro One • Applicable safety standards and requirements
		Total area (ha) of ROW	Narrower ROWs tend to have fewer environmental effects and lower cost	• Hydro One • Applicable safety standards and requirements
	Existing Community Infrastructure	Number of rail lines crossed by the ROW	Reducing the amount of rail line crossed may reduce potential for damage to facilities and overall Project costs	• Hydro One • Applicable safety standards and requirements
		Number of roads crossed by the ROW	Reducing the amount of roads crossed may reduce potential for damage to facilities and overall Project costs	• Hydro One • Applicable safety standards and requirements
		Number of pipelines crossed by the ROW	Reducing the amount of existing pipeline crossed may reduce potential for damage to facilities	• Hydro One • Applicable safety standards and requirements

Preliminary List of Evaluation Criteria and Indicators				
Factor	**Criteria**	**Indicator(s)**	**Rationale for Selection**	**Possible Data Source(s)**
			and overall Project costs	
		Number of airports crossed by the ROW	Distancing towers from local airports can minimize potential for future disruptions	• Transport Canada • Hydro One • Applicable safety standards and requirements
	Constructability	Number of transmission line corners required	Minimize the number of transmission line corners which require more land, increase overall cost and complexity	• Hydro One • Applicable safety standards and requirements
		Number of transmission line crossovers required	Minimize the number of transmission line crossovers which can reduce system security, require more land and increase costs	• Hydro One • Applicable safety standards and requirements
		Area (ha) of hazard/unstable land in the ROW	Avoid areas with hazard/unstable slopes for tower locations	• Hydro One • Applicable safety standards and requirements
		Terrain condition/ quality (poor, moderate, good)	Use favourable terrain (and sub-terrain) for tower locations	• Hydro One • Applicable safety standards and requirements
		Distance of existing access roads available (low, medium, high)	Maximize use of existing access roads, as possible	• Hydro One • Applicable safety standards and requirements
		Distance of existing access roads to be upgraded (low, medium, high)	Maximize upgrades to existing access roads over construction of new roads, as possible	• Hydro One • Applicable safety standards and requirements
		Distance of new access roads required (low, medium, high)	Minimize need for new access roads to extent possible	• Hydro One • Applicable safety standards and requirements
		Amount of working space	Avoid areas with insufficient	• Hydro One

Preliminary List of Evaluation Criteria and Indicators				
Factor	**Criteria**	**Indicator(s)**	**Rationale for Selection**	**Possible Data Source(s)**
		(poor, moderate, good)	working space	• Applicable safety standards and requirements
	Existing ROWs	Distance (km) of route located parallel to existing ROWs	Routes located within, or parallel to, existing ROWs generally have fewer adverse effects compared to new corridors	n/a
	Safety and Compatibility with Electricity Grid	Hydro One/IESO	Some routes may offer better safety and compatibility with the existing electrical grid in Ontario than others	• Hydro One • Applicable safety standards and requirements

Notes:

- This is a preliminary list subject to refinement/change based on ongoing consultation and new information that may be received during the review of the draft Terms of Reference and subsequent EA
- Only those criteria/indicators for which suitable data is available will be used as part of the evaluation

Acronyms and Abbreviations

ENDM – Ministry of Energy, Northern Development and Mines
GIS – Geographic Information Systems
IESO – Independent Electrical System Operator
IK – Indigenous Knowledge
LIO – Land Information Ontario
LSA – Local Study Area (lands within approximately 500 m on each side of the Project Footprint)
MAFRA – Ministry of Agriculture, Food and Rural Affairs
MECP – Ministry of Environment, Conservation and Parks
MNRF – Ministry of Natural Resources and Forestry
MMAH – Ministry of Municipal Affairs and Housing
n/a – Not applicable

NHIC – Natural Heritage Information Centre
PF – Project Footprint (lands covered by the transmission line ROW, access roads and supporting infrastructure, e.g., laydown areas)
ROW – Right-of-Way