Hydro One Networks Inc. Class Environmental Assessment

Environmental Study Report

January 2022

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Executive Summary

Hydro One Networks Inc. (Hydro One) has prepared this Environmental Study Report (ESR) for the proposed refurbishment of the existing A8K/A9K 115 kilovolt (kV) Transmission Line (the "Project") in Northeastern Ontario. The Project Area spans from the Town of Kirkland Lake, Timiskaming District (Unorganized), Cochrane District (Unorganized), to the Township of Black River-Matheson and the Town of Iroquois Falls (**Figure E-1**).

The proposed Project includes refurbishing all deteriorated line sections of the existing 115 kV transmission infrastructure on circuits A8K and A9K that run between the Kirkland Lake Transformer Station (TS) and Ansonville TS. In addition, the Independent Energy System Operator (IESO) requires an ampacity increase on circuits A8K/A9K as it would be cost-beneficial in the long run for the system. If approved, the proposed Project will involve the replacement and/or modification of all aging/damaged wood poles, and steel lattice structures, the replacement of sections of conductor (wire) along the existing right-of-way (ROW) that do not meet IESO's requested ampacity, and replacement of the overhead shield wire. It is anticipated that most of this work would be carried out within the existing transmission ROW. Where possible, access to the transmission structures will be achieved using existing access roads and trails. There will be little noticeable difference in the appearance of the transmission line following completion of the Project.

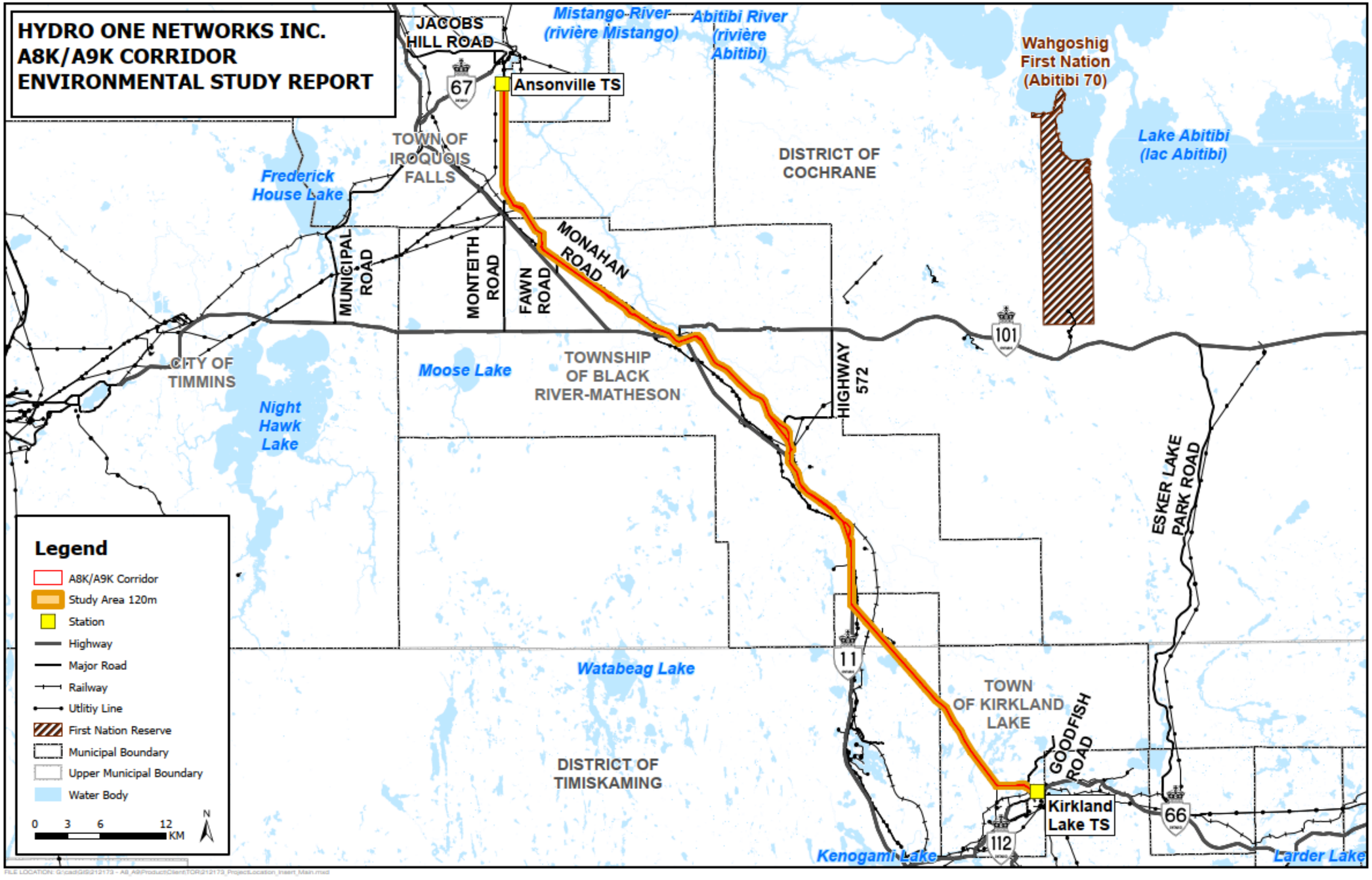
The proposed Project is subject to the Class Environment Assessment for Minor Transmission Facilities (Class EA; Hydro One, 2016), an approved planning process under the Ontario *Environmental Assessment Act* (EA Act) designed for proponents to characterize the existing environment, assess potential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

At the outset of the Class EA, the project was initiated as a Class EA Screening Process; however, following consultation activities and input received from stakeholders and Indigenous communities, Hydro One voluntarily elevated the Project to be completed as a full Class EA. In support of the Class EA process, three project alternatives were considered:

- Do Nothing – Not undertaking the refurbishment project
- Refurbish the existing transmission line within the existing right-of-way

- Construct a new 115 kV transmission line parallel to the existing line

Figure E-1: Project Study Area



To evaluate the alternatives, a series of criteria were developed to assess each alternative based on natural environment, socio-economic environment and technical and cost factor areas. The alternatives were compared, using a reasoned argument method, by assessing the advantages and disadvantages that each alternative had against the established criteria. The reasoned argument method for evaluation applies a qualitative approach to making reasoned judgements regarding potential impacts to project alternatives. The reasoned arguments are supported by quantitative data and analysis collected through supporting background datasets where available (field data collection and background desktop review investigations).

Since June 2018, Hydro One has conducted consultation with municipal and provincial government officials and agencies, Indigenous communities, potentially affected and interested persons, and interest groups. This involved project notifications, communications and engagements resulting in issues identification and resolution efforts. The consultation process included the development of a project website, a Virtual Information Session (VIS), meetings with Indigenous communities and stakeholders, and dedicated Community Relations and Indigenous Relations representatives.

The Class EA process for the proposed Project includes a characterization of the existing environment through literature reviews, reports and technical memos commissioned by Hydro One, online databases, mapping, consultation and field surveys. This research informed an assessment of the alternative solutions. Overall, refurbishment of the existing 115 kV transmission line is preferred given that it utilizes existing property and resources and minimizes offsite effects compared to construction of a new transmission corridor.

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

On October 18, 2021, the Notice of Completion of draft ESR was distributed to all interested parties including Indigenous communities, municipal, provincial and federal government officials and agencies, potentially affected and interested persons, and interest groups presented in **Section 3** (refer to **Appendix A** for contact list). The Notice was sent via mail to local property owners in the area on October 18, 2021, as well as Indigenous communities by email and hard copy, in addition to being posted on the

Project website www.HydroOne.com/A8KA9K (refer to **Appendix B** for notification letter).

Comments received from stakeholders have been addressed and documented in this final ESR as required by the Class EA process. Hydro One has responded to comments raised by concerned parties during the public review period. Following completion of the review period, the ESR has been finalized for the proposed Project in accordance with the Class EA, and the final ESR has been filed with the Ministry of the Environment, Conservation and Parks (MECP). The Project is now considered approved and may proceed as outlined in this ESR.

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List of Acronyms & Abbreviations

AA	Archeology Assessment
ANSI	Area of Natural and Scientific Interest
AQHI	Air Quality Health Index
ARA	Aquatic Resource Area
BFN	Beaverhouse First Nation
CIC	Community Information Centre
Class EA	Class Environmental Assessment for Minor Transmission Facilities
CLI	Canadian Land Inventory
cm	Centimetres
CO	Carbon Monoxide
COSSARO	Committee on the Status of Species at Risk in Ontario
CWS	Canadian Wildlife Services
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EA Act	Ontario Environmental Assessment Act
EAB	Environmental Assessment Branch
EASR	Environmental Activity and Sector Registry
EMF	Electro-magnetic Field
EPC	Engineering, Procurement and Construction Contractor
ESA	Endangered Species Act, 2007
ESC	Erosion and Sediment Controls
ESR	Environmental Study Report
IAA	Impact Assessment Act, 2019
IEA	Interim Engagement Agreement
IESO	Independent Energy System Operator
km	Kilometres
km/hr	Kilometers per hour
kV	Kilovolt
LIO	Land Information Ontario
MBCA	Migratory Birds Convention Act
MCFN	Missanabie Cree First Nation

MECP	Ministry of the Environment, Conservation and Parks
MFN	Matachewan First Nation
mG	Milligauss
MHSTCI	Ministry of Heritage, Sports, Tourism and Culture Industries
mm	Millimetres
MNDMNRF	Ministry of Northern Development, Mines, Natural Resources and Forestry
MNO	Metis Nation of Ontario
MNRF	Ministry of Natural Resources and Forestry
MOE	Ministry of Energy
MTO	Ontario Ministry of Transportation
NBS	Northern BioScience
NLMC	Northern Lights Metis Council
NO2	Nitrogen Dioxide
NRCan	Natural Resources Canada
O. Reg.	Ontario Regulation
O3	Ozone
oC	Degrees Celsius
PM2.5	Particular Matter
PPS	Provincial Policy Statement
PSA	Project Study Area
PTTW	Permit to Take Water
ROW	Right-of-way
SAC	Spills Action Centre
SAR	Species at Risk
SARA	Species at Risk Act
SCC	Species of Conservation Concern
SO2	Sulphur Dioxide
SVS	Shared Value Solutions
SWH	Significant Wildlife Habitat
TKLU	Traditional Knowledge and Land Use
TMC	Timmins Metis Council
TS	Transformer Station
TTN	Taykwa Tagamou Nation

V/m	Volts per metre
VIS	Virtual Information Sessions
WFN	Wahgoshig First Nation
WHO	World Health Organization
WTC	Wabun Tribal Council

1 Introduction

Hydro One Networks Inc. (Hydro One) is proposing to complete a refurbishment of the existing A8K/A9K 115 kilovolt (kV) Transmission Line (the "Project"). The Project Area spans from the Town of Kirkland Lake, Timiskaming District (Unorganized), Cochrane District (Unorganized), to the Township of Black River-Matheson and the Town of Iroquois Falls (**Figure 1-1**). The proposed work includes refurbishing all deteriorated line sections of the existing 115 kV transmission infrastructure on circuits A8K and A9K that run between the Kirkland Lake Transformer Station (TS) and Ansonville TS. In addition, the Independent Energy System Operator (IESO) requires an ampacity increase on circuits A8K/A9K as it would be cost-beneficial in the long run for the system. If approved, the proposed Project will involve the replacement and/or modification of all aging/damaged wood poles, and steel lattice structures, and the replacement of sections of conductor (wire) along the existing right-of-way (ROW), as well as replacement of the overhead shield wire. It is anticipated that most of this work would be carried out within the existing transmission ROW. Where possible, access to the transmission structures will be achieved using existing access roads and trails. There will be little noticeable difference in the appearance of the transmission line following completion of the Project.

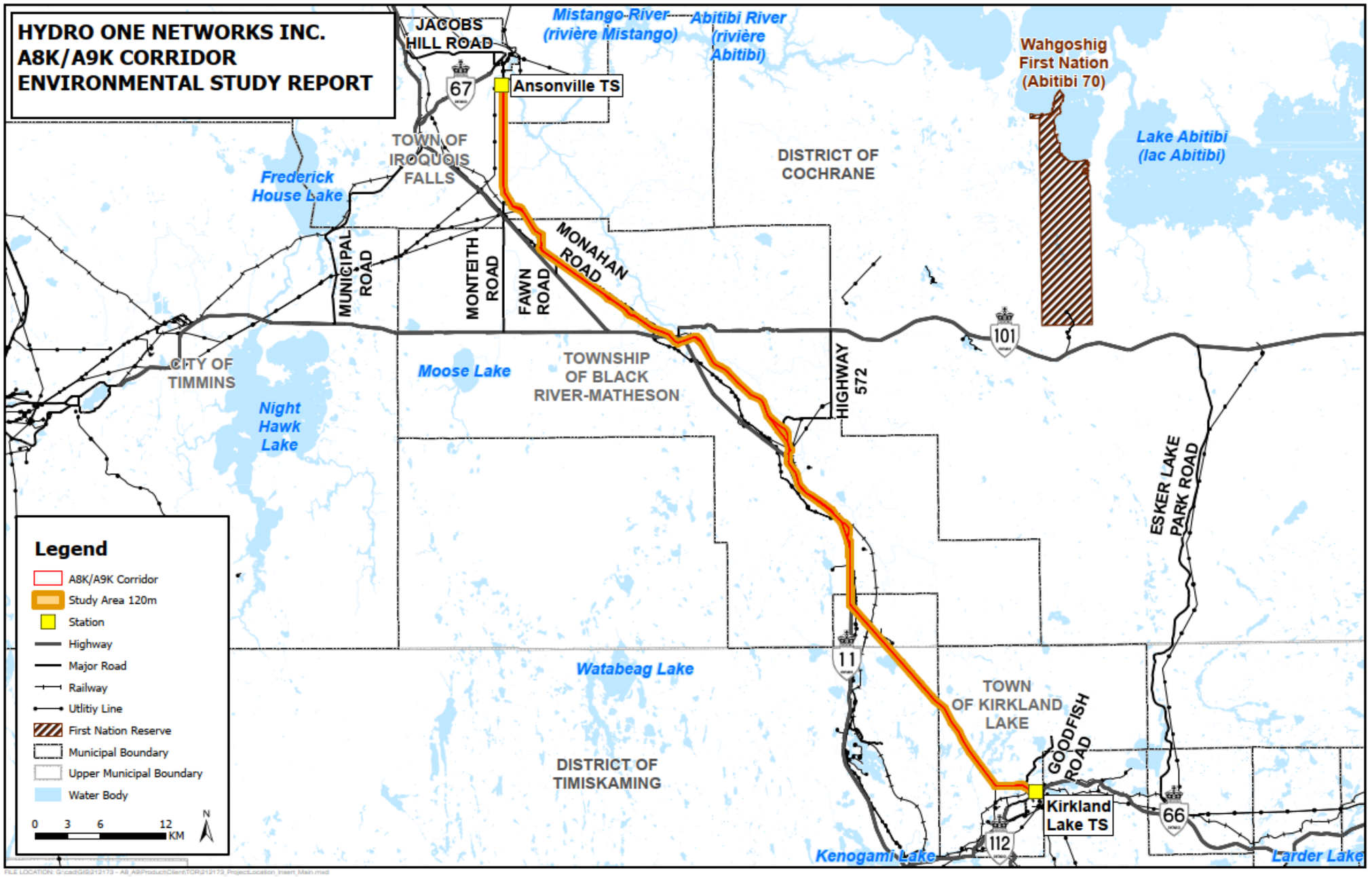
The Project is subject to the Class EA for Minor Transmission Facilities (Class EA; Hydro One, 2016), an approved planning process under the Ontario *Environmental Assessment Act* (EA Act) designed for proponents to characterize the existing environment, assess potential environmental effects and mitigation, identify and evaluate alternatives, conduct consultation and document study findings. At the outset of the Class EA, the Project was initiated as a Class EA Screening Process; however, following consultation activities and input received from Indigenous Communities and other stakeholders, Hydro One voluntarily elevated the Project to be completed as a full Class EA. This Environmental Study Report (ESR) has been prepared in accordance with the requirements of the EA Act and describes the Class EA process undertaken for the proposed Project.

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

This ESR describes the Class EA process that was undertaken for the proposed Project. The ESR:

- Summarizes existing conditions within the Project Study Area (120 m).
- Documents the notification to, and consultation undertaken with, Indigenous communities, government agencies, municipal staff and elected officials, interest groups and members of the public about the Project.
- Documents the comparative evaluation for the selection of the technically preferred solution.
- Identifies potential environmental effects associated with the Project.
- Identifies potential avoidance, mitigation and restoration measures to address these potential environmental effects.

Figure 1-1: Project Location



1.1 Need for the Undertaking

In August 2019 and May, 2020 IESO – the agency responsible for monitoring electricity demand and forecasting future needs in the province – requested Hydro One to initiate work on the refurbishment of the existing 115 kV transmission line between the Kirkland Lake TS and the Ansonville TS. The IESO's planning studies have determined that the existing ratings of circuits A8K and A9K are inadequate for the reliable operation of the Kirkland Lake area. The IESO's assessments indicate that increasing the ratings will provide additional flexibility for generation resources in the Kirkland Lake area to be dispatched in response to system needs, reducing reliance on arming local load rejection that is required today, and allow for future connection of new mining loads in the area.

The purpose of the refurbishment of the existing 115 kV transmission line is to:

- Maintain reliability in the area, and enable system benefits by allowing local generation to operate in a more cost-effective manner.
- Better align the rating of A8K and A9K transmission circuits with the current system needs as well as prepare for potential future needs of the area.
- Replace aging/damaged wood poles and structures.

1.2 Description of the Undertaking

The proposed Project will involve the refurbishment and ampacity upgrade of the existing 115 kV transmission line between the Kirkland Lake TS and the Ansonville TS. The majority of work for the proposed Project will involve the replacement and/or modification of a number of aging/damaged wood poles along with some steel lattice structures, and the replacement of sections of the conductor that do not meet ampacity upgrade and sections of shield wire along the existing ROW.

Contingent on the outcome of the Class EA process and Section 92 (S92) Leave to Construct approval from the Ontario Energy Board, construction could begin as early as January 2022 and be completed by Spring 2023.

1.3 Alternatives to the Undertaking

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

technical, economic and environmental perspective and must fall within the mandate of the proponent.

Hydro One has identified a number of potential alternatives for the transmission line refurbishment (alternatives to the undertaking), which would meet the need for the project as identified by IESO. The alternatives include:

1. **Alternative 1: Do Nothing**

Though considered, the 'Do Nothing Alternative' would result in the inability to reliably supply the forecasted load growth in the Kirkland Lake Area. For this reason, the Do Nothing alternative is not considered a feasible option and is not carried forward for further consideration.

2. **Alternative 2: Refurbish the exiting transmission line within the existing ROW**

Refurbishment of the existing transmission line to meet the needs of forecasted load growth in the Kirkland Lake Area is a technically feasible alternative and is consistent with the Ontario Provincial Policy Statement (PPS, 2020). Section 1.6.3 of the PPS states that before considering is given to the development of new infrastructure:

- The use of existing infrastructure and public services should be optimized; and,
- Opportunities for adaptive re-use should be considered, where feasible.

Therefore, Alternative 2 was considered as part of the Identification and Evaluation of Alternative Solutions (**Section 5**).

3. **Alternative 3: Construction a new 115 kV transmission line parallel to the existing line**

The construction of a new transmission line is considered a technically feasible alternative and was considered as part of the Identification of Evaluation of Alternative Solutions (**Section 5**).

1.4 Approval Process and Regulatory Requirements

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

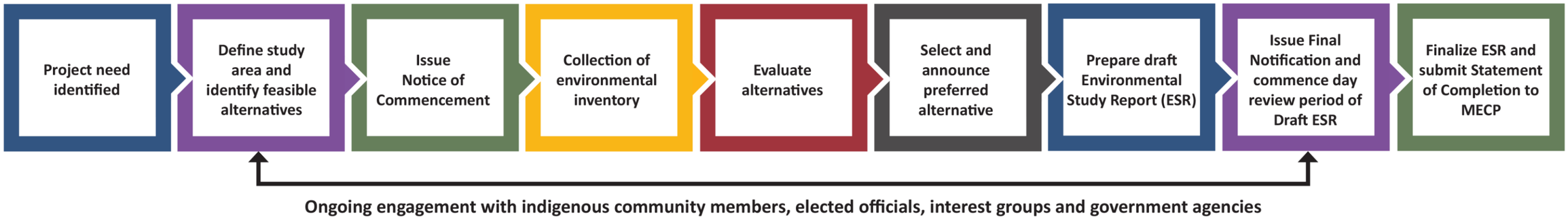
1.4.1 Class Environmental Assessment Process

This ESR has been prepared in accordance with the Class EA for Minor Transmission Facilities (Hydro One, 2016), an approved planning process under the EA Act. Components of the process include:

- Establish need (Section 1.1)
- Identify and evaluate “alternatives to” the undertaking (**Section 1.3**)
- Define Study Area (**Section 2.0**)
- Issue initial notification (**Section 3.1**)
- Conduct an environmental inventory (**Section 4.0**)
- Identify and evaluate “Alternative Solutions” (**Section 5.0**)
- Select preferred Alternative (**Section 5**) and prepare draft ESR
- Issue final notification and the draft ESR for public review and comment (**Section 3.9**).
- File final ESR and Class EA Statement of Completion with the MECP and proceed with the undertaking
- Conduct consultation throughout the process (**Section 3.0**)

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

Figure 1-2: Class Environmental Assessment Process



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

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

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

a. The planning, design and construction required to modify or upgrade a transmission line, and the subsequent operation, maintenance and retirement of the revised line where:

    i. The work requires replacement of poles, or towers and/or changes in the right of way (RoW) for existing transmission lines capable of operating at a nominal voltage of equal to or greater than 115 kV and equal to or less than 500 kV

    ii. The modified or upgraded existing lines would operate at a nominal voltage of equal to or greater than 115 kV, and equal to or less than 500 kV (nominal voltage).”

Hydro One issued notifications of the draft ESR review period to municipal, provincial and federal government officials and agencies, Indigenous Communities, potentially affected and interested persons, and interest groups. The draft ESR was made available for public review and comment for a period of 30 calendar days, from October 18, 2021 until November 19, 2021. Hydro One has responded to comments raised by concerned parties during the draft ESR review period. Any issues and their respective resolutions are documented and summarized in this final ESR.

As outlined by recent Provincial government amendments, a request may be made to the Ministry of the Environment, Conservation and Parks (MECP) for an order requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed). A request may also be submitted that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. The MECP will not consider requests on other grounds. No Part II order requests were received during the 30-day review period.

A copy of this final ESR has been placed on the Hydro One Project website (www.HydroOne.com/A8KA9K), and a copy has been provided to the Environmental Assessment Branch (EAB) and the appropriate Regional EA Coordinator at MECP for filing. The proposed Project is now considered acceptable and can proceed as outlined herein.

1.4.2 Other Permits, Licenses and Approvals

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

As stated in Section 62(1) of the Planning Act (R.S.O. 1990, c. P.13), "An undertaking of Hydro One Inc. that has been approved under the EA Act is not subject to this Act." While the proposed Project is not subject to the Planning Act after completion of the Class EA, Hydro One has been working with the Town of Iroquois Falls, Township of Black River-Matheson and Town of Kirkland Lake during the Class EA process and will continue to consult with these municipalities regarding design, and potential construction effects on local traffic and nearby communities, as needed.

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

Permit, License, or Approval	Primary Agency	Description
Section 92 Leave to Construct	Ontario Energy Board (OEB)	Will be obtained as a requirement for the ampacity increase.
Mitigation Plan for Endangered Species Act Registration under the Ontario Regulations 242/08	MECP	Registration under Section 23.18 of O. Reg. 242/08 to ensure regulatory conditions are met in relation to species that are listed on the Species at Risk in Ontario List as an endangered or threatened species within the Project Area.
Archaeological Acceptance Letters	Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)	Stage 2 acceptance is required prior to undertaking new ground disturbance in areas with archeological potential.

Permit, License, or Approval	Primary Agency	Description
Entrance Permit	Ministry of Transportation (MTO)	Required for new permanent and temporary entrances onto any provincial Highway corridor.
Encroachment Permit	MTO	Required for works within provincial Highway corridors.
Land Use Permit	MTO	Required for potential laydown yard requirements.
Noise By-law Exemption	Town of Iroquois Falls, Township of Black River-Matheson and Town of Kirkland Lake	An exemption may be required if the operation of construction equipment occurs outside of the noise-by-law curfew.
Road Entrance Permits	Town of Iroquois Falls, Township of Black River-Matheson and Town of Kirkland Lake	Required to construct potential new entrances for access to a construction site from existing municipal roads.
Fisheries Act Authorization	Fisheries and Oceans Canada (DFO)	May be required for in-water construction works or works that have potential to adversely affect fish or fish habitat.
Crown Land Work Permit	Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF)	May be required for work on Crown lands.
Notice of Work	Rail Companies	May be required for crossings of federally regulated rail lines.
Clearance Letter	Utility companies	Required to cross utilities (e.g. natural gas or oil pipelines).

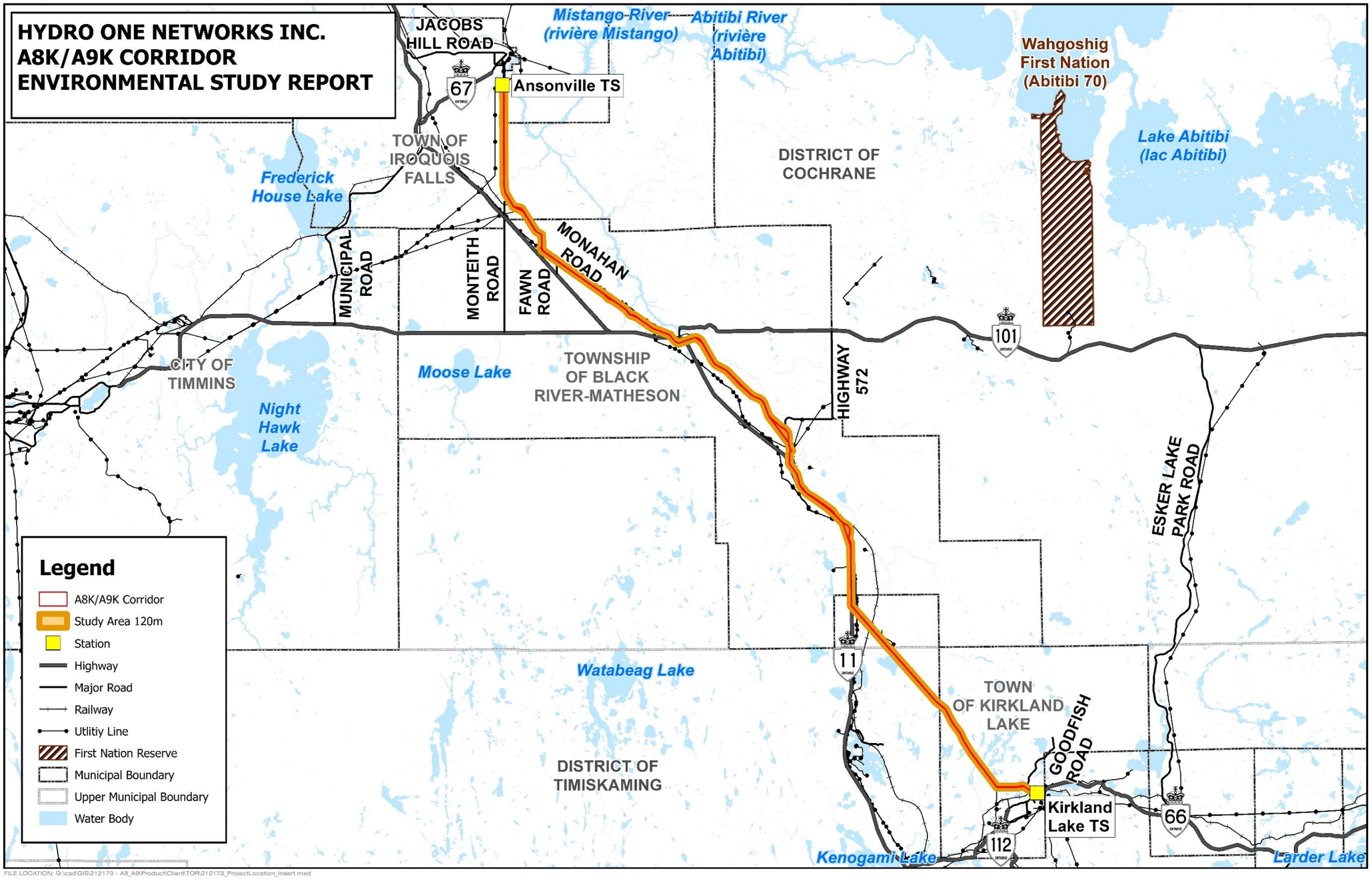
In the event that other permits are identified as required, Hydro One and/or the Engineering, Procurement and Construction Contractor (EPC) will work with applicable regulators to ensure compliance.

2 Study Area

The Project Study Area was delineated to include lands within 120 m of each side of the existing 90 km long, 115 kV transmission line from the Kirkland Lake TS to the Ansonville TS. The Project Study Area was selected to encompass the area of potential future asset location as a mechanism to document baseline conditions to support the effects assessment (**Section 7**). The Project Study Area includes the existing ROW and adjacent lands where technical studies and field investigations were completed for the purposes of documenting baseline existing conditions (**Figure 2-1**).

Additional information beyond the Project Study Area is provided for desktop reviews (e.g. 500 m) and some environmental features (such the socio-economic environment and cultural heritage) where additional context is appropriate (e.g. regional assessments for socio-economic factors).

Figure 2-1: Study Area



3 Consultation

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

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

The consultation process for this Project incorporated methods to encourage two-way communication involving: Indigenous communities, local elected officials, provincial and municipal government agencies, potentially affected and interested persons and businesses, and interest groups. The Project contact list is provided in **Appendix A**.

To facilitate comprehensive, transparent and adequate consultation and engagement, the consultation process consisted of:

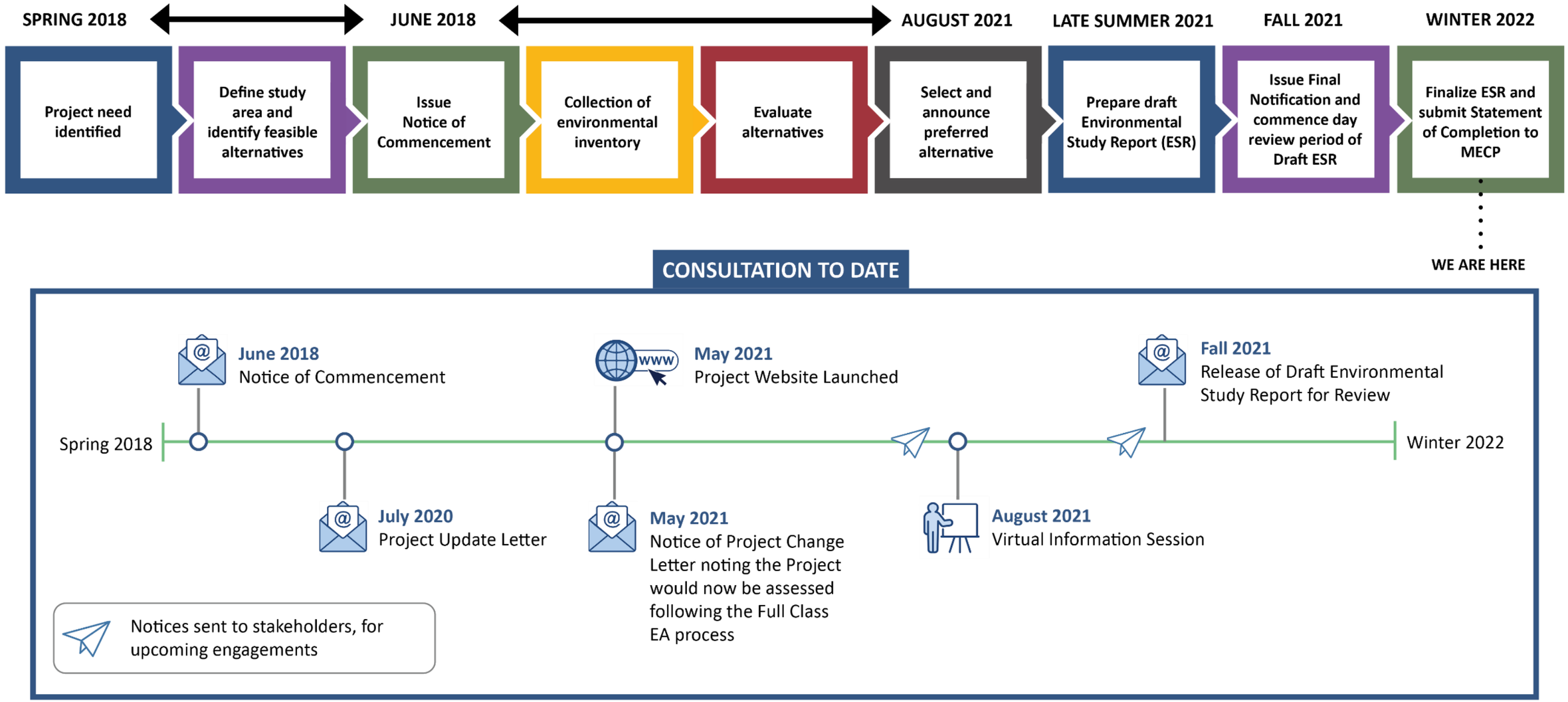
- Notification letters and flyers to announce and provide updates on the Project. Notices were sent via Canada Post admail campaigns to target all available postal routes within the Project Area, as well as emails to the Project contact list.
- Municipal correspondence informing on project updates and invitation to the Virtual Information Centre.
- Advertisements in local news publications announcing the Virtual Information Centre and inviting residents to join.
- One Virtual Information Session (VIS), which consisted of an online virtual meeting and live discussion.

- Meetings, video conference calls and correspondence with Indigenous Communities and other stakeholders who expressed specific interests or concerns.
- Establishment of a Project contact list, through which interested parties received Project updates via email.
- Dedicated Community Relations representatives and email address.
- Establishment and maintenance of a project website at www.HydroOne.com/A8KA9K which allowed for the sharing of project information and updates.

The results of the consultation program are summarized in the sections below. Input was considered by the Project team and incorporated into the Project planning, where considered feasible and reasonable. Copies of consultation materials such as notices, notification letters, and VIS presentation slides are provided in **Appendix B**. A copy of the Projects Record of Consultation log is provided in **Appendix C.**

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

Figure 3-1: Consultation Timeline



3.1 Notice of Commencement

The Notice of Commencement was distributed to the Project contact list in June 2018. The Notice introduced and provided details on the proposed Project, and solicited questions and comments to be provided to Hydro One. As detailed in the Notice of Commencement, the Project was initially assessed following the Class EA Screening Process. Following the Notice of Commencement, Hydro One voluntarily changed to the project to follow a full Class EA process (refer to **Section 3.3**). Copies of the Notice of Commencement were distributed as follows:

- Hydro One issued the Notice of Commencement to Indigenous communities by email and registered mail on June 25, 2018.
- Beginning July 16, 2018, the Notice of Commencement was sent via email to elected officials, government agencies, interest groups and businesses.
- The Notice of Commencement was issued to homes and businesses within the Project Area as admail by Canada Post during the week of July 16, 2018.

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

3.2 Project Update Letter (2020)

A Project Update Letter was sent to the Project contact list, providing an update on the Project, including the addition of a new section to the Project Study Area. The Project Update Letter solicited questions and comments to be provided to Hydro One. Copies of the Project Update Letter were distributed as follows:

- Hydro One issued the Project Update Letter to Indigenous communities by email on July 8, 2020.
- Hydro One issued the Project Update Letter via email to elected officials, government agencies, interest groups and businesses beginning on July 30, 2020.
- The Project Update Letter was issued to homes and businesses within the Project Area as admail by Canada Post during the week of August 10, 2020.

Refer to **Appendix B** for the 2020 Project Update Letter materials.

3.3 Notice of Project Change Letter (2021)

A Notice of Project Change Letter was sent to the Project contact list, providing an update following previous notices. It was noted in the Project Change Letter that while

the Project was initially being assessed following the Class EA Screening Process, based on feedback received the Project would be assessed following the Full Class EA process. Copies of the Project Change Letter were distributed as follows:

- Hydro One issued the Notice of Project Change Letter to Indigenous communities by email on May 27, 2021.

Hydro One issued the Notice of Project Change Letter via email to elected officials, government agencies and officials, interest groups and businesses beginning on May 28, 2021.Refer to **Appendix B** for the 2021 Notice of Project Change Letter materials.

3.4 Virtual Information Session

A Virtual Information Session (VIS) was scheduled to be held on August 25, 2021. The Notice inviting Indigenous communities and stakeholders to attend the VIS was distributed as follows:

- Hydro One issued the Notice to Indigenous communities beginning August 4, 2021, by email.
- The Notice of the VIS was sent via email to elected officials, government agencies, interest groups and businesses beginning August 4, 2021.
- The Notice was issued to homes and businesses within the Project Area as admail by Canada Post during the week of August 9, 2021. This notice also contained information regarding the Project Change to a Full Class EA.
- Advertisements were placed in the Cochrane Times Post, Iroquois Falls Enterprise and Kirkland Lake Northern News This Week promoting the VIS and inviting community members to join.

Refer to **Appendix B** for the Notice of VIS #1 materials.

3.4.1 Virtual Information Session Summary

A VIS was held on August 25, 2021 from 6:00pm – 7:30pm. The session was scheduled to provide interested stakeholders with an opportunity to learn more about the Project, Indigenous consultation, the Class EA process, Environmental investigations and studies, the evaluation of feasible alternatives and next steps.

The session was presented through a virtual forum and listeners could register and view the live stream of materials (**Appendix B**) and/or call-in to listen to the presentation. Listeners were able to submit their questions in advance or dial-in to join a queue for live questions. The virtual session included a panel of Hydro One representatives and a

moderator. A presentation was given by Hydro One with information panels providing details on:

- Project location
- Schedule
- Class Environmental Assessment process
- Environmental investigations and studies being completed
- Indigenous engagement activities
- The evaluation of feasible alternatives
- Key project milestones
- Next steps

In total, 10 attendees joined the VIS and the Hydro One panel responded to live questions. Participants were interested in details on if structure locations would be moved as a result of this project, if there would be residential power outages and if there would be increased exposure to Electric Magnetic Fields (EMF) as a result of this work. Hydro One project team members were able to speak to these questions and offered participants with contact information for the Hydro One Community Relations team for any further questions on the project.

A separate VIS has also been requested by First Nation Community, TTN, however, a date has not been confirmed by the community. Hydro One is committed to providing the VIS as requested once a date is selected.

3.5 Indigenous Communities

Consultation with Indigenous communities is an important part of the engagement requirements of the Class EA process. Hydro One consulted with the following communities throughout the Class EA process.

- First Nation Communities:
    - Beaverhouse First Nation
- Matachewan First Nation
- Taykwa Tagamou Nation
- Wahgoshig First Nation
- Métis Nation of Ontario:
- Northern Lights Métis Council
- Timmins Métis Council
- MNO Consultation Unit

These communities were identified by Hydro One based on their proximity to the Project Area and their anticipated interest in the project. The Indigenous community consultation and engagement process was implemented to promote a comprehensive, transparent and meaningful consultation approach. The process included:

- Sending Notice of Class EA commencement via email and direct mail, follow-up to ensure notice was received.
- Emails of notifications and updates on the Project throughout the Class EA process, including follow-up by phone and email.
- Meetings, conference calls and correspondence with representatives of interested Indigenous communities.
- Sharing of requested project documents with interested indigenous community.
- Offer to host project information sessions with Indigenous communities in addition to the public VIS.
- Supporting participation in project work such as monitoring in archaeological assessments.
- Dedicated Indigenous Relations representatives.
- Establishment and maintenance of a project website (www.HydroOne.com/A8KA9K), allowing for the sharing of project information and updates.
- Capacity funding was provided to interested indigenous communities.
- Making procurement opportunities available through the EPC contractor.

As outlined in **Sections 3.1 to 3.4**, Hydro One issued Project notifications and maintained direct correspondence with Indigenous communities throughout the Project.

Ongoing correspondence with Indigenous Communities is included in the Record of Consultation (**Appendix C**).

3.5.1 Indigenous Community Consultation

3.5.1.1 Beaverhouse First Nation

On June 25, 2018, Hydro One sent Beaverhouse First Nation (BFN) a Notice of Commencement via email and hard copy by Canada Post registered mail confirming initiation of the Class EA for refurbishment of the existing 115 kV transmission infrastructure on circuits A8K/A9K. On July 26, 2018, Hydro One called BFN to confirm receipt of the Notice of Commencement; BFN requested the notice be re-sent and Hydro One re-sent the Notice to the Chief on the same day.

Hydro One emailed BFN on July 8, 2020, to provide a Project update. The Project Update notice detailed the proposed Project undertaking and the streamlined Class EA Screening process. Hydro One welcomed BFN's comments and feedback. Hydro One emailed BFN on July 8, 2020 to inform them that a Request for Proposal (RFP) for procurement opportunities related to the project had been published and will be available until August 14, 2020. Hydro One followed up via phone call and email on August 5, 2020 to ensure that BFN had received the Project Update notice. BFN responded to Hydro One on August 6, 2020, with contact information to be used on future correspondence.

On November 25, 2020, Hydro One emailed BFN to inform them that Hydro One has awarded Forbes Bros Ltd. to undertake some project planning work and to provide regulatory support. Hydro One also provided contact information for Forbes Bros Ltd. for project contracting opportunities.

On May 27, 2021, Hydro One emailed BFN a letter providing a Project Update and indicated that based on feedback received during the Class EA Screening Process, Hydro One will now assess the project following the Full Class EA Process.

A Notice of VIS was sent by email to BFN on August 4, 2021, stating the VIS would be held on August 25, 2021.

Hydro One spoke with BFN's reception on August 24, 2021 to remind the community of the public VIS, and was advised to follow up via email, which was sent out the same day. Hydro One emailed Chief Wabie on September 23, 2021, and provided an update on the project. In the email, Hydro One also informed Chief Wabie of a number of beaver dams located on some of the watercourses identified as a crossing. Hydro One inquired whether a trapper from BFN would be interested in assisting with the beavers.

3.5.1.2 Matachewan First Nation

It is noted that Matachewan First Nation (MFN) is a member Nation of Wabun Tribal Council (WTC). WTC was present at several engagement activities with MFN throughout the Class EA.

On June 25, 2018, Hydro One sent MFN a Notice of Commencement via email and hard copy by Canada Post registered mail confirming initiation of the Class EA for refurbishment of the existing 115 kV transmission infrastructure on circuits A8K/A9K. On July 26, 2018, Hydro One called MFN to confirm receipt of the Notice of Commencement. On August 3, 2018, MFN sent a letter to Hydro One thanking Hydro

One for the notice and requesting a meeting to discuss the project. MFN provided dates for a meeting to take place.

On August 28, 2018, Hydro One met with MFN at their band office to discuss the project and any opportunities for First Nation involvement in the project. Representatives from WTC also attended. It was mentioned in the meeting that WTC was there to support MFN on engaging on this project. It was noted that the WTC have businesses and are interested in procurement opportunities on this project Hydro One committed to following up with a list of Qualified Service Providers. On August 30, 2018, Hydro One emailed MFN to thank them for meeting and provided a list of Qualified Service Providers. MFN responded on the same day via email indicating that they are hopeful MFN can participate in the project and provided a website which gives general overview of the company, Niiwin.

On October 29, 2018, Hydro One sent a follow up email to inform the community that they will work with the interested communities to award brush clearing work associated with the project. Hydro One also confirmed that the Request for Proposal for the construction of the project will have indigenous participation verbiage and they encourage all interested communities to participate.

Hydro One emailed MFN on July 8, 2020, to provide a Project update. The Project Update notice detailed the proposed project undertaking and the streamlined Class EA process. Hydro One welcomed MFN's comments and feedback. Hydro One emailed MFN on July 8, 2020 to inform them that the Request for Proposal for A8K/A9K has been published and will be available until August 14, 2020. Hydro One also indicated that there is a mandatory requirement to sub contract clearing and brush removal on the project to MFN and Taykwa Tagamou Nation. The successful proponent will work directly with the communities in defining the scope of work of the brush removal. Hydro One followed up via phone call and email on August 5, 2020 to ensure that MFN had received the Project Update notice. MFN responded to Hydro One on August 6, 2020, and indicated that no feedback has been received regarding the Project and they have no comments or questions.

On November 25, 2020, Hydro One emailed MFN and Wabun Tribal Council to inform them that Hydro One has awarded Forbes Bros Ltd. to undertake some project planning work and to provide regulatory support. Hydro One provided the contact information for Forbes Bros Ltd. for project contracting opportunities. Following this email, there was follow-up correspondence regarding Hydro One's RFP process between WTC and

Hydro One in November and December 2020 and January 2021 followed by a meeting in February 2021.

On May 27, 2021, Hydro One emailed MFN a letter providing a Project Update and indicated that based on feedback received during the Class EA Screening Process, Hydro One will now assess the project following the Full Class EA Process.

A Notice of Virtual Information Session was sent by email to MFN on August 4, 2021, stating the VIS would be held on August 25, 2021.

Hydro One spoke with MFN on August 24, 2021 to remind the community of the public VIS, and was advised to follow up via email, which was sent out the same day.

Hydro One emailed MFN on September 23, 2021, and provided an update on the Project. Hydro One informed the community of a number of beaver dams located on some of the watercourses identified as a crossing. Hydro One inquired whether a trapper from MFN would be interested in assisting with the beavers.

3.5.1.3 Taykwa Tagamou Nation

On June 25, 2018, Hydro One sent TTN a Notice of Commencement confirming initiation of the Class EA for refurbishment of the existing 115 kV transmission infrastructure on circuits A8K/A9K. On July 26, 2018, Hydro One called and emailed TTN to confirm receipt of the Notice of Commencement. Hydro One and TTN met on August 27, 2018 to discuss the scope of the project.

On July 26, 2018, TTN sent an email requesting details related to the project. Hydro One responded via email on July 27, 2018, seeking the opportunity for further discussions. On October 29, 2018, Hydro emailed TTN notifying them that a brush clearing contract for the project would be awarded to interested communities and that a workplan would be provided.

On January 25, 2019, Hydro One and TTN had a teleconference call to discuss the project, TTN expressed concerns with this project, requested capacity funding to engage in the project and requested an in-person meeting to discuss the project in detail. Hydro One followed up to schedule meetings and requested capacity funding proposal from TTN.

On March 3, 2019, Hydro One received a letter from TTN requesting a meeting to discuss their issues with multiple project including the A8K/A9K project. Hydro One responded on March 4, 2019 indicating that the project was in design phase and

reiterated that the project was undergoing the Class EA process. TTN and Hydro One met on May 24, 2019 to discuss the project. TTN requested information on any environmental reports that have been completed. Following the meeting Hydro One provided available environmental reports via email.

On June 11, 2019, TTN sent Hydro One a letter indicating that TTN had not been formally consulted on the project and requested a meeting. Hydro One responded via email on June 12, 2019 offering to meet with TTN to discuss the project.

On August 26, 2019, TTN requested all Hydro One work in their territory be temporarily paused.

On September 27, 2019, Hydro One sent an information package via registered mail containing project details sent to TTN previously including the Class EA Notice of Commencement letter, general project map, draft Class EA screening criteria checklist and project information as per section 5.1 of TTN's engagement protocol.

On November 16, 2019, TTN sent Hydro One a letter stating that no reasonable Duty to Consult engagement had occurred between the Crown, Hydro One (by way of delegated authority), and TTN.

On November 18, 2019, Hydro One sent the engagement agreement with TTN including Hydro One's comments to OKT Law. On November 18, 2019, Hydro One and TTN had a meeting where TTN shared their objective to explore and enter into a partnership arrangement. Hydro One expressed concern at engaging in this type of partnership in the context of existing projects, including refurbishments. TTN noted their willingness to engage, history and record of open engagement, and further noted the lack of meaningful engagement to date by Hydro One.

In November and December of 2019, Hydro One and TTN continued to work on an engagement agreement for capacity funding.

On January 27, 2020, Hydro One followed up via email if TTN had any comments to share on the engagement agreement. Hydro One requested a meeting to discuss potential impacts of the work and procurement opportunities on the construction phase of the projects.

On January 8, 2020, a letter was sent from TTN that stated the projects would be harmful to TTN Lands, rights and cultural heritage and do not consent to projects in their territory. In March and April of 2020, Hydro One and TTN worked to set up a meeting, citing a teleconference was most appropriate given the pandemic situation.

A teleconference call took place on April 9, 2020 to discuss that both parties were interested in establishing a mutually beneficial relationship. Key contacts were provided to Hydro One for further discussions.

On April 28, 2020, Hydro One had another call with TTN to discuss next steps and to work on information sharing agreement with Hydro One on the documents Hydro One had previously shared with TTN. Hydro One also agreed to cover expenses incurred by TTN for work associated with the review of Hydro One documents and engagement with Hydro One. On the same day, Hydro One received an email from TTN with TTN's engagement protocol.

On May 4, 2020, Hydro One received a letter from TTN outlining their concerns.

On May 6, 2020, Hydro One had a teleconference call with TTN to discuss the letter and an update on the project. Hydro One requested feedback from TTN on previously shared documents for the project.

On May 21, 2020, Hydro One had a teleconference call with TTN. TTN indicated they would send initial engagement agreement for Hydro One's consideration as well as seek reimbursement of expenses associated with work undertaken by consultants.

On May 27, 2020, Hydro One had a teleconference call with TTN. Hydro One provided a project update.

On May 29, 2020, Hydro One received a letter from TTN listing their concerns with the project and requested that Hydro One negotiate and sign an Interim Engagement Agreement with TTN to guide engagement on the project.

TTN emailed Hydro One on June 1, 2020, TTN sent a letter requesting Hydro One enter into an initial engagement agreement with TTN and undertake a Full Class EA Process for the project. They included a copy of the proposed agreement and an updated TTN Engagement Protocol. On June 11, 2020, Hydro One and TTN had a teleconference call to discuss expenses from TTN for the meetings in October and November and Hydro One awaiting feedback on any environmental concerns with the project. Hydro One shared a response letter via email on June 11, 2020 responding to TTN's concerns and stated they were interested in continuing to negotiate an engagement agreement with TTN and did not intend to voluntarily elevate the Class EA Screening Process for the project. On June 12, 2020, Hydro One informed TTN that MECP stated that it was the expectation of the ministry that Hydro One work with TTN regarding TTN's concerns in accordance with the Class EA requirements. TTN provided a response letter via

email on June 16, 2020, to provide clarification and to indicate that they require a protocol for engagement prior to submitting meaningful comments on the Project. TTN shared a list of questions and concerns in the letter.

Hydro One emailed TTN on July 6, 2020, with a revised Interim Engagement Agreement and information packages on the project. The project update letter was also shared with TTN by email on July 8, 2020. Hydro One also emailed TTN on July 8, 2020, to provide a Project update. The Project Update notice detailed the proposed project undertaking and the streamlined Class EA process.

On July 16, 2020, Hydro One and TTN continued to work on an Interim Engagement agreement and to provide information on economic opportunities associated with the project.

On July 31, 2020, Hydro One called OKT Law to discuss next steps on the agreement. In August 2020, Hydro One and TTN continued to develop and Interim Engagement Agreement.

Hydro One emailed TTN on October 19, 2020, and shared a letter stating they have been apprised of TTN's recent letter to Minister Rickford indicating their dissatisfaction with Hydro One's engagement to date. Hydro One reiterated a commitment to building a positive and respectful relationship with TTN and discussed meeting to continue discussions on the project.

On October 29, 2020, Hydro One met with TTN, OKT Law and TTN advisors wherein both parties discussed interest in making progress on the Interim Engagement Agreement and working collaboratively together.

On November 11, 2020, SVS on behalf of TTN, emailed Hydro One noting they will undertake review of the project and requested confirmation of the current status of the Project and additional information related to the project. On November 16, 2020, TTN requested information on a preliminary Environmental Management Plan.

TTN emailed Hydro One on January 27, 2021, expressing concerns with the Class EA process for the project and that TTN is requesting an elevation of the project to a Full Class EA. expressed concerns with the EA classification of the project. Hydro One emailed TTN on February 5, 2021, and reiterated Hydro One's commitment to building a long-term positive relationship with TTN and. a commitment to discuss their interests and concerns with respect to the Project and to further establish an IEA.

On March 12, 2021, TTN emailed Hydro One to request that Hydro One provide capacity funding for a Traditional Knowledge and Land Use Study (TKLUS).

Hydro One met with TTN via virtual meeting on April 20, 2021 to discuss next steps and TTN's interest in Hydro One projects, including proposed TKLUS and capacity funding/collaboration opportunities. On May 5, 2021, TTN emailed Hydro One with a letter reiterating their concern regarding the project and seeking commitment from Hydro One to fund a TKLUS. On the same day, Hydro One had a phone call with TTN to discuss the letter and committed to voluntarily elevate the project to a Full Class EA process. Hydro One also indicated that they would like to support TTN with the TKLUS. It was proposed that TTN and Hydro One would have a technical meeting to discuss more of the technical aspects of the project in depth.

On May 12, 2021, Hydro One emailed TTN with a TK funding agreement and indicated they look forward to advancing collaboration efforts through the TK agreement and proposed technical meetings to discuss TKLUS workplan and timelines.

On May 27, 2021, Hydro One emailed TTN a letter providing a Project Update and indicating that based on feedback received during the Class EA Screening Process, Hydro One will now assess the project following the Full Class EA Process.

Hydro One met via virtual meeting with TTN on June 4, 2021 to discuss the details regarding the TKLUS agreement. Hydro One emailed TTN on June 7, 2021, and thanked them for meeting with them. Hydro One shared the schedule for the Project noting there may be changes pending regulatory approvals. On June 18, 2021, Hydro One emailed TTN to provide the proposed TKLUS funding agreement with Hydro One's comments. Hydro One also provided a map of water crossings where assessments will be undertaken.

A Notice of VIS was sent by email to TTN on August 6, 2021, stating the VIS would be held on August 25, 2021.

A Technical Meeting was held with TTN on August 18, 2021, during which Hydro One shared a presentation and received comments from SVS and TTN. The presentation slides were shared by email on August 25, 2021.

On September 2, 2021, Hydro One provided TTN with details on the Stage 2 Archaeological Assessment. On September 3, 2021, TTN requested via email that Hydro One provide capacity funding for an independent third party archaeologist to participate in field monitoring of Stage 2 Archaeological Assessment activities. On

September 9, 2021, Hydro One followed up with TTN SVS on this request and confirmed that they have committed to capacity funding for a monitor position in addition to capacity funding for a TKLUS and requested a brief meeting to discuss further.

A virtual meeting was held on September 10, 2021 to discuss the archaeological assessment and TTN's request for a third-party archaeologist. Hydro One indicated that this would not be possible and that they would accommodate two monitors from the community to assist in the archaeological assessment fieldwork.

On September 15, 2021, TTN provided a technical review of Hydro One's Natural Environment Study Report for the project. Comments and Hydro One responses from the technical review can be found in **Appendix E**.

On September 23, 2021, TTN provided a technical review of Hydro One's Aquatic Habitat Crossing Assessment Report for the project. Comments and Hydro One responses from the technical review can be found in **Appendix E**.

As part of the Class EA, TTN reviewed and provided comments on the following documents which can be found in **Appendix E**:

- ESA Mitigation Plan
- Natural Environmental Study Report
- Aquatic Habitat Crossing Assessment Report.

Technical Meeting #2 was held on October 6, 2021. Discussions included updates on Stage 2 Archaeological Assessment fieldwork, formal responses to the ESA Mitigation Plan, Natural Environment Report and Water Crossing Assessment Report, as well as monitoring and fieldwork involvement opportunities.

Technical Meeting #3 was held on November 17, 2021. TTN and SVS provided initial comments on the draft ESR noting that formal comments would be submitted for the November 19, 2021 deadline. TTN confirmed their continued interest in hosting a virtual information session for the project. A date for the VIS would be confirmed in the future.

November 19, 2021, SVS submitted comments on behalf of TTN for the draft ESR. A table summarizing TTN comments and recommendations and Hydro One's responses is provided in **Appendix C1**. Following receipt of the comments a fourth technical meeting was held on December 8, 2021, to discuss Hydro One responses to the comments and outline changes made to the ESR to reflect TTN comments.

At the December 8, 2021 technical meeting, TTN requested that the ESR not be finalized until at least January 14, 2022, to allow time for further conversation and discussion on commitments of importance to TTN. Hydro One agreed to not file the final ESR until at least January 14, 2022 and a fifth technical meeting was schedule with TTN and SVS for January 12, 2022. The fifth technical meeting, held on January 12, 2022, reviewed the final commitments table which Hydro One agree to include in the final ESR (**Table 3-1**). All parties were satisfied with the outcome of the commitments and agreed to move ahead with filing the final ESR.

Table 3-1: TTN Commitments Table

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requests that HONI immediately provide a description of all activities planned as part of the A8K/A9K project. This should include a list of access roads, borrow pits and crossings (including temporary crossings) that will be constructed. Moreover, HONI should provide clarity regarding what physical structures will be replaced or modified.	HONI commits to following up with TTN on any future schedule updates related to activities for the A8K/A9K Transmission Line Refurbishment Project.
TTN requests that HONI provide a summary of all activities planned, with accompanying EPPs, for review and comment at least eight weeks in advance of construction, and a summary of all activities completed through the lifespan of the Project.	HONI commits to sharing the final EMP with TTN for a review period of 3 weeks, following a Workshop Meeting focused on EMP revisions scheduled for Jan 27, 2022.
TTN requests that HONI to provide a complete list of watercourses within the study area. For each watercourse HONI should provide descriptions of whether crossing is expected, types of existing structures, new structures anticipated, whether in-water work or fording is necessary, anticipated timing of crossings, and mitigation measures to be implemented. TTN requests a complete access plan with information on watercourse crossing installation plans, access road construction/upgrades (both on and off the ROW), and information about decommissioning of access and watercourse crossings. HONI must engage with TTN, MENDM and MECP to evaluate how this communication failure regarding the potential grading may impact the screening process for the A8K/A9K transmission line screening Class EA. It is TTN's position that this approval be revoked and that a full category B Class EA be completed.	HONI commits to providing final access plans and watercourse crossing once verified after field investigations

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requests that all relevant plans, permit applications, and active permits be provided to TTN for their review and comment.	HONI commits to providing relevant plans and permit applications to TTN for their review. HONI will provide permit applications to TTN for a review period of 30 days in advance of regulatory submission with exception of MNRF watercourse crossing permits. However, TTN Lands and Resources Department will be included on application correspondence.
HONI must engage with TTN, MENDM and MECP to evaluate how this communication failure regarding the potential grading may impact the screening process for the A8K/A9K transmission line screening Class EA. It is TTN's position that this approval be revoked and that a full category B Class EA be completed.	If grading is required, HONI commits to providing details, including mitigation measures and monitoring, to TTN which will also be included in the final EMP.

Issue/Comment Raised by TTN	Hydro One Commitment
HONI must provide a draft work permit for each temporary or permanent watercourse crossing. Work must be completed outside the timing window guidelines for northeast Ontario (MNRF, 2013), which will be informed by the species which are likely to occur in each watercourse.	HONI commits to following the in-water works timing windows (April 1 to June 20 in the spring and September 1 to June 15 in the fall) for establishing new watercourse crossings. Where watercourse crossings may need to be established during a restricted timing window, HONI will work with the local MNRF office through the permitting process to ensure that all appropriate mitigation measures are in place. HONI will provide copies of permits including conditions and restrictions and will include TTN's Lands and Resources Department on any correspondence with MNRF. HONI commits to providing a 3-week review period.

Issue/Comment Raised by TTN	Hydro One Commitment
HONI must commit to performing removals outside of the breeding bird season to ensure that bird species listed under the Migratory Birds Convention Act (Government of Canada, 1994) are protected.	HONI commits to complete any required brush clearing work outside of the migratory bird breeding season (April 15 to August 31). If brush trimming or clearing activities are required during the migratory bird breeding season, HONI will have a qualified person on site to conduct nest surveys and breeding bird point counts in compliance with the Migratory Birds Convention Act. Prior to beginning work at a new location, a qualified person will be responsible for conducting nest sweeps in the area. HONI commits to completing nest sweeps within 24 hours in advance commencing activities.
TTN requests a description of mitigation measures planned for activities that will occur within 30 m of watercourses, for crossings, and for in-water works. It is expected that this information will be found within HONI's EPPs.	HONI along with their contractor Forbes will produce site-specific mitigation plans to eliminate potential impacts to water resources that are located less than 30m from work sites. Hydro One will provide descriptions of mitigation measures in place for watercourse crossings, to be established through the permitting process. HONI commits to providing a 3 weeks review period following a Workshop Meeting focused on EMP revisions scheduled for Jan 27, 2022.

Issue/Comment Raised by TTN	Hydro One Commitment
HONI must include TTN community members as Environmental Monitors and provide them with industry-standard training. This direct oversight and monitoring will allow TTN to have greater confidence that environmental compliance with permits/approvals is occurring and that appropriate mitigation measures are being implemented.	HONI commits to accommodating TTN on pre- and/or post-construction site visits to areas where TTN feels there is an environmental concern.
HONI must share the Stage 2 Archaeological Assessment, Department of Fisheries and Oceans Letter of Authorization – Temporary Water Crossings, and Ministry of Natural Resources and Forestry Work Permit – Temporary Water Crossings with TTN for their review and comment. This will give TTN greater confidence that the sensitive environmental and cultural heritage features within and surrounding the Project Area are being protected. Please include a recommendation that any subsequent archaeological research include TTN archaeological monitors. HONI should provide capacity funding for monitors to participate.	HONI commits to inviting TTN as archaeological monitors, through Forbes, for Stage 2 Archaeological Assessments. If subsequent archaeological fieldwork is required, Forbes will invite TTN archaeological monitors to be present during this fieldwork and will provide funding to do so. HONI will provide 30 days' notice regarding archaeological fieldwork and the need for associated archaeological monitors, should additional work be required.
Include a recommendation that Indigenous communities, including TTN, should be consulted regarding where archaeological material is to be stored should any archaeological materials be identified.	HONI commits to consulting with TTN regarding where archaeological materials will be stored, if findings are discovered during Archaeological Assessments. HONI commits to transferring archaeological material to an appropriate repository and notifying TTN before transferring the archaeological material to any other appropriate repository.

Issue/Comment Raised by TTN	Hydro One Commitment
As described in section 3.4, the potential effects to cultural heritage should be evaluated through additional studies by a qualified person. Moreover, as described in section 3.5, there is a need to complete a project specific TTN-led traditional land use study to provide the necessary certainty to assess impacts on cultural heritage resources. The Proponent should provide funding for an Indigenous Knowledge and Land Use and Occupancy Study for TTN. The results should be considered as part of the Class EA process, and included within an addendum to the archaeological assessment. HONI should provide funding for project specific TTN-led traditional land use study. The results should be considered as part of the Class EA process. HONI should engage with TTN to discuss appropriate mitigation or accommodation for any potential impacts identified through the traditional land use study.	TTN commits to funding a TKLUS study
Please provide the results of the geotechnical surveys and clarification on structure replacements once the information is available.	HONI commits to providing the results of the geotechnical surveys and clarification on structure replacements when information becomes available in summer 2021.
Evaluating the potential for conflict between the Project and TTN's goals, objectives and plans should have been completed prior to HONI completing the Environmental Screening process. As TTN has noted previously, HONI is not in a position to determine if they are proceeding in conflict with the TTN Engagement Protocol: A Path to Community Consent. As the impacted community, TTN firmly believes the Project is proceeding in conflict with A Path to Consent. While the work is being done on existing right-of-way, there was never any accommodation or agreement with TTN for the initial clearing and construction. Furthermore, the screening process being undertaken by HONI is too opaque, too rushed, and does not provide sufficient opportunity for consultation and engagement.	HONI commits to engaging with TTN throughout the Class EA and after the EA is filed to address TTN's comments and concerns.

Issue/Comment Raised by TTN	Hydro One Commitment
TTN appreciates that HONI is planning to complete vegetation and brush removal outside of the migratory breeding bird season. In the event that brush trimming or clearing activities are required during the migratory bird breeding season, please provide TTN with notification prior to these activities occurring. In addition, please provide the results of all nest sweeps completed as part of the Project.	HONI commits to informing TTN in the event that brush clearing or trimming activities are required during the migratory bird breeding season and will provide the results of all nest sweeps completed.
TTN appreciates that HONI will be provided a detailed SAR training session to all employees. It is suggested that this training also include the identification of SAR habitat, where applicable (e.g., identification of roosting habitat for Myotis spp.). In addition, as noted in TTN's initial comment, it is expected that TTN will be also be notified in the event that mitigation measures require adaptation to ensure impacts to SAR are minimized.	HONI commits to notifying TTN in the event that mitigation measures require adaptation to ensure that impacts to SAR are minimized
HONI has not committed to providing community members with opportunities to be involved in training and ongoing monitoring of transmission lines. This will provide TTN with opportunities to build community members' capacity, increase transparency around the Project, and allow for effective and timely communication of Project activities to TTN staff and leadership.	HONI commits to providing TTN with monitoring opportunities including archaeological monitoring, environmental monitoring, pre-construction site visits and post-construction site visits.

Issue/Comment Raised by TTN	Hydro One Commitment
TTN does not agree with HONI's assertion that no further assessments for the Project are required. TTN notes that many of the baseline studies completed for the Project were desktop based. While desktop surveys do provide a good starting point for identifying potential impacts of the Project, this information must be ground-truthed through field-based surveys. Since construction of the A8K/A9K transmission line, SAR may have colonized habitats along the right of way. Modification of the habitats present within the existing footprint and associated construction activities could potentially cause impacts to SAR and SAR habitat. This is of serious concern to TTN as SAR and their associated habitat are vulnerable and important components of the natural environment. HONI must confirm the presence of SAR/SAR habitat through field-based surveys prior to any construction activities commencing.	HONI will perform pre-construction surveys in the field to verify every site before construction crews enter the site to assess and document pre-existing conditions.
TTN appreciates that HONI will be provided a detailed SAR training session to all employees. It is suggested that this training also include the identification of SAR habitat, where applicable (e.g., identification of roosting habitat for Myotis spp.). In addition, as noted in TTN's initial comment, it is expected that TTN will be also be notified in the event that mitigation measures require adaptation to ensure impacts to SAR are minimized.	HONI commits to ensuring all employees on the project participate in a detailed SAR training session which will outline potential SAR, SAR habitat, species identification, mitigation measures, and reporting requirements including during tailboard meetings
HONI notes that a Stage 2 Archaeological Assessment will be conducted in areas where ground disturbance activities may be occurring, which alludes to the need for grading. TTN is still awaiting confirmation from HONI if grading will be required for the Project. TTN will work with HONI through a more fulsome EA process to share our knowledge of areas with high archaeological potential through the results of a Traditional Knowledge and Land Use Study, to be funded by HONI.	If grading is required, further archaeological assessments will be performed in the specific area

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requests that HONI state in the ESA Mitigation Plan that if activities that were not previously identified are required to complete the Project, that HONI will notify TTN of these activities and work with our community to understand how these activities may impact our rights, claims and interests, and to update environmental management and monitoring plans, as required.	HONI commits to notifying TTN of any additional project activities or change in project, to engage with the community on any project changes and their impacts and update environmental management and monitoring plans, as required.
TTN requests that HONI note in the ESA Mitigation Plan that any environmental permit applications will be provided to TTN for advanced review and comment ahead of permit submission by HONI. As well, TTN requests that HONI provide at minimum of three weeks for TTN's review once TTN has been provided with a draft permit application.	HONI commits to notifying TTN prior to environmental permit applications being submitted for TTN's review. HONI commits to providing relevant plans and permit applications to TTN for their review. HONI will provide permit applications to TTN for a review period of 30 days in advance of regulatory submission with exception of MNRF watercourse crossing permits. However, TTN Lands and Resources Department will be included on application correspondence.
TTN requests that should any future field studies be required for the Project that TTN is provided at minimum three weeks advanced notice of the study commencing.	HONI commits to notifying TTN in the case that additional field studies are warranted and providing three weeks' notice.

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requests that HONI commit to developing a site-specific mitigation plan where work within 30 meters of the high-water mark is required, and that the ESA Mitigation Plan be updated to reflect this commitment. Site-specific mitigation plans should include a description of planned activities / crossings to occur, erosion and sediment control measures, spill prevention and contingency measures, the proposed reclamation plan for the site, and any follow-up monitoring requirements.	HONI commits to developing a project-specific mitigation plan to be incorporated into the EMP for works within 30 meters of the high-water mark
TTN recommends that HONI undertake multi-season confirmatory studies to confirm and accurately characterize environmental conditions and collect fulsome baseline data. These confirmatory studies should adhere to appropriate protocols provided by agencies / other organizations (e.g. Environment and Climate Change Canada, Ministry of Northern Development. Mines, Natural Resources and Forestry, Ontario Breeding Bird Atlas). TTN further recommend that if confirmatory studies identify sensitive environmental features (e.g. Species at Risk), that HONI use an adaptive management approach to update and incorporate this new information into existing plans (e.g. Environmental Protection Plan). Should this adaptive management approach be used HONI must consult with TTN on proposed updates.	Where appropriate, all potential habitat related to SAR or species of conservation concern (noted in the desktop review and field surveys) or candidate significant wildlife habitat, appropriate avoidance, protection and mitigation measures will be adhered to during both construction and operation/maintenance phases of the Project.
TTN requests that HONI provide rationale as to why their methods for surveying for Bobolink (i.e. short field season, single site visit, late season) are sufficient to adequately assess the presence or absence of Bobolink.	HONI commits to implementing mitigation measures for Bobolink and updating the ESA Mitigation Plan to reflect the presence of Bobolink
TTN requests that HONI consult with the staff of the Lands and Resources Department and provide the opportunity for a review of the Project area through a helicopter flight of the entire ROW in mid-late October. This timing will coincide with the completion of fieldwork from TTN's traditional knowledge and land-use study.	HONI can accommodate an opportunity for a review of the Project areas through a helicopter flight of the ROW
TTN requires further details regarding the proposed snow and ice bridges. Information that TTN requires includes: IV. Details on the erosion and sediment controls that will be installed prior to the construction of snow and ice bridges to prevent the entry of sediment and other deleterious substances into watercourses.	HONI commits to following up with site-specific Erosion and Sediment Control measures

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requests that HONI provide details on enhanced measures that will be implemented to mitigate potential impacts to watercourses that are upstream of areas harvested by TTN. Where possible, TTN would prefer that HONI avoid crossing tributaries to the Black River.	HONI commits to following up with a site-specific Erosion and Sediment Control Plan based on specific watercourse crossing and permit conditions. HONI commits to providing TTN the opportunity to review the final watercourse crossing permit conditions and updated site-specific ESC Plan with a 3-week review period.
If permits and / or approvals from MECP are required for the discharge of construction water (e.g., Environmental Compliance Approvals), TTN requires that these be provided for review.	HONI commits to providing permits and/or approvals from MECP required for the discharge of construction water to TTN for a review period of 30 days in advance of regulatory submission.
HONI must commit to producing a Project-specific Invasive Species Management Plan, which outlines all measures and protocols that will be adhered to during Project activities. TTN requests that HONI commits to the use of only mechanical methods for invasive species control in the ROW throughout the construction and operations periods, unless for emergency reasons. If the latter, HONI must commit to notifying and providing justification for use of non-mechanical methods on a case-by-case basis, including why it is considered an emergency need to do so. HONI must commit to providing this document to TTN for our review and comment.	HONI commits to creating a project specific Invasive Species Management Plan and provide to TTN for their review.
HONI should provide maps showing the construction footprints along the transmission line, as well as any construction associated with entrance roads, and road improvements, and other Project components.	HONI commits to providing maps showing the construction footprints along the transmission line

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requests that HONI commits to using only mechanical methods for vegetation control in the ROW throughout the operations period, unless for emergency reasons. If the latter, HONI must commit to notifying and providing justification for use of non-mechanical methods on a case-by-case basis, including why it is considered an emergency need to do so.	HONI commits to avoiding the use of herbicides for vegetation maintenance during the construction phase of the Project. HONI commits to consulting with TTN on herbicide use for project construction or Right-of-Way maintenance purposes within their traditional territory (including the A8K/A9K Transmission Line). During this consultation HONI commits to providing details on the proposed herbicide use including, but not limited to: application methods used, specific herbicides used (trade name and chemical name), approximate amounts used, locations where herbicides would be used, approximate times of years of herbicide use, weather conditions where herbicide use will be permitted. HONI commits to arranging a meeting with TTN to discuss various vegetation maintenance applications, including herbicide and mechanical means.
HONI must provide mapping showing the location of potential SAR habitat and candidate confirmed significant wildlife habitat in relation to proposed Project infrastructure and construction areas (e.g., access roads, areas required to be cleared for equipment, laydowns).	HONI commits to providing a detailed SAR map that shows potential SAR habitat and candidate confirmed significant wildlife habitat in relation to proposed Project infrastructure

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requires that HONI notify the Lands and Resources Department (lands@taykwatagamou.com) of any spills reported to the MECP's Spills Action Centre. Information shared in these notifications should reflect the information reported to the MECP and include: • Date and time of the incident, • Source and/or location of the incident, • Current status of the incident, • Type of pollutant involved, • What impact the pollutant is having on the environment, and; • Weather conditions (for example, precipitation, temperature, wind direction, etc.) TTN also requires that HONI provide updates on the cleanup and remediation of spills.	HONI commits to notifying the Lands and Resources Department of any spills reported.

Issue/Comment Raised by TTN	Hydro One Commitment
HONI must commit to developing a Project-specific restoration plan and consulting with TTN during the development of this plan and providing a draft for our review and comment. TTN expects at a minimum that this Project-specific restoration plan will include: • Restoration objectives, • List of plant species to be used during restoration, • Activities/measures that will be used during restoration (e.g., plant saplings, hand seeding, contouring, providing coarse woody debris), • Planned monitoring activities/schedule to confirm effectiveness of restoration activities, and; • Adaptive management strategy and thresholds for the use of adaptive management	
HONI must provide details of what the Biodiversity Initiative will entail. TTN expects that at a minimum this will include: • Creating new wetland habitat within the local landscape to offset the loss of existing wetlands, • Ensuring that created wetland habitat includes features and functions that benefit SAR and species of conservation concern (e.g., Blanding's Turtle, Olive-sided Flycatcher), • Habitat offsets will be provided at a ratio of 2:1, and; • Monitoring of offset habitat to confirm it provides the require ecological features and functions	HONI commits to developing a Biodiversity Initiative in collaboration with TTN
HONI must commit to consulting and engaging with TTN on the Biodiversity Initiative. TTN expects that at a minimum this will include consultation on: • The specific wetland areas that will be impacted, and the details of the impacts • The proposed area for wetland habitat offsets • The proposed functions provided by and features present within the wetland habitat offsets • The methods used to construct the wetland habitat offsets • The monitoring methods used to confirm the effectiveness of the wetland habitat offsets	

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requests that HONI notify our Lands and Resources Department (lands@taykwatagamou.com) when SAR are harmed or killed as a result of Project activities or SAR are observed. TTN assumes that these notifications will include endangered, threatened and special concern species.	HONI commits to notifying the Lands and Resources Department when SAR are observed, harmed or killed as a result of Project activities.
It is TTN's expectation that HONI will work with our community to develop measures to avoid any impact to land use and occupancy features identified through the completion of our TKLUS. As an example, TTN expects HONI to avoid undertaking construction activities in areas used for hunting during the time of year that our community members typically harvest in these areas.	HONI commits to working with TTN to develop measures to avoid impact to land use and occupancy features identified through the completion of the TKLUS, where reasonably possible
HONI must commit to consulting with TTN on the proposed list of plant species that will be used during restoration activities. TTN expects that this list will include plant species present within the local landscape (e.g., red maple), and plant species of conservation concern (e.g., black ash).	HONI commits to consulting with TTN on the list of plant species that will be used during restoration activities. HONI commits to using native plant species present within the local landscape where seeding or planting is required.

Issue/Comment Raised by TTN	Hydro One Commitment
HONI must commit to consulting and engaging with both TTN, MECP and/or DFO regarding impacts to SAR and SAR habitat that cannot be avoided and permitting/approvals. At a minimum TTN expects that this consultation and engagement will include: • Details of potential impacts to SAR • Details of the potential area of SAR habitat (e.g., 10 m2 of potential SAR bat habitat) that will be impacted as part of the Project • Nature of these impacts (e.g., complete removal of habitat, potential removal of specific vegetation that poses a risk to human health of interferes with the transmission line) • Details of potential SAR habitat enhancements and habitat compensation (at a 2:1 ratio) that will be undertaken to offset these impacts	HONI commits to consulting and engaging with both TTN, MECP and/or DFO regarding impacts to SAR and SAR habitat that cannot be avoided and permitting/approvals. This consultation and engagement will include details of potential impacts to SAR, details of the potential area of SAR habitat that will be impacted as part of the Project, nature of these impacts, details of potential SAR habitat enhancements and habitat compensation at a 2:1 ratio that will be undertaken to offset these impacts.
If brush clearing is necessary, TTN requires that this be completed outside the migratory bird breeding season (April 15 to August 31). Where brush clearing is necessary during the migratory bird breeding seasons, TTN requires that HONI commit to completing nest sweeps within 24 hours of commencing activities.	If brush clearing is necessary as part of project activities or ongoing project maintenance, HONI will complete the work outside of the migratory bird breeding season (April 15 to August 31) and where brush clearing is required during migratory bird breeding season, HONI commits to completing nest sweeps within 24 hours of commencing activities.
TTN requests that should snags and cavity trees require removal that they are compensated for with habitat enhancements (e.g., bat rocket boxes) to allow for their important function to be restored to the local area.	HONI commits to compensating for snag and cavity tree removals in the form of bat rocket boxes

Issue/Comment Raised by TTN	Hydro One Commitment
HONI must commit to adhering the to the Clean Equipment Protocol for Industry (Halloran et al., 2013) to prevent the spread of invasive species via equipment and vehicles used as part of project activities	HONI commits to following the Clean Equipment Protocol for Industry to prevent the spread of invasive species via equipment and vehicles used as part of project activities
Exclusionary fencing (i.e., silt fencing to serve as dual purpose) where Project activities are adjacent to habitats that have the potential to contain amphibians or reptiles Exclusion fencing once installed must be inspected regularly to ensure that no holes or other defects are present that could impact its effectiveness as a barrier	HONI commits to installing exclusionary fencing (i.e., silt fencing to serve as dual purpose) where Project activities are adjacent to habitats that have the potential to contain SAR amphibians or reptiles. Exclusion fencing once installed will be inspected regularly to ensure that no holes or other defects are present that could impact its effectiveness as a barrier
Where it is not possible to avoid candidate/confirmed significant wildlife habitat, these areas must be restored to baseline conditions or better following construction activities or compensated for through enhancements of the local landscape	HONI commits to restoring areas to baseline conditions or better following construction activities, where retention of natural vegetation is not possible

Issue/Comment Raised by TTN	Hydro One Commitment
HONI must commit to updating this table to reflect the need for another Stage 1 and Stage 2 AA to address the missing 15 km section of corridor, and accommodations to these recommendations. If this work has been completed, please confirm and provide copies of all relevant reports to TTN. HONI must provide in their formal list of commitments the following: HONI commits to undertaking another Stage 1 AA and Stage 2 AA to address the missing 15 km section of the corridor and that these new assessments will include accommodations to the recommendations provided by TTN in the Draft ESR Technical Review. HONI must commit to undertaking a new Stage 1 AA. If the Stage 2 AA did not cover the study area between Val Gagné and the Ansonville TS, TTN recommends that HONI undertake a combined Stage 1 AA and Stage 2 AA for the entire line as well as any additional areas like laydowns, entrance road, and improvements to road and drainage. This will allow for the following recommendations to be accommodated.	HONI commits to undertaking a combined Stage 1 and 2 AA for any areas in the additional 16 km section if ground disturbance will be occurring within areas of archaeological potential. HONI commits to undertaking a combined Stage 1 and 2 AA at any ancillary constructions along the entire route.
HONI must ensure that all future archaeology report titles list all the lots, concessions, and names of the geographic townships that are crossed by the transmission line corridor.	HONI commits to ensuring any future archaeological report titles for the project list all the lots, concessions and names of the geographic townships that are crossed by the transmission line corridor.
HONI/CAGI must commit to consulting with TTN and seek our approval on methodologies used in any future archaeological assessments with our Traditional Territory. TTN expects that HONI/CAGI will not undertake any future archaeological assessments that use the “Northern Alternative” methodology within our Traditional Territory.	HONI commits to consulting with TTN on methodologies used in any future archaeological assessments.

Issue/Comment Raised by TTN	Hydro One Commitment
HONI must commit to undertaking these consultation activities well in advance (a minimum of 30 days) of planned assessments and include fulsome and detailed information on the proposed methods.	HONI commits to undertaking consultations activities regarding archaeological assessment methodologies in advance of planned assessments and provide fulsome and detailed information on the proposed methods
TTN requests that HONI commits to using only mechanical methods for vegetation control in the ROW throughout the operations period, unless for emergency reasons. If the latter, HONI must commit to notifying and providing justification for use of non-mechanical methods on a case-by-case basis, including why it is considered an emergency need to do so.	HONI commits to having further discussions on vegetation maintenance taking into consideration the TKLUS Study.
HONI must commit to developing a Project-specific restoration plan and consulting with TTN during the development of this plan and providing a draft for our review and comment. TTN expects at a minimum that this Project-specific restoration plan will include: • Restoration objectives • List of plant species to be used during restoration • Activities/measures that will be used during restoration (e.g., plant saplings, hand seeding, contouring, providing coarse woody debris) • Planned monitoring activities/schedule to confirm effectiveness of restoration activities • Adaptive management strategy and thresholds for the use of adaptive management	HONI commits to working with TTN on developing a project-specific restoration plan.
TTN requests that HONI provide details and relevant mapping of the specific wetland locations and areas of these wetlands that are anticipated to be impacted.	HONI commits to providing mapping with specific wetland locations and areas where wetlands are anticipated to be impacted

Issue/Comment Raised by TTN	Hydro One Commitment
TTN requests that Hydro One incorporate their suggestions into the existing Stage 1 and future Stage 2 Archaeology Assessments for the project.	HONI commits to incorporating TTN's suggested revisions to the existing Stage 1 AA report into additional Stage 1 & 2 AA reports for the 15 km portion of this project.
HONI must commit to undertaking appropriately timed visual encounter/basking surveys for Blanding's Turtles that adhere to survey techniques, survey period (i.e., after ice cover has melted and no later than June 15), timing, environmental conditions, and search effort (Ontario Ministry of Natural Resources and Forestry, 2015). HONI must commit to updating the Endangered Species Act (ESA) Mitigation Plan to include Blanding's Turtle along with appropriate avoidance, protection and mitigation measures. If HONI is unable to commit to undertaking appropriately timed visual encounter/basking surveys to confirm presence or absence of Blanding's Turtles, then HONI must commit to assuming that all potential Blanding's Turtle habit, as defined under the General Habitat Description (Ministry of the Environment, Conservation and Parks, 2021), is being inhabited by the species and adhere to the policies of the Endangered Species Act, 2007. If HONI is already taking this approach, please confirm. If HONI is unable to adequately protect potential Blanding's Turtle habit from impacts of the Project, they must further undertake, and consult with MECP and TTN, an application for authorization under the Endangered Species Act, 2007.	HONI commits to undertaking appropriately timed visual encounter/basking surveys for Blanding's Turtles that adhere to survey techniques, survey period, timing, environmental conditions, and search effort. HONI commits to performing pre-construction sweeps for turtles. HONI commits to including information regarding historical Blanding's Turtle sightings and visual encounter/basking surveys as well as pre-construction sweeps that will be conducted, in the EMP.
TTN acknowledges that the DFO's Aquatic Species at Risk mapping indicates that lake sturgeon is not present in watercourses crossed by the ROW. However, the ROW does cross tributaries to the Black River which may provide suitable habitat for lake sturgeon (despite this not being indicated on the DFO's Aquatic Species at Risk Mapping) and is itself a tributary to the Abitibi River. In the absence of multi-season lake sturgeon data, TTN's expectation is that HONI will take extra precaution when crossing tributaries of the Black River. Please confirm that this precautionary approach will be taken.	HONI commits to taking extra precautions when crossing tributaries of the Black River.

Issue/Comment Raised by TTN	Hydro One Commitment
TTN agrees that identifying the fish community at or near the watercourse crossing is sufficient. However, HONI only visually confirmed the presence of fish and/or fish habitat at some watercourse crossings but did not confirm the fish community composition through sampling. For watercourse crossings with a cool or coldwater thermal regime, TTN's expectation is that HONI adheres to in-water work restricted activity timing windows for both fall and spring spawning species. TTN would consider use of the spring in-water work restricted activity timing window only appropriate for watercourses with a warmwater thermal regime.	HONI commits to adhering to in-water work restricted activity timing windows for both fall and spring spawning species for watercourse crossings with a cool or cold-water thermal regime.
Presumably HONI is referring to receipt of MHSTCI review and acceptance letter already received for the Stage 1 AA, and is expecting one for the recently completed Stage 2 AA. But the TTN recommendation refers to the need for further Stage 1&2 AAs at road entrances improvements, and any drainage improvements, stream crossings, and lay down areas where the soil might be altered.	HONI commits to performing additional Stage 1 and 2 AA as required at road entrances improvements, and any drainage improvements, stream crossings, and lay down areas where ground disturbance will be occurring.
TTN requires that HONI complete real-time turbidity monitoring during the installation and removal of watercourse crossings, using a control-impact approach (i.e., using an upstream reference site and downstream impact site). HONI must ensure that construction-based turbidity increases (where construction-based turbidity increase (measured downstream turbidity) – (measured upstream turbidity) do not persist for durations exceeding those prescribed in Table 10-3 of the Erosion and Sediment Control Guideline for Urban Construction (Toronto and Region Conservation Authority, 2019).	HONI commits to performing real-time turbidity monitoring during the installation and removal of watercourse crossings, using a control-impact approach (i.e., using an upstream reference site and downstream impact site).

3.5.1.4 Wahgoshig First Nation

On June 25, 2018, Hydro One sent Wahgoshig First Nation (WFN) a Notice of Commencement confirming initiation of the Class EA for refurbishment of the existing 115 kV transmission infrastructure on circuits A8K/A9K. On July 26, 2018, Hydro One called and emailed WFN to confirm receipt of the Notice of Commencement.

Hydro One emailed Wahgoshig First Nation (WFN) on July 8, 2020, to provide a project update. The Project Update notice detailed the proposed project undertaking and the streamlined Class EA process. Hydro One welcomed WFN's comments and feedback. Hydro One emailed WFN on July 8, 2020 to inform them that the RFP for A8K/A9K has been published and will be available until August 14, 2020. A high level scope of work document and map were shared for reference. Hydro One provided contact information on the QSPs who have been invited to submit a proposal in order to follow up with them if they are interested in working with them on the project. Hydro One outlined that the QSPs are awarded marks depending on the amount of Indigenous participation in their bids and that a list of indigenous businesses will also be provided to the QSPs that sign up in the RFP. Hydro One followed up on the Project Update notice by phone and email on August 5, 2020.

On May 27, 2021, Hydro One emailed WFN a letter providing a Project Update and indicating that based on feedback received during the Class EA Screening Process, Hydro One will now assess the project following the Full Class EA process.

A Notice of VIS was sent by email to WFN on August 4, 2021, stating the VIS would be held on August 25, 2021.

Hydro One left a voicemail with WFN on August 24, 2021, with details about the meeting and asking for a call back.

Hydro One emailed WFN on September 23, 2021, and provided an update on the Project. Hydro One informed WFN of a number of beaver dams located on some of the watercourses identified as a crossing. Hydro One inquired whether a trapper from their community would be interested in assisting with the beavers.

3.5.1.5 Métis Nation of Ontario

All project notifications were sent to the Northern Lights Métis Council and the Timmins Métis Council. Copies were also sent to the Métis Nation of Ontario (MNO) Consultation Unit. On July 18, 2018, MNO responded by providing new contact information for the

organization. No additional comments were received from MNO regarding the proposed Project.

3.5.1.6 Northern Lights Métis Council

On June 25, 2018, Hydro One sent Northern Lights Métis Council (NLMC) a Notice of Commencement via email and hard copy by Canada Post registered mail confirming initiation of the Class EA for refurbishment of the existing 115 kV transmission infrastructure on circuits A8K/A9K. On July 9, 2018, Hydro One called and emailed NLMC to confirm receipt of the Notice of Commencement. On July 17, 2018, NLMC advised Hydro One of changes to their council contacts. Hydro One responded by issuing a new Notice of Commencement on July 17, 2018, to the new NLMC contacts. On July 26, 2018, NLMC confirmed they have no concerns with the proposed refurbishment project.

Hydro One emailed NLMC on July 8, 2020, to provide a Project update. The Project Update notice detailed the proposed project undertaking and the streamlined Class EA process. Hydro One welcomed NLMC's comments and feedback. Hydro One emailed NLMC on July 8, 2020, to inform them that the Request for Proposal for the project has been published and will be available until August 14, 2020. Hydro One followed up via phone call on August 5, 2020, to ensure that NLMC had received the Project Update notice. NLMC confirmed receipt of the notice and informed Hydro One that the Lands and Resources Council reviews projects and will provide comments, not the individual councils.

On November 25, 2020, Hydro One emailed NLMC to inform them that Hydro One has awarded Forbes Bros Ltd. to undertake some project planning work and to provide regulatory support. Hydro One provided the contact information for Forbes Bros Ltd. for project contracting opportunities.

On May 27, 2021, Hydro One emailed NLMC a letter providing a Project Update and indicated that based on feedback received during the Class EA Screening Process, Hydro One will now assess the project following the Full Class EA Process.

A Notice of VIS was sent by email to NLMC on August 4, 2021, stating the VIS would be held on August 25, 2021.

Hydro One emailed NLMC on September 23, 2021, and provided an update on the Project. Hydro One informed NLMC of a number of beaver dams located on some of the

watercourses identified as a crossing. Hydro One inquired whether a trapper from their community would be interested in assisting with the beavers.

3.5.1.7 Timmins Métis Council

On June 25, 2018, Hydro One sent Timmins Métis Council (TMC) a Notice of Commencement via email and hard copy by Canada Post registered mail confirming initiation of the Class EA for refurbishment of the existing 115 kV transmission infrastructure on circuits A8K/A9K. On July 3, 2018, Hydro One re-sent the Notice of Commencement via email to an updated email address. On July 9, 2018, Hydro One called and emailed TMC to confirm receipt of the Notice of Commencement. On July 26, 2018, Hydro One called and left a voicemail to confirm receipt. Hydro One emailed TMC on July 8, 2020, to provide a project update. The Project Update notice detailed the proposed Project undertaking and the streamlined Class EA process. Hydro One welcomed TMC's comments and feedback. Hydro One emailed TMC on July 8, 2020, to inform them that the RFP for A8K/A9K has been published and will be available until August 14, 2020.

Hydro One followed up via phone call and email on August 5, 2020, to ensure that TMC had received the Project Update notice. TMC confirmed receipt of the notice via email and that they had passed it on to the appropriate contacts for comment.

On November 25, 2020, Hydro One emailed TMC to inform them that Hydro One has awarded Forbes Bros Ltd. to undertake some project planning work and to provide regulatory support. Hydro One provided the contact information for Forbes Bros Ltd. for project contracting opportunities.

On May 27, 2021, Hydro One emailed TMC a letter providing a Project Update and indicated that based on feedback received during the Class EA Screening Process, Hydro One will now assess the project following the Full Class EA Process.

A Notice of VIS was sent by email to TMC on August 4, 2021, stating the VIS would be held on August 25, 2021.

Hydro One emailed TMC on September 23, 2021, and provided an update on the project. Hydro One informed TMC of a number of beaver dams located on some of the watercourses identified as a crossing. Hydro One inquired whether a trapper from their community would be interested in assisting with the beavers.

3.5.2 Summary of Indigenous Community Comments and Concerns

Table 3-2 provides a consolidated summary of the key comments and concerns raised from Indigenous communities throughout the Class EA consultation process.

Table 3-2: Summary of Key Comments and Concerns from Indigenous Communities

Theme	Question/Comment	Response
Procurement	How was First Nations/Aboriginal content evaluated for selection of the preferred EPC Contractor?	Hydro One fully evaluates all submissions on various criteria that ensures Hydro One awards business to the best overall company and Hydro One does not disclose content of a proponent's proposal due to confidentiality. However, the Indigenous participation criteria requires proponents to provide details on local community involvement related to subcontracting, partnerships and workforce/recruitment. Factors such as portion of the overall work given to Indigenous communities, work plan to engage these communities and how this plan fits in the overall project execution would ultimately affect the evaluation of the proposals. The proposed indigenous plans are further discussed in clarification meetings with the proponents. For this specific project the weight given to Indigenous participation was increased compared to previous projects to ensure proponents were making their best effort to engage Indigenous communities.
Class EA Process	What is the Class EA process that is supporting the Project?	The Class EA for Minor Transmission Facilities (Hydro One, 2016) in accordance with the Ontario EA Act, sets out a planning and decision-making process that ensures transmission projects that have a predictable range of effects are planned and carried out in an environmentally acceptable manner. This process includes: • Consultation with Indigenous Communities, government officials, government agencies, potentially affected and interested persons, affected businesses and interest groups. • Collection of environmental data and a description of existing conditions. • Identification and evaluation of alternative methods of undertaking the Project. • Identification of potential environmental effects of the Project and mitigation measures. • Selection of the Preferred Alternative. As part of the Class EA process, a draft ESR was made available for public review and comment period.
Class EA Process	Hydro One has not accurately assessed the Project as a Full Class EA.	On May 27, 2021, Hydro One issued a Project Update indicating that based on feedback received during the Class EA Screening Process, Hydro One will now assess the project following the Full Class EA Process.
Class EA Process	Will Hydro One incorporate Indigenous Knowledge into the environmental studies?	Hydro One will incorporate feedback regarding Indigenous Knowledge into the Class EA including the effects assessment of the Preferred Alternative. Hydro One has committed to working with TTN to fund a Traditional Knowledge/Traditional Land-Use Study in which findings will be incorporated into the Environmental Management Plan, which outlines project specific mitigations. Hydro One has also committed to funding an Environmental Liaison from TTN to participate as part of the project team and ensure that any concerns or issues identified in the Traditional Knowledge Traditional Land Use study are mitigated during the construction phase of the project.

Theme	Question/Comment	Response
Consultation	For meaningful consultation to occur Hydro One must follow community engagement protocols and provide capacity funding for communities to review project information and studies.	Hydro One appreciates and encourages the continued participation of Indigenous Communities and where requested has provided capacity funding for interested communities. Hydro One has also requested and made efforts to follow community engagement protocols and to provide detailed technical studies and project information packages to address specific issues and concerns. TTN expressed concerns regarding assertion of rights and economic participation in relation to the Project. Hydro One has met with TTN to work towards addressing their concerns and has committed to working together to move the Project forward. Hydro One is presently corresponding with TTN representatives on the conclusion of an Engagement Agreement including capacity funding to participate in the engagement process. Hydro One also entered into an interim capacity funding agreement to provide initial funding until the Engagement Agreement was complete.
Archaeological Resources	How will assessment of potential Archaeological resources be conducted for the Project.	Stage 1 Archaeological Assessment was conducted for the Preferred Alternative to confirm known archaeological sites and identify features and areas of archaeological potential within the transmission line corridor. If any areas are identified during the Stage 1 Archaeological Assessment as requiring further assessment, a Stage 2 Archaeological Assessment will be conducted for those areas as required, before any construction begins. If artifacts are found during Stage 2, the locations will be recorded as archaeological sites, and analyzed to determine if they have sufficient cultural heritage value or interest (CHVI) to warrant further Stage 3 archaeological assessment. A Stage 3 assessment is a site-specific excavation of 1x1 m units, based on a permanent datum point, to determine the site deposit limits and nature. (Note: even if the Stage 2 AA recommends further Stage 3 work at specific locations, it may recommend partial clearance for construction footprints where no archaeological material was found.) If Stage 3 excavation confirms a site's CHVI, then Stage 4 mitigation will be required. The preferred method of Stage 4 mitigation is perpetual preservation of the site through avoidance; but, if avoidance is not feasible, Stage 4 excavation to remove the archaeological deposit will be necessary. Should archaeological artifacts be encountered during construction, work in the vicinity will cease and a licensed archaeologist will be engaged immediately to ensure compliance with the provincial Heritage Act. Likewise, should any human remains be encountered during construction, work in the vicinity will cease and the police and coroner will be notified immediately, as well as the Registrar of Cemeteries to ensure compliance with the Funeral, Burial and Cremation Services Act.
Impacts to animals and their habitats	Concerned about the impact the Project will have on animals and their habitat.	Within the Class EA, effects to natural environment and wildlife habitats, are considered in the evaluation and identification of environmental effects and potential mitigation measures (**Section 7**), before an infrastructure project advances to detailed design and construction. Hydro One will continue to provide opportunities to work with TTN to participate in discussions regarding effects, mitigation and restoration to wildlife and their habitats on the Project moving forward. Hydro One has committed to reviewing the Environmental Management Plan, as well as project specific mitigations with TTN and their technical experts as well as provide capacity funding to an Environmental Liaison to participate as part of the Project team.
Impacts to aquatic habitats	Concerned about the impact the Project will have to aquatic habitats.	Within the Class EA, effects to natural environment and wildlife habitats, are considered in the evaluation and identification of environmental effects and potential mitigation measures (**Section 7**) before an infrastructure project advances to detailed design and construction. Hydro One will continue to provide opportunities to work with TTN to participate in discussions regarding effects, mitigation and restoration to aquatic habitats on the Project moving forward. Hydro One has committed to reviewing the Environmental Management Plan, as well as project specific mitigations with TTN and their technical experts as well as provide capacity funding to an Environmental Liaison to participate as part of the Project team. While watercourse crossings will need to be installed mitigation measures will be employed and documented in the Environmental Management Plan.

Theme	Question/Comment	Response
Species at Risk (SAR)	Concerns about the impact the Project could have to Species at Risk in the area. The following Species at Risk have the potential to occur within the Project Area: • Birds (Eastern Whip-poor-will, Bobolink, Barn Swallow, Banks Swallow, Chimney Swift) • Bats (Little Brown Myotis, Eastern Small-Footed Myotis, Northern Myotis) • Gypsy Cuckoo Bumble Bee • Caribou (Boreal population) • Eastern Cougar • Pitcher's Thistle The following Species at Risk have been observed within the Project Area through field investigations: • Eastern Whip-poor-will • Bobolink • Barn Swallow • Little Brown Myotis	Hydro One's contactor and their crews will be aware of the potential presence of, and able to identify, SAR with the potential to occur within the work areas. Habitat removal during the migratory bird breeding season (April 15 to August 31 in nesting zone C4/5: ECCC, 2018) and the bat active period (May 1 to September 30) would be avoided to the extent feasible. Extensive vegetation removal is not anticipated given the construction activities for the refurbishment will largely occur within the existing ROW. Should SAR be encountered during construction activities, all work will be stopped until it has been determined that harm will not occur. Prior to construction, Hydro One will also register an ESA Mitigation Plan with the MECP which further details mitigation measures to be adhered to throughout the Project to reduce the impacts on SAR and SAR habitat.
Aquatic SAR	Concerns about the impact the Project could have to aquatic SAR	As described in Section 4.6.6.2, potential aquatic SAR habitat was identified in association with the Project study area. The same mitigation measures outlined above for aquatic habitat will be employed with respect to potential impacts to aquatic SAR. In the event the construction of watercourse crossings has the potential to impact habitat necessary permits and approvals from MECP and DFO would be obtained before work commences.
Employment, Training and Business Opportunities	Will there be potential business opportunities for Indigenous businesses?	Yes, there will be opportunities for Indigenous-owned businesses within the region. Discussions will occur between the Contractor, the communities and Hydro One to try and ensure that the participation of Indigenous owned businesses is maximized during the construction of this Project.
Partnership Opportunities	Will there be equity partnership opportunities on this project?	Hydro One will not be offering equity partnership in this Project. Hydro One will continue to work with Indigenous Communities to provide meaningful opportunities for economic benefit throughout the process.

3.6 Provincial Government & Agencies

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

- Independent Electricity System Operator (IESO)
- Ministry of Energy
- Ministry of the Environment, Conservation and Parks (MECP)
- Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)
- Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF)
- Ministry of Transportation (MTO)

Provincial Governments and agencies were provided copies of all Project notices and advertisements with few project specific comments received. Correspondence with Provincial Government and Agencies is included in the Record of Consultation (**Appendix C**).

3.7 Municipal Governments

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

- Town of Iroquois Falls
- Township of Black River-Matheson
- Town of Kirkland Lake

For each of the aforementioned municipal agency, key staff (e.g. Mayor, CAO, and Public Works) were contacted, where appropriate.

Municipal Governments were provided copies of all Project notices and advertisements with few project specific comments received. Correspondence with Municipal Governments is included in the Record of Consultation (**Appendix C**).

3.8 Potentially Affected and Interested Groups and Businesses

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

As part of the consultation program, the following interest groups and businesses were contacted during the Class EA:

- Timiskaming Abitibi Trail Association
- Ontario Northland Transportation Commission
- Golden Corridor Snowdrifters

Potentially affected and interested groups and businesses were provided copies of all Project notices and advertisements. No comments were received from potentially affected and interested groups and businesses with respect to the Project. Correspondence with potentially affected and interested groups and businesses is included in the Record of Consultation (**Appendix C**).

3.9 Property Owners/Residents/General Members of the Public

Property owners, residents and general members of the public within mailing routes of the study area were provided all project notifications by means of Canada Post admail and advertisements in Cochrane Times Post, Iroquois Falls Enterprise, Kirkland Lake Northern News This Week and on the project website. Three admail campaigns with over 3500 recipients in each campaign were delivered throughout the Class EA process. Hydro One also received few feedback and comments by phone and email to their Community Relations team. Correspondence with Property Owners/Residents/General Members of the Public is summarized in the Record of Consultation (**Appendix C**).

3.10 Final Notification and Draft ESR Review Period

Hydro One issued notifications of the draft ESR review period to municipal, provincial and federal government officials and agencies, Indigenous Communities, potentially affected and interested persons, and interest groups. The draft ESR was made available for public review and comment for a period of 30 calendar days, from October 18, 2021 until November 19, 2021. Hydro One has responded to comments raised by concerned parties during the draft ESR review period. Any issues and their respective resolutions are documented and summarized in this final ESR.

As outlined by recent Provincial government amendments, a request may be made to the Ministry of the Environment, Conservation and Parks (MECP) for an order requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed). A request may also be submitted that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty

rights. The MECP will not consider requests on other grounds. No Part II order requests were received during the 30-day review period.

A copy of this final ESR has been placed on the Hydro One Project website (www.HydroOne.com/ A8KA9K), and a copy has been provided to the Environmental Assessment Branch (EAB) and the appropriate Regional EA Coordinator at MECP for filing. The proposed Project is now considered acceptable and can proceed as outlined herein.

4 Environmental Inventory

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

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

- Agricultural resources
- Forestry resources
- Cultural heritage resources (i.e., built heritage resources, cultural heritage landscapes and archeological resources)
- Land Use and Communities
- Mineral resources
- Natural environment resources (e.g., air, land, water, wildlife and wildlife habitat)
- Recreational resources
- Visual and aesthetic resources.

Natural and socio-economic environment baseline conditions are described in the following sections. Desktop information for the natural and socio-economic environment was generally collected within the Project Study Area, and natural environment field surveys were also completed within the Project Study Area (**Section 2.0**). Desktop review and field surveys for species at risk (SAR) and significant wildlife habitat (SWH) were undertaken in July 2021. Additional information beyond the Study Area is provided for some environmental features (such as the socio-economic environment and cultural heritage) where additional context is appropriate.

Results of the natural environment desktop review and field surveys are summarized in the Iroquois Falls to Kirkland Lake 2021 Field Surveys Summary (NBS, 2021) for the Project (**Appendix D**).

4.1 Agricultural Resources

In the northern portion of the Project Study Area, large areas of land with a high capability for agriculture are found within the Iroquois Falls Planning Area. In the Planning Area, the best agricultural land is Canada Land Inventory (CLI) classes 3 and 4 (**Figure 4-1**). Much of this land is presently not suitable for farming due to extensive tree cover; however, as identified in the Official Plan, the land has future potential and should be protected (Town of Iroquois Falls, 1984).[1] In the southern portion of the Project Study Area near the Township of Black River-Matheson, lands designated as Agricultural Area consist of prime agricultural lands with soils that are predominantly comprised of Class 1 through 3 of the CLI (Township of Black River-Matheson, 2017); however, most of these lands are heavily forested. It is the general intent that Rural Area land parcels, in all municipalities in the Project Study Area, are preserved for future agricultural use by prohibiting the subdivision of land into parcels that are not economically viable for future farm operations.

4.2 Forestry Resources

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

The Project Study Area falls within the Timiskaming Forest Management Plan, which provides direction for the strategic management of the Timiskaming Forest and outlines species forest management operations for a ten-year planning period from 2021 to 2031 (Timiskaming Forest Alliance Inc., 2021). As indicated in the Management Plan, a significant portion of the land base is comprised of private land which is not managed under the Management Plan. Any Crown timber on private land is managed by

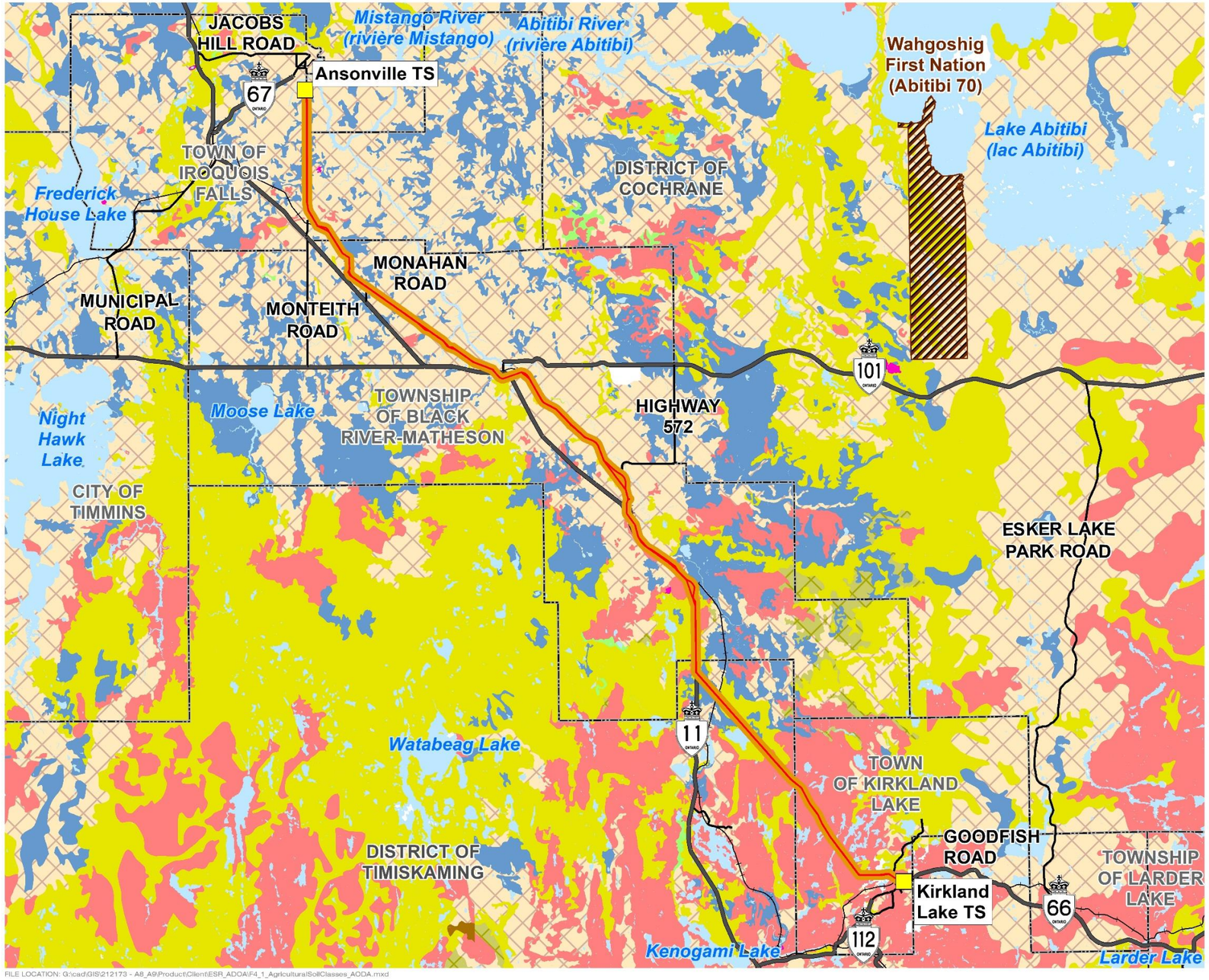
[1] The Town of Iroquois Falls is currently undertaking an Official Plan update

MNDMNRF Kirkland Lakes and Timmins Districts under the *Management of Crown Trees on Patent Land* program and not through the Management Plan.

As identified in the Forest Management Plan, the Project Study Area is comprised predominantly of private land, with Contingency Allocation and Regular Harvest Allocation areas identified along the southern portion of the transmission line near Kirkland Lakes (**Figure 4-2**).

Contingency Allocation areas are intended as replacement areas for lost harvest opportunities planned in the Management Plan and are selected for their proximity to existing roads, planned road corridors or adjacent to proposed allocations to provide operational flexibility (Timiskaming Forest Alliance Inc., 2021). As the proposed Project follows a pre-existing corridor (Highway 11), there is limited potential for the proposed Project to affect the productivity or utilization of the land for timber harvesting.

Figure 4-1: Canada Land Inventory Soil Classifications



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A8K/A9K CORRIDOR

ENVIRONMENTAL STUDY REPORT

CANADA LAND INVENTORY SOIL CLASSIFICATIONS

FIGURE 4.1

- A8K/A9K Corridor
- Study Area 120m
- Station
- Highway
- Major Road
- Railway
- First Nation Reserve
- Municipal Boundary
- Water Body

Agricultural Soil Classes

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Class 6
- Class 7
- Organic Soils

SCALE 1:300,000

0 2 4 8 km

N

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNDMNRF;Atlas of Canada; Corrridor provided by Hydro One

MAP CREATED BY: LMM
MAP CHECKED BY: BJF
MAP PROJECTION: NAD 1983 UTM Zone 17N

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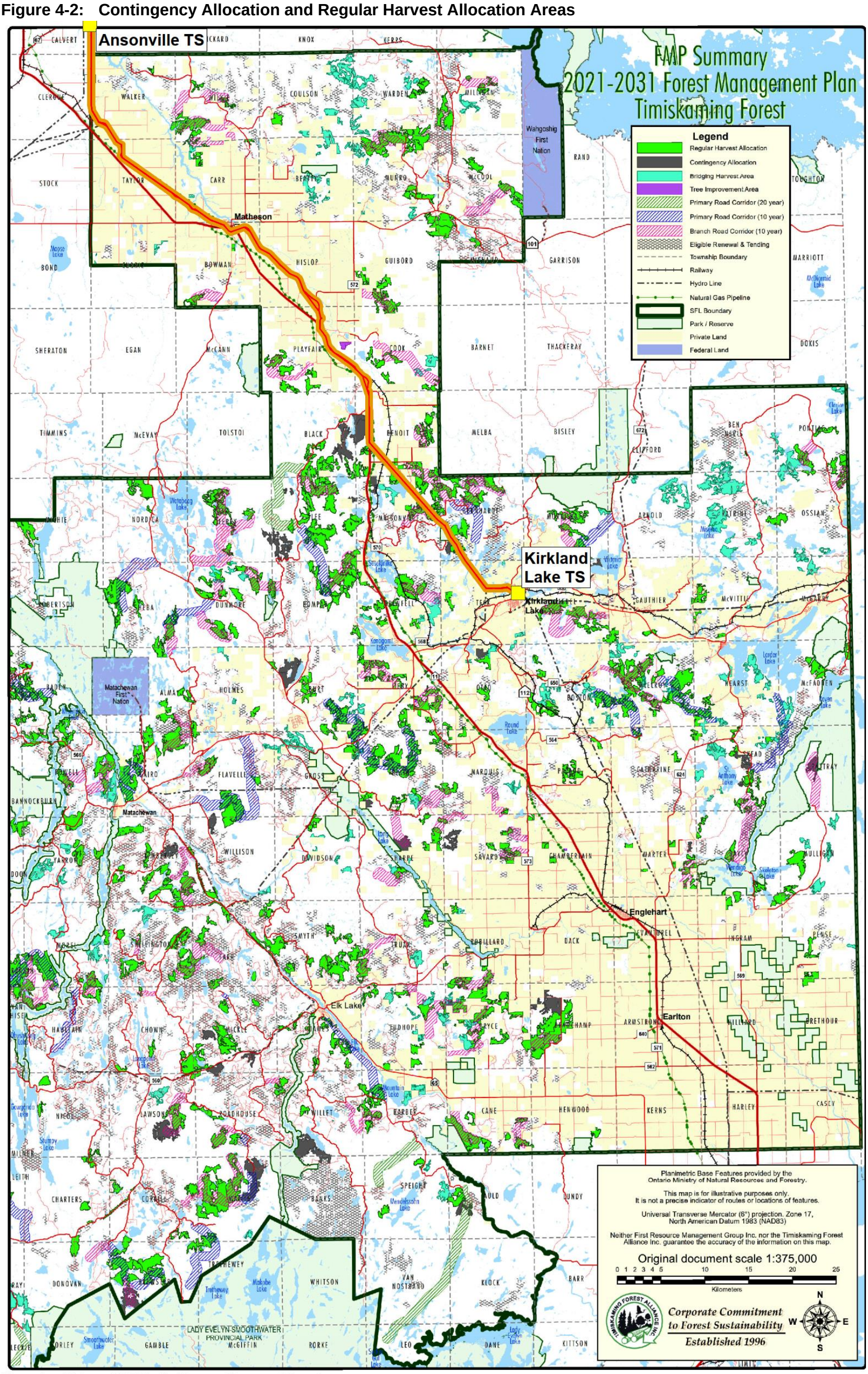
PROJECT: 21-2173
STATUS: DRAFT
DATE: 2021-10-14

Figure 4-2: Contingency Allocation and Regular Harvest Allocation Areas



Map produced February 5, 2021 by First Resource Management Group Inc.

Source: This map was produced by the First Resource Management Group Inc.

4.3 Cultural Heritage Resources

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

4.3.1 Built Heritage and Cultural Landscapes

Hydro One completed an internal desktop review based on MHSTCI's Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes and is included in **Appendix F**. Based on the checklist, it was determined that there is low potential for built heritage or cultural heritage landscape within the Project Area.

4.3.2 Archaeology

The Central Archaeology Group Inc. was contracted by Hydro One to conduct a Stage 1 Archaeological Assessment (AA) for the project, which was completed in June 2018. The need for archaeological assessment work was determined through Hydro One's internal environmental review of the Project Area, as per the Class EA. All archaeological consulting activities were performed in accordance with MHSTCI's *Standards and Guidelines for Consultant Archaeologists* (2011a) by a licensed archaeologist. The results of the Stage 1 AA were provided to MHSTCI and entered into the Ontario Public Register of Archaeological Reports on June 11, 2021. The Stage 1 Archeology Assessment identified areas where additional Stage 2 archaeology investigations are required. Northwest Archaeological Assessments was contracted by Hydro One's construction contractor, Forbes Bro Ltd. to conduct a Stage 2 AA. Fieldwork for the Stage 2 AA was completed in September 2021 in areas where ground disturbance would occur that were located within areas identified as having archaeological potential based on the Stage 1 AA. Based on the results of the Stage 2 AA fieldwork, no archaeological resources were identified and no further archaeological work is recommended. A Stage 2 AA report will be prepared and submitted to MHSTCI for acceptance prior to construction start.

A copy of the Stage 1 Archaeology Assessment report and MHSTCI acceptance letter is included in **Appendix F**.

4.4 Land Use and Communities

The majority of the Project Study Area is designated as Rural Land as identified in the Town of Iroquois Falls (1984), Township of Black River-Matheson (2017) and Town of

Kirkland Lake (2016) Official Plans. Human settlement areas include those located within the Towns of Iroquois Falls and Kirkland Lake and the Township of Black River-Matheson.

The Town of Iroquois Falls is comprised of an Urban Area to the north of the proposed Project Rural Area, and village communities. Iroquois Falls had a population of 4, 537 in 2016 (Town of Iroquois Falls, 1984; Statistics Canada, 2017a). The Project Study Area includes Rural Area and traverses some Hazard Land.

The Township of Black River-Matheson is comprised of Settlement Area, Agricultural Area and Rural Area. The Township had a population of 2,438 in 2016 (Township of Black River-Matheson, 2017; Statistics Canada, 2017b). The Project Study Area includes the Settlement Areas of Val Gagne, Matheson and Ramore, Rural Area, Agricultural Area and Hazard Lands. The lands within these settlement areas are primarily designated as industrial use, mixed use, residential and parks and open space; however, the transmission line follows along the existing rail corridor within the Settlement Areas.

The Town of Kirkland Lake is comprised primarily of Urban Areas and Rural Lands. The population of Kirkland Lake was 6,305 in 2016 (Town of Kirkland Lake, 2016; Statistics Canada, 2017c). The Project Study Area includes the northern Urban Area within the lands designated as industrial, residential, open space and institutional. The line follows along the existing rail corridor within the Urban Area to connect to Kirkland Lake TS.

4.4.1 Land Use Planning

Three Official Plans apply to the Study Area, including the Town of Iroquois Falls, the Township of Black River-Matheson and the Town of Kirkland Lake Official Plans. Land use planning and development in the Project Study Area is also guided by the Provincial Policy Statement (PPS).

4.4.1.1 Provincial Policy Statement (2020)

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

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

Section 1.6.8.6 of the PPS requires that when planning for corridors and ROWs for significant electricity transmission and infrastructure facilities, consider the significant resources protected by Section 2 of the PPS, Wise Use and Management of Resources. Effects to significant resources, as identified by Section 2 of the PPS, outside of the Project Study Area are not anticipated (Ministry of Municipal Affairs and Housing, 2020).

4.4.1.2 Town of Iroquois Falls Official Plan (1984)

The Town of Iroquois Falls Official Plan guides public and private decisions regarding future development within the Town of Iroquois Falls Planning Area.

As shown in Schedule A "Rural – Urban Area" the Project Study Area is primarily comprised of Rural Area land designations and traverses some Hazard Lands. Land Use policies for these designations do not prohibit development of transmission facilities. It is acknowledged that the majority of lands in the Rural Area are forested, but are comprised of primarily Class 3 and 4 soils making them suitable for agricultural activities. It is the general intent that Rural Area land parcels are preserved for future agricultural use by prohibiting the subdivision of land into parcels that are not economically viable for future farm operations.

Hazard Land policies do not prohibit development of transmission facilities but do prohibit the construction of buildings or structures not intended for flood or erosion control. Transmission line towers including lattice structures and wood pole options may require approval for construction within hazard land areas. Approval can be achieved through completion of an EA process (Town of Iroquois Falls, 1984).

4.4.1.3 Township of Black River-Matheson Official Plan (2017)

The Township of Black River-Matheson Official Plan provides guidance on land use planning matters for the next 20 years and describes policies for how land should be used.

Schedule A, "Rural Land Use Designations", identifies lands within the Project Study Area as primarily Rural Area land designations. Land Use policies for these

designations do not prohibit development of transmission facilities. Most of the Township is designated as a Rural Area for which the predominant uses of land include forestry, agriculture, mining, aggregate extraction, recreation and other resource development activities, resource-based recreational activities, and limited residential development.

The Project Study Area also traverses Settlement Areas, within which lands are designated as industrial use, mixed use, residential and parks and open space. Section 3.10 of the Official Plan states that public utilities, including electricity generation facilities and transmission and distribution systems, are allowed in all land use designations without an Official Plan amendment. Secondary uses, including passive recreation, agriculture, and community gardens are encouraged on hydro corridor lands, when compatible with surrounding land uses (Township of Black River-Matheson, 2017).

4.4.1.4 Town of Kirkland Lake Official Plan (2016)

The Town of Kirkland Lake's Official Plan provides a guide for local decision-makers to direct development of the Town by organizing land use types in a way that allows the Town to remain economically competitive and maintain environmental sustainability.

As identified in Schedule B of the Official Plan, the majority of the lands within the Project Study Area are designated as Rural. The Study Area includes an Urban Area with lands designated as industrial, residential, open space and institutional (Town of Kirkland, 2016).

4.4.2 Transportation

The Project Study Area is comprised of multiple road networks within the Town of Iroquois Falls, Township of Black River-Matheson and Town of Kirkland Lake.

Road classifications within the Study Area for each Municipality are summarized in **Table 4-1**.

Table 4-1: Road Classifications within Study Area

Municipality	Road Classification
Town of Iroquois Falls	• Arterial Road
Township of Black River-Matheson	• Provincial Highway • Local Road

Municipality	Road Classification
Town of Kirkland Lake	• Local Road • Rural Road

Source(s): Town of Iroquois Falls Official Plan - Schedule D (1984); Township of Black River-Matheson Official Plan (2017); Town of Kirkland Official Plan (2016)

The provincial road network within the Project Study Area carries regional traffic. Kings highways crossing the Study Area include Highway 11, Highway 101, and Highway 66.

Ontario Northland Railway rail line follows along the existing transmission line, crossing through the Project Study Area north-south and east-west. Generally, a large portion of the existing ROW parallels the Ontario Northland Railway rail line.

4.4.3 First Nations Lands

As outlined in **Section 3.5**, several Indigenous communities were consulted as part of the Class EA process. Of the Indigenous communities identified for consultation, the closest communities to the Project Study Area include Wahgoshig First Nation, and Beaverhouse First Nation (Government of Canada, 2020); neither are located within the Project Study Area.

Indigenous communities were consulted on the basis that they have or may have constitutionally protected Aboriginal and/or treaty rights that may be adversely affected by the Project. These communities were identified by Hydro One based on their proximity to the Project Area and their anticipated interest in the project.

Section 3.5 provides additional information regarding Indigenous communities' consultation activities completed for the project.

4.5 Mineral Resources

Based on a review of the MNDMNRF (formerly Ministry of Natural Resources and Forestry (MNRF)) LIO database, satellite imagery interpretation and observations made during field investigations, there are no active aggregate pits and quarries located within the Project Study Area. It is noted however, that several active registered pits and quarries do operate within proximity to the project Study Area, but are not anticipated to be affected by the proposed project (**Figure 4-3**).

Between the Kirkland Lake TS and Iroquois Falls TS active precious metal mines are currently in operation including the Taylor Mine (operated by Kirkland Lake Gold Ltd.),

the Black Fox Mine (operated by McEwen Mining Inc.) and the Macassa Mine (operated by Kirkland Lake Gold Ltd.). There are also two active exploration projects in the region including the Golden Highway Exploration Area (Moneta Porcupine Mines), and the Upper Beaver Exploration Area (Agnico Eagle). None of the active mining operations or exploration sites are located within the project Study Area (**Figure 4-3**).

The TC Canada Mainline natural gas pipeline is in operation and crosses and parallels the project Study Area (**Figure 4-3**). TransCanada Pipelines Limited owns and operates the pipeline which extends from the Albert/Saskatchewan border to connection points with the US Border in both Southern Ontario and Southern Quebec. Crossings of the TC Mainline Pipeline require approvals and consultation with TransCanada Pipelines Limited.

4.6 Natural Environment Resources

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

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

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

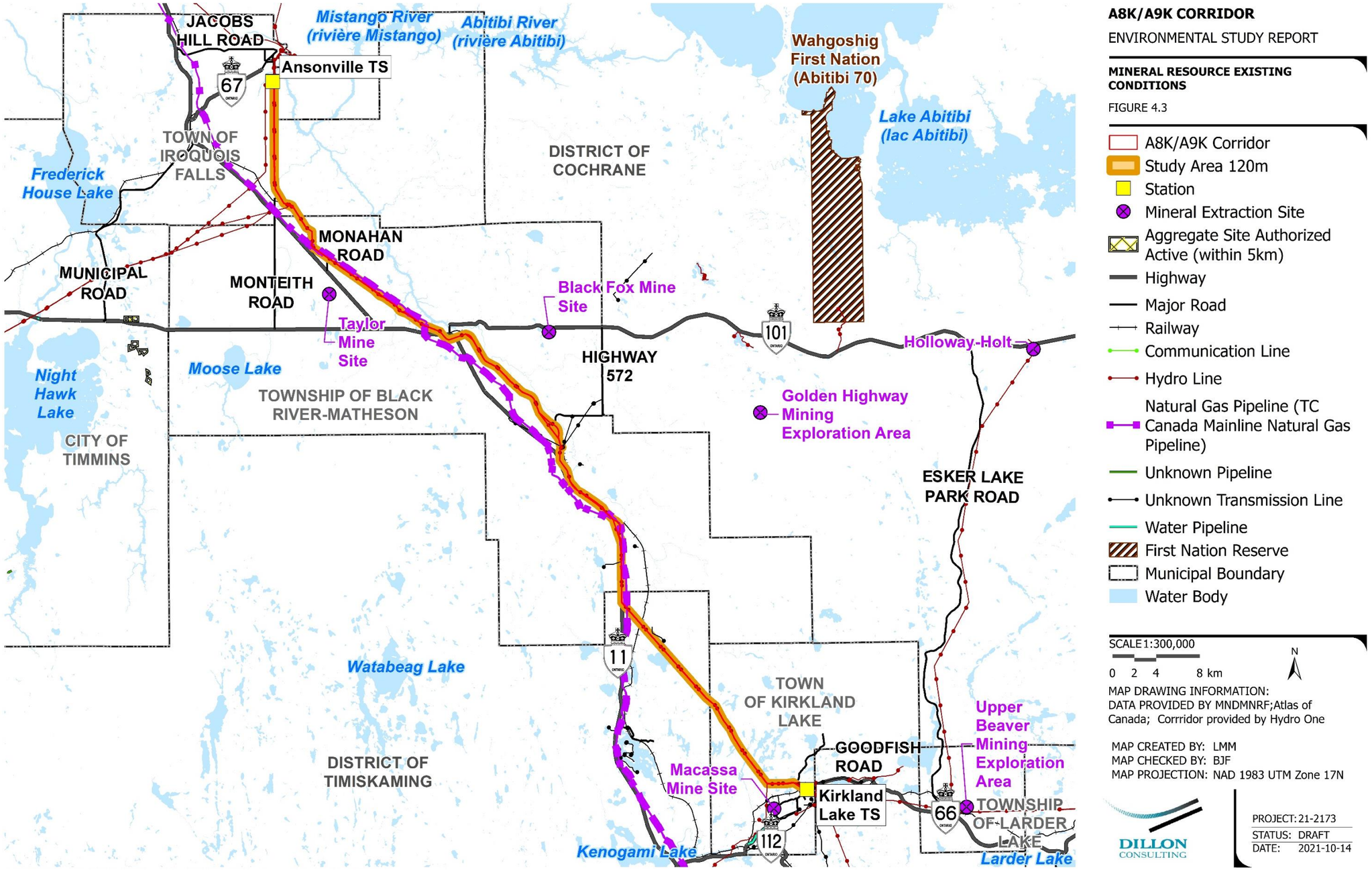
4.6.1 Physical Environment

Bedrock Geology of the PSA is illustrated on **Figure 4-4** (ENDM, 2010). Bedrock deposits within the majority of the Project Study Area are characterized predominantly as Mafic/Felsic to intermediate metavolcanic rocks and metasedimentary rocks of the Archean period (ENDM, 1991) comprising the Abitibi Uplands of the James Region within the Canadian Shield (MNDM, 1991). These formations consist of Neo- to Mesoarchean deposits consisting of Baltic and andesitic flows, tuffs and breccias, chert, iron formations, and minor metasedimenary rocks (MNDM, 1991). Metasedimentary rocks consist of wacke, arkose, argillite, slate, marble, cert, iron formations and minor volcanic rocks (MNDM, 1991).

Quaternary geology of the Project Study Area is depicted on **Figure 4-5** (MNDM, 2010). The majority of the Project Study Area consists of Glaciolacustrine deposits. The

glaciolacustrine deposits within this section of the Project Study Area consist of silt and clay with minor sane, basin and quiet water deposits. Quaternary geology within the remaining Project Study Area consists of a combination of Glaciofluvial Ice (outwash deposits) and Precambrian bedrock. Generally, the Glaciofluvial outwash deposits consist of gravel and sand, and include Proglacial River and deltaic deposits. Conversely, the Precambrian bedrock is listed as undifferentiated igneous and metamorphic rock, which is exposed at the surface or covered by a thin layer of drift.

Figure 4-3: Mineral Resource Existing Conditions



A8K/A9K CORRIDOR

ENVIRONMENTAL STUDY REPORT

MINERAL RESOURCE EXISTING CONDITIONS

FIGURE 4.3

- A8K/A9K Corridor
- Study Area 120m
- Station
- Mineral Extraction Site
- Aggregate Site Authorized Active (within 5km)
- Highway
- Major Road
- Railway
- Communication Line
- Hydro Line
- Natural Gas Pipeline (TC Canada Mainline Natural Gas Pipeline)
- Unknown Pipeline
- Unknown Transmission Line
- Water Pipeline
- First Nation Reserve
- Municipal Boundary
- Water Body

SCALE 1:300,000

0 2 4 8 km

N

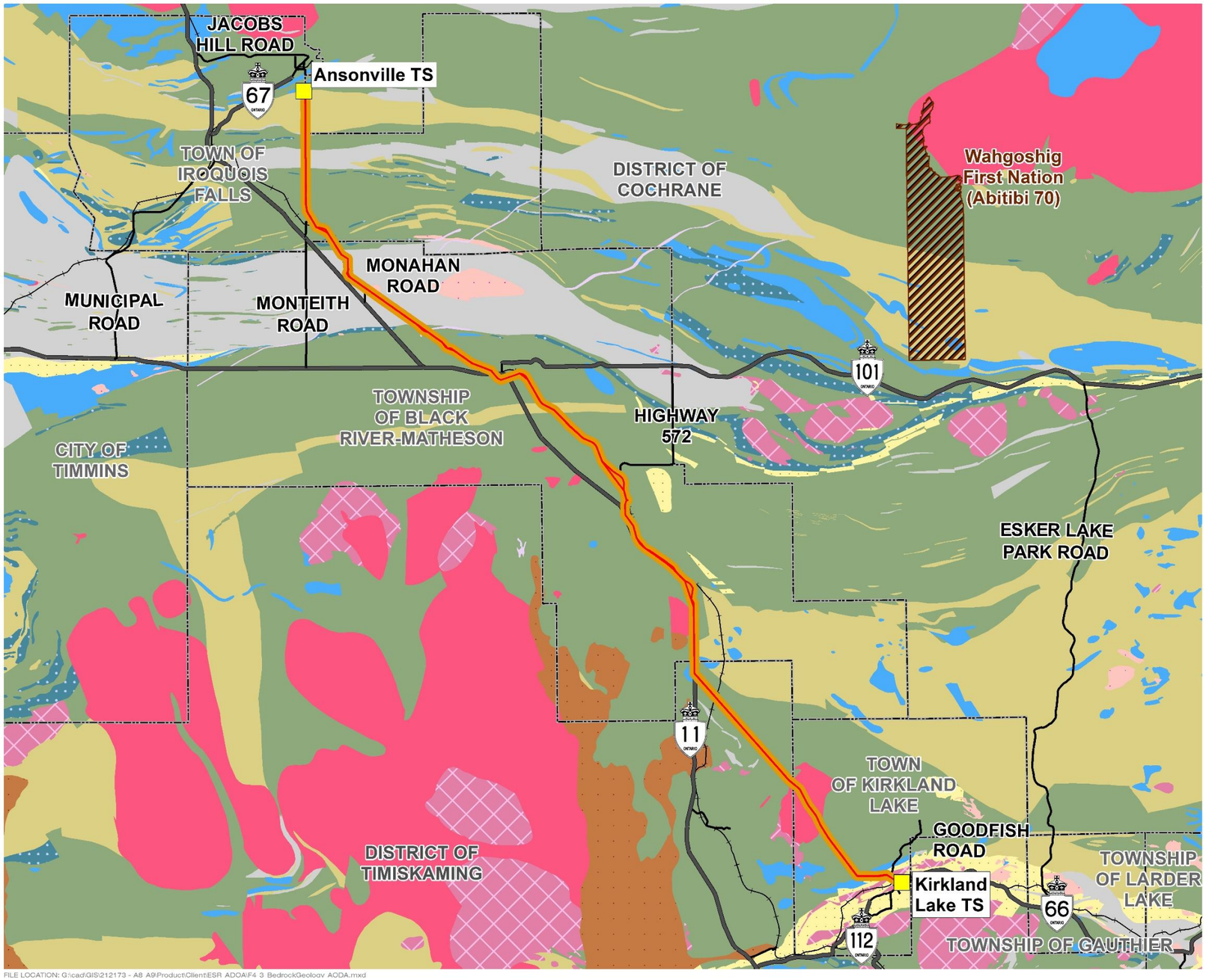
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNDMNRF;Atlas of Canada; Corrridor provided by Hydro One

MAP CREATED BY: LMM
MAP CHECKED BY: BJF
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 21-2173
STATUS: DRAFT
DATE: 2021-10-14

Figure 4-4: Bedrock Geology



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A8K/A9K CORRIDOR

ENVIRONMENTAL STUDY REPORT

BEDROCK GEOLOGY

FIGURE 4.4

- A8K/A9K Corridor
- Study Area
- Station
- Highway
- Major
- Railway
- First Nation Reserve
- Municipal Boundary

Bedrock Geology

- Mafic and related intrusive rocks[i] and mafic dikes
- Cobalt Gp.
- Massive granodiorite to
- Diorite-monzodiorite-granodiorite suite
- Foliated tonalite
- Mafic and ultramafic rocks
- Coarse clastic metasedimentary rocks[r]
- Metasedimentary rocks
- Felsic to intermediate metavolcanic rocks[gt]
- Mafic to intermediate metavolcanic rocks[gt]
- Mafic to ultramafic metavolcanic rocks[gt]

SCALE 1:300,000

0 2 4 8 km

N

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNDMNRF;Atlas of Canada; Corrridor provided by Hydro One

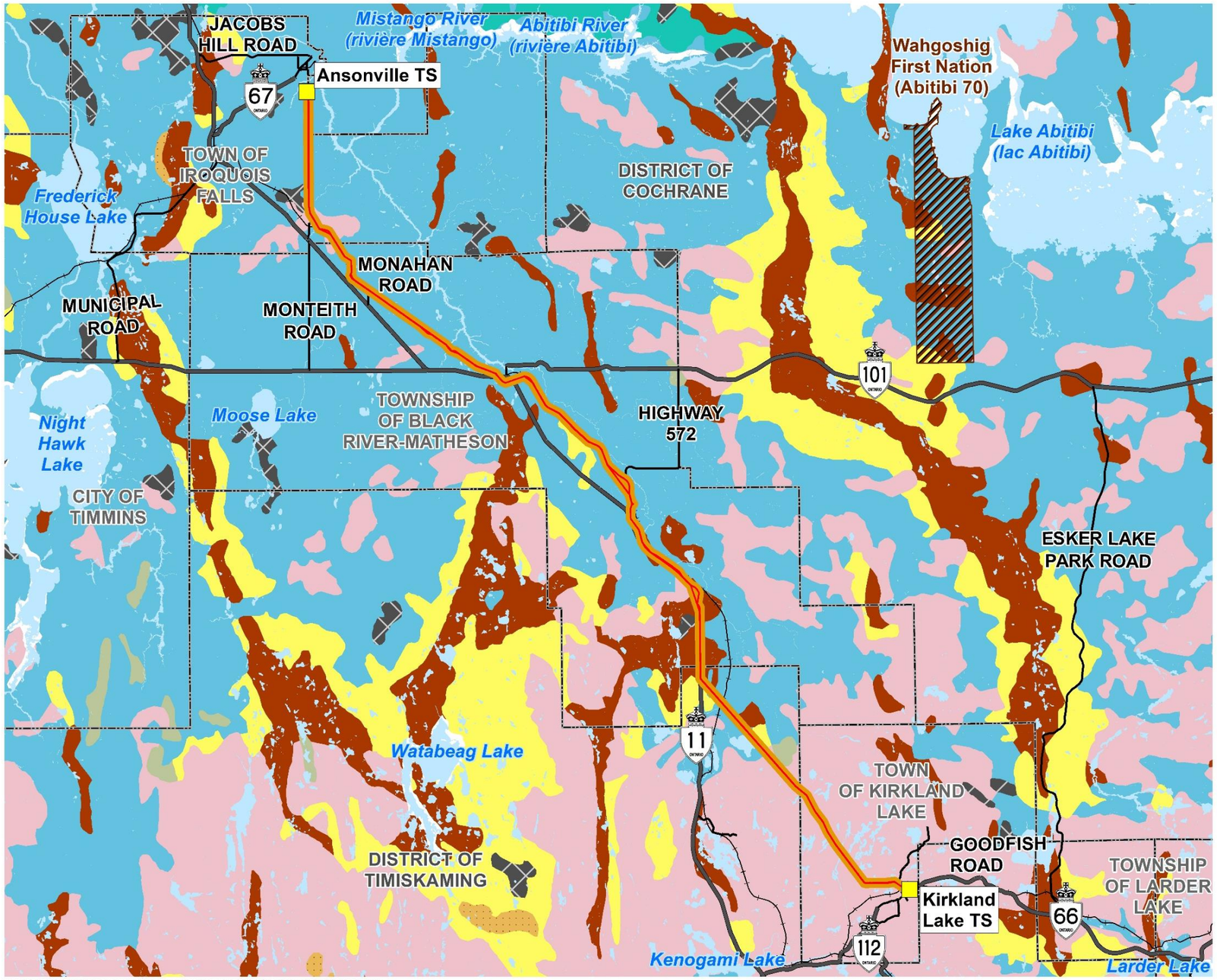
MAP CREATED BY: LMM
MAP CHECKED BY: BJF
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 21-2173
STATUS: DRAFT
DATE: 2021-10-14

hydro one

Figure 4-5: Quarternary Geology



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A8K/A9K CORRIDOR

ENVIRONMENTAL STUDY REPORT

QUATERNARY GEOLOGY

FIGURE 4.5

- A8K/A9K Corridor
- Study Area 120m
- Station
- Highway
- Major Road
- Railway
- First Nation Reserve
- Municipal Boundary
- Water Body

Quaternary Geology

- Bedrock
- Till
- Till, fine-grained
- Glaciofluvial Ice
- Glaciofluvial Outwash deposits
- Glaciolacustrine deposits (silt and clay)
- Glaciolacustrine deposits (sand)
- Organic deposits

SCALE 1:300,000

0 2 4 8 km

N

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNDMNRF;Atlas of Canada; Corrridor provided by Hydro One

MAP CREATED BY: LMM
MAP CHECKED BY: BJF
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 21-2173
STATUS: DRAFT
DATE: 2021-12-06

4.6.2 Atmospheric Environment

Climate

The Project Study Area is located within the humid mid-boreal eco-climatic region of northeastern Ontario. The local climate in this region is characterized as having long, cold winters with short, warm summers with a growing season of approximately 175 days (Crins et al., 2009). Meteorological stations operated by the Government of Canada and the MECP with sufficient long-term data for the general region of the Project Study Area have been identified in Kirkland Lake (Climate Identifier [ID] 6074209) and in Porcupine (Porcupine Ontario Hydro; Climate Identifier [ID] 6076572) Ontario (Government of Canada, 2021a,b). The meteorological stations are located approximately 3.3 km southwest, and 53 km west of the Project Study Area, respectively. Temperature and precipitation data presented in this section are based on annual Climate Normals data available from 1981 and 2010 (**Table 4-2**; Government of Canada, 2021a,b).

Table 4-2: Summary of Published Annual Climate Normals for the 1996 to 2010 Period for the Kirkland Lake and Porcupine ONT Hydro Stations

PARAMETER	Kirkland Lake (Station ID: 6074209): 3.3 km southwest of the Project Study Area	Porcupine ON Hydro (Station ID: 6076572): 53 km west Project Study Area
Daily average (°C)	1.7	2.3
Daily maximum (°C)	7.5	8.3
Daily minimum (°C)	-4.2	-3.7
Rainfall (mm)	589.7	555.4
Snowfall (cm)	294.1	309.6
Precipitation (mm)	883.8	865.1
Days with maximum temperature >35°C	0.18	0.62
Days with minimum temperature <-30°C	19.6	17.5
Days with rainfall ≥ 25 mm	3.1	2.2
Days with snowfall ≥ 25 mm	0.66	0.51
Days with precipitation ≥ 25 mm	3.8	3.0

Source: Government of Canada, 2021a,b

Temperature

The climate normal mean annual temperature recorded at the Kirkland Lake and Porcupine ON Hydro meteorological stations are 1.7 and 2.3 degrees Celsius (ºC), respectively (Government of Canada, 2021a,b). For these two stations, the climate normal daily average temperature varies between -3.7 – 8.3 °C and -4.2 – 7.5ºC. The climate normal frost-free period is from June 11 to September 8 (88 days) (Government of Canada, 2021a; Farmer's Almanac, 2021).

Precipitation

Precipitation is distributed throughout all four seasons, with snowfall typically limited between October to April, and rainfall occurring throughout the year (the lowest volumes occurring in December, January and February). Climate normal days with precipitation (equal to or over 0.2 mm) range between 172 and 154.2 days per year for the Kirkland Lake and Porcupine ON Hydro meteorological stations, respectively (Government of Canada, 2021a,b).

Climate normal monthly precipitation varies between 47.5 – 48.6 millimetres (mm) (February) and 89.7-100.0 mm (September) (Government of Canada, 2021a,b). For the two meteorological stations, the climate normal total annual precipitation is 883.8 mm (Kirkland Lake) and 865.1 mm (Porcupine ON Hydro), where 589.7 mm and 555.4 mm are associated with rainfall and 294.1 mm and 309.6 mm occur as snowfall for each station respectively.

Extreme daily rainfall for the Kirkland Lake meteorological station varies from 15.2 mm (February and December) to 96.5 mm (June) and are considered climate normal. Extreme snow depths for the Kirkland Lake station range from zero to 41.9 centimetres (cm) (March; Government of Canada, 2021a). On the other hand, extreme daily rainfall climate normal data for the Porcupine ON Hydro meteorological station varies from 12.0 mm (January) to 82.0 mm (August), while extreme snow depth ranges from zero to 51.0 cm (November; Government of Canada, 2021b).

Wind

Within Kirkland Lake and Iroquois Falls, an average maximum hourly speed of 11.5 kilometres per hour (km/hr) and 11.45 km/hr were reported, respectively (World Weather Online, 2021a,b

Air Quality

In Ontario, air quality is monitored through a network of air quality monitoring stations operated by the MECP and Environment Canada (MECP, 2021; EC 2021); the MECP monitors air quality throughout the Province as part of the Air Quality Monitoring System (MECP 2018). The nearest stations are located approximately 243 km south (North Bay) and 305 km southwest (Sudbury) of the Project Study Area. Through hourly monitoring, an Air Quality Health Index (AQHI) reading summarizes background air quality levels for ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulphur dioxide (SO_2) and particulate matter ($PM_{2.5}$). Three of the five parameters (O_3, $PM_{2.5}$, and NO_2) were measured at the North Bay station; four of the five parameters (O_3, $PM_{2.5}$, NO_2, and SO_2) were measured from the Sudbury Station.

The AQHI creates a score (i.e. 1 - 10+) totalling the overall risk associated with levels recorded for the parameters measured. A score of 1-3 indicates a low risk, a score of 4-6 indicates a moderate risk, while a score of 7+ indicates a high risk to ambient air quality. Air monitoring data summarized to provide AQHI scores from the North Bay and Sudbury stations represent the combined effect of emissions from nearby sources, as well as the effect of emissions transported into the region. AQHI readings are recorded hourly. Based on averaged daily AQHI readings recorded over the 2018, 2019 and 2020 monitoring years, a low score (1-3) and, therefore a low risk to air quality, are indicated for the North Bay and Sudbury areas (MECP, 2021a,b).

Noise and Vibration

In accordance with the MECP (formerly MOE) publication NPC-300 “Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning” noise-sensitive receptors, or points of reception, are defined as sensitive land uses, which include dwellings; institutional use (educational, nursery, hospital, health care facility, community centre, place of worship or detention centre); and commercial use (hotel or motel) (MOECC, 2016b). Based on a desktop review, points of reception were identified to represent the noise-sensitive receptors in the vicinity, all being rural residential dwellings and/or commercial operations.

Ambient noise conditions within were established through a review of publicly available information and the professional opinion of Hydro One based on experience on existing transmission line and station projects. Ambient noise conditions are generally expected to be dominated by anthropogenic activities. These activities include, but are not limited to, transportation (road), residential and commercial activities; the latter of which are located primarily within settlement areas. The actual ambient noise levels at a given

point of reception depend on a number of factors, including type of noise source, distance to the noise source, and influences from intervening areas (e.g., structures, vegetation, as applicable) that could provide shielding between the noise source and point of reception. Ambient noise levels are expected to vary throughout the various periods of the day (i.e., Daytime [07:00-19:00], Evening [19:00-23:00], and Night-time [23:00-07:00]), days of the week, and seasons of the year. Ambient noise levels are expected to be at their highest during peak traffic.

Ambient noise levels are likely influenced by the following noise emissions:

- Local and distant road traffic, particularly along Highway 11
- Railway activities

Vibration can be a by-product of construction activities. Some activities during the construction phase of the proposed Project with the ability to result in vibration include soil compaction, excavation of foundations, and heavy equipment use.

4.6.3 Surface Water Resources

Watercourse crossings along the ROW were assessed through desktop review by Tulloch Engineering. A total of 46 watercourse crossings were identified along the ROW. Based on desktop review by Tulloch, 42 of the watercourses are considered permanent while data was unavailable to determine permanence of flow on the remaining 4 watercourses. Physical conditions of the watercourses were not assessed.

The identified watercourses are located in both the Cochrane and Kirkland Lake MNDMNRF Districts and are considered tributary channels to various rivers, creeks and lakes. Specifically, 24 watercourses are considered tributaries to the Black River; 9 are tributaries to Wolf Lake, 4 are tributaries to the Driftwood River; with 1 tributary each to Wabbler Creek, Winnie Lake and O'Connell Lake and 1 crossing associated with the main stem of Wewegimok / Wendtright Creek. The remaining 5 watercourses are unnamed and have unknown connections.

Based on preliminary review of the watercourse crossings by HONI and their contractor (Forbes Bros), 17 watercourses will require temporary clear span bridges or ice bridges to safely access the ROW in support of the Project.

A complete list of the identified watercourse crossings including fish presence (per MNRF and ARA), drainage area, thermal regime and other pertinent information is provided in **Appendix G**. Fish distribution for each watercourse as identified by MNRF and ARA are also summarized in the **Section 4.6.6.2 (**Aquatic and Fish Habitat) below.

4.6.4 Groundwater Resources

Groundwater resources were evaluated within the Project Study Area to effectively capture potential effects on groundwater resources from the proposed Project. Well records mapped for the province of Ontario were reviewed to determine groundwater quality (MECP, 2021). Background review determined that many water wells are located within the extent of the Project Study Area. As such, select well records were chosen within the Project Study Area in order to identify the approximate ground water and overburden depths. The summary of the water wells chosen for review are listed in **Table 4-3**.

Table 4-3: Water Well Records Selected for Review within the PSA

Well ID	Date Complete	UTM Coordinates (Zone 17 T) Eastings	UTM Coordinates (Zone 17 T) Northings	Depth to Water (m)	Overburden
1604578	09/05/1991	523068	5399368	87.2	Clay, sand
1604681	11/29/1992	523539	5397403	82.3	Clay
1604215	05/05/1989	523504	5392930	92.0	Clay
1604603	07/04/1991	525729	5386420	32.9	Clay, Sand
1604598	09/13/1991	532657	5379580	13.7	Clay, Fine Sand
7286664	04/27/2017	541448	5375619	36.6	Clay
1604468	11/02/1989	545372	5371506	28.0	Sand and Gravel
6302564	11/22/1995	558975	5349745	56.1	Sand
6302709	02/18/1998	563039	5340099	76.2	Sand and Clay
7124115	05/29/2009	571979	5334169	5.3	Peat, Wet Sand, Gravel

Source: MECP, 2021

Well log records are consistent amongst the water wells: depth to groundwater varies approximately between 5.3 m to 92 m (average groundwater depth of 51 m). Wells observed within the northern extent of the Project Study Area were noted within soils consisting of a thick layer of clay. Conversely, records for wells present within the southern extent of the Project Study Area noted that overburden consisted of predominantly of sand. The majority of wells observed within and adjacent to the Project

Study Area were all used for local water supply (agricultural/livestock and domestic residential). Excerpted summary water well records listed in Table 4-4 are presented in **Appendix I**. No municipal drinking water supplies were identified within the PSA or within the general vicinity.

Groundwater Hydrology

Through reviewing available online atlases, the Project Study Area is not located within a Source Protection Area or well head protection area, intake protection zone or significant groundwater recharge area (MECP, 2021). Furthermore, there are no highly vulnerable aquifers, documented within the Project Study Area.

4.6.5 Designated or Special Natural Areas

Designated or special natural areas are identified by federal or provincial agencies and municipalities through legislation, policies, or approved management plans. These areas typically have special or unique values that result in conservation land initiatives. Such areas may have a variety of ecological, recreational, and aesthetic features and functions that are highly valued. No designated or special natural areas were identified within the Study Area. Significant woodlands are discussed below in **Section 4.6.6.**

4.6.6 Natural Heritage Features

Natural heritage features associated with the Project were assessed by NBS. Review of natural features was completed through detailed desktop review while a field studies focused on SAR and SWH and were completed in July 2021. Desktop review was included the area along the existing transmission corridor and within 500 m on either side, including potential access roads and trails. The desktop review focused on potential SAR, and special concern species with potential to occur within the Project Study Area. The desktop review included review of the following resources:

- Atlas of Lake Sturgeon Waters in Ontario (Kerr 2002)
- Atlas of the Mammals of Ontario (Dobbyn 1994)
- BugGuide (www.bugguide.net)
- Bumble Bees of North America (Williams et al. 2014)
- Bumble Bee Watch (https://www.bumblebeewatch.org/)
- Committee on the Status or Endangered Wildlife (COSEWIC) status reports
- Fisheries and Oceans Canada Aquatic Species at Risk Mapping (2019)
- eBird: An online database of bird distribution and abundance (https://ebird.org/home).

- eButterfly: a citizen-based butterfly database in the biological sciences. (http://www.e-butterfly.org/)
- Forest Management Plans
- Freshwater Fishes of Ontario (Holm et al. 2009)
- iNaturalist (https://www.inaturalist.org/)
- Ontario Breeding Bird Atlas (Cadman et al. 2019)
- Ontario Butterfly Atlas (http://www.ontarioinsects.org/atlas_online.htm)
- Ontario Reptile and Amphibian Atlas (https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/)
- Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)
- The Natural History of Canadian Mammals (Naughton 2012)
- NatureServe (https://www.natureserve.org/)
- Rare Vascular Plants of Ontario (Oldham and Brinker 2009); and,
- Species at Risk in Ontario (SARO) List (https://www.ontario.ca/page/species-risk-ontario)

Results of the desktop review were used to guide the 2021 field surveys. Surveys were conducted along the existing transmission corridor and within approximately 120 m on either from July 2 – July 10, 2021. The surveys generally focused on bats, birds, anurans, SWH and other taxa as applicable. Results of the desktop review and field program are provided in the 2021 Field Survey Summary Report (Field Report) provided in **Appendix D**. Key findings of the Field Report are also summarized in the sections below.

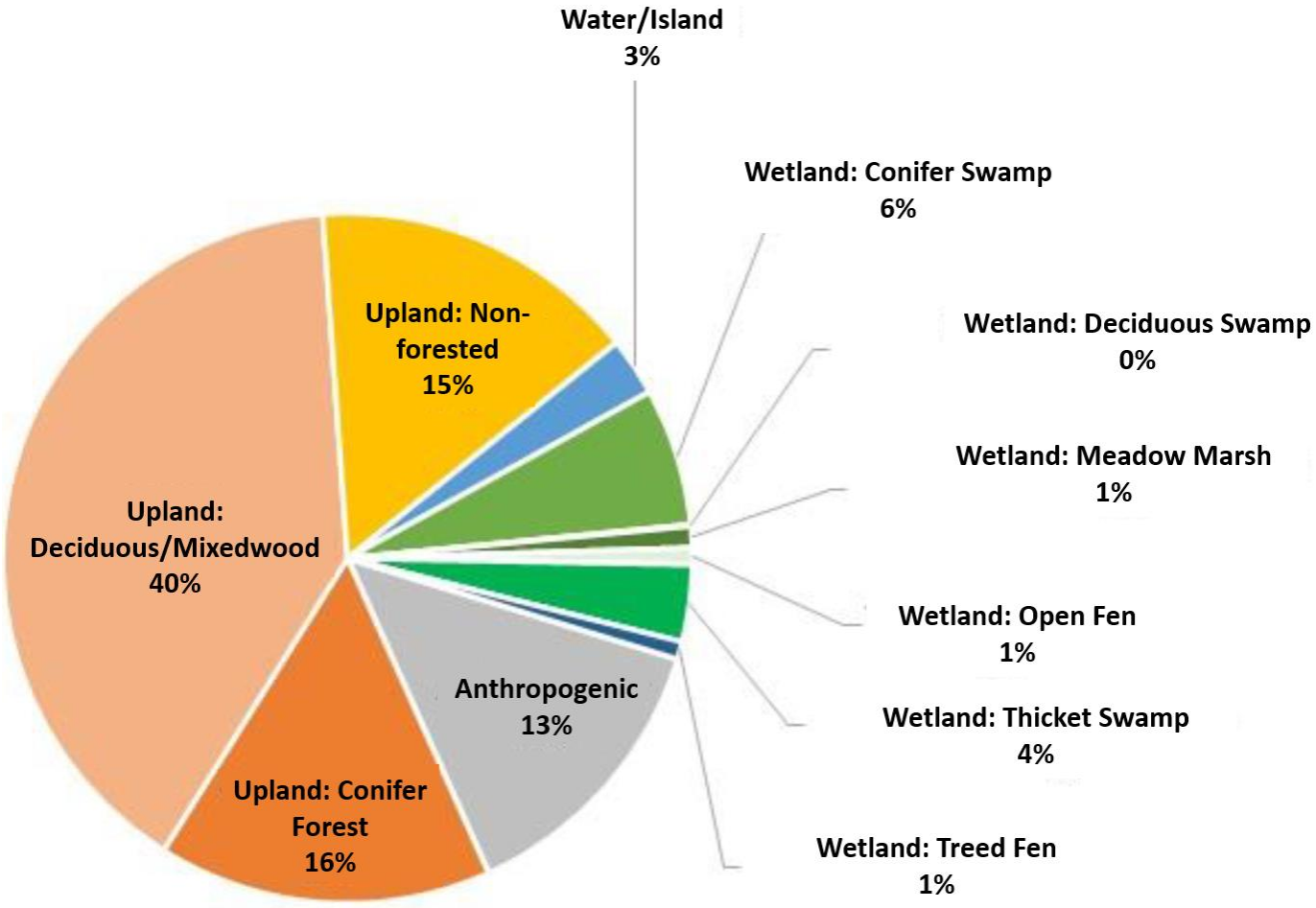
4.6.6.1 Vegetation and Wetlands

Vegetation was quantified for the Project Study Area using available Forest Resource Inventory (FRI) data for the Timiskaming Forest region. FRI data was not available for a small portion of the Project Study Area near Iroquois Falls that is located within the Abitibi Forest. Vegetation for this portion of the Project Study Area (Abitibi Forest) was assessed in the field and through review of available satellite imagery; however, they were not quantitatively assessed. Surveys for rare plants were done concurrent with other field work (birds, bats) using the random meander method (ANPC 2000).

The ROW within the Project Study Area is generally dominated by herbaceous, gramineous, and/or low woody vegetation. The current vegetation types and characteristic within the ROW are likely attributed to historic maintenance activities completed to prevent the growth of trees and shrubs from interfering with the overhead transmission line. While soils within the ROW were noted to be similar to those in

adjacent habitats (wetlands, forested habitat, open fields, etc.), plant species within the ROW generally consist of those tolerant of open, disturbed habitats and periodic maintenance, including non-native species. Vegetation communities along the ROW and within the Project Study Area were reviewed and it was determined that the majority of the ROW is bordered by upland habitats. Approximately 70% of the habitat adjacent to the ROW is comprised of either upland forest or non-forested habitats (**Figure 4-6**). Remaining habitat types include treed and open wetlands (approximately 13%) with waterbodies and watercourses accounting for approximately 3%. The remaining 13% is considered anthropogenic, with habitats dominated by transmission lines, roads, and other developed areas.

Figure 4-6: Approximate Proportion of Habitat Types in the Project Study Area



A total of 43 ecosites were identified within the Project Study Area (**Appendix D**; Table 6).The majority of habitats within and adjacent to the ROW are comprised of upland forests and open vegetation communities. Deciduous forests or mixedwoods make up

approximately 55% of adjacent habitats, with Boreal Ecosite B104 (Fresh Silty/Fine Loamy Aspen-Birch Deciduous) being the most abundant, representing nearly 25% of the habitats within the Project Study Area. This ecosite has an overstory dominated by trembling aspen (*Populus tremuloides*) and/or white birch (*Betula papyrifera*), with white spruce (*Picea glauca*), balsam fir (*Abies balsamea*) as common subdominants. The shrub and herbaceous layers are often well-developed. Mountain maple (*Acer spicatum*) is common, as are sarsaparilla (*Aralia nudicaulis*), bunchberry (*Cornus canadensis*), bluebead lily (*Clintonia borealis*), and Canada mayflower (*Maianthemum canadense*) in a well-developed herbaceous layer. Ground cover is typically comprised of feathermoss, broom mosses (Dicranum spp.), and leaf litter.

Ecosite B055 (Coarse Dry/Fresh Aspen-Birch Deciduous) was the next most common upland vegetation community, account for approximately 12% of the adjacent habitats. This community contains a slightly higher moisture regime than B104, with beaked hazel (*Corylus cornuta*) and bush honeysuckle common shrubs, as well as bunchberry, Canada mayflower, and feathermosses common in the understory.

On well-drained upland sites such as Ecosite B044 (Coarse Dry/Fresh Field) and B055, ground cover in the ROW is often sparse and dominated by bracken fern (*Pterdidium aquilinum*), sheep laurel (*Kalmia angustifolia*), bearberry (*Arctostaphylos uva-ursi*), and reindeer lichen (*Cladina* spp.).

Wetlands were quantified for the Project Study Area using available FRI data for the Timiskaming Forest. Wetlands were not formally evaluated; however, a desktop screening exercise was completed to identify potential PSWs.

Wetlands account for approximately 13% of the habitats with the Project Study Area, with open wetlands accounting for less than 2%. The wetland habitats documented comprise a variety of wetland types / ecosites, including the following (listed chronologically based on abundance, most abundant to less abundant):

- B128 - Organic Intermediate Conifer Swamp;
- B135 - Organic Thicket Swamp (next most abundant);
- B127 - Organic Poor Conifer Swamp; and,
- B142 - Mineral Meadow Marsh

No PSWs were identified by MNDMNRF (formerly MNRF) along or within 1 km of the ROW or potential access routes. The ROW does, however, intersect portions of 2 large unevaluated contiguous wetlands; one near Wolf Lake, east of Bourkes and another to the west of Bourkes and north of Meyers Lake. Refer to Figures 25 and 26 in **Appendix**

D for the locations of the aforementioned unevaluated wetlands relative to the existing ROW.

The wetland near Wolf Lake covers approximately 1800 ha with more than half (56%) of its extent associated with intermediate conifer swamp, with poor and rich conifer swamps accounting for another 21% of the wetland area. Thicket swamp covers over 200 ha and treed fen another 97 ha. Meadow marsh and floating marsh account for only 3. 4 and 1.1 ha, respectively. The contiguous wetland near Meyers Lake is approximately 2000 ha in size, with conifer swamps representing 80% of the area, of which most are intermediate swamp dominated by black spruce and tamarack. Thicket swamp and treed fen each account for approximately 7% of the wetland area, with small pockets associated with bog (approximately 35 ha) or marsh (less than 3 ha).

The ROW is also adjacent to a 300 ha wetland, north of Val Gange (Figure 27 in **Appendix D**)**.** This wetland is primarily poor or intermediate conifer swamp and organic thicket swamp, with minimal treed fen and open poor fen habitat.

Refer to Section 3.4.2 in **Appendix D** for more detailed summaries and representative ecosite photos.

4.6.6.2 Aquatic and Fish Habitat

As discussed in **Section 4.6.3** above, a total of 46 watercourse crossings were identified along the ROW. Based on information provided in the Tulloch Environmental ESA Mitigation Plan (**Appendix H**), 17 of these watercourses are expected to require crossings by either temporary clear-span bridges or ice bridges. Of the 46 watercourses, based on available ARA data, 35 are expected to provide habitat for a variety of cool water fish species, 1 watercourse is expected to provide habitat for cold water fish species. The remaining 10 watercourses were noted to provide potential habitat for cool water species based on the potential connectivity to known fish habitat (i.e., tributaries to known fish habitat) based on MNRF data., It is assumed that 45 of the watercourses provide potential habitat for a variety of cool water fish species while one watercourse provides habitat for cold water species. It should be noted that a total of 10 watercourses had no data available related the thermal regime, based on the location of the Project Area, we have assumed that those 10 watercourses would be considered cool water regimes.

A list of anticipated fish species per watercourse based on available ARA and MNRF data is provided below:

Black River Tributaries (24 watercourses): Brook Trout (*Salvelinus fontinalis*), Brown Bullhead (*Ameiurus nebulosus*), Goldfish (*Carassius auratus*), Sauger (*Sander canadensis*), Brook Stickleback (*Culaea inconstans*), Creek Chub (*Semolitus atromaculatus*), Fathead Minnow (*Pimephales promelas*), Finescale Dace (*Chrosomus neogaeus*), Northern Redbelly Dace (*Chrosomus eos*) and Brassy Minnow (*Hybognathus hankinsoni*).

Wolf Lake Tributaries (9 watercourses): Walleye (*Sander vitreus*), Common Shiner (*Luxilus cornutus*), Logperch (*Percina caprodes*), Northern Pike (*Esox lucius*), Pumpkinseed (*Lepomis gibbosus*), Spottail Shiner (*Notropis hudsonius*), Golden Shiner (*Notemigonus crysoleucas*), White Sucker (*Catostomus commersonii*) and Yellow Perch (*Perca flavescens*).

Driftwood River Tributaries (4 watercourses): Walleye and Northern Pike.

Wabbler Creek Tributary (1 watercourse): Brassy Minnow, Common Shiner, Fathead Minnow, Iowa Darter (*Etheostoma exile*), Northern Pearl Dace (*Margariscus nachtriebi*), Northern Redbelly Dace and White Sucker.

Winnie Lake Tributary (1 watercourse): Northern Pike and White Sucker.

O'Connell Lake Tributary (1 watercourse): Brook Trout, Northern Pike, Rainbow Trout (*Oncorhynchus mykiss*), White Sucker, Yellow Perch, Blacknose Shiner (*Notropis heterolepis*), Brook Stickleback, Common Shiner, Finescale Dace and Mottled Sculpin (*Cottus bairdii*).

Wewegimock / Wendtright Creek (1 watercourse): Northern Pike, Walleye and White Sucker, Yellow Perch.

Through review of DFO's Aquatic Species at Risk mapping, it was determined that the Lake Sturgeon (Acipenser fulvescens) is present within the Abitibi River near the northern extent of the Project, east of Ansonville. Lake Sturgeon is listed as Special Concern within this northern extent of the ROW (Southern James Bay population). However, the ROW does not intersect the Abitibi River, and as such, disturbance to Lake Sturgeon is not anticipated. Erosion and sediment control plans for watercourse crossings will be determined based on the specific watercourse crossing and permit conditions as outlined in Section 7.6.4.

4.6.6.3 Birds

Through desktop review, it was determined that three SAR birds; Eastern Whip-poor-will, Bobolink and Barn Swallow have the potential to occur within the Project Area. Based on the results of the screening, breeding bird surveys completed by NBS were focused on SAR species with potential occurrence within the Project Study Area. Bird surveys completed by NBS focused on confirming presence/absence of SAR and assessing habitat use by breeding birds. Bird monitoring/assessment completed along the ROW included morning point counts, crepuscular/nocturnal surveys, marsh bird surveys, and incidental observations.

A total of 172 morning point counts were conducted on or immediately adjacent to the ROW. Spacing of the point counts were at least 500 m to avoid overlap of birds detected on adjacent point count plots. The point count plots were accessed by foot, truck and/or ATV. Further details on the point count monitoring protocol are provided in the NBS report (**Appendix D**).

Crepuscular and nocturnal surveys were conducted at select locations for Eastern Whip-poor-will (see section 2.4.2 of the NBS report [**Appendix D**]). 70 point-in-time surveys, 10 wildlife acoustic micro acoustic recording units (ARUs) were utilized at 30 locations for a total of 80 deployment nights. Acoustic recordings collected during these surveys were analyzed manually by ear and with the use of sonograms in Wildlife Acoustic's Kaleidoscope Pro software program.

Finally, a total of 22 surveys were conducted for marsh birds following the Environment Canada Marsh Monitoring Program protocol to the extent practical considering the lateness in the season for completing surveys (July). Further details on the point count, crepuscular/nocturnal and point-in-time assessment protocols are provided in the NBS report (**Appendix D**).

A total of 101 species of birds including 3 SAR and 4 SCC were observed during the field work including a total of 2643 individuals recorded either by sight, sound (in the field or recorded via ARUs). A full list of bird species observed is provided in Appendix 7 (pages 38 - 40) of the NBS report in **Appendix D**. SAR are discussed further in subsequent sections.

HONI acknowledges that due to time and schedule constraints, single visit morning point counts, crepuscular/nocturnal surveys, marsh bird surveys were completed to assess presence/absence of SAR and breeding birds within the Project Area as opposed to multi-season field surveys. Given this, HONI is committed to using a precautionary approach to impact mitigation, assuming that all potential habitat

identified related to SAR or SCC that was not able to be fully assessed due to timing or methodology of field surveys are present, and mitigate appropriately. To mitigate potential disturbance to SAR or SCC, relevant avoidance, protection and mitigation measures will be adhered to during both construction and operation/maintenance phases of the Project.

4.6.6.4 Bats

Bat assessments were completed by NBS with the use of a handheld Echometer Touch2, and deployed MiniBat ultrasonic recorders. A total of four MiniBat recorders were deployed at 10 locations for a total of 28 deployment nights (4 recorders deployed 7 nights each). Specific locations of each MiniBat and EchoMeter Touch2 survey location are shown on Figure 9 in the NBS report in **Appendix D**.

Acoustic data was analyzed using the Auto ID feature in Kaleidoscope Pro software to determine total number of detections per bat species. **Table 4-4** below outlines the results of the bat acoustic monitoring, showing total number of bat passes per species.

Table 4-4: Results of Bat Detection Surveys

Common Name	Species	Number of Passes
Big Brown Bat	Eptesicus fuscus	9
Red Bat	Lasiurus borealis	23
Hoary Bat	Lasiurus cinereus	276
Silver-haired Bat	Lasionycteris noctivagans	190
Little Brown Myotis	Myotis lucifugus	123
All Names	All Species	Total: 621

Of the bat species observed, only one SAR, Little Brown Myotis (*Myotis lucifugus*), was detected. SAR bats are discussed further in subsequent sections.

4.6.6.5 Woodlands

Under the PPS, significant woodlands are not protected in Ecoregion 3E. Given the location of the existing transmission line in northern Ontario, the majority of the corridor is located within expansive contiguous woodlands comprising the southern Boreal forest. No significant woodlands were identified in the Project Study Area.

4.6.6.6 Valleylands

Under the PPS, significant valleylands are not protected in Ecoregion 3E. No valleylands were identified within the Project Study Area as part of the background review.

4.6.6.7 Areas of Natural and Scientific Interest

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

4.6.6.8 Species at Risk

In June 2008, the Endangered Species Act, 2007 (ESA) came into effect in Ontario; the ESA applies to lands under provincial jurisdiction. The purpose of the ESA is to identify SAR based on the best available scientific information; to protect SAR and their habitats, to promote the recovery of SAR; and to promote stewardship activities to assist in the protection and recovery of SAR in Ontario. There are two applicable regulations under the ESA; O. Reg. 230/08 (Species at Risk Ontario [SARO] list), and O. Reg. 242/08 (General). These regulation serve to identify which species and habitat receive protection and provide direction on the current implementation of the ESA by the MECP.

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

A screening to identify potential SAR and SAR habitat within the PSA was completed in support of the Natural Environment Field Program TOR. In total, 13 SAR were identified as having the potential to occur within the general vicinity of the PSA (**Appendix D**)

Table 4-5: SAR with the Potential to Occur within the General Vicinity of the Project Study Area

Group	Scientific Name	Common Name	SARA[2]	ESA[3]	SRank[4]
Birds	Hirundo rustica	Barn Swallow	THR	THR	S4B
Birds	Riparia riparia	Bank Swallow	THR	THR	S4B
Birds	Hirundo rustica	Barn Swallow	THR	THR	S4B
Birds	Dolichonyx oryzivorus	Bobolink	THR	THR	S4B
Birds	Chaetura pelagica	Chimney Swift	THR	THR	S4B,S4N
Birds	Caprimulgus vociferus	Eastern Whip-poor-will	THR	THR	S4B
Mammals	Rangifer tarandus caribou	Caribou (Boreal population)	THR	THR	S4
Mammals	Puma concolor	Eastern Cougar	Not Listed	END	SU
Mammals	Myotis leibii	Eastern Small-footed Myotis	Not Listed	END	S2S3
Mammals	Myotis lucifugus	Little Brown Myotis	END	END	S4
Mammals	Myotis septentrionalis	Northern Myotis	END	END	S3
Insects	Bombus bohemicus	Gypsy Cuckoo Bumble Bee	END	END	Not Listed

Results of the screening and field investigations were summarized in the NBS report (**Appendix D**).

[2] Federal Species at Risk Act, 2002 (SARA), where SC = special concern, THR = threatened and END = endangered;
[3] Provincial Endangered Species Act, 2007 (ESA), where THR = threatened and END = endangered;
[4] Provincial Conservation Ranking (SRank) where S4 = apparently secure, S3 = vulnerable, S2 = imperiled, SU = unranked, B = breeding, and N = non-breeding,

Throughout the 2021 field season, the following four SAR were observed within the Project Study Area:

- Eastern Whip-poor-will
- Bobolink
- Barn Swallow
- Little Brown Myotis

Each of the aforementioned species are discussed below.

- Eastern Whip-poor Will: A single eastern whip-poor-will was observed foraging near a private driveway north of Kirkland Lake at 22:00 on 8th July 2021. It was sitting on the ground and sallying forth to catch flying insects. No eastern whip-poor-will were detected during point-in-time nocturnal surveys. A single, very faint call that may have been a whip-poor-will was detected on July 7 at ARU Micro #7 deployed in potentially suitable rock barren habitat along the Sesekinika Road (556992E 5340234N). No other potential whip-poor-will calls were detected later in the night or on the previous or following night either.
- Bobolink: One male and two females were observed in a field near Monteith on July 4, 2021 and a single male was observed in a grassy ROW to the west of Val Gagne sewage lagoon on July 4, 2021. The presence of preferred habitat for Bobolink was confirmed within the Project Study Area.
- Barn Swallow: A single adult was observed perched roadside on a telephone wire near Monteith on July 4, 2021. No evidence of breeding was observed on or near the ROW or Project access roads.
- Little Brown Myotis: A total of 123 passes of this species was recorded during the acoustic monitoring period, although the majority of passes were from a single location, suggesting these detections were not all separate individuals; and were more likely to be multiple passes from one or a few bats. In addition, only one Little Brown Myotis was detected during 70 in-person surveys targeted toward locations that would be more likely to have bats. This suggests that there is relatively limited use of the Project Study Area by this species.

Mitigation measures to protect potential SAR and SAR habitat during construction are discussed below in **Section 7.6.6.4**.

4.6.6.9 Wildlife and Significant Habitat

Species of Conservation Concern (SCC) are defined as:

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

Based on desktop background review previously summarized in the Natural Environment Field Program TOR, the following 14 SCC were identified as having the potential to occur within the general vicinity of the Project Study Area (**Table 4-6**).

Table 4-6: SCC with the Potential to Occur within the General Vicinity of the Project Study Area

Group	Scientific Name	Common Name	SARA[5]	ESA[6]	SRank[7]
Birds	Contopus virens	Eastern Wood-pewee	SC	SC	S4B
Birds	Haliaeetus leucocephalus	Bald Eagle	Not Listed	SC	S2N,S4B
Birds	Chlidonias niger	Black Tern	Not Listed	SC	S3B
Birds	Contopus cooperi	Olive-sided Flycatcher	THR	SC	S4B
Birds	Euphagus carolinus	Rusty Blackbird	SC	SC	S4B
Birds	Asio flammeus	Short-eared Owl	SC	SC	S2N,S4B
Birds	Coturnicops noveboracensis	Yellow Rail	SC	SC	S4B
Birds	Cardellina canadensis	Canada Warbler	THR	SC	S4B

[5] Federal Species at Risk Act, 2002 (SARA), where SC = special concern, THR = threatened
[6] Provincial Endangered Species Act, 2007 (ESA), where SC = special concern
[7] Provincial Conservation Ranking (SRank) where S4 = apparently secure, S3 = vulnerable, S2 = imperilled, B = breeding, and N = non-breeding.

Group	Scientific Name	Common Name	SARA[5]	ESA[6]	SRank[7]
Birds	Chordeiles minor	Common Nighthawk	THR	SC	S4B
Lichens	*Leptogium rivulare*	Flooded Jellyskin	THR	Not Listed	S3
Fish	*Ichthyomyzon fossor*	Northern Brook Lamprey	SC	SC	S3
Fish	*Acipenser fulvescens pop. 2*	Lake Sturgeon	Not Listed	SC	S3
Herpetofauna	Chelydra serpentina	Snapping Turtle	SC	SC	S3
Lepidoptera	Danaus plexippus	Monarch	SC	SC	S4

Throughout the 2021 field season, the following four SCC were observed within the Project Study Area:

- Olive-sided Flycatcher
- Canada Warbler
- Common Nighthawk
- Bald Eagle
- Monarch

Each of the aforementioned species are discussed below.

- Olive-sided Flycatcher: Lone male olive-sided flycatchers (*Contopus cooperi*) were heard singing on territory on July 5, 2021 at two locations along the Sesekinika Road used to access the southern portion of the ROW near Kirkland Lake.
- Canada Warbler: Male Canada warblers (*Cardellina canadensis*) were recorded on plots or incidentally at seven locations along the ROW on multiple dates in July 2021. Males were heard singing (apparently on territory) in mixedwood forest adjacent to the ROW, rather in the ROW itself.
- Common Nighthawk: Common nighthawks were observed in the evening (20:40 to 21:50) on July 6, 8, and 9 during crepuscular/nocturnal surveys or incidentally. They were observed at 10 locations, primarily in upland habitat (often jack pine-dominated) in the southern portion of the study areas, particularly the Sesekinika Road used to access the ROW near Kirkland Lake. Lone individuals were often

observed flying overhead, calling, and displaying (peenting), and one group of four was also observed. Common nighthawk were also detected on 28 occasions at nine locations (NBS Report - Figure 13) using ARUs deployed throughout the study area (NBS Report -Appendix 8 [**Appendix D**]), typically single individuals peenting but also multiple birds were heard on several occasions.

- Bald Eagle: A single adult bald eagle (*Haliaeetus leucocephalus*) was flying overhead on 7th July 2021 near Wolf Lake along the Project ROW. No evidence of nesting was observed. This species is listed as Special Concern in Ontario, but Not At Risk federally. As this species was only observed flying overhead, no candidate SWH was identified.
- Monarch: Two adult monarchs were observed flying in fields near the ROW at Matheson in July 2021 (NBS Report - Figure 13 [**Appendix D**]). However, no milkweed or larvae were observed in or near the Project, and therefore no candidate SWH was identified. Monarch is listed as Special Concern under Ontario's ESA; federally it is listed as Special Concern under Schedule 1 of the SARA8, although the species was recently assessed as Endangered by COSEWIC (COSEWIC 2016).

As the Project is located in Ecoregion 3E (the Carolinian Zone), the presence of SWH was assessed according to the Significant Wildlife Habitat Technical Guide (MNRF, 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E (MNRF, 2015a). Habitat types considered include: seasonal concentration areas of animals; rare vegetation communities or specialized habitat for wildlife; habitat for SCC; and animal movement corridors. Based on the list of SCC identified in **Table 4-6** the following Candidate SWH were assessed as having the potential to occur within the Project Study Area based on the background review:

Seasonal Concentration Areas of Animals

- Bat Maternity Colonies.
- Reptile Hibernacula.
- Colonially-Nesting Bird Breeding Habitat.

Rare Vegetation Communities or Specialized Habitat for Wildlife

- Rare treed types
- Rock Barren

Specialized Habitat for Wildlife

- Waterfowl Nesting Area

- Woodland Raptor Nesting Habitat
- Turtle Nesting Areas
- Seeps and Springs
- Mineral Licks
- Denning Sites
- Amphibian Breeding Habitat (woodland and wetland)

Habitat for Species of Conservation Concern

- Special Concern and Rare Wildlife Species
- Eastern Wood-pewee
- Olive-sided Flycatcher
- Rusty Blackbird
- Short-eared Owl
- Canada Warbler
- Common Nighthawk
- Flooded Jellyskin
- Monarch

SWH identified within the Project Study Area was confirmed, identified as candidate, or ruled out using criteria outlined in the Ontario Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E (MNRF, 2015a), habitat mapping reviewed from aerial imagery, and information collected during the 2021 field surveys. Incidental observations of wildlife (including dens, tracks and scats, and other wildlife evidence) were recorded during the 2021 field surveys. Observations of SCC made during the 2021 field surveys are listed in Table 3 and illustrated in Figure 12 in **Appendix D**. Descriptions of candidate and confirmed SWH within the Project Study Area are provided below.

While DFO's Aquatic Species at Risk mapping does not show potential for Lake Sturgeon within the Project Area, comments from TTN indicated potential presence in the Black River and its tributaries. Given this potential, HONI will take a precautionary approach for watercourse crossings over the Black River and its tributaries to ensure potential impacts to Lake Sturgeon are avoided through the application of protections and mitigation measures.

4.6.6.10 Seasonal Concentrations of Animals

Forest and swamp communities identified within the Project Study Area have the potential to provide candidate SWH for Bat Maternity Colonies, as evidenced by

acoustic recordings, sightings of bats in the area during the 2021 field program and observations of potential roost trees. These areas comprise all deciduous, mixed forest and swamp types within the Project Study Area.

No other evidence of SWH types associated with Seasonal Concentrations of Animals was observed during the 2021 field season.

4.6.6.11 Rare Vegetation Communities or Specialized Habitat for Wildlife

During the 2021 field studies, communities of both Black Ash trees and Red Maple trees were observed within the Project Study Area. As a result, SWH for Rare Treed Type: Black Ash and Rare Treed Type: Red Maple are confirmed present within the Project Study Area. Refer to Table 3 in **Appendix D**.

It should be noted that Black Ash was recently classified as Endangered by Committee on the Status of SAR in Ontario (COSSARO). As a result, the ESA requires that the SARO List be updated within 1 year of received COSSARO's annual report (i.e. by January 27, 2022) to reflect the new designation for Black Ash. This is discussed further in **Section 7.6.6.5**.

4.6.6.12 Specialized Habitat for Wildlife

The potential for turtle nesting was observed during the 2021 field program within sandy areas; however, no turtle nests or turtles were observed during the 2021 field program. In accordance with the Ecoregion 3E Criterion Schedules (MNRF, 2015a), turtle nesting areas must have evidence of at least one turtle nest to be considered significant.

While no turtle nests were observed within the PSA, several occurrences of potential turtle nesting habitat were observed consisting of sandy areas near wetlands. As these areas would be considered candidate turtle nesting habitat (NBS Report - Table 5 [Appendix D]). As no further surveys will be conducted to confirm turtle nesting habitat, HONI is committed to using a precautionary approach to impact mitigations and will include these areas as candidate turtle nesting habitat and will provide appropriate avoidance, protection and mitigation measures accordingly.

One seep was identified with iron precipitates flowing under a road within the PSA. In addition, a spring (artesian well) which is used as a drinking water source near Wolf Lake. In accordance with the Ecoregion 3E Criterion Schedules (MNRF, 2015a), in order for an area to be considered SWH for seeps and springs, there must be two or more seeps or springs observed (within a vegetation community or same area). Given

that the seep and spring were not observed within the same vegetation community or area, SWH for seeps and springs was not observed.

Spring peepers (*Pseudacris crucifer*), American toads (*Anaxyrus americanus*), and/or mink frogs (*Lithobates septentrionalis*) were heard at most wetlands that were surveyed (NBS Report Appendix 5, Appendix 8 [**Appendix D**]); some may be candidate SWH for wetland amphibian breeding habitat (NBS Report - Figure 14 [**Appendix D**]).

While suitable habitat for Bald Eagle was screened out due to the requirement for riparian areas next to large bodies of water, a single adult Bald Eagle was observed flying overhead on July 7, 2021 near Wolf Lake along the ROW. No evidence of Bald Eagle nesting was observed within the PSA.

4.6.6.13 Habitat for Species of Conservation Concern

The following SCC were identified within the Project Study Area during the 2021 field studies:

- Common Nighthawk: Several individuals were observed in the evening hours on July 6, 8 and 9 at 10, locations, primarily in upland habitat in the southern portion of the Project Study Area, particularly Sesekinika Road which is used to access the ROW near Kirkland Lake.
- Olive-sided Flycatcher: Two males were observed at two locations along Sesekinika Road near Kirkland Lake.
- Canada Warbler: Several males were heard calling on territory on July 5 at two locations along Sesekinika Road near Kirkland Lake.
- Monarch: Two adults were observed flying in fields near the ROW at Matheson in July; however, no host plants (Milkweed) were observed.

The breeding bird surveys were completed within the required timing window as defined by the Ontario Breeding Bird Atlas Guide for Participants (2001) (i.e., late May through early July). However, not enough data was collected to prove breeding evidence of the SCC observed (i.e., multiple sightings over two or more surveys and evidence of breeding behaviour). As a result, habitats containing the locations of the SCC birds listed above will be considered as Candidate SWH. Please refer to **Appendix D** for further details.

Considering that the field program consisted of single site surveys rather than multi-day or multi-year surveys to confirm breeding behaviour, HONI is committed to to using the precautionary principle by providing all appropriate habitat for SCC (whether an

individual was seen during the limited breeding bird surveys or not) with the same avoidance, protections and mitigation measures as Candidate SWH.

4.7 Recreational Resources

There are several outdoor recreation areas serving the region, such as lakes, beaches, Provincial Parks, including Little Abitibi Provincial Park, Abitibi-de-Troyes Provincial Park and Kettle Lakes Provincial Park (Ontario Parks, 2021), and conservation reserves.

Snowmobile trail systems are also present within the region with Route A18 traversing the Project Study Area south of Iroquois Falls around Highway 11 at Val Gagne (Iroquois Falls, 2019).

4.8 Visual and Aesthetic Resources

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

The Project is located within predominantly rural area with a mix of contiguous forested lands and open lands, thus providing a mix of open and obstructed views. Natural elements include woodlots, forest cover, tree canopies of rural communities, as well as vegetation adjacent to lakes and water crossings. Existing vertical elements include traffic and light standards and existing transmission lines. The majority of sensitive receptors are residences with wide views into the horizon.

5 Identification and Evaluation of Alternative Solutions

The Project is subject to the Class EA for Minor Transmission Facilities in accordance with the Ontario *Environmental Assessment Act*. Hydro One's Class EA for MTF process requires the identification of feasible alternatives that can be compared and evaluated to select a preferred alternative. Hydro One has identified a number of potential alternatives for the transmission line refurbishment (alternatives to the undertaking), which would meet the need for the Project. The alternatives include:

- Do Nothing – Not undertaking the refurbishment project.
- Refurbish the existing transmission line within the existing right-of-way.
- Construct a new 115 kV transmission line parallel to the existing line.

The need for the Project is to replace aging assets and increase the ampacity (current), based on direction from IESO, travelling through the conductors (wires). Based on the identified need, not undertaking the refurbishment project is not considered a feasible alternative because it does not address the capacity upgrade need for the Project. Therefore, of the three alternatives identified, only two can be carried forward for further evaluation.

To evaluate the alternatives, a series of criteria were developed to assess each alternative based on natural environment, socio-economic environment and technical and cost factors following the recommendations of the Provincial Policy Statement (PPS), as shown in **Table 5-1**. The evaluation for each alternative was based on available background data, including preliminary field investigations (completed in August, 2021) and desktop background reviews. To systematically complete the evaluation, the criteria were broken into three factor areas:

Table 5-1: Evaluation Criteria and Indicators

Factor	Criteria	Indicators
Natural Environment	Species at Risk	Potential effects to SAR and/or SCC and/or their habitats.
Natural Environment	Significant Wildlife Habitat	Potential effects to significant wildlife habitat
Natural Environment	Designated Natural Areas	Potential effects to designate natural areas
Natural Environment	Effects to Fish and Aquatic Habitat	Potential effects to fish and/or aquatic habitat
Natural Environment	Effects to Vegetation	Potential effects to vegetation including potential removals, and disturbance/alternation/destruction of established, connected, vegetation communities
Socio-Economic Environment	Existing and Future Land Use	Alignment with existing land use designations as defined by the PPS and local Municipal Official Plans
Socio-Economic Environment	Cultural Heritage and Archeological Resources	Effects to properties or landscapes with cultural heritage resource potential and effects to land with archaeological potential
Socio-Economic Environment	Effects to Forestry Resources	Potential for effects to established forest management units
Socio-Economic Environment	Effects to Mineral and Mining Rights	Potential effects to established areas with defined mineral or mining rights holders

Factor	Criteria	Indicators
Socio-Economic Environment	Effects to existing Residential, Commercial or Industrial operations	Effects to existing residential, commercial, or industrial operations
Socio-Economic Environment	Source Water Protection	Potential effects to source water protection resources including policy areas and drinking water resources for private landowners
Technical and Cost	Overall Constructability	Considerations affecting complexity of construction including, but not limited to, geotechnical conditions, construction obstacles, line geometry, line length, construction conflicts
Technical and Cost	Property Requirements	Land acquisition requirements to obtain and maintain the required right-of-way
Technical and Cost	Cost	Construction cost

The alternatives were compared, **Table 5-2**, using a reasoned argument method, by assessing the advantages and disadvantages that each alternative had against the established criteria. The reasoned argument method for evaluation applies a qualitative approach to making reasoned judgements regarding potential impacts to project alternatives. The reasoned arguments are supported by quantitative data and analysis collected through supporting background datasets where available (field data collection and background desktop review investigations).

Table 5-2: Comparative Evaluation of Alternatives

Criteria	Indicator	Alternative 1 Refurbish the existing transmission line within the existing right-of-way	Alternative 2 Construct a new 115 kV transmission line parallel to the existing line.
Natural Environment Factor Area: Species at Risk	Potential effects to SAR and/or SCC and/or their habitats.	Reuse of the existing ROW corridor minimizes encroachment into sensitive SAR habitats.	Requires encroachment into new, undisturbed habitats to widen the ROW and construct a new corridor.
Natural Environment Factor Area: Significant Wildlife Habitat	Potential effects to significant wildlife habitat.	Reuse of the existing ROW corridor minimizes encroachment into candidate and confirmed SWH.	Requires encroachment into new, undisturbed habitats to widen the ROW and construct a new corridor.
Natural Environment Factor Area: Designated Natural Areas	Potential effects to designate natural areas.	No designated natural areas are anticipated to be effected.	No designated natural areas are anticipated to be effected.

Criteria	Indicator	Alternative 1 Refurbish the existing transmission line within the existing right-of-way	Alternative 2 Construct a new 115 kV transmission line parallel to the existing line.
Natural Environment Factor Area: Effects to Fish and Aquatic Habitat	Potential effects to fish and/or aquatic habitat.	No new permanent watercourse crossings anticipated. Temporary watercourse crossings are anticipated.	Requires twining of all watercourse crossings along the ROW.
Natural Environment Factor Area: Effects to Vegetation	Potential effects to vegetation including potential removals, and disturbance/alternation/destruction of established, connected, vegetation communities.	Existing corridor contains established compatible vegetation with defined edges and edge effects already in place. Effects to existing ROW vegetation anticipated to be temporary in nature.	Requires removal of non-compatible vegetation to create wider ROW.

Criteria	Indicator	Alternative 1 Refurbish the existing transmission line within the existing right-of-way	Alternative 2 Construct a new 115 kV transmission line parallel to the existing line.
Socio-Economic Environment Factor Area: Existing and Future Land Use	Alignment with existing land use designations as defined by the PPS and local Municipal Official Plans.	Aligns with PPS directions for wise management of resources and reuse of existing infrastructure. Aligns with local official plans by reusing existing corridors and not subdividing land parcels.	Requires new ROW which does not utilize existing infrastructure to the extent possible.
Socio-Economic Environment Factor Area: Cultural Heritage and Archeological Resources	Effects to properties or landscapes with cultural heritage resource potential and effects to land with archaeological potential.	Defined study area to perform archaeological assessments to determine impacts to cultural heritage and archaeological resources	Larger project area with increased potential to impact cultural heritage and archaeological resources

Criteria	Indicator	Alternative 1 Refurbish the existing transmission line within the existing right-of-way	Alternative 2 Construct a new 115 kV transmission line parallel to the existing line.
Socio-Economic Environment Factor Area: Effects to Forestry Resources	Potential for effects to established forest management units.	Limits potential effects to access roads as existing ROW has been accounted for in Tamiskaming Forest Management Plan.	Requires removal of timber resources for clearing of new corridor impacting private timber resources and potential crown land timber allocations.
Socio-Economic Environment Factor Area: Effects to Mineral and Mining Rights	Potential effects to established areas with defined mineral or mining rights holders.	Does not impact existing mining operations.	Does not impact existing mining operations.

Criteria	Indicator	Alternative 1 Refurbish the existing transmission line within the existing right-of-way	Alternative 2 Construct a new 115 kV transmission line parallel to the existing line.
Socio-Economic Environment Factor Area: Effects to existing Residential, Commercial or Industrial operations	Effects to existing residential, commercial, or industrial operations.	Temporary nuisance effects associated with construction activities may be experienced by existing operations. Due to the line being contained within the existing ROW effects are temporary in nature.	Expansion of the ROW would require potential disruption to site operations of select commercial and industrial operations immediately adjacent to the existing ROW corridor through property acquisition and easement needs.
Socio-Economic Environment Factor Area: Source Water Protection	Potential effects to source water protection resources including policy areas and drinking water resources for private landowners.	No source water protection policies impacted.	No source water protection policies impacted.

Criteria	Indicator	Alternative 1 Refurbish the existing transmission line within the existing right-of-way	Alternative 2 Construct a new 115 kV transmission line parallel to the existing line.
Technical and Cost Factor Area: Overall Constructability	Considerations affecting complexity of construction including, but not limited to, geotechnical conditions, construction obstacles, line geometry, line length, construction conflicts.	Follows an existing ROW with known technical constraints and limitations.	Requires more complex construction due to unknowns beyond existing ROW.
Technical and Cost Factor Area: Property Requirements	Land acquisition requirements to obtain and maintain the required right-of-way.	Property requirements limited to access easements and temporary laydown areas for construction activities.	Requires extensive new property for new corridor.
Technical and Cost Factor Area: Cost	Cost	Lower cost to construction and no property acquisition costs.	Significantly higher cost due to property acquisition and inability to re-use existing wood poles/lattice towers.

5.1 Comparative Evaluation Summary

5.1.1 Natural Environment Factor Area

From a natural environment perspective, Alternative 1 is preferred because it minimizes potential for encroachment onto adjacent lands. Alternative 2, requires new tree removals, effects to SAR and SAR habitat and require a significant number of new watercourse crossings.

5.1.2 Socio-Economic Environment Factor Area

From a socio-economic perspective, re-using the existing ROW (Alternative 1) best aligns with PPS priorities, minimizes impacts to adjacent landowners and minimizes potential for effects to adjacent resources such as timber reserves. Alternative 1 is preferred from a socio-economic perspective.

5.1.3 Technical and Cost Factor Area

From a technical and cost perspective, Alternative 1 is preferred. Alternative 1 does not require purchasing of land to widen the ROW and re-uses existing hydro poles/steel lattices structures that are in good condition, minimizing the need for new infrastructure and only refurbishing aging infrastructure that is in need of repair. In contrast, Alternative 2 would require significant property acquisitions and all new infrastructure to support the construction of a new transmission line.

5.2 Preferred Alternative

The technically preferred alternative selected for the Project is refurbishment of the existing 115 kV transmission line including replacement of some wood poles/steel lattice structures. The technically preferred alternative has significantly fewer effects due to its ability to make use of the existing ROW, minimizing effects to adjacent property owners and natural environment features. Using the existing ROW also aligns with PPS objectives and minimizes costs associated with property acquisition and construction compared to creation or a wider ROW.

6 Project Description

The purpose of this project is a refurbishment of the existing 115 kV transmission line between the Kirkland Lake TS and the Ansonville TS. The IESO'S planning studies have determined that the existing ratings of circuits A8K and A9K are inadequate for the reliable operation of the Kirkland Lake area. IESO'S assessments indicate that increasing the ratings will provide additional flexibility for generation resources in the Kirkland Lake area to be dispatched in response to system needs, reduce reliance on arming local load rejection that is required today, and allow for future connection of new mining loads in the area.

The purpose of the refurbishment of the existing 115 kV transmission line is to:

- Maintain reliability in the area, and enable system benefits by allowing local generation to operate in a more cost-effective manner.
- Better align the rating of A8K and A9K transmission circuits with the current system needs as well as prepare for potential future needs of the area.
- Replace aging/damaged wood poles and structures.

6.1 Design Phase

The final design plans will be based on necessary surveys and consultation with stakeholders. Concurrent with finalization of the design, any required permits, licences and approvals, not obtained to date as listed in **Section 1.4.2**, will be obtained.

Hydro One recognizes that a changing climate is likely to result in an increase of unusual weather patterns and severe weather events, which could potentially damage or adversely affect infrastructure and other public facilities. Hydro One is confident that the facilities being planned for this project have been engineered to adequately withstand the effects of climate change throughout the duration of their planned lifespan.

6.2 Construction Phase

Construction activities will be guided by Hydro One standards and guidelines as well as project-specific documents; these are to be adhered to by all construction personnel including contractors and sub-contractors. In addition, a project-specific Environmental Management Plan will be prepared, outlining specific requirements to be followed for the proposed Project.

Prior to construction, a detailed construction plan will be developed. Construction activities will be restricted to designated work areas and protective barriers, such as fencing, will be erected to protect against features from construction related effects.

Throughout the construction period, an Environmental Specialist will be available to address unforeseen environmental effects and mitigation requirements. The Environmental Specialist will monitor activities to ensure conformance with the requirements set out in the Environmental Specification.

Should any archaeological finds be uncovered during construction, work will stop immediately pending assessment by the Project archaeologist and further consultation with the MHSTCI – Heritage Program Unit, as well as the appropriate Indigenous communities.

Upon completion of construction, clean up and restoration (e.g. seeding, plantings, etc.) of areas disturbed by construction would occur, as required. Documents covering ongoing commitments, including monitoring and notification requirements will be prepared, and operation and maintenance staff will be briefed, as necessary.

Refurbishment and ampacity upgrade of the existing 115 kV transmission line will involve the following activities:

- Site preparation including clearing, demolition and removal of existing structures (including dismantling and removal of existing idle transmission line structures, conductors and associated equipment) as required, and grading.
- Installation of foundations at the new structure locations.
- Refurbishment of existing wood poles that won’t be replaced.
- Assembly and construction of the new transmission structures.
- Painting and foundation reinforcement (if required) for existing steel lattice structures
- Stringing of new transmission conductors (wires) and shield wire on the structures
- Clean up and site restoration.

Temporary facilities for the purpose of the proposed Project may include equipment staging areas and temporary stockpile areas, temporary rider poles or similar protective measures required during conductor stringing, and temporary structures near the transmission stations for the staging of outages. Temporary facilities will be required prior to, and during, the construction period. The location of the temporary facilities will

be determined by the Project team and their contractor(s) during detail design/construction planning.

6.3 Maintenance, Operation and Retirement Phases

The proposed Project is planned to be in service by 2023. The existing transmission line would undergo regular maintenance in adherence with Hydro One's maintenance standards and regulatory requirements to maintain a safe and reliable electricity transmission system. On-going maintenance activities may include inspection, replacement of components and vegetation management. These activities may include the requirement to establish access and watercourse crossings. All activities will be conducted in adherence to applicable laws. If brush clearing is necessary, HONI will complete the work outside of the migratory bird breeding season (April 15 to August 31) and where brush clearing is required during migratory bird breeding season, Hydro One commits to completing nest sweeps within 24 hours of commencing activities.

When transmission facilities become obsolete or unserviceable and/or deemed to be at end-of-life, the equipment is retired from service. Transmission facilities that are retired from service are often left in place (idle) for potential future use. The facilities may eventually be removed and the site made suitable for other purposes. The foundations are typically cut back 1.0 m below ground surface when transmission structures are removed.

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

6.4 Project Schedule

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

Table 6-1: Project Schedule

Activity	Period
Draft ESR released for 30-day public review and comment period	October 18 to November 19, 2021
Comment integration and response	November and December, 2021

Activity	Period
Filing of final ESR and Class EA Statement of Completion with the MECP	December 2021
Submission of Section 92 application to the Ontario Energy Board	August 2021
Ontario Energy Board Section 92 Approval	December 2022
Construction Start	January 2022
Planned in-service date	Spring 2023

7 Potential Environmental Effects and Mitigation Measures

This section describes the potential environmental effects and mitigation measures associated with both the short-term (construction) and long-term (operation/maintenance) activities of the proposed Project. The assessment of potential environmental effects for the proposed Project considered the baseline information on the environmental features that was collected for the project Study Area as presented in **Section 4**.

The potential environmental effects resulting from the construction and operation/maintenance of the proposed Project are similar to other projects undertaken by Hydro One and are well understood by the Project team. Hydro One has a strong track record of environmental compliance and stewardship and is committed to the completion of comprehensive environmental and social analysis and mitigation of potential effects.

The selection of mitigation measures are based on the following seven (7) guiding principles:

- Avoidance of sensitive areas, where practical.
- Avoidance of watercourse crossings, where feasible, by use of an existing nearby crossing, access to structures from either side of the watercourse, or use of off-corridor access.
- Appropriate timing of construction activities, where feasible, to avoid sensitive time periods, such as fish spawning and egg incubation periods, or migratory bird nesting periods.
- Proactive communication with area residents, property owners and businesses on the proposed Project timelines and construction areas.
- Proactive communication with Indigenous communities, government agencies, stakeholders and interest groups regarding the proposed Project.
- Implementation of conventional, proven mitigation measures during construction consistent with the criteria set out in Appendix E of the Class EA (Hydro One, 2016), and in accordance with applicable legislative requirements.
- Development of environmental enhancement or compensation measures to offset the unavoidable effects of construction and operation where such effects exist and where practical.

Based on the Project design and implementation of the proposed mitigation measures, no “significant” adverse net effects (e.g. effects following the implementation of mitigation) are anticipated. The following subsections detail the effects assessment and identify avoidance, mitigation and/or compensation commitments required for the proposed Project.

7.1 Agricultural Resources

The majority of lands within the Project Study Area are categorized as having Class 3 and 4 soil types under the Canada Land Inventory (CLI). Much of this land is presently not suitable for farming due to extensive tree cover; however, as identified in local Official Plans, the land has future potential and should be protected (Town of Iroquois Falls, 1984). Specifically, local municipalities place an emphasis on creating parcels of land that can remain agriculturally viable. Since the preferred alternative utilizes the existing ROW, there are no anticipated effects to the viability of future agricultural operations in the area.

7.2 Forestry Resources

As indicated in **Section 4.2**, the Project Study Area falls within the Timiskaming Forest Management Plan area. A significant portion of lands within the Timiskaming Forest Management Area are considered private lands and are not managed in accordance with the Timiskaming Forest Plan. The small portion of available crown land timber resources available in the area are primarily concentrated along the southern portion of the Project Study Area. Lands designated for regular harvest allocation and contingency allocation are located outside of the existing ROW. Because the project will be re-using the existing ROW, impacts to adjacent Timber Harvesting areas are not anticipated.

7.3 Cultural Heritage Resources

As noted in **Section 4.3.1**, Hydro One completed an internal desktop review based on MHSTCI’s Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes and is included in **Appendix F**. Based on the checklist, it was determined that there is low potential for built heritage or cultural heritage landscape within the Project Area.

7.3.1 Archaeological Resources

As noted in **Section 4.3.2**, a Stage 1 Archaeological Assessment was completed by the Central Archaeology Group Inc. (2020). The Stage 1 Archeological Assessment

identified areas where additional Stage 2 archaeology investigations are required. A Stage 2 AA was completed in areas where ground disturbance would occur that were located within areas identified as having archaeological potential based on the Stage 1 AA. Based on the results of the Stage 2 AA, no archaeological resources were identified and no further archaeological work is recommended.

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

7.4 Land Use and Communities

7.4.1 Business Operations

Project activities are required in areas of existing commercial operations such as those located on the fringes of Iroquois Falls and Kirkland Lake. There is potential for disruption and/or nuisance effects to commercial operations during the construction phase of the Project; however, it is expected to be minimal and temporary in nature.

To minimize disruptions and/or impacts, contact will be maintained with commercial property owners during construction. Business access will be maintained at all times during construction, and in instances where access cannot be maintained, arrangements will be made for alternate access prior to construction activities starting and appropriate road signage will be provided. Access to construction areas will be carefully designed to avoid and minimize adverse effects. Advanced notice will be provided to nearby residences, landowners and commercial operations, MTO, and emergency response services outlining the location of entry/exit points for the construction site (e.g., at the transmission line and Highway), as well as the schedule for construction work or construction related traffic in those areas. Road signage will also be created and installed to reflect this information.

7.4.2 Effects to Land Use Designations

The preferred alternative utilizes the existing ROW transmission line corridor and does not require re-alignment. As outlined in **Section 4.4.1** local official plans permit development and operation of transmission facilities within all land use types. Since the Project will utilize the existing ROW corridor, no effects to land use designations are anticipated from the proposed Project.

7.4.3 Effects to Local Roads and Traffic

The proposed Project is located within a rural landscape, with Highway 11, 101 and 66 serving as regional connections through northeastern Ontario. Construction activities have potential to cause disruption to Provincial highway traffic and to local traffic on local roads during construction phases of the proposed Project. Specifically, stringing of conductors across roads and highways may require temporary road closures, rolling closures and/or detours. The presence of heavy equipment may also increase traffic and loads which may result in localized wear and tear on lower order roadways. Effects to road and highway traffic and roadways are expected to be minimal and temporary in nature. Potential disruption to airports/aerodromes and railway lines are not anticipated.

Temporary effects to roads and traffic are largely unavoidable. To mitigate potential impacts from construction activities, Hydro One will:

- Adhere to seasonal load restrictions.
- Where required, a Traffic Control Plan will be developed and shared with local municipalities, as necessary.
- Construction haul routes and schedules will be shared with local municipalities in advance of construction, as necessary.
- Construction traffic will access the construction area from the existing road network at specified construction access/egress locations.
- Common parking areas will be established for construction crews.
- To the extent practical, in an effort to avoid road closures and other disruptions during stringing, conductor stringing will utilize rider poles, boom-tipped riders, or other protective measures.
- If temporary road or highway closures (e.g., rolling closures) are required during stringing or other construction activities, the construction contractor will coordinate closely with the appropriate road authority to ensure that proper notice is provided and that required signage and traffic controls are utilized, and that the duration of any temporary closures will be minimized to the extent practical.

- Local advertisements (e.g. radio, newspaper, etc.) will be issued and road signage will be erected to provide notification / pre-construction information to area residents on timelines and construction routes, and potential detours, if required.
- Traffic control officers or flag persons will be assigned to assist with construction entry/exit, as necessary.

With the implementation of the mitigation measures described above, the proposed Project is not anticipated to have a long-term net effect on local roads and traffic.

7.4.4 Mud and Construction Debris

Construction activities may result in the accumulation of mud and construction debris on and adjacent to local roads in construction areas. These effects have the potential to migrate to areas outside of the construction zone.

Construction will be completed with general clean site policies enforced requiring pick-up and disposal of refuse and construction waste on a regular basis. Mud related to construction activities will be removed from local roads and access roads as necessary throughout construction. Mud mats will be installed (as needed) as a mechanism to reduce the transport of debris off-site. Vehicles and equipment will be washed and maintained at work areas as necessary. Formal cleanup and site restoration (e.g., restoration planting and seeding) will further minimize this potential effect as construction progresses and is completed.

With the implementation of the mitigation measures described above, mud and construction debris generated by the proposed Project is not anticipated to have a long-term net effect.

7.4.5 Electric and Magnetic Fields (EMF)

EMF are invisible forces that surround electrical equipment, power cords, and wires that carry electricity. Although they are often referred to together as EMF, electric fields and magnetic fields are actually two distinct components of electricity. Hydro One is committed to meet safe EMF exposure levels for the proposed Project and EMF are taken into consideration during the design of any new electrical transmission project. This commitment ensures that both employees maintaining the infrastructure, as well as members of the public in the vicinity of transmission infrastructure are not exposed to elevated EMF levels.

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

Regarding research on EMF, Health Canada's conclusion is that there is no conclusive evidence of adverse effects caused by EMF exposure from power lines (Health Canada, 2016). Health Canada does not consider that any precautionary measures are needed regarding daily exposures to EMFs at extremely low frequencies.

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

7.4.6 Noise and Vibration

Construction and maintenance activities have the potential to affect ambient noise and vibration levels. These effects, in turn, may create temporary nuisance or disturbance effects for local residents and land users.

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

Noise and vibration effects are anticipated to be short-term, temporary and transient during the construction period. Specific to vibration, it is expected to be temporary in nature, occur only during specific activities (e.g. implosive splicing), and limited to the immediate vicinity of the construction work area. Mitigation measures to reduce potential nuisance effects resulting from noise and vibration include:

- Equipment and machinery used on site will be maintained in good working condition.
- Prior to any use of implosive splicing, a Blasting Communication and Management Plan will be developed outlining proper storage, security, detonation, and notification requirements.
- Area residents, municipal authorities, police departments (Ontario Provincial Police), and other crews within 1.6 km will be notified about the use of implosive splicing one week prior to the work commencing.
- Signs shall be posted on all roadways leading to a blasting area in accordance with government rules and regulations.
- A safe distance of the blasting site will be maintained from other employees, vehicles, equipment, structures, and fire hazard sources. Blasts will be performed during pre-determined times and outside of electrical storms, adverse weather conditions or fire bans.

Construction activities will also conform to local noise control by-laws (Town of Iroquois Falls Noise Control By-Law No. 2194/83, Town Kirkland Lake By-law to Prohibit or Regulate Noise By-Law No. 07-065). Noise By-Law exemptions will be sought if work is required outside of the hours specified in the aforementioned by-laws (e.g. overnight).

Noise sources and vibration levels from maintenance activities after construction would be variable, are expected to be limited to a short duration, and would occur periodically over the life of the proposed Project. With exception of periodic maintenance activities (e.g., inspection from ground-based vehicles and vegetation maintenance, etc.), no additional noise (or vibration) sources are expected during maintenance and operation of the proposed Project. Therefore, no additional mitigation is required during the maintenance and operation of the proposed Project.

With the implementation of the mitigation measures described above, noise sources and vibration levels generated by the proposed Project are not anticipated to have a long-term net effect.

7.5 Mineral and Petroleum Resources

7.5.1 Aggregate Extraction

As discussed in **Section 4.5**, there are no areas within the Project Study Area used for the extraction of aggregate; therefore; no potential effects have been identified for the proposed Project.

7.5.2 Mining Operations

As discussed in **Section 4.5**, there are active mining operations within Project Study Area; therefore; no potential effects have been identified for the proposed Project.

7.6 Natural Environment Resources

7.6.1 Physical Environment

7.6.1.1 Physiography and Geology

The existing physiography, topography and geology is expected to remain as is following the construction of the proposed Project. Therefore, no net effects on the physical environment have been identified for the proposed Project.

7.6.1.2 Spills

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

An Emergency Response Plan and spill cleanup equipment will be maintained and readily accessible at all times during construction and maintenance activities. Refueling of vehicles and equipment will be completed in designated locations, a minimum of 30 m away from sensitive receptors (e.g. watercourse, wetlands, etc.) while utilizing emergency spill trays. In the event refueling is required outside of designated areas, additional containment or other mitigation and spill prevention measures will be utilized. Fuelling operations will require the operator to visually observe the fuelling process at all times.

There are a number of additional mitigation measures to reduce the risk of spills and to minimize the effect in the unlikely event that a spill occurs. These measures include the following:

- Areas impacted by a spill will be secured, and unauthorized personnel will be kept out of the affected area until further assessment and/or clean-up is conducted.
- Clean-up and the disposal of contaminated materials will be managed in accordance with provincial regulations and guidelines.

- Fuels, chemicals, lubricants or other deleterious substances will be stored on level ground in properly contained storage areas.
- Only approved aboveground petroleum storage tanks will be used during the construction phase of the Project, and will be stored in designated fuelling areas and with additional temporary containment measures.
- Work conducted near sensitive receptors (i.e. natural features.) will be avoided or limited, where practical.

Should a spill occur, the MECP Spills Action Centre (SAC) will be notified of all reportable spills and containment and remediation should occur as soon as possible.

7.6.1.3 Waste Generation

Construction waste would be generated by the proposed Project, and would need to be disposed of in regional landfills and recycling facilities. Waste produced during the construction period may include non-hazardous wastes (packaging, spent lubricating cartridges, coffee cups, etc.) and hazardous wastes (pneumatic oils from hydraulic systems, gasoline and other lubricants/oils).

Hazardous waste (solid and liquid) should be transported by MECP licensed waste haulers to MECP registered disposal sites. Good management practices are recommended to prevent spills and contamination during construction (see above). Any temporary waste on-site should include the use of secured containers in designated sites away from sensitive areas and removed from the site on an ongoing basis. Waste produced will be minimized, segregated, and recycled where possible, and all testing, handling, storage, transport and disposal of waste will be completed in accordance with all applicable legislation.

With the implementation of the mitigation measures described above, waste generated by the proposed Project is not anticipated to have a long-term net effect.

7.6.1.4 Excess Materials Management

Project activities have the potential to produce excess materials during construction and maintenance phases. Excess materials can include topsoil and subsoil from excavation or stripping activities. All efforts will be made to reuse soils onsite where practical and feasible; however, excess materials that cannot be managed onsite will be handled in accordance with O.Reg. 406/19.

Soil testing to meet the requirements of O.Reg. 406/19 will be completed, if necessary, during geotechnical investigations prior to or during construction. If excess material is deemed suitable, Hydro One will work with landowners to explore opportunities for beneficial reuse within the property parcel. Any excess soil required to leave the site will be taken to an approved facility licensed to accept excess soil based on its characterization or other off-site location that can demonstrate beneficial reuse.

7.6.2 Atmospheric Environment

7.6.2.1 Climate Change

It is important to note that the proposed Project is not a power generation project and its operation would not emit greenhouse gases. However, there would be temporary emission of fossil fuels from the vehicles and equipment used during construction and maintenance activities associated with the proposed Project. Idling of construction vehicles and equipment will be kept to a minimum and GPS or other navigational tools will be utilized to optimize routing to reduce fossil fuel emissions. The emissions directly related to the construction and maintenance of this project would be minimal.

Hydro One recognizes that a changing climate is likely to result in an increase of unusual weather patterns and severe weather events, which could potentially damage or adversely affect infrastructure and other public facilities. The infrastructure being planned for this proposed Project will be engineered to adequately withstand the effects of climate change.

7.6.2.2 Air Quality

Construction activities have the potential to create temporary, localized effects on air quality in the immediate vicinity of the proposed Project. Emissions from construction activities are primarily comprised of fugitive dust and combustion products from the movement and operation of construction equipment and vehicles. These emissions, in turn, may create a nuisance or disturbance effect for local residents and land users during the construction phase.

During construction, equipment and machinery will be maintained in good working condition to minimize excessive exhaust. Idling of construction vehicles and equipment will be kept to a minimum and GPSs will be installed in vehicles to optimize routing to reduce fossil fuel emissions. Additional mitigation measures to reduce nuisance effects of dust and air emissions during construction include the following:

- Vehicles will not exceed posted speed limits.

- Minimize and stabilize vehicular traffic and exposed soils in high traffic areas with suitable cover material.
- Avoid excavation and other construction activities that have the potential to release airborne particulates during windy and prolonged dry periods, to the extent practical.
- If excavation or other construction activities with a potential to release airborne particulates must occur during windy conditions, dust controls will be utilized.
- Effective dust suppression techniques, such as on-site watering, will be implemented as necessary.
- Cover or otherwise contain loose construction materials with the potential to release airborne particulates during transport, installation or removal.
- Disturbed areas will be restored as soon as practical to minimize duration of soil exposure.

Significant emissions from maintenance activities during operation will be variable, are expected to be short-term in duration, and would occur periodically over the life of the proposed Project. Nuisance effects posed by these temporary activities are expected to be negligible and would not result in noticeable or long-term changes to local air quality.

7.6.3 Noise and Vibration

There is the potential for increased noise and vibration during the construction and maintenance activities; however, as noted in **Section 7.5.6**, they are anticipated to be short-term, temporary, transient and intermittent. This is because the proposed Project is linear and activities would be planned sequentially. The duration of construction and maintenance activities at any one location along the transmission line corridor would be limited and intermittent; thereby, reducing the amount of time of noise and vibration at any given area. **Section 7.4.6** provides additional information.

7.6.4 Surface and Groundwater Water Resources

During construction and certain maintenance activities, the potential effects of the proposed Project on water resources include changes in water quantity or quality conditions. Due to the nature of the physical environment underlain by Canadian Shield bedrock, changes to groundwater quality and quantity from project activities is best assessed through surface water effects and associated surface water mitigation. Water resource quantity and quality effects during construction may be overserved in nearby watercourses due to site preparation, earthworks, discharge of construction water, and operation of vehicles and equipment.

7.6.4.1 Potential Effects on Water Quantity

Project activities during the construction phase that have the potential to influence water quantity conditions in nearby watercourses include:

- Site preparation for the new wood pole/transmission towers, construction of temporary access roads and temporary laydown areas.
- Construction adjacent to watercourses and in/adjacent to wetland areas.
- Discharge of construction water from dewatering activities, if necessary.

Site preparation, including activities such as removal of vegetation, locates/daylighting of potential existing buried utilities, and construction of temporary access roads would be required in support of wood pole/transmission tower installation. Vegetation removals during construction have the potential to result in a temporary increase in overland flows, potential organic and sediment loading to nearby watercourses, as well as potential water temperature increases in instances where vegetation removal adjacent to watercourses is required. Similarly, vehicle and construction equipment have the potential to create temporary rutting in soils which have the potential to result in localized ponding and/or channelization leading to additional erosion of soils.

To avoid or minimize the potential adverse effects related to vegetation removals and soil rutting on water quantity, the following mitigation measures would be implemented:

- Where practical, activities with potential to cause rutting, ponding/channelization or erosion will be planned during stable and dry ground conditions.
- Existing watercourse crossings and constructed access routes will be utilized to the extent practical.
- Where required, temporary crossing structures will be installed for construction access at watercourses and other low lying areas, and will be removed upon completion of construction.
- The use of constructed access (e.g., mats or geotextile/crushed stone) roads will be utilized and will be monitored to ensure there is no surface ponding to minimize rutting and pooling of water.
- Vegetation removals will be minimized to the extent practical. Compatible vegetation will be retained within riparian areas adjacent to watercourses.
- Machine clearing and grubbing will be restricted near sensitive environmental areas; hand clearing will be required within watercourse banks/riparian areas or in wetlands.
- Replant with compatible vegetation as required.

- Where erosion is of a concern, exposed soils in previously vegetated areas will be re-vegetated as practical, or have other erosion or sedimentation measures applied as necessary.
- Where applicable and possible, vegetative buffers will be maintained to protect receptors.
- Construction access and laydown areas will be restored following completion of construction.
- Work will be staged to minimize the extent of exposed and disturbed areas at any given time.
- Cleared vegetation will be relocated to designated areas away from water features.
- Topsoil will be stockpiled in designated areas away from water features and will utilize containment measures such as erosion and sediment control as appropriate.
- Disturbed areas will be stabilized and restored as soon as practical.
- Equipment operation adjacent to water features will be minimized, where possible.
- Works adjacent or around water feature banks will be conducted during appropriate conditions and times of the year (e.g., dry or frozen conditions), to the extent practical.
- Vegetation buffers along water feature banks will be maintained to the extent practical, and restored.

With the implementation of the mitigation measures described above, vegetation removals and temporary soil rutting are not anticipated to have a long-term net effect on water quantity in the receiving watercourses.

It is anticipated that the proposed Project will utilize existing access roads wherever practical; the number and location of access roads would be established during the detailed design phase. Access roads will be chosen where possible to avoid crossing watercourses. In the event the proposed Project requires the construction of new access roads, their construction has the potential to disrupt sheet flow of water.

To avoid or minimize the potential adverse effects associated with the installation of access roads on water quantity, the following mitigation measures would be implemented:

- Existing, natural drainage patterns and flows will be identified and maintained to the extent practical.

- Equalization culverts or similar methods may be used in construction of access roads.
- Existing watercourse crossings and constructed access routes will be utilized to the extent practical.
- Discussions with landowners will be held where further information is needed to avoid adverse effects.

With the implementation of the mitigation measures described above, installation of access roads is not anticipated to have a long-term net effect on water quantity in the receiving watercourses.

Site preparation would also be required for temporary laydown areas, and conductor “pulling pads”; the locations of which have not been established. Where practical, these areas would be placed away from sensitive areas (e.g. watercourses, wetlands, woodlots) to the extent feasible.

During construction, it is expected that changes to streamflow and water levels in the watercourses downgradient of disturbed lands would reflect the proportion of disturbed area relative to the total watercourse catchment area.

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

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

- Construction water will be discharged in compliance with permits and/or approvals from MECP, as required
- A construction water management plan will be developed prior to construction and implemented appropriately (e.g., passing discharge water through a filter bag or drum before discharge to the environment to capture sediment and slow down the water velocity, etc.), as required.

- Where possible, opportunities to maximize retention times and reduce surface flow velocities will be executed.

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

At the end of construction, the work areas (i.e., tower foundation areas, access roads, pulling pads and temporary laydown areas) will be seeded/re-vegetate and the temporary laydown areas would be restored to their original condition to the extent feasible. The construction phase of the proposed Project is not anticipated to have a long-term net effect on water quantity.

Maintenance activities will be variable, are expected to be short-term in duration, and would occur periodically over the life of the proposed Project. Though short-term in duration, maintenance activities have the potential to result in soil rutting, disrupt sheet flow of water, increase overland flow and mobilization/transportation of organic debris and sediment loading in nearby watercourses.

To avoid or minimize the potential adverse effects of maintenance activities on surface water quantity, the implementation of the mitigation measures outlined above for construction related activities (where applicable) would be implemented during maintenance activities. As a result, maintenance activities are not anticipated to have a long-term net effect on water quantity.

7.6.4.2 Potential Effects on Water Quality

Project activities during the construction phase that have the potential to influence water quality conditions in nearby aquatic features (e.g., watercourses) include:

- Site preparation for the new transmission towers, construction of access roads, and temporary laydown areas.
- Earthworks associated with the construction of access roads, temporary laydown areas, puller pads, etc.
- Discharge of construction water from dewatering activities to nearby lands.
- Operation of vehicles and equipment throughout the construction phase.

Site preparation would consist of removal of vegetation, rough grading, and stockpiling of materials. These activities would result in the temporary exposure and disturbance of soil with the potential for wind and water erosion and the transport of sediment to aquatic features. Site preparation would also result in the temporary accumulation of

cleared vegetation with the potential for mobilization of organic debris and its transport to aquatic features during runoff events. Earthworks would consist of excavation, fill, and stockpiling activities, and would similarly result in disturbance and exposure of soil to wind and water erosion and the transport of sediment to aquatic features. It is expected that the transmission ROW associated with the proposed Project will be restored to similar grades at the various areas of disturbance.

Earthworks will also be required for the construction of temporary access roads, temporary laydown areas, and pulling pads within the various disturbed work areas along the transmission line ROW. Earthworks may also be required for the installation of temporary culverts, including excavation, preparation of culvert pipe bedding, culvert pipe placement, and backfilling. Stockpiling of soil and aggregate materials will also be required in support of earthworks.

Earthworks for the construction of temporary laydown areas, pulling pads, etc., would similarly consist of excavation, fill and sub-grade preparation, followed by the installation of crushed stone overtop of geotextile fabric. Soil and aggregate materials would be stockpiled.

Earthworks would also potentially be required during foundation preparations, though, depending on the technology, this may not be required. Earthworks to support the above activities would include stockpiling of soil and aggregate materials.

The measures outlined above to avoid or minimize potential impacts the proposed Project may have on water quantity will also serve to avoid or minimize the potential adverse effects of site preparation and other earthwork activities on water quality in aquatic features.

In addition, and in support of site preparation and earthwork activities, the following ESC measures will be implemented as a mechanism to avoid and minimize impacts on water quality:

- An ESC plan will be developed prior to construction and ESC measures will be identified and implemented as required.
- Areas with high erosion potential will be identified and avoided, where possible.
- Construction activities near sensitive features or areas may be suspended during extreme wet weather events, and crews will review and consider weather forecasts in their planning of such work.

- ESC installations will only be removed after disturbed areas are restored, accumulated sediment has been disposed, and construction activities in the vicinity are completed.
- In an effort to reduce potential erosion, mechanical or vegetation erosion control measures will be employed, such as buffer strips, erosion control blankets and sedimentation fences, as required;
- Equipment operation on slopes adjacent to streams will be minimized to the extent practical.
- Disturbed areas near water features or sensitive environmental areas will be restored as soon as practical.
- ESC measures will be regularly inspected, including after each significant [>10 mm] rainfall event, and repaired where necessary to maintain functionality.

With the implementation of the mitigation measures described above, and the limited duration of the construction works, site preparation and earthwork activities are not anticipated to have long-term net effects on water quality conditions in aquatic features.

The removal and discharge of construction water may be required as a result of dewatering activities in holes or trenches related to foundations of transmission towers. The measures outlined above to avoid or minimize discharge of construction water on water quantity will also serve to avoid or minimize the potential adverse effects on water quality. As a result, dewatering activities are not anticipated to have long-term net effects on water quality in the receiving aquatic features.

7.6.5 Designated or Special Natural Areas

7.6.5.1 Significant Woodlands

There are no significant woodlands located within the Project Study Area associated with the preferred alternative; therefore, no effects on significant woodlands as a result of the proposed Project are anticipated.

7.6.5.2 Areas of Natural and Scientific Interest

There are no ANSI’s located within the Project Study Area associated with the preferred alternative; therefore, no effects on ANSIs as a result of the proposed Project are anticipated.

7.6.5.3 Valleylands

There are no valleylands located Project Study Area associated with the preferred alternative; therefore, no effects on valleylands as a result of the proposed Project are anticipated.

7.6.5.4 Provincially Significant Wetlands

There are no PSWs located within the Project Study Area associated with the preferred alternative therefore, no effects on PSWs as a result of the proposed Project are anticipated. Furthermore, as the Project footprint will not require encroachments into natural areas in addition to the existing ROW, removal of wetlands is not proposed, and impacts are not anticipated.

7.6.6 Natural Heritage Features

Construction associated with the proposed Project may require temporary removal of vegetation that has established within the existing ROW but is generally compatible with transmission line activities. It may also require the temporary removal of vegetation along access roads and in construction laydown areas. Temporary adverse effects from vegetation removals include those from work operations that physically, or visually disrupt wildlife during active construction. No effects on natural heritage features are anticipated during the maintenance and operation phase.

Construction activities would be restricted to designated work areas and protective barriers, such as fencing, would be erected to protect adjacent features from construction related effects. For example, silt fencing and/or other sediment and erosion control measures would be installed as required to prevent the migration of sediment-laden water from the site. In addition, vegetation removal limits would be clearly demarcated. Prior to construction, a detailed construction plan would be developed.

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

- Restricting access and minimizing travel/work areas to maximize retention of compatible vegetation.
- Implementing sediment and erosion controls.
- Selectively cutting and retaining compatible vegetation to promote regeneration.
- Using geotextile and gravel for access, where feasible, to reduce compaction.
- Restoring compacted areas, as required.
- Retention of compatible vegetation.

- Installing barriers (e.g., silt fences) to promote protection of sensitive features.

Temporary construction access (e.g., access mats or geotextile and gravel) will be removed upon completion of construction. Temporary laydown areas will be constructed and these areas will be restored following removal of the laydown areas post-construction. Hydro One will undertake a Biodiversity Initiative to offset habitat loss that cannot otherwise be avoided or mitigated. This initiative will be conducted subsequent to completion of the Class EA and EOB Leave-to-Construct processes in consultation with Indigenous communities. Wetland areas impacted during construction (directly or indirectly) will be restored to pre-construction condition/drainage patterns, where practical.

For the most part, sensitive resident animals can relocate temporarily to avoid noise and disturbance associated with construction activities and return after construction completion. Construction disturbance would be sufficiently local and transitory that little displacement of wildlife is anticipated. Therefore, the effect of the proposed Project on wildlife will be minimal.

Removal of vegetation has the potential to disturb nesting migratory birds. The *Migratory Birds Convention Act, 1994* (MBCA) prohibits the disturbance, destruction or removal of a nest, egg or nest shelter of a migratory bird. In order to avoid contravention of the MBCA, vegetation removal should not be conducted during the migratory bird breeding season from April 15 to August 31 in nesting zone C4/5 as provided by ECCC (2018c), where feasible.

Removal of incompatible vegetation (trees) has the potential to impact SAR bats and birds. In order to avoid impacts to SAR bats, tree removals should take place during the non-active bat period (October 1 to April 30 for northern Ontario). Trees that may be impacted by removal activities should be evaluated for their potential to provide suitable bat maternity roost habitat; although it is anticipated that limited vegetation removal will be required as the refurbishment activities will be located within the existing ROW.

7.6.6.1 Wetlands

As outlined in **Section 4.6.6.1**, some of the vegetation communities within the ROW are associated with wetland ecosites which have the potential to be impacted as a result of the Project. As proposed work associated with Alternative 1 does not require widening of the ROW and re-uses existing hydro poles/steel lattices structures that are in good condition, impacts to wetlands are anticipated to be minimal. No impacts to wetlands outside of the existing ROW are expected. Furthermore, should pole or steel lattices

require replacement or repair/refurbishment, the footprints are anticipated to be in close proximity to existing structures and generally within pre-disturbed areas.

Hydro One will undertake a Biodiversity Initiative to offset habitat loss that cannot otherwise be avoided or mitigated. This initiative will be conducted subsequent to completion of the Class EA and EOB Leave-to-Construct processes in consultation with Indigenous communities. Wetland areas impacted during construction (directly or indirectly) will be restored to pre-construction condition/drainage patterns, where practical.

Section 7.6.6 describes project impacts on natural features, and associated mitigation measures that would be employed during construction to mitigate and/or minimize impacts on wetlands. Similarly, **Section 7.6.4** would also be employed with respect to wetland areas. In general, the removal of ground vegetation will be minimized during construction to the extent practical. In addition, construction activities for the Project will be restricted to designated work areas. Wherever practical, access to the construction areas for the Project will utilize existing access. An erosion and sediment control plan will be employed to identify mitigation for wetland communities and will identify locations for protection fencing. In addition, no fuelling of vehicles and/or equipment would be permitted adjacent to wetlands (i.e. a 30 m buffer) to avoid potential spills (e.g. fuel, oil, lubricant) from migrating and entering aquatic habitats. Spill kits will be located at work areas to mitigate the effects of accidental spills or releases, should they occur during construction.

7.6.6.2 Fish and Aquatic Habitat

The proposed Project crosses several watercourses identified as direct fish habitat. Although construction activities are located in areas that avoid impacts to fish and aquatic habitat, there is potential for fish and aquatic habitat to be affected during the construction phase of the proposed project as temporary watercourse crossings may be required to facilitate construction activities. In the event in-water works are required to support the construction of potential watercourse crossings, necessary permits and approvals from MECP and DFO will be obtained before the commencement of work.

Other potential disturbances to fish and aquatic habitat resulting from construction activities near water would be minimized through the development of the Environmental Management Plan and ESA Mitigation Plan, which would include mitigation measures such as crossings during low flow conditions, retaining stream bank vegetation (where practical), and storing materials away from water features. In addition, no refueling or

vehicles and/or equipment would be permitted near a watercourse to prevent potential spills (e.g. fuel, oil, lubricant) from entering aquatic features.

7.6.6.3 Woodlands

As previously mentioned, the existing transmission line ROW does not cross significant woodlands. **Section 7.6.7** describes project impacts on vegetation, including trees, and associated mitigation measures that would be employed during construction.

7.6.6.4 Species at Risk

As noted in **Section 4.6.7,** species designated as either endangered or threatened under the ESA and SARA are provided species and habitat protection. Generally, impacts to SAR habitat will be avoided during detailed design, where possible. In addition, construction personnel will be aware of the potential presence of, and able to identify, SAR with the potential to occur within work areas.

From a terrestrial perspective, the proposed Project was assessed as having the potential to provide habitat for Eastern Whip-poor-will, Bobolink, and SAR bats. Habitat removal during the migratory bird breeding season (April 15 to August 31 in nesting zone C4/5: ECCC, 2018) and the bat active period (May 1 to September 30) would be avoided to the extent feasible. With respect to birds, HONI is committed to completing a non-intrusive nest survey/sweep by a qualified individual a maximum of 24 hours in advance of vegetation removal if clearing is required during the restricted timing window of April 15 to August 31. If a tree is identified as suitable for bat maternity roosting and the tree must be felled during the bat active season (May 1 to September 30), then “bat exit surveys” will be performed by a qualified environmental professional. The environmental professional will observe the tree for 90 minutes at sunset (and during appropriate weather conditions) for two nights in June. The survey will involve both a visual (to witness bats emerging from the tree cavities) and ultrasonic acoustic (to identify the bats to species) assessment of the potential roost habitat.

Construction personnel will be aware of the potential presence of, and able to identify, SAR with the potential to occur within the general work areas. Should SAR be encountered during construction activities, activities will be stopped until it has been determined that harm will not occur. The required activities will be assessed to determine whether the work/schedule can be modified, or mitigation measures employed, to avoid potential effects on SAR and their habitat.Other potential disturbances to SAR and SAR habitat resulting from construction activities in potential habitat, would be minimized with the development of the ESA Mitigation Plan, which will

be registered with the MECP under the Ontario Regulations 242/08, prior to construction commencing.

Based on the results of the background review and results of the 2021 field investigations, the following confirmed and candidate SWH types were identified within the Project Study Area for the proposed Project:

- Confirmed SWH for Rare Treed Type: Black Ash and Red Maple
- Candidate SWH for Bat Maternity Roosts
- Candidate SWH for Amphibian Breeding Habitat (woodland and wetland)
- Candidate SWH for Special Concern and Rare Wildlife Species:
- Olive-sided Flycatcher
- Canada Warbler
- Common Nighthawk.

During project construction activities, the following would be taken into consideration as a mechanism to avoid and/or mitigate impacts to wildlife habitat:

- Retention of snags and cavity trees with potential to support bats where feasible.
- Tree/vegetation clearing will be avoided during the breeding bird and bat active period, where possible.
- General avoidance of wildlife habitats, where practical.
- Promotion of wildlife habitat through vegetation control.
- Retention of natural vegetation, where possible.
- During the detailed design phase, candidate/confirmed SWH should be identified and avoided through micro siting Project activities (equipment locations) and infrastructure (e.g., laydowns, access roads) to avoid these areas.
- Where it is not possible to avoid candidate/confirmed SWH, these areas must be restored to baseline conditions or better following construction activities or compensated for through enhancements of the local landscape.
- Retention of snags and cavity trees with potential to support bats, unless the snags pose a risk to human safety or interfere/pose a risk to the transmission line.
- Where snags and cavity trees with potential to support bats cannot be retained, bat rocket boxes will be established following construction activities to provide similar roosting habitat.
- Exclusionary fencing (i.e., silt fencing to serve as dual purpose) where Project activities are adjacent to habitats that have the potential to contain amphibians or reptiles.

- Exclusion fencing once installed must be inspected regularly to ensure that no holes or other defects are present that could impact its effectiveness as a barrier.
- Where retention of natural vegetation is not possible the area must be restored following Project activities to baseline conditions or better following construction activities.
- Use of native plant species present within the local landscape where seeding or planting is completed.

As noted in **Section 4.6.6.11**, Black Ash has recently been assessed as Endangered by COSSARO, and will be added to the SARO List by January of 2022. The Ministry is proposing to make an amendment that would temporarily suspend protections for Black Ash afforded under the ESA for a period of two years from the time the species is added to the SARO List (O. Reg. 242/08). Black Ash trees are found throughout Ontario and protecting the species is likely to result in social and economic implications to forestry, development, infrastructure, and agriculture industries. The Ministry plans to develop a recovery strategy for Black Ash within a year of its listing on the SARO List, and to develop species-specific policy direction for species recovery within 9 months of the publication of the recovery strategy (Notice number 019-4278). A second amendment would allow the use of existing conditional exemptions for select newly-listed species that will be added to the SARO List regulation in January 2022; allowing proponents to carry out eligible activities (those that have common and routine mitigation actions with well understood requirements to reduce impacts on species), without having to obtain an ESA permit or agreement (Notice number 019-4280).

HONI is committed to using a precautionary approach to impact mitigation, assuming that all potential habitat related to SAR or species of conservation concern are inhabited by the species noted in the desktop review and field surveys. To mitigate potential disturbance SAR or species of conservation concern, relevant avoidance, protection and mitigation measures will be adhered to during both construction and operation/maintenance phases of the Project.

7.6.6.5 Invasive Species

The following invasive species have been observed within the Project Area:

- Giant Hogweed
- Wild Parsnip

There is potential for the proposed Project to facilitate the spread of non-native or invasive species that may occur within or adjacent to work areas during the construction

phase. A project specific Invasive Species Management Plan will be developed prior to construction. The Invasive Species Management Plan will aim to educate construction personal on the identification of invasive species and the importance of avoiding their spread to new areas. Additional measures that would be undertaken to reduce the spread of invasive species include:

- Utilizing native plant species during construction restoration.
- Taking care to avoid spreading invasive species (especially invasive plant species) that occur in or adjacent to work areas, and educating crews on the importance of preventing the spread of invasive species.
- Abiding by the Invasive Species Act regulations;
- Proper handling, containment and disposal of invasive plant material, where required.
- Inspecting and cleaning equipment, in accordance with the Clean Equipment Protocol for Industry, and vehicles as necessary to reduce potential for spreading invasive species propagules.

7.7 Indigenous Lands and Territory

As indicated in **Section 4.4.3**, there are no Indigenous Community Reserve Lands located in the Project Study Area.

Hydro One is committed to developing and maintaining relationships of mutual respect with Indigenous communities, and recognizes that Indigenous communities and their lands are unique in Canada, with distinct legal, historical and cultural significance. Hydro One is committed to continue to engage with the Indigenous communities to provide regular project updates, and actively identify and avoid geographically defined areas which support current or past traditional use for the harvesting of wildlife or fish, the harvesting of traditional plants, or use as sites of spiritual or cultural significance. Similarly, Indigenous communities will continue to be provided opportunities to review the findings of archaeological field surveys and assessment reports.

Hydro One will continue to seek to identify community concerns and build appropriate actions into proposed Project plans to address expressed concerns, as described in **Section 3.5.**

7.8 Recreational Resources

There is potential that some recreational resources (e.g. A18 Snowmobile Trail) may be temporarily affected during the construction and maintenance phase of the proposed

Project due to the presence of construction laydown areas within the corridor, as well as construction equipment and presence of construction crew members. Impacts during the operations phase are not anticipated.

While there may be some temporary impacts to the enjoyment of recreational resources adjacent to the proposed Project, such impacts are expected to be short-term in nature. Advanced notice will be provided to nearby snowmobile associations, residences, landowners and commercial operations, outlining the location of entry/exit points for the construction site as well as the schedule for construction work or construction related traffic in those areas. Clear and temporary road signage will also be created and installed to reflect this information.

7.9 Visual and Aesthetic Resources

The proposed project is located within a predominantly rural area with forested lands and open spaces, thus providing a mix of open and obstructed views. Natural elements include isolated woodlots, forest cover, tree canopies of rural communities, as well as vegetation adjacent to lakes and water crossings. Existing vertical elements include sparse traffic and light standards and existing transmission lines within the existing ROW. The majority of sensitive receptors are residences with wide views into the horizon.

Location of transmission structures is one of the largest factors influencing the visual effects to specific receptors. Rehabilitation of the transmission line will result in replacement of some wood pole/lattice structures, but the overall visual effects of the Project are not expected to significantly change the views based on existing conditions.

7.10 Technical Considerations

7.10.1 Infrastructure Crossings

Construction of the proposed Project will require crossings of existing linear infrastructure; including provincial Highway 11, and 101, railway line, and the TransCanada pipeline, including running parallel to existing highways, roadways and along and over several municipal roads. Permanent or long-term impacts to existing linear infrastructure are not anticipated. Rider poles, boom-tipped riders or similar protection will be utilized during conductor stringing. Disruption to traffic on roads and highways during construction is anticipated to be temporary and short in duration. Use of temporary or rolling closures of Highways may be required to facilitate stringing activities. Work within MTOs highway ROW or permit control area will require an

Encroachment Permit and/or Land Use Permit as well as consultation with MTO during detailed design. Hydro One will obtain all necessary Encroachment Permits and Land Use Permits from MTO prior to the start of construction. To facilitate construction of the aerial crossings associated with railway lines, temporary flagging operations may be required; consultation with Ontario Northland Rail will be completed during detail design to obtain all necessary track permits and authorizations. Similarly, crossing of the TC Mainline Natural Gas Pipeline will require consultation with TransCanada Pipelines during detail design to acquire clearance letters for crossings.

7.11 Cumulative Effects

In accordance with Hydro Ones Class EA for MTF, proponents must consider cumulative effects when planning projects. Cumulative effects include the proposed undertaking and any other proposed undertakings in the immediate Project Area where documentation is available. There are no other known projects within the Project Study Area with available documentation to integrate into the effects assessment for this Class EA.

7.12 Summary of Potential Environmental Effects, Mitigation Measures, and Net Effects

Table 7-1 provides a summary of potential effects, the associated mitigation, and the net effects identified for the proposed Project, during the construction and operation and maintenance phase.

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

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Archaeological Resources	**Construction:** Disturbance to lands with potential to support archaeological resources.	Stage 1 and 2 Archaeological Assessments have been completed within identified areas of archaeological potential with ground disturbance anticipated to occur along the transmission corridor in accordance with the MHSTCI requirements. Based on the results of the Stage 2 AA, no archaeological resources were identified and no further archaeological work is recommended. Should archaeological artifacts be encountered during construction, work in the vicinity will cease and a licensed archaeologist will be engaged immediately to ensure compliance with the provincial Heritage Act. Likewise, should any human remains be encountered during construction, work in the vicinity will cease and the police and coroner notified immediately as well as the Registrar of Cemeteries to ensure compliance with the Funeral, Burial and Cremation Services Act. In addition, all Indigenous communities that have an interest in the Project and/or location will also be immediately contacted so that, in the event such resources or remains are Indigenous in origin, protocols for handling such resources can be established immediately prior to the disturbance or removal of such from the property.	No significant net effects are predicted. Additional archaeological investigations will be completed prior to construction, as required.
Cultural Heritage Resources	**Construction:** Disturbance to lands and resources with potential to support cultural heritage.	Hydro One completed an internal desktop review based on MHSTCI's Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes and is included in **Appendix F**. Based on the checklist, it was determined that there is low potential for built heritage or cultural heritage landscape within the Project Area.	No significant net effects are predicted.
Land Use and Communities: Business Operations	**Construction:** Potential for activities to disrupt commercial or industrial operations.	The following additional mitigation is recommended to address these potential effects: • Access to businesses will be maintained at all times during construction to the extent feasible. If existing access cannot be maintained, arrangements will be made for alternate access, including public signage as required; and, • Construction activities and equipment will be managed to avoid damage and disturbance to adjacent properties, structures and operations.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Land Use and Communities: Local Roads and Traffic	**Construction:** Potential for increased traffic, including heavy equipment, on local and regional roads. In addition, stringing of conductors across highways and roadways may require temporary road closures and detours.	The following mitigation is recommended to address these potential effects: • The proposed Project will adhere to seasonal load restrictions. • Where required, a Traffic Control Plan will be developed and shared with local municipalities, as necessary. • Construction haul routes and schedules will be shared with local municipalities in advance of construction, as necessary. • Construction traffic will access the construction area from the existing road network at specified construction access/egress locations. • Common parking areas will be established for construction crews. • To the extent practical, in an effort to avoid road closures and other disruptions during stringing, conductor stringing will utilize rider poles, boom-tipped riders, or other protective measures. • If temporary road or highway closures (e.g., rolling closures) are required during stringing or other construction activities, the construction contractor will coordinate closely with the appropriate road authority to ensure that proper notice is provided and that required signage and traffic controls are utilized, and that the duration of any temporary closures will be minimized to the extent practical. • Local advertisements (e.g. radio, newspaper, etc.) will be issued and road signage will be erected to provide notification / pre-construction information to area residents on timelines and construction routes, and potential detours, if required. • Traffic control officers or flag persons will be assigned to assist with construction entry/exit, as necessary.	No significant net effects are predicted.
Land Use and Communities: Mud and Construction Debris	**Construction & Maintenance:** Potential for tracking of mud and migration of construction debris to areas outside of the construction zone.	The following mitigation is recommended to address these potential effects: • Roads will be cleaned/scraped to remove mud on an as needed basis; • Mud mats will be installed (on an as need basis) as a mechanism to reduce the transport of mud; • Vehicles / equipment will be inspected and cleaned, as necessary, Construction sites will be kept tidy at all times and waste bins will be available wherever solid wastes are generated; • Waste materials will be collected and transported to a licensed or approved waste management facility on a regular basis; and, • General clean site policies will be implemented requiring pick-up and disposal of refuse and construction waste on a regular basis.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Land Use and Communities: Electric and Magnetic Fields (EMF)	**Operation:** Potential exposure to increased EMF once the transmission line is energized.	The following mitigation is recommended to address these potential effects: • EMF levels associated with the proposed Project are anticipated to remain significantly lower than the general public exposure limits; and, • The proposed Project will be designed and operated in accordance with appropriate regulatory requirements.	No significant net effects are predicted Health Canada does not consider that any precautionary measures are needed regarding daily exposures to EMFs at extremely low frequencies. There is no conclusive evidence of any harm caused by exposures at levels found in Canadian homes and schools, including those located just outside the boundaries of power line corridors.
Land Use and Communities: Noise & Vibration	**Construction & Maintenance:** Potential disturbance as a result of noise	The following mitigation is recommended to address these potential effects: • Equipment and machinery used on site will be maintained in good working condition. • Construction activities will conform to local noise control by-laws (Town of Iroquois Falls Noise Control By-Law No. 2194/83, Town Kirkland Lake By-law to Prohibit or Regulate Noise By-Law No. 07-065). Noise By-Law exemptions will be sought if work is required outside of the hours specified in the aforementioned by-laws (e.g. overnight).	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Natural Environment Resources - **Physical Environment:** Spills	**Construction & Maintenance:** Potential inadvertent release of deleterious substances including oil, gasoline or other liquids.	The following mitigation is recommended to address these potential effects: • Refueling of vehicles and equipment will be completed in a designated location located a minimum of 30 m away from sensitive receptors, such as watercourses, surface drainage features, wetlands, etc.; • Fuelling of vehicles/equipment will occur utilizing an emergency spill tray to capture any accidental release of fluids; • Fuelling operations will require the operator to visually observe the fuelling process 100% of the time; • If refuelling must occur outside of designated areas, additional containment or other mitigation and spill prevention measures will be utilized; • An Emergency Response Plan and spill cleanup equipment will be maintained and be readily accessible at all times during construction and maintenance activities; • Spills will be addressed and remediated as soon as possible after a spill; • Areas impacted by a spill will be secured, and unauthorized personnel will be kept out of the affected area until further assessment and/or clean-up is conducted; • Clean-up and the disposal of contaminated materials will be managed in accordance with provincial regulations and guidelines; • Fuels, chemicals, lubricants or other deleterious substances will be stored on level ground in properly contained storage areas; • Only approved aboveground petroleum storage tanks will be used during the construction phase of the Project, and will be stored in designated fuelling areas and with additional temporary containment measures; • Work conducted near sensitive receptions will be avoided or limited, where practical. • The MECP Spills Action Centre (SAC) will be notified of all reportable spills.	No significant net effects are predicted.
Natural Environment Resources - **Physical Environment:** Waste Generation	**Construction & Maintenance:** Solid and/or liquid waste will be generated.	The following mitigation is recommended to address these potential effects: • Waste and recyclables will be sorted, segregated and removed to a licensed or approved waste management facilities site and/or recycling facility; • Excess construction materials (i.e. waste, granular fill) will be removed from construction sites and areas on an ongoing basis; • Liquid and solid sewage wastes held in portable tanks will be removed by a licensed contractor and taken to licensed or approved disposal areas; • Waste materials will be contained and not allowed into sensitive receptors such as waterbodies, riparian areas or wetlands. • Waste materials will be collected and transported to a licensed or approved waste management facility; and, • All testing, handling, storage, transport and disposal of waste will be completed in accordance with all applicable legislation.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Natural Environment Resources - **Physical Environment:** Excess Materials Management	**Construction & Maintenance:** Excess materials including topsoil and subsoil, may be produced during site excavations.	The following mitigation is recommended to address these potential effects: • All excess materials will be tested, if necessary, and managed in accordance with O. Reg. 406/19. All efforts will be made to manage soils onsite; • Soil testing to meet the requirements of O. Reg. 406/19, will be completed, if necessary, during geotechnical investigations and prior to or during construction; • If excess soil is deemed to be suitable, Hydro One will work with landowners to explore opportunities for re-use within the property; and, • Any excess soil required to leave the site will be taken to an approved facility licensed to accept the soil based on its characterization.	No significant net effects are predicted.
Natural Environment Resources – Atmospheric Environment: Climate Change	**Construction & Maintenance:** Emissions will be generated from vehicles and equipment.	In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects: • Equipment will be properly serviced and maintained; • Idling of construction vehicles and equipment will be kept to a minimum and GPS or other navigation tools will be used in vehicles to optimize routing; and, • The transmission line will be designed to adequately withstand the effects of climate change.	No significant net effects are predicted.
Natural Environment Resources - **Atmospheric Environment:** Air Quality	**Construction & Maintenance:** Potential for fugitive dust and impacts to air quality from vehicle emissions.	In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects: • Vehicles will not exceed posted speed limits; • Minimize and stabilize vehicular traffic and exposed soils in high traffic areas with suitable cover material; • Avoid excavation and other construction activities that have the potential to release airborne particulates during excessively windy and prolonged dry periods, to the extent practical; • If excavation or other construction activities with a potential to release airborne particulates must occur during windy conditions, dust controls will be utilized; • Cover or otherwise contain loose construction materials with the potential to release airborne particulates during transport, installation or removal; • Disturbed areas will be restored as soon as practical to minimize duration of soil exposure; and, • Effective dust suppression techniques, such as on-site watering, will be implemented as necessary.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Natural Environment Resources - **Water Resources:** Soil Rutting & Vegetation Removals	**Construction & Maintenance:** Potential for vehicles and equipment to create rutting in soils, creating ponding or channelization leading to additional erosion of soils. Vegetation removals have the potential for increases in both overland flow and water temperature, as well as mobilization and transport of organic debris and sediment to nearby watercourses	In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects: • Where practical, activities with potential to cause rutting, ponding/channelization or erosion will be planned during stable and dry ground conditions; • Existing watercourse crossings and constructed access routes will be utilized to the extent practical; • Where required, temporary crossing structures will be installed for construction access at watercourses and other low lying areas and will be removed upon completion of construction; • Existing, natural drainage patterns and flows will be identified and maintained to the extent possible; • Equalization culverts or similar methods may be used in construction of access roads; • Compatible vegetation will be retained and buffered to protect sensitive receptors, where practical. • Machine clearing and grubbing will be restricted near sensitive environmental areas, hand clearing will be required within watercourse banks/riparian areas or in wetlands. • Vegetation removals will be minimized to the extent possible, and replanted/seeded with compatible vegetation as required; • Where erosion is of a concern, exposed soils in previously vegetated areas will be re-vegetated as practical, or have other ESC measures applied as necessary; • Construction access and laydown areas will be restored following completion of construction; • Cleared vegetation will be relocated to designated areas away from aquatic features; • Equipment operation adjacent to water features will be minimized, where practical; • Works adjacent or around watercourse banks will be conducted during appropriate conditions and times of the year (e.g., dry or frozen conditions), to the extent practical;	Net effects include temporary removal of compatible vegetation. Given that the Project will utilize the existing corridor ROW, effects to incompatible vegetation is considered low. In the event Incompatible vegetation requires removal in support of the Project, it will not represent a loss of vegetation on the landscape, but rather a transition from vegetation that is incompatible with transmission line corridors, to vegetation that is compatible.
Natural Environment Resources - **Water Resources:** Dewatering	**Construction:** Potential increase in surface water flows resulting from dewatering activities.	The following mitigation is recommended to address these potential effects: • Construction water will be discharged in compliance with permits and/or approvals from MECP, as required; • A construction water management plan will be developed prior to construction and implemented appropriately (e.g., passing discharge water through a filter bag or drum before discharge to the environment to capture sediment and slow down the water velocity, etc.), as required; and, • Where practical, opportunities to maximize retention times and reduce surface flow velocities will be executed.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Natural Environment Resources - **Water Resources:** Erosion and Sedimentation	**Construction:** Potential for erosion, sedimentation and soil loss during site preparation and construction.	In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects: • An ESC plan will be developed prior to construction and ESC measures will be identified and implemented as required; • Areas with high erosion potential will be identified and avoided, to the extent practical; • Construction activities near sensitive features or areas may be suspended during extreme wet weather events, and crews will review and consider weather forecasts in their planning of such work; • ESC installations will only be removed after disturbed areas are restored, accumulated sediment has been disposed, and construction activities in the vicinity are completed; • In an effort to reduce potential erosion, mechanical or vegetation erosion control measures will be employed, such as buffer strips, erosion control blankets and sedimentation fences, as required; • Equipment operation on slopes adjacent to streams will be minimized to the extent practical; • Disturbed areas near water features or sensitive environmental areas will be restored as soon as practical; and, • ESC measures will be regularly inspected (including after each significant rainfall event; >10 mm) and repaired where necessary to maintain functionality.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Natural Environment Resources - **Designated or Special Natural Areas:** Vegetation	**Construction:** Temporary removal of compatible vegetation within the ROW and temporary removal of vegetation for access roads and construction laydown areas including trees. **Maintenance:** Vegetation management within the ROW to ensure that incompatible vegetation does not threaten the safe and reliable operation of the transmission line.	In addition to the applicable mitigation outlined above, the following additional mitigation is recommended to address these potential effects: • The extent of clearing and vegetation removal required for the transmission line ROW will be minimized to the extent practical; • Tree removals will be taken into account when planning access and laydown areas, and the footprint of work areas/access will be minimized to the extent practical; • Incompatible vegetation will be salvaged or felled as appropriate; • Conduct tree removals outside of the migratory bird breeding season (i.e., April 15 through August 31, zone C4/5 as provided by ECCC 2018) and the bat active season (i.e. May 1 through September 30), where practical; • In the event vegetation clearing is required during the breeding bird season, nest searches will be conducted by a qualified person in accordance with applicable provincial and federal requirements; • Snags (dead standing trees) and cavity trees that do not pose a risk to the operation of the transmission line will be identified and retained. Where snags and cavity trees with potential to support bats cannot be retained, bat rocket boxes will be established following construction activities to provide similar roosting habitat. • Tree protection zones will be used to delineate and protect trees that do not require removal for construction activities or operation of the transmission line, as necessary; • Non-salvageable limbs will be disposed of by chipping or removal to designated areas; and • Tree removals adjacent to watercourses will be cut such that their root systems remain intact to maintain soil stability, and compatible bank/riparian vegetation will be retained to the extent practical.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Natural Environment Resources - **Natural Heritage Features:** Fish and Fish Habitat	**Construction & Maintenance:** Potential disturbance to fish habitat as a result of vegetation loss, soil erosion, sedimentation, etc.	Refer to mitigation recommended for Spills under Physical Environment. Additional mitigation includes: • The creation of new water crossings during construction will be avoided to the extent feasible by using existing access and crossings (e.g. bridges, culverts) and by accessing work areas from either side of watercourses, where practical; • Construction access, laydown and work areas will be planned to avoid waterbodies and potential fish habitat to the extent practical (e.g., maintaining distance from watercourse banks except where crossings exist or are required); • Any disturbance to adjacent to potential fish habitat will be stabilized to prevent erosion immediately; • An ESC plan will be developed to include mitigation measures such as constructing watercrossings during low flow conditions, retaining compatible stream bank vegetation, use of ESC during construction and restoration, and storing materials away from sensitive receptors (e.g. watercourses, drains, wetlands); • Project wastes will be stored and/or removed from all riparian areas immediately; • Disturbed areas will be restored to a pre-disturbed state or better, upon completion of construction; • If permanent or temporary works are required below the high water mark of a watercourse with potential fish habitat, a Request for Review will be prepared and submitted to the DFO in support of a Letter of Advance and/or approvals under the *Fisheries Act*; • Transmission line structures will be set back from watercourse banks and located outside of floodplains, to the extent practical.	No significant net effects are predicted.
Natural Environment Resources - **Natural Heritage Features:** Wetlands	**Construction:** Potential impacts to wetlands as a result of vegetation loss, soil erosion, sedimentation, etc.	Refer to mitigation recommended for Spills under Physical Environment, Soil Rutting & Vegetation Removal under Water Resources and Vegetation Removals.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Natural Environment Resources - **Natural Heritage Features:** Species at Risk (SAR)	**Construction & Maintenance:** Potential disturbance or loss of SAR and/or SAR habitat.	Refer to mitigation recommended for Soil Rutting & Vegetation Removal under Surface Water Resources, Significant Woodland under Designated or Special Natural Areas and Vegetation under Natural Heritage Features. Additional mitigation includes: • Impacts to potential SAR habitat will be avoided, where possible. In the event impacts cannot be avoided, MECP will be consulted regarding permitting/approval requirements under the ESA during detailed design. • Boundaries of SAR habitats will be identified and flagged off and protected; • To the extent possible, incompatible vegetation/trees with the potential to provide SAR habitat will be removed/trimmed to the extent that they no longer pose a risk to overhead transmission lines while still maintaining their potential SAR habitat characteristics. Alternatively, incompatible vegetation will be replaced with compatible vegetation to maintain SAR habitat; • Snags (dead standing trees) and cavity trees with the potential to provide SAR habitat that do not pose a risk to the operation of the transmission line will be identified and retained to the extent practical; • Construction personnel will be aware of the potential presence of, and able to identify, SAR with the potential to occur within the general work areas; • Should SAR be encountered during construction activities, activities will be stopped until it has been determined that harm will not occur. The required activities will be assessed to determine whether the work/schedule can be modified, or mitigation measures employed, to avoid potential effects on SAR and their habitat; • If avoidance of SAR and/or SAR habitat is not possible, MECP and/or DFO will be consulted to mitigate the impact of the activities and/or assess the need for permitting/approvals under the ESA, SARA or the Fisheries Act; • If as SAR is harmed or killed as a result of work activities, the MECP will be notified and the relevant work activities will cease within the immediate area until the species has been removed by personnel authorized to handle SAR; and, • SAR observed during construction activities will be reported to the MECP.	Net effects include permanent removal of incompatible vegetation to ensure the safe operation of the transmission line; not considered significant. Due to the existing corridor, vegetation removal is anticipated to be minimal in scale. An ESA Mitigation Plan will be registered with MECP in advance of construction.
Natural Environment Resources - **Natural Heritage Features:** Wildlife Habitat	**Construction & Operation:** Potential disturbance or loss of wildlife habitat, including habitat fragmentation.	• Boundaries of important wildlife habitats will be identified and flagged prior to clearing; • Trees containing stick nests and areas where active animal dens or burrows are encountered will be left undisturbed until unoccupied, as determined by a qualified person; • Promotion of wildlife habitat through vegetation control and brush piles; • Birds of prey may construct stick nests on transmission structures. Osprey nests are most common on transmission structures, but Bald Eagle nests are occasionally encountered. If there are eggs or young in the nest, it is Hydro One protocol to leave the nest until the young have fledged unless there is an immediate safety concern to be addressed. If there are no eggs or young observed, the nest will be removed and replaced; and • Construction personnel will be aware of the potential for wildlife which may be encountered with the within the general work areas.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Natural Environment Resources - **Natural Heritage Features:** Invasive Species	**Construction:** Potential for inadvertent spread of invasive species propagules through the movement of soil, debris and/or plant material via construction vehicles and equipment.	• A project specific Invasive Species Management Plan will be developed prior to construction. The Invasive Species Management Plan will aim to educate construction personal on the identification of invasive species likely to occur within work areas and the importance of avoiding their spread to new areas. • Areas identified as having invasive species present will be considered during access and construction planning. Stands of invasive plant species will be avoided to the extent practical during construction; • Inspecting and cleaning equipment, in accordance with the Clean Equipment Protocol for Industry, and vehicles as necessary to reduce potential for spreading invasive species propagules. • Crews will be educated and informed of invasive species known or with potential to occur in work areas; and • Special treatment areas (e.g. invasive species) will be designated and tracked for future maintenance works.	No significant net effects are predicted.
Indigenous Communities	**All Phases** Potential to affect Indigenous interests.	• Some communities expressed interest in being involved with future archaeological and natural environment field work. Hydro One and its consulting archaeologist will work with interested communities to include representatives from interested communities in archaeological and environmental fieldwork; • Indigenous communities will be provided opportunities to review the findings of archaeological field surveys and archaeological assessment reports; • If archaeological artefacts are encountered during construction, work in the vicinity will cease and a licensed archaeologist will be engaged immediately to ensure compliance with the provincial Heritage Act.	No significant net effects are predicted.
Recreational Resources	**Construction & Maintenance:** Potential for temporary disturbance to tourism and enjoyment of recreational resources (e.g., snowmobile trails, etc.).	The following mitigation is recommended to address these potential effects: • Disturbance to existing recreational resources will be avoided, to the extent practical; and • Safety precautions will be utilized throughout the Project Area to protect the public such as anti-climbing devices and appropriate signage, where necessary.	No significant net effects are predicted.
Visual and Aesthetic Resources: Visibility of the Project by Sensitive Receptors	**All Phases** Potential visual impacts to views of the Project.	Refurbishment of the transmission line will result in replacement of some structures, but the overall visual effects of the project are not expected to significantly change the views based on existing conditions.	No significant net effects are predicted.

Environmental Concern	Project Phase & Potential Effects	Mitigation Measures	Net Effects
Technical Considerations: Infrastructure Crossings	**All Phases:** Permanent overhead crossing of Highway 11 and 101 and local municipal roads.	Refer to mitigation recommended for Local Roads & Traffic under Land Use Communities. Additional mitigation includes: • Permanent impacts to provincial highways or any other municipal road crossings are not anticipated as part of this project; • Temporary or rolling highway closures may be required to facilitate stringing, and duration of any temporary closures will be minimized to the extent practical; • Work within the MTO Highway ROW will require an Encroachment Permit and consultation and input from Ministry staff during design; and, • Works within MTO permit control areas will require a Land Use permit from the MTO. Site specific traffic control plans will be developed to accommodate crossings.	No significant net effects are predicted.
Technical Considerations: Infrastructure Crossings	**Construction:** Underground utility crossing.	The following mitigation is recommended to address these potential effects: • Equipment with low bearing capacity will be used, where feasible; • Temporary access roads and work pads will be built using mats or geotextile and crushed rock, and/or other protective measures will be implemented as deemed necessary; and, • Contact will be maintained with applicable utility operators regarding work schedule and other items of interest.	No significant net effects are predicted.
Technical Considerations: Infrastructure Crossings	**Construction and Operation,** Permanent overhead crossing of the existing railway line ROWs.	The following mitigation is recommended to address these potential effects: • Temporary flagging operations of railway lines may be required to facilitate construction of the aerial crossing; and, • Hydro One will work with applicable rail authorities during design.	No significant net effects are predicted.

8 Effects Monitoring

The purpose of effects monitoring is to confirm the extent of the proposed Project's environmental effects by comparing the actual effects with the predicted effects, to verify the effectiveness of mitigation measures, and to determine whether additional measures are warranted. Monitoring also confirms that the commitments, conditions of approval, where applicable, and compliance with other environmental legislation are met. An Environmental Specialist will be assigned to the Project for the duration of construction to monitor construction activities and provide guidance on needed field changes.

As previously noted in **Section 7**, a project-specific Environmental Management Plan has been prepared and will be updated as required prior to and throughout construction.. The Environmental Management Plan:

- Summarizes legislative requirements.
- Summarizes environmental commitments set out in the final ESR, and terms and conditions of approval, if any.
- Ensures the documentation of pre-construction site conditions, where necessary.
- Provides specific directions to construction personnel on the implementation of environmental mitigation measures, response plans, and other information (e.g., identification of Species at Risk).
- Ensures that supporting protection plans have been implemented during construction.
- Describes the environmental monitoring process and frequency to be undertaken during construction;
- Outlines steps to be taken when documenting monitoring and identify procedures for follow-up actions, as required; and,
- Provides specific directions on the post-construction restoration of work areas and access locations.

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

9 Conclusion

Hydro One is seeking approval under the *Environmental Assessment Act* for the refurbishment due to aging infrastructure and ampacity upgrade of the existing 115 kV transmission line based on direction provided by IESO in June 2019. The existing transmission line spans the Town of Kirkland Lake (Kirkland Lake TS), Timiskaming District (Unorganized), Cochrane District (Unorganized), to the Township of Black River-Matheson and the Town of Iroquois Falls (Ansonville TS). The Project will involve the replacement and/or modification of a number of aging/damaged wood poles along with some steel lattice structures, and the replacement of sections of the conductor (wire) that do not meet ampacity upgrade and sections of shield wire along the existing ROW. In addition, the overhead shield wire will be replaced. It is anticipated that most of this work will be carried out within the existing transmission ROW. Where possible, access to the transmission structures will be achieved using existing access roads and trails. There will be little noticeable difference in the appearance of the transmission line after the project has been completed.

Hydro One initiated the project as a Class EA Screening Process; however, following consultation activities and input received from stakeholders and Indigenous communities, Hydro One voluntarily elevated the Project to be assessed following the Full Class EA process. This ESR has been prepared in accordance with the requirements of the EA Act and describes the Class EA process undertaken for the proposed Project.

Since the Notice of Commencement in June 2018, municipal, provincial and federal government officials, staff and agencies, Indigenous communities, potentially affected and interested persons, and interest groups were consulted. Given the uniqueness of the ongoing public health emergency related to COVID-19, many of the traditional in-person meetings and Community Information Centres (CIC) were replaced with a Virtual Information Session (VIS), held on August 25, 2021. A separate VIS may be held for Indigenous communities in the coming months.

Potential short- and long-term environmental effects were identified for the proposed Project and corresponding mitigation measures were developed to address these effects. Based on information collected, project design and implementation of the proposed mitigation measures, no significant net adverse environmental effects are expected.

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