Henvey Inlet Wind


draft for discussion

Prepared by:
AECOM
105 Commerce Valley Drive West, Floor 7 905 886 7022 tel
Markham, ON, Canada L3T 7W3 905 886 9494 fax
www.aecom.com

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60341251

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AECOM Signatures

Report Prepared By: Faranak Amirsalari, BSc., MES Environmental Planner
Report Reviewed By: Kyle Hunt, M.E.Des. Senior Planner

Faranak Amirsalari
Julia DeDecker, B.Sc.
Environmental Planner
Environmental Planner
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Appendix

Appendix A. Screening Criteria
List of Acronyms

AADT ................. Annual Average Daily Traffic
AANDC ................. Aboriginal Affairs and Northern Development Canada
AECOM ................. AECOM Canada Ltd.
ANSI ...................... Area of Nature of Scientific Interest
AQI ...................... Air Quality Index
ATV ....................... All-terrain vehicle
CEAA ..................... Canadian Environmental Assessment Act
COO ...................... Chiefs of Ontario
COSSARO ............ Committee on the Status of Species at Risk in Ontario
COSEWIC ............. Committee on the Status of Endangered Wildlife in Canada
CN ...................... Canadian National
CP ...................... Canadian Pacific
CWS ..................... Canadian Wildlife Services
DFO ...................... Department of Fisheries and Oceans
DO ...................... Dissolved Oxygen
DSB ..................... District Services Board
EA ACT ................ Environmental Assessment Act
EC ................. Environment Canada
EC- CWS ............. Environment Canada - Canadian Wildlife Service
ELC .................... Ecological Land Classification
EMA .................... Enhanced Management Area
ER .................... Environmental Review
ERR .................... Environmental Review Report
ESA .................... Environmentally Significant Areas
ESA .................... Endangered Species Act
FIT .................... Feed-in-Tariff
FNLM .................... First Nation Land Management Act
GSC ..................... Geological Survey of Canada
ha ..................... Hectares
HIFN .................... Henvey Inlet First Nation
HIFN I.R.#2 .......... Henvey Inlet First Nation Reserve No. 2
HIW .................... Henvey Inlet Wind LP
HIWEC ................ Henvey Inlet Wind Energy Centre
HONI ..................... Hydro One Networks Inc.
IESO ..................... Independent Electrical System Operator
km ................... Kilometres
km² ................... Squared Kilometres
kV ..................... Kilovolts
kW ..................... Kilowatts
m .................... Metre
mASL ..................... metres Above Sea Level
MBCA .................... Migratory Birds Convention Act
1. Introduction and Overview

Nigig Power Corporation (Nigig) received a Feed-in-Tariff (FIT) Contract from the Ontario Power Authority (OPA) in 2011 for a 300 megawatt (MW) wind energy generation centre. Henvey Inlet Wind LP (HIW), a limited partnership between Pattern Renewable Holdings Canada ULC and Nigig is proposing to develop the Henvey Inlet Wind Energy Centre (HIWEC), a 300 MW facility on Henvey Inlet First Nation Reserve No. 2 (HIFN I.R. #2). The HIWEC requires a new off-Reserve Transmission Line to deliver the electricity generated by the HIWEC to the Ontario electricity grid. AECOM Canada Ltd. (AECOM) was retained by HIW to conduct the Environmental Screening Process under Ontario Regulation (O.Reg.) 116/01 for the proposed off-Reserve Transmission Line.

The purpose of this Interim Report is to present the draft findings of the Environmental Review (ER) baseline studies and provide an opportunity for the Henvey Inlet First Nation (HIFN) community, other Aboriginal communities, associations, agencies, and public to comment on the findings to date. The information presented in this Report will be updated following the completion of 2015 field studies and the second round of community and public consultation planned for the summer of 2015. This report will ultimately represent the first four chapters of the final draft Environmental Review Report (ERR) with the remaining chapters, including the assessment of environmental effects, included in the Final ERR.

1.1 Overview

HIFN has broad authority to manage and protect its Reserve lands. This authority comes from the First Nations Land Management Act (FNLMA), related instruments, and the HIFN Land Code. This authority includes responsibility for environmental protection and the environmental assessment of projects and physical activities on-Reserve lands. Therefore, the HIWEC will undergo a separate environmental assessment in accordance with HIFN requirements for the components of the HIWEC which are on-Reserve.

Off-Reserve, there will be a new Transmission Line to deliver the electricity generated by the HIWEC to the Ontario electricity grid. Two (2) potential routes are currently being considered. One (1) route (Route A) extends approximately 14 kilometers (km) east from HIFN I.R. #2 connecting to the existing 500 kilovolt (kV) Hydro One Networks Inc. (HONI) Transmission Line. The second (Route B) from HIFN I.R. #2 follows the proposed Highway 69/400 south to Woods Road, then travels east to the east side of the existing HONI 500 kV Transmission Line system, before travelling south to connect to the existing HONI 230 kV Transmission Line system south of the Town of Parry Sound and the Parry Sound Transformer Station (TS). The length of Route B is approximately 86 km. Both routes may require a new TS or switching station (SS) to connect to the existing HONI system. Subject to further review, the voltage of the Route A and Route B are up to 500 kV and 230 kV respectively. The Transmission Line corridors are predominantly located on Crown-owned or managed lands.

The Transmission Line proposed off-Reserve is subject to an Environmental Screening Process under O.Reg 116/01. Specifically, HIW is completing an ER under the Environmental Screening Process for the Transmission Line.

Final selection of a preferred route is subject to a technical analysis by the Independent Electrical System Operator (IESO). The IESO technical analysis is a separate process from the ER so the factors involved in the IESO led analysis are not included in the environmental analysis outlined in this ERR. The results of the IESO technical analysis may override the environmental analysis described herein as final decision making on the route connection point is within IESO authority. This ER assesses the significance of environmental effects for both routes to mitigate uncertainty around the results of the IESO analysis. A decision on which Transmission Line will be constructed is expected to be announced by the Fall of 2015.
This document describes the proposed off-Reserve Transmission Line. The purpose of this document is to describe the characteristics of the study area, the overall preliminary design of the Transmission Line, and present a review of potential environmental effects associated with the construction, operation and decommissioning of the Transmission Line.

1.2 Purpose

The province of Ontario’s Long Term Energy Plan (Government of Ontario, 2013), which is predated by the Integrated Power System Plan (Government of Ontario, 2008), establishes a goal of bringing 20,000 MW of renewable energy online by 2025. As part of the effort to achieve this goal, Nigig was awarded a FIT contract to develop a 300 MW wind energy generation centre on HIFN I.R. #2. It will be a large-scale renewable energy centre capable of providing substantial economic benefits to HIFN’s local economy. It is also expected to provide economic spin-off benefits accruing to communities outside of HIFN related to procurement, construction and operation. Renewable energy contributes to a reduced reliance on fossil fuel based power generation resulting in additional environmental benefits such as reduced greenhouse gas emissions. The Transmission Line described in this report is required to connect the generation facility to the provincial transmission grid.

1.3 Regulatory Framework

Multiple permits, licenses, and authorizations may be required to facilitate the development of the Transmission Line. The ultimate applicability of all permits, licenses, and authorizations will be determined by and based upon the final design. The following section provides an overview of potentially applicable regulatory approvals. A more detailed list will be provided in the Final ERR.

1.3.1 Henvey Inlet First Nation

Pursuant to the FNLMA, the Government of Canada and HIFN have entered into agreements regarding the management of HIFN’s Reserve lands, namely the Framework Agreement on Management of First Nation Land and an Individual Agreement. In 2009, HIFN adopted a formal Land Code which was amended in 2012 to apply to HIFN I.R. #2. Pursuant to these instruments, HIFN’s Band Council is the decision-making authority with respect to the creation and granting of interests in lands within HIFN I.R. #2. These instruments also provide HIFN Band Council with the legislative, regulatory, and executive authority to ensure environmental management of the Reserve. This authority includes responsibility for environmental assessment, permitting, and environmental protection for developments on HIFN lands.

The majority of the Transmission Line will not be constructed on HIFN Reserve lands and HIFN does not have regulatory jurisdiction for off-Reserve components. Since the Transmission Line connects to the HIWEC and occurs within HIFN traditional territory, HIFN will provide input throughout the ER process and will review the potential effects of both Transmission Line routes.

1.3.2 Federal

The Transmission Line is not a Designated Project under the Canadian Environmental Assessment Act (CEAA) (2012). However, given that portions of Route B may be carried out on Aboriginal lands (i.e., Magnetawan First Nation Reserve No.1 and Shawanaga First Nation Reserve No. 17), federal permits may be required. Any applicable federal permits and approvals required for the Transmission Line will be determined during the planning process. Should any federal permits be required for the Transmission Line the issuing agency may be required to address Section 67 of CEAA, 2012.
Additional federal permits may apply and will be confirmed as the planning process progresses. Some of the potential permits and authorizations are listed in Table 1-1.

### Table 1-1: Potentially Applicable Federal Permits and Approvals

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<tbody>
<tr>
<td>Aeronautical Obstruction Clearance (Lighting scheme)</td>
<td>Transport Canada- Aviation Division</td>
<td>Required for marking and lighting. May apply to Transmission Line and Towers</td>
</tr>
<tr>
<td>Navigable Waters Protection Act Application for Approval</td>
<td>Transport Canada- Marine Division</td>
<td>Required if crossing navigable watercourse</td>
</tr>
<tr>
<td>Explosives In Transit Permit (Explosives Act, 2013)</td>
<td>Natural Resources Canada (NRCan) - Explosives Regulatory Division</td>
<td>Required to transport explosives in transit</td>
</tr>
<tr>
<td>Temporary Magazine License (section 7(1) of the Explosives Act)</td>
<td>NRCan - Explosives Regulatory Division</td>
<td>Required to acquire and store certain explosives and equipment over specified quantities</td>
</tr>
<tr>
<td>Permit or Approvals under Species at Risk Act (SARA)</td>
<td>Environment Canada (EC)</td>
<td>Required if the Transmission Line will destroy or remove species at risk (SAR) or critical habitat for SAR</td>
</tr>
<tr>
<td>Permit to Collect Bird Carcasses of Species Listed as Endangered or Threatened (SARA)</td>
<td>EC</td>
<td>Required to collect carcasses of endangered or threatened bird species during bird mortality surveys</td>
</tr>
<tr>
<td>Permit under Migratory Birds Convention Act (MBCA) to Collect Bird Carcasses</td>
<td>EC - Canadian Wildlife Service (CWS)</td>
<td>Required to collect carcasses of bird species protected by the MBCA during bird mortality surveys</td>
</tr>
<tr>
<td>Authorization for Watercourse Crossing (Fisheries Act subsection 35(2))</td>
<td>Department of Fisheries and Oceans Canada (DFO)</td>
<td>A self-assessment of the potential to impact fish to determine if any work requires DFO review and authorization</td>
</tr>
<tr>
<td>Aviation Safety Land Use Proposal</td>
<td>Navigation Canada</td>
<td>Required for all land use proposals near airports and air navigation infrastructure</td>
</tr>
<tr>
<td>Review of Proposal by the RCMP Mobile Communications Services</td>
<td>Royal Canadian Mounted Police (RCMP)</td>
<td>Recommended review for potential signal disruptions from towers etc.</td>
</tr>
<tr>
<td>Land Designation, Lease or Permit (Indian Act Section 35)</td>
<td>Aboriginal Affairs and Northern Development Canada (AANDC)</td>
<td>Required for use or lease of First Nation’s Reserve land</td>
</tr>
</tbody>
</table>

### 1.3.3 Provincial

The Ontario *Environmental Assessment Act (EA Act)* sets out a planning and decision-making process so that potential environmental effects are considered before a project begins. The Ontario *EA Act* defines environment in a broad sense that includes natural, social, cultural, economic and built environments. The *EA Act* requirements are set out in O. Reg. 116/01. The Transmission Line is subject to O. Reg. 116/01 and will undergo a Category B ER as described in the Ontario Ministry of the Environment and Climate Change (MOECC) Guide to Environmental Assessment Requirements for Electricity Projects (January 2011). At the end of the ER, an ERR will be made available for a 30-day review and comment period.

Additional provincial permits may apply and will be confirmed during the planning process. Some of the potential permits and authorizations are listed in Table 1-2.

### Table 1-2: Potentially Applicable Provincial Permits and Approvals

<table>
<thead>
<tr>
<th>Permit / Authorization</th>
<th>Approval Authority</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Compliance Approval for Air &amp; Noise (Section 9 of the Environmental Protection Act);</td>
<td>MOECC</td>
<td>Required for the operation or use of any apparatus (e.g., transformers, concrete batch plant, crushing plant) to allow the regulated discharge of air contaminants (including noise) into the natural environment</td>
</tr>
</tbody>
</table>
1.3.4 Municipal

Municipal permits and approvals may be required on municipal lands or if access from a municipal road is needed. Additional municipal permits may apply and will be confirmed with each municipality as the planning process progresses. The Transmission Line Route B is within the Municipality of McDougall, Seguin Township, Township of The Archipelago, and Carling Township. Transmission Line Route B also lies within the Unorganized Centre of Parry Sound District which consists of many unincorporated townships that are not part of an organized municipality and do not have their own governing body (MMAH, 2013). Transmission Line Route B travels through three (3) of these Unincorporated Townships including Henvey, Wallbridge and Harrison, which are under the jurisdiction of the Archipelago planning board and one (1) unincorporated township, Shawanaga, which is under the jurisdiction of the Parry Sound Area Planning Board (MMAH, 2013). The Transmission Line Route A also lies
within the Unorganized Centre of Parry Sound, travelling through two (2) unincorporated townships: Mowat, and Blair. These two (2) unincorporated townships are both under the jurisdiction of the Archipelago Planning board (MMAH, 2013). Some of the potential municipal permits and authorizations are listed in Table 1-3.

Table 1-3: Potentially Applicable Municipal Permits and Approvals

<table>
<thead>
<tr>
<th>Permit / Authorization</th>
<th>Administering Agency</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road User Agreement</td>
<td>Municipality</td>
<td>Required to specify details regarding proposed road access, infrastructure and route management, and road restoration</td>
</tr>
<tr>
<td>Municipal Drain Crossing Permit</td>
<td>Municipality</td>
<td>Required for construction of infrastructure which crosses a municipal drain</td>
</tr>
<tr>
<td>Traffic Management Plan</td>
<td>Municipality</td>
<td>Required to specify details regarding traffic control in work zones, often required to comply with Ontario Traffic Manual Book 7</td>
</tr>
<tr>
<td>Entrance Permit</td>
<td>Municipality</td>
<td>Required for proposed entrances on Municipal roads</td>
</tr>
<tr>
<td>Building Permit</td>
<td>Municipality</td>
<td>Required for the construction of any planned operations and maintenance building</td>
</tr>
<tr>
<td>Stormwater Management Plan</td>
<td>Municipality</td>
<td>Required to detail the ways in which stormwater will be dealt with for buildings and infrastructure</td>
</tr>
<tr>
<td>Oversize / Overweight Permit</td>
<td>Municipality</td>
<td>Required to provide details on oversized and/or overweight loads being moved through an identified route using municipal roads</td>
</tr>
<tr>
<td>Utility Consent Permit</td>
<td>Municipality</td>
<td>Required for utilities that may be installed or moved within a municipal road ROW.</td>
</tr>
<tr>
<td>Noise By-law Exemption Permit</td>
<td>Municipality</td>
<td>Required for most municipalities or townships for construction work at various times. For example:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Township of The Archipelago:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Municipality of McDougall: Exemption required for all Construction work, at any time.</td>
</tr>
</tbody>
</table>


2. Transmission Line Description

2.1 Location and Study Area

The Transmission Line study area accommodates two (2) proposed routes (as outlined in Section 1.1). Route A originates at the eastern edge of HIFN I.R. #2 and travels adjacent to Highway 522 for approximately 14 km in total before connecting to the existing 500 kV HONI system near its intersection with Highway 522. Route B travels south from HiFN I.R. #2 for approximately 86 km adjacent to the proposed Highway 69/400 corridor until diverting east from the proposed Highway 69/400 at Woods Road to the existing HONI 500 kV system where it runs parallel to the existing HONI corridor for the remainder of its length, connecting to the HONI 230 kV system south of the Town of Parry Sound and the Parry Sound TS (Figure 2-1).

Both options for the proposed Transmission Line are mostly located within the Canadian Shield. The Shield is part of a vast horseshoe shaped area around Hudson Bay covering eastern and central Canada. The Transmission Line study areas are characterised by exposed bedrock formations, bedrock barrens and bedrock plains with shallow soils and organic soil accumulations in low lying areas (Ecoplans, 2006). Much of the Canadian Shield rock has been carved and arranged by the last ice age, to form millions of lakes, ponds and wetlands (Wilkem, et al.).

**Route A:**

From east of HIFN I.R.#2, Route A is located within the District of Parry Sound and extends east through two (2) Unincorporated Townships: Mowat and Blair (under jurisdiction by the Archipelago Planning Board), paralleling the Highway 522 corridor and connecting to the existing HONI system.

The Route A study area is a combination of upland rock barrens scattered by wetland drainages between the rocky ridges and includes the waterbodies of the Key River, Henvey Inlet and Portage Lake. These larger waterbodies are located at the northwestern limit of the Route A study area near HIFN I.R. #2.

**Route B:**

Route B extends approximately 86 km from HIFN I.R. #2 and travels south through the Unincorporated Townships of Henvey, Wallbridge and Harrison (under jurisdiction by the Archipelago Planning Board), before entering the Township of The Archipelago, Unincorporated Township of Shawanaga (under jurisdiction of the Parry Sound Area Planning Board), Carling Township, Municipality of McDougall, and the Seguin Township. Route B also passes through the Reserve lands of Shawanaga Reserve No. 17 and the Magnetawan Reserve No. 1, of which Shawanaga First Nation and Magnetawan First Nation have the right to exclusive use and occupation (AADNC, 2013).

The Route B study area includes many waterbodies, the larger of these being the Giroux River, the Magnetawan River, Straight Lake, Still River as well as an unnamed tributary to the Still River, three (3) unnamed streams and an unnamed wetland.
Henvey Inlet Wind LP

Transmission Line Study Area

June 2015
Datum: NAD 83, Zone 17
Scale: 1:250,000
Source: DBM, LIO

Figure 2-1

This drawing has been prepared for the use of AECOM’s client and may not be used, reproduced or relied upon by third parties, except as agreed by AECOM and its client, as required by law or for use by governmental reviewing agencies. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that modifies this drawing without AECOM’s express written consent.
2.2 Components

The following provides a general description of the permanent and temporary Transmission Line components.

2.2.1 Transmission Lines and Towers

There are two (2) Transmission Line routes being proposed to connect the HIWEC to the provincial transmission system. Route A runs due east of the HIWEC to two (2) existing parallel HONI 500 kV system. Connecting to these 500kV lines will require a Transmission Line operating up to 500kV, with one or two (1 or 2) circuits. Route B runs south from the HIWEC to connect to the 230 kV lines south of Parry Sound. This line is expected to be a single circuit and operate at 230kV.

The conductor used to transmit power along either of these lines will be steel reinforced aluminum conductor. The conductor is secured to insulators that are attached to the transmission structures. These structures are 20 to 45 metres (m) in height. An optical ground wire will be installed on the Transmission Line to facilitate communications with various components of the HIWEC.

The towers will be steel monopole, steel lattice, composite, concrete or wood poles. These structures will have foundations that could include: concrete foundations, rock bolted, rock augured, blasted rock, pipe foundations backfilled with self-compacting aggregate, direct embedment in native soil, swamp mats or cribbing, as appropriate for the tower location and design. On average, the structures will be spaced approximately 170 to 230 m apart except where site specific conditions require shorter or longer tower spans (e.g., significant changes in line direction, large waterbody crossings, or in compliance with design codes and laws).

2.2.2 Access Roads

Construction vehicles will utilize existing roads and access routes as much as possible during construction to gain access to the Transmission Line ROW. Some of the existing access roads may need to be upgraded (e.g. widened and granular placed) in order to be suitable for use. New access roads will be constructed to access areas where existing roads do not reach the ROW and in areas where the ROW crosses an impassable feature (e.g. waterbody, wetland, cliff face). The intent of these access roads is to avoid and mitigate impacts on water resources and wetlands. All access roads are needed during construction to deliver materials and equipment in order to install tower foundations, assemble towers and string conductors, etc. These roads will connect to existing local, municipal or provincial roads.

All access roads will be designed to minimize the effects on the natural environment. The access roads will be used during operations to access the ROW for maintenance purposes. In some cases, access roads will only be needed temporarily for construction. Following construction, temporary access roads will be decommissioned and the areas restored.

The area cleared for access roads (approximately 10 m) will be minimized as much as possible and will be reduced where natural constraints exist such as wetlands or waterbodies. In all cases, the construction area will be confined to the area required to support safe construction activities.

2.2.3 Temporary Storage Areas

Temporary storage areas for construction will be established at several locations along both Routes for the temporary storage of construction materials and equipment. Temporary storage of materials will conform to
applicable standards, codes and best management practices. It is anticipated that these areas will be areas already disturbed (e.g. previously used commercial land or previously cleared areas near established roads). Construction trailers, temporary material storage and portable washroom facilities will also be located at some of these areas.

2.2.4 Switching Station

A new SS will be required for the interconnection regardless of which route is ultimately selected. The approximate footprint of the SS is 100 m x 100 m. The SS will be connected to the HONI 500 kV system (Route A), or to the 230 kV system just south of the Town of Parry Sound (Route B). The SS components may include circuit breakers and disconnect switches, surge arrestors, meters, ancillary equipment, structural steel, along with associated concrete foundations to mount the afore mentioned equipment.

The SS will be located on a graded area and will be fenced and secured to prevent unauthorized entry and maintain public safety. All non-current carrying and conducting metal components within the fenced area of the station will be connected to a grounding grid installed below finished grade.

2.3 Proposed Schedule

The schedule in Table 2-1 outlines the anticipated timelines for Transmission Line development:

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Anticipated Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notice of Commencement</td>
<td>January, 2015</td>
</tr>
<tr>
<td>Host Public Information Centre #1</td>
<td>February, 2015</td>
</tr>
<tr>
<td>Complete Baseline ER</td>
<td>June, 2015</td>
</tr>
<tr>
<td>Host Public Information Centre #2</td>
<td>August, 2015</td>
</tr>
<tr>
<td>Final ERR for Public Review</td>
<td>August, 2015</td>
</tr>
<tr>
<td>Notice of Completion</td>
<td>September, 2015</td>
</tr>
<tr>
<td>Obtain Pre-Construction Permits</td>
<td>March, 2016</td>
</tr>
<tr>
<td>Start Construction</td>
<td>Summer, 2016</td>
</tr>
<tr>
<td>Commence Operations and Maintenance</td>
<td>January, 2018</td>
</tr>
</tbody>
</table>

The specific schedule for decommissioning will be determined at the time it is undertaken. The wind turbines used for the HIWEC can be expected to be in service for the term of the 20 year FIT contract, and as such the Transmission Line is expected to be in service for at least this duration.

2.4 Construction Phase

Activities that may occur during the pre-construction phase include: planning and resource management, pre-construction surveys, geotechnical investigations, permitting and detailed design. Pre-construction activities are not included within the scope of the EA.

The construction phase will consist of the following key activities:

- Delineation of work area and important natural features, and installation of erosion and sedimentation controls;
- Vegetation clearing and site grading;
• Delineation of temporary work areas and installation of temporary facilities, including storage areas, laydown and access (if required);
• Construction of access roads and upgrading of existing access roads (where required);
• Installation of transmission tower and structure foundations (where required);
• Transmission tower and structure erection;
• Installation of Transmission Line conductors and anchoring;
• Installation of the SS; and,
• Restoration of the temporary work site and removal of temporary facilities and storage areas.

2.4.1 Vegetation Clearing and Site Grading

After the preferred route is selected and finalized, selective clearing, and if necessary, grading (leveling the ground) of the ROW is undertaken to allow construction equipment to access structures and to establish the safe operating distance of conductors from adjacent vegetation. Depending on type, density and tree species present, the clearing activities would typically be achieved through combination of chainsaws, hand operated tree felling and use of feller bunchers, bulldozers and skidders. Trees outside of the ROW that are tall enough to come within limits of approach, or could fall into the ROW within the next few years, will be cut. The long-term goal would be to establish and maintain vegetation cover that is compatible with the overhead conductors and allows for safe operation of the Transmission Line. Outside of the Transmission Line ROW corridor limits, only those trees considered diseased, leaning towards the Transmission Line or poorly rooted and have that have the risk of falling into the Transmission Line ROW would be cut.

Merchantable timber would be made available to HIFN members, local businesses or individuals. Brush and non-marketable wood would be chipped and burned on ROW to help with fire management.

2.4.2 Temporary and Permanent Access Road Construction

Temporary access roads will be required to enable vehicles, construction equipment and materials to gain access to the tower sites. Access roads will be approximately 10 m wide and capable of supporting heavy machinery used to deliver equipment, materials, and string conductors. Existing roads will be reviewed to determine requirements for trimming of overgrowth to allow vehicles or equipment to travel on the road safely. Any minor repairs to existing drainage, road surface, culverts, or crossings would be updated for safe travelling of vehicles or equipment. The use of low impact (less than 6 per square inch) rubber tracked equipment will reduce maintenance requirements on access roads.

Typically, access roads are constructed with aggregate placed over geotextile. Some access roads only need to be accessible by track vehicle and therefore would not require aggregate.

2.4.3 Watercourse Crossings

Wherever possible, access roads will be located to avoid watercourse crossings, if required. For example, access roads would terminate at the tower locations on either side of larger watercourses, or off-corridor access roads can be constructed to tower locations to avoid sensitive watercourses and associated riparian habitat. Where necessary, an appropriate stream crossing technique will be implemented, i.e. temporary bridges, culverts, ford culverts and fords. Swamp mats may be used to cross watercourses that are not frozen. During winter, streams and rivers will typically freeze and can create a crossing strong enough for track vehicles to cross with minimal damage to surrounding environment.
Where culverts are needed, the culverts will be sized accordingly and the appropriate approvals will be obtained. Installation of culverts will follow applicable standards to protect the water feature.

### 2.4.4 Delivery of Materials

Construction materials and Transmission Line components will be delivered to work sites using existing roads, highways and access roads. Materials will also be delivered to the temporary storage areas. Trucks, flatdeck tracked units and other tracked units are among the equipment used to transport materials to the temporary storage areas and ROW.

### 2.4.5 Installation of Tower Foundations

Types of foundation designs that may be used and a description of the construction activities include:

- Direct buried - structures can be direct buried and backfilled with native soil.
- Pipe foundations - holes are augured, pipes are inserted into the holes, poles are placed and then the holes are backfilled with either crushed gravel or native soils depending upon foundation design.
- Concrete caisson - holes are augured, the engineered steel rebar cage is inserted into the hole, then concrete is poured to the level of anchor bolts. The steel pole is placed onto the anchor bolts and fastened to the caisson foundation.
- Rock drilled – rock hole is drilled larger than size of pole butt, pole is inserted and backfilled with the filings from the drilling.
- Rock anchored – rock hole is drilled. Rock anchors are drilled in open hole. Anchors are installed and a surface collar is cemented in place to ensure anchor bolts are secured. Pole is placed on the anchor bolts and secured.

During the detailed design phase of the Transmission Line and after the completion the geotechnical studies, the type(s) of foundations will be chosen as the most appropriate.

### 2.4.6 Tower Erection

Depending on the type of foundation, once this has been prepared, the tower steel components will be assembled at the tower site and lifted into place. Towers are expected to be erected with cranes on wheels or on tracks. If necessary, towers can also be erected with helicopters.

### 2.4.7 Installation of Transmission Lines

The conductors for the Transmission Lines are generally installed utilizing tension stringing methods through pulleys to control the conductors from touching the ground and avoid potentially getting damaged. Stringing equipment may require small clearings outside the ROW to facilitate installation. Rope is strung along the line from pole to pole. The conductor is attached and the rope is pulled back pulling the conductor into place under control. The wire is adjusted to the appropriate tension through sagging to design criteria then compression dead end assemblies applied to secured to the conductor in place.

At road, rail and other infrastructure crossings, temporary rider poles will be installed on each side of crossing. These temporary structures have cross arms designed to keep conductors clear of the infrastructure, should the conductor sag as a result of a malfunction. These structures are removed after the wire is secured to the permanent structures. Pole holes are backfilled and the disturbance area is restored.
2.4.8 **ROW Restoration**

Following completion of construction, the ROW will be restored. Activities will include:

- Removal of construction refuse, temporary access roads and water crossings;
- Replacement of fences (if applicable);
- Stabilization of soils and erosion prone areas;
- Removal from the ROW or proper levelling of spoils from pole excavations;
- Seeding or planting of vegetation, if necessary and in accordance with property owner agreements (for sections on private property) at pole or access locations; and
- Implementation of required restoration or enhancement measures (mitigation measures will be reviewed in the Final ERR).

2.5 **Operations Phase**

The operating phase will consist of the following key activities:

- Annual visual inspection;
- Preventative and routine maintenance on the Transmission Line and TS;
- Unplanned maintenance;
- ROW maintenance (e.g., vegetation control);
- Manual tree clearing on a regular basis;
- Monitoring of restoration and
- Maintenance of plantings and areas of soil stabilization.

2.6 **Decommissioning Phase**

The decommissioning phase will include the following key activities should there be no other use for the Transmission Line and towers:

- Reinstatement of previously existing access roads;
- Removal of lines, towers, SS infrastructure and access roads; and
- Site restoration.
3. Environmental Review Methodology

Based on the Environmental Screening Process under O. Reg. 116/01, the following steps outline the ER methodology that was applied to both proposed Transmission Line routes:

1. Determine the location and scale of the Transmission Line and all related undertakings and activities;
2. Determine spatial and temporal boundaries (revise, if necessary, as the ER progresses);
3. Identify Valued Features identified by HIFN on I.R. #2 (hereinafter referred to as “Nishshing Aki”)\(^1\), and Valued Ecosystem Components (VECs) based O. Reg. 116/01 Environmental Screening Criteria that have potential to be affected;
4. Complete background data collection and baseline field studies to obtain information on the Nishshing Aki and VECs;
5. Predict the potential environmental effects of the Transmission Line on the Nishshing Aki and VECs and propose mitigation measures to address these effects;
6. Determine the net effects of the Transmission Line on the Nishshing Aki and VECs;
7. Determine the significance of net effects of the Transmission Line on the Nishshing Aki and VECs;
8. Predict the cumulative effects on Nishshing Aki and VECs that are likely to arise from the overlapping effects of the Transmission Line and the HIWEC combined with other past, present or reasonably foreseeable future projects and activities;
9. Determine the significance of the cumulative effects on Nishshing Aki and VECs;
10. Propose monitoring and follow-up plans;
11. Determine the overall advantages and disadvantages of the Transmission Line;
12. Complete and document the Aboriginal community, public and agency consultation, including how issues were resolved and addressed; and
13. Determine and describe how environmental effects or issues may be addressed by other required approvals.

In addition to the steps outlined above, an analysis of the trade-offs between the two (2) routes was conducted to identify the potential environmental advantages and disadvantages of each, despite the results of the environmental analysis.

3.1 Factors of Assessment

The focus of this ER is to assess and design the Transmission Line to avoid, minimize, or mitigate potential adverse effects on the environment. To address this focus, this ER considers the following factors that are included in MOECC’s Guide to Environmental Assessment Requirements for Electricity Projects (MOECC, 2011):

1. a description of all the Transmission Line components, activities and phases, as well as any plans for future expansions;
2. the screening criteria and how it is applies to the Transmission Line to identify the potential for any negative effects on the environment;

---

\(^1\) Nishshing Aki are defined as existing social, cultural, or economic features or conditions that have been (i) identified as valued by HIFN, or (ii) designated as valued by HIFN with Community Input as provided in the Land Code. Nishshing Aki includes sacred sites, burial grounds and old settlements.
3. the potential negative environmental effects or concerns of the Transmission Line on the screening criteria;
4. comments from the HIFN community, the public, other Aboriginal communities, stakeholders and agencies;
5. standard environmental mitigation or impact management measures that will be used to avoid, reduce, or minimize the environmental effects, concerns or issues;
6. any remaining “net effects” (net effects are those negative environmental effects caused by the Transmission Line and related activities that will remain after mitigation and impact management measures have been applied);
7. the significance of any net effects or concerns; and
8. overall advantages and disadvantages of the Transmission Line.

In addition to the above mentioned factors, we will also be assessing to address any potential requirements under CEAA should Section 67 apply in the federal permit and approval process that may apply where the route crosses lands under federal jurisdiction:

1. the environmental effects of malfunctions or accidents that may occur in connection with the off-Reserve electricity transmission;
2. measures that are technically and economically feasible that would mitigate adverse environmental effects of malfunctions or accidents;
3. in reference to the effects considered in items 1 and 2, the significance of the effects which are likely, taking into account proposed mitigation measures;
4. recommendations for monitoring and follow-up programs to verify the accuracy of the ER and determine the effectiveness of any mitigation measures;
5. potential environmental effects of the on-Reserve HIWEC that may overlap with potential environmental effects of the off-Reserve electricity transmission (Volume C);
6. cumulative environmental effects that are likely to arise from the combination of (i) the on-Reserve HIWEC, the off-Reserve electricity transmission, and (ii) other projects and activities that have occurred or are reasonably foreseeable (Volume C);
7. measures that are technically and economically feasible that would mitigate adverse cumulative environmental effects, and, in particular, any adverse cumulative environmental effects that may be significant;
8. in reference to the effects considered in items 5-8, the significance of the cumulative effects which are likely, taking into account proposed mitigation measures;
9. comments from the HIFN community, the public, other Aboriginal communities, stakeholders and agencies; and
10. features identified through Aboriginal traditional knowledge of nearby Aboriginal communities (pending the availability of such information by each nearby community).

To focus the ER on what is most relevant in the environment, Nishshing Aki and VECs have been identified. VECs are environmental components that have recognized ecological, social or cultural value to Aboriginal and non-Aboriginal communities, science, law, or policy including the Environmental Screening Criteria under O. Reg. 116/01. The VECs that were examined in the ER process link directly to the Environmental Screening Criteria under O. Reg. 116/01 and are listed in Table 3-1. A description of how the VECs were selected is provided in Section 3.4.
Table 3-1: Valued Ecosystem Components

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface and Groundwater</td>
<td>- Surface water quality, quantity or flow</td>
</tr>
<tr>
<td></td>
<td>- Groundwater quality, quantity or movement</td>
</tr>
<tr>
<td>Land Use</td>
<td>- Residential, commercial or institutional land uses</td>
</tr>
<tr>
<td></td>
<td>- Provincial land use or resource management plans</td>
</tr>
<tr>
<td></td>
<td>- Municipal land use policies, plans and zoning by-laws</td>
</tr>
<tr>
<td></td>
<td>- Traditional land use</td>
</tr>
<tr>
<td></td>
<td>- Hazard lands or unstable lands that are subject to erosion</td>
</tr>
<tr>
<td></td>
<td>- Contaminated land</td>
</tr>
<tr>
<td>Air and Noise</td>
<td>- Air quality</td>
</tr>
<tr>
<td></td>
<td>- Noise</td>
</tr>
<tr>
<td>Natural Environment</td>
<td>- Rare, threatened or endangered terrestrial or aquatic species or their habitat</td>
</tr>
<tr>
<td></td>
<td>- Protected natural areas such as Area or Nature of Scientific Interest (ANSIs), Environmentally Significant Areas (ESAs) or other significant natural areas</td>
</tr>
<tr>
<td></td>
<td>- Wetlands</td>
</tr>
<tr>
<td></td>
<td>- Wildlife habitat, populations, corridors or movement</td>
</tr>
<tr>
<td></td>
<td>- Wildlife habitat, spawning, movement or environmental conditions (e.g., water temperature, turbidity, etc.)</td>
</tr>
<tr>
<td></td>
<td>- Migratory birds, including effects on their habitat or staging areas</td>
</tr>
<tr>
<td></td>
<td>- Locally important or valued ecosystems or vegetation</td>
</tr>
<tr>
<td>Resources</td>
<td>- Non-renewable resources</td>
</tr>
<tr>
<td></td>
<td>- Canada Land Inventory Class 1-3, specialty crop or locally significant agricultural lands</td>
</tr>
<tr>
<td></td>
<td>- Existing agricultural production</td>
</tr>
<tr>
<td></td>
<td>- The availability of mineral, aggregate or petroleum resources</td>
</tr>
<tr>
<td></td>
<td>- The availability of forest resources</td>
</tr>
<tr>
<td></td>
<td>- Game and fishery resources</td>
</tr>
<tr>
<td>Socio-Economic</td>
<td>- Neighbourhood or community character</td>
</tr>
<tr>
<td></td>
<td>- Local businesses, institutions or public facilities</td>
</tr>
<tr>
<td></td>
<td>- Recreation, cottaging or tourism</td>
</tr>
<tr>
<td></td>
<td>- Community services and infrastructure</td>
</tr>
<tr>
<td></td>
<td>- The economic base of a municipality or community</td>
</tr>
<tr>
<td></td>
<td>- The local employment or labour supply</td>
</tr>
<tr>
<td></td>
<td>- Traffic and transportation infrastructure</td>
</tr>
<tr>
<td></td>
<td>- Public health and safety</td>
</tr>
<tr>
<td>Heritage and Culture</td>
<td>- Heritage buildings, structures or sites, archaeological resources, or cultural heritage landscapes</td>
</tr>
<tr>
<td></td>
<td>- Scenic or aesthetically pleasing landscapes or views</td>
</tr>
<tr>
<td>Aboriginal</td>
<td>- First Nations or other Aboriginal communities</td>
</tr>
<tr>
<td>Other</td>
<td>- Waste materials requiring disposal</td>
</tr>
</tbody>
</table>

3.2 Aboriginal Interests and Traditional Knowledge

O. Reg 116/01 requires proponents to identify Aboriginal interests, consult with, and have consideration for, any Aboriginal communities located in the vicinity of an undertaking or that may have an interest in an undertaking. Aboriginal traditional knowledge is the cumulative knowledge held by Aboriginal peoples through generations of living in close contact with nature. It encompasses cultural, environmental, economic, political and spiritual inter-relationships (HIFN, 2015).
The traditional knowledge of Anishnabek and other Aboriginal communities that has been made available to the ER team was taken into account in selecting Nishshing Aki and VECs, proposing mitigation and assessing the impacts of the Transmission Line.

Traditional knowledge for HIFN was gathered from secondary sources, as well as through a traditional knowledge study that was conducted in 2013 for the proposed Highway 69/400 widening project. In the Traditional Land Use Study Related to Proposed Four Lane Highway 69, HIFN community members and groups were interviewed to provide information on historic and current land uses within the community’s traditional territory (HIFN, 2013). The information was used internally, and in discussion with HIFN Chief and Council, to identify Nishshing Aki and VECs and establish avoidance and or mitigation strategies.

3.3 Consultation Program Feedback

Consultation with the public, other stakeholders, provincial, federal and non-government agencies, local municipalities and Aboriginal communities was completed at key stages in the ER process for the Transmission Line which included notices, meetings and opportunities for comment (e.g., through contact phone number / email and comment forms on the HIW website). A summary of all engagement activities throughout the ER process will be included in the Final ERR.

All comments that were received from HIFN and its members, Aboriginal communities, municipalities, agencies, stakeholders, the general public and landowners within the Transmission Line study area were and will be considered in the ER. Where applicable, consultation activities have influenced the identification of Nishshing Aki and VECs, assisted with the assessment of routes, contributed to the identification of mitigation measures, and provided feedback to improve the consultation process.

3.4 Selection of Nishshing Aki and Valued Ecosystem Components

As described in Section 3.1, the Nishshing Aki and VECs were identified to focus the ER on what is most relevant in the environment. The Nishshing Aki include existing social and cultural features on HIFN I.R. #2 lands that are valued by HIFN and must be protected. A review of the interaction between Transmission Line activities and components and the identified Nishshing Aki indicates that the proposed off-Reserve Transmission Line will not impact any of the Nishshing Aki since the Nishshing Aki are contained within HIFN I.R. #2.

VECs were developed based on the O. Reg. 116/01 Environmental Screening Criteria (see Screening Criteria Checklist in Appendix A). To ensure a comprehensive review of the potential environmental effects of the Transmission Line, HIW also considered the following items when developing the VECs:

- Consultation with provincial agencies and consideration of other provincial and federal law and guidance (e.g., MNRF Class EA process);
- Input from HIFN;
- Federal and provincial law and guidance; and
- Any other source HIW considered to be relevant, such as scientific or academic publications or input from the public.

A full list of Nishshing Aki and VECs, as well as their interactions with Transmission Line components and activities, are provided in Section 3.1.
3.5 Spatial and Temporal Boundaries

The spatial and temporal boundaries define the geographic and time-based limits of the ER.

The Transmission Line ROW for each route shown on Figure 2-1 is of sufficient size to include all of the Transmission Line components, phases and activities. The study area includes a 1 km buffer on each side of the proposed transmission center line; however, exceptions where a larger study area is warranted, the boundaries are described in Section 4. Individual spatial boundaries are defined specifically for each Nishshing Aki and VEC, where required, based on the anticipated spatial extent of potential environmental effects. These individual study areas are identified for the applicable Nishshing Aki and VECs in Section 4. Study areas may be adjusted as the ER progresses, where new information supports a change.

The temporal boundaries for each phase of the Transmission Line are defined below:

- **Construction Phase:** May 2016 to January 2018
- **Operating Phase:** January 2018 to January 2048
- **Decommissioning Phase:** January 2048 to May 2049

Based on the timing of the phases, the overall temporal boundary for the ER is from May 2016 to May 2049.

3.6 Potential Effects and Mitigation

Potential effects of each route of the Transmission Line are determined by assessing the interaction of components and activities of the Transmission Line with Nishshing Aki and VECs based on existing environmental conditions. O. Reg. 116/01 requires additional information and analysis for each of the potential environmental effects identified through the Environmental Screening Process including:

- A description of the potential negative environmental effects or concerns (see the Glossary for a description of what may constitute a negative environmental effect) (MOECC, 2011); and
- A description of any standard environmental mitigation or impact management measures that will be used to avoid, reduce, or minimize the environmental effects, concerns or issues (MOECC, 2011).

Mitigation is the elimination, reduction, or control of any adverse environmental effect which can also include restitution for any damage caused by such effects through replacement, restoration, compensation, or other means (MOECC, 2011; HIFN, 2015). Mitigation strategies are developed based on federal and provincial law and guidance, industry best practices and previous experience on similar electricity projects.

In accordance with O. Reg. 116/01, where the ER determines that there is a potential environmental effect, but that the effect could likely be addressed through mitigation, the ERR will still conclude that the effect exists and will answer “Yes” to the criteria question in the Screening Checklist. This approach ensures that the potential environmental effects of the Transmission Line and proposed methods for mitigating and managing any impacts are open to discussion and reviewed by all interested and affected Aboriginal communities, public and agency stakeholders, and that HIW has made a binding commitment to implement mitigation measures. The potential effects, proposed mitigation measures and review if these will be included in the Final ERR.
3.7 Net Effects and Determination of Significance

The MOECC’s Guide to Environmental Assessment Requirements for Electricity Projects defines net effects as negative environmental effects of a project and related activities that will remain after mitigation and impact management measures have been applied. The main purpose of the ER is to assess and design the proposed Transmission Line so as to avoid or minimize significant net adverse environmental effects. In order to assess the significance of net adverse environmental effects, the following criteria are used:

**Value of the Resource Affected:** ............... is the affected resource and / or area considered common or scarce?

**Magnitude of the Effect:** ......................... is the effect inconsequential, minor, moderate, or major?

**Geographic Extent of the Effect:** ............... is the effect confined to a small area around a physical work or activity, a larger area within study area, or a larger area?

**Duration and Frequency of the Effect:** ...... is the effect short-term, medium-term, or long-term? Infrequent, frequent, or continuous?

**Irreversibility of the Effect:** ...................... is the effect reversible?

**Ecological / Social Context:** ....................... is the effect on a resilient feature or a sensitive feature?

These criteria are further defined in Table 3-2. To assist in determining significance, the degree of effect is defined in the following table. Once the degree of effect is understood, significance can be determined. The final determination of significance will be based on weighing all criteria and identifying the likelihood of the effect occurring. The significance of negative net effects will be described in the Final ERR.

**Table 3-2: Net Effects Significance Criteria and Degree of Effect**

<table>
<thead>
<tr>
<th>Net Effects Criteria</th>
<th>Degree of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Value of the Resource Affected</td>
<td>Effect is on a common feature.</td>
</tr>
<tr>
<td>Magnitude of the Effect</td>
<td>Effect is inconsequential or is a minor change compared to existing conditions.</td>
</tr>
<tr>
<td>Geographic Extent of the Effect</td>
<td>Effect is within the study area.</td>
</tr>
<tr>
<td>Duration and Frequency of the Effect</td>
<td>Effect is evident only during construction activities and/or occurs infrequently for short durations.</td>
</tr>
<tr>
<td>Irreversibility of the Effect</td>
<td>Effect is readily reversible over a short period of time (e.g., one (1) growing season).</td>
</tr>
<tr>
<td>Ecological / Social Context</td>
<td>The effect is on a feature with low fragility (i.e., high resilience to effect)</td>
</tr>
</tbody>
</table>
3.8 Cumulative Effects

Given that portions of Route B may be carried out on Aboriginal lands (i.e., Magnetawan and Shawanaga First Nation Reserves), federal permits and associated approvals under Section 67 of the CEAA may be required. Cumulative effects are assessed to meet the potential requirements under Section 67 (“projects carried out on federal lands”) of the CEAA, 2012. The cumulative environmental effects are determined by assessing combined effects of the on- and off-Reserve components with other past, present and reasonably foreseeable future projects and activities.

This step of the ER is described in Volume C and includes a determination of potential cumulative effects, proposed mitigation measures and the significance of the net adverse cumulative environmental effects.

3.9 Proposed Monitoring and Follow-up Plans

Monitoring and follow-up programs are developed in conjunction with mitigation measures for potentially adverse environmental effects (including cumulative effects). These programs will allow HIW to determine the effectiveness of the proposed mitigation measures, and verify the accuracy of the ER predictions. If adverse environmental effects are determined to be more severe than predicted, or if mitigation is less effective than planned, the results of monitoring and follow-up programs will serve as early warning signals that will allow HIW to implement remedial measures in a timely manner. Proposed monitoring and follow-up plans will be provided in the Final ERR.

3.10 Advantages and Disadvantages

The final step of the ER is reviewing the overall advantages and disadvantages of the Transmission Line. Advantages include positive environmental effects such as community benefits resulting from job creation, or enabling the use of a renewable resource to generate power. Such advantages can offset negative environmental effects and have been evaluated by comparing them against not constructing the Transmission Line. A summary of this comparison will be provided in the Final ERR.
4. Existing Environment

4.1 Physical Environment

Physical environment existing conditions were reviewed within a 1 km buffer around the Route A and Route B Transmission Lines.

4.1.1 Physiography and Topography

Route A & B:

The Route A and B study area lies within the Georgian Bay Fringe physiographic region, as defined by Chapman and Putnam (1984). The Georgian Bay Fringe is characterized by a gentle plain that slopes up gradually from the shores of Georgian Bay to the Algonquin Highlands region that runs approximately north-south along its eastern boundary. Although relief within the Georgian Bay Fringe is generally considered to be low (i.e., less than about 15 m), numerous bare rock knobs and ridges occur which rise above the local ground topography. The character of the land surface across the region is dictated by the irregular bedrock surface that underlies a thin, discontinuous blanket of overburden.

Route A:

Steep-walled valleys and bedrock-controlled features are observed to trend northeast – southwest within the Route A study area and are dictated by the fault and fracture network prevalent in the bedrock. Ground elevations along the proposed Route A Transmission Line generally decline towards the west from a topographic high of approximately 222 m Above Sea Level (mASL) to a low of about 175 mASL at the western end of the Route A Transmission Line.

Route B:

Steep-walled valleys and bedrock-controlled features are observed to trend in a general east – west direction within the Route B study area and are dictated by the fault and fracture network prevalent in the bedrock. Ground elevations along the proposed Route B Transmission Line generally decline towards the north from a topographic high of approximately 277.5 m Above Sea Level (mASL) near Parry Sound, Ontario to a low of about 176.5 mASL near Britt, Ontario.

4.1.2 Bedrock Geology

Route A:

The Route A study area is situated over a folded assemblage of gneissic rocks of the Key Harbour Gneiss Association and intermediate to felsic intrusive within the western portion of the Central Gneiss Belt (Culshaw et al., 2004a). The Key Harbour Gneiss Association is characterized by intermediate to felsic leucocratic gneiss, and layered metasedimentary rocks of pink to grey quartz-feldspar-biotite paragneiss. Rocks of the Key Harbour Gneiss Association within the study area are mapped as a single unit in Figure 4-1 due to their similarity in age and generally more mafic composition when compared to the younger, more felsic intrusives.

A later suite of intermediate to felsic intrusive rocks is mapped within the Route A study area and is characterized by weakly foliated to gneissic grey-coloured hornblende-biotite granodiorite, locally containing potassium feldspar megacrysts, minor tonalite, pink granite, and grey granodiorite (Culshaw et al., 2004b).
Route B:

The Route B study area is situated within the western portion of the Central Gneiss Belt, which comprises the southwestern part of the Grenville Province of the Canadian Shield. The Grenville Front Tectonic Zone lies to the north of the study area, and the Central Metasedimentary Belt lies to the south. The Central Gneiss Belt is composed of a complex suite of strongly foliated gneissic and migmatitic rocks of Early to Middle Proterozoic age (Kor, 1991). The Central Gneiss Belt has been further divided into separate lithotectonic domains and sub-domains, each separated by zones of intense metamorphism and based on distinct changes in geological, geophysical, and structural characteristics (Kor, 1991, Davidson et al., 1982).

The Route B study area is located within two (2) geological domains; the Britt Domain which occupies the eastern shoreline of Georgian Bay north of Pointe-au-Baril, and the Shawanaga Domain which extends along Georgian Bay south to Parry Sound (Culshaw et al., 2004). The Britt Domain is characterized by a complex of highly deformed layered, migmatitic gneisses of granitic to granodioritic composition that range from pinkish-grey to greyish white in colour and exhibit strong foliation (Bright, 1989). Mineral assemblages correspond to that of the mid- to upper amphibolites facies (Davidson and Morgan, 1981). Biotite gneiss and quartzfeldspathic gneiss are also present. These units are intruded by metamorphosed felsic to intermediate plutonic rocks consisting of massive to foliated monzogranitic to granitic orthogneiss, and a sequence of mafic dikes composed of amphibolite and gabbroic orthogneiss. The suite of metamorphic rocks within the area is intruded by late, unmetamorphosed pegmatitic granite dykes (Bright, 1989). The Shawanaga Domain differs from the Britt Domain in the lack of crosscutting mafic dikes, but rocks rather contain pods of retrogressed mafic eclogites composed essential of garnet and pyroxene (Culshaw et al., 2004).

North of Pointe-au-Baril, the Route B study area is situated over a folded assemblage of gneissic rocks of the Key Harbour Gneiss Association and intermediate to felsic intrusives (Culshaw et al., 2004). The Key Harbour Gneiss Association is characterized by intermediate to felsic leucocratic gneiss, and layered metasedimentary rocks of pink to grey quartz-feldspar-biotite paragneiss. Rocks of the Key Harbour Gneiss Association within the study area are mapped as a single unit in Figure 4-2 due to their similarity in age and generally more mafic composition when compared to the younger, more felsic intrusives. A later suite of intermediate to felsic intrusive rocks is mapped along the Route B Transmission Line and is characterized by weakly foliated to gneissic grey-coloured hornblende-biotite granodiorite, locally containing potassium feldspar megacrysts, minor tonalite, pink granite, and grey granodiorite (Culshaw et al., 2004).

Through the Township of McDougall, the Route B Transmission Line overlies a thrust contact with the Parry Sound Domain, illustrated on Figure 4-2 as a ‘Tectonite Unit’ (Culshaw et al., 2004). This unit is dominated by mafic and metasedimentary rocks, which includes para-amphibolite and layered mafic gneiss.

4.1.3 Quaternary Geology

Route A:

Very little overburden is present within the Route A study area. Exposed, polished bedrock accounts for much of the surficial geology, with the remainder being characterized by organic deposits which have accumulated in low-lying areas and bedrock valleys as well, as a bedrock-drift complex consisting of a thin, discontinuous veneer of glaciolacustrine and glaciofluvial sand and / or gravel, isolated occurrences of ice-contact stratified sands and gravels, and of loose, stony glacial till (OGS, 2003). Where present, the thickness of the overburden generally is less than about 1 m, with slightly thicker accumulations of up to 3 m being found in bedrock hollows, topographic lows, and on the lee-side of bedrock knobs in relation to the direction of glacial ice-flow. Surficial geology mapping along Highway 522 for the eastern portion of the Route A study area is currently unavailable.
The past glacial history of the region is better described through observations of erosional bedrock features such as striae, chattermarks, and roches moutonees. The deposited drift and bedrock erosional features represent the final Late Wisconsinan glacial advance and retreat (Kor, 1989). The following sections provide a description of the quaternary geological deposits found along the Route A Transmission Line.

4.1.3.1 Ice-Contact Stratified Deposits and Till

Ice-contact stratified deposits occur in a narrow linear bedrock-controlled valley in the western portion of the Route A study area (Figure 4-1). This deposit is described by Kor (1989) as being comprised of rippled, cross-bedded, medium- to coarse-grained sands and fine gravels that are interbedded with loose stony diamict flows.

The till is of a loose sandy to silty sand texture and contains sub-angular clasts derived from local rock types. This deposit was observed by Kor (1989) in protected bedrock hollows and was associated with the ice-contact stratified deposits. Kor (1989) suggests this till may have been more extensively deposited, but was removed by glacial meltwaters.

4.1.3.2 Glaciolacustrine Deposits

Glaciolacustrine sands and gravels were deposited during a time when the study area was submerged by glacial Lake Algonquin. Thicker, more continuous deposits of glaciolacustrine sediments are mapped north and northwest of the Route A Transmission Line, but a small outcrop potentially intercepts the Route A Transmission Line near the CN railway and the CP railway. These deposits are generally characterized by a coarsening-upward sequence of laminated silts and clays overlain by stratified sand and some gravel (Kor, 1989).

4.1.3.3 Glaciofluvial Deposits

A small outcrop of coarse-textured glaciofluvial deposits of sand and gravel intercepts the Route A Transmission Line near the CN railway crossing. Within the Parry Sound District these deposits typically overlie glaciolacustrine deposits, indicating drainage during phases of glacial lake decline (Kor, 1989).

4.1.3.4 Recent Deposits

Recent deposits, swamps and organic deposits are common within the Route A study area and are typically present in low-lying areas and bedrock hollows. These areas commonly exhibit poor drainage and associated marsh-like characteristics.

Route B:

Very little overburden is present within the Route B study area. Exposed, polished bedrock accounts for much of the surficial geology, with the remainder being characterized by organic deposits which have accumulated in low-lying areas and bedrock valleys as well as a bedrock-drift complex consisting of a thin, discontinuous veneer of glaciolacustrine and glaciofluvial sand and / or gravel, isolated occurrences of ice-contact stratified sands and gravels, and of loose, stony glacial till (OGS, 2003). According to MOECC water well records, where present, the thickness of the overburden generally is less than about 1 m, with thicker accumulations of up to 45 m being found associated with ice-contact stratified deposits and glaciolacustrine sand and gravel deposits.

The past glacial history of the region is better described through observations of erosional bedrock features such as striae, chattermarks, and roches moutonees. The deposited drift and bedrock erosional features represent the final Late Wisconsinan glacial advance and retreat (Kor, 1989). The following sections provide a description of the quaternary geological deposits found along the Route B Transmission Line.
4.1.3.5 Ice-Contact Stratified Deposits and Till

Isolated occurrences of Ice-contact stratified deposits are primarily found within the southern portion of the Route B study area (Figure 4-2). This deposit is described by Kor (1989) as being comprised of rippled, cross-bedded, medium- to coarse-grained sands and fine gravels that are interbedded with loose stony diamict flows.

The till is of a loose sandy to silty sand texture and contains sub-angular clasts derived from local rock types. This deposit was observed by Kor (1989) in protected bedrock hollows and was associated with the ice-contact stratified deposits. Kor (1989) suggests this till may have been more extensively deposited, but was removed by glacial meltwaters.

4.1.3.6 Glaciolacustrine Deposits

Glaciolacustrine sands and gravels were deposited during a time when the study area was submerged by glacial Lake Algonquin. Thicker, more continuous deposits of glaciolacustrine sediments are mapped along the northern portion of the Route B Transmission Line. Based on MOECC water well records these deposits range in thickness from less than 10 m up to 29 m. These deposits are generally characterized by a coarsening-upward sequence of laminated silts and clays overlain by stratified sand and some gravel (Kor, 1989).

4.1.3.7 Glaciofluvial Deposits

A small outcrop of coarse-textured glaciofluvial deposits of sand and gravel is found west of the Route B Transmission Line in the southern portion of the Route B study area. Within the Parry Sound District these deposits typically overlie glaciolacustrine deposits, indicating drainage during phases of glacial lake decline (Kor, 1989).

4.1.3.8 Recent Deposits

Recent deposits, swamps and organic deposits are common within the Route B study area and are typically present in low-lying areas and bedrock hollows. These areas commonly exhibit poor drainage and associated marsh-like characteristics.

4.1.4 Contaminated Land

To review the status of contaminated land within the Transmission Line Route A and Route B study areas Ecolog Eris, a report outlining known areas of potential contamination, has been ordered and is currently under review. Information pertaining to these findings will be provided in the Final ERR.

4.1.5 Seismicity

Route A:

Seismic hazard is quantified by determining the probability of expected ground motion within an area. The Geological Survey of Canada (GSC) is responsible for evaluating regional seismic hazards and preparing seismic hazard maps based on statistical analysis of past earthquake and from knowledge of Canada’s tectonic and geological structure. The National Building Code uses seismic hazard maps and earthquake load guidelines to design and construct buildings to be as resilient to earthquake damage as possible. According to the 2010 Seismic Hazard Map, prepared by the GSC, the Route A study area is situated within a low relative seismic hazard area (GSC, 2015).
Route B:

According to the 2010 Seismic Hazard Map, prepared by the GSC (2015), the Route B study area is situated within a low relative seismic hazard area, however, seismic hazard increases towards the east and results in a relative higher seismic hazard along the southern portion of the Route B Transmission Line.

4.2 Natural Environment

Natural environment existing conditions were reviewed within a 1 km buffer around the Route A and Route B Transmission Lines. A review of the natural environment was conducted using the following resources:

- MNRF Natural Resource Values Information System (NRVIS) mapping; (MNRF, 2014)
- MNRF Make-a-Map: Natural Heritage Areas Application;
- MNRF Crown Land Use Policy Atlas;
- MNRF Natural Heritage Information Centre (NHIC) Rare Species Records;
- MNR Significant Wildlife Technical Guide;
- Draft Significant Wildlife Habitat 5E Criterion Schedule (MNRF, 2012);
- Ontario Breeding Bird Atlas (OBBA) Website (Bird Studies Canada et al., 2006);
- Atlas of the Mammals of Ontario (Dobbyn, 1994)
- Important Bird Areas Canada (Bird Studies Canada et al., 2015)
- Highway 69 Four-Laning From North of Nobel to Highway 522 North Section (MTO, 2008)
- Highway 69 Four-Laning From North of Nobel to Highway 522 South Section (MTO, 2006)
- Highway 69 Four-Laning From North of Nobel to Highway 522 Natural Heritage Background Interim Report (Ecoplans, 2006)
- Highway 69 Four-Laning From North of Nobel to Highway 522 Vegetation and Wildlife Resources Technical Report. South Section (Ecoplans, 2006a)
- Terrestrial Technical Memorandum: Phase 2 Highway 69 Four-Laning, CEAA Project 2, Contract 3 – from 4.9 km north of existing Woods Road to 1.2 km north of existing Highway 7182 (Shebeshekong Road), G.W.P. 5111-07-00 (Ecoplans, 2014)
- The Neegan Burnside Nigig Power Corp/Henvey Inlet Wind Project Preliminary Environmental Constraints Analysis (Neegan Burnside Ltd., 2011);
- The results of the Stantec Consulting Ltd. (Stantec) 2013 terrestrial field studies provided to AECOM in October 2014 and compiled in 2015 (AECOM 2015);

The study areas and the associated natural features are shown in Figure 4-3 and Figure 4-4.
Route A:

The natural environment surrounding the Route A Transmission Line is comprehensively described in the *Henvey Inlet Route A Transmission Line – Environmental Baseline Report (Route A Environmental Baseline Report)*, to be included in the Final ERR. This document identifies any known or potential natural features for each VEC within the study area through a review of available background information.

The presence of natural features identified in the background review and any additional features will be studied further within 25 m of either side of the centre line of the proposed Route A Transmission Line during the spring / summer 2015 field season.

Information from the *Route A Environmental Baseline Report* that is relevant to the VECs for the natural environment is summarized in the following Sections.

Route B:

The natural environment surrounding the Route B study area is comprehensively described in the *Henvey Inlet Route B Transmission Line – Environmental Baseline Report (Route B Environmental Baseline Report)*, to be included in the Final ERR. This document identifies any known or potential natural features for each VEC within the study area through a review of available background information.

The presence of natural features identified in the background review and any additional features will be studied further within 25 m of either side of centre line of the proposed Route B Transmission Line during the spring / summer 2015 field season.

Information from the *Route B Environmental Baseline Report* that is relevant to the VECs for the natural environment is summarized in the following Sections.

### 4.2.1 Wildlife and Wildlife Habitat

#### Route A:

Given that the majority of the Route A study area is largely undeveloped, it provides habitat to a diversity of wildlife, including 17 mammal species, 13 reptile species and 12 amphibian species as identified through the background review (Bird Studies Canada, 2006, Dobbyn, 1994, MNRF 2014 and Ontario Nature, 2015) Of these wildlife species, the majority are considered to be common species with secure populations in Ontario. However, several species were identified as either Species of Conservation Concern (SOCC) or Protected Species, which are further described in **Section 4.2.5**.

The following Significant Wildlife Habitats for fauna species were identified as potentially occurring in the Route A study area:

- Bat Hibernacula;
- Bat Maternity Colonies;
- Turtle Wintering Areas;
- Reptile Hibernacula;
- Deer Winter Congregation Areas;
- Turtle and Lizard Nesting Areas;
- Seeps and springs;
- Aquatic Feeding Habitat;
- Mineral Licks;
- Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf;
- Amphibian Breeding Habitat (Woodland);
- Amphibian Breeding Habitat (Wetland);
- Mast Producing Areas;
- Amphibian Corridors;
- Deer Movement Corridors; and
- Furbearer Movement Corridors.
Detailed information pertaining to these Significant Wildlife Habitats will be provided in the Final ERR. The presence, boundaries and characteristics of candidate Significant Wildlife Habitat within the Route A study area will be determined during the aerial photography interpretation and field studies scheduled to be completed in spring and summer 2015.

**Route B:**

Given that the majority of the Route B study area is largely undeveloped, it provides habitat to a diversity of wildlife, including 17 mammal species, 13 reptile species and 12 amphibian species as identified through the background review (AECOM, 2014; AECOM, 2015; AECOM 2015a; Bird Studies Canada, 2006; Dobbyn, 1994; MNRF, 2014; Ontario Nature, 2015; MTO, 2006; and MTO, 2008). Of these wildlife species, the majority are considered to be common species with secure populations in Ontario. However, a few species were identified as either Species of Conservation Concern (SOCC) or Protected Species, which are further described in Section 4.2.5.

As described in the *Route B Environmental Baseline Report* (to be included in the Final ERR), the following Significant Wildlife Habitats for fauna species were identified as potentially occurring in the Route B study area:

- Bat Hibernacula;
- Bat Maternity Colonies;
- Turtle Wintering Areas;
- Reptile Hibernacula;
- Deer Winter Congregation Areas;
- Turtle and Lizard Nesting Areas;
- Seeps and springs;
- Aquatic Feeding Habitat;
- Mineral Licks;
- Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf;
- Amphibian Breeding Habitat (Woodland);
- Amphibian Breeding Habitat (Wetland);
- Mast Producing Areas;
- Amphibian Corridors;
- Deer Movement Corridors; and
- Habitat of fauna SOCC.

Previous studies completed by Stantec have identified potential amphibian breeding habitats along the northern section of the Route B study area (surveyed in 2013) (AECOM, 2015). Several potential Massasauga Rattlesnake (*Sistrurus catenatus*) gestation habitats along a short section of the Route B Transmission Line, south of Britt were also identified (Stantec, 2013; AECOM, 2015). The Massasauga Rattlesnake is a provincially and federally protected species and has been further discussed in Section 4.2.5. Detailed information pertaining to these identified Significant Wildlife Habitats is provided in the Final ERR. Previous studies that were conducted for the proposed Highway 69/400 widening were also reviewed and consisted of similar results (EcoPlans, 2014; MTO, 2006; MTO, 2008).

The current alignment of the Route B Transmission Line has not been fully surveyed by previous studies. Therefore, the presence, boundaries and characteristics of candidate Significant Wildlife Habitat for fauna species within the Route B study area will be determined during the aerial photography interpretation and field studies scheduled to be completed by AECOM in spring and summer 2015.

### 4.2.1.1 Avi-Fauna

**Route A:**

As part of the background review, the OBBA (Bird Studies Canada et al., 2006) was searched for bird species that have been previously recorded within the six (6) 10 x 10 square km (km$^2$) (ID: 17NL37, 17NL38, 17NL47, 17NL48, 17NL57 and 17NL58) that overlap with the Route A study area. The search resulted in a total of 200 bird species; of these, 180 species are considered common and secure or apparently secure in Ontario. A few species were identified as either SOCC or Protected Species, which are further described in Section 4.2.5. Detailed information pertaining to Migratory Birds will be appended to the final ERR.
The following Significant Wildlife Habitats for birds were identified as potentially occurring in the Route A study area:

- Waterfowl Stopover and Staging Areas (Terrestrial);
- Waterfowl Stopover and Staging Areas (Aquatic);
- Shorebird Migratory Stopover Areas (Shorebird Staging);
- Raptor Wintering Area;
- Colonially-Nesting Bird Breeding Habitat (Bank and Cliff);
- Colonially-Nesting Bird Breeding Habitat (Trees/Shrubs);
- Colonially-Nesting Bird Breeding Habitat (Ground);
- Waterfowl Nesting Areas;
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;
- Woodland Raptor Nesting Habitat;
- Marsh Bird Breeding Habitat;
- Open Country Bird Breeding Habitat; and
- Shrub/Early Successional Bird Breeding Habitat.

Detailed information pertaining to these identified Significant Wildlife Habitats will be appended to the Final ERR. The presence, boundaries and characteristics of candidate Significant Wildlife Habitat within the Route A study area will be determined during the aerial photography interpretation and field studies, including Breeding Bird and Migratory bird field studies, scheduled to be completed in spring and summer 2015.

**Route B:**

As part of the background review, the OBBA (Bird Studies Canada et al., 2006) was searched for bird species that have been previously recorded within the eleven 10 x 10 km² (ID: 17NL37, 17NL36, 17NL46, 17NL45, 17NL44, 17NL54, 17NL64, 17NL63, 17NL73, 17NL72 and 17NL71) that overlap with the Route B Transmission Line study area. The search resulted in a total of 192 bird species; of these, 178 species are considered common and secure or apparently secure in Ontario (Bird Studies Canada et al., 2006). Several bird species were identified as either SOCC or Protected Species, which are further described in Section 4.2.5.

Previous breeding bird area searches completed by Stantec in 2013 within Highway 69 portions of the Route B study area identified a total of 76 bird species (AECOM, 2015a). The most common species encountered within the daytime breeding bird area searches were Turkey Vulture (Cathartes aura), Red-winged Blackbird (Agelaius phoeniceus), Barn Swallow (Hirundo rustica) and European Starling (Sturnus vulgaris). Stantec also completed crepuscular breeding bird surveys during which Whip-poor-will (Antrostomus vociferus) and Common Nighthawk (Chordeiles minor) were recorded within or in the vicinity of the Route B study area (AECOM, 2015a). Detailed information pertaining to Migratory Birds is described in the Route B Environmental Baseline Report (which will be provided in the Final ERR). Previous studies that were conducted for the Highway 69/400 widening were also reviewed and consisted of similar results (EcoPlans, 2014; MTO, 2006; MTO, 2008).

Barn Swallow and Whip-poor-will are Provincially Protected Species while Common Nighthawk is a SOCC. These species, in addition to all of the other protected species and SOCC identified through the background review are summarized and further discussed in Section 4.2.5.

The following Significant Wildlife Habitats for Birds were identified as potentially occurring in the Route B study area:

- Waterfowl Stopover and Staging Areas (Terrestrial);
- Waterfowl Stopover and Staging Areas (Aquatic);
- Shorebird Migratory Stopover Areas (Shorebird Staging);
Detailed information pertaining to these identified Significant Wildlife Habitats will be appended to the Final ERR. The presence, boundaries and characteristics of candidate Significant Wildlife Habitat within the Route B study area will be determined during the aerial photography interpretation and field studies, including breeding bird and migratory bird field studies, scheduled to be completed in spring and summer 2015.

4.2.2 Vegetation

Route A:

The Route A study area is located in Ecoregion 5E (Georgian Bay Ecoregion) which is situated in south-central Ontario in the Canadian Shield and comprises of 7,447,869 hectares (ha). The Ecoregion extends from Lake Superior in the west to the Quebec border in the east (Crins et al., 2009). The majority (32%) of the Ecoregion is dominated by mixed forest. Deciduous forest covers 22%, followed by coniferous forest (12%) and sparse forest (11%) (Crins et al., 2009). Dominant trees represent a mixture of Great Lakes- St. Lawrence forest species and Boreal forest species, including Eastern White pine (Pinus strobus), Red Pine (Pinus resinosa), Eastern Hemlock (Tsuga canadensis), Black Spruce (Picea mariana), White Spruce (Picea glauca), Balsam Fir (Abies balsamea), Jack Pine (Pinus banksiana), Tamarack (Larix laricina), Yellow Birch (Betula allegheniensis), Sugar Maple (Acer saccharum) and other hardwoods (Crins et al., 2009).

Generally, there is sparse vegetation recorded in the Route A study area. There is a rolling topography associated with the general area. Upland areas have little to no soil, therefore have low biological productivity; while lowlands have accumulated more soils, and therefore have higher amounts of vegetation present (Neegan Burnside, 2011). Previous field studies conducted within the vicinity of the Route A Transmission Line have identified the following tree species (Neegan Burnside, 2011):

- Red Pine (Pinus resinosa), White Pine (Pinus Strobus) and Jack Pine (Pinus banksiana);
- White Birch (Betula papyrifera), Yellow Birch (Betula allegheniensis);
- White Spruce (Picea glauca), Eastern Hemlock (Tsuga Canadensis), Red Cedar (Juniperus virginiana);
- Hard & Soft Maple (Acer spp.), Poplar (Populus spp.), Red Oak (Quercus rubra);
- Aspen (Populus spp.), Balsam Fir (Abies balsamea) and Beech (Fagus grandifolia).

No rare vegetation communities have been identified through the background review but the following Rare Vegetation Communities were identified as having the potential to occur within the Route A study area includes the following:

- Shallow Atlantic Coastal Marsh;
- Cliffs and Talus Slopes;
- Precambrian Rock Barren;
- Old-growth or Mature Forests; and
- Bog.
A desktop review to delineate and classify vegetation communities to the community series through aerial photography interpretation has been completed within 25 m of either side of the centre line following the protocols outlined in the Ecological Land Classification (ELC) Manual for Southern Ontario (Lee et al., 1998). ELC field studies, which will be conducted in 2015, will target a pre-determined and diverse subset of representative vegetation communities identified through the preliminary aerial photography interpretation. The results from the ELC field studies will be extrapolated from the targeted field surveys to further refine the aerial photography interpretation results.

**Route B:**

The Route B study area is located in Ecoregion 5E (Georgian Bay Ecoregion) which is situated in south-central Ontario on the Canadian Shield and comprises of 7,447,869 hectares (ha). The Ecoregion extends from Lake Superior in the west to the Quebec border in the east (Crins et al., 2009). The majority (32%) of the Ecoregion is dominated by mixed forest. Deciduous forest covers 22%, followed by coniferous forest (12%) and sparse forest (11%) (Crins et al., 2009). Dominant trees represent a mixture of Great Lakes- St. Lawrence forest species and Boreal forest species, including Eastern White pine (*Pinus strobus*), Red Pine (*Pinus resinosa*), Eastern Hemlock (*Tsuga canadensis*), Black Spruce (*Picea mariana*), White Spruce (*Picea glauca*), Balsam Fir (*Abies balsamea*), Jack Pine (*Pinus banksiana*), Tamarack (*Larix laricina*), Yellow Birch (*Betula allegheniensis*), Sugar Maple (*Acer saccharum*) and other hardwoods (Crins et al., 2009).

Generally, there is sparse vegetation recorded in the Route B study area. There is a rolling topography associated with the general area. Upland areas have little to no soil, therefore have low biological productivity; while lowlands have accumulated more soils, and therefore have higher amounts of vegetation present (Neegan Burnside, 2011). Previous studies within and in the vicinity of the Route B study area have identified the following vegetation community types: deciduous forest, coniferous forest, mixed forest, rock barren, deciduous swamp, coniferous swamp, mixed swamp, thicket swamp, shrub fen, meadow marsh, shallow marsh; floating-leaved shallow aquatic, mixed shallow aquatic, shallow aquatic, open aquatic, cultural and anthropogenic communities (Ecoplans, 2006a, Ecoplans 2007, MTO, 2006, 2008).

A Red Oak – Little Bluestem Provincially Significant vegetation community was identified within the northern section of the Route B study area through the background review (MTO, 2008). Additional Rare Vegetation Communities were identified as having the potential to occur within the Route B Transmission Line study area includes the following:

- Shallow Atlantic Coastal Marsh;
- Cliffs and Talus Slopes;
- Precambrian Rock Barren;
- Old-growth or Mature Forests; and
- Bog.

Ecoplans classified forest communities to the Ecosite level using the Field Guide to Forest Ecosystems of Central Ontario (Chambers et al. 1997), and other communities to community series level using the Ecological Land Classification (ELC) for Southern Ontario (Lee et al., 1998) within their study area, located along Highway 69 from Harris Lake Road to north of Highway 522 (Ecoplans, 2007). Through GIS analysis, Ecoplans determined that approximately 75% of their study area was comprised of terrestrial communities, 16% was wetland, 5% was aquatic and 6% was anthropogenic (Ecoplans, 2007). A total of 24 vegetation communities were identified within their study area along Highway 69 from Harris Lake Road to north of Highway 522, and are presented in Table 4-1 (Ecoplans, 2007).
Table 4-1: Ecosites and Community Series identified by Ecoplans Ltd.

<table>
<thead>
<tr>
<th>Code</th>
<th>Ecosite/Community Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES17</td>
<td>Poplar – White Birch Forest</td>
</tr>
<tr>
<td>ES26</td>
<td>Sugar Maple – Basswood</td>
</tr>
<tr>
<td>ES29</td>
<td>Sugar Maple – Yellow Birch</td>
</tr>
<tr>
<td>ES11</td>
<td>White Pine – Red Pine</td>
</tr>
<tr>
<td>ES13</td>
<td>Jack Pine - Red Pine</td>
</tr>
<tr>
<td>ES14</td>
<td>White Pine – Large-tooth Aspen – Red Oak</td>
</tr>
<tr>
<td>ES18</td>
<td>Poplar – White Birch – White Spruce – Balsam Fir</td>
</tr>
<tr>
<td>ES27</td>
<td>Sugar Maple – White Birch – Poplar</td>
</tr>
<tr>
<td>RB</td>
<td>Not further described</td>
</tr>
<tr>
<td>ES35</td>
<td>Lowland Hardwoods</td>
</tr>
<tr>
<td>ES31</td>
<td>Black Spruce – Tamarack</td>
</tr>
<tr>
<td>ES33</td>
<td>White Cedar – Other Conifer</td>
</tr>
<tr>
<td>ES34</td>
<td>White Cedar – Lowland Hardwoods</td>
</tr>
<tr>
<td>SWT</td>
<td>Thicket Swamp</td>
</tr>
<tr>
<td>FES</td>
<td>Shrub Fen</td>
</tr>
<tr>
<td>MAS</td>
<td>Shallow Marsh</td>
</tr>
<tr>
<td>MAM</td>
<td>Meadow Marsh</td>
</tr>
<tr>
<td>SAF</td>
<td>Floating-leaved Shallow Aquatic</td>
</tr>
<tr>
<td>SAM</td>
<td>Mixed Shallow Aquatic</td>
</tr>
<tr>
<td>OAO</td>
<td>Open Aquatic</td>
</tr>
<tr>
<td>CUM</td>
<td>Cultural Meadow</td>
</tr>
<tr>
<td>CUP</td>
<td>Cultural Plantation</td>
</tr>
</tbody>
</table>

A desktop review to delineate and classify vegetation communities to the community series through aerial photography interpretation has been completed within 25 m on either side of the centre line following the protocols outlined in the ELC Manual for Southern Ontario (Lee et al., 1998). ELC field studies, to be completed in 2015, will target a pre-determined and diverse subset of representative vegetation communities identified through the preliminary aerial photography interpretation. The results from the ELC field studies will be extrapolated from the targeted field surveys, to further refine the aerial photography interpretation results.

### 4.2.3 Wetlands

In Ontario, Provincially Significant Wetlands (PSWs) are identified and evaluated using the Ontario Wetland Evaluation System, which is a standardized assessment process developed by the MNRF (2013). This process assesses the value or importance of a wetland based on a numerical scoring system. The key components considered in a wetland evaluation are the biological, social, hydrological and special features of the wetland or wetland complex. Based on scoring, a wetland can fall into one of two (1 of 2) classes: Provincially Significant or Locally Significant (non-Provincially significant).

According to the *Provincial Policy Statement* (2014), Section 2.1: Natural Heritage, subsection 2.1.4 notes that,

> "Development and site alteration shall not be permitted in:
>  a) significant wetlands in Ecoregions 5E, 6E and 7E¹; and
>  b) significant coastal wetlands."
There are no PSWs or Locally Significant Wetlands identified in or near the Route A study area; however, there is an abundance of unevaluated wetlands, which include swamps, bogs and fen communities (Neegan Burnside, 2011). AECOM will confirm the presence, boundaries and characteristics of wetland communities within the Route A study area through aerial photography interpretation and ELC field studies scheduled in the spring and summer of 2015.

**Route B:**

There are Locally Significant Wetlands identified in or near the Route B study area; however, one (1) PSW (the Haines Lake Wetland Complex) is present within the Route B Transmission Line study area. The Haines Lake Wetland PSW is a complex of numerous small wetland polygons located within the southern portion of the HONI system. This wetland is 111.4 ha in size, composed primarily of marsh with lesser amounts of swamp and fen (MNRF, 1993). The proposed Route B Transmission Line crosses the PSW on five (5) occasions. Additionally, unevaluated wetlands are widespread and include swamps, bogs and fen communities (MNFR, 2015a). AECOM will confirm the presence, boundaries and characteristics of wetland communities within the Route B study area through aerial photography interpretation and ELC field studies scheduled in the spring and summer of 2015.

### 4.2.4 Protected Areas

**Route A:**

There are no federal parks; however, there are several provincial parks and designated natural areas located in the vicinity, but outside, of the Route A study area, including the Grundy Lake Provincial Park, the French River Provincial Park, and the Pakeshkag River Forest Conservation Reserve (MNFR, 2014, 2015a).

The majority of the Route A study area is located on Crown land and within the North Parry Sound Enhanced Management Area (EMA) (ONTLA, 2001). The North Parry Sound EMA is categorized as recreational EMA, which is intended to protect remote recreational areas and provide recreation and resource-based tourism within a remote forested setting (ONTLA, 2001). Recreational EMAs may still permit sustainable business and industrial activities (ONTLA, 2001). Additionally, the western portion of the Route A Transmission Line study area includes HIFN Reserve lands between Highway 69 and the Canadian National (CN) railway track (CN, 2015).

There are no Life Science or Earth Science ANSIs or ESAs located within the Route A study area.

**Route B:**

There are no federal parks; however, there are several provincial parks and designated natural areas located in the vicinity of the Route B study area, including the Grundy Lake Provincial Park and the Sturgeon Bay Provincial Park, which are located in close proximity to, but outside of, the study area (MNFR, 2014, 2015a). In addition, the North Georgian Bay Shoreline and Islands Conservation Reserve, Round Lake Provincial Nature Reserve, Seguin River Conservation Reserve and the Georgian Bay Biosphere Reserve are located within the Route B study area.

Portions of the Route B Transmission Line are located on Reserve lands within the North Parry Sound Enhanced Management Area (EMA), Great Lakes Coastal Area – Parry Sound North EMA, Parry Sound Interior EMA and other General Use Areas. For more details, refer to the *Route B Environmental Baseline* Report, which will be provided in the Final ERR.

There are no Life Science or Earth Science ANSIs or ESAs within the Route B Transmission Line study area.
4.2.5 Rare, Threatened or Endangered Non-Aquatic Species

4.2.5.1 Species of Conservation Concern

Route A:

The SOCC and their habitats were included as part of the Route A background review. SOCC for the Route A study area include the following species:

- Provincially rare species ranked by the NHIC as S1 (critically imperiled), S2 (imperiled) or S3 (vulnerable) in the province of Ontario but not listed as Endangered or Threatened under Schedule 1 of the federal SARA, 2002 or the provincial ESA, 2007 (ESA);
- Species listed as Special Concern under Schedule 1 of SARA;
- Species evaluated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Special Concern, Threatened or Endangered but not listed as Endangered or Threatened under Schedule 1 of SARA or the ESA; and
- Species listed as Special Concern under the ESA.

A total of eight (8) SOCC were identified as occurring or having some potential to occur within the Route A study area (Bird Studies Canada, 2006; MNRF 2014; and Ontario Nature, 2015) based on the background review. These are summarized in Table 4-2.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-rank¹</th>
<th>ESA Status²</th>
<th>COSEWIC Status³</th>
<th>SARA Status⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird Species (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bald Eagle</td>
<td>Haliaeetus leucocephalus</td>
<td>S2</td>
<td>SC</td>
<td>NAR</td>
<td>NAR</td>
</tr>
<tr>
<td>Black Tern</td>
<td>Chlidonias niger</td>
<td>S3</td>
<td>SC</td>
<td>NAR</td>
<td>NAR</td>
</tr>
<tr>
<td>Louisiana Waterthrush</td>
<td>Seiurus motacilla</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Peregrine Falcon</td>
<td>Falco peregrinus</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Short-eared Owl</td>
<td>Asio flammeus</td>
<td>S2</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Reptile Species (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common Five-lined Skink (Southern Shield population)</td>
<td>Plestiodon fasciatus pop. 2</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Milksnake</td>
<td>Lampropeltis triangulum</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Snapping Turtle</td>
<td>Chelydra serpentina</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
</tbody>
</table>

For all notes pertaining to this table please see the end of section 4.3.2.1

Route B:

The SOCC and their habitats were included as part of the Route B background review. SOCC for the Route B study area include the following rare species:

- Provincially rare species ranked by the NHIC as S1 (critically imperiled), S2 (imperiled) or S3 (vulnerable) in the province of Ontario but not listed as Endangered or Threatened under Schedule 1 of the federal SARA, 2002 or the provincial ESA, 2007 (ESA);
- Species listed as Special Concern under Schedule 1 of SARA;
• Species evaluated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Special Concern, Threatened or Endangered but not listed as Endangered or Threatened under Schedule 1 of SARA or the ESA; and
• Species listed as Special Concern under the ESA.

A total of 13 SOCC were identified as occurring or having some potential to occur within the Route B study area based on the background review (AECOM, 2015; AECOM, 2015a; Bird Studies Canada, 2006; Dobbyn, 1994; MNRF, 2014; Ontario Nature, 2015; MTO, 2006; MTO, 2008; and AECOM, 2014). These are summarized in Table 4-3.

Table 4-3: SOCC Potentially Occurring in the Route B Study Area

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>SARA Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bird Species (8)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bald Eagle</td>
<td>Haliaeetus leucocephalus</td>
<td>S2</td>
<td>SC</td>
<td>NAR</td>
<td>NAR</td>
</tr>
<tr>
<td>Black Tern</td>
<td>Chlidonias niger</td>
<td>S3</td>
<td>SC</td>
<td>NAR</td>
<td>NAR</td>
</tr>
<tr>
<td>Eastern Wood-Pewee</td>
<td>Contopus virens</td>
<td>S4</td>
<td>SC</td>
<td>SC</td>
<td>No Status</td>
</tr>
<tr>
<td>Louisiana Waterthrush</td>
<td>Seiurus motacilla</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Rusty Blackbird</td>
<td>Euphagus carolinus</td>
<td>S4</td>
<td>NAR</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Short-eared Owl</td>
<td>Asio flammeus</td>
<td>S2</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Wood Thrush</td>
<td>Hylocichla mustelina</td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>No Status</td>
</tr>
<tr>
<td>Yellow Rail</td>
<td>Coturnicops noveboracensis</td>
<td>S4</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
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<tr>
<td><strong>Plant Species (1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liverwort</td>
<td>Diplophyllum taxifolium</td>
<td>S1S2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Reptile Species (4)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common Five-lined Skink</td>
<td>Plestiodon fasciatus pop. 2</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>(Southern Shield population)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milksnake</td>
<td>Lampropeltis triangulum</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Northern Map Turtle</td>
<td>Graptemys geographica</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Snapping Turtle</td>
<td>Chelydra serpentina</td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>SC (Schedule 1)</td>
</tr>
</tbody>
</table>

For all notes pertaining to this table please see the end of section 4.3.2.1

4.2.5.2 Protected Species

4.2.5.2.1 Federal

Route A:

4.2.5.2.1.1 Species at Risk Act, 2002

Species listed as Endangered and Threatened under Schedule 1 of the SARA (Table 4-4) are protected and may require permits and/or authorization administered by EC-CWS if the proposed Route A Transmission Line negatively affects the protected species or its habitat on Reserve land. A total of 17 federally protected species, including five (5) Endangered and 12 Threatened species were identified as occurring or having the potential to occur within the Route A study area based on the background review (Bird Studies Canada, 2006; MNRF, 2014; and Ontario Nature, 2015). For more details, refer to the Route A Environmental Baseline Report, which will be provided in the Final ERR.
Table 4-4: Federally Protected Species Potentially Occurring in the Route A Study Area

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>SARA Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amphibian Species (1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield Population)</td>
<td><em>Pseudacris triseriata</em> pop. 1</td>
<td>S3</td>
<td>NAR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td><strong>Bird Species (9)</strong></td>
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<td></td>
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</tr>
<tr>
<td>Loggerhead Shrike</td>
<td><em>Lanius ludovicianus migrans</em></td>
<td>S2</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Canada Warbler</td>
<td><em>Cardellina pusilla</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Chimney Swift</td>
<td><em>Chaetura pelagica</em></td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Common Nighthawk</td>
<td><em>Chordeiles minor</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Golden-winged Warbler</td>
<td><em>Vermivora chrysoptera</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Least Bittern</td>
<td><em>Ixobrychus exilis</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Olive-sided Flycatcher</td>
<td><em>Contopus borealis</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Red-headed Woodpecker</td>
<td><em>Melanerpes erythrocephalus</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Whip-poor-will</td>
<td><em>Caprimulgus vociferus</em></td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td><strong>Mammal Species (2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little Brown Bat</td>
<td><em>Myotis lucifugus</em></td>
<td>S4</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Northern Myotis Bat</td>
<td><em>Myotis septentrionalis</em></td>
<td>S4</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td><strong>Reptile Species (5)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blanding’s Turtle</td>
<td><em>Emydoidea blandingii</em></td>
<td>S3</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Foxsnake (Georgian Bay population)</td>
<td><em>Pantherophis gloydi</em> pop. 1</td>
<td>S3</td>
<td>THR</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Musk Turtle</td>
<td><em>Sternotherus odoratus</em></td>
<td>S3</td>
<td>SC</td>
<td>SC5</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Massasauga Rattlesnake (Great Lakes / St. Lawrence population)</td>
<td><em>Sistrurus catenatus</em> pop. 1</td>
<td>S3</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Spotted Turtle</td>
<td><em>Clemmys guttata</em></td>
<td>S3</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
</tbody>
</table>

Note: For all notes pertaining to this table please see the end of section 4.3.2.1

4.2.5.2.1.2 Migratory Birds Convention Act, 1994

The MBCA provides protection to migratory birds, their habitats and nests at the federal level by prohibiting the destruction of active migratory bird nests. Currently, 700 migratory bird species are protected under this Act, including songbirds, woodland birds, waterfowl, shorebirds and seabirds. Migratory birds listed under the MBCA will be identified during the breeding bird and migratory bird field studies that are scheduled to be completed in 2015.

Route B:

4.2.5.2.1.3 Species at Risk Act, 2002

Species listed as Endangered and Threatened under Schedule 1 of the SARA (Table 4-5) are protected and may require permits and / or authorization administered by EC-CWS if affected by the proposed Route B Transmission Line. A total of 16 federally protected species, including four (4) Endangered and 12 Threatened species were identified as occurring or having the potential to occur within the Route B study area based on the background review (AECOM, 2014; AECOM, 2015; AECOM, 2015a; Bird Studies Canada, 2006; Dobbyn, 1994; MNRF, 2014; Ontario Nature, 2015; MTO, 2006; and MTO, 2008). For more details, refer to the Route B Environmental Baseline Report, which will be provided in the Final ERR.
Table 4-5: Federally Protected Species Potentially Occurring in the Route B Study Area

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>SARA Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amphibian Species (1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield Population)</td>
<td><em>Pseudacris triseriata pop. 1</em></td>
<td>S3</td>
<td>NAR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td><strong>Bird Species (8)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada Warbler</td>
<td><em>Cardellina pusilla</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Chimney Swift</td>
<td><em>Chaetura pelagica</em></td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Common Nighthawk</td>
<td><em>Chordeiles minor</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Golden-winged Warbler</td>
<td><em>Vermivora chrysoptera</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Least Bitter assorted</td>
<td></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Olive-sided Flycatcher</td>
<td><em>Contopus borealis</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Red-headed Woodpecker</td>
<td><em>Melanerpes erythrocephalus</em></td>
<td>S4</td>
<td>SC</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Whip-poor-will</td>
<td><em>Caprimulgus vociferus</em></td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td><strong>Mammal Species (2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little Brown Bat</td>
<td><em>Myotis lucifugus</em></td>
<td>S4</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Northern Myotis Bat</td>
<td><em>Myotis septentrionalis</em></td>
<td>S4</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td><strong>Reptile Species (5)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blanding’s Turtle</td>
<td><em>Emydoidea blandingii</em></td>
<td>S3</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Foxsnake (Georgian Bay population)</td>
<td><em>Pantherophis gloydii pop. 1</em></td>
<td>S3</td>
<td>THR</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Musk Turtle</td>
<td><em>Sternotherus odoratus</em></td>
<td>S3</td>
<td>SC</td>
<td>SC</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Massasauga Rattlesnake (Great Lakes / St. Lawrence population)</td>
<td><em>Sistrurus catenatus pop. 1</em></td>
<td>S3</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Spotted Turtle</td>
<td><em>Clemmys guttata</em></td>
<td>S3</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
</tbody>
</table>

For all notes pertaining to this table please see the end of section 4.3.2.1

4.2.5.2.1.4 Migratory Birds Convention Act, 1994

The **MBCA** provides protection to migratory birds, their habitats and nests at the federal level by prohibiting the destruction of active migratory bird nests. Currently, 700 migratory bird species are protected under this Act, including songbirds, woodland birds, waterfowl, shorebirds and seabirds. Migratory birds listed under the **MBCA** will be identified during the breeding bird and migratory bird field studies that are scheduled to be completed in 2015.

4.2.5.2.2 Provincial

**Route A:**

Species listed as Endangered and Threatened under the provincial **ESA** are treated as Provincially Protected Species for the purpose of this ERR. As shown in Table 4-6, a total of 17 provincially protected species, including five (5) Endangered and 12 Threatened species, were identified as occurring or potentially occurring within the Route A study area through the background review (Bird Studies Canada, 2006; MNRF, 2014; and Ontario Nature, 2015). These species may require permits and/or authorization administered by the MNRF if the proposed Route A Transmission Line infrastructure would negatively affect the species or its habitat on provincial land.
## Table 4-6: Provincially Protected Species Potentially Occurring the Route A Study Area

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>SARA Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bird Species (9)</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Loggerhead Shrike</td>
<td>Lanius ludovicianus migrans</td>
<td>S2</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Bank Swallow</td>
<td>Riparia riparia</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>No Status (No Schedule)</td>
</tr>
<tr>
<td>Barn Swallow</td>
<td>Hirundo rustica</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>No Status (No Schedule)</td>
</tr>
<tr>
<td>Bobolink</td>
<td>Dolichonyx oryzivorus</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>No Status (No Schedule)</td>
</tr>
<tr>
<td>Cerulean Warbler</td>
<td>Dendroica cerulea</td>
<td>S5</td>
<td>THR</td>
<td>END</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Chimney Swift</td>
<td>Chaetura pelagica</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Meadowlark</td>
<td>Sturnella magna</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>No Status (No Schedule)</td>
</tr>
<tr>
<td>Least Bittern</td>
<td>Ixobrychus exilis</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Whip-poor-will</td>
<td>Caprimulgus vociferus</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td><strong>Mammal Species (3)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Small-footed Myotis</td>
<td>Myotis leibii</td>
<td>S2S3</td>
<td>END</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Little Brown Bat</td>
<td>Myotis lucifugus</td>
<td>S4</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Northern Myotis Bat</td>
<td>Myotis septentrionalis</td>
<td>S4</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td><strong>Reptile Species (5)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blanding’s Turtle</td>
<td>Emydoidea blandingii</td>
<td>S3</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>East Foxsnake (Georgian Bay population)</td>
<td>Pantherophis gloydi pop. 1</td>
<td>S3</td>
<td>THR</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Hog-nosed Snake</td>
<td>Heterodon platirhinus</td>
<td>S3</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Massasauga Rattlesnake</td>
<td>Sistrurus catenatus pop. 1</td>
<td>S3</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Spotted Turtle</td>
<td>Clemmys guttata</td>
<td>S3</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
</tbody>
</table>

For all notes pertaining to this table please see the end of section 4.3.2.1

### Route B:

Species listed as Endangered and Threatened under the provincial ESA are treated as Provincially Protected Species for the purpose of this EA Report. As shown in Table 4-7, a total of 16 provincially protected species, including four (4) Endangered and 12 Threatened species, were identified as occurring or potentially occurring within the Route B study area through the background review (AECOM, 2014; AECOM, 2015; AECOM, 2015a; Bird Studies Canada, 2006; Dobbyn, 1994; MNRF, 2014; Ontario Nature, 2015; MTO, 2006; and MTO, 2008). These species may require permits and / or authorization administered by the MNRF if the proposed Route B Transmission Line infrastructure would negatively affect the species or its habitat on provincial land.

## Table 4-7: Provincially Protected Species Potentially Occurring the Route B Study Area

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>SARA Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bird Species (8)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank Swallow</td>
<td>Riparia riparia</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>No Status (No Schedule)</td>
</tr>
<tr>
<td>Barn Swallow</td>
<td>Hirundo rustica</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>No Status (No Schedule)</td>
</tr>
<tr>
<td>Bobolink</td>
<td>Dolichonyx oryzivorus</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>No Status (No Schedule)</td>
</tr>
<tr>
<td>Cerulean Warbler</td>
<td>Dendroica cerulea</td>
<td>S5</td>
<td>THR</td>
<td>END</td>
<td>SC (Schedule 1)</td>
</tr>
<tr>
<td>Chimney Swift</td>
<td>Chaetura pelagica</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Meadowlark</td>
<td>Sturnella magna</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>No Status (No Schedule)</td>
</tr>
<tr>
<td>Least Bittern</td>
<td>Ixobrychus exilis</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Whip-poor-will</td>
<td>Caprimulgus vociferus</td>
<td>S4</td>
<td>THR</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
</tr>
</tbody>
</table>
### Mammal Species (3)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>SARA Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Small-footed Myotis</td>
<td><em>Myotis leibii</em></td>
<td>S2S3</td>
<td>END</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Little Brown Bat</td>
<td><em>Myotis lucifugus</em></td>
<td>S4</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Northern Myotis Bat</td>
<td><em>Myotis septentrionalis</em></td>
<td>S4</td>
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<td>END</td>
<td>END (Schedule 1)</td>
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</tbody>
</table>

### Reptile Species (5)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>SARA Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanding’s Turtle</td>
<td><em>Emydoidea blandingii</em></td>
<td>S3</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Foxsnake (Georgian Bay population)</td>
<td><em>Pantherophis gloyd pop. 1</em></td>
<td>S3</td>
<td>THR</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
<tr>
<td>Eastern Hog-nosed Snake</td>
<td><em>Heterodon platirhinos</em></td>
<td>S3</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Massasauga Rattlesnake</td>
<td><em>Sistrurus catenatus pop. 1</em></td>
<td>S3</td>
<td>THR</td>
<td>THR (Schedule 1)</td>
<td>THR (Schedule 1)</td>
</tr>
<tr>
<td>Spotted Turtle</td>
<td><em>Clemmys guttata</em></td>
<td>S3</td>
<td>END</td>
<td>END</td>
<td>END (Schedule 1)</td>
</tr>
</tbody>
</table>

*For all notes pertaining to this table please see the end of section 4.3.2.1*

### 4.3 Water Bodies, Fish Habitat and Aquatic Ecosystems

A background review of aquatic natural heritage features and functions located within 1 km of the proposed Route A and B Transmission Line was conducted using the following resources:

- MNRF NRVIS mapping;
- MNRF Make-a-Map: Natural Heritage Areas Application;
- MNRF Crown Land Use Policy Atlas;
- MNRF NHIC Rare Species Records;
- MNRF Significant Wildlife Technical Guide;
- Draft Significant Wildlife Habitat 5E Criterion Schedule (MNRF, 2012);
- Highway 69 Four-Laning From North of Nobel to Highway 522  (MTO, 2008);
- Highway 69 Four-Laning From North of Nobel to Highway 522 Natural Heritage Background Interim Report (Ecoplans, 2006);
- Fisheries and Aquatic Habitat Ecosystems Report - Highway 69 Four-Laning From the South Study Limits Northerly for 1.6 km;
- Fisheries and Aquatic Habitat Ecosystems Report - Highway 69 Four-Laning From 1.7 km North of Highway 529 Northerly to Straight Lake;
- Fisheries and Aquatic Habitat Ecosystems Report - Highway 69 Four-Laning From Straight Lake Northerly to 3.9 km North of Highway 522;
- The Neegan Burnside Nigig Power Corp / Henvey Inlet Wind Project Preliminary Environmental Constraints Analysis (Neegan Burnside Ltd., 2011);
- Highway 69 Four-Laning Detail Design from 5.3 km South of Highway 529 (North Junction) northerly to 2.2 km North of Highway 529 (North Junction) Fish and Fish Habitat Report; and
- The results of the Tulloch Environmental aquatic field investigations provided to AECOM in October 2014.

A request for information has been submitted to the MNRF’s Parry Sound District Office. Once information has been received back from the MNRF, AECOM will look for any data gaps identified during the background review to confirm that the information presented in this report is both accurate and up-to-date.

Field investigations will be completed in the spring and summer of 2015 in order to collect fish habitat data for proposed water crossing locations. This data will be used to support the impact assessment portion of the Final ERR.
4.3.1 Waterbodies

Route A:

The Route A study area is located within the Canadian Shield, as shown on Figure 4-5. The Route A study area is a combination of upland rock barrens interspersed by wetland drainages between the rocky ridges. The Route A Transmission Line extends approximately 14 km from east to west. The eastern portion of the Route A study area overlaps into HIFN I.R. #2 and therefore includes the waterbodies of the Key River, the Henvey Inlet, and the Portage Lake. These larger water systems are located at the northwestern limit of the Route A study area near the junction of Highway 69 and Highway 522. The Route A study area is a patchwork of upland rock barrens interspersed by wetland drainages between the rocky ridges.

4.3.1.1 Key River

The Key River is a relatively slow moving river that is moderately deep. It is important as a migratory route and supports warm, cool, and some cold water salmon species. The central unnamed wetland just to the west of the Route A Transmission Line, north of the Key River is likely a significant spawning and nursery area for Northern pike. There are also portions of the Key River shoreline that can function as spawning and nursery habitat as well. The mixed shallow aquatic wetland at the Key River supports a warm water baitfish community.

Route B:

The Route B study area is located within the Canadian Shield, generally following the existing Highway 69 alignment from HIFN I.R. #2 south to Parry Sound, as shown on Figure 4-6. Major rivers draining the study area include the Giroux, Magnetawan, and Still Rivers. The tributary channels of these watercourses are frequently blocked with a series of active beaver dams both up and downstream of the proposed Highway 69/400 widening corridor which has resulted in a patchwork of cattail marshes and wet meadows that comprise the majority of aquatic habitat available (AECOM, 2013). In addition to riverine aquatic environments the Route B Transmission Line study area includes Straight Lake in addition to a number of other smaller lakes.

4.3.1.2 Giroux River

The Giroux River is a permanently flowing watercourse with an approximate drainage area of 1,500 ha. It is a slow moving, minor watercourse outletting directly to Georgian Bay 10 km south of the mouth of the Magnetawan River. The tributary sub-watersheds, in combination, drain approximately 1,000 ha and headwaters extend, in some cases, a kilometre or more (Warme, 2014).

The channel morphology - beaver dams and ponds up and downstream that are frequently confined between rock outcrops - is typical and represent very similar aquatic habitat conditions that occur at all Giroux River tributaries. Defined channels, when present, were 1 m or less in width and 0.1 m deep and frequently choked with vegetation – cattails, sedges, rushes and long grasses are dominant. Alder, buckthorn, dogwood and willow shrubs occupy adjacent areas. Water lilies, burreed, phragmites, duckweed and arrowhead are common floating and emergent species.

Based on observations made by Warme, 2014, the flows at most crossings were weak or undetectable by mid-summer. In the very dry latter part of 2012, all channels were dry with the exception of occasional refuge pools and within culvert barrels. Muck and organic detritus are the predominant streambed and wetland substrates. Dissolved oxygen (DO) levels were expectedly low (< 3 mg/L) with widely fluctuating conductivities (20 - 4420+ us/cm) (Warme, 2014).
4.3.1.3 Magnetawan River

The Magnetawan River, a permanently flowing, cool water system in its lower reaches, drains the majority of the Route B study area with its bisecting west-flowing channel. This is a large river with an upstream drainage area in the order of 285,000 ha and extending from its outlet in Georgian Bay east to beyond Highway 11 and into Algonquin Provincial Park. Within the Magnetawan Reserve No. 1, it flows as a series of slower moving and deeper ponded areas separated by rapids over the exposed bedrock and boulder clusters. The Magnetawan River channel is contained within a shallow valley in the surface bedrock with grasses and other herbaceous growth approaching the water’s edge from the adjacent forest in some locations. The entire reach of the river for 100 m up and downstream is flat with rapids at each end. Broken rock litters the overbanks with a dense cover of spruce-pine-balsam fir forest just beyond. The pH and conductivity values were similar to those of other stations although DO values were high as would be expected in this large, fast moving system (Warme, 2014).

4.3.1.4 Straight Lake

Straight Lake is located east of proposed Highway 69/400 widening corridor and the Route B Transmission Line. It is a relatively shallow waterbody with an abundance of aquatic macrophytes.

4.3.1.5 Still River & Tributaries

The Still River is a small to medium-sized, low-gradient river that flows westerly into Georgian Bay. It is located south of the Key River. The Route B Transmission Line is just west of an existing lamprey weir operated by DFO. The site specific habitat includes mainly pasture lands to the south with a narrow riparian fringe of vegetation. This vegetation includes white birch, red maple, speckled alder along with grasses and sedges. The north bank rises sharply to a rock barren community that includes pine and oak species. The instream cover is a combination of boulders, cobble sand and silt. The river ranges from 7.8 m to 10.6 m in width throughout the reach with depths of 0.5 m to 1.8 m. (MTO, 2013). A number of beaver dams have been recorded along the Still River. Tributaries of the Still River provide a variety of habitat types for baitfish such as undercut banks and slow moving flows.

4.3.1.6 Little Still River & Tributaries

The Little Still River, located south of Still Lake is a well-defined meandering channel flowing through upland and wetland habitats. The substrates include sands, silts and clays. Sandy sediments in the floodplain indicate that it tops its banks frequently. Instream cover includes woody debris, undercut banks, overhanging vegetation and detritus. Riparian vegetation is a mixture of grasses, sedges and forbs along with speckled alder and occasional patches of black ash (MTO, 2013).

4.3.2 Fish and Fish Habitat

Route A:

Field studies to map fish habitat have not yet been completed along the Route A Transmission Line. Little information is currently available to document the existing conditions along this alignment; therefore the scheduled field studies for the spring of 2015 will capture data gaps for this alignment. This information will be included in the Final ERR.
Route B:

The major aquatic systems in the study area include the Magnetawan, Key, Still and Little Still Rivers and all support sport fish and bait fish communities typical of central / northern Ontario. The area is used widely for recreational sportfishing anglers as well as by local communities including Magnetawan First Nation and Henvey Inlet First Nations members. Areas identified by community members as used for fishing include Two-Foot Rapids, Byng Inlet, and Miner’s Lake. The Georgian Bay coastline was also identified to be of importance to community members, mainly in sheltered areas with weed-beds suitable for Bass, Walleye and Northern Pike (Neegan Burnside Limited, 2011), previous studies completed on watercourses within the Route B Transmission Line study area were listed as references at the beginning of Section 4.3. A summary of fish species caught in study area waterbodies during previous studies overlapping the Route B Transmission Line alignment are presented in Table 4-8 below.

The proposed Route B Transmission Line alignment has changed since studies were completed in 2013, therefore the section of the Transmission Line which travels away from Highway 69 and east over Crown land to meet the existing 500 kV HONI system will be completed in spring / summer 2015 and included in the Final ERR.

Table 4-8: Fish Species Caught within Route B Transmission Line Study Area During Previous Studies

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Magnetawan River</th>
<th>Key River Wetland</th>
<th>Still River</th>
<th>Still River Tributaries</th>
<th>Little Still River</th>
<th>Little Still River Tributaries</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fathead Minnow</td>
<td>Pimephales promelas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tulloch Environmental, 2013</td>
</tr>
<tr>
<td>Central mudminnow</td>
<td>Umbra limi</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>Tulloch Environmental, 2013; Warme, 2014</td>
</tr>
<tr>
<td>Pumpkinseed</td>
<td>Pimephales promelas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tulloch Environmental, 2013; MNRF Species Records</td>
</tr>
<tr>
<td>Brown bullhead</td>
<td>Ameiurus nebulosus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>Tulloch Environmental, 2013; MNRF Species Records</td>
</tr>
<tr>
<td>Smallmouth Bass</td>
<td>Micropterus dolomieu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Largemouth Bass</td>
<td>Micropterus salmoides</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Walleye</td>
<td>Sander vitreus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Northern Pike</td>
<td>Esox lucius</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Lake Sturgeon</td>
<td>Acipenser fulvescens</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Logperch</td>
<td>Percina caprodes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Pearl Dace</td>
<td>Margariscus margarita</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Iowa Darter</td>
<td>Ethostoma exile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>White sucker</td>
<td>Catosomus commersoni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Redhorse sucker</td>
<td>Moxostoma macrolepidotum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Brassy Minnow</td>
<td>Hybognathus hakinsoni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FRI, 2014</td>
</tr>
<tr>
<td>Brook Stickleback</td>
<td>Culaea inconstans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>FRI, 2014</td>
</tr>
<tr>
<td>Yellow perch</td>
<td>Perca flavescens</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Rock bass</td>
<td>Ambloplites rupestris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Creek Chub</td>
<td>Semotilus atromaculatus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>Warme, 2014</td>
</tr>
<tr>
<td>Common Shiner</td>
<td>Luxilus cornutus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>Warme, 2014</td>
</tr>
</tbody>
</table>
4.3.2.1 Protected Aquatic Species

Route A:

Rare species include species with designations by COSEWIC, species listed as SAR in Ontario by Committee on the Status of Species at Risk in Ontario (COSSARO), as well as Provincially Ranked S1 to S3 species. The Make-a-map: Natural Heritage Areas Application (MNRF, 2015a) was used to search for NHIC rare species records within any of the 1 km UTM squares that intersected the Route A study area. The search resulted in a total of two (2) provincially rare species including one (1) species designated as Threatened (Lake Sturgeon (*Acipenser fulvescens*)). Refer to Table 4-9 below.

Table 4-9: Rare Species Records within the Vicinity of the Route A Study Area

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-Rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>Year Last Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>Lake Sturgeon (Great Lakes – Upper St. Lawrence River population)</td>
<td><em>Acipenser fulvescens</em></td>
<td>S2</td>
<td>THR</td>
<td>THR</td>
<td>1990s</td>
</tr>
<tr>
<td>Fish</td>
<td>Deepwater Sculpin §</td>
<td><em>Myoxocephalus thompsoni</em></td>
<td>S3</td>
<td>NAR</td>
<td>SC</td>
<td>1976-04-20</td>
</tr>
</tbody>
</table>

Notes: For all notes pertaining to this table please see the end of section 4.3.2.1. Species marked with "§" are considered historical records.

Route B:

Rare species include species with designations by COSEWIC, species listed as SAR in Ontario by COSSARO, as well as Provincially Ranked S1 to S3 species. The Make-a-map: Natural Heritage Areas Application (MNRF, 2015a) was used to search for NHIC rare species records within any of the 1 km UTM squares that intersected the Route B study area. The search resulted in a total of two (2) provincially rare species including one (1) species designated as Threatened (Lake Sturgeon (*Acipenser fulvescens*)). Refer to Table 4-10 below.

Table 4-10: Protected Species Records within the Vicinity of the Route B Study Area

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Common Name</th>
<th>Scientific Name</th>
<th>S-Rank</th>
<th>ESA Status</th>
<th>COSEWIC Status</th>
<th>Year Last Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>Lake Sturgeon (Great Lakes – Upper St. Lawrence River population)</td>
<td><em>Acipenser fulvescens</em></td>
<td>S2</td>
<td>THR</td>
<td>THR</td>
<td>1990s</td>
</tr>
<tr>
<td>Fish</td>
<td>Deepwater Sculpin §</td>
<td><em>Myoxocephalus thompsoni</em></td>
<td>S3</td>
<td>NAR</td>
<td>SC</td>
<td>1976-04-20</td>
</tr>
</tbody>
</table>

Notes: For all notes pertaining to this table please see the end of Section 4.3.2.1. Species marked with "§" are considered historical records.

4.3.2.1.1 Federal

Route A & B:

The Deepwater sculpin is a designated at-risk fish species in Canada and protected as a species of Special Concern under Canada’s SARA. This species has historical records in the Route A and B study areas; however, it is not expected to be currently present (COSEWIC, 2000).

The Deepwater Sculpin is a bottom-dwelling fish that is found in cold (<7°C), well-oxygenated, deep lakes. In the Great Lakes, adults usually live between 60 and 150 m in depth. Its distribution ranges from the Great Bear Lake of Canada to the Great Lakes. It is a designated at-risk fish species in Canada, protected as a species of Special Concern under SARA (COSEWIC, 2000).

The record for Deepwater Sculpin is historical (more than 30 years old) and is not considered conclusive evidence of the species’ continued presence within the Route A and B study areas.
4.3.2.1.2 **Provincial**

**Route A and B:**

Lake Sturgeon (Great Lakes - Upper St. Lawrence River population) is listed as a threatened species under the Ontario ESA, 2007.

Lake Sturgeon inhabits large rivers and lakes, inland deltas and the mouths of large rivers, however detailed habitat information for this species is limited (COSEWIC, 2000). Adults of this species are known to forage for invertebrates in aquatic habitats with depths of 5 to 10 m with substrates of mud, clay, sand or gravel (COSEWIC, 2000). Spawning habitats are fast-flowing waters that contain a fine to medium sized gravel and boulders with spawning sites often located below waterfalls, rapids, or dam (COSEWIC, 2000). Young-of-the-year are typically associated with shallower waterbodies with sand bars, fine gravel or cobble substrates (COSEWIC, 2000).

**Notes for Tables 4-2 – 4-7, 4-9 and 4-10**

\(^1\)S-rank:

The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNRF NHIC to set protection priorities for rare species and natural communities. Definitions are as follows:

- **S1**........... Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.
- **S2**........... Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.
- **S3**........... Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances. Most species with an S3 rank are assigned to the watch list, unless they have a relatively high global rank.
- **S4**........... Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.
- **S5**........... Very common and demonstrably secure in Ontario.
- **SH** .......... Possibly Extirpated (Historical). Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.
- **S#S#**...... A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.
- **S#**........... Rank uncertain.

\(^2\) **ESA Status:**

The ESA 2007 (ESA) protects species listed as Threatened and Endangered on the Species at Risk in Ontario (SARO) List on provincial and private land. The Minister lists species on the SARO list based on recommendations from the COSSARO, which evaluates the conservation status of species occurring in Ontario. The following are the categories of at risk:

- **END** (Endangered)........... A species facing imminent extinction or extirpation in Ontario.
- **THR** (Threatened).......... Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a significant portion of its Ontario range if the limiting factors are not reversed.
SC (Special Concern) ...... A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) ............ A species that has been evaluated and found to be not at risk.

3COSEWIC Status:

COSEWIC evaluates a federal status ranking for all species that it assesses. Rankings include the following:

END (Endangered)........... A species facing imminent extirpation or extinction throughout its range.

THR (Threatened)............. A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) ...... A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) ............ A species that has been evaluated and found to be not at risk.

4SARA Status:

The SARA (SARA protects SAR designated as Endangered, Threatened and Extirpated listed under Schedule 1, including their habitats on federal land. Schedule 1 of SARA is the official list of wildlife SAR in Canada and includes species listed as Extirpated, Endangered, Threatened and of Special Concern. Once a species is listed on Schedule 1, they receive protection and recovery measures that are required to be developed and implemented under SARA. Species that were designated at risk by COSEWIC before SARA need to be reassessed based on the new criteria of the Act before they can be listed under Schedule 1. These species that are waiting to be listed under Schedule 1 do not receive official protection under SARA. Once the species on other schedules (2 and 3) have been reassessed, the other schedules are eliminated and the species is either listed under Schedule 1 or is not listed under the Act.

The following are definitions of the SARA status rankings assigned to each species in the tables above:

END (Schedule 1)............. These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1)............. These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1).............. These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No schedule) .. These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk)............ These species have either been assessed by COSEWIC as Not at Risk or there is not enough sufficient data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N/A)....... These species have either been assessed by COSEWIC as Not at Risk or there is not enough sufficient data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Source:

4.3.3 Surface Water Quality

Route A & B:

Transmission Line Route A and the northern portion of the Transmission Line Route B alignments have had previous studies completed by Tulloch Environmental (2013) that found water quality for waterbodies near the Route A and Route B study areas have lower than average DO and pH readings. This is commonly observed in bog and fen-type environments.

A Fisheries Impact Assessment Study was completed in 2014 by AECOM for MTO, within the Unincorporated Township of Wallbridge and on Magnetawan First Nation Reserve No. 1. Water quality parameters were tested in the field, upstream of many waterbody crossings of the proposed Highway 69/400 widening where fish habitat was identified. The results of this study show that water quality was within acceptable and expected ranges for the area (MTO, 2014).

4.3.4 Hydrogeology and Groundwater

4.3.4.1 Hydrostratigraphy

Route A & B:

Within the Canadian Shield, two (2) separate groundwater systems are identified: a shallow, freshwater system that extends to at least 150 m depth, and a deep saline system that extends down hundreds of metres (Singer and Cheng, 2002; Thorne and Gascoyne, 1993). The majority of drinking water wells within the Canadian Shield source water from the shallow freshwater system. Geological materials that host and transmit groundwater can be subdivided into two (2) distinct groups based on their ability to allow groundwater movement: aquifers and aquitards. Aquifers are classically defined as a geological unit permeable enough to permit a useable supply of water to be extracted, and aquitards are relatively impermeable units that inhibit groundwater movement. The exposed bedrock of the Central Gneiss Belt across the region is highly fractured within the upper 10 to 20 m (Sykes et al., 2009; Ecoplans Limited, 2007), making it an aquifer unit. It is the secondary permeability created by these fractures that dictate the ease at which groundwater is able to move through the bedrock aquifer, and the intensity and distribution of fractures determines the total porosity, hydraulic conductivity, and infiltration rate (Singer and Cheng, 2002).

Within the Route A and B study area, the pattern of fractures in the bedrock aquifer allows for movement of groundwater, however, this secondary permeability generally decreases with depth (Sykes et al. 2009). Overburden deposits, such as the glaciolacustrine sands and gravels are also considered aquifer units; however, as mentioned in Section 4.1.3, these units are thin and discontinuous and thus are not considered to be significant, although they may be hydraulically connected with the underlying Precambrian bedrock aquifer (Singer and Cheng, 2002). The primary aquifer within the Route A and B study areas is considered to be the upper fractured bedrock.

The fundamental characteristics of fractured rock aquifers are the extreme variability in hydraulic properties, such as conductivity and flow direction. In a fractured rock setting, groundwater flows may be extremely high through discrete fractures or faults, creating a defined flow zone. In a purely fractured media, such as in crystalline bedrock environments, groundwater flow in the host rock between these fractures and faults is extremely low and is considered a low permeability unit (confining unit).
4.3.4.2 Groundwater Recharge and Discharge

**Route A & B:**

Recharge is the term used to describe downward flowing groundwater, that is, from the ground surface toward the water table. Discharge is defined as the movement of groundwater such that the water table intersects the ground surface. Within the Canadian Shield, recharge and downward groundwater movement occurs in topographically high regions, such as the Algonquin Highlands to the east of the Route A and B study areas or more locally on bedrock knobs and ridges. Discharge and upward groundwater flow occurs in topographic lows, such as the Key River valley or within bedrock valleys and isolated topographic depressions between bedrock knobs. Throughflow, sub-parallel to ground surface, occurs in areas of low topographic relief at moderate elevations (Sykes et al., 2009). A significant component of the Route A and B study areas can be classified as a recharge area due to the dense, interconnected fracture network at surface.

**Route B:**

In addition to the Key River valley, Route B study area also contains the Magnetawan River valley, where additional discharge and upward groundwater flow occurs.

4.3.4.3 Groundwater Flow

**Route A & B:**

Groundwater flow is the result of differences in hydraulic head or, simply stated, water table elevation, from one (1) location to another. Regional groundwater flows from east to west toward Georgian Bay. Topographic lows, such as river valleys, can have local effects on the rate and direction of groundwater movement. Groundwater flowpaths frequently bend into river valleys and isolated topographic depressions; examples within the Route A and B study areas include Key River, and some of the deeper bedrock hollows and valleys within the lowlands.

In addition to the Key River, Route B study area also includes the Magnetawan River, where additional groundwater flowpaths frequently bend into.

4.3.4.4 Groundwater Use

**Route A:**

An inventory of private water wells (i.e., domestic, commercial, industrial, etc.) was performed within the Route A study area, by means of searching the MOECC’s Water Well Database. Results are shown in Figure 4-7, along with the primary use of each well. A total of two (2) water well records were identified within the Route A study area. A review of the water well records indicates that both wells are domestic supply wells, completed within bedrock to a depth of between about 24 m and 34 m.

**Route B:**

An inventory of private water wells (i.e., domestic, commercial, industrial, etc.) was performed within the Route B study area, by means of searching the MOECC Water Well Database. Results of the private well inventory are shown in Figure 4-8, along with the primary use of each well. A total of 171 water well records were identified within the Route B study area. A review of the water well records indicates that the majority (81%) of wells are completed in bedrock and range in depth between about 6.7 and 182.9 m. Zero (0) wells were reported to be completed in overburden material (sand); however, 36 records did not provide information pertaining to well type (overburden or bedrock).
As shown in Table 4-11, available well records indicate that 76% of groundwater use in the Route B study area is for domestic purposes, followed by commercial use (8%), public and municipal supply use (3%), industrial use (1%) and irrigation (1%). Approximately 2% of MOECC water well records specified the primary use as ‘Monitoring and Test Hole’, which indicates those wells are not used as a groundwater supply, and the remaining (9%) provided no well use information.

Table 4-11: Summary of MOECC Water Well Records

<table>
<thead>
<tr>
<th>Primary Well Use</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>13</td>
</tr>
<tr>
<td>Domestic</td>
<td>130</td>
</tr>
<tr>
<td>Industrial</td>
<td>2</td>
</tr>
<tr>
<td>Irrigation</td>
<td>1</td>
</tr>
<tr>
<td>Monitoring and Test Hole</td>
<td>4</td>
</tr>
<tr>
<td>Municipal</td>
<td>2</td>
</tr>
<tr>
<td>No Information</td>
<td>15</td>
</tr>
<tr>
<td>Public</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>171</td>
</tr>
</tbody>
</table>

4.3.5 Hazard Lands, Erosion and Sedimentation

Route A & B:

Soil erosion is the gradual wearing away of the land surface by water, wind, ice and gravity. The transportation, deposition and accumulation of soil are known as sedimentation. Erosion is influenced primarily by four (4) factors: climate, soil type, topography and vegetation. Rainfall is the major climatic factor which contributes to erosion. It causes erosion in two (2) ways: by raindrop impact and by runoff. Although the amount and intensity of rainfall are critical parameters affecting erosion, the seasonal distribution is often more critical. The season of heaviest erosion is characterized by a combination of the most unstable ground condition and the most intensive rainfall. In the Route A and B Transmission Line study areas, this occurs in the spring and fall.

The rate of soil erosion may be influenced by landscape, rainstorm characteristics, cover and soil management but even with all factors being equal, some soils erode more readily than others. Soil erodibility tends to increase with a greater content of silt and very fine sand and decrease with a greater content of coarse sand, clay and organic matter. Within the Route A and B study areas, little overburden is present and exposed bedrock accounts for much of the surficial geology with the remainder being characterized by organic deposits which have accumulated in low lying areas and bedrock valleys as well as a bedrock drift complex consisting of a thin, discontinuous veneer of glaciolacustrine and glaciofluvial sand and / or gravel, isolated occurrences of ice-contact stratified sands and gravels and of loose, stony glacial till (OGS, 2003). The thickness of overburden is generally less than about 1 m across the study area with slightly thicker accumulations of up to 3 m being found in bedrock hollows, topographic lows and on the lee-side of bedrock knobs in relation to the direction of glacial ice-flow.

The lengths and steepness of slopes affect the velocity of runoff water, and therefore are the principal surface features affecting erosion on a site. Chapman and Putnam (1984) delineate the Route A and B study areas as being within the Georgian Bay Fringe physiographic region which is characterized by a gentle plain that slopes up gradually from the shores of Georgian Bay to the Algonquin Highlands region. Although relief in the Georgian Bay Fringe is generally considered to be low, numerous bare rock knobs and ridges occur which rise above the local ground topography. Due to the absence of overburden material on these topographic highs, minor amounts of sediment are expected to be eroded due to topography.
Accelerated soil erosion on construction sites is generally caused by the removal of a protective vegetative cover. Generally, there is sparse vegetation along the proposed Route A and B Transmission Line routes resulting in an increased risk of accelerated soil erosion. Upland areas have little to no soil erosion as it is primarily barren bedrock knobs. On rock knobs and ridges where soil accumulation has occurred an increased risk for unstable land occurs.

4.4 Air and Noise

4.4.1 Atmospheric Environment

4.4.1.1 Climate

Route A & B:

The Route A and B Transmission Lines are located within the Georgian Bay Ecoregion, situated on the southern portion of the Precambrian Shield in south-central Ontario. The climate of this ecoregion is cool-temperate and humid, and falls within the Humid High Moderate Temperature Ecoclimate Region. The mean annual temperature range is between 2.8 to 6.2°C, and the mean length of growing season is between 183 to 219 days. The mean summer rainfall is between 204 and 304 mm, with annual precipitation ranging between 771 and 1,134 mm. (Crins et al., 2009).

Monthly climatic statistics were derived from EC’s nearest long-term monitoring stations to the Route A and B Transmission Lines; because of the length of the Transmission Lines, two (2) stations were selected, Monetville and Dunchurch, Ontario, as shown in Table 4-12. The Monetville, Ontario station is located approximately 30 km from HIFN I.R. #2 (EC, 2015a) near the northern extent of the Route A and B Transmission Lines, whereas the Dunchurch, Ontario station is located approximately 30 km from Parry Sound (EC, 2015b) near the southern extent of Route B Transmission Line.

<table>
<thead>
<tr>
<th>Table 4-12: Monthly Average Climatic Statistics for Monetville and Dunchurch, Ontario (1981-2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>January</td>
</tr>
<tr>
<td>February</td>
</tr>
<tr>
<td>March</td>
</tr>
<tr>
<td>April</td>
</tr>
<tr>
<td>May</td>
</tr>
<tr>
<td>June</td>
</tr>
<tr>
<td>July</td>
</tr>
<tr>
<td>August</td>
</tr>
<tr>
<td>September</td>
</tr>
<tr>
<td>October</td>
</tr>
<tr>
<td>November</td>
</tr>
<tr>
<td>December</td>
</tr>
</tbody>
</table>
Table 4-12: Monthly Average Climatic Statistics for Monetville and Dunchurch, Ontario (1981-2010)

<table>
<thead>
<tr>
<th>Month</th>
<th>Dunchurch, Ontario²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daily Average Temperature (°C)</td>
</tr>
<tr>
<td>January</td>
<td>-11.1</td>
</tr>
<tr>
<td>February</td>
<td>-9.1</td>
</tr>
<tr>
<td>March</td>
<td>-3.8</td>
</tr>
<tr>
<td>April</td>
<td>4.4</td>
</tr>
<tr>
<td>May</td>
<td>11.1</td>
</tr>
<tr>
<td>June</td>
<td>16.2</td>
</tr>
<tr>
<td>July</td>
<td>18.9</td>
</tr>
<tr>
<td>August</td>
<td>17.8</td>
</tr>
<tr>
<td>September</td>
<td>13.4</td>
</tr>
<tr>
<td>October</td>
<td>6.9</td>
</tr>
<tr>
<td>November</td>
<td>0.3</td>
</tr>
<tr>
<td>December</td>
<td>-6.7</td>
</tr>
</tbody>
</table>

Notes: 1. Monetville Station: 46°08’33.006"N 80°18’25.044"W, Elevation 221.00 m
2. Dunchurch Station: 45°37’00.000"N 79°53’02.000”W, Elevation 268.20 m
Source: EC, 2015a; EC, 2015b

4.4.1.2 Air Quality

Route A & B:

The MOECC Air Quality Index is an indicator of air quality in Ontario, based on air pollutants that are known to have adverse effects on human health and the environment; these include ozone, fine particulate matter, nitrogen dioxide, carbon monoxide, sulphur dioxide and total reduced sulphur compounds. According to MOECC, an Air Quality Index (AQI) reading below 16 is categorized as very good, a reading of 16 to 31 is good, 32 to 49 is moderate but there may be some adverse effects on very sensitive people, 50 to 99 is poor and may have adverse effects on sensitive human and animal populations and may cause significant damage to vegetation and property, and a reading above 99 is categorized as very poor and may have adverse effects on a large proportion of those exposed (MOECC, 2014).

The Parry Sound AQI monitoring station is the closest station to the Route A and B Transmission Lines. The 2014 daily data from this station shows an average AQI of 22.38 (good) with a standard deviation of 6.10 and extreme AQIs of seven (7) (very good) on September 30 and October 16 and of 45 (moderate) on May 26 (MOECC, 2014).

4.4.2 Noise

4.4.2.1 Existing Sound Levels

Route A:

The proposed Route A Transmission Line is primarily adjacent to sections of the existing Highway 522. Along this section, existing anthropogenic sound sources are primarily associated with highway traffic. A small section (approximately 3 km) is primarily undeveloped but is bisected by a CN rail corridor with several adjacent buildings. In this section there are few anthropogenic sound sources aside from intermittent passing trains.
Route B:

The proposed Route B Transmission Line is primarily adjacent to sections of the existing and/or future proposed sections of Highway 69/400. Along these sections, existing anthropogenic sound sources are associated with the highway. The existing railway line, adjacent to sections of Highway 69, also influences existing sound levels along some sections of Route B.

The central portion of Route B deviates from Highway 69 into an undeveloped area before connecting with the existing HONI 500 kV system, and travelling south towards a more developed area near Highway 124. This primarily undeveloped section of the route has few anthropogenic sound sources aside from intermittent recreational activities such as All-Terrain Vehicles (ATVs), snowmobiles and hunting.

The southern portion of Route B continues south as a connection with the existing HONI 500 kV system from Highway 124 to Highway 518; and from Highway 518 to south of Highway 400. Existing sound levels near Highway 124, Highway 518 and Highway 400 are controlled by the respective Highways. The remaining sections along this portion of Route B are generally composed of greenspace areas and dispersed residential dwellings, where existing sound levels are controlled by residential activities, and natural sounds (e.g., weather and wildlife).

4.5 Socio-Economic Environment

The socio-economic environment is evaluated with respect to those features deemed important to the day-to-day function of the community and that bolster community well-being and cohesion. Generally, the socio-economic environment framework consists of the following categories. These are:

- **Socio-Economic Framework:**
  - Population and Demographics
  - Employment and Labour Supply
  - Housing and Businesses
  - Governance and Land Use
  - Community Services and Infrastructure
  - Transportation and Traffic
  - Recreation and Tourism
  - Public Health and Safety
  - Natural Resource Assets

- **Heritage and Culture**
  - Aboriginal Interests
  - Land and Resources Used for Traditional Purposes by Aboriginal Persons
  - Archaeology
  - Built Heritage and Cultural Heritage Landscapes
  - Preliminary Cultural Heritage Evaluation
  - Landscapes and Views

This framework is used to establish the existing environment and provide the parameters by which the socio-economic environment will be evaluated for potential effects.

Information on existing socio-economic conditions was collected through desktop research. This research included a review of information from publicly available sources such as: existing GIS data, and community, municipal and
government websites. Information was also consulted from Aboriginal community websites, published statistics from Statistics Canada and AANDC, treaty and land claims information from the Aboriginal Treaty Research Information System, and previously asserted interests from Aboriginal communities on other undertakings such as the proposed Highway 69/400 expansion.

The socio-economic study area for the Route A Transmission Line includes the Route A Transmission Line ROW, the Unincorporated Townships of Mowat and Blair, HIFN I.R. #2 as well as the adjacent Municipality of Killarney and the Unincorporated Township of Henvey (Figure 4-9). The socio-economic study area for the Route B Transmission Line includes the Route B Transmission Line ROW and the following geographic and incorporated municipalities (Figure 4-10):

- HIFN I.R. #2;
- Unincorporated Township of Henvey;
- Unincorporated Township of Wallbridge;
- Magnetawan Reserve No. 1;
- Unincorporated Township of Harrison;
- Township of The Archipelago;
- Shawanaga Reserve No. 17;
- Unincorporated Township of Shawanaga;
- Carling Township;
- Municipality of McDougall; and
- Seguin Township.

In addition, First Nations with Reserve lands located within the socio-economic study area are also examined within this research. These communities include:

- Henvey Inlet First Nation (HIFN);
- Magnetawan First Nation; and
- Shawanaga First Nation.

### 4.5.1 Socio-Economic Framework

#### 4.5.1.1 Population and Demographics

##### 4.5.1.1.1 Parry Sound District Population

Route A:

Census information for the unorganized portion of Parry Sound District is limited, given that much of the district consists of Crown Land with limited dwellings and only a small year-round population. Population figures for the Parry Sound District are presented in Table 4-13. The Unorganized portion of Parry Sound District has had a significantly declining population between 2006 and 2011 of 9.3%. The area also has a higher median age and percentage of the population over 15 years of age compared to the Parry Sound District as a whole. These indicators may be the result of a higher prevalence of retirees in the area, or youth outmigration in search of work.
Henvey Township

PARKSHKAD RIVER FOREST CONSERVATION RESERVE

Transmission Line Route A

Socio-Economic Features

- Access Road
- Accommodations
- Rail
- Commercial
- Industrial
- Restaurant
- Building Point

Aggregate Sites

- Both (Pit and Quarry)
- Pit
- Quarry
- Pit/Quarry < 10ha

Municipalities

Unincorporated Townships

Private Property

Base Layers

- Transmission Line Route A
- Proposed Hwy 69/400 Corridor
- Railway
- Roads
- Watercourses
- Trails
- HONI Corridor
- Conservation Reserve
- Waterbodies
- Provincial Parks
- Aboriginal Communities

Henvey Inlet Wind LP

Transmission Line Route A

Socio-Economic Features

June 2015

1:50,000

Datum: NAD 83, Zone 17
Source: Stantec, OBM, LIO

Figure 4-9

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Table 4-13: Population Trend (2006-2011) – Parry Sound District Communities

<table>
<thead>
<tr>
<th></th>
<th>2006 (Census)</th>
<th>2011 (Census)</th>
<th>2006-2011 Population Change (%)</th>
<th>Median Age</th>
<th>% Age Over 15 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parry Sound District</td>
<td>40,918</td>
<td>42,162</td>
<td>3.0</td>
<td>49.8</td>
<td>86.8</td>
</tr>
<tr>
<td>Parry Sound, Unorganized Centre Part</td>
<td>2,424</td>
<td>2,199</td>
<td>-9.3</td>
<td>58.6</td>
<td>92.7</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 2011a-b

Route B:

Population figures for the municipalities located within the Route B socio-economic study area are presented in Table 4-14.

Table 4-14: Population Trend (2006-2011) – Parry Sound District Communities

<table>
<thead>
<tr>
<th></th>
<th>2006 (Census)</th>
<th>2011 (Census)</th>
<th>2006-2011 Population Change (%)</th>
<th>Median Age</th>
<th>% Age Over 15 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parry Sound District</td>
<td>40,918</td>
<td>42,162</td>
<td>3.0</td>
<td>49.8</td>
<td>86.8</td>
</tr>
<tr>
<td>Parry Sound, Unorganized Centre Part</td>
<td>2,424</td>
<td>2,199</td>
<td>-9.3</td>
<td>58.6</td>
<td>92.7</td>
</tr>
<tr>
<td>The Archipelago</td>
<td>576</td>
<td>566</td>
<td>-1.7</td>
<td>55.2</td>
<td>90.5</td>
</tr>
<tr>
<td>Carling Township</td>
<td>1,123</td>
<td>1,248</td>
<td>11.1</td>
<td>52.8</td>
<td>88.9</td>
</tr>
<tr>
<td>McDougall (Municipality)</td>
<td>2,704</td>
<td>2,705</td>
<td>0.0</td>
<td>48.7</td>
<td>85.5</td>
</tr>
<tr>
<td>Seguin Township</td>
<td>4,276</td>
<td>3,988</td>
<td>-6.7</td>
<td>49.7</td>
<td>86.2</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 2011a-e.

4.5.1.1.2 Population Characteristics for Aboriginal Communities

Henvey Inlet First Nation

A portion of both the Route A Transmission Line and Route B Transmission Line study areas are located on HIFN I.R. #2. HIFN identifies that this Reserve is sparsely populated, with few dwellings. Statistics Canada 2011 Census provides data specifically about HIFN I.R. #2 where both Transmission Line routes will originate. The population given for HIFN I.R. #2 was 15 in 2006 and 28 in 2011 (Statistics Canada, 2011f). The majority of HIFN on-Reserve population lives at the HIFN French River Reserve No. 13 village.

Table 4-15 below shows HIFNs statistics for its community (both Reserves, as well as off-Reserve members).

Table 4-15: Henvey Inlet First Nation Membership

<table>
<thead>
<tr>
<th>Population Location</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Reserve</td>
<td>150</td>
</tr>
<tr>
<td>Off-Reserve</td>
<td>450</td>
</tr>
<tr>
<td>Total</td>
<td>600</td>
</tr>
</tbody>
</table>

Source: HIFN, 2015a

AANDC identifies an on-Reserve population for both Reserves that is slightly higher at 165 in 2011 and 115 members in 2006. (AANDC, 2015a)

HIFN population characteristics are provided in Table 4-16. These statistics demonstrate that the average age has decreased between 2006 and 2011.
Table 4-16: Henvey Inlet First Nation Population and Age Characteristics

<table>
<thead>
<tr>
<th>Population and Age Characteristics</th>
<th>2006</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
</tr>
<tr>
<td>Population Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total all persons</td>
<td>115</td>
<td>55</td>
</tr>
<tr>
<td>Registered Indian</td>
<td>100</td>
<td>45</td>
</tr>
<tr>
<td>Not a registered Indian</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Age Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total all persons</td>
<td>115</td>
<td>55</td>
</tr>
<tr>
<td>Age 0-19</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Age 20-64</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>Age 65 and over</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Median Age</td>
<td>32.5</td>
<td>32.0</td>
</tr>
</tbody>
</table>

Source: AANDC, 2015a

Magnetawan First Nation

Magnetawan First Nation is located along the proposed Route B Transmission Line. Table 4-17 shows population statistics from AANDC, as of January 2015 for Magnetawan First Nation.

Table 4-17: Magnetawan First Nation Membership

<table>
<thead>
<tr>
<th>Population Location</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Reserve</td>
<td>76</td>
</tr>
<tr>
<td>Off-Reserve</td>
<td>177</td>
</tr>
<tr>
<td>Total</td>
<td>253</td>
</tr>
</tbody>
</table>

Source: AANDC, 2015b

Statistics Canada offers data for Magnetawan First Nation for the years 2006 and 2011. The Census data reveals that the population grew from 80 on-Reserve members in 2006 to 90 on-Reserve members in 2011, for a population change of 12.5%. This was higher than the Ontario average of 5.2% over the same period.

Other details regarding the community population and age characteristics are included in Table 4-18 below over the 2006 to 2011 period.

Table 4-18: Magnetawan First Nation Population and Age Characteristics

<table>
<thead>
<tr>
<th>Population and Age Characteristics</th>
<th>2006</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
</tr>
<tr>
<td>Population Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total all persons</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>Registered Indian</td>
<td>75</td>
<td>35</td>
</tr>
<tr>
<td>Not a registered Indian</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Age Characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total all persons</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>Age 0-19</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Age 20-64</td>
<td>45</td>
<td>20</td>
</tr>
<tr>
<td>Age 65 and over</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Median Age</td>
<td>33.0</td>
<td>25.5</td>
</tr>
</tbody>
</table>

Source: AANDC, 2015a
Shawanaga First Nation

Shawanaga First Nation is located along the proposed Route B Transmission Line. Table 4-19 shows population statistics from AANDC, as of January 2015 for Shawanaga First Nation (all three Reserves and off-Reserve populations).

<table>
<thead>
<tr>
<th>Population Location</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Reserve</td>
<td>188</td>
</tr>
<tr>
<td>Off-Reserve</td>
<td>446</td>
</tr>
<tr>
<td>Total</td>
<td>634</td>
</tr>
</tbody>
</table>

Source: AANDC, 2015c

Statistics Canada offers data for Shawanaga First Nation for the years 2006 and 2011. The Census data reveals that the reported population grew from 190 on Reserve-members in 2006 to 215 on-Reserve members in 2011, for a population change of 13.2%. This was higher than the Ontario average of 5.2% over the same period.

Other details regarding the community population and age characteristics are included in Table 4-20 below over the 2006 to 2011 period.

<table>
<thead>
<tr>
<th>Population and Age Characteristics</th>
<th>2006</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total all persons</td>
<td>190</td>
<td>215</td>
</tr>
<tr>
<td>Registered Indian</td>
<td>170</td>
<td>180</td>
</tr>
<tr>
<td>Not a registered Indian</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td><strong>Age Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total all persons</td>
<td>190</td>
<td>215</td>
</tr>
<tr>
<td>Age 0-19</td>
<td>65</td>
<td>70</td>
</tr>
<tr>
<td>Age 20-64</td>
<td>115</td>
<td>130</td>
</tr>
<tr>
<td>Age 65 and over</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td><strong>Median Age</strong></td>
<td>33.9</td>
<td>33.8</td>
</tr>
</tbody>
</table>

Source: AANDC, 2015c

4.5.1.2 Employment and Labour Supply

Due to the sparsely populated geography of the Parry Sound District, employment and industry tend to be centralized in the Town of Parry Sound, with some small commercial and tourism activities located along the Highway 69 corridor.

Table 4-25 identifies that the Parry Sound District has an unemployment rate of 11.8%, higher than the national average of 7.8% in 2011.

<table>
<thead>
<tr>
<th>Total Population aged 15 years and over by Labour Force Status</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the Labour Force</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>17,950</td>
<td>9,400</td>
<td>8,550</td>
</tr>
<tr>
<td>Unemployed</td>
<td>2,395</td>
<td>1,565</td>
<td>830</td>
</tr>
<tr>
<td>Not in the Labour Force</td>
<td>15,400</td>
<td>6,885</td>
<td>8,515</td>
</tr>
<tr>
<td><strong>Participation Rate (%)</strong></td>
<td>56.9</td>
<td>61.4</td>
<td>52.4</td>
</tr>
<tr>
<td><strong>Employment Rate (%)</strong></td>
<td>50.2</td>
<td>52.7</td>
<td>47.8</td>
</tr>
<tr>
<td><strong>Unemployment Rate (%)</strong></td>
<td>11.8</td>
<td>14.3</td>
<td>8.8</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 2011g
Table 4-26 shows the occupation categories for Parry Sound District residents in 2011 from the National Household Survey. The most common occupation categories were “sales and service” occupations, and “trades, transport and equipment operators and related occupations”. The least common occupations other than those not applicable were in the “art, culture recreation and sport” sector.

**Table 4-22:  Parry Sound District by Occupations, 2011**

<table>
<thead>
<tr>
<th>Occupation Category</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation – not applicable</td>
<td>390</td>
<td>160</td>
<td>230</td>
</tr>
<tr>
<td>All Occupations</td>
<td>19,955</td>
<td>10,805</td>
<td>9,150</td>
</tr>
<tr>
<td>Management Occupations</td>
<td>2,245</td>
<td>1,430</td>
<td>815</td>
</tr>
<tr>
<td>Business, Finance and Administration Occupations</td>
<td>2,515</td>
<td>615</td>
<td>1,900</td>
</tr>
<tr>
<td>Natural and Applied Sciences and Related Occupations</td>
<td>745</td>
<td>635</td>
<td>110</td>
</tr>
<tr>
<td>Health Occupations</td>
<td>1,375</td>
<td>185</td>
<td>1,190</td>
</tr>
<tr>
<td>Occupations in Education, Law and Social, Community and Government Services</td>
<td>2,350</td>
<td>765</td>
<td>1,585</td>
</tr>
<tr>
<td>Occupations in Art, Culture, Recreation and Sport</td>
<td>480</td>
<td>195</td>
<td>280</td>
</tr>
<tr>
<td>Sales and Service Occupations</td>
<td>4,460</td>
<td>1,815</td>
<td>2,645</td>
</tr>
<tr>
<td>Trades, Transport and Equipment Operators and Related Occupations</td>
<td>4,335</td>
<td>4,020</td>
<td>315</td>
</tr>
<tr>
<td>Natural Resources, Agriculture and Related Production Occupations</td>
<td>510</td>
<td>390</td>
<td>115</td>
</tr>
<tr>
<td>Occupations in Manufacturing and Utilities</td>
<td>940</td>
<td>750</td>
<td>190</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 2011g

Table 4-27 includes information of Parry Sound District industries in 2011 from the National Household Survey. The largest industry segments in the District are “healthcare and social assistance” services, followed closely by “construction” and “retail trade.” These areas suggest a focus on providing core services for residents, while the construction industry may serve both local and cottage industries. Likewise, retail activities may have both a local and tourism focus.

**Table 4-23:  Parry Sound District by Industry, 2011**

<table>
<thead>
<tr>
<th>Industry Category</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry – not applicable</td>
<td>390</td>
<td>160</td>
<td>230</td>
</tr>
<tr>
<td>All Industries</td>
<td>19,955</td>
<td>10,800</td>
<td>9,155</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>295</td>
<td>235</td>
<td>65</td>
</tr>
<tr>
<td>Mining, Quarrying, and Oil and Gas Extraction</td>
<td>125</td>
<td>95</td>
<td>25</td>
</tr>
<tr>
<td>Utilities</td>
<td>135</td>
<td>125</td>
<td>0</td>
</tr>
<tr>
<td>Construction</td>
<td>2,710</td>
<td>2,440</td>
<td>270</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1,450</td>
<td>1,080</td>
<td>365</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>440</td>
<td>365</td>
<td>75</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>2,565</td>
<td>1,245</td>
<td>1,320</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>890</td>
<td>675</td>
<td>220</td>
</tr>
<tr>
<td>Information and Cultural Industries</td>
<td>265</td>
<td>185</td>
<td>80</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>315</td>
<td>85</td>
<td>230</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>400</td>
<td>255</td>
<td>145</td>
</tr>
<tr>
<td>Professional, Scientific and Technical Services</td>
<td>640</td>
<td>290</td>
<td>350</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Administrative and Support, Waste Management and Remediation Services</td>
<td>660</td>
<td>450</td>
<td>210</td>
</tr>
<tr>
<td>Educational Services</td>
<td>1,565</td>
<td>430</td>
<td>1,140</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>2,725</td>
<td>355</td>
<td>2,370</td>
</tr>
<tr>
<td>Arts, Entertainment and Recreation</td>
<td>540</td>
<td>360</td>
<td>180</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>1,650</td>
<td>635</td>
<td>1,010</td>
</tr>
<tr>
<td>Other Services (except public administration)</td>
<td>1,045</td>
<td>555</td>
<td>490</td>
</tr>
<tr>
<td>Public Administration</td>
<td>1,535</td>
<td>950</td>
<td>585</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 2011g
4.5.1.3 Housing and Businesses

4.5.1.3.1 Housing

Route A & B:

Housing data from the National Household Survey for the Parry Sound District in 2011 is shown in Table 4-21. Based on this data, approximately 58% of the homes in the district are over 35 years old. Approximately 85% of homes are occupied by the owners, and 15% of the homes are rented. The District has a total of 80 reported First Nation band houses, a separate category as lands on-reserve are not severed and remains band controlled collective property.

Table 4-24: Key Dwelling Statistics, Parry Sound District (2011)

<table>
<thead>
<tr>
<th>Total Number of Occupied Private Dwellings</th>
<th>Parry Sound District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Occupied Private Dwellings by Period of Construction</td>
<td></td>
</tr>
<tr>
<td>1960s or before</td>
<td>4,995</td>
</tr>
<tr>
<td>1961 to 1980</td>
<td>5,420</td>
</tr>
<tr>
<td>1981 to 1990</td>
<td>3,125</td>
</tr>
<tr>
<td>1991 to 2000</td>
<td>2,190</td>
</tr>
<tr>
<td>2001 to 2005</td>
<td>1,295</td>
</tr>
<tr>
<td>2006 to 2011</td>
<td>1,045</td>
</tr>
<tr>
<td>Total Number of Private Households by Tenure</td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>15,305</td>
</tr>
<tr>
<td>Renter</td>
<td>2,690</td>
</tr>
<tr>
<td>Band Housing</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 2015

Route A:

There are 38 buildings located within a 1 km radius of the Route A Transmission Line. The Route A socio-economic study area is sparsely populated, with some residential and seasonal properties surrounded by Crown Land. The proposed Route A Transmission Line intersects five (5) private land parcels.

There are few homes located on HIFN I.R. #2. The Reserve is sparsely populated with only a few structures located along the Henvey Inlet shoreline and Bekanon Road. The community indicates there are 12 households on this Reserve (HIFN, 2015a).

Route B:

Although the proposed Route B Transmission Line is not located near residential settlement areas, there are several residences and businesses located along the proposed Highway 69/400 widening corridor and Highway 124. The residences along these routes are often distant from each other and are typically located on large private parcels surrounded by Crown Land.

There are few homes located on HIFN I.R. #2. The Reserve is sparsely populated with only a few structures located along the Henvey Inlet shoreline and Bekanon Road. The community indicates there are 12 households on this Reserve (HIFN, 2015a).
There are 347 buildings located within a 1 km radius of the Route B Transmission Line, many of which are residences along Highway 69. The proposed Route B Transmission Line crosses 97 private land parcels.

The main settlement area of Magnetawan First Nation is located to the west of the existing Highway 69 route at the Magnetawan River. There are some residential dwellings on the east side of the highway, although this is sparsely populated. The total on-Reserve population is 76 (AANDC, 2015). Housing data are provided from the National Household Survey for Magnetawan Reserve No. 1 and shown in Table 4-22.

Table 4-25: Key Dwelling Statistics, Magnetawan Reserve No. 1 (2011)

<table>
<thead>
<tr>
<th>Total Number of Occupied Private Dwellings by Period of Construction</th>
<th>Parry Sound District</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960s or before</td>
<td>0</td>
</tr>
<tr>
<td>1961 to 1980</td>
<td>10</td>
</tr>
<tr>
<td>1981 to 1990</td>
<td>15</td>
</tr>
<tr>
<td>1991 to 2000</td>
<td>10</td>
</tr>
<tr>
<td>2001 to 2005</td>
<td>10</td>
</tr>
<tr>
<td>2006 to 2011</td>
<td>0</td>
</tr>
</tbody>
</table>

Total Number of Private Households by Tenure

<table>
<thead>
<tr>
<th>Owner</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renter</td>
<td>15</td>
</tr>
<tr>
<td>Band Housing</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 2015

Shawanaga First Nation has a village located to the west of the existing Highway 69 with housing supporting an on-Reserve population of 188 (AANDC, 2015). Housing data are provided from the National Housing Survey specifically for the Shawanaga Reserve No. 17 and shown in Table 4-23.

Table 4-26: Key Dwelling Statistics, Shawanaga Reserve No. 17 (2011)

<table>
<thead>
<tr>
<th>Total Number of Occupied Private Dwellings</th>
<th>Parry Sound District</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

Total Number of Occupied Private Dwellings by Period of Construction

| 1960s or before                          | 0     |
| 1961 to 1980                             | 20    |
| 1981 to 1990                             | 20    |
| 1991 to 2000                             | 30    |
| 2001 to 2005                             | 10    |
| 2006 to 2011                             | 0     |

Total Number of Private Households by Tenure

<table>
<thead>
<tr>
<th>Owner</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renter</td>
<td>10</td>
</tr>
<tr>
<td>Band Housing</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 2015

4.5.1.3.1.1 Non-Residential Land Uses

Route A & B:

Table 4-24 provides a detailed inventory of the non-residential land uses present within the Route A and B socio-economic study areas.
Table 4-27: Non-Residential Land Uses within the Route A and B Socio-economic Study Areas

<table>
<thead>
<tr>
<th>Name of Feature</th>
<th>Approximate Location</th>
<th>Type of Feature (School, hospital, etc.)</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario Provincial Police (OPP) – Still River</td>
<td>944 Highway 69 South, Henvey Township, ON</td>
<td>Police Station</td>
<td>OPP Detachment</td>
</tr>
<tr>
<td>Gas Station</td>
<td>182 Highway 69</td>
<td>Commercial</td>
<td>Construction activity and heavy machinery on-site</td>
</tr>
<tr>
<td>Unnamed Telecom Towers</td>
<td>Within approximately 500 m of the intersection of Highway 69 and Station Lane</td>
<td>Telecom Towers</td>
<td>There are four (4) telecom towers, which are accessible from Highway 69 and Station Lane.</td>
</tr>
<tr>
<td>Magnetawan Gas Bar &amp; Store</td>
<td>1 Highway 529, Britt, ON</td>
<td>Commercial</td>
<td>Gas bar and convenience store</td>
</tr>
<tr>
<td>Moose Lake Trading Post and Lodge</td>
<td>Highway 69, Pointe au Baril, ON</td>
<td>Accommodations / Commercial</td>
<td>Moose Lake Trading Post is a gift shop which sells traditional First Nation goods, coffee and homemade desserts. The Moose Lake Lodge offers overnight accommodations and boat rentals.</td>
</tr>
<tr>
<td>The Haven Restaurant</td>
<td>1732 Highway 69, Pointe au Baril, ON</td>
<td>Restaurant</td>
<td></td>
</tr>
<tr>
<td>Chip Wagon, Pointe Au Baril Restaurant and Deli, Ojibway (Real Estate), Shell Gas Bar, and Boat Storage Facility</td>
<td>Intersection of Highway 69 and South Shore Road</td>
<td>Commercial retail area</td>
<td></td>
</tr>
<tr>
<td>LCBO, Captain Sammy's Fish &amp; Chips, Beacon Marine (Boat Sales and services), E &amp; R Tackle &amp; Bait, Post Office and an Unnamed Convenience Store</td>
<td>Pointe au Baril</td>
<td>Commercial retail area</td>
<td></td>
</tr>
<tr>
<td>C.C Kennedy Co. Ltd. and Home Hardware</td>
<td>31 Highway 644 PO Box 269, Pointe au Baril Station, ON</td>
<td>Commercial</td>
<td>Hardware and retail building supply store; and Groceries store.</td>
</tr>
<tr>
<td>Pointe au Baril Information Centre</td>
<td>1650 Highway 69</td>
<td>Commercial / Government</td>
<td>Information kiosk</td>
</tr>
<tr>
<td>Unnamed Commercial Site</td>
<td>1604 Highway 69</td>
<td>Commercial</td>
<td>Farm machinery available on site</td>
</tr>
<tr>
<td>The Ironworker</td>
<td>1549 Highway 69</td>
<td>Industrial / Commercial</td>
<td>Steel and Aluminum Welding and fabricating business.</td>
</tr>
<tr>
<td>Unnamed feature</td>
<td>1526 Highway 69</td>
<td>Electric supply facility</td>
<td></td>
</tr>
<tr>
<td>Shawanaga Gas, Variety and Restaurant</td>
<td>Intersection of Highway 69 and Shebeshekong Rd</td>
<td>Commercial</td>
<td>First Nation owned gas bar and retail location.</td>
</tr>
</tbody>
</table>
| Parry Sound Area Industrial Park                                                | Intersection of Highway 69 and Lagoon Road                | Commercial and industrial businesses park | The Parry Sound Area Industrial Park offers serviced and un-serviced land, all of which is designated as Industrial (M1) zone under the Carling Township Zoning By-law. The site includes the following businesses:  
  - 2KM North America Inc.,  
  - Bobcat of Parry Sound,  
  - Four Seasons Log Homes,  
  - Norse Brewery Inc.,  
  - Paul The Breadman,  
  - Selkirk, and  
  - Urban Tree Salvage  
  - White Oaks Service & Supply (Wossco) |
4.5.1.3.2 Local Business

**Route A:**

The Route A socio-economic study area has limited business activity and there is minimal commercial activity taking place at HIFN I.R. #2. HIFN has a commercial building at French River Reserve No. 13, as well as a gas station located 1 km from Highway 69 on Pickerel River Road which sells convenience items.

The area along Highway 522 is remote and does not have commercial buildings. The closest commercial businesses are those at Key River associated within the marina, as well as some aggregate / quarry operations which are shown on Figure 4-9.

**Route B:**

There is some business activity within the Route B socio-economic study area. HIFN commercial activity is centred at the Pickerel village located at French River Reserve No. 13, although this is north of the Route B transmission line route. There is minimal commercial activity occurring on HIFN I.R. #2.

Magnetawan First Nation operates a convenience store / gas bar located on existing Highway 69. The community is close to Britt, Ontario, where some individuals may work. The community also has a band office which serves as a location for governance, recreation and social functions for the community (Magnetawan First Nation, 2015).

Shawanaga First Nation operates the Shawanaga Gas and Variety store located in the community which provides fuel, tobacco products, groceries and other convenience items. The store also stocks local crafts and fishing supplies. According to the community website, the store employs eight (8) community members (Shawanaga First Nation, 2015a).

Highway 69 provides some access to businesses in Britt and Pointe au Baril, typically service stations and seasonal businesses catering to travellers and the small local population. The Town of Parry Sound is the primary commercial centre in the Parry Sound District and offers a diverse range of retail and small industrial opportunities. The community serves a wide area, including a significant seasonal population during the summer months. Many businesses based in Parry Sound may have a large service area that includes much of the Route B socio-economic study area.

South of Highway 124 and north of Highway 518 there are two (2) businesses located along the Route B Transmission Line. Camp Koinonia, a summer camp for children and families, is located on the shores of Haines Lake near Parry Sound, and Mill Lake Cottage Resort resides on the north west shores of Mill Lake.

South of Highway 518 there is a small community of Otter Lake, in which many businesses are located, such as the manufacturing plant for Crofter's Foods. Other industrial businesses are located on Industrial Boulevard including Biosenta, Zero Mold, RJW Enterprises, Parry Sound Fuels, and Watermark Innovations Inc. This area also includes a Quality Inn Hotel and restaurant on the East side of Highway 400 at Oastler Lake Road.

4.5.1.4 Governance and Land Use

4.5.1.4.1 Governance

**Route A:**

The majority of Route A socio-economic study area is located within an unorganized territory geographically known as Mowat and Blair Townships. These are part of a larger area of unincorporated townships referred to as the
geographic Unorganized Centre Parry Sound District. These townships have no municipal government or local service board, but are under the jurisdiction of the Archipelago Planning Board. The majority of land within these townships is provincial Crown Land and therefore applicable land use guidelines and administration is the responsibility of the provincial government through agencies such as the MNRF and Ontario Ministry of Municipal Affairs and Housing (MMAH). Figure 4-11 provides a map of the District of Parry Sound, which includes the district’s unincorporated townships.

The unincorporated township of Henvey is adjacent to the Route A Transmission Line and, like Mowat and Blair, has no municipal government or local service board, and is also under the jurisdiction of the Archipelago Planning Board.

The Municipality of Killarney is the closest organized municipality and is located in the north end of Parry Sound District (or the South, end of Manitoulin or Sudbury Districts). The Municipality of Killarney is a single tier incorporated municipality with its own council and local level governance. The Municipal Council has six (6) members made up of a mayor, three (3) councillors from Ward one (1) and two (2)councillors from Ward Two (2), which is adjacent to the northern boundary of the socio-economic Transmission Line study area (Municipality of Killarney, 2015a). Land use planning within the Municipality of Killarney is under jurisdiction of the Sudbury East Planning Board and many municipal, social and emergency services are delivered by the Manitoulin-Sudbury District Services Board (DSB) (Municipality of Killarney, 2015b,c). The Municipality of Killarney, the Sudbury East Planning Board and the Manitoulin-Sudbury DSB will be consulted with to minimize any potential adverse impacts of the Route A Transmission Line.

HIFN is located at the western extent of Route A. HIFN has a band council, led by a Chief and Councillors voted by community members.

**Route B:**

The Route B socio-economic study area intersects a number of local jurisdictions including:

- HIFN I.R. #2;
- Unincorporated Township of Henvey;
- Unincorporated Township of Wallbridge;
- Magnetawan Reserve No. 1;
- Unincorporated Township of Harrison;
- Township of The Archipelago;
- Shawanaga Reserve No. 17;
- Unincorporated Township of Shawanaga;
- Carling Township;
- Municipality of McDougall; and
- Seguin Township.

Within the unincorporated townships of Henvey, Wallbridge, Harrison and Shawanaga, there is no local governance structure, and land use control falls to provincial responsibility through the MNRF and MMAH. The Planning Act gives the Archipelago Planning Board jurisdiction over Henvey, Wallbridge and Harrison, while the unincorporated Township of Shawanaga is under the jurisdiction of the Parry Sound Planning Board. Local service boards provide some services in communities such as Britt and Byng Inlet. The Township of The Archipelago, Carling Township, Municipality of McDougall and Seguin Township are all incorporated municipalities with their own municipal councils and land use control. Figure 4-11 provides a map of the District of Parry Sound, which includes the district’s unincorporated townships.

HIFN, Magnetawan First Nation and Shawanaga First Nation each have individual band councils, led by a Chief and councillors as voted by community members.
Figure 4-11: District of Parry Sound

Source: PSDSSAB, 2015
4.5.1.4.1.1 First Nation Tribal Councils and Political Organizations

<table>
<thead>
<tr>
<th>Route A &amp; B:</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIFN and Magnetawan First Nation are part of the Waabnoong Bemjiwang Association of First Nations, a tribal council organization established to provide technical services to member communities, but that does not have a political governance role. The members of this tribal council are located within a similar geographic area of Central Ontario. Tribal council groupings often have similar cultural, heritage and linguistic characteristics.</td>
</tr>
</tbody>
</table>

- HIFN and Magnetawan First Nation are members of the following political organizations:
  - Union of Ontario Indians (UOI): an organization of Anishinabek communities in Ontario. The UOI provides a number of programs and services, including: health, social services, education, intergovernmental affairs and treaty research.
  - Chiefs of Ontario (COO), an organization of chiefs from throughout the Province of Ontario. COO facilitates the discussion, planning, implementation and evaluation of all local, regional and national matters affecting the First Nations of Ontario.

Shawanaga First Nation is not part of any tribal councils or the UOI. It is a member of the COO organization.

4.5.1.4.2 Land Use Planning Legislation

<table>
<thead>
<tr>
<th>Route A:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The proposed Route A Transmission Line passes, exclusively, through Crown land which is designated as Recreation EMA under MNRF’s Guide for Crown Land Use Planning. This land designation is applied to areas that have recreational use or value for activities including, but not limited to, trail use and canoeing and can be seen in Figure 4-12 (MNRF, 2011).</td>
</tr>
</tbody>
</table>

The Province has delegated authority under the Planning Act to The Archipelago Area Planning Board to make decisions on consent applications, requests for approval of plans of subdivision and on condominium developments within the Township of The Archipelago. The Planning Board also has the authority to grant consents within many of the Unincorporated Townships including Mowat and Blair (Township of The Archipelago, 2013).

With regard to electricity projects, the Township of The Archipelago Official Plan states:

“Existing energy and communication facilities and the development of new facilities will be permitted without amendment to this Plan, provided that the development satisfies the provisions of the Environmental Assessment Act and other relevant statutes, and is carried out having regard to the provisions of this Plan. Where energy or communication facilities are proposed, they will be designed and located so as to avoid potential adverse environmental, social, health and aesthetic impacts. In this regard, the following should be considered:

- The co-location of facilities, where possible, to reduce overall numbers;
- Locating facilities within or along existing utility or transportation corridors;
- Setback from waterbodies and the impact of the structure on the lake horizon;
- Construction of towers and antennas to heights below those requiring lighting devices in order to help preserve the night sky; and,
- The impact on natural areas including fish and wildlife habitat and wetlands.”

(Township of The Archipelago, 2010).
Transmission Line Route A
Land Classifications

Crown Land
- Conservation Reserve
- Enhanced Management Area
- General Use Area
- Provincial Park
- Recommended Conservation Reserve
- Recommended Provincial Park
- Wilderness Area

Base Layers
- Transmission Line Route A
- Proposed Hwy 69/400 Corridor
- Railways
- Trails
- Watercourses
- Conservation Reserve
- Waterbodies
- Aboriginal Communities
- Unincorporated Townships
- Municipalities

Henvey Inlet Wind LP

Transmission Line Route A
Land Classifications

June 2015
1:50,000
Datum: NAD 83, Zone 17
Source: Stantec, OBM, LIO

Figure 4-12
Route B:

The majority of the proposed Route B Transmission Line north of the Shawanaga First Nation Reserve No. 17, as well as a small portion of the corridor south of the Shawanaga First Nation Reserve No. 17, is designated as EMA, with small portions designated as Recreation EMAs, Remote Access EMAs, Great Lakes Coastal Area EMAs and General Use Areas (MNRF, 2011). Recreation EMAs and Remote Access EMAs may be used for recreational experiences with little to no motorized vehicle access. The Great Lakes Coastal Area EMA is the designation for the land and water along the shore of Georgian Bay (MNRF, 2011). South of the Shawanaga First Nation Reserve No. 17, Route B is predominately designated as General Use Area. Land designated as General Use Area accounts for the majority of crown lands and means that this land can be used for a large range of resource and recreational uses (MNRF, 2011). Figure 4-13 shows the MNRF Crown land use classifications within Route B socio-economic study area.

The Province has delegated authority under the Planning Act to The Archipelago Area Planning Board to make decisions on consent applications, requests for approval of plans of subdivision and on condominium developments within the Township of The Archipelago. The Planning Board has the authority to grant consents within Henvey, Harrison and Wallbridge Townships (Township of The Archipelago, 2013).

With regard to electricity projects, the Township of The Archipelago Official Plan states:

“Existing energy and communication facilities and the development of new facilities will be permitted without amendment to this Plan, provided that the development satisfies the provisions of the Environmental Assessment Act and other relevant statutes, and is carried out having regard to the provisions of this Plan. Where energy or communication facilities are proposed, they will be designed and located so as to avoid potential adverse environmental, social, health and aesthetic impacts. In this regard, the following should be considered:

- The co-location of facilities, where possible, to reduce overall numbers;
- Locating facilities within or along existing utility or transportation corridors;
- Setback from waterbodies and the impact of the structure on the lake horizon;
- Construction of towers and antennas to heights below those requiring lighting devices in order to help preserve the night sky; and,
- The impact on natural areas including fish and wildlife habitat and wetlands.”

(Township of The Archipelago, 2010).

Similarly, the Municipality of McDougall Official Plan states:

“Existing energy and communication facilities and the development of new facilities will be permitted without amendment to this Plan, provided that the development satisfies the provisions of the Environmental Assessment Act and other relevant statutes, and is carried out having regard to the provisions of this Plan. Where energy or communication facilities or utilities are proposed, they will be designed and located so as to avoid potential adverse environmental, social, health and aesthetic impacts. In this regard, the following should be considered:

- The location of facilities, where possible, to reduce overall numbers;
- Locating facilities within or along existing utility or transportation corridors;
- Setback from waterbodies and the impact of the structure on the lake horizon;
- Construction of towers and antennas to heights below those requiring lighting devices in order to help preserve the night sky; and
- The impact on natural areas including fish and wildlife habitat and wetlands.
Transmission Line Route B
Land Classifications

Aboriginal Lands
Conservation Reserve
Enhanced Management Area
General Use Area
Provincial Park
Recommended Conservation Reserve
Recommended Provincial Park
Wilderness Area

Base Layers
- Proposed Hwy 69/400 Corridor
- HONI Corridor
- Railway
- Watercourses
- Roads
- Trails
- Waterbodies
- Unincorporated Townships
- Municipalities

Crown Land

Map 1

Map 2

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Proponents of energy and communication facilities shall consult with the Municipality regarding the location of new facilities and may be requested to consult with the public.” (Municipality of McDougall, 2004).

4.5.1.5 Community Services and Infrastructure

4.5.1.5.1 Social Services and Organizations

Routes A & B:

The Parry Sound District operates the Parry Sound District Social Services Administrative Board (PSDSSAB) which oversees programs such as day care licensing, social housing units, Ontario Works (financial and employment support for those in need), and a women’s shelter in the Town of Parry Sound. Licensed childcare centres are located in:

- Parry Sound;
- South River;
- Emsdale; and
- Powassan.

The PSDSSAB indicates that there are over 40 Early Years / Best Start Child and Family Centres throughout the Districts of Parry Sound and Muskoka. Early Years Programs / Best Start Child and Family Centres enable parents and children to drop-in, meet, share, and play and find support and information for children’s programing (PSDSSAB, 2015).

The PSDSSAB owns and operates 209 affordable housing units in the District through the Parry Sound Housing Corporation. In addition to the PSDSSAB stock, there are 164 units of affordable non-profit housing stock in the District (PSDSSAB, 2015).

The Manitoulin-Sudbury DSB oversees social and emergency services within the Manitoulin District and Sudbury District, including the Municipality of Killarney. The DSB is responsible for Ontario Works, social housing, Emergency Medical Services (Land Ambulance) and Early Learning and Child Care Services (Manitoulin-Sudbury DSB, 2015).

4.5.1.5.2 Community Centres

Route A & B:

For many communities in Northern Ontario, arenas and community centres are synonymous with each other given that they often provide a venue for community events as well as social and recreation opportunities. For other communities, churches play a similar role as community gathering places.

Route A:

There are no community centres within the Route A socio-economic study area. Arnstein Baptist Church is located in Port Loring, a community located on Highway 522 east of HIFN I.R. #2 in Blair Township.

Route B:

The Town of Parry Sound features the Bobby Orr Community Centre, which provides ice surfaces for hockey and other sports, as well as three (3) meeting rooms. Other community events in the Town of Parry Sound are held at the municipal building on Seguin Street (Town of Parry Sound, 2015).
The Town of Parry Sound includes a number of churches and other religious offerings for residents, including denominations such as Anglican, Catholic, Mennonite, United, Church of Jesus Christ of Latter-day Saints, Baptist, Salvation Army, Pentecostal, and Jehovah’s Witness. Other churches are present in the rural communities of Parry Sound District, for example the United church in Nobel, the Mennonite and the United church in Otter Lake and the Holy Family Church in Britt.

South of Parry Sound, in the community of Otter Lake, the Foley Activity Centre is also home to the Library and the Agricultural Hall and is located on Rankin Lake Road. This centre is in close proximity to the Parry Sound TS.

Local First Nation band offices provide a gathering place for community members during community events. Magnetawan First Nation, Shawanaga First Nation, and HIFN each have a band office. The HIFN band office is located on French River Reserve No. 13.

4.5.1.5.3  Utilities

4.5.1.5.3.1 Water and Wastewater

**Route A:**

Well water or surface water are the predominant water supplies for the Route A socio-economic study area. Septic systems are also common throughout the study area.

**Route B:**

The Town of Parry Sound Public Works department operates the only municipal drinking water and waste water systems along the Route B socio-economic study area, serving an area within town limits that includes 32 kilometres of sanitary collection mains and 40 kilometres of water distribution mains (Town of Parry Sound, 2015).

Well or surface water supplies are the predominant water supply for all other areas given the prevalence of bedrock exposed or near the surface and the limited population. Septic systems are also common in rural areas of the Parry Sound District.

4.5.1.5.3.2 Electrical Utilities

**Route A:**

The Route A socio-economic study area is within the HONI electricity service territory.

**Route B:**

The proposed Route B Transmission Line is located near the Highway 69 corridor. Given the presence of dwellings and businesses along the highway, there is some local electricity distribution available. Communities along Highway 69 and some cottage areas are served by HONI.

The Town of Parry Sound has a local distribution company (LDC), Parry Sound Power, which now operates as Lakeland Power. Parry Sound Power Corporation (Wiresco) owns the land, land rights, distribution station, poles, towers and fixtures, overhead and underground conductors and devices, underground conduit, line transformers, services and meters. Wiresco distributes power from Genco to its customers and is responsible for the activities relating to the transmission, distribution and retailing of electricity. The coverage area is limited to areas on the west side of the existing Highway 69, with the exception of a small area near Mill Lake. All other electricity is provided by Hydrop One (Lakeland Power, 2015).
4.5.1.5.4 On-Reserve Infrastructure

Route A & B:

There is a small population at the HIFN I.R. #2 of approximately 12 households. Households are located along Bekanon Road and several cottages are located on the shores of Henvey Inlet. The majority of HIFN population resides at French River Reserve No. 13 where at the present time there are 50 houses; most have been built within the last ten (10) to fifteen years. More housing is in the planning stages along Pickerel River Road within French River Reserve No. 13 and further subdivision will occur should population continue to increase. (HIFN, 2015a)

The HIFN website identifies the following structures within its main village at French River Reserve No. 13:

- Public Works garage – 370 m²
  - This structure includes Henvey Inlet Fire and Rescue and the First Response Team.
  - Community events are held in this location as well.
- Commercial building – 110 m². This building also includes the current Band Office.
- Former Band Office – Leased by the Waabnoong Bemjiwang Association of First Nations Tribal Council.
- Subdivision development: Pickerel River Road – Under development. (HIFN, 2015a)
- Schools – None
- Daycare – Opened in 1999
- Library – Opened in 2000. The library is notable as it offers public access to reading materials as well as public internet (HIFN, 2015a; HIFN, 2015d).

Route B:

Magnetawan First Nation

Magnetawan First Nation has a band office located on Highway 529, which contains a large meeting room, offices, as well as the community library. The main commercial operation in the community is the gas bar/convenience store operation along existing Highway 69.

The community is seeking to expand its gas bar/convenience store operation. Magnetawan First Nation is also seeking other initiatives to improve economic development as the widening of Highway 69/400 may limit visibility of the gas bar (AECOM, 2014).

The main community settlement area has a water and waste treatment plant for services, and the community has a waste disposal site. HONI provides electricity for the community (Magnetawan First Nation, 2015).

Shawanaga First Nation

The Shawanaga First Nation Public Works department maintains buildings in the community village including First Nation office buildings, the Health Centre, the Recreation Centre, the Gas Bar and the Fire Hall. There is also an elementary school that operates within the community. Community members receive water by truck. Community homes use septic systems, and there are no wastewater facilities on-Reserve. (Shawanaga First Nation, 2015a).

4.5.1.6 Transportation and Traffic

Route A & B:

The Route A Transmission Line mostly follows Highway 522 and the northern section of Route B Transmission Line primarily follows the proposed Highway 69/400 widening corridor. These are provincially maintained highways with
Highway 69 being part of the Trans-Canada Highway. As such, neither highway can be closed for construction purposes without acquiring applicable MTO permits. In addition, any proponent wishing to install transmission lines or pole lines within 400 m of a provincial highway require an MTO building and land use permit and must adhere to a minimum setback of 14 m from the MTO ROW (MTO, 2009).

Additional modes of transportation serving the Route A and B socio-economic study area includes local marinas located off-Reserve that provide fixed access to the rivers in the area, including the Pickerel River. Two (2) freight railway lines owned by CN and Canadian Pacific (CP) follow the Highway 69/400 corridor connecting the Route A and B socio-economic study area to northern and southern Ontario. There is no passenger service for these railway lines. Inter-city bus service using Highway 69 is available with stops in Sudbury, Parry Sound, Britt, Byng Inlet, Point Au Baril and Key River (Ontario Northland, 2015).

The nearest major airport by car to the Route A and B socio-economic study area is the Greater Sudbury Airport located approximately 80 km north from start of the Transmission Lines on HIFN I.R. #2. There are also a number of local aerodromes and water aerodromes within 50 km of the Route A and B Transmission Lines.

**Route A:**

The Route A Transmission Line crosses Highway 69 within HIFN I.R.#2, before heading east along Highway 522. Highway 522 is a narrow, paved, two (2) lane highway with no passing lanes. Table 4-28 shows the annual average daily traffic (AADT) volume as of 2010 for the sections of Highway 522 that run adjacent to the Route A Transmission Line.

**Table 4-28: 2010 Highway 522 Annual Average Daily Traffic (AADT)**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Distance (km)</th>
<th>2010 AADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rogerson Rd(S) – Wilson Twps</td>
<td>Grundy Lake Prv Park Rd(N) Mowat Twp</td>
<td>37.4</td>
<td>450</td>
</tr>
<tr>
<td>Grundy Lake Prv Park Rd(N) Mowat Twp</td>
<td>Hwy 69 - Hwy End Of Hwy 522</td>
<td>1.0</td>
<td>870</td>
</tr>
</tbody>
</table>

*Source: MTO, 2010*

**Route B:**

Along much of the proposed Route B Transmission Line, Highway 69 is a paved, two (2) lane highway with passing lanes alternating between the northbound and southbound lanes. Highway 69 becomes Highway 400 north of the Town of Parry Sound where it is four (4) lanes. Table 4-29 shows the annual average daily traffic (AADT) volume as of 2010 for the sections of Highway 69 and Highway 400 that run adjacent to the Route B Transmission Line.

**Table 4-29: 2010 Highway 69 Annual Average Daily Traffic (AADT)**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Distance (km)</th>
<th>2010 AADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rankin Rd (W)/Hwy 69 N IC Overlap Hwy 400</td>
<td>Parry Sound Dr (W) Hall’s Quarry Rd (E)IC Up</td>
<td>15.8</td>
<td>N/A</td>
</tr>
<tr>
<td>Parry Sound Dr (W) Hall’s Quarry Rd (E)IC Up</td>
<td>Hwy 124 (E) Parry Sound Dr (W)IC Up</td>
<td>2.6</td>
<td>13,300</td>
</tr>
<tr>
<td>Hwy 124 (E) Parry Sound Dr (W)IC Up</td>
<td>Bayside Dr (W) Lake Forest Dr (E)</td>
<td>1.8</td>
<td>13,100</td>
</tr>
<tr>
<td>Bayside Dr(W) Lake Forest Dr (E)</td>
<td>Hwy 7910 Avro Arrow Rd IC Up</td>
<td>3.4</td>
<td>13,400</td>
</tr>
<tr>
<td>Hwy 7910 Avro Arrow Rd IC Up</td>
<td>JCT Sec Hwy 7287 (Old Hwy 559)Up 241</td>
<td>5.8</td>
<td>10,700</td>
</tr>
<tr>
<td>JCT Sec Hwy 7287 (Old Hwy 559)Up 241</td>
<td>A Point 5.6 Km N of Sec Hwy 559</td>
<td>5.6</td>
<td>7,250</td>
</tr>
<tr>
<td>A Point 5.6 Km N of Sec Hwy 559</td>
<td>Hwy 7182 -Shebeshekong Rd(W)</td>
<td>12.9</td>
<td>7,250</td>
</tr>
<tr>
<td>Hwy 7182 -Shebeshekong Rd(W)</td>
<td>Huntsville-Sudbury MTO District Boundary</td>
<td>4.6</td>
<td>6,900</td>
</tr>
<tr>
<td>Huntsville-Sudbury MTO District Boundary</td>
<td>Sec Hwy 644(W)N Archipelago Twp</td>
<td>4.6</td>
<td>6,900</td>
</tr>
</tbody>
</table>
Table 4-29: 2010 Highway 69 Annual Average Daily Traffic (AADT)

<table>
<thead>
<tr>
<th>Highway 69 Section</th>
<th>From</th>
<th>To</th>
<th>Distance (km)</th>
<th>2010 AADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sec Hwy 644(W)N Archipelago Twp</td>
<td>S JCT Sec Hwy 529(W)</td>
<td>Archipelago Twp</td>
<td>1.9</td>
<td>6,100</td>
</tr>
<tr>
<td>S JCT Sec Hwy 529(W) Archipelago Twp</td>
<td>N JCT Sec Hwy 529(W)</td>
<td>Magnetawan Bdy</td>
<td>20.0</td>
<td>6,600</td>
</tr>
<tr>
<td>N JCT Sec Hwy 529(W) Magnetawan Bdy</td>
<td>Sec Hwy 526(W)</td>
<td>Henvey Twp</td>
<td>5.2</td>
<td>7,050</td>
</tr>
<tr>
<td>Sec Hwy 526(W)-Henvey Twp</td>
<td>Sec Hwy 522(E)-Mowat Twp</td>
<td></td>
<td>12.8</td>
<td>6,900</td>
</tr>
</tbody>
</table>

Source: MTO, 2010

Through the Northern Highways Program 2013 - 2017, the Ontario Ministry of Northern Development and Mines (MNMD) and MTO plan to widen Highway 69/400 to four (4) lanes, with construction occurring in segments along the route between Sudbury and the Town of Parry Sound (MNMD, 2013).

The Highway 69 / Highway 400 corridor provides an important north-south link between Sudbury and Barrie, and is also a major freight shipping route. Other important highways along the Route B Transmission Line include: Highway 526 providing access to Britt, Highway 529 which provides an alternate route paralleling Highway 69 between Magnetawan First Nation and Pointe au Baril Station, and Highway 124 which links Parry Sound to Highway 11 (West Parry Sound Geography Network, 2015).

The southern portion of the Route B Transmission Line is also located near the Parry Sound Area Municipal Airport located in Seguin Township servicing local flights to and from the Parry Sound District (Seguin Township, 2012).

### 4.5.1.7 Recreation and Tourism

#### Route A & B:

According to the MTCS, both the Route A and Route B socio-economic study area are located in Tourism Region 12 (MTCS, 2015). The region’s tourism website provides links and information relating to the activities that can occur within the region, notably a number of outdoor recreation activities. The region is known as cottage country and caters to a tourism and recreation population that predominately travels to the region from May to September. While the region seeks to promote activities that can occur in all seasons, the busiest period is the summer months due to the influx of cottagers and visitors using nearby waterways and forests (Explorer’s Edge, 2015).

Notable recreational activities common within the Route A and B socio-economic study area include fishing, hunting and hiking, paddling (canoeing / kayaking), and motor sports such as ATVs and snowmobile uses. The tourism strategy for the region also identifies other pursuits such as spas, shopping, golf, health and wellness, arts and culture and area attractions (Explorer’s Edge, 2015).

Route A and the northern extent of Route B Transmission Lines are located in close proximity to the Grundy Lake Provincial Park and French River Provincial Park. These parks include camping and other recreational amenities that draw visitors to the area and provide opportunities for local businesses in the service industry including marinas at the Pickerel and French Rivers, as well as the trading post at Grundy Lake Road.

Grundy Lake Provincial Park is located approximately 2.5 km north of the Route A Transmission Line. This provincial park is 3,614 ha in size and received 104,594 visitors in 2010, with 485 developed campsites as well as other interior camping opportunities. The park has 69% camping occupancy during the peak July-August period, or 100,646 camper nights. The French River Provincial Park (73,530 ha) offers only interior camping opportunities (i.e., no developed campsites), and recorded 18,100 camper nights in 2010 (Ontario Parks, 2010).
There are also many trails and open spaces to ride ATVs in the spring, summer and fall and ride snowmobiles in the winter months. The Northeast Georgian Bay snowmobile club is the organization which has jurisdiction within the Route A and B socio-economic study area (Northeast Georgian Bay Snowmobile Club, 2015) and maintains snowmobile trails in the area.

**Route A:**

The Route A socio-economic study area is remote with little access beyond Highway 522, limiting potential recreation pursuits. Hunting, fishing, and other activities occur on Crown Land throughout the Parry Sound District, and may be present during hunting and fishing seasons. Hunting seasons for most large game species such as moose and deer are typically in the fall season, while fishing and other activities may occur throughout the year.

There are also trails and open spaces within the area that can be utilized for ATVs or snowmobiles. The proposed Route A Transmission Line crosses three (3) recreational trails.

The Route A Transmission Line is also close to the Pakeshkag River Forest Conservation Reserve, a protected forest area listed as a Conservation Reserve located approximately 2 km north of the proposed Route A Transmission Line and just east of Grundy Lake Provincial Park (NRCAN, 2015).

**Route B:**

The Route B Transmission Line is located along the proposed Highway 69/400 corridor for much of its length, a major transportation route providing access to recreational areas throughout Northern Ontario. Outdoor recreation enthusiasts utilize the transportation infrastructure and associated access roads (i.e., for logging or other past uses) to access the provincial Crown Land. The existing Highway 69 corridor provides access for many recreational land owners with cottages located in the Route B socio-economic study area, largely concentrated near the Town of Parry Sound. As shown in Section 4.5.1.1, a large part of the Parry Sound District economy serves these recreational residents.

Hunting seasons for most large game species such as moose and deer are typically in the fall season, although fishing and other activities may occur throughout the year.

There are also trails and open spaces within the Route B socio-economic study area that can be utilized for ATVs or snowmobiles. The proposed Route B Transmission Line crosses a total of 11 recreational trails.

The North Georgian Bay Shoreline and Islands Conservation Reserve is located to the west of the existing Highway 69 from the southern border of the HIFN I.R. #2, south, to the north Point au Baril forest and Wetland conservation area. This is an area of protected Crown land for recreation and traditional land uses. The area is protected from development.

The Route B Transmission Line is also close to the Round Lake Provincial Nature Reserve. This reserve includes Round Lake, as well as other smaller lakes and rivers in proximity to the proposed Route B Transmission Line.

### 4.5.1.8 Public Health and Safety

#### 4.5.1.8.1 Health and Safety Facilities and Services

**Route A:**

There is no health care access within the Route A socio-economic study area, given its remote location. The closest first response capabilities are available at French River Reserve No. 13, although ambulance dispatch
comes from the Municipality of Killarney ambulance base at Noëlville. The nearest hospitals are located in Parry Sound and Sudbury with a night landing heliport located on the French River Reserve No. 13 to assist with emergency evacuations. A nursing station is available in Britt, and is part of the West Parry Sound Health Centre system. The station was established in 2012 and has a nurse practitioner on site.

Police services in the Route A socio-economic study area are provided by the Still River detachment of the Ontario Provincial Police (Municipality of Killarney, 2015; HIFN, 2015d; Northeast Health Line, 2015).

Route B:

The Route B socio-economic study area is primarily serviced by health care facilities located in regional centres Parry Sound or Sudbury. Highway 69 provides access for ambulances along the highway based in the Town of Parry Sound, or at smaller ambulance bases such as the one (1) located in Noëlville. The nearest hospitals are located in the Town of Parry Sound and Sudbury with a night landing heliport located on the French River Reserve No. 13 to assist with emergency evacuations. A nursing station is available in Britt, and is part of the West Parry Sound Health Centre system. The station was established in 2012 and has a nurse practitioner on site.

Police services in the Route B socio-economic study area are provided by the Still River and Parry Sound detachments of the Ontario Provincial Police. Magnetawan First Nation and Shawanaga First Nation are served by Anishinabek Police Services (HIFN, 2015d; Anishinabek Police Service, 2015; Northeast Health Line, 2015)

4.5.1.9 Natural Resource Assets

4.5.1.9.1 Agriculture and Soils

Route A:

Soil survey reports published by Agriculture and Agri-Food Canada have not been completed for the Route A socio-economic study area. Available landform and geology terrain mapping published by the Ontario Geological Survey indicates that the Route A Transmission Line overlies soils classified as a sandy glaciolacustrine delta deposit associated with bedrock knob landforms, with mainly low local relief, and mixed wet and dry soils (Mollard, 1981). Agricultural potential is assumed to be low, largely due to the lack of soils within the Route A Transmission Line.

Route B:

Soil survey reports published by Agriculture and Agri-Food Canada have not been completed for the entire Route B socio-economic study area, largely due to the lack of soil and minimal agricultural potential. However, the southern 14 km of the Route B Transmission Line is included in the Soil Survey Report for Parry Sound District (Hoffman and Wicklund, 1962). This segment of the Route B Transmission Line is described by Hoffman and Wicklund as being dominated by the Rock-Monteagle Gravelly Sandy Loam soil complex, which is characterized as mainly rock with a thin covering of stony and gravelly material derived from granites and other hard rocks. West of the Route B socio-economic study area, small isolated areas of Rock-Wendigo sandy loam soil complex are noted to exist within the Soil Survey Report. This soil complex is similar to the Rock-Monteagle complex, with exception of an increased amount of fine sand. Both soil complexes have little agricultural value, but have been known to support forestry.

4.5.1.9.2 Economic Geology

Route A:

High quality aggregate deposits are not common within the Route A socio-economic study area and existing pits most commonly exploit glaciolacustrine deposits, which are too small in size to represent a significant economic
Quarrying of bedrock resources for road building materials also occurs throughout the Route A socio-economic study area. The location of nearby pits and quarries, regulated under the Aggregate Resources Act, has been included on Figure 4-9. The Route A Transmission Line does not transverse existing or abandoned pits and / or quarries.

A review of the Mineral Deposits Inventory published by the Ontario Geological Survey (2014) indicates discretionary occurrences of peat and uranium within the Route A socio-economic study area, however, these deposits do not intersect the alignment of the Route A Transmission Line.

**Route B:**

High quality aggregate deposits are not common within the Parry Sound region and existing pits most commonly exploit glaciolacustrine deposits, which are too small in size to represent a significant economic resource. Quarrying of bedrock resources for road building materials also occurs throughout the area. The location of nearby pits and quarries, regulated under the Aggregate Resources Act, has been included on Figure 4-12.

A total of 12 authorized aggregate resources are located within the 1 km of the Route B Transmission Line ROW, as shown on Figure 4-12 and Table 4-30 below. Three (3) of the authorized aggregate resources are located adjacent to the Route B Transmission Line ROW. These resources were carried forward to determine if the proposed Transmission Lines will have any potential impacts to aggregate extraction activities.

### Table 4-30: Aggregate Resources

<table>
<thead>
<tr>
<th>Area (ha)</th>
<th>Licence Class</th>
<th>Status</th>
<th>Distance from Transmission Line ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Class A Licence &gt; 20,000 tonnes</td>
<td>Active</td>
<td>204 m</td>
</tr>
<tr>
<td>11.41</td>
<td>Class B Licence &lt;= 20,000 tonnes</td>
<td>Active</td>
<td>269 m</td>
</tr>
<tr>
<td>35.61</td>
<td>Class A Licence &gt; 20,000 tonnes</td>
<td>Active</td>
<td>410 m</td>
</tr>
<tr>
<td>9.51</td>
<td>Class B Licence &lt;= 20,000 tonnes</td>
<td>Surrendered</td>
<td>701 m</td>
</tr>
<tr>
<td>112.55</td>
<td>Class A Licence &gt; 20,000 tonnes</td>
<td>Active</td>
<td>831 m</td>
</tr>
<tr>
<td>13.05</td>
<td>Class B Licence &lt;= 20,000 tonnes</td>
<td>Active</td>
<td>Adjacent</td>
</tr>
<tr>
<td>19.25</td>
<td>Aggregate Permit</td>
<td>Active</td>
<td>Adjacent</td>
</tr>
<tr>
<td>5.42</td>
<td>Aggregate Permit</td>
<td>Active</td>
<td>Adjacent</td>
</tr>
<tr>
<td>5.2</td>
<td>Aggregate Permit</td>
<td>Active</td>
<td>Adjacent</td>
</tr>
<tr>
<td>0.65</td>
<td>Aggregate Permit</td>
<td>Active</td>
<td>Adjacent</td>
</tr>
<tr>
<td>40.92</td>
<td>Class A Licence &gt; 20,000 tonnes</td>
<td>Active</td>
<td>818 m</td>
</tr>
<tr>
<td>122.36</td>
<td>Class A Licence &gt; 20,000 tonnes</td>
<td>Active</td>
<td>288 m</td>
</tr>
<tr>
<td>11.3</td>
<td>MTO permit</td>
<td>N/A</td>
<td>Adjacent</td>
</tr>
<tr>
<td>23.2</td>
<td>MTO permit</td>
<td>N/A</td>
<td>Adjacent</td>
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<tr>
<td>15.6</td>
<td>MTO permit</td>
<td>N/A</td>
<td>Adjacent</td>
</tr>
</tbody>
</table>

Source: MNRF, 2015

A review of the Mineral Deposits Inventory published by the Ontario Geological Survey (2014) indicates fourteen records for mineral occurrences within the Route B socio-economic study area. These occurrences include five (5) past producing quarries and / or developed prospects of gneiss, four (4) discretionary mineral occurrences of copper, one (1) discretionary mineral occurrence of each graphite, mica, feldspar, and uranium and one (1) mineral occurrence of peat.
4.5.1.9.3 Other Resources

Route A & B:

The dominant landscape feature within both the Route A and B socio-economic study areas is the Canadian Shield and boreal forest. The Canadian Shield is known to yield bedrock for aggregate extraction, mineral and ore deposits for mining, forests suitable for logging, and lakes and rivers which are used for fishing.

Much of the land within both the Route A and B socio-economic study areas is Crown Land, where hunting and fishing are typically permitted for individuals licenced by the Province. While other activities such as mineral extraction, forestry, and trapping require permits for specific geographic areas.

4.5.1.9.3.1 Petroleum

Route A & B:

There are no known petroleum resources in development or operations within either the Route A or B socio-economic study areas.

4.5.1.9.3.2 Forestry

Route A & B:

Both the Route A and B socio-economic study areas are located within the jurisdiction of the French-Severn Forest Management Plan. The plan covers the entirety of the French / Severn Forest east of Georgian Bay and west to Algonquin Park. The French-Severn Forest Management Plan was developed and is maintained by a non-profit organization operating in the forest management plan area, Westwind Forest Stewardship. (MNRF / Westwind Forestry Management, 2009-2019).

4.5.1.9.3.3 Mining

Route A:

There are no known operating mines within the Route A socio-economic study area. One (1) identified mine claim is located approximately 2.5 km north of the Route A Transmission Line.

Route B:

There are no known operating mines within the Route B socio-economic study area, although there are 11 staked claims along the route. The total crossing length of these claims is 1.1 km.

4.5.2 Heritage and Culture

4.5.2.1 Aboriginal Interests

On June 19, 2015, MOECC provided a copy of a list identifying the Aboriginal communities to be engaged as part of this project, based on their Aboriginal interests. This list was also confirmed by MNRF on June 25, 2015.
The list of First Nation and Métis groups to be engaged for this project included the following:

- Henvey Inlet First Nation
- Magnetawan First Nation
- Shawanaga First Nation
- Wasauksing First Nation
- Dokis First Nation
- Chippewas of Georgina Island First Nation
- Beausoleil First Nation (Christian Island) First Nation
- Chippewas of Rama First Nation
- Métis Nation of Ontario Consultation Office and community councils:
  - Georgian Bay Métis Council
  - Moon River Métis Council

All communities on the MOECC list will continue to be engaged as part of this project through project notices, invitations to public events, and opportunities to provide information related to the project related to their Aboriginal rights or treaty rights.

The following sections provide more detailed information pertaining to Aboriginal communities on the MOECC list that are within the Route A or Route B socio-economic study areas, i.e., those with reserve lands that are directly crossed by transmission line infrastructure:

- Henvey Inlet First Nation (HIFN),
- Magnetawan First Nation (MFN), and
- Shawanaga First Nation (SFN).

### 4.5.2.1.1 Aboriginal Communities: Overview and Potential Interests

#### Route A & B:

The Route A and B socio-economic study areas are located within the Robinson-Huron Treaty area, a large treaty signed in 1850 covering much of northeastern Ontario along Georgian Bay and the North Shore of Lake Huron. The following First Nations communities are located directly within the Route A and B socio-economic study areas:

- HIFN;
- Magnetawan First Nation; and
- Shawanaga First Nation.

These Robinson Huron Treaty communities are anticipated to have the highest potential interest in the Transmission Line given their location and expected traditional use of the region.

The Route A and B socio-economic study areas are also located within the Williams Treaties boundaries; a treaty signed between the Crown and the Mississauga and Chippewa communities to the South (now Central Ontario) in 1923 for areas deemed to have been improperly ceded under previous treaties. Signatories of this treaty are expected to have treaty rights pertaining to the Route A and B socio-economic study areas, although with less potential interest due to their current community locations in southern Ontario.
4.5.2.1.1 Aboriginal Communities: Anishinabek Cultural History

The Robinson Huron Treaty and Williams Treaty signatory communities are considered Anishinabek peoples, a collective term meaning “First People.” When the Anishinabek people first encountered European fur traders, there were many similar, but politically autonomous groups in what is now Ontario. Many of the Bands or Tribes were given different names despite sharing many common linguistic and cultural similarities. Some examples of these names are Algonquin, Ojibway, Odawa, Chippewa, and Mississauga.

Today, the concept of an Anishinabek Nation now links speakers of the Ojibway language. The Odawa (or Ottawa), occupied much of the north shore of Gregorian Bay and Manitoulin Island and Bruce Peninsula, where they bordered on the Huron and Petun communities (McMillan and Yellowhorn, 2004). Their role as intermediaries in the trade with these Iroquoian communities gave rise to calling them ‘traders’. The Algonquin inhabited the Ottawa Valley and adjacent regions in the early contact period. They are all collectively referred to as Anishinabek or Ojibwa, because linguists determined they all speak the same language in different dialects (McMillan and Yellowhorn, 2004; Schmalz, 1991).

The region encompassing the Route A and B socio-economic study areas was first explored by Europeans in the early 1600s, who travelled the French River into Georgian Bay from the Ottawa River. This led to the development of fur trade posts in the area and the beginning of European settlement.

4.5.2.1.2 Métis Overview and Potential Interests

Route A & B:

The Métis are an Aboriginal people as enshrined by the Canadian Constitution Act, 1982 and as such have Aboriginal rights.

The Métis Nation of Ontario provides services to many Métis groups throughout Ontario, and oversees a series of Community Councils which serve as an organizational hub for local Métis individuals. According to the MOECC list provide on June 19, 2015, the following Métis Community Councils may have an interest in Route A and B socio-economic study areas:

- MNO Georgian Bay Métis Council
- MNO Moon River Métis Council

4.5.2.1.2.1 Métis Cultural History

The Métis are the descendants of mixed European and Aboriginal ancestry that, over time, developed into a unique culture within Canada. Métis culture has many ties to the early fur trading practiced by French (as well as some English and Scottish) traders which were some of the first visitors to the interior of North America.

French fur traders are known to have used the French River and related watershed to transport furs and explore the area between the Ottawa River and Georgian Bay. The proximity of this trade route may suggest that Métis Councils could have Aboriginal interests pertaining to the Route A and B Transmission Lines.

The Métis Nation of Ontario has a harvesting agreement with the Ministry of Natural Resources and Forestry, outlined in a 2004 MNO-MNRF Harvesting Agreement. The Métis Nation of Ontario 2011 Harvesting Policy based on this agreement allows for Métis citizens to harvest for personal use items such as plants, fish, wildlife and firewood gathered for heating, food, medicinal, social or ceremonial purposes (Métis Nation of Ontario, 2011). The Métis Nation of Ontario identifies that the Georgian Bay coastal areas are part of the Georgian Bay Traditional Harvesting Territory (Métis Nation of Ontario, 2015).
4.5.2.1.3 Treaties

Route A & B:

There are two (2) treaties that pertain to the Route A and B Transmission Lines, namely:

- Robinson-Huron Treaty (1850)
- Williams Treaties (1923)

4.5.2.1.3.1 Robinson Huron Treaty (1950)

The first treaty signed within this region was the Robinson-Huron Treaty, a treaty signed between Crown representatives and the communities living along northern Georgian Bay and the North Shore of Lake Huron, which it called the “Ojibewa Indians of Lake Huron”. The 1850 Robinson Huron Treaty was different from others negotiated in the southern portion of the Province in that they promised the creation of Reserves, annuities, and the continued right to hunt and fish on unoccupied lands. The boundaries of the treaty extended from the lake shore between the Sault Ste. Marie area and the southern end of Georgian Bay to the height of land, an ill-defined area inland that extended to the limits of the lake’s watershed. (AANDC, 2013)

The Robinson Huron Treaty established reserve lands for the signatory bands, which included First Nations throughout the extensive territory. All First Nation reserves for HIFN, Magnetewan First Nation, and Shawanaga First Nation within the Route A and B socio-economic study areas were formed as a result of this treaty.

4.5.2.1.3.2 Williams Treaties (1923)

The Route A and B Transmission Lines also fall within the limits of the Williams Treaties signed in 1923, although HIFN, Magnetawan First Nation, and Shawanaga First Nation are not signatories. Signatories of the treaty included the Chippewas of Lake Simcoe, Lake Huron and the Mississaugas of Rice Lake, Scugog, Curve Lake and Alderville in central Ontario.

The MOECC list of Aboriginal communities to be engaged on this project included four signatories of the Williams Treaties:

- Chippewas of Rama First Nation;
- Chippewas of Georgina Island First Nation;
- Beausoleil First Nation; and
- Wasauksing First Nation

The Robinson Huron Treaty and Williams Treaties appear to overlap, and the applicability of these treaties and associated rights are ongoing. Figure 4-14 identifies the Williams Treaties area as well as the Robinson Huron Treaty area. HIFN, Magnetawan First Nation and Shawanaga First Nation are signatories of the Robinson Huron Treaty shown as a green diamond symbol in Figure 4-14.

4.5.2.1.4 Land Claims

Route A:

One (1) land claim is in negotiations within the proposed Route A socio-economic study area. The claim pertains to the illegal appropriation of land from HIFN I.R. #2 for the James Bay Railway in 1907. The Route A Transmission Line traverses railway lands at the western extent of the route which may be associated with this land claim negotiation process.
Figure 4-14: Pre-1975 Treaties, showing the Robinson Huron Treaty and the Williams Treaties

Route B:

Table 4-31 shows a list of existing and concluded claims presented by First Nations within the Route B socio-economic study area, including their current status and potential relevance. Notably, each community has asserted concerns about transportation (road and rail) and utilities (telephone and electricity) expropriations due to past activities in the region.

Table 4-31: Specific Land Claims – Route B

<table>
<thead>
<tr>
<th>Claim</th>
<th>Status</th>
<th>Potential Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIFN James Bay Railway: Alleged illegal appropriation of land from the HIFN I.R. #2.</td>
<td>In negotiations. Claimant agreed to negotiate January 17, 2012</td>
<td>Yes. This claim refers to HIFN I.R. #2. Railway lands off-reserve may be associated with this claim.</td>
</tr>
<tr>
<td>Magnetawan First Nation 4 CPR Lines on IR 1: Alleges a breach of fiduciary duty while executing and managing Reserve lands during and after the construction of the CP Railway.</td>
<td>In negotiations</td>
<td>No. Focused on the CP Railway route through the community.</td>
</tr>
</tbody>
</table>
Table 4-31: Specific Land Claims – Route B

<table>
<thead>
<tr>
<th>Claim</th>
<th>Status</th>
<th>Potential Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boundaries of Magnetawan: Alleges a failure to properly set out the boundaries of Magnetawan Reserve No. 1 under the Robinson Huron Treaty.</td>
<td>In negotiations</td>
<td>Yes. Pertains to the Magnetawan Reserve No. 1 which is intersected by the Route B Transmission Line.</td>
</tr>
<tr>
<td>Highways: Alleges the Crown breached its obligations to the claimant with respect to the construction of four (4) roads on Reserve land between 1883 and 1958, the construction of a parking lot in 1936, a drainage ditch in 1959, and a ‘visibility triangle’ in 1963.</td>
<td>In negotiations</td>
<td>Yes. Pertains to the Magnetawan Reserve No. 1 which is intersected by the Route B Transmission Line.</td>
</tr>
<tr>
<td>Surrenders to Hydro Line IR 1: Alleges unlawful use and occupation of IR 1 from 1950; failure to provide adequate compensation and failure to provide services.</td>
<td>In negotiations</td>
<td>Yes. Pertains to the Magnetawan Reserve No. 1 which is intersected by the Route B Transmission Line. May be of special interest due to the connection and use of this line by the Route B Transmission Line, although the connection is far from the community.</td>
</tr>
<tr>
<td>4 CPR Lines on IR 1: Alleges a breach of fiduciary duty while executing and managing Reserve lands during and after the construction of the CP Railway.</td>
<td>In negotiations</td>
<td>No. Focused on the CP Railway route through the community.</td>
</tr>
<tr>
<td>Ontario Hydro &amp; Bell Canada Trespasses</td>
<td>Concluded</td>
<td>No.</td>
</tr>
<tr>
<td>The Band alleges that the Hydro-Electric Power Commission of Ontario unlawfully occupies the Shawanaga FN’s two (2) Reserves, and has never paid proper compensation for the lines. The Band further alleges that Bell Canada never received authorization to occupy the Reserves, nor did they pay any compensation. The Band claims that Canada breached provisions of the Indian Act and breached its fiduciary duty by failing to obtain proper compensation.</td>
<td>No lawful obligation found</td>
<td>No.</td>
</tr>
<tr>
<td>Robinson Huron Chiefs Treaty Rights</td>
<td>Concluded</td>
<td>No. However, the request for a renegotiated treaty regarding hunting and fishing identifies the importance of these items to the communities involved, including Shawanaga First Nation.</td>
</tr>
<tr>
<td>Chiefs of the Robinson-Huron Treaty area asked that their treaty dated 1850 be renegotiated alleging that the Crown failed to meet certain commitments under the treaty specifically: Crown liability regarding Indian land, hunting / fishing rights.</td>
<td>No lawful obligation found</td>
<td></td>
</tr>
<tr>
<td>HIFN and Magnetawan First Nation (as well as other communities)</td>
<td>Concluded</td>
<td>No. However, the request for a renegotiated treaty regarding hunting and fishing identifies the importance of these items to the communities involved.</td>
</tr>
<tr>
<td>Treaty Rights: Chiefs of the Robinson-Huron Treaty area asked that their treaty dated 1850 be renegotiated alleging that the Crown failed to meet certain commitments under the treaty specifically: Crown liability regarding Indian land, hunting / fishing rights.</td>
<td>No. However, the request for a renegotiated treaty regarding hunting and fishing identifies the importance of these items to the communities involved.</td>
<td></td>
</tr>
<tr>
<td>Anishinabek Nation UOI – Of which Magnetawan First Nation and HIFN are members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Government Negotiations</td>
<td>Accepted for negotiations. Negotiations to finalize a treaty.</td>
<td>Likely. This is a general claim that may have some relevance for the management of Crown lands in this region, although no agreement has been reached.</td>
</tr>
<tr>
<td>Anishinabek Nation UOI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: AANDC, 2015d
4.5.2.2 Land and Resources Used for Traditional Purposes by Aboriginal Persons

Route A & B:

4.5.2.2.1 Traditional Land Use

HIFN, Magnetawan First Nation and Shawanaga First Nation are Anishinabek communities located within the Route A and B socio-economic study areas, and have Aboriginal and Treaty Rights associated with traditional land uses in the areas. Under the Robinson-Huron Treaty, signatory communities were allowed to continue hunting and fishing within the territory, and these rights still extend to lands both on-Reserve and off-Reserve (Crown lands).

Anishinabek subsistence was based on the annual round of hunting, fishing and plant collecting. The winter was devoted to the pursuit of moose, deer, bear and other large game. In the spring, families would return from their hunting camps to rejoin others at their major fishing sites. Pickerel, pike and suckers could be caught throughout the summer, and autumn spawning brought whitefish, trout and sturgeon close to shore. The Anishinabek netted or speared large quantities of fish, and the fisheries became centres of community life and cultural interaction. (McMillan and Yellowhorn, 2004). Plant foods have always played an important role in Anishinabek economy; maples were tapped, berries collected, and wild rice harvested from the shallow waters of nearby lakes. In order to transport food stuffs and travel between different resource areas Anishinabek people utilized birch bark canoes. These canoes were tough, but lightweight, which allowed for easy portage between waterways (McMillan and Yellowhorn, 2004).

HIFN prepared the Traditional Land Use Study Related to Proposed Four Lane Highway 69. Community members and groups were interviewed to provide information on historic and current land uses within the community’s traditional territory.

Due to the confidential nature of sensitive community information, a general summary is provided without identifying specific locations.

- **Food Sources**: Hunting, fishing, trapping, gathering as well as cultural practices, all of which occur within HIFN’s traditional territory.
  - The community historically consumed much more fish than large game as fishing was far easier than hunting larger game.
  - Gathering for food included various species of naturally occurring berries.
  - Squash and corn were planted as a food source.

- **Animal behaviours**: The knowledge level within the community was demonstrated as members identified locations on-Reserve that are particularly important for their traditional way of life, including fish spawning areas and deer crossing locations.

- **Gathering (Ceremonial)**: Items gathered for their cultural and spiritual value included types of bark and plants added to teas or as part of smudging ceremonies. Sweet grass is of particular importance to the community.

- **Settlements**: The site of a historic village for the community was identified within Reserve lands, as well as former cabin and camp locations. These locations are typically associated with rivers and waterbodies that cross the community’s traditional territory. Inland areas were not used for settlements, but rather were for hunting, trapping, gathering traditional medicines, and making syrup.

- **Sacred locations**: These refer to areas such as grave sites. These areas are present, but are particularly sensitive for community members. Many of these locations are not to be shared with individuals outside of the community. Identified burial locations include ceremonial locations (such as sweat lodges), and sacred areas which should be avoided by development.
• **Travel routes**: These routes typically corresponded with access provided by rivers. These travel routes were identified as having economic, historical and cultural significance. Some built trails such as railway right of ways or other existing trails were also important to the community.

• **Landmarks**: Mapped built infrastructure or features on the land such as former hotels or camps, beach sites, or local landmarks that are important for the community’s sense of place. (HIFN, 2013).

• **SAR**: The community has raised concerns about SAR, including the Blanding’s Turtle.

• **Water**: Surface water and ground water are important to the community. Water has important linkages to travel, drinking water, and cultural uses. (HIFN, 2013).

Magnetawan First Nation also completed an Aboriginal Traditional Land Use Study (TLUS) related to the Highway 69 expansion project. As with the HIFN study, the information contained within the report is considered sensitive and confidential. Permission was granted by Magnetawan First Nation to use the study for internal scoping purposes. Based on the review of the study, no traditional land use information was identified within the Route A study area.

Aboriginal traditional land uses are present within the Route B study area. A general summary is provided without identifying specific locations to maintain the confidential nature of the TLUS:

• **Cultural and Community Sites**: Areas associated with the community’s cultural practices. These also include natural land forms that are of significance to the community, or important landmarks for navigation.

• **Hunting**: Hunting remains an important part of the way of life of many Magnetawan First Nation members. Primary species include moose, deer and partridge (ruffed grouse and spruce grouse).

• **Trapping**: Trapping for fur bearing animals historically took place in the region, however trapping has been less prevalent in recent years since it is harder to make a living on low fur prices.

• **Fishing**: Fishing remains an important land use for the people of Magnetawan First Nation within its traditional territory as a food source. The most commonly mentioned species of fish caught is pickerel/walleye, followed by bass, northern pike, and rainbow smelt.

• **Gathering**: Gathering sites are used to obtain natural medicines, plants for food sources, and items for ceremonies. Many community members are reluctant to share information on medicinal plants out of concern for their care and safe use. A local biologist on the study confirmed that none of the plants are regionally rare.

• **Trails**: Trails and portages are important for Magnetawan First Nation community members for accessing areas for traditional land uses.

A request has been made to Shawanaga First Nation for Aboriginal traditional land use information pertaining to Route A and Route B Transmission Lines. The community will be examining the maps provided to identify potential areas of interest or concerns related to their Aboriginal interests.

### 4.5.2.2.2 Current Aboriginal Resources and Land Use

#### 4.5.2.2.2.1 Current Land Use On-Reserve: First Nations Land Management Act Policies

In 2006, HIFN became a signatory of the *First Nations Land Management Act*, and entered into a separate agreement in 2009 with the Minister of Indian Affairs and Northern Development (now AANDC). The community now has the authority to enact laws in relation to environmental assessment and environmental protection on its Reserve lands. The community has developed an environmental law covering the EA process.
Shawanaga First Nation and Magnetawan First Nation have also ratified land codes under the *First Nations Land Management Act*. Shawanaga First Nation ratified its land code agreement on May 20, 2015 as part of a community ratification vote while Magnetawan First Nation ratified its land code agreement on June 20, 2015 (Shawanaga First Nation, 2015; Anishinabek News, 2015).

### 4.5.2.2.2 Regional Natural Environment Interests

As part of the Robinson-Huron Treaty, signatory communities are able to continue their traditional land uses such as hunting and harvesting within the Robinson Huron Treaty area. HIFN, Magnetawan First Nation, and Shawanaga First Nation are the closest communities to the Route A and B socio-economic study areas with these treaty rights. The Métis Nation of Ontario has a harvesting agreement with the MNRF pertaining to harvesting (such as hunting, fishing, and gathering) for personal purposes. Section 4.5.3.1.2 includes additional information on Métis interests.

HIFN, Magnetawan First Nation and Shawanaga First Nation are located within the French / Severn Forest. The French-Severn Forest Management Plan governs the Route A and B socio-economic study areas, as well as forests east of Georgian Bay and west to Algonquin Park. The French-Severn Forest Management Plan was developed using an Aboriginal Background Information Report prepared by Westwind Forest Stewardship, a non-profit organization operating in the forest management plan area who is the Sustainable Forest License holder (Ministry of Natural Resources / Westwind Forestry Management, 2009).

There are seven (7) First Nations that were involved in the development of the French-Severn Forest Management Plan, all situated along the Highway 69 / Highway 400 corridor. They include:

- HIFN;
- Magnetawan First Nation;
- Shawanaga First Nation;
- Wasausking First Nation;
- Moose Deer Point First Nation;
- Wahta Mohawks; And
- Dokis First Nation (located on the border of the French / Severn Forest).

The Plan summarized the interests of First Nations in the area as tending towards Crown land when using land off-Reserve for hunting, fishing, gathering and spiritual/cultural practices. Some communities are interested in fisheries management and watersheds, renewable energy opportunities, economic development opportunities, interest in shared stewardship opportunities across the land base, and preserving Aboriginal cultural values.

The French-Severn Forest Management Plan also identified Aboriginal interests in the following areas:

- **Forestry Compensation**: the issue most commonly articulated by Robinson-Huron Treaty signatory communities who feel strongly that Resource Benefit Agreements or revenue sharing (i.e., Crown dues) is a fundamental part to their treaty rights.

- **Forest Harvesting**: Many First Nations continue to express interest in easy access to timber harvests within close proximity to their communities for personal / communal use (in accordance with Sappier / Gray), or commercial profit. There is growing interest in some communities in supporting emergent bio-energy opportunities through post-harvest processing (i.e., chipping).

- **Forest Spraying**: Early and ongoing communication throughout the Forest Management Plan’s life cycle is very important to many communities. With respect to spray programs, First Nations may have site specific values interests which need to be considered, or conversely may wish to participate in on-Reserve treatments at the same time as the nearby Crown forest.
Access: With continued and growing pressures on access to resources by various third party interests, First Nations continue to be concerned that both physical access to Crown land and access to the resources themselves are threatened. In the case of Robinson-Huron Treaty signatories, this is acutely expressed as a potential threat to their treaty rights.

Values Protection: this is perhaps the issue of greatest interest and discussion, as well as the most challenging. The protection of Aboriginal values throughout the planning cycle is of key importance to First Nations, MNRF, Westwind and their partners, and the Planning Team as a whole. Continuing to foster and build strong, trusting relationships between all parties is key in protecting Aboriginal values across the Forest.

Source: MNRF/ Westwind Forest Stewardship Inc., 2009

Magnetawan First Nation and HIFN are members of the UOI (the Anishinabek Nation), a 39-member First Nation political organization that advocates for member interests, including lands and resources access. The organization asserts aboriginal interests in water quality, trapping through an existing Trapping Harmonization Agreement with Federal and Provincial entities, Aboriginal participation in the forestry and mining sectors, as well as ongoing negotiations regarding resource benefit sharing. Many of these interests are expected to be shared by the First Nations given their membership in the organization. (Anishinabek Nation, 2015). Shawanaga First Nation is not a member of the Anishinabek Nation organization and has chosen to remain independent - despite being culturally an Anishinabek community.

4.5.2.2.3 Route Considerations

HIFN performed a Transmission Route Selection Overview Study to determine the most appropriate alignment from the community’s perspective. This document noted that the HONI 500 kV ROW parallel option had a high potential for archaeological and historical resources “due to the proximity to numerous watercourses and use of such waterways by First Nations and European settlers” (HIFN, n.d.). Extensive studies would have been required. This option was later discarded since:

- It is a remote location with little knowledge of ecological features, and existing MNR data coverage was only 1%; and
- Ten species and associated habitats for endangered and threatened species that are protected under the Endangered Species Act were likely to have high potential to be encountered along the HONI 500 kV route.

An alternate MTO proposed route was also discarded. It was not selected due to the route’s many turns and its excessive length.

The preferred option studied was the Highway 69 / Highway 400 widening route. The route was preferred since part of it had already been cleared, natural heritage features are well understood, and potential effects have been thoroughly studied. It also has support from HIFN as the preferred route since, among other considerations, potential cultural and environmental effects can be contained to a single corridor (HIFN, n.d.).

4.5.2.2.3 Other Aboriginal Current and Traditional Resources and Land Use

There may be additional Aboriginal current and traditional resources or land uses occurring in the Route A and B socio-economic study areas, such as from other First Nations communities or from Métis communities. The EA team will continue to work with the Crown to determine where there may be potential for other Aboriginal or treaty interests in the area.
4.5.2.2.4 Reserve Land

Reserve lands are those areas that were set aside under treaties for use by the descendants of the treaty signatory bands. The Reserve lands within the Route A and B socio-economic study areas are each the result of the Robinson Huron Treaty.

**Route A:**

The Route A socio-economic study area includes a portion of HIFN I.R. #2. This Reserve is on the northeast shore of Georgian Bay, approximately 90 km south of Sudbury on the west side of Highway 69 and 71 km north of Parry Sound, at approximately 40 degrees 50’ north latitude and 80 degrees 40’ west longitude. The Reserve has an area of 9,232.86 ha. No other First Nation Reserve lands are located within the Route A socio-economic study area.

**Route B:**

The Route B socio-economic study area also includes a portion of HIFN I.R. #2. From HIFN I.R. #2, the proposed Route B Transmission Line travels south through Magnetawan First Nation Reserve No. 1, close to the community settlement area at the Magnetawan River crossing of Highway 69. The main village of Magnetawan First Nation community is on the west side of Highway 69, although some dwellings are located on the east side. The community is located 100 km southwest of North Bay and six (6) km east of Georgian Bay.

The Route B Transmission Line continues south outside the boundaries of Shawanaga First Nation’s Naiscoutaing No. 17A Reserve and intersects Shawanaga First Nation Reserve No. 17 south of Pointe au Baril. Shawanaga First Nation has a total of three (3) First Nation Reserves within the Route B socio-economic study area:

- **Naiscoutaing Reserve No. 17A** is located 100 km southwest of North Bay with an area of 1059.10 ha;
- **Shawanaga First Nation Reserve No. 17** is located 105 km southwest of North Bay, 3 km east of Georgian Bay with an area of 3376.30 ha; and
- **Shawanaga First Nation Reserve No. 17 B** is located 112 km southwest of North Bay with a total area of 73.40. The Reserve is known locally as Shawanaga Landing.

Shawanaga First Nation describes its traditional territory as bordering the Seguin River to the south, the Magnetawan River to the north and extending to Georgian Bay (including the 30,000 islands) and east to the Ottawa valley (Shawanaga First Nation, 2015). Each of these Reserves is shown on **Figure 4-12**.

4.5.2.3 Archaeology

Archaeological research has classified the various developments based on the technological, stylistic patterns, and cultural changes identified in artifacts over time. A pre-contact settlement chronology based on cultural and temporal history of occupations in Central Ontario is provided in the Stage 1 Archaeological Assessment Report will be provided in the Final ERR.

The effects of the Transmission Line on archaeological sites or material are evaluated during Stage 1 and 2 archaeological assessments. During the Stage 1 assessment, research areas of archaeological potential were identified in the Route A and B socio-economic study areas and a Stage 2 archaeological survey is ongoing. The Stage 2 archaeological assessment involves the physical survey of all areas with archaeological potential to determine if any archaeological resources are present within the Route A and B socio-economic study areas and will identify which areas are free of archaeological concerns. If archaeological resources are identified, mitigation measures and recommendations for further work will be included in the Stage 2 report.
4.5.2.3.1 Stage 1 Archaeology Assessment

Route A:

The Stage 1 archaeological assessment study area for Route A encompasses Route A socio-economic study area, and more, to accommodate uncertainty in the route at the time the study was initiated the Stage 1 archaeological assessment study area for Route A is located in the Unincorporated Townships of Henvey, Mowat and Blair in the District of Parry Sound as shown on Figure 4-15. The Stage 1 archaeological assessment study area extends from the eastern boundary of HIFN I.R. #2 east to the existing 500 kV HONI system.

The MNRF governs archaeological assessments on Crown land and requires that archaeological assessments meet the Standards and Guidelines established by the MTCS (Ontario Government, 2011b). Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property.

Criteria commonly used by the Ontario MTCS (Ontario Government, 2011b: 17-18) to determine areas of archaeological potential include:

- Proximity to previously identified archaeological sites;
- Distance to various types of water sources;
- Soil texture and drainage;
- Glacial geomorphology, elevated topography and the general topographic variability of the area;
- Resource areas including food or medicinal plants, scarce raw materials and early Euro-Canadian industry;
- Areas of early Euro-Canadian settlement and early transportation routes;
- Properties listed on municipal register of properties designated under the Ontario Heritage Act (Government of Ontario 1990b);
- Properties that local histories or informants have identified with possible archaeological sites, historical events, activities or occupants; and
- Historic landmarks or sites.

Certain features indicate that archaeological potential has been removed, such as land that has been subject to extensive and intensive deep land alterations that have severely damaged the integrity of any archaeological resources. This includes landscaping that involves grading below the topsoil level, building footprints, quarrying, sewage and infrastructure development (Ontario Government, 2011b, Section 1.3.2).

4.5.2.3.1.1 Pre-contact Aboriginal and Contact Period Archaeological Potential

The potential for pre-contact and contact period Aboriginal archaeological resources within the Route A Stage 1 archaeological assessment study area is judged to be high within 50 m of modern watercourses, within 300 m of previously identified areas of cultural significance, and within 150 m of well-drained soil in close proximity to marshes, wetlands or watercourses (Ontario Government 2011b: Section 1.4). The presence of two (2) registered archaeological sites within the Route A Stage 1 archaeological assessment study area boundaries increases the potential for archaeological remains. It has been noted also, that multiple archaeological sites exist beyond the Route A Stage 1 archaeological assessment study area boundaries. Outside these designated proximities the potential for pre-contact Aboriginal archaeological resources is low; however there is moderate potential for archaeological materials that are not in the ground (i.e., pictographs and quarry sites). Additionally, the presence of multiple fur trade post increases the potential for archaeological remains. Therefore, further Stage 2
Figure 4-15

Henvey Inlet Wind LP

Transmission Line A Cultural Heritage & Archaeology Study Area

June 2015

Datum: NAD 83, Zone 17
Source: Stantec, OBM, LIO

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archaeological investigation is recommended to clear Route A Transmission Line and ensure there are no impacts to culturally significant sites that may not have been previously recorded. As no glacial shorelines are found within Route A Stage 1 archaeological assessment study area this type of feature does not impact the evaluation of pre-contact Aboriginal archaeological potential. Contact period resources in the Route A Stage 1 archaeological assessment study area consist of significant watercourses which would have been equally important to both Euro-Canadian and First Nations people during this time, and the possibility for raw material quarrying activities.

4.5.2.3.1.2 Euro-Canadian Archaeological Potential

The potential for Euro-Canadian archaeological resources is judged to be high within 150 m of historic transportation routes and areas of early Euro-Canadian settlement and industry (Ontario Government 2011b: Section 1.4). Outside of these designated proximities the potential for Euro-Canadian archaeological resources is low and no Stage 2 archaeological assessment is recommended.

Many early roads were not followed by modern highways, meaning areas of cultural heritage value or interest associated with historic roadways are far removed from modern thoroughfares, often in remote areas or used as trails or logging roads. Therefore, archaeological potential is high within 150 m of these historic transportation routes. This includes existing and previous rail lines; the rail lines were the first form of transportation within this area of Ontario, and a large number of early communities sprang up along the lines to service the lumber industry. Historic communities within the study areas have contracted over time, each of them at their largest in the late 1800s to early 1900s, seeing a gradual decrease over time. Significant archaeological resources related to these communities may remain outside of their current limits. Archaeological potential has been determined to be high in proximity to the estimated locations of early roads, the post offices, and historic communities. Highways 69 and 522 are not considered to be historic transportation routes, and any cultural heritage value or interest associated with them has now been previously and extensively disturbed.

4.5.2.3.1.3 Areas Retaining No Archaeological Potential

The most common disturbance that has removed archaeological potential in the Route A Stage 1 archaeological assessment study area is the roadways and major highways that the Route A Stage 1 archaeological assessment study area follows. The road and road ROW, including gravel shoulders and associated drainage ditches, do not require Stage 2 archaeological assessment (Ontario Government 2011b; Section 1.3.2) as these areas have been subject to extensive land alterations that have severely damaged the integrity of any archaeological resources that may have been present.

Areas of steep slope and poor drainage are not considered to have archaeological potential and may be excluded from further assessment regardless of proximity to archaeological features. However, exceptions must be made for any areas of steep slope containing exposed bedrock cliff faces. These areas must be assessed and photo documented when warranted for the potential presence of rock art given the identification of pictograph sites in close proximity to the current Route A Stage 1 archaeological assessment study area. The exposed bedrock may also contain areas where previous quartz quarrying activities have been conducted, based on the proximity of the Route A Stage 1 archaeological assessment study area to similar locations along the eastern shore of Georgian Bay where these activities have been documented. These areas must be assessed and photo documented for potential quarrying. Numerous wetlands are scattered within the Route A Stage 1 archaeological assessment study area and these poorly drained areas do not retain archaeological potential and, therefore, do not require Stage 2 archaeological assessment. However, the presence of wetlands or marshes can elevate the archaeological potential of adjoining land if there are well drained areas of elevated topography adjacent to them.
4.5.2.3.1.4  **Recommendations**

The Stage 1 archaeological assessment has identified areas of archaeological potential within the Route A Stage 1 archaeological assessment study area limits and will therefore require a Stage 2 archaeological assessment to assist in determining where areas of archaeological potential or archaeological features are located within the Route A Stage 1 archaeological assessment study area.

As the Route A Stage 1 archaeological assessment study area is situated entirely in the Canadian Shield and includes a complex combination of land conditions, the strategy for Stage 2 assessment will follow Section 2.1.5 and Section 2.1.6 of the *Standards and Guidelines for Consultant Archaeologists* (Ontario Government 2011b).

The Stage 2 archaeological assessment will include:

- Property inspection
- Stage 2 Pedestrian Survey
- Stage 2 Test Pit Assessment

The MTCS will review the Stage 1 Archaeological Assessment report, before accepting it into the provincial register of archaeological reports and providing a letter to the proponent indicating that the Ministry concurs with the recommendations provided within the report. In anticipation of the MTCS approval a Stage 2 archaeological assessment is currently underway for the Route A and B socio-economic study area, expected to be finalized in the fall of 2015.

**Route B:**

The Stage 1 archaeological assessment study area for Route B encompasses Route B socio-economic study area, and more, to accommodate uncertainty in the route at the time the study was initiated. The Stage 1 archaeological assessment study area for Route B runs through multiple townships east of Georgian Bay; Township of The Archipelago, Geographical Townships of Shawanaga and Harrison; Seguin Township, Geographical Township of Foley; Carling Township, Geographical Township of Carling; Municipality of McDougall, Geographical Township of McDougall and Ferguson; Municipality of Whitestone, Geographical Township of East Burpee; and the Unincorporated Townships of Henvey, Mowat, Shawanaga and Wallbridge and Harrison and extends from HIFN I.R. #2 south to approximately Woods Road where it travels east to the existing 500 kV HONI system. Route B then travels south parallel to the HONI 500 kV system to the HONI 230 kV system, east of the Parry Sound TS, near Oastler Park Drive. The Route B Stage 1 archaeological assessment study area location is provided in Figure 4-16.

The Route B Stage 1 archaeological assessment study area is primarily located on Crown-owned or managed lands. The MNRF governs archaeological assessments on Crown land and requires that archaeological assessments meet the Standards and Guidelines established by the MTCS (Ontario Government, 2011b). Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property.

Criteria commonly used by the MTCS (Ontario Government, 2011b: 17-18) to determine areas of archaeological potential include:

- Proximity to previously identified archaeological sites;
- Distance to various types of water sources;
- Soil texture and drainage;
- Glacial geomorphology, elevated topography and the general topographic variability of the area;
Resource areas including food or medicinal plants, scarce raw materials and early Euro-Canadian industry;

Areas of early Euro-Canadian settlement and early transportation routes;

Properties listed on the municipal register of properties designated under the Ontario Heritage Act (Government of Ontario 1990b);

Properties that local histories or informants have identified with possible archaeological sites, historical events, activities or occupants; and

Historic landmarks or sites.

Certain features indicate that archaeological potential has been removed, such as land that has been subject to extensive and intensive deep land alterations that have severely damaged the integrity of any archaeological resources. This includes landscaping that involves grading below the topsoil level, building footprints, quarrying, sewage and infrastructure development (Ontario Government, 2011b, Section 1.3.2).

The small number of archaeological assessments in the area has resulted in a limited understanding of pre-contact First Nations occupation practices in this part of the Province; therefore, archaeological potential modeling is based on the requirements outlined in the Standards and Guidelines for Consultant Archaeologists (Ontario Government 2011b). While Section 1.4 in the Standards and Guidelines for Consultant Archaeologists outlines the conditions for recommendations for the reduction of test pit survey coverage, this is superseded for the Transmission Line Route B Stage 1 archaeological assessment study area by Section 2.1.5 as the land has been demonstrated to be situated entirely on Canadian Shield (Ontario Government 2011b).

4.5.2.3.1.5 Pre-contact Aboriginal and Contact Period Archaeological Potential

The potential for pre-contact and contact period First Nations archaeological resources within the Route B Stage 1 archaeological assessment study area is judged to be high within 50 m of modern watercourses, within 300 m of previously identified areas of cultural significance, and within 150 m of well-drained soil in close proximity to marshes, wetlands or watercourses (Ontario Government 2011b: Section 1.4). The presence of five (5) registered archaeological sites within the Route B Stage 1 archaeological assessment study area boundaries increases the potential for archaeological remains. It has also been noted that multiple archaeological sites exist beyond the Route B Stage 1 archaeological assessment study area boundaries. Outside these designated proximities the potential for pre-contact First Nations archaeological resources is low, however there is potential for archaeological materials that are not in the ground such as pictographs and quarry sites. Additionally, the presence of multiple fur trade posts increases the potential for archaeological material. Therefore, further Stage 2 archaeological investigation is recommended to clear the Route B Transmission Line and ensure there are no impacts to culturally significant sites that may not have been previously recorded. As no glacial shorelines are found within the Route B Stage 1 archaeological assessment study area, this type of feature does not impact the evaluation of pre-contact First Nations archaeological potential. Contact period resources in the Route B Stage 1 archaeological assessment study area consist of significant watercourses which would have been equally important to both Euro-Canadian and First Nations people during this time, and the possibility for extensive raw material quarrying activities.

4.5.2.3.1.6 Euro-Canadian Archaeological Potential

The potential for Euro-Canadian archaeological resources is judged to be high within 150 m of historic transportation routes and areas of early Euro-Canadian settlement and industry (Ontario Government 2011b: Section 1.4). Outside of these designated proximities the potential for Euro-Canadian archaeological resources is low and no Stage 2 archaeological assessment is recommended.

Many early roads were not followed by modern highways, meaning areas of cultural heritage value or interest associated with historic roadways are now far removed from modern thoroughfares, often in remote areas or used
as trails or logging roads. Therefore, archaeological potential is high within 150 m of these historic transportation routes. Historic communities within the Route B Stage 1 archaeological assessment study area have contracted over time, each of them at their largest in the late 1800s to early 1900s, seeing a gradual decrease over time. Significant archaeological resources related to these communities may remain outside of their current limits. Archaeological potential has been determined to be high in proximity to the estimated locations of early roads, post offices, and historic communities. Highways 69 and 522 are not considered to be historic transportation routes, and any cultural heritage value or interest associated with them has now been previously and extensively disturbed.

4.5.2.3.1.7 Areas Retaining No Archaeological Potential

The most common disturbance that has removed archaeological potential in the Route B Stage 1 archaeological assessment study area is the roadways and major highways that the Route B Transmission Line follows. The road and road ROWs, including gravel shoulders and associated drainage ditches, do not require Stage 2 archaeological assessment (Ontario Government 2011b; Section 1.3.2) as these areas have been subject to extensive land alterations that have severely damaged the integrity of any archaeological resources that may have been present.

Areas of steep slope and poor drainage are not considered to have archaeological potential and may be excluded from further assessment regardless of proximity to archaeological features. However, exceptions must be made for any areas of steep slope containing exposed bedrock cliff faces. These areas must be assessed and photo documented for the potential presence of rock art given the identification of pictograph sites in close proximity to the current Route B Stage 1 archaeological assessment study area. The exposed bedrock may also contain areas where previous quartz quarrying activities have been conducted, based on the proximity of the Route B Stage 1 archaeological assessment study area to similar locations along the eastern shore of Georgian Bay where these activities have been documented. These areas must be assessed and photo documented for the potential quarrying. Numerous wetlands are scattered within the Route B Stage 1 archaeological assessment study area and these poorly drained areas do not retain archaeological potential and, therefore, do not require Stage 2 archaeological assessment. However, the presence of wetlands or marshes can elevate the archaeological potential of adjoining land if there are well drained areas of elevated topography adjacent to them.

4.5.2.3.1.8 Recommendations

The Stage 1 archaeological assessment has identified areas of archaeological potential within the Route B Stage 1 archaeological assessment study area limits and will therefore require a Stage 2 archaeological assessment to assist in determining where areas of archaeological potential or archaeological features are located within the Route B Transmission Line.

As the Route B Stage 1 archaeological assessment study area is situated entirely in the Canadian Shield and includes a complex combination of land conditions, the strategy for Stage 2 archaeological assessment will follow Section 2.1.5 and Section 2.1.6 of the Standards and Guidelines for Consultant Archaeologists (Ontario Government 2011b). The Stage 2 archaeological assessment will include:

- Property Inspection
- Stage 2 Pedestrian Survey
- Stage 2 Test Pit Assessment

Based on aerial photography, there does not appear to be any agricultural land in the Route B Stage 1 archaeological assessment study area; however, in the event agricultural land is identified it should be noted that survey reductions are not permitted for agricultural fields. Agricultural land that can be ploughed must be ploughed, weathered and subject to full pedestrian survey at 5 m intervals (Ontario Government 2011b: Section 2.1.1).
The MTCS will review the Stage 1 Archaeological Assessment report, before accepting it into the provincial register of archaeological reports and providing a letter to the proponent indicating that the Ministry concurs with the recommendations provided within the report. In anticipation of the MTCS approval, a Stage 2 archaeological assessment is currently underway for the Route A and B socio-economic study area, expected to be finalized in the summer of 2015.

Further information regarding the Stage 1 archaeological assessment, including development and historical context and recommendations, will be provided in the Final ERR.

### 4.5.2.4 Built Heritage and Cultural Heritage Landscapes

#### Route A & B:

The cultural heritage study area for Route A and Route B encompass the Route A and Route B socio-economic study area, and more, to accommodate uncertainty in the route at the time the study was initiated. The Route A and B cultural heritage study areas were first explored by Europeans in the early 1600s, who travelled the French River into Georgian Bay from the Ottawa River. This led to the development of fur trade posts in the area. During the period between 1670 and 1713, French traders began to leave established settlements and construct trading posts that enabled traders to make direct contact with the people living in the interior. The Nipissings, Odawa and Anishinabek in Northern Canada were referred to as the ‘middlemen’ of the trade all the way north to James Bay (Hunt 1940: 35, 45; Pollock 1999).

An examination of the Atlas of Canada’s map entitled, Posts of the Canadian Fur Trade, 1600-1870, indicates the presence of three (3) Fur Trade Posts in close proximity to the Route A and B cultural heritage study areas. The Hudson’s Bay Company had a post at the mouth of the French River, and one (1) south called “Shawinaga”, near Pointe au Baril. There were also multiple Independent Canadian posts in the surrounding area, but a large number of them were located around Lake Nipissing to the northeast.

Competition for resources between French and English led to alliances, such as the French-Huron alliance which began in 1615. The northern coasts of Georgian Bay and Lake Huron may have served as a transition zone or buffer between the Anishinabek and Iroquois, as it was sparsely occupied until the return of the Ojibway along the Georgian Bay and Lake Huron in the 1700s (Pollock, 1999). By the early 1800s, securing mining and other resources became increasingly important, and a driving force for Upper Canada to begin looking to northern territories. The treaty making process for the Robinson Huron Treaty of 1850 was established during this period.

The post-contact Aboriginal occupation of Ontario was heavily influenced by European diseases and population movements. Initial survey consisted of efforts confined to canoe through rivers and water ways. The Northern and Pacific Junction Railway was constructed in the 1880s to connect the railways of Southern Ontario to the new transcontinental line of the CP Railway. Communities like Britt and Key Harbour survived as CNR ports to unload coal and oil off tankers that were coming from Lake Superior and Lake Huron (Campbell, 2005). The Northern and Pacific Junction Railway became part of the Grand Trunk railroad system which opened up Parry Sound and Muskoka's isolation. The area remained relatively untouched until the Muskoka and Parry Sound Districts were surveyed between 1866 and 1870 (Campbell, 2005). Despite the surveyors reporting that the land was unfit for farming, the wealth in timber was deemed highly profitable. Communities on Georgian Bay, i.e., Killarney, Byng Inlet / Britt, Parry Sound, developed not as service centres for surrounding farmlands, which was the case in Southern Ontario, but as isolated ports, railway stops, or company mill towns (Campbell, 2005).

The French River was the main water artery from the St. Lawrence River to the Great Lakes from 1600 to the mid-1800s. The area prospered within the fur trade, as well as commercial logging and fishing. The French River Village eventually was developed in the late 1880s as a result of the extensive logging industry. Timber cutting, logging and lumber mills sprang up in the area in 1873 until the 1930 depression era.
Colonization Roads served to increase access to logging, but also to provide a way north for early settlers, and facilitated transportation between the Ottawa Valley and Georgian Bay, known as the Ottawa–Huron Tract. The government built over 1,600 km of roads over two (2) decades. The Great North Road extended from Parry Sound northeast to Lake Nipissing. By 1955 the modern day Highway 69 connected Parry Sound and the Trans-Canada Highway (Highway 17) at Sudbury. The 1879 historical atlas of the Parry Sound District indicates Highway 69 appears to follow an early historic roadway through McDougall Township and approximately half way through Carling Township (Harrison and Rogers, 1979). Though extensive efforts were made to locate the material, there are no maps of Shawanaga or Harrison Townships in the historical atlas, and no roadway is indicated on the 1879 Parry Sound District map.

Aboriginal communities within the Route A and B cultural heritage study areas have been encouraged to provide information to the EA team regarding areas of their Aboriginal interests such as areas of cultural significance, past settlements and current settlements. Other stakeholders were also provided opportunities to identify areas of interest as part of the ongoing study.

In order to fully understand the potential effects of the proposed Transmission Lines on built heritage and cultural heritage landscapes, a Cultural Heritage Assessment Report will be prepared and provided in the Final ERR. This report will involve background research on the land use history of the area to develop an understanding of the local historical context to assist in evaluating heritage resources; creation of an inventory of known cultural heritage resources and resources that have the potential to retain cultural heritage value; and, an evaluation of the proposed undertaking on identified heritage resources.

4.5.2.5 Preliminary Cultural Heritage Evaluation

**Route A:**

A preliminary review of potential cultural heritage resources within the Route A cultural heritage study area was conducted as part of the formal cultural heritage evaluation process. A review of government and private agency records and the HIFN TLUS (URS, 2013) provided information on the properties and structures within the study area that require consideration in regards to Cultural Heritage planning.

The cultural heritage study area for Route A encompasses Route A socio-economic study area, and more, to accommodate uncertainty in the route at the time the study was initiated. The Route A cultural heritage study area follows the same boundaries as the Route A Stage 1 Archaeological Assessment study area and can be seen in Figure 4-15, running through the Unorganized Townships of Henvey, Mowat and Blair, in the District of Parry Sound, and Unsurveyed Territory in the Municipality of Killarney. The preliminary cultural heritage evaluation only pertains to off-reserve land, as the on-reserve portion of Route A Transmission Line is incorporated within the HIFN EA process. The HIFN EA process has similar requirements for archaeological assessments as wind energy centre undertakings elsewhere in Ontario; however, MTCS acceptance is not required for the portions on federal land.

During the preliminary review of cultural heritage resources for the Route A cultural heritage study area, no designated or listed heritage properties/structures were identified within the study area. Additionally, no historical plaques, National Historic sites, registered cemeteries, or unregistered cemeteries were identified. However, four (4) registered archaeological sites were identified within the current cultural heritage study area boundaries which will require consideration as part of the project planning process. Although the results of this preliminary study have identified four (4) cultural heritage resources for consideration, there remains the potential for the identification of additional properties or features with heritage significance within the cultural heritage study area during the formal heritage assessment process.
Route B:

A preliminary review of potential cultural heritage resources within the Route B cultural heritage study area was conducted as part of the formal cultural heritage evaluation process. A review of government and private agency records and the HIFN TLUS (URS, 2013) provided information on the properties and structures within the cultural heritage study area that require consideration in regards to Cultural Heritage planning.

The cultural heritage study area for Route B encompasses Route B socio-economic study area, and more, to accommodate uncertainty in the route at the time the study was initiated. The Route B cultural heritage study area follows the same boundaries as the Route B Stage 1 Archaeological Assessment study area and can be seen in Figure 4-16, located off-reserve, running through various townships and municipalities within the District of Parry Sound. The Route B cultural heritage study area is comprised of a corridor 250 m wide and approximately 86 km long and extends from HIFN I.R. #2 south to approximately Woods Road where is travels east to the existing 500 kV HONI system. Route B then travels south parallel to the HONI 500 kV system to the HONI 230 kV system, east of the Parry Sound TS, near Oastler Park Drive. The Route B Transmission Line runs through multiple townships east of Georgian Bay; the Township of The Archipelago, Geographical Townships of Shawanaga and Harrison; the Township of Sequin, Geographical Township of Foley; the Township of Carling, Geographical Township of Carling; the Municipality of McDougall, Geographical Township of McDougall and Ferguson; Municipality of Whitestone, Geographical Township of East Burpee; and the Unorganized Townships of Henvey, Mowat, Shawanaga, Wallbridge and Harrison, Parry Sound District, Ontario.

During the preliminary review of cultural heritage resources for the Route B Transmission Line corridor, no designated or listed heritage properties or structures were identified within the Route B cultural heritage study area. Additionally, no historical plaques, National Historic sites, registered cemeteries, or unregistered cemeteries were identified. However, five (5) registered archaeological sites were identified within the Route B cultural heritage study area boundaries as well as culturally/spiritually significant cultural heritage features located adjacent to HIFN I.R. #2 and on Magnetewan First Nation Reserve No. 1. Each of these five (5) archaeological sites as well as the culturally/spiritually significant features identified by HIFN and Magnetewan First Nation will require consideration as part of the project planning process. Although the results of this preliminary study have identified several cultural heritage resources for consideration, there remains the potential for the identification of additional properties or features with heritage significance within the cultural heritage study area during the formal heritage assessment process.

4.5.2.6 Landscapes and Views

Route A:

The proposed Route A Transmission Line extends approximately 14 km east from HIFN I.R. #2. The route ends at a connection point near the intersection of Highway 522 and the HONI 500 kV system. The majority of the route runs adjacent to the existing Highway 522, and, in the western end, crosses both a CN and CP rail line.

Route B:

The proposed Route B Transmission Line travels south primarily parallel to sections of the existing and/or proposed Highway 69/400. The existing railway line, adjacent to sections of the existing Highway 69, also traverses portions of Route B. The central (east-west) portion of Route B diverts east from the existing Highway 69 for approximately 12 km into a primarily undeveloped area with the exception of some existing roads and trails throughout. From there Route B parallels the existing HONI 500 kV system to the connection point south of the Town of Parry Sound.

Except for the east-west portion of the alignment which is largely undisturbed, the majority of Route B Transmission Line is parallel to existing linear disturbances predominantly along the existing and proposed Highway 69/400 and the HONI 500 kV system.
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Appendix A

Transmission Line Screening Checklist (Ontario Regulation 116/01)
## Appendix A: Transmission Line Screening Checklist (Ontario Regulation 116/01)

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
<th>Route A</th>
<th>Route B</th>
<th>Additional Information</th>
</tr>
</thead>
</table>
| 1.0 Surface and Ground Water | 1.1 Potential effects on surface water quality, quantity or flow | ✓ | ✓ | - Construction is proposed away from surface waterbodies but has the potential to affect adjacent waterbodies  
- Surface water quality has the potential to be impacted by sedimentation during construction |
| | 1.2 Potential effects on groundwater quality, quantity or movement | ✓ | ✓ | - Potential impacts to groundwater quality impacts could occur where excavation is required for tower foundations |
| | 1.3 Potential to cause significant sedimentation, soil erosion or shoreline or riverbank erosion on or off site | ✓ | ✓ | - Best management practices for vegetation removal near waterbodies will be applied during construction; however there is the potential for some sedimentation to occur. |
| | 1.4 Potential negative effects on surface or groundwater from accidental spills or releases to the environment | ✓ | ✓ | - Spills of fuels, lubricating oils and other fluids have the potential to occur during construction and operation of the facility |
| 2.0 Land Use | 2.1 Potential negative effects on residential, commercial or institutional land uses within 500 metres of the site | ✓ | ✓ | - No negative residential, commercial or institutional land use impacts are anticipated for Route A.  
- Route B requires some private land crossings and could result in negative impacts |
| | 2.2 Inconsistent with the Provincial Policy Statement, provincial land use or resource management plans | ✓ | ✓ | - The transmission routes are predominantly on Crown land and are anticipated to be consistent with PPS and provincial plans  
- Provincial Policy Statement does not apply to any sections of the transmission corridor within First Nation Reserve lands |
| | 2.3 Inconsistency with municipal land use policies, plans and zoning bylaws | ✓ | ✓ | - The transmission routes are anticipated to be consistent with municipal land use policies and zoning bylaws  
- Municipal policies, plans and zoning bylaws are not applicable to any sections of the transmission corridor within First Nation Reserve lands |
| | 2.4 Use of hazard lands or unstable lands that are subject to erosion | ✓ | ✓ | - It is not anticipated that any transmission components will be located within hazard lands |
| | 2.5 Potential negative effects related to the remediation of contaminated land | ✓ | ✓ | - Known contaminated sites will be avoided |
| 3.0 Air and Noise | 3.1 Potential negative effects on air quality due to emissions of nitrogen dioxide, sulphur dioxide, suspended particulates, or other pollutants | ✓ | ✓ | - Diesel and gasoline-powered equipment will be used during construction phase of the Transmission Line  
- Limited use of diesel and gasoline-powered service vehicles will occur during the maintenance phase |
### Appendix A: Transmission Line Screening Checklist (Ontario Regulation 116/01)

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
<th>Route A</th>
<th>Route B</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0 Air and Noise</td>
<td>3.2 Potential negative effects on air quality due to the emission of greenhous gases (CO2, methane)</td>
<td>✓</td>
<td>✓</td>
<td>• Greenhouse gas emissions will be limited to construction equipment during the construction phase of the Transmission Line and service vehicles during the maintenance phase</td>
</tr>
<tr>
<td>(continued)</td>
<td>3.3 Potential negative effects on air quality due to emission of dust or odour</td>
<td>✓</td>
<td>✓</td>
<td>• Dust will be created during construction of the Transmission Line, but will be limited to areas in the vicinity of the work and is not anticipated to impact other activities</td>
</tr>
<tr>
<td></td>
<td>3.4 Potential negative effects due to the emission of noise</td>
<td>✓</td>
<td>✓</td>
<td>• Noise emissions will be temporary in nature and limited to construction equipment during construction phase</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Any noise generated during maintenance is expected to be very limited</td>
</tr>
<tr>
<td>4.0 Natural Environment</td>
<td>4.1 Potential negative effects on rare, threatened or endangered species of flora or fauna or their habitat</td>
<td>✓</td>
<td>✓</td>
<td>• Rare, threatened and endangered species have been recorded and confirmed within the study area and the species and their habitat have the potential to be disrupted</td>
</tr>
<tr>
<td></td>
<td>4.2 Potential negative effects on protected natural areas such as ANSIs, ESAs or other significant natural areas</td>
<td>✓</td>
<td>✓</td>
<td>• Grundy Lake Provincial Park is north of Highway 522 adjacent to the Transmission Line study area. It is anticipated that final routing will avoid any impact to this park.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• No other ANSIs, ESAs or other protected natural areas are known to occur within either transmission corridor</td>
</tr>
<tr>
<td></td>
<td>4.3 Potential negative effects on wetlands</td>
<td>✓</td>
<td>✓</td>
<td>• Wetland complexes are found throughout the study area and have the potential to be disrupted during construction activities</td>
</tr>
<tr>
<td></td>
<td>4.4 Potential negative effects on wildlife habitat, populations, corridors or movement</td>
<td>✓</td>
<td>✓</td>
<td>• Wildlife habitat, populations and movement corridors may be temporarily disrupted during construction activities</td>
</tr>
<tr>
<td></td>
<td>4.5 Potential negative effects on fish or their habitat, spawning, movement or environmental conditions (e.g., water temperature, turbidity, etc.)</td>
<td>✓</td>
<td>✓</td>
<td>• Some vegetation removal may be required in shoreline areas and the potential for associated erosion and sedimentation has the potential for negative effects</td>
</tr>
<tr>
<td></td>
<td>4.6 Potential negative effects on migratory birds, including effects on their habitat or staging areas</td>
<td>✓</td>
<td>✓</td>
<td>• No effects on migratory birds and their habitat is anticipated</td>
</tr>
<tr>
<td></td>
<td>4.7 Potential negative effects on locally important or valued ecosystems or vegetation</td>
<td>✓</td>
<td>✓</td>
<td>• Infrastructure has the potential to be sited in areas that could impact valued ecosystems and vegetation communities</td>
</tr>
</tbody>
</table>
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<td><strong>5.0 Resources</strong></td>
<td>5.1 Result in inefficient (below 40%) use of a non-renewable resource (efficiency is defined as the ratio of output energy to input energy, where output energy includes electricity produced plus useful heat captured)</td>
<td>√</td>
<td>√</td>
<td>The Transmission Line is not expected to result in inefficient use of non-renewable resources</td>
</tr>
<tr>
<td></td>
<td>5.2 Potential negative effects on the use of Canada Land Inventory Class 1-3, specialty crop or locally significant agricultural lands</td>
<td>√</td>
<td>√</td>
<td>The Transmission Line is not located on significant agricultural lands</td>
</tr>
<tr>
<td></td>
<td>5.3 Potential negative effects on existing agricultural production</td>
<td>√</td>
<td>√</td>
<td>The Transmission Line is not expected to affect agricultural production</td>
</tr>
<tr>
<td></td>
<td>5.4 Potential negative effects on the availability of mineral, aggregate or petroleum resources</td>
<td>√</td>
<td>√</td>
<td>Neither construction activities nor the location of the Transmission Line infrastructure are anticipated to impact the availability of mineral, aggregate or petroleum resources</td>
</tr>
<tr>
<td></td>
<td>5.5 Potential negative effects on the availability of forest resources</td>
<td>√</td>
<td>√</td>
<td>The study area is within the French-Severn Forest Management Unit and will result in some tree clearing for the transmission right-of-way</td>
</tr>
<tr>
<td></td>
<td>5.6 Potential negative effects on game and fishery resources, including negative effects caused by creating access to previously inaccessible areas</td>
<td>√</td>
<td>√</td>
<td>Some previously inaccessible areas may become accessible through the creation of the transmission corridor</td>
</tr>
<tr>
<td><strong>6.0 Socio-Economic</strong></td>
<td>6.1 Potential negative effects on neighbourhood or community character</td>
<td>√</td>
<td>√</td>
<td>Transmission Line towers and conductors may alter the community character along Route B where the line is in proximity to populated areas Route A is not located in close proximity to any communities and is unlikely to have negative effects on community character</td>
</tr>
<tr>
<td></td>
<td>6.2 Potential negative effects on local businesses, institutions or public facilities</td>
<td>√</td>
<td>√</td>
<td>Local businesses are expected to benefit from an influx in demand for services during the construction phase No long-term effects are anticipated</td>
</tr>
<tr>
<td></td>
<td>6.3 Potential negative effects on recreation, cottaging or tourism</td>
<td>√</td>
<td>√</td>
<td>The alterations to the visual landscape resulting from the Transmission Line which could impact tourism are expected to be minimal</td>
</tr>
</tbody>
</table>
## Appendix A: Transmission Line Screening Checklist (Ontario Regulation 116/01)

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<tr>
<td><strong>6.0 Socio-Economic</strong></td>
<td>6.4 Potential negative effects related to increases in the demands on community services and infrastructure</td>
<td>√</td>
<td>√</td>
<td>- The Transmission Line does not require water or wastewater services so no additional demands on community infrastructure will occur</td>
</tr>
<tr>
<td></td>
<td>6.5 Potential negative effects on the economic base of a municipality or community</td>
<td>√</td>
<td>√</td>
<td>- During construction of the Transmission Line, local suppliers will be used to the extent possible which will generate additional local revenues</td>
</tr>
<tr>
<td></td>
<td>6.6 Potential negative effects on local employment and labour supply</td>
<td>√</td>
<td>√</td>
<td>- Local labour will be used to the extent possible during construction activities</td>
</tr>
<tr>
<td></td>
<td>6.7 Potential negative effects related to traffic</td>
<td>√</td>
<td>√</td>
<td>- MTO permits will be obtained for access and egress from Highway 69 and Highway 522</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- The majority of all other road traffic will occur within the transmission right-of-way or construction/maintenance access roads</td>
</tr>
<tr>
<td></td>
<td>6.8 Potential to cause public concerns related to public health and safety</td>
<td>√</td>
<td>√</td>
<td>- Public concerns related to safety may include aspects related to electric and magnetic fields (EMFs) associated with transmission station and Transmission Lines</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Current scientific research does not demonstrate that EMFs cause or contribute to adverse health effects</td>
</tr>
<tr>
<td><strong>7.0 Heritage and Culture</strong></td>
<td>7.1 Potential negative effects on heritage buildings, structures or sites, archaeological resources, or cultural heritage landscapes</td>
<td>√</td>
<td>√</td>
<td>- The Transmission Line will be designed to avoid or minimize impacts to areas of cultural importance that were identified through the Traditional Knowledge Study and archaeological assessments</td>
</tr>
<tr>
<td></td>
<td>7.2 Potential negative effects on scenic or aesthetically pleasing landscapes or views</td>
<td>√</td>
<td>√</td>
<td>- Transmission line towers and conductors will alter the visual landscapes in some sections of both routes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Most sections follow the existing infrastructure ROW (i.e. Hwy 69 or Hwy 522) and are less likely to have negative effects on the visual landscape</td>
</tr>
<tr>
<td><strong>8.0 Aboriginal</strong></td>
<td>8.1 Cause negative effects on First Nations or other Aboriginal communities</td>
<td>√</td>
<td>√</td>
<td>- First Nation community members will be consulted as part of the EA process</td>
</tr>
<tr>
<td><strong>9.0 Other</strong></td>
<td>9.1 Result in the creation of waste materials requiring disposal</td>
<td>√</td>
<td>√</td>
<td>- Waste materials will be created during the construction and maintenance of the Transmission Line</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Waste materials will be disposed of at an approved facility</td>
</tr>
<tr>
<td></td>
<td>9.2 Potential negative environmental effects not covered by the criteria outlined above</td>
<td>√</td>
<td>√</td>
<td>N/A</td>
</tr>
</tbody>
</table>