



August 2017

UPDATED PROJECT DESCRIPTION

Pikangikum Distribution Line Project

Submitted to:
Wataynikaneyap Power L.P.

REPORT



Project Number: 1657738

Distribution:

- 1 e-copy - Wataynikaneyap Power L.P.
- 1 e-copy - Ministry of Natural Resources and Forestry
- 1 e-copy - Golder Associates Ltd.





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1.0 INTRODUCTION

Wataynikaneyap Power Limited Partnership (Wataynikaneyap) is proposing to construct, operate and maintain a 44 kV and 25 kV distribution line, the Pikangikum Distribution Project (the Project). The Project will provide a distribution connection between Pikangikum First Nation and the existing transmission system from Red Lake, Ontario. The Project is located in northwestern Ontario (Figure 1).

The Pikangikum First Nation successfully completed a federal environmental screening assessment under the previous *Canadian Environmental Assessment Act* (CEAA) (1992); and a screening under the Ministry of Natural Resources and Forestry Class Environmental Assessment Resource Stewardship and Facility Development (MNRFSFD) screening under Category B in 2009. The 2009 federal screening environmental assessment (EA) concluded no significant impacts and received approval under Section 16 of CEAA. The Project has not yet commenced. Wataynikaneyap, as the new Project proponent, has developed a revised Project design, based on engagement results, First Nation community preference and design engineering (Figure 2).

More than five years have elapsed since the EA Statement of Completion was issued by the MNRFSFD in August 20, 2009. Therefore, under the MNRFSFD Class EA there is a requirement to provide an updated Project Description (PD). In addition, the Project crosses dedicated protected areas (DPAs) that were not identified or in force in 2009. Therefore, the MNRFSFD Class EA for Provincial Parks and Conservation Reserves (PPCR) now also applies.

This updated PD has been prepared for submission to the MNRFSFD in accordance with the content requirements for an updated PD identified in the MNRFSFD letter dated October 27, 2016 (Appendix A), scope clarification meetings with the MNRFSFD during engagement and the requirements of the PPCR Class EA. This PD includes the following main components:

- Project purpose and rationale;
- Project proponent;
- Environmental assessment regulatory requirements;
- Project details, including highlighting Project detail revisions since the 2009 Statement of Completion issuance;
- Existing baseline overview, effects assessment and mitigation;
- Summary of potential permits and approvals;
- Species at Risk Report (Appendix B);
- Aboriginal Engagement Plan (Appendix C); and
- Stage 1 Archaeology Assessment (Appendix D).



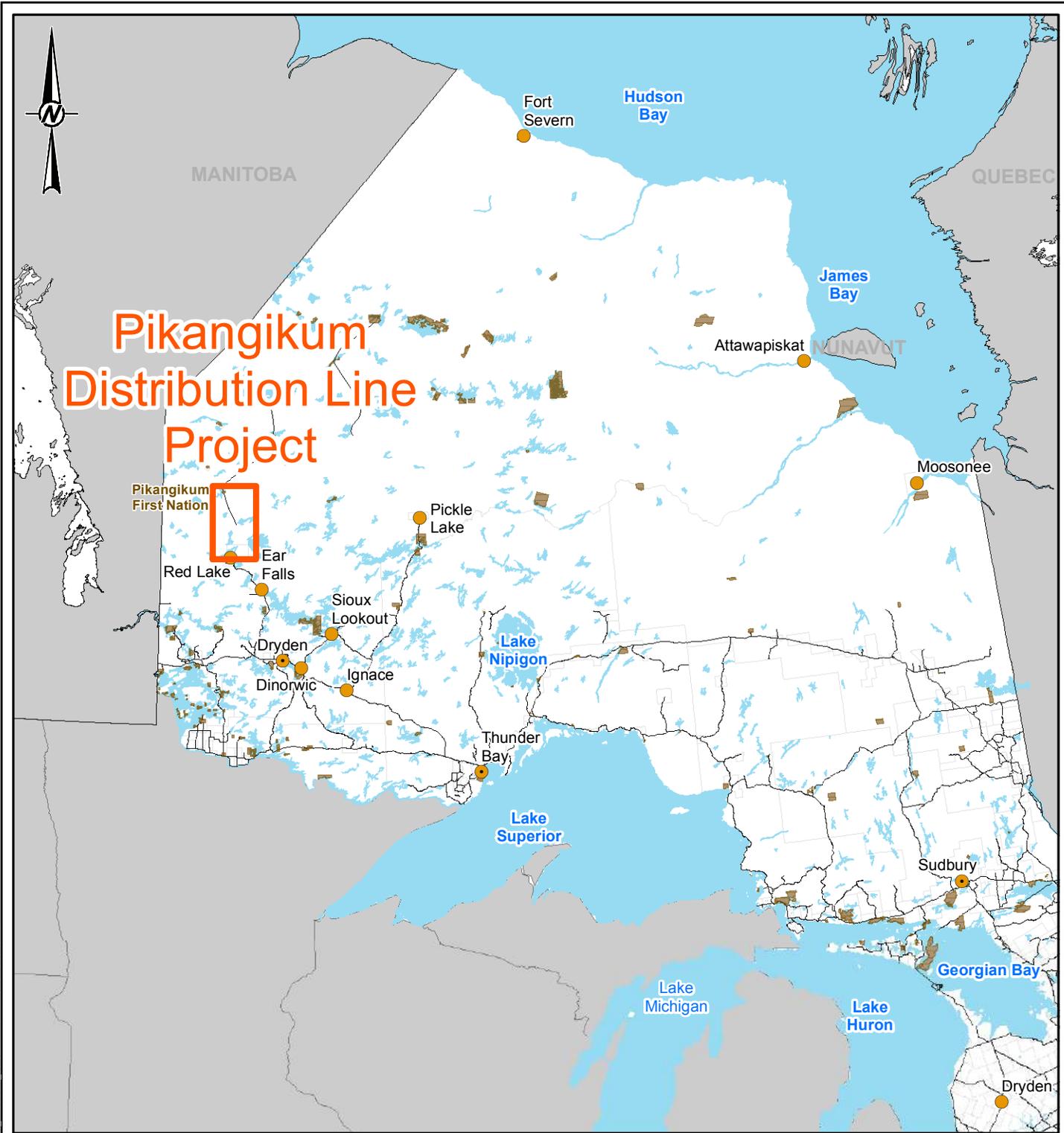
2.0 PROJECT PURPOSE AND RATIONALE

Pikangikum First Nation (Pikangikum) is a remote settlement approximately 100 km north of Red Lake in Northwestern Ontario (MNR Red Lake District). The community has a reserve land base of 1,808 ha with no year-round road access. The purpose of the Project is the construction and operation and maintenance of a power line and associated distribution station (substation) that will connect Pikangikum with the provincial electrical grid at Red Lake; thereby meeting one of the priorities identified in Ontario's *Long-Term Energy Plan* (LTEP) (Ministry of Energy 2013).

Pikangikum currently relies upon a diesel generating station to provide electricity to the community. It frequently operates near, at, or above rated capacity, thereby constraining basic infrastructure such as sewage and running water, as well as housing growth in accordance with a growing population. This diesel generation has proven over time to be unreliable; the outcomes of a system failure are inconvenient and costly. Fuel costs have increased in recent years and the resulting high cost to the community has a net effect of reducing funds available for the maintenance of other community infrastructure assets. An additional Project benefit is the reduction of greenhouse gases (GHG) as a result of reduced reliance on diesel generator. The Project will also serve to mitigate risks and costs associated with the existing generating system by providing access to more affordable and consistent electricity while providing additional power to meet future increases in electrical load, thereby supporting Pikangikum's socio-economic growth.

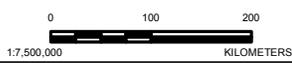
3.0 PROJECT PROPONENT

Wataynikaneyap is the proponent for this Project. Wataynikaneyap is a transmission company equally owned by 22 First Nations communities in partnership with FortisOntario Inc. The company will develop, own, and operate new transmission facilities in Northwestern Ontario in order to connect 17 remote First Nation communities currently powered by diesel generation. On August 4, 2016, Pikangikum First Nation joined Wataynikaneyap and mandated Wataynikaneyap to develop the Pikangikum Distribution Line Project on an expedited basis.



Pikangikum Distribution Line Project

- LEGEND**
- City
 - Town
 - Highway
 - First Nation Reserve Land
 - Waterbody



REFERENCE(S)

1. BASE DATA - MNR LIO, OBTAINED 2016, NTDB
2. PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2016
3. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 15

CLIENT
WATAYNIKANEYAP POWER L.P.

PROJECT
PIKANGIKUM DISTRIBUTION LINE PROJECT

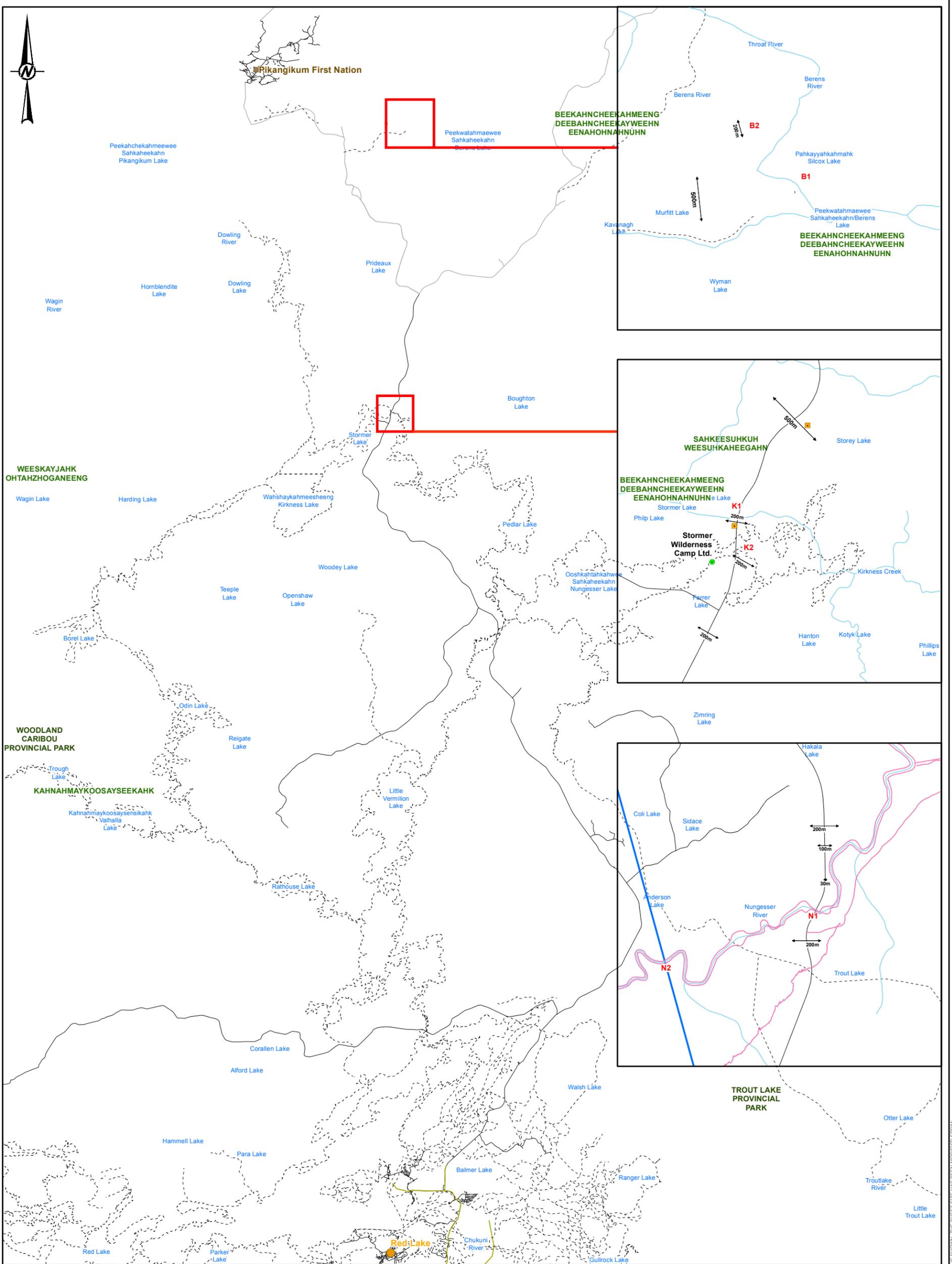
TITLE
PROJECT LOCATION

CONSULTANT		YYYY-MM-DD	2016-09-14
		DESIGNED	JMC
		PREPARED	JMC
		REVIEWED	KS
		APPROVED	AE

PROJECT NO. 1544751	CONTROL ####	REV. ####	FIGURE 1
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LEGEND <ul style="list-style-type: none"> ● City ● Town ■ First Nation Community ■ Wataynikaneyap Power Community ■ Recreation Point ● Tourism Establishment Area — Major Roads and Highways — Winter Road --- Trail — Existing Electrical Transmission Line — Watercourse — 2009 Proposed Distribution Line Route — Pikangikum Distribution Study Corridor - Current Route — Pikangikum Distribution Study Corridor - Option A — Pikangikum Distribution Study Corridor - Option B ■ Substation Area ■ First Nation Reserve Land ■ Waterbody ■ Conservation Reserve ■ Dedicated Protected Area ■ Provincial Parks 		CLIENT WATAYNIKANEYAP POWER L.P. PROJECT PIKANGIKUM DISTRIBUTION LINE PROJECT TITLE REVISED PROJECT DESIGN AND PREVIOUS ALIGNMENT CONSULTANT Golder Associates PROJECT NO. 1657738
REFERENCE(S) 1. BASE DATA - MNR LIO, OBTAINED 2016, NTDB 2. IMAGERY: ESRI, DIGITAL GLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AERGRID, IGN, AND THE GIS USER COMMUNITY, AND LIDAR PROVIDED BY RES 3. TRANSMISSION ROUTES - PROVIDED BY WATAYNIKANEYAP POWER L.P. 4. FIRST NATION COMMUNITIES FROM INDIGENOUS AND NORTHERN AFFAIRS CANADA (WWW.AINC-INAC.GC.CA) 5. PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2016 6. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 15	YYYY-MM-DD 2017-06-15 DESIGNED JMC PREPARED JMC REVIEWED BT APPROVED AE CONTROL #### REV. #### 0 5 10 1:270,000 Kilometers	
	PROJECT NO. 1657738 CONTROL #### REV. #### FIGURE 2	

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4.0 ENVIRONMENTAL ASSESSMENT REGULATORY REQUIREMENTS

4.1 Provincial

4.1.1 Ministry of Natural Resources and Forestry Class Environmental Assessment for Resource Stewardship and Facility Development

In 2009, a screening matrix under the MNR Class EA for RSFD was completed (Appendix A) and included in the federal screening document compiled for the project (INAC 2009). Since more than five years have passed since the Statement of Completion was issued by the MNR in 2009, Section 5.7 “Proceeding with Projects – After Statement of Completion of the MNR RSFD” and Section 5.8 “Modification to Project Files or ESRs” apply. Under these sections, the MNR is required to review and document any changes that may have taken place since the initial Statement of Completion was issued on August 20, 2009. Section 8.0 provides an assessment of effects of changes that have taken place since the initial Notice of Completion of the project was issued (i.e., environmental conditions, new government policies, changes in the project design).

4.1.2 Ministry of Natural Resources and Forestry Class EA for Provincial Parks and Conservation Reserves

A portion of the Project crosses the Beekahncheekahmeeng Deebahncheekayweehn Eenahohnahnuhn DPA (BDE DPA) which was regulated under the *Provincial Parks and Conservation Reserves Act (PPCRA)* (2006) in 2011. The BDE-DPA was regulated after the Statement of Completion under RSFD Class EA was filed. Therefore, the project is now subject to the requirements of the PPCR Class EA. Section 8.2 provides an assessment of the Project effects to the DPA; and includes an alternatives analysis, which is a requirement under this Class EA and the *PPCRA*.

4.2 Canadian Environmental Assessment Act

The *Canadian Environmental Assessment Act, 2012* (CEAA) (Agency 2012) came into force on July 6, 2012. According to the *Regulations Designating Physical Activities* under CEAA 2012, a federal EA is to be undertaken for transmission projects that:

- include construction, operation, decommissioning and abandonment of a transmission line in a wildlife area (as defined under the *Wildlife Area Regulations*) or migratory bird sanctuary (as designated under the *Migratory Bird Sanctuary Regulations*); or
- include construction, operation, decommissioning and abandonment of a transmission line with a voltage of 345 kV or more that is 75 km or more in length on a new right-of-way (ROW).

The Project is not captured by the *Regulations Designating Physical Activities* as the voltage of the transmission line is below 345 kV and the preliminary proposed corridor or corridor alternatives are not located within a wildlife area, as defined under the *Wildlife Area Regulations*, or migratory bird sanctuary, as designated under the *Migratory Bird Sanctuary Regulations*.



A portion of the Project is located on the Pikangikum First Nation Reserve land; and is subject to Section 67 of the *Canadian Environmental Assessment Act* which states:

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

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

5.0 PROJECT DETAILS

The Project includes the construction, operation and maintenance of a 44 kV and 25 kV power line that will connect Pikangikum to the provincial power grid. The line will originate from an existing 44kV feeder on the Nungesser Road, approximately 2 km from its intersection with Highway 125, and travel north to Pikangikum First Nation community. Construction is anticipated to begin in August 2017, after acquisition of required permits and approvals; and may take up to 14 months depending on environmental conditions and restrictions, and equipment procurement lead times.

5.1 Project Components

The following main project components will be constructed, operated and maintained:

Power Line and Associated Structures

The power line includes approximately 97 km of 44 kV and 18 km of 25 kV of overhead single circuit line and associated components. The northern approximately 91 km of the 44 kV portion of the line will be designed and built to be able to operate at 115 kV, in the future should separate approvals be obtained for such higher voltage operation. Line structures will be a combination of single-pole, double-pole (H-frame), and/or triple-pole (possible at sharp corners, water crossings, or long spans). Poles may be wood, metal, concrete, resin, or a hybrid concrete-steel hybrid.

Subject to surveying, geotechnical analysis, preliminary design, and a land rights assessment, approximately 32 km of the southern-most section of line is expected to be constructed on single poles in and/or adjacent to the existing Nungesser Road ROW. A major portion of the power line structures and associated conductors and anchors will be installed within or adjacent to the road ROWs. The limits of work for the power line is identified on Figure 2. Any requirements for poles or anchors outside of the power line ROW will be appropriately dealt with as they occur in the field during detailed design.

The limits of work were identified taking into account environmental constraints (e.g., known woodland caribou habitat use areas), available traditional land and resource use information and engagement input.



Access Roads

Existing access options are relatively abundant and their utilization will be maximized in the final Project design as a means of minimizing potential Project effects. Primary access will be from Nungesser Road, the Pikangikum All-Season Road, and any newly cleared portions of all-season roads that are planned to be constructed under the Whitefeather Forest Management Plan. Approved Whitefeather Forest Management Plan all-season roads or clearings will be utilized (if constructed) to access the existing utility clearing on the north side of the Berens River and the proposed substation area. An ice crossing across the Berens River may also be utilized should ice conditions permit. No new access apart from the Project ROW clearing are anticipated to be constructed for the Project.

Substation

A distribution station (substation) is proposed to be located south of the Berens River (Figure 2). The location is proposed to avoid having to transport materials and equipment across the Berens River and/or along the existing utility clearing running east out of Pikangikum First Nation; and therefore reduce environmental effects to the river, and risks to the Project schedule. The substation will have an approximately 70 m x 80 m footprint.

Helicopter Landing Pad and Staging Area

A helicopter landing pad and a permanent equipment staging area may be required at the substation location. A helicopter landing pad would have a minimum area of approximately 30 m x 30 m, subject to terrain and vegetation conditions as well as aeronautical approval requirements. In total, the staging area and helicopter pad require approximately 100 m x 100 m of cleared area in addition to the substation fenced area above.

Additional Temporary Project Components

Additional temporary Project components will be required during construction, which will include the following:

- **Aggregate Sources** – subject to geotechnical and engineering analysis, substation foundations and pole foundation backfill may consist of either native soil (if deemed suitable), or contain concrete and/or aggregate. Aggregate will be sourced from regulated (permitted or licenced) aggregate pits or will be taken from a new hole dug near the pole foundation hole for the purposes of swapping subgrade with the pole foundation hole. Concrete will likely be sourced from supplier(s) in Red Lake, or will be brought to the site in dry format and mixed in small quantity near each foundation hole using water provided from off-site delivery trucks.
- **Construction Worker Housing** – Construction workers may be housed in existing private accommodations such as the Stormer Lake Camp owned by Pikangikum First Nation, and / or in the Municipality of Red Lake, and/or in Pikangikum First Nation.

If necessary, temporary accommodations may be established and separately permitted by the selected constructor. Should this be the case, the following activities are assumed:

- Power source is anticipated to be a portable diesel generating station;
- Water will be sourced from either off-site delivery trucks or separately permitted local source; and
- All liquid and solid waste will be appropriately stored onsite and transported to facilities licensed to dispose of the waste. There will be no discharge of liquid waste from the temporary accommodation unless separately permitted and approved.



All applicable permits and approvals will be acquired for any temporary accommodation, should it be required.

- **Laydown Areas** – apart from the substation area, temporary laydown areas for the storage of materials and equipment will be located on existing cleared areas within the limits of work, or areas reachable by existing roads originating within the limits of work, with appropriate set back distances from sensitive environmental features (see Section 8.0).
- **Watercourse Crossing** – It is anticipated that there will not be a requirement for new watercourse crossings for Project construction as the ROW follows existing and planned roads or existing ROW area. If the planned Whitefeather Forest Management Plan roads are not constructed prior to construction timing of the Project, or the Whitefeather Forest Community Resource Management Authority is unable to construct the roads in accordance with their approvals; there may be a requirement for new watercourse crossings. If required, mitigation measures including minimizing removal of bank stabilizing vegetation where possible, will be employed during construction of the watercourse crossings considering MNRF's Environmental Guideline for Access Roads and Water Crossings (1990).
- **Refueling Areas** – refuelling areas will be located in the Municipality of Red Lake, the Pikangikum First Nation community, or other private facility unless separate permits are obtained for a temporary construction camp.

5.2 Changes to the Project Design Since 2009

Figure 2 illustrates the Project screened in 2009 and the current proposed Project (as well as current environment and land use). The primary revisions to the Project since the MNRF screening are as follows:

- The northernmost section of the current proposed power line has been revised based on feedback from Pikangikum Chief and Council, community Elders, and consultation with MNRF. Both the community and MNRF have indicated a preference to align the routing with existing impacted areas and plans for future infrastructure, such as existing utilities corridors and roads (Whitefeather FMP). This re-alignment follows an existing utility corridor on the north side of the Berens River, and eliminates a submarine cable that was part of the previous design. Wataynikaneyap abides by a Chief's directive to the community forbidding the implementation of submarine cables due to concerns of impacts to aquatic habitat.
- The previous assessment considered a 10-m-wide ROW clearing with larger areas cleared at corners. To avoid excessive line outages, damage repair, and vegetation trimming, the revised effects assessment conservatively assumes:
 - up to a 20 m wide expansion of the existing cleared road ROW for 1/3 length of the line that is south of the Berens River; and
 - a ROW width of up to 20 m from centre-line for the balance of the corridor that is not located within or adjacent to existing ROW.
- The substation is proposed to be at a different location (Figure 2). This location accommodates the new alignment of the northern portion of the route. Noise emissions associated with the substation are not anticipated to be substantially different from the original substation.



- There is no permanent in-water work associated with the power line; all power line watercourse crossings will be overhead.
- Construction housing at the Stormer Lake Camp (if elected by a constructor), in the Municipality of Red Lake, ON, in the Pikangikum First Nation, and/or temporary construction accommodation.
- The Project has been designed to avoid and minimize potential effects to identified traditional land and resource use activities and sites as have been identified during Aboriginal engagement (see separate Aboriginal Record of Engagement), built heritage and cultural heritage landscape (Section 8.4) and archaeology resources (Section 8.5).

5.3 Operations and Maintenance Activities

Upon commissioning, the Project will operate on a continuous basis. Maintenance activities will include regular inspection of the power line and associated infrastructure (including the substation), and any necessary repairs and vegetation management along the ROW. All operation and maintenance activities will be conducted in accordance with permits and regulations, as well as standards adopted by the Independent Electricity System Operator (IESO) which generally mirror those set by the North American Electric Reliability Corporation.

Operation of the Project involves the transfer of electricity through the conductors between the existing 44kV feeder on the Nungesser Road that marks the point of connection to the existing grid and the substation, where voltage will be stepped down to 25 kV, then from the substation to the connection to the existing distribution system in Pikangikum First Nation. The electrical equipment and facility systems will be remotely monitored and controlled using a Supervisory Control and Data Acquisition (SCADA)/Operational Data System.

The line will be inspected for signs of physical damage (e.g., broken or missing insulators), loose or eroded parts (e.g., bolts) and condition of the conductors (e.g., frayed or areas of reduced clearance) at intervals prescribed by the IESO using access along existing or planned roads as well as the ROW itself. The power line ROW will be patrolled at intervals prescribed by the IESO to identify any trees that could pose a risk to the line. Likewise, the substation will undergo an inspection program that meets the minimum requirements of the IESO.

Typical power line maintenance activities include minor adjustments and replacements (e.g., replacement of insulators). However, more extensive repairs may be required that could involve the replacement of poles, conductors, anchors, and/or guy wires, necessitating the use of heavy equipment such as backhoes, boom trucks, tracked off-road equipment, and/or cranes. Other maintenance to a lesser degree includes station service and protection re-verification, as well as grounds maintenance and snow removal. Emergency maintenance may be required in the event of bad weather or power outages.

It is expected that vegetation management will be conducted every three to eight years during Project operation for any given line segment, or as required for safety purposes. Vegetation will be controlled by mechanical cutting where minimum powerline height clearances are being encroached on. Vegetation management will also be applied at the substation, as required.



6.0 ABORIGINAL ENGAGEMENT AND TRADITIONAL LAND AND RESOURCE USE DATA

Details of the approach to engagement can be found in the Aboriginal Engagement Plan (Appendix C). Aboriginal engagement completed by Wataynikaneyap, including methods and results of traditional land and resource use (TLRU) data and information collection, is provided in a separate Aboriginal Record of Engagement. Cultural values are also discussed in the archaeology assessment section (Section 8.5). An assessment of potential effects of the Project on TLRU and Aboriginal values are addressed through Project design and avoidance, as identified in the screening table below (Section 9.0, Table 11).

7.0 EXISTING BASELINE OVERVIEW

The following section provides an overview of baseline conditions based on a review of existing data and information. Figure 3 illustrates existing environment and land use with respect to the Project. Further baseline characterization detail is provided under the disciplines identified in the sections below and supporting appendices (e.g., Appendix B - Wildlife Species at Risk Assessment).

7.1 Air Quality and Climate

There are no ambient monitoring stations within hundreds of kilometres of the proposed Project. Air quality is generally unimpaired due to the remoteness of the area from major urban centres or heavy industry. The largest cause of negative air quality is smoke from periodic forest fires.

The climate in the study area is typical of the mid-Boreal climatic zone with warm summers (ranging from 6.1 to 37.8 degrees Celsius) and cold winters (ranging from 9.3 to -46.1 degrees Celsius). Average annual precipitation is 716 mm (Environment Canada).

7.2 Aquatic Environment

The Project is located within the Hudson Bay drainage basin and more specifically, the Chikuni and Upper Berens tertiary watersheds within the English and Eastern Winnipeg secondary watersheds.

The proposed Project crosses the BDE (formerly Cultural Landscape Waterways) DPA, which is a regulated provincial park. This DPA is particularly associated with the waterways that the Project is proposed to cross, which includes the Berens River, Kirkness River and Nungesser River.

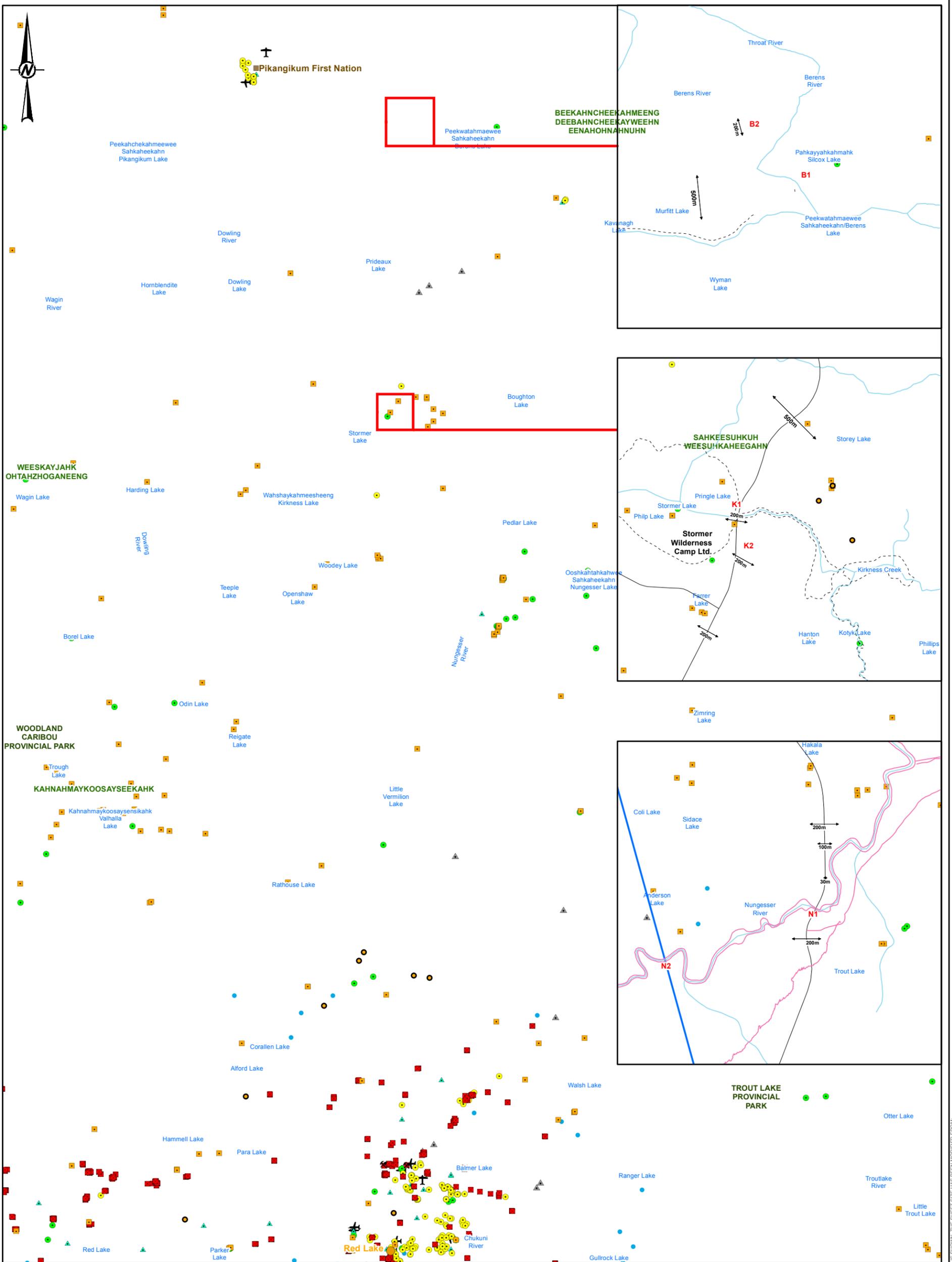
Degree of development in the area of the Project is limited and rivers and lakes are considered to be in their natural state. No identified provincially significant wetlands are crossed by the Project. The proposed line crosses Abalard Creek, Rindar Creek, Kirkness Creek, Nungesser River, Berens River and several small unnamed creeks.

A review of available information based on historical ranges and habitat requirements indicates there are at least 40 fish species known to inhabit the waterbodies and watercourses of the study area (Eakins 2012; Scott and Crossman 1973). These species include northern pike (*Esox lucius*), Walleye (locally known as Pickerel) (*Sander vitreus*), Sauger (*Sander canadensis*), Lake Trout (*Salvelinus namaycush*), Lake Whitefish (*Coregonus clupeaformis*) and Yellow Perch (*Perca flavescens*). All have wide distribution throughout the province of Ontario and are considered common to the region (Scott and Crossman 1973).



PIKANGIKUM DISTRIBUTION LINE PROJECT UPDATED PROJECT DESCRIPTION

As per the MNR letter dated April 7, 2016 regarding re-activation of the Class EA, Lake Sturgeon could potentially interact with the Project as they are present in both the Berens River and Pikangikum Lake. Lake Sturgeon (northwestern population) is listed as Threatened under the provincial ESA. The removal of the submarine crossing from the previous Project proposal has reduced the potential to affect this species.

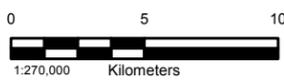


Legend

- | | | | |
|---------------------------------|--|---|---------------------------------------|
| ● City | ● Unknown Raptor Nesting Site | ■ Substation Area | □ Fish Nursery Area |
| ● Town | ● Aquatic Feeding Area | — Existing Electrical Transmission Line | ■ Conservation Reserve |
| ■ Wataynikaneyp Power Community | ● Helipoint | — Railway | ■ Dedicated Protected Area |
| ■ First Nation Community | ✈ Seaplane Base | — Far North Boundary | ■ Provincial Parks |
| ▲ Tower | — Major Roads and Highways | ■ First Nation Reserve Land | ■ Whitefeather Forest Management Unit |
| ● Water Wells | — Winter Road | ■ Active Mining Claims Areas | ■ Waterbody Thermal Regime |
| ✂ Mine | — Trail | ■ MTO Aggregate Sites | ■ Unknown |
| ▲ Active Aggregate Sites | — 2009 Proposed Distribution Line Route | ■ Kirkness Aggregate Expansion | ■ Cold |
| ■ Abandoned Mines | — Pikangikum Distribution Study Corridor - Current Route | ■ Kirkness Aggregate Expansion - Work | ■ Cool |
| ■ Recreation Point | — Pikangikum Distribution Study Corridor - Option A | ■ Caribou Nursery Area | ■ Warm |
| ● Tourism Establishment Area | — Pikangikum Distribution Study Corridor - Option B | ■ Wildlife Travel Corridor | |
| ● Forest Research Area | | ■ Spawning Area | |

REFERENCE(S)

1. BASE DATA - MNR LIO, OBTAINED 2016, NTDB
2. IMAGERY: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AERGRID, IGN, AND THE GIS USER COMMUNITY, AND LIDAR PROVIDED BY RES
3. TRANSMISSION ROUTES - PROVIDED BY WATAYNIKANEYP POWER L.P.
4. FIRST NATION COMMUNITIES FROM INDIGENOUS AND NORTHERN AFFAIRS CANADA (WWW.AINC-INAC.GC.CA)
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CLIENT
WATAYNIKANEYP POWER L.P.

PROJECT
PIKANGIKUM DISTRIBUTION LINE PROJECT

TITLE
EXISTING ENVIRONMENT AND LAND USE

CONSULTANT



PROJECT NO.
1657738

CONTROL
####

YYYY-MM-DD
2017-06-15

DESIGNED
JMC

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7.3 Terrestrial Environment

The Project traverses typical glaciated Northern Ontario Precambrian shield terrain, characterized by boreal forest, relatively shallow surficial soils over bedrock and irregular drainage systems. Vegetation is typical of the boreal forest with tree species including white birch (*Betula papyrifera*), jack pine (*Pinus banksiana*), white spruce (*Picea glauca*), black spruce (*Picea mariana*), trembling aspen (*Populus tremeloides*), balsam poplar (*Populus balsamifera*) and black ash (*Fraxinus nigra*) (Ontario Parks and Whitefeather Forest Management Corporation 2012).

An initial list of the commonly occurring mammals in the Project areas includes woodland caribou (*Rangifer tarandus caribou*), black bear (*Ursus americanus*), gray wolf (*Canis lupus*), moose (*Alces alces*), lynx (*Lynx canadensis*), pine marten (*Martes Americana*), ermine (*Mutela erminea*), fisher (*Martes pennanti*), mink (*Neovison vison*), beaver (*Castor canadensis*), red squirrel (*Tamiasciurus hudsonicus*), woodchuck (*Marmota monax*) and snowshoe hare (*Lepus americanus*) (Environment Canada 2010). Typical bird species include spruce grouse (*Falcipecten canadensis*), sharp-tailed grouse (*Tympanuchus phasianellus*), ruffed grouse (*Bonasa umbellus*), herring gull (*Larus argentatus*), double-crested cormorant (*Phalacrocorax auritus*), bald eagle (*Haliaeetus leucocephalus*), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), American black duck (*Anas rubripes*), wood duck (*Aix sponsa*), hooded merganser (*Lophodytes cucullatus*), pileated woodpecker (*Dryocopus pileatus*) and turkey vulture (*Cathartes aura*) (Environment Canada 2010). Several species of amphibians, reptiles and insects are likely to inhabit the study areas and include boreal chorus frog (*Pseudacris maculate*), central newt (*Notophthalmus viridescens louisianensis*), eastern gartersnake (*Thamnophis sirtalis sirtalis*), western painted turtle (*Chrysemys picta bellii*), American emerald (*Cordulia shurtleffi*) and Canada darner (*Aeshna canadensis*).

As per the MNRF letter dated April 7, 2016 regarding re-activation of the Class EA, the following species at risk could potentially interact with the Project:

- Woodland caribou – the Project is located within the Berens range (Figure 3). Throughout the distribution of this species in Canada, local population declines have occurred due to alteration of their habitat (i.e., fragmentation, loss, degradation) which increases predation pressure (Environment Canada 2012). Federal recovery initiatives for this species focus on achieving self-sustaining populations by limiting habitat alteration (Environment Canada 2012). The MNRF published an Integrated Range Assessment for Woodland Caribou and their Habitat: Berens Range (MNRF 2014), a quantitative analysis of past and present caribou occupancy and range condition. It is used to guide management decisions that support the conservation of caribou and their habitat within the Berens Range.
- Wolverine are listed as threatened on the Species at Risk in Ontario (SARO) list and the species and its habitat are protected under the ESA.
- Eastern whip-poor-will are listed as threatened on the SARO list and protected under the ESA. There was evidence of Eastern whip-poor-will documented within 20 km northeast of Red Lake during field surveys undertaken in 2016 (Appendix B).
- Bank swallow are listed as threatened on the SARO list and protected under the ESA. Aggregate pits are often used for nesting. Consideration will be given to any pits adjacent to the proposed route.



Little brown myotis and Northern long-eared myotis bats are listed as endangered and afforded species and habitat protection under the ESA. A description of baseline conditions and an assessment of effects of the Project on Species at Risk are included in Appendix B. Bald eagle, provincially of special concern under SARO, as well as horned grebe and Canada warbler, listed as of special concern under SARO and SARA are also considered. Federal SARA species including common nighthawk (threatened) and olive-sided fly-catcher have also been considered in the assessment of effects to wildlife Species at Risk in Appendix B.

7.4 Socio-Economic Environment

The proposed Project is within the District of Kenora which has a land area of approximately 407,213 km² and a population of 57,607, 37% of whom self-identify as having Aboriginal origins. The Municipality of Red Lake is the single incorporated community within the vicinity of the project.

Economic development in the area is severely limited by the current power supply infrastructure, and many of the First Nation communities, including Pikangikum First Nation are at capacity. This limited power supply contributes to numerous challenges within the communities ranging from constraints to new economic development opportunities and inability to develop large renewable energy projects, to overcrowding in houses due to an inability to connect new homes to the existing distribution network, lack of consistent access to community infrastructure including communications, water systems, the grocery store, fuel supplies, and school from frequent power outages caused by an unreliable power system. Connecting to the provincial transmission system would establish a reliable power supply system that could foster economic development and improve living conditions within these communities (SENES 2014).

Northwestern Ontario, including the Project area, is characterized by an economic base historically dependent on natural resources, including forestry and mining. The closest mine to the study area is Goldcorp's Red Lake Gold Mine and there are several other mines in its vicinity.

7.5 Land and Resource Use

Natural resources are an important part of the recreation and tourism industry in the study areas. Common outdoor recreational activities include fishing, hunting, recreational boating, snowmobiling, camping, canoeing and hiking (McKenzie Forest Products Inc. 2011). Recreational users enjoy the isolated wilderness aesthetic provided by the region's expansive forests, lakes and waterways. In 2010, there were over 1,837,000 person visits to the Northern Ontario Tourism Region – North West (Region 13c), with related visitor spending of over \$454 million (MTCS 2012). This visitor spending supported nearly 5,200 direct, indirect and induced jobs (MTCS 2014). There are eight identified recreational points in close proximity to the proposed line: three commercial boat caches, two private boat caches, two access points and a designated camping site (Figure 3). There are four tourism establishments in close proximity to the Project including the Red Lake and Area Golf and Country Club, Coli Lake Campground, Stormer Wilderness Camp Ltd., and McNeely Boat Club (Figure 3). MNR has land use plans for docks and vehicular parking at the Nungesser River also.

There are three active permitted aggregate pits (Figure 3) in close proximity to the Project, belonging to Dale Butterfield, Red Lake Gold Mines and the Whitefeather Economic Development Corporation. There are a further two surrendered aggregate pit sites previously belonging to Whitefeather Economic Development Corporation. There are three MTO aggregate pits overlapping the limits of work for the project also. One south of the Nungesser River to the east of the road, one north of the Kirkness Creek on the east side of the road and the Kirkness Aggregate Expansion area including an area on each side of the road east of Kirkness Lake.



The power line originates within 1.6 km of Red Lake Airport Runway 08/26. An Aeronautical Construction Clearance Form was previously submitted to Transport Canada who reviewed and approved pole heights and locations, when the routing originated closer to the runway at the southern end of Nungesser Road. Transport Canada approval is expected to be re-obtained if required using the revised and presumably lower-aviation-impact design. As well, a Bell communications tower is located approximately 350 m west of the Nungesser Road north of Kirkness Creek.

Various First Nations employ traditional land-based activities including hunting, fishing, trapping, gathering and harvesting. These land based activities represent an important supplement with respect to food sources, additional income, and quality of life. Traditional activities go well beyond the boundaries of the First Nation Reserves.

The Project is located within the Whitefeather Forest for which a land use strategy was developed jointly by Pikangikum First Nation (through the Whitefeather Forest Management Corporation) and the MNRF. Keeping the Land: A Land Use Strategy for the Whitefeather Forest and Adjacent Areas (Pikangikum First Nation and Ontario Ministry of Natural Resources 2006) is deemed to be an approved community based land use plan under Section 9(21) of the Far North Act (2010) and includes the following land use designations: General Use Areas, Enhanced Management Areas and DPA. There are five Cheemuhnuhcheecheekuhtaykeehn (DPAs) identified under the LUS. The proposed line crosses the BDE DPA (formerly Cultural Landscape Waterways) for which a series of management proposals were put forward in 2013 (Figure 3).

The Whitefeather Forest Land Use Strategy Implementation Team (WFLUSIT) provides direction on land use decision making within the Whitefeather Land Use Strategy planning area. Similarly, the Whitefeather Forest Initiative Steering Group (WFISG) provides direction on land use decision making in the context of forest management planning, and the Whitefeather Forest Community Resources Management Authority (WFCRMA) is the holder of the Sustainable Forest Licence for the Whitefeather Forest. Wataynikaneyap is engaging with these groups on the Project, including alternative locations for crossing the DPA and to discuss consistency with existing knowledge and strategic direction.

8.0 EFFECTS ASSESSMENT AND MITIGATION

The focus of this assessment is on Project changes since the initial Statement of Completion of the project was issued in 2009. This includes potential effects of the Project to the BDE (formerly Cultural Landscape Waterways) DPA regulated under the *Provincial Parks and Conservation Reserves Act (PPCRA)* (2006) in 2009; new regulations affording species and habitat protection under the *Endangered Species Act, 2007*, new species additional to the *Species at Risk List in Ontario*, and potential effects to cultural heritage resources in relation to any routing or other changes proposed for the Project.

Two key Project changes considered in this report are the new route in the northern section of the line, and an additional clearing width required. A summary of the 2009 assessment and applicability of mitigations recommended is provided in Table 11 (Section 9.0). Additionally, mitigations recommended to address potential effects as a result of the Project changes are also provided in Table 11 (Section 9.0).



8.1 Assessment Method

The general steps in the environmental assessment are summarized below:

- Describing the Project;
- Identifying components of the environment that may interact with the Project to focus the assessment, done in engagement with Aboriginal people, government agencies, and other interested parties;
- Defining the spatial and temporal boundaries for the assessment, and the assessment cases used to assess the effects of the Project;
- Describing existing conditions;
- Identifying potential Project-environment interactions;
- Predicting and characterizing net effects of the Project (Project Case);
- Predicting and characterizing cumulative effects of the predicted Project Case net effects in combination with past, present and reasonably foreseeable future activities (Reasonably Foreseeable Development Case);
- Determining the significance of the net effects of the Project Case and the Reasonably Foreseeable Development Case;
- Identify key factors influencing confidence in effects predictions and how uncertainty is managed so that effects are not underestimated;
- Identifying monitoring and follow-up to confirm predictions and address uncertainty; and
- Presenting overall conclusions with regard to the results of the assessment for each assessed criterion.

Assessment Boundaries

Spatial Boundaries

Defining the geographic extent of study areas is a key step in the environmental assessment process. Spatial boundaries are selected for the assessment using the following factors:

- physical extent of the Project;
- physical extent of anticipated Project-related effects; and
- physical extent of key environmental systems (e.g., watershed boundary of potentially affected streams).

Study areas generally defined for the Project include:

- **Project footprint** – established to identify areas of direct disturbance (i.e., the physical area required and cleared for Project construction and operation). The Project footprint includes the up to 40-m-wide ROW and substation. The specific footprint for this project has not been fully defined and is conservatively assessed in this report considering the up to 40-m-wide ROW within the limits of work representing the most sensitive area defined for a specific environmental component.



- **Local Study Area** – The local study area (LSA) is meant to encompass the area where most effects of the Project are likely to be measurable, including the Project footprint; and therefore the focus of data collection to characterize the existing environment. The LSA for the disciplines includes the limits of work (between 200 m and 500 m width; see Figure 2) where most of the Project components are expected to be located; and therefore most of the Project effects are expected to occur.
- **Regional Study Area** – The regional study area (RSA) includes areas outside of the LSA used to measure broader-scale existing environment conditions, and provide regional context for the maximum predicted geographic extent of effects from the Project (e.g., changes to downstream water quality, caribou ranges, or changes to regional employment and incomes). Cumulative effects from the Project in combination with past, present, and reasonably foreseeable developments are typically assessed at this larger spatial scale.

Temporal Boundaries

The environmental assessment is designed to evaluate the short- and longer-term changes from the Project and associated effects on the physical, biological and socio-economic environments. Temporal (time) boundaries considered for this Project include:

- **Construction Phase** – Construction is expected to commence in the late-summer of 2017, to meet an in-service date of fall 2018.
- **Operations and Maintenance Phase** – The Project is expected to operate indefinitely.

Assessment Cases

- **Project Case** – This scenario represents predictions of the existing conditions (Base Case) combined with the effects that may result from the Project. This case is used to identify incremental changes that are predicted to occur from the Project.
- **Reasonably Foreseeable Development Case** – This scenario characterizes cumulative effects associated with past and present developments, the Project Case plus additional reasonably foreseeable developments in the region that have not yet been approved or are approved but not yet constructed. Developments and activities that are currently under application review, have officially entered a regulatory application process, are considered reasonably foreseeable.

Determination of Significance

The net effects characterization of primary pathways and the associated predicted changes in indicators provide the foundation for determining the significance of incremental (i.e., Project Case), and cumulative effects from the Project and other past, present, and reasonably foreseeable developments on criteria assessment endpoints (i.e., the Reasonably Foreseeable Development Case). The characterization of net effects and the determination of significance are completed for assessment of the Project. The key factors considered in the determination of significance of effects to criteria are:

- Results from the net effects characterization.



- Context, magnitude, geographic extent, duration and reversibility are the primary factors used to determine significance. Frequency and timing are modifiers for determining significance, where applicable.
- Where uncertainty is high and the effect might be either significant or not significant, the assessment would use a precautionary approach and identified the effect as significant and provided additional follow-up actions to reduce uncertainty.

8.2 Parks and Protected Areas

This section presents the parks and protected areas baseline characterization and effects assessment and mitigation. This section also provides an alternatives analysis, as required under the MNRF Class EA PPCR and the *Provincial Parks and Conservation Reserves Act (2006) (PPCRA)*.

8.2.1 Study Areas

One study area, the LSA, is the limits of work at the BDE DPA.

8.2.2 Baseline Characterization

On April 18, 2011 the majority of the Whitefeather DPA were regulated as provincial parks without classification under the *PPCRA*. The proposed Project crosses the BDE DPA, which is regulated under the *PPCRA*.

Cultural Landscape Waterways are described as: “a special land use category to enhance the value of waterways to visitors who wish to enjoy the land through recreation and tourism activities. These areas are in most cases a combination of Dedicated Protected Areas and Enhanced Management Areas”. This DPA category recognizes these waterways as having an important place in the culture and history of Pikangikum people; as cultural landscapes, they are the living result of Pikangikum people’s historical customary stewardship role in the Whitefeather planning area. This land use category also enhances opportunities for recreation and eco-cultural tourism activities (Pikangikum First Nation and Ontario Ministry of Natural Resources 2006).

The boundaries of this DPA follow ecosystem features and natural and cultural feature boundaries. There are no critical landform vegetation within the DPA that could be affected by the Project.

The *PPCRA* provides the legislative framework for the formal protection of provincial parks and conservation reserves, allowing the MNRF (generally through Ontario Parks) to manage these areas. Development is generally prohibited or limited in Ontario’s parks and protected areas; however, Section 20(2) of the Act does permit utility corridors, stating that “subject to the policies of the Ministry and the approval of the Minister, with or without conditions, utility corridors, including but not limited to utility corridors for electrical transmission lines, are permitted in provincial parks and conservation reserves” (Government of Ontario 2006). Section 21 of the Act states that in approving a utility corridor under Section 20, the Minister must be satisfied that “there are no reasonable alternatives; that the lowest cost is not the sole or overriding justification; and that environmental impacts have been considered and all reasonable measures will be undertaken to minimize harmful environmental impact and to protect ecological integrity” (Government of Ontario 2006).



The Whitefeather LUS provides direction on access with regards to the BDE DPA and associated enhanced management areas, which is as follows:

“There will be no road access within this area with the possible exception of access provisions for major crossings. Waterway crossings required to provide road access for a variety of purposes including northern communities’ access, mineral exploration and development, and forest management will be accommodated and determined through appropriate planning processes (Pikangikum First Nation and Ontario Ministry of Natural Resources 2006).

Land use direction from Keeping the Land: A Land Use Strategy for the Whitefeather Forest and Adjacent Areas (a community based land use plan under the Far North Act) is reflected in Ontario’s Crown Land Use Policy Atlas (CLUPA) which lists new energy transmission and communications corridors as possible permitted uses within the DPA:

“In certain circumstances such as for a major energy transmission and communications corridor, provisions for access and water crossings will be made through a planning process, considering the intent and values of the area.” (Queens Printer for Ontario 2014).

8.2.3 Project Alternatives

As required under the PPCR Class EA, an evaluation of alternatives is required including alternatives to the Project and alternative methods for carrying out the Project. Section 20 (2) of the *PPCRA* permits utility corridors in provincial parks (subject to policies of the Ministry and approval of the Minister). Section 21 of the *PPCRA* lists conditions for approval that must be met when approving a utility corridor. They are:

- There are no reasonable alternatives;
- Lowest cost is not the sole or overriding justification; and
- Environmental impacts have been considered and all reasonable measures will be undertaken to minimize harmful environmental impact and to protect ecological integrity.

This section provides the analysis and results of the alternative methods for carrying out the Project. The alternatives to the Project was completed and included in the 2009 federal screening EA; and therefore will not be addressed in this document.

Alternatives Analysis

The proposed power line will cross the aforementioned DPA in three locations: Nungesser River, Kirkness Creek, and the Berens River/Lake. Two alternatives have been identified for each crossing, which are described below. The two alternative locations for the Kirkness Creek and Berens River / Lake are identified on Figure 2:

- **Nungesser River** – Alternative N1 proposes to cross the Nungesser River as close to the 30 m Nungesser Road ROW as is technically reasonable (but still intersecting part of the DPA). Alternative N2 is the crossing location in Nungesser that had been approved in 2009 and is completely within the DPA. This crossing is approximately 1 km west of Nungesser Road. There is no in-water work planned for either alternative.



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- **Kirkness Creek** – Alternative K1 will predominantly be located outside the DPA following the ROW for the existing Nungesser Road; however, the alternative may require some project activities within the DPA boundary. The power line would clear span Kirkness Creek. Alternative K2 uses an existing previously cleared corridor within the DPA, and the power line would clear span Kirkness Creek. There is no in-water work planned for either alternative. The crossings are of a similar length (approx. 30 m).
- **Berens River/Lake** – Alternative B1 proposes to cross Berens Lake in the DPA at a location adjacent to where a bridge is proposed to be constructed; and Alternative B2 proposes to cross the Berens River in a narrower area of the DPA where the crossing distance is minimized.

Table 1 provides a summary of the key factors for the alternatives analysis for the Nungesser River, Kirkness Creek and Berens River/Lake DPA crossings related to DPA values, environmental considerations, social and environment considerations, Aboriginal and non-Aboriginal cultural considerations, and cost and constructability. The key factors considered in the assessment are based on the screening criteria identified in the PPCR Class EA. Where screening criteria have not been identified as key factors, they are not judged to mark a distinguishing characteristic between the alternatives (i.e., the project is not expected to affect permafrost within or adjacent to the DPA; release of contaminants in soils and sediments will be managed through best management practices for all alternatives; the project will have a high positive effect for the Pikangikum First Nation under all alternatives). See Table 11 in Section 9.0 for consideration of other screening criteria and identified mitigation. Mitigation measures summarized for the Project in Section 9.0 are applicable in all work areas, including within and adjacent to the DPA.

Table 1: Project Alternatives Analysis

Key Factors	Project Alternatives		Preferred Alternative and Rationale
	Nungesser River		
	N1 (current line)	N2 (original project)	
Values for which the provincial park or conservation reserve was established (including Aboriginal values, land use and resource management considerations)	<p>The BDE DPA is recognized as having an important place in the culture and history of the Pikangikum people; and the designated land use category also enhances opportunities for remote recreation and eco-cultural tourism activities.</p> <p>Both alternatives may have a low negative effects on park user experience due to the visual aspect of the power line. There will be potential effects to noise during construction of the Project, but this will be short-term. Neither of these effects are predicted to be significant.</p> <p>The operation and maintenance of the power line does not result in any limit of access of land or water in or to the DPA for cultural or recreational purposes.</p> <p>Wildlife and fish resource populations are not predicted to be significantly affected by the Project; thereby not affecting use of these resources in the DPA.</p> <p>North of Nungesser River there is timing restriction during April and November along a wildlife travel corridor, as per MNRF.</p> <p>All activities at Nungesser River crossing of the BDE DPA are subject to a timing restriction to minimize sensory disturbance from July 15 to September 15 up to 10 km from a defined area of woodland caribou nursery habitat.</p>		No discernable difference



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Table 1: Project Alternatives Analysis

Key Factors	Project Alternatives		Preferred Alternative and Rationale
	Nungesser River		
	N1 (current line)	N2 (original project)	
	<p>There are no new permanent access roads associated with the Project in the DPA.</p> <p>No construction waste associated with the Project will be permitted within the DPA.</p>		
Natural environment considerations	<p>The cleared area adjacent to the existing Nungesser Road is not wide enough to accommodate the Project infrastructure and adjacent tree clearing requirements along the crossing of Nungesser River DPA. Based on the position of the road within its defined ROW, vegetation clearing for the Project ROW will extend beyond the road ROW and require clearing within the DPA boundary.</p>	<p>There will be a need for a new separate ROW up to 20 m in width from the centre-line for the construction and operation and maintenance approximately 1 km west of the Nungesser Road.</p>	<p>N1 is preferred to be adjacent to an existing previously cleared corridor (Nungesser Road), to reduce cumulative effects such as visual disturbance, noise, and habitat fragmentation within the DPA.</p>
	<p><u>Vegetation and Habitat Linkages</u></p> <p>There will be vegetation clearing required for a new ROW adjacent to the existing road. No rare vegetation communities are identified within the limits of work. The ROW will overlap with the existing road ROW to the degree possible, but some clearing will be required within the DPA. As noted above, timing restrictions for work are in place in this area relative to use by woodland caribou. Vegetation and habitat linkages are not predicted to be significantly affected.</p>	<p><u>Vegetation and Habitat Linkages</u></p> <p>There will be vegetation clearing required for a new ROW. No rare vegetation communities are identified within the limits of work. The ROW would represent a new clearing in an area of undeveloped habitat within the DPA. As noted above, timing restrictions for work are in place in this area relative to use by woodland caribou. A new ROW would introduce potential for effects such as visual disturbance, noise and habitat fragmentation not currently present within this area of the DPA.</p>	
Social and economic considerations (including tourism values)	<p>The power line (visually resembling a 115 kV transmission line) will result in visual effects. The power line will be able to be viewed by persons using Nungesser River for recreational and commercial activities at the Nungesser Road; and may be visible from a tourist operator lodge located on the opposite side of the Nungesser Road (east side) from the planned N1 location. The power line will be located adjacent to the road on the west side with primary access to the river on the east side of the road.</p>	<p>There will be a visual effect to cultural and recreational use due to the new power line structure in an undeveloped section of the DPA.</p> <p>There are no commercial sensitive viewpoints associated with this alternative.</p>	<p>Neither N1 nor N2 is preferred as both result in potential visual effects to cultural and recreational use within the DPA. N1 includes commercial and recreational users who currently access the Nungesser River at a developed location (adjacent to existing Nungesser Road, established boat launch). Development at N2 represents disturbance to a currently undeveloped area.</p>



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Table 1: Project Alternatives Analysis

Key Factors	Project Alternatives		Preferred Alternative and Rationale
	Nungesser River		
	N1 (current line)	N2 (original project)	
Aboriginal and non-Aboriginal cultural considerations (including archaeology, built heritage, sacred or traditional use sites)	<p><u>Archaeology</u></p> <p>Archaeological potential has been identified at this crossing location. A Stage 2 archaeological assessment is required prior to development. Should archaeological resources be identified, pole location and frozen ground timing restrictions may be implemented, or a Stage 3 and potentially a Stage 4 archaeological assessment may be required.</p> <p>With the implementation of mitigation measures through the Ministry of Tourism, Culture and Sport (MTCS) staged assessment process, this alternative is not predicted to result in significant effects to known archaeological resources.</p>	<p><u>Archaeology</u></p> <p>Archaeological potential has been identified at this crossing location. A Stage 2 archaeological assessment is required prior to development. Should archaeological resources be identified, pole location and frozen ground timing restrictions may be implemented, or a Stage 3 and potentially a Stage 4 archaeological assessment may be required.</p> <p>With the implementation of mitigation measures through the MTCS staged assessment process, this alternative is not predicted to result in significant effects to known archaeological resources.</p>	No discernable difference
	<p><u>Built Heritage and Cultural Heritage Landscape</u></p> <p>There is no built heritage within the limits of work. There will be ROW clearing required within the DPA that will affect the cultural heritage landscape within the DPA. However, the Project clearing is adjacent to an existing road that has already created a linear corridor intrusion into the cultural heritage landscape. In addition, the building of a power line through the landscape is reversible as the corridor can be removed and the area returned to its original state. No irreversible effects to the cultural heritage landscape is predicted.</p>	<p><u>Built Heritage and Cultural Heritage Resources</u></p> <p>There is no built heritage within the limits of work. There will be ROW clearing required within the DPA that will affect the cultural heritage landscape within the DPA. The building of a power line through the landscape is reversible as the corridor can be removed and the area returned to its original state. No irreversible significant effects to the cultural heritage landscape is predicted.</p>	
	<p><u>Sacred or traditional use sites; spiritual, ceremonial or cultural sites</u></p> <p>There were no sacred or traditional use sites; spiritual, ceremonial or cultural sites identified within the limits of work in the DPA.</p>	<p><u>Sacred or traditional use sites; spiritual, ceremonial or cultural sites</u></p> <p>There were no sacred or traditional use sites; spiritual, ceremonial or cultural sites identified within the limits of work in the DPA.</p>	



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Table 1: Project Alternatives Analysis

Key Factors	Project Alternatives		Preferred Alternative and Rationale
	Nungesser River		
	N1 (current line)	N2 (original project)	
<i>Preferred Alternative</i>	<i>N1</i>		

Table 1: Project Alternatives Analysis

Key Factors	Project Alternatives		Preferred Alternative and Rationale
	Kirkness Creek		
	K1	K2	
Values for which the provincial park or conservation reserve was established (including Aboriginal values, land use and resource management considerations)	<p>The BDE DPA is recognized as having an important place in the culture and history of the Pikangikum people; and the designated land use category also enhances opportunities for remote recreation and eco-cultural tourism activities.</p> <p>Both alternatives may have a low negative effects on park user experience due to the visual aspect of the power line. There will be potential effects to noise during construction of the Project, but this will be short-term. Neither of these effects are predicted to be significant.</p> <p>The operation and maintenance of the power line does not result in any limit of access of land or water in or to the DPA for cultural or recreational purposes.</p> <p>Wildlife and fish resource populations are not predicted to be significantly affected by the Project; thereby not affecting use of these resources in the DPA.</p> <p>There are no new permanent access roads associated with the Project in the DPA.</p> <p>No construction waste associated with the Project will be permitted within the DPA.</p>		No discernable difference
Natural environment considerations	The cleared area adjacent to the existing Nungesser Road is not wide enough to accommodate the Project infrastructure along the crossing of Kirkness Creek. Based on the position of the road within its defined ROW, vegetation clearing for the Project ROW may extend beyond the road ROW and require limited clearing within the DPA boundary.	The power line will make use of an existing previously cleared corridor within the DPA. There will be some requirement for clearing of vegetation regrowth within the corridor, and a widening to accommodate the power line.	K2 is preferred to make use of an existing previously cleared corridor, which will mitigate but not remove the effect of ROW clearing.



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Table 1: Project Alternatives Analysis

Key Factors	Project Alternatives		Preferred Alternative and Rationale
	Kirkness Creek		
	K1	K2	
	<p><u>Vegetation and Habitat Linkages</u></p> <p>There will be vegetation clearing required for a new ROW adjacent to the existing road. No rare vegetation communities are identified within the limits of work. The ROW will overlap with the existing road ROW to the degree possible, but clearing may be required within the DPA. Vegetation and habitat linkages are not predicted to be significantly affected.</p>	<p><u>Vegetation and Habitat Linkages</u></p> <p>There will be clearing of vegetation regrowth within the existing previously cleared ROW in the DPA, and a widening to accommodate the power line. No rare vegetation communities are identified within the limits of work. Vegetation and habitat linkages are not predicted to be significantly affected.</p>	
<p>Social and economic considerations (including tourism values)</p>	<p>The power line (visually resembling a 115 kV transmission line) will result in visual effects. The power line will be able to be viewed by persons using Stomer Lake for recreational and commercial activities; be viewed from Stomer Wilderness Camp Ltd. accessed on the west side of the Nungesser Road approximately 250 m south of the crossing of Kirkness Creek; and viewed by cultural and recreational users in the DPA.</p>	<p>There will be a visual effect to cultural and recreational use due to the new power line structure in the DPA.</p> <p>There are no commercial sensitive viewpoints associated with this alternative.</p>	<p>K2 is preferred as the potential visual effects are less than K1.</p> <p>K1 includes commercial and recreational users that experience a remote lake and wilderness camp that may be affected by the addition of a power line along the lake shore and directly adjacent to the wilderness camp.</p>
<p>Aboriginal and non-Aboriginal cultural considerations (including archaeology, built heritage, sacred or traditional use sites)</p>	<p><u>Archaeology</u></p> <p>Archaeological potential has been identified at this crossing location. A Stage 2 archaeological assessment is required prior to development. Should archaeological resources be identified, a Stage 3 and potentially a Stage 4 archaeological assessment will be required.</p> <p>With the implementation of mitigation measures through the Ministry of Tourism, Culture and Sport (MTCS) staged assessment process, this alternative is not predicted to result in significant effects to known archaeological resources.</p>	<p><u>Archaeology</u></p> <p>Archaeological potential has been identified at this crossing location. A Stage 2 archaeological assessment is required prior to development. Should archaeological resources be identified, a Stage 3 and potentially a Stage 4 archaeological assessment will be required.</p> <p>With the implementation of mitigation measures through the MTCS staged assessment process, this alternative is not predicted to result in significant effects to known archaeological resources.</p>	<p>No discernable difference</p>



PIKANGIKUM DISTRIBUTION LINE PROJECT UPDATED PROJECT DESCRIPTION

Table 1: Project Alternatives Analysis

Key Factors	Project Alternatives		Preferred Alternative and Rationale
	Kirkness Creek		
	K1	K2	
	<p><u>Built Heritage and Cultural Heritage Landscape</u></p> <p>There is no built heritage within the limits of work. There will be ROW clearing required within the DPA that will affect the cultural heritage landscape within the DPA. However, the Project clearing is adjacent to an existing road that has already created a linear corridor intrusion into the cultural heritage landscape. In addition, the building of a power line through the landscape is reversible as the corridor can be removed and the area returned to its original state. No irreversible effects to the cultural heritage landscape is predicted.</p>	<p><u>Built Heritage and Cultural Heritage Resources</u></p> <p>There is no built heritage within the limits of work. The Project will use an existing ROW, which has already created a linear corridor intrusion into the cultural heritage landscape. In addition, the building of a power line through the landscape is reversible as the corridor can be removed and the area returned to its original state. No irreversible significant effects to the cultural heritage landscape is predicted.</p>	
	<p><u>Sacred or traditional use sites; spiritual, ceremonial or cultural sites</u></p> <p>There were no sacred or traditional use sites; spiritual, ceremonial or cultural sites identified within the limits of work in the DPA.</p>	<p><u>Sacred or traditional use sites; spiritual, ceremonial or cultural sites</u></p> <p>There were no sacred or traditional use sites; spiritual, ceremonial or cultural sites identified within the limits of work in the DPA.</p>	
Preferred Alternative	K2		



PIKANGIKUM DISTRIBUTION LINE PROJECT UPDATED PROJECT DESCRIPTION

Table 1: Project Alternatives Analysis

Berens River / Lake			
Key Factors	B1	B2	Preferred Alternative and Rationale
<p>Values for which the provincial park or conservation reserve was established (including Aboriginal values, land use and resource management considerations)</p>	<p>The DPA is recognized as having an important place in the culture and history of the Pikangikum people; and the designated land use category also enhances opportunities for remote recreation and eco-cultural tourism activities.</p> <p>Both alternatives may effects on park user experience due to the visual aspect of the power line. There will be potential effects to noise during construction of the Project, but this will be short-term. Neither of these effects are predicted to be significant.</p> <p>The operation and maintenance of the power line does not result in any limit of access of land or water in or to the DPA for cultural or recreational purposes.</p> <p>Wildlife and fish resource populations are not predicted to be significantly affected by the Project; thereby not affecting use of these resources in the DPA.</p> <p>There are no access roads associated with the Project in the DPA; the B1 alternative would be located adjacent to the planned Berens River bridge, which would connect two sides of a planned road approved in the Whitefeather Forest Management Plan. Construction and maintenance access to the B2 alternative would be through the corridor itself.</p> <p>No waste associated with the Project will be permitted within the DPA.</p>		<p>No discernable difference</p>
<p>Natural environment considerations</p>	<p>The power line will be located adjacent to a planned road ROW. A smaller area of vegetation clearing is required for the power line ROW where the Project can be located adjacent to the planned Whitefeather Forest Road ROW.</p> <p><u>Vegetation and Habitat Linkages</u> A smaller area of vegetation clearing may be required for the power line ROW where the Project can be located adjacent to the planned Whitefeather Forest Road ROW. No rare vegetation communities are identified within the limits of work. The ROW will overlap with the planned road ROW to the degree possible, but clearing will be required within the DPA. Vegetation and habitat linkages are not predicted to be significantly affected.</p>	<p>There will be a need for a new separate ROW up to 20 m in width from the centre-line for the construction and operation and maintenance of the power line, approximately 1 km downstream of the planned Berens River bridge location.</p> <p><u>Vegetation and Habitat Linkages</u> There will be vegetation clearing required for a new ROW. No rare vegetation communities are identified within the limits of work. Vegetation and habitat linkages are not predicted to be significantly affected.</p>	<p>B1 is preferred as a smaller area of vegetation clearing may be required for the power line ROW where the Project can be located adjacent to the planned Whitefeather Forest Road ROW. Additionally, given plans for a future bridge with a large truss structure in the vicinity of B1, the aerial collision hazard of power line is expected to be partially reduced.</p>



PIKANGIKUM DISTRIBUTION LINE PROJECT UPDATED PROJECT DESCRIPTION

Table 1: Project Alternatives Analysis

Berens River / Lake			
Key Factors	B1	B2	Preferred Alternative and Rationale
<p>Social and economic considerations (including tourism values)</p>	<p>The power line will clear span Berens Lake adjacent to the planned Berens River bridge location. There will be a visual effect to cultural and recreational use due to the new power line structure in the DPA; however, the contribution of the power line compared with the cumulative visual effect of the power line and the bridge is not predicted to be significant.</p> <p>There are no commercial sensitive viewpoints associated with this alternative.</p>	<p>The power line through the DPA will be a new structure approximately 1 km downstream from the planned Berens River bridge location. There will be a visual effect to cultural and recreational use due to the new power line structure in the DPA.</p> <p>There are no commercial sensitive viewpoints associated with this alternative.</p>	<p>B1 is preferred as the power line will be near to the planned bridge structure.</p>
<p>Aboriginal and non-Aboriginal cultural considerations (including archaeology, built heritage and cultural heritage landscapes, sacred or traditional use sites; spiritual, ceremonial or cultural sites)</p>	<p><u>Archaeology</u></p> <p>One identified archaeological site and archaeology potential have been identified within the limits of work. A Stage 2 archaeological assessment is required prior to development. Should archaeological resources be identified a Stage 3 and potentially a Stage 4 archaeological assessment will be required.</p> <p>With the implementation of mitigation measures through the Ministry of MTCS's staged assessment process, this alternative is not predicted to result in effects to archaeological resources.</p>	<p><u>Archaeology</u></p> <p>There is archaeology potential within the limits of work. A Stage 2 archaeological assessment is required prior to development. Should archaeological resources be identified a Stage 3 and potentially a Stage 4 archaeological assessment will be required.</p> <p>With the implementation of mitigation measures through the MTCS's staged assessment process, this alternative is not predicted to result in effects to archaeological resources.</p>	<p>B2 is preferred as there is an identified archaeological site within the limits of work for B1.</p>



PIKANGIKUM DISTRIBUTION LINE PROJECT UPDATED PROJECT DESCRIPTION

Table 1: Project Alternatives Analysis

Berens River / Lake			
Key Factors	B1	B2	Preferred Alternative and Rationale
	<p><u>Built and Cultural Heritage Landscapes</u></p> <p>There is no built heritage within the limits of work. There will be ROW clearing required within the DPA that will affect the cultural heritage landscape within the DPA. However, the Project clearing is adjacent to the proposed Whitefeather Road ROW to minimize the linear corridor intrusion into the cultural heritage landscape. In addition, the building of a power line through the landscape is reversible as the corridor can be removed and the area returned to its original state. No irreversible significant effects to the cultural heritage landscape is predicted.</p>	<p><u>Built and Cultural Heritage Landscapes</u></p> <p>There is no built heritage within the limits of work. There will be ROW clearing required within the DPA that will affect the cultural heritage landscape within the DPA. However, the Project clearing is adjacent to the proposed Whitefeather Road ROW to minimize the linear corridor intrusion into the cultural heritage landscape. In addition, the building of a power line through the landscape is reversible as the corridor can be removed and the area returned to its original state. No irreversible significant effects to the cultural heritage landscape is predicted.</p>	
	<p><u>Sacred or traditional use sites: spiritual, ceremonial or cultural sites</u></p> <p>There are no known sacred or traditional use sites; spiritual, ceremonial or cultural sites identified within the limits of work in the DPA.</p>	<p><u>Sacred or traditional use sites: spiritual, ceremonial or cultural sites</u></p> <p>There are no known sacred or traditional use sites; spiritual, ceremonial or cultural sites identified within the limits of work in the DPA.</p>	
Preferred Alternative	B1		

Cost was not included in the alternatives evaluation above as there is no discernable difference between each pair of alternatives, given the coarse nature of estimations at this stage of the Project. Therefore, cost was not a factor in identifying the preferred alternative.

Based on the analyses completed above, N1, K2, and B1 have been identified as the preferred alternatives to cross the DPAs. These preferred alternatives were carried into the effects assessment described in the next section, which includes recommended impact mitigation measures.

8.2.4 Effects Assessment and Mitigation

Project Case

The Project has been designed to avoid effects to any known archaeological sites, built heritage, sacred sites or traditional use sites in the DPA where possible. One archaeological site is identified within the limits of work for the B1 crossing alternative in the area of the planned Berens River Bridge. Compliance with the findings of further archaeological investigations (e.g., MTCS Stage 2) will guide specific design in this area. No significant effects to



known archaeological sites, sacred sites or traditional use sites in the DPA are predicted for any of the alternatives considered. Significant effects to fish and wildlife populations, which may be used for cultural and recreational resources, are not predicted.

During construction, site preparation activities, such as vegetation clearing for the power line ROW, tower foundation preparation and erection of towers may temporarily limit access in the DPA during the construction period; and result in an increase in noise disturbance that could affect use of the DPA by wildlife and for cultural, recreational or commercial use by people in the area of construction. There will be emissions associated with construction equipment and machinery that may have localized effects to air quality. However, these potential effects will be short-term, limited to the timeframe of construction through the DPA. Temporary access restrictions at the location of construction through the DPA may be required during the construction period. The construction period is anticipated to be up to three months in the DPA.

The Project has been designed to follow or use existing and planned ROWs where possible with the intent to limit the requirement for vegetation clearing, including areas within the DPA. For the Nungesser River crossing, the power line ROW will require vegetation clearing to the water's edge within the DPA adjacent to the existing Nungesser Road. Primary access for construction, operation and maintenance will be via the Nungesser Road. There will be no in-water work in the DPA. A riparian buffer regrowth to 30 m from the high water mark will be implemented post-construction with consideration for the safe operation of the power line. The up to 40 m wide ROW overlaps approximately 2 ha of the BDE DPA and up to 6 poles are expected to be required within this area.

For the Kirkness Creek crossing, Wataynikaneyap will use a previously cleared ROW in the DPA for access and construction of the power line. There will be a requirement for clearing of vegetation that has overgrown this ROW. A riparian buffer regrowth to 30 m from the high water mark will be implemented post-construction with consideration for the safe operation of the power line. The up to 40 m wide ROW will overlap approximately 1.2 ha of the BDE DPA and up to 4 poles are expected to be required within this area.

For the Berens River crossing, the power line ROW will require vegetation clearing in the DPA; but will align with the planned Whitefeather Forest Road ROW. Access during construction will use the existing road or clearing, depending on its construction status, and may include temporary access along the ROW where road construction is not complete along the Whitefeather Forest road. An ice crossing across the Berens River may also be utilized should ice conditions permit. Vegetation clearing for the power line ROW will be to water's edge; however there will not be a requirement for any in-water work in the DPA. A riparian buffer regrowth to 30 m from the high water mark will be implemented post-construction; with consideration of the safe operation of the power line. There are no new access roads associated with the Project in the DPA. No construction waste associated with the Project will be permitted within the DPA. After construction, all construction materials will be removed and the area rehabilitated, as required. The up to 40 m wide ROW overlaps approximately 5 ha of the BDE DPA ground surface and up to 15 poles are expected to be required within this area.

No construction waste associated with the Project will be permitted at any of the proposed DPA crossings. After construction, all construction materials will be removed and the area will be rehabilitated in manner consistent with best utility practice.

Maintenance and operation of the power line ROW will require routine mechanical clearing. Riparian vegetation regrowth will be permitted along the Berens River, Kirkness Creek and Nungesser River crossings, such that the vegetation does not interfere with the safe operation of the power line. The power line structure will result in a



change of view in the DPA. At the Kirkness Creek crossing K2; there is no current structure through the DPA. At the Berens Lake crossing B1, there is no current structure; however, the power line location will align with the proposed bridge location, which will minimize potential visual effects of the Project. At the Nungesser River crossing N1, there is no current structure; however the power line location will align with the current Nungesser Road and bridge plans within the DPA; which will minimize potential visual effects of the Project. The power lines will not reduce access in or to the DPA, and are predicted to have a negligible effect to park users and sense of remoteness.

Mitigation measures that will be implemented by Wataynikaneyap include the following:

- no new permanent access roads associated with the Project in the DPA;
- no construction waste associated with the Project will be permitted within the DPA;
- install signs on the ROW during construction indicating the DPA boundary;
- no burning of merchantable timber in the DPA;
- minimize number of towers in the DPA;
- clean equipment before moving it between the DPA and other non-protected area land;
- no laydown areas permitted in the DPA; and
- at all waterbodies maintain a minimum 30 m vegetated buffer post-construction.

With the Project design and mitigation described above, it is not predicted that the Project will result in a significant effects to parks and protected areas. In addition, the Project is not anticipated to result in a significant effect to the cultural and recreational values and resources associated with the DPA. The Project will not result in permanent loss of access in or to the DPA for cultural or recreational purposes, and will result in negligible effects to park users and sense of remoteness due to the presence of the power line structure in the DPA.

Reasonably Foreseeable Development Case

For the Berens River crossing, a bridge and planned Whitefeather Forest Road will be constructed. The power line would be located adjacent to the bridge and the Whitefeather Forest Road to minimize cumulative effects with projects that have already been planned and located.

The Wataynikaneyap Phase 2 Project ROW is likely to overlap the Project limits of work at the Berens River crossing. North of the planned substation for the Project, including the Berens River crossing, Phase 2 Project will require construction of a separate transmission line ROW operating at 115 kV. This line is currently planned to twin the Project and Whitefeather Forest Road alignments from the substation location to the point where the Project follows an existing clearing west toward the Pikangikum First Nation community. Through Project design and locating the Phase 2 ROW next to and paralleling existing cleared corridors, the area required to be cleared to provide an up to 40-m-wide ROW for Phase 2 transmission line can be minimized, additional clearing for access roads reduced, and visual effects limited to one location.



With the Project and Phase 2 being co-located with existing and planned disturbances in the Berens River crossing in the DPA; the reasonably foreseeable development case and incremental changes in the DPA is predicted to not results in significant effects to the DPA.

8.2.5 Prediction Confidence in the Assessment

Confidence that there will be no predicted significant effects on parks and protected areas is high based on the location of the Project crossings in the DPA, use of existing ROWs for construction and access, limit clearing for the ROW and mitigation measures to minimize potential effects to park users, resources and the values identified for the DPA.

8.2.6 Follow-up, Inspection, and Monitoring

No follow-up, inspection or monitoring is required.

8.2.7 Conclusions

With the implementation of identified mitigation measures, no significant effects to parks and protected areas are predicted from the Project.

8.3 Species at Risk

Correspondence from the MNRF (Appendix A) identified the following Species at Risk be addressed:

- Woodland caribou
- Eastern whip-poor-will
- Wolverine
- Bank swallow
- Little brown myotis and northern long-eared myotis
- Lake sturgeon.

Appendix B provides a detailed baseline characterization, effects assessment, and proposed mitigation for all the terrestrial species above. Findings are summarized in this section and in Table 6 of Section 9.0 Summary and Conclusions, along with proposed mitigation.

For terrestrial SAR species, except for bats and woodland caribou, the Project Case and the RFD Case are not predicted to result in significant effects with the implementation of identified mitigation.

The little brown myotis population at Base Case is predicted to be significantly affected. However with effective implementation of mitigation, the Project is predicted to have a small but negative effect on the bats, and have no to little contribution to the combined effects from the Base Case. No significant effects are predicted from the Project Case. The RFD Case is conservatively predicted to be significant due to uncertainty associated with future forestry activities, climate change, and population demographic rates. However, the Project is expected to contribute little to the significance of RFD Case.



No significant effects to woodland caribou are predicted from the Project Case. The RFD Case is conservatively predicted to be significant due to uncertainty associated with future forestry activities, climate change, and population demographic rates. However, the Project is expected to contribute little to the significance of RFD Case.

Lake Sturgeon (northwestern population) is listed as Threatened under the provincial ESA, Endangered under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) evaluation and are present in the Berens River and Pikangikum Lake. The removal of the submarine crossing from the previous Project proposal has reduced the potential to affect this species. Potential to cause adverse effects to Lake Sturgeon as a result of the current Project are consistent with those identified for aquatic SAR at aerial water crossings identified in the previous 2009 EA approval (Appendix A), and associated use of temporary crossing structures during construction, namely through damage to shoreline or riparian vegetation, disturbance to or erosion of banks from construction activities, sediment entrainment, and deposition within the water body, and potential for fuel spillage.

Where the Project crosses the Berens River, the approved Whitefeather Forest Management Plan all-season road paths will be utilized to access the north side of the Berens River and also the proposed substation area to the south. An ice crossing across the Berens River may also be utilized should ice conditions permit. For the construction of the ice crossing, no new temporary or permanent soil fill will be placed below the high water mark). As Lake Sturgeon occur in the bottom areas of lakes and large rivers (Nelson and Paetz 1992), the riparian area is not part of the critical habitat of Lake Sturgeon, and removal of riparian vegetation can occur following Fisheries and Oceans Canada (DFO) *Measures to Avoid Causing Harm to Fish and Fish Habitat including Aquatic Species at Risk* (DFO 2016).

The Project will implement mitigations identified in the 2009 EA approval (Appendix A) to control sediment and erosion to the Berens River and Pikangikum Lake, as well as potential releases from spills to water bodies spanned by the Project. In addition, the Project will follow DFO's *Measures to Avoid Causing Harm to Fish and Fish Habitat Including Aquatic Species at Risk* (e.g., no clearing of vegetation during the timing window¹ if there is open water; allowing riparian vegetation below the ordinary high water mark to regrow, if any is required to be removed during construction; when practicable, pruning or topping the vegetation instead of grubbing/uprooting) and MNRF's *Environmental Guidelines for Access Roads and Water Crossings*. Specific mitigations are summarized in Table 6 (Section 9.0).

Considering the design of the Project (aerial water crossings and use of temporary crossing structures with no work below the high water mark) and implementation of proposed mitigations, there are no predicted significant effects of the Project to Lake Sturgeon.

8.4 Built Heritage Resources and Cultural Heritage Landscapes Assessment

This section describes and summarizes a preliminary screening and assessment of the effects of the Project on built heritage resources and cultural heritage landscapes (termed heritage resources for remaining text). As defined in the *Provincial Policy Statement, 2014* (PPS 2014), built heritage resources are “a building, structures,

¹ At Peekwatahmaewee Sahkaheekahn/Berens Lake, based on the thermal regime designation (cool), the restricted activity timing window for work would be April 1 to July 15. Based on MNRF information, species specific timing would be: September 15 to June 30 (Cisco [October 1 to May 31], Lake Whitefish [September 15 to May 31], Lake Sturgeon [May 1 to June 30] plus spring spawning species [e.g., Walleye, Northern Pike]). Confirmation with MNRF and/or DFO on required timing would be obtained if clearing of vegetation under open water conditions was determined to be required below the ordinary high water mark.



monuments, installations, or any manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Aboriginal [Indigenous] community". A cultural heritage landscape is "a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest as identified by a community, including an Aboriginal [Indigenous] community" (PPS 2014). The area "may involve features such as structures, spaces, archaeological sites, or natural elements that are valued together for their interrelationship, meaning or association" (PPS 2014). Examples of cultural heritage landscapes include: heritage conservation districts designated under Part V of the *Ontario Heritage Act*, cemeteries, trailways, viewsheds, natural areas, and industrial complexes of heritage significance; villages, parks, gardens, battlefields, mainstreets, and neighbourhoods; and areas recognized by federal or international designation authorities, such as a National Historic Site or a UNESCO World Heritage Site (PPS 2014). *Keeping the Land: A Land Use Strategy for the Whitefeather Forest and Adjacent Areas* (Pikangikum First Nation and Ontario Ministry of Natural Resources 2006) defines specific cultural landscapes within the Whitefeather Forest portion of the Project area.

The Province of Ontario, through the MTCS, has developed a series of products to advise municipalities, organizations, and individuals on heritage protection and conservation. Identifying the presence of heritage resources within a project area is aided by the MTCS *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist for the Non-Specialist* (2015), while more detailed guidance on other aspects of heritage evaluation and conservation provided in the *Ontario Heritage Tool Kit* series.

The screening for this project is being conducted under the Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects and the Class Environmental Assessment for Provincial Parks and Conservation Reserves. This process is managed by the MNRF which provides guidance for the assessment of Built Heritage and Cultural Heritage Landscapes through their *Technical Guideline for Cultural Heritage Resources for Projects Planned Under the Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects and the Class Environmental Assessment for Provincial Parks and Conservation Reserves* (2006). Further guidance from the MNRF in Forestry Management areas comes from their *Forest Management Guide for Cultural Heritage Values* (2007).

If the potential for heritage resources in a LSA is identified when completing the MTCS or MNR *Checklist*, further investigation as part of a Cultural Heritage Evaluation Report (CHER) or Heritage Impact Assessment (HIA) is required. In both a CHER and HIA the heritage value or interest of listed properties or newly identified resources is evaluated using the *Ontario Regulation 9/06 Criteria for Determining Cultural Heritage Value or Interest* (O. Reg. 9/06 and O. Reg. 10/06). The effects of a development or site alteration on known or newly identified built heritage resources or cultural heritage landscapes are assessed as part of a HIA. In this EA report, heritage resources are represented by two key indicators: known heritage resources (resources already protected under formal or informal government policy or legislation), and potential heritage resource (resources which could be considered for protection under formal or informal government policy or legislation). These key indicators have been identified to assess the effects of the Project on the heritage resources in the study area. The criterion, rationale and indicators are summarized in Table 2.



Table 2: Heritage Resources Criteria and Indicators

Criteria	Rationale	Indicators
Built Heritage and Cultural Heritage Landscapes	<ul style="list-style-type: none"> ■ Built heritage remains are a non-renewable resource that could be affected by Project activities ■ Cultural heritage landscapes are a non-renewable resource that could be affected by Project activities ■ Heritage resources and cultural heritage landscapes have spiritual and symbolic meaning for First Peoples and to Canadians ■ Heritage resources and cultural heritage landscapes are protected under the <i>Ontario Heritage Act</i> 	<ul style="list-style-type: none"> ■ Number, type and location of identified and potential built heritage resources and cultural heritage landscapes

8.4.1 Study Area

One study area, a LSA, has been identified for Built Heritage Resources and Cultural Heritage Landscapes. The LSA is the limits of work shown on Figure 2, plus a 50 m buffer.

8.4.2 Baseline Characterization (Base Case)

8.4.2.1 Methods

Historic research was conducted using archival and secondary materials including historic atlases and topographic maps, local histories, and government reports. A review of government registers was conducted to determine the presence of municipally, provincially, and federally recognized heritage resources in the study area. Analysis of historic mapping material also provided a context from which to determine the location of known heritage resources in the study area.

8.4.2.2 Results

8.4.2.2.1 Known Heritage Resources

The following provides a preliminary understanding of known built heritage and cultural heritage landscapes in the LSA that are already protected under formal or informal government policy or legislation.

Federally Recognized Heritage Resources

Federally-recognized built heritage resources are those properties, buildings, and places that have been designated under a form of federal legislation such as the *Canada National Parks Act* or the *Heritage Railway Stations Protection Act*. Federal heritage designations can include national historic sites, persons and events of national historic significance, heritage railway stations, federal heritage buildings, and heritage lighthouses. Only a proportion of these are directly administered by Parks Canada but the agency provides heritage conservation advice and support whether the asset is privately owned or the responsibility of a provincial or federal department.

Parks Canada manages the Canadian Register of Historic Places (CRHP), which is a database of recognized heritage properties. A search of the CRHP database on March 14, 2017 found no recognized federal sites in the LSA. Of note, the Pikangikum First Nation have stated in their *Land Use Strategy* for the Whitefeather forest that



they intend to pursue a National Historic Site proposal for Kirkness Lake in close proximity to the LSA (Pikangikum 2006).

The study area also crosses a small portion of the area formerly included in a UNESCO World Heritage Nomination, called Pimachiowin Aki. Pimachiowin Aki included an area of 33,499 square kilometres of land and water spanning both Manitoba and Ontario. The nomination was a collaboration between five Anishinaabe First Nations groups, including Pikangikum. In 2016, Pikangikum First Nation withdrew from the Project.

A bid for nomination was submitted in 2017 including a smaller geographic area, which is outside of the study area of this project. The federal agency, Parks Canada, is the Government of Canada's representative for the UNESCO World Heritage Convention. While the nominated area is not federal, Parks Canada does retain interest in any area under a UNESCO World Heritage Nomination and would be responsible for ensuring the planning mechanisms in place to protect and conserve the site are upheld should its Nomination be successful (Parks Canada 2016).

Provincially Recognized Properties of Heritage Value or Interest

Protection and conservation of properties of heritage value or interest in Ontario is primarily achieved under the *Ontario Heritage Act*, which empowers municipalities to recognize and protect built heritage resources and cultural heritage landscapes. Although the MTCS also has the authority to designate properties of heritage value or interest under the *Ontario Heritage Act*. Other provincial acts such as the *Funeral, Burial and Cremation Services Act, 2002* and the *Provincial Parks and Conservation Reserves Act, 2006* also serve to protect heritage resources. Provincial parks are administrative areas set aside as reserves for the purpose of protecting the natural environment within their boundaries. There are seven different classes of parks including wilderness, nature reserve, cultural heritage, natural environment, waterway, recreational, and aquatic. All seven classes of parks can include heritage resources within their boundaries, which are to be protected by implementing administrative controls carried out by each park's staff and the MNRF.

Provincially-recognized heritage resources include properties, plaques, and monuments that have been recognized by the provincial government and provincial agencies through the use of registers, plaque programs, monuments and conservation easements, agreements, and covenants. The MTCS and the Ontario Heritage Trust (OHT), a provincial government agency, maintain a list of these resources, and the OHT also manages the *Ontario Heritage Act Register*, which includes information on properties designated under the *Ontario Heritage Act*. Management of these provincially-recognized heritage resources is guided by the *Standards and Guidelines for the Conservation of Provincial Heritage Properties* (MTCS 2010).

The desktop review of provincial heritage inventories indicated that three designated or listed heritage properties are located in the LSA. These designated properties are in a regulated provincial park; (BDE DPA), of which the project crosses at three points: Berens River, Kirkness Creek; and the Nungesser River.

The DPA was created in 2011. This park was created from part of the cultural landscape area identified within the *Land Use Strategy for the Whitefeather Forest and Adjacent areas* a planning document created through collaboration between the Pikangikum First Nations and the Ontario Ministry of Natural Resources in 2006.



The following is a brief summary of the Pikangikum First Nations understanding of their cultural heritage landscapes with common elements shared by all three waterways. This is followed by some distinctions for the three waterways which are crossed by the project. All three waterways were part of the former UNESCO World Heritage Nomination completed for the area (Pimachiowin Aki Corporation 2016). The following description of the three cultural landscapes is taken primarily from the Whitefeather Land Use Strategy (Pikangikum 2006) and the UNESCO World Heritage Nomination (Pimachiowin Aki Corporation 2016).

Cultural Landscapes as Defined by Pikangikum First Nation

The Pikangikum First Nations have defined their cultural heritage landscapes as “the living result of Pikangikum people’s historical customary stewardship role” (Pikangikum 2006). This stewardship role is expressed through the spiritual beliefs of the Anishinaabeg people:

“Anishinaabeg understand the Creator put them on the land, providing them with all the physical and spiritual resources they need to survive and prosper. In acknowledgement of the gift of life, Anishinaabeg uphold a sacred trust with the Creator to care for *aki*, the land and all its life. This sacred trust entails a duty to work with other beings in a respectful way, a way that honours creation, with the understanding that all beings are united under the Creator, *Gaa-debenjiged* or *Gizhe-Manidoo* (Great Spirit). (Pimachiowin Aki Corporation 2016).

The Anishinaabeg people uphold their sacred trust through *Ji-ganawendamang Gidakiiminaan*:

“*Ji-ganawendamang Gidakiiminaan* is a set of beliefs, values, knowledge, and practices that guide relations with the land and all life placed on the land by the Creator; these are the *aadizookewin* (“teachings”) passed down through the generations through oral traditions in *Anishinaabemowin* (the Ojibwe language). (Pimachiowin Aki Corporation 2016).

The Anishinaabe tradition of *Ji-ganawendamang Gidakiiminaan* is not about transforming the landscape, it is about living within the opportunities and limits presented by the boreal forest environment of Pimachiowin Aki. Anishinaabe *akiing ondaaji'idizowin* (customary livelihood practices) entail the harvest of plants, animals, and other forms of life in a manner that ensures the continuity of the Creator’s gifts. Every being, everything on the land, has a purpose for being and its own relationship with the Creator that must be respected, even if that relationship is not well understood by human beings. (Pimachiowin Aki Corporation 2016).



The cultural landscapes within the LSA are:

“an exceptional expression of the cultural tradition of *Ji-ganawendamang Gidakiiminaan*. A complex network of interlinked sites, routes, and areas make up the attributes that span the nominated area, providing testimony to the beliefs, values, knowledge, and practices that constitute Keeping the Land. While the material remains of Anishinaabe use and occupation are generally impermanent and often difficult to observe for an untrained eye, the evidence of *Ji-ganawendamang Gidakiiminaan* is pervasive within the nominated area and can be understood through Anishinaabe knowledge and oral traditions. (Pimachiowin Aki Corporation 2016).

Key attributes with the cultural landscapes which reflect the cultural tradition of *Ji-ganawendamang Gidakiiminaan* include harvesting sites, habitation and processing sites, travel routes, named places, sacred and ceremonial sites, and trapline areas:

At harvesting sites, Anishinaabeg of Pimachiowin Aki honour the Creator’s gifts through the harvest of plants, animals, and other forms of life in a manner that ensures continuity of all life on the land. Habitation and processing sites in Pimachiowin Aki enable Anishinaabeg to focus harvesting efforts in areas where resources are most abundant. Travel routes, especially waterways, and the named places that serve as landmarks along those travel routes, support the shifting use of this vast landscape as people respond to the uneven and changing distribution of resources. Sacred and ceremonial sites are important nodes on the Pimachiowin Aki cultural landscape where Anishinaabeg acknowledge dependence on the Creator and observe respectful behaviour toward other beings. Trapline areas within Pimachiowin Aki enable shared use of the land while also acknowledging that extended family groups are responsible for stewardship of specific areas, based on their established histories of trapping, hunting, and fishing. (Pimachiowin Aki Corporation 2016).

Nungesser River (Ohshkahtohkahweeseebie) – Cultural Heritage Landscape

The Nungesser River connects Nungesser Lake with Little Vermillion Lake. The former UNESCO World Heritage Nomination notes a number of important features in association with this cultural heritage landscape:

- habitation sites at the mouth of the Nungesser River on Nungesser Lake approximately 3 km from the Project crossing of the Nungesser River. Archaeological sites data states that a site is located there under Borden number EiKk-1 (Pimachiowin Aki Corporation 2016).
- Extensive hunting and trapping sites along its route (Pimachiowin Aki Corporation 2016).
- A significant waterway travel route (Pimachiowin Aki Corporation 2016).

Kirkness Creek/Stormer Lake – Cultural Heritage Landscape

Kirkness Creek connects Kirkness Lake/Stormer Lake with Shining in the Distance Lake/Nungesser Lake. This cultural heritage landscape is located in the LSA. The location of the proposed Project is at the mouth of Kirkness Creek on Stormer Lake. Stormer Lake is directly connected with Kirkness Lake to the west. Kirkness Lake (Wahshaygahmesshiing) is an important lake as a historical location of a summer village for the Pikangikum people and a historical crossroads for the Pikangikum people and the fur trade (Pikangikum 2006).



Important aspects noted near the LSA within the cultural heritage landscape include:

- An important significant waterway travel route (Pimachiowin Aki Corporation 2016).
- Extensive hunting and trapping sites within the area (Pimachiowin Aki Corporation 2016).
- Manoomin (Northern Wild Rice) harvest area identified within 500 m to the east of the LSA (Pimachiowin Aki Corporation 2016).

Berens Lake/Berens River (Kitchee Zeebee) – Cultural Heritage Landscape

Berens Lake/Berens River is the major watercourse through the region which eventually drains into Lake Winnipeg to the west. The LSA is located at a crossing of the Berens River at the outlet of Berens Lake. Pikangikum Lake is located to the west along the waterway and numerous significant areas are located up river including Silcox Lake, Throat River, Owl River, and Mamakwash Lake.

The Land Use Strategy for the Whitefeather Forest describes the Berens River as the “heart of the Pikangikum cultural landscape” (Pikangikum 2006). Important aspects noted near or in the LSA within the cultural heritage landscape include:

- A significant waterway travel route (Pimachiowin Aki Corporation 2016).
- Extensive hunting and trapping sites within the area (Pimachiowin Aki Corporation 2016).
- A number of cabins and campsites are located along the shores of Berens Lake (Pimachiowin Aki Corporation 2016). All noted locations are not in close proximity to the LSA.
- A set of rapids (Pimachiowin Aki Corporation 2016) are located within the LSA.
- An archaeological site is registered within the LSA and the cultural heritage landscape; EkKk-4, Berens Lake Portage (Hamilton and Taylor-Hollings 2010).

Where the project crosses these cultural heritage landscapes, the power line design seeks to parallel existing and planned road crossings to the degree possible.

Municipally Recognized Built Heritage and Cultural Heritage Landscapes

Municipally recognized built heritage and cultural heritage landscapes are primarily designated or listed properties and protected under by-laws enabled by Part IV and V of the *Ontario Heritage Act*, and other forms including informally recognized plaques, monuments and parks.

The only municipality within the LSA is the Municipality of Red Lake. The Official Plan of the Municipality of Red Lake indicates that there are currently no identified built heritage or cultural heritage landscapes within the Municipality (Red Lake 2015).



8.4.2.2.2 Potential Heritage Resources

According to MTCS guidelines (MTCS 2005), any resources (i.e., buildings or structures) older than 40 years can be considered potential heritage resources. These properties are not listed or designated properties and currently have no associated controls or heritage by-laws, but could be protected for their heritage value should any level of government deem them significant heritage resources.

Based on the preliminary desktop research, one potential resource was identified within the LSA close proximity to the LSA with potential heritage value: the Leemac Occurrence (Gold Mine) location, identified through review of the Abandoned Mines Information System (AMIS). The Ministry of Northern Development and Mines (MNDM) AMIS database record MDI52N04SE00006 indicates this location represents a gold deposit tested in the 1940s and 1950s. The recorded point within the AMIS database is located approximately 60 m east of the limits of work boundary; as the extent of the site is not documented, features associated with the testing could be located within the LSA. Where the project crosses this potential heritage resource, the power line design seeks to parallel the existing Nungesser Road which will further increase the setback distance to the recorded point in the AMIS database.

8.4.3 Effects Assessment and Mitigation

Project Case

As noted in Section 8.4.2, known and potential heritage resources within the LSA were identified based on historic research using archival and secondary materials, a review of government registers, analysis of historic mapping material, historic survey, aerial photography, LIDAR, and topographical maps.

The potential interactions with Project activities, the potential effects from the Project, the need for mitigation, and the predicted residual environmental effects are presented in Table 3 for the two key indicators, known heritage resources and potential heritage resources identified to assess the effects of the Project on Built Heritage Resources and Cultural Landscapes.



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Table 3: Potential Effects, Mitigation and Residual Effects for the Environment on the Project

Indicators	Project Component or Activity	Effect Pathway	Mitigation Measures	Description of Net Effect
Known heritage resources and potential heritage resources	Project activities during the construction stage, including clearing and grubbing of vegetation along the power line alignment right-of-way, and other construction areas	Alteration of a heritage resource from vibration of construction equipment during construction, clearing and grubbing of vegetation along the power line alignment right-of-way and other construction areas	<p>Consultation with the MNRF to determine best practice for the protection of identified heritage resources.</p> <p>Existing roads and trails will be used where possible.</p> <p>Implement mitigation measures identified in the 2009 INAC screening report to minimize for potential indirect effects from water quality, for example, to heritage resources.</p> <p>Identified heritage resources near the Project footprint and their associated setbacks will be staked or flagged.</p> <ul style="list-style-type: none"> ▪ Project personnel will avoid areas that are flagged or fenced and abide by restrictions on in/out privileges that are implemented in areas requiring special protection due to environmentally sensitive features. <p>In the event that heritage resources not previously identified are suspected or encountered unexpectedly during construction, implement a Chance Find Procedure.</p> <ul style="list-style-type: none"> ▪ In the event that a previously unidentified heritage resource is suspected or encountered, Wataynikaneyap will contact the applicable First Nation, heritage or archaeology resource specialist, municipality and MTCS, as applicable. ▪ Suspend activity at that location if it has the potential to damage or affect a heritage feature. Work at that location will not resume until permission is granted by Wataynikaneyap in engagement with appropriate regulators, as required. ▪ The resource specialist may deem it necessary to visit the site and will, regardless of whether a site visit is required, develop an appropriate mitigation plan in engagement with Wataynikaneyap, applicable First Nation and the MTCS. 	Not significant



Potential effects on heritage resources are most likely to occur during the construction of the Project. Specifically, negative effects related to heritage resources can occur as a result of any alteration, relocation, or demolition of heritage resources. Avoidance of heritage resources during the design and routing phases of the Project will minimize any potential effects on the heritage resources.

When undertaking projects that may result in the demolition, alteration, or relocation of a heritage resource, mitigation measures are recommended to avoid or minimize adverse effects on the resources. Typically, strategies are implemented to avoid and retain a resource in situ, relocate the resource to a suitable location or, if those options are not feasible, document the resource prior to or during its demolition. By successfully carrying out these mitigation strategies effects of the Project on heritage resources will be mitigated.

To the extent feasible, temporary workspace will be established in a manner that accommodates the identified heritage resources (including the features of the cultural heritage landscapes identified at the water crossings for the Nungesser River, Kirkness Creek and Berens River) to avoid demolition or alteration of their features. Consultation with the MNRF will be undertaken to ensure best practice for the conservation of heritage features and determine next steps to be completed.

No residual effects on heritage resources are predicted as a result of the Project construction (Table 3). Likewise, no interaction between the Project and heritage resources is anticipated during operation. Consequently, Built Heritage Resources and Cultural Heritage Landscapes was not carried forward in the assessment for evaluation of significance or considered under the reasonably foreseeable development case assessment.

Reasonably Foreseeable Development Case

No significant effects are predicted for the Project case; therefore a reasonably foreseeable development case assessment was not completed.

8.4.4 Prediction Confidence in the Assessment

Confidence in the prediction of no significant effects on heritage resources is moderate. The investigation of heritage resources to be completed for the Project complies with the best practices identified in the *Technical Guideline for Cultural Heritage Resources for Projects Planned Under the Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects and the Class Environmental Assessment for Provincial Parks and Conservation Reserves* (MNR 2006).

8.4.5 Follow-up, Inspection, and Monitoring

Consultation with the MNRF will be undertaken to ensure best practice for the conservation of heritage features and determine next steps to be completed including possible follow-up, inspection or monitoring to address Built Heritage and Cultural Heritage Landscapes for this project.

8.5 Archaeological Resources Assessment

This section describes and summarizes the archaeological study undertaken for the Project, and presents an assessment of the effects of the Project on archaeological resources. Archaeological resources include known and undiscovered archaeological objects, material or physical features that may have cultural heritage value or interest, and are protected under the *Ontario Heritage Act*.



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The screening for this project is being conducted under the Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects and the Class Environmental Assessment for Provincial Parks and Conservation Reserves. This process is managed by the MNRF which provides guidance for the assessment of archaeological resources through their *Technical Guideline for Cultural Heritage Resources for Projects Planned Under the Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects and the Class Environmental Assessment for Provincial Parks and Conservation Reserves* (2006) (MNRF Technical Guide for Cultural Heritage Resources). Further guidance from the MNRF in Forestry Management areas comes from their *Forest Management Guide for Cultural Heritage Values* (2007).

In addition, the archaeological studies undertaken for the Project are in accordance with the *Ontario Heritage Act*, and the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

One criterion (archaeological resources) has been identified to assess the effects of the Project on the archaeological resources. The rationale and key indicators are summarized in Table 4.

Table 4: Archaeological Resources Criterion, Rationale and Indicators

Criterion	Rationale	Indicators
Archaeological resources	<ul style="list-style-type: none"> ■ Archaeological resources are a non-renewable resource that could be affected by Project activities ■ Archaeological resources have spiritual and cultural importance to First Peoples and to Canadians ■ Archaeological sites are protected under the <i>Ontario Heritage Act</i> 	<ul style="list-style-type: none"> ■ Number, type and location of known archaeological resources ■ Area of archaeological potential

The archaeology resources assessment focuses on the following types of archaeological resources

- **Known archaeological resources:** Known archaeological sites are those that have been previously registered with the MTCS. The known archaeological resources are protected under the *Ontario Heritage Act*.
- **Potential archaeological and cultural resources:** Potential archaeological and cultural resources include any type of site that contains evidence of past human occupation which may be considered by some level of authority as worthy of protection under a relevant archaeological protection method but has not yet been evaluated or given formal recognition or protection by a governmental approval agency.

The *Ontario Heritage Act* provides the provincial government and municipalities the power to preserve and protect heritage properties and archaeological sites on non-federally owned land within Ontario including both privately and publically owned lands. Under the *Ontario Heritage Act*, the MTCS is responsible for the “administration of the Act and may determine policies, priorities and programs for the conservation, protection and preservation of the heritage of Ontario”. Prior to any construction activities, a letter of compliance from the MTCS is required which states that no further archaeological work is required for the Project.



The *Ontario Heritage Act* defines archaeological resources and the term may also refer to artifacts and archaeological sites. These are defined as follows:

- archaeological resource: an object, material or physical feature that may have cultural heritage value or interest;
- archaeological site: any property that contains an artifact or any other physical evidence of past human use or activity that is of cultural heritage value or interest; and
- artifact: any object, material or substance that is made, modified, used, deposited or affected by human action and is of cultural heritage value or interest.

Archaeological sites take the form of objects, constructs and landscape changes which have the potential to yield information on the cultural history of human activities. Sites can take a variety of forms, but generally consist of artifacts (e.g., pottery and projectile points), soil impressions or alterations identified as features (e.g., postholes and building footprints) and landscape changes (e.g., construction of mounds and removal of natural forest for farming). Cultural deposits are typically layered and can be relatively dated (the deeper the deposit, the older its date) assuming that they have not been previously disturbed. These layers can range in depth from less than a centimetre to several metres. The excavation of these deposits by an experienced archaeologist will result in an understanding of the site's cultural history through the analysis of the spatial distribution of artifacts, including their relationship to identified cultural features, the nature of a site's assemblage and the comparison of the site to similarly dated sites in the region.

Terrestrial archaeology assessment in Ontario involves a multi-stage process to identify and protect archaeological resources as directed by the *Ontario Heritage Act* and outlined in the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011). The process followed to meet provincial requirements involves the completion of a Stage 1 Archaeology Assessment. Based on the results of the Stage 1, the need to complete a Stage 2 Archaeology Assessment, which includes field surveys, will be completed. The Stage 2 assessment will be required in areas identified as having archaeological potential in the Stage 1 assessment. Stage 3 assessments are required when an archaeological site is identified but the Cultural Heritage Value or Interest (CHVI) is not known. Stage 4 mitigation is required when an archaeological site with CHVI has been identified, Stage 4 mitigation can take the form of block excavation and documentation of the entire site limits that will be impacted; or, it can be mitigated through avoidance and protection.

Underwater archaeology assessment in Ontario involves a permitting process designed to fit the Project parameters and protect archaeological resources as directed by the *Ontario Heritage Act* and the MTCS or Parks Canada, where federal lands such as historic canals are involved. If deemed appropriate, based on discussions with the MTCS, a marine archaeologist will design a program of background research and field survey, and submit the program to the MTCS for approval.

8.5.1 Study Area

The LSA which is the limits of work (defined in Section 8.1 and shown on Figure 2) is identified as the study area for assessing archaeological resource. The LSA is sufficient to address potential direct effects (e.g., destruction or alteration) and indirect effects (e.g., water quality) from the Project to these resources. Archaeological resources outside of this study area were also reviewed to provide more of a regional context.



8.5.2 Baseline Characterization (Base Case)

This section provides a summary of the existing environment for archaeological resources based on the desktop Stage 1 Archaeology Assessment (Stage 1) completed for the Project.

Methods

Information for the archaeological resources Base Case was collected from review of the following sources:

- Reports from previously completed archaeological assessments and surveys;
- MTCS's Archaeological Sites Database, which provides information on known archaeological sites in the Province provided to Golder on 3 May 2017;
- MTCS *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011);
- Ministry of Natural Resources and Forestry *Technical Guideline for Cultural Heritage Resources for Projects Planned Under the Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects and the Class Environmental Assessment for Provincial Parks and Conservation Reserves* (MNR 2006);
- MNRF *Forest Management Guide for Cultural Heritage Values* (MNR 2007);
- Published environmental and topographic literature and maps;
- Published document and books related to previous land uses;
- Archival documents and secondary sources; and
- Aerial imagery.

This baseline characterization follows the process of a preliminary screening using the checklist provided in the MNRF Technical Guide for Cultural Heritage Resources (MNR 2006), as well as any additional checklist metrics identified in the MTCS *Criteria for Evaluating Potential for Archaeological Potential: A Checklist for the Non-Specialist* (2015). The purpose of the checklist is to determine, through desktop study, whether known or potential archaeological resources are present in the Project area, and determine if the Project area has potential for as of yet undiscovered archaeological resources. In addition to the checklists, the MTCS *Standards and Guidelines for Consultant Archaeologist* (2011) provides detailed standards and guidelines for determining archaeological potential. The general criteria for archaeological resources potential is proximity to known archaeological sites, elevated and well drained topography such as drumlins, eskers, and ancient beach ridges, navigable water ways (rivers, lakes streams), burial sites or cemeteries, and Aboriginal or local knowledge of historically documented evidence of past human land use within a given area (resource procurement locations, areas of spiritual significance, areas along migration corridors, etc.).

A Stage 2 Archaeological Assessment (Stage 2) to determine whether archaeological sites are located within the Project footprint will be required within all identified areas of archaeological potential outline in the Stage 1. Following the requirements of the MTCS *Standards and Guidelines for Consultant Archaeologists*, the Stage 2 will consist of test pit survey within the environment of the project. Test pit survey involves systematically walking the



property along regularly spaced transects, excavating small pits by hand at regular intervals and examining their contents.

8.5.3 Results

Known Archaeology Resources

The primary source of information regarding known archaeological sites in the LSA is the MTCS's archaeological sites database; available land use planning documentation, and engagement with Pikangikum First Nation, Wabauskang First Nation and Lac Seul First Nation.

The results indicate that there are four registered archaeological sites within or in close proximity to the study area. Two sites are located over 2 km from the LSA (EjKl-4 and EgKk-6), one site is located over 1 km from the LSA (EhKj-1), and one site, EkKk-4, is located within the LSA at the proposed Berens River crossing (Alternative B1). These sites are further described below.

■ Outside the LSA:

- **EgKk-3** – Pre-contact Laurel tradition campsite containing 4 Hudson Bay Lowland chert artifacts and broken scraper situated on the east side of an island between McKenzie and Bruce Channels on Red Lake.
- **EhKj-1: Coli Lake Cabin** – Site of unknown period located on the east side of a long northwest facing peninsula on Coli Lake across from two small islands.
- **EjKl-4: Kirkness Area 6** – A large multi-component pre-contact and historic site located on a raised terrace near the outlet to Stormer Lake into Kirkness Lake. The site contained 103 artifacts associated with the Blackduck, Laurel and Selkirk traditions, as well as Euro-Canadian material.

■ Within the LSA:

- **EkKk-4: Berens Lake Portage** – Site of unknown age or cultural affiliation located at the western end of Berens Lake. The site was first identified by Pollock in 1980 during an assessment of the Berens River watershed. A small lithic scatter was observed on the surface of a heavily utilized portage trail. No subsurface testing was conducted but it has been intimated that the additional Pre-Contact Aboriginal cultural material remains intact below the surface.

Potential Archaeological Resources

Numerous criteria are used to determine the potential for Pre-Contact Aboriginal and historical Euro-Canadian archaeological sites. Key indicators of archaeological potential include proximity to navigable water-courses, where well-drained soils are present, along glacial features such as drumlins, eskers, moraines, and glacial beach ridges, railway infrastructure, glacial shorelines, early transportation routes and known archaeological sites as outlined in the MNR Technical Guide for Cultural Heritage Resources (MNR 2006) Section 2.2 and Appendix 2; MNR *Forest Management Guide for Cultural Heritage Values* (MNR 2007) Section 3.3 and MTCS Standards and Guidelines Section 1.3.1 (2011). Section 1.3.3 of the Standards and Guidelines identifies areas in the Canadian Shield that are distinct from the surrounding environment such as sand and clay plains possess a higher degree of archaeological potential (MTCS 2011).



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Potential archaeological resources that could be found within the study area include:

- Aboriginal sites such as campsites, portage areas, canoe spills (i.e., where cargo from canoe was spilt and not recovered) caches, sacred sites, resource extraction areas and burial sites.
- Potential archaeological resources related to historical Euro-Canadian sites, such as logging associated infrastructure, mining associated infrastructure, early domestic settlement, early industrial infrastructure, religious centres (e.g., missionary related), cemeteries, single isolated burials, canoe spills, caches, fur trade associated infrastructure and early recreational infrastructure (e.g., related to tourism).
- Petroglyphs, pictographs, petroforms, and guideposts used by both Aboriginal peoples and Euro-Canadian settlers.

Areas exhibiting low archaeological potential include areas at a distance removed from a feature of archaeological potential, or those areas where the likelihood of someone actively using the area for subsistence, resource activities, habitation or spiritual means has been determined to be low; in the Canadian Shield, areas in excess of 150 m from a feature of archaeological potential are generally considered to exhibit low archaeological potential (MTCS 2011).

There is a cultural heritage value identified in a communication by the MNR (Appendix A) that is outside the LSA where the project ROW has been designed to avoid the value. The cultural heritage value has been identified as a Thunderbird nest and was photo documented as part of a site visit completed by Wataynikaneyap representative on August 24, 2016.

The *Whitefeather Forest and Adjacent Areas Land Use Strategy* identify that Kirkness Lake “is a very special lake that is the historical location of a summer village for the Pikangikum people” (June 2006). The land use strategy further identifies that on Kirkness Lake there is evidence for old cabins and tent frames and that archaeological work guided by Elders have uncovered artifacts dating back thousands of years. In addition, there are accounts of Thunderbird nests located near the shores of Kirkness Lake. No exact information was provided on the location of these cultural resources, however the importance of this lake as the summer location for the Pikangikum people indicates that archaeological resources are probable to be found in close association to the Project area along Kirkness Creek. Mapping within the land use strategy does not identify Stormer Lake separately from Kirkness Lake.

Using the sources noted above, in conjunction with a review of LiDAR imagery, MNR Stream Order and archaeological potential data and applying MTCS Standards 1.3.3, 1.3.4, and 2.1.5, the Stage 1 Archaeological Assessment identified a number of areas of archaeological potential that were recommended for Stage 2 Archaeological Assessment. The primary areas requiring Stage 2 Archaeological Assessment are Pindar Creek, the Nungesser and Kirkness Rivers, and the Berens River crossing at Dog Rib Rapids. In addition to larger creeks and rivers, there are small sections of Coli and Prideaux Lakes as well as some unnamed ponds where the outside limits of the LSA overlap with areas of archaeological potential.



8.5.4 Effects Assessment and Mitigation

Project Case

A summary of the potential interactions with Project activities, the potential effects from the Project, recommended mitigation and the predicted significance of the potential effect to archaeology resources and cultural values is presented in Table 5.

Table 5: Potential Effects, Mitigation and Net Effects for the Environment on the Project

Indicator	Project Component or Activity	Effect Pathway	Mitigation Measures	Description of Net Effect
Archaeological Resources Sites	Site clearing, soil stripping, grading, distribution line installation and post installation site remediation works and maintenance	Loss of or damage to archaeological resource sites	<p>Completion of Stage 2 (and Stage 3 and 4 if required) archaeology assessment on areas identified in the Stage 1 assessment within the Project footprint to determine whether archaeological sites are present and to recommend appropriate mitigation measures should archaeological resources be identified.</p> <p>Existing roads and trails will be used where possible.</p> <p>Implement mitigation measures identified in the 2009 INAC screening report to minimize for potential indirect effects from water quality, for example, to archaeology resources.</p> <p>Identified archaeological resources near the Project footprint and their associated setbacks will be staked or flagged.</p> <ul style="list-style-type: none"> ▪ Project personnel will avoid areas that are flagged or fenced and abide by restrictions on in/out privileges that are implemented in areas requiring special protection due to environmentally sensitive features. <p>No clearing or construction activity within flagged or fenced areas that contain archaeological resources.</p> <p>In the event that archaeological resources not previously identified are suspected or encountered unexpectedly during construction, implement a Chance Find Procedure.</p> <ul style="list-style-type: none"> ▪ In the event that a previously unidentified archaeological resource is suspected or encountered, Wataynikaneyap will bring in a resource specialist and contact the potentially affected First Nation community and the MTCS. ▪ Suspend activity at that location. Work at that location will not resume until permission is granted by Wataynikaneyap in engagement with appropriate regulators as required. ▪ The resource specialist may deem it necessary to visit the site and will, regardless of whether a site visit is required, develop an appropriate mitigation measures plan in engagement with Wataynikaneyap and, if necessary, the appropriate regulatory agencies. <p>Collection of archaeological resources by Project personnel is prohibited. Project personnel will be provided guidance prior to construction.</p>	Not significant



The potential effect on archaeological resources is expressed as the loss or damage to archaeological resources potentially affected by the Project. As archaeological resources could affect knowledge of regional history and in compliance with the *Ontario Heritage Act*, appropriate mitigation measures were identified where potential effects were anticipated.

Alteration of the landscape can result in damage or destruction of archaeological resources. These alterations often involve displacement of artifacts resulting in the loss of valuable contextual information. Or alteration of the landscape may result in the complete destruction of artifacts and features leading to complete loss of ability for additions to cultural analysis and to First Nations history. Any activity with the potential to cause ground disturbance may affect archaeological resources unless appropriate steps are taken in advance to identify and either protect or have the resource properly excavated by a licensed consultant archaeologist, following the recommended measures in the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011).

As described above in Section 8.5.3, areas of archaeological potential, and previously recorded archaeological sites identified as being culturally important to the people of the Pikangikum First Nation are located within the LSA. Avoidance and protection of archaeological resource sites is the preferred approach as per the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011). Direct effects can be avoided by identifying and avoiding archaeological resources prior to ground disturbance, and by increasing the awareness of Project personnel about archaeological resources in proximity to the Project footprint. Thus, prior to any ground disturbance, a Stage 2 will be completed on the archaeology sites and areas of archaeology potential to be disturbed by the Project prior to the start of construction, with the exception of lands that do not retain archaeological potential or lands previously subject to Stage 1 or 2 archaeological assessments that have been entered into the public registry. The results of the Stage 2 assessment will be used to identify archaeological resources and to develop a strategy to mitigate potential direct effects of the Project on these archaeological resources.

A Stage 3 archaeological assessment will be undertaken if a site of cultural heritage value or interest is identified as outlined in the MTCS Standards and Guidelines Section 2.2. Stage 3 is a site-specific assessment undertaken to determine whether the resource warrants protection under the *Ontario Heritage Act*. A Stage 4 archaeological assessment will be undertaken if a resource is determined to have cultural heritage value or interest that warrants protection and cannot be avoided by relocating the Project infrastructure. Stage 4 involves mitigation of development impacts to conserve the resource. All required archaeological assessments will be undertaken and clearance for the Project under the *Ontario Heritage Act* will be obtained prior to any ground disturbance.

The archaeological resource site-specific mitigation summarized in Table 5 and the completion of Stage 2 (or Stage 3 and 4) and additional mitigation measures identified from these additional stages will be implemented to avoid and minimize the potential for both direct effects (i.e., loss or damage) and indirect effects on archaeological resource sites in the archaeological resources in the limits of work. Given the Project planning and recommended mitigation strategies to minimize direct and indirect effects, significant net effects on archaeological resources are not predicted as a result of the Project.

At this stage of Project design, there are no Project components currently planned below the high water mark. However, should design requirements change, the MTCS *Criteria for Evaluating Marine Archaeological Potential: A checklist for Non-Marine Archaeologists* will be completed. If the results of the checklist identify that marine archaeological potential exists within the limits of work; compliance with the *Ontario Heritage Act* and with the



MTCS *Standards and Guidelines for Consultant Archaeologists* will need to be met through the completion of a Marine Archaeological Assessment.

Reasonably Foreseeable Development Case

No significant effects are predicted for the Project case; therefore a reasonably foreseeable development case assessment was not completed.

8.5.5 Prediction Confidence in the Assessment

The confidence in the prediction of residual environmental effects on archaeological resources is high, based on the available information from existing data sources. Confidence in the mitigation for archaeological resources is also high given that the mitigation and monitoring identified in Table 13, is based on accepted and proven best management practices identified in the *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011) and will be approved by the MTCS.

8.5.6 Follow-up, Inspection, and Monitoring

A Stage 2 (or Stage 3 and 4) archaeology assessment will be required as discussed above. There may be a requirement for monitoring to follow the mitigation recommendation that would be identified in the Stage 4 report, if required.

8.5.7 Conclusions

There are no predicted significant effects to archaeology resources from the Project assuming any additional mitigation identified in the Stage 2 (or Stage 3 and 4) archaeology assessments are implemented by Wataynikaneyap.

9.0 SUMMARY AND CONCLUSIONS

As discussed earlier in this report, an INAC Screening EA Report and MNRF RSFD screening criteria table were completed in 2009. This updated PD has focussed on revisions to Project design and resulting potential effects to the environment, where it differs from the 2009 assessment results; and the scope of the updated PD based on input from the MNRF. As such, Table 6 provides an updated MNRF criteria table. The table notes where the assessment results remain the same, assuming implementation of mitigation identified in the 2009 report and additional mitigation identified in this report.



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Table 6: Update to Potential Effects as Compared to Previous Proposal, and Proposed Mitigation

Environment	Potential Effects as Compared with Previous Proposal	Proposed Mitigation
Natural Environment Considerations		
Air quality	<ul style="list-style-type: none"> ▪ New substation location is not located near sensitive receptors, such as a community. ▪ No change in effects from previous Project proposal. ▪ Positive benefit from decreased reliance on diesel electricity generation at First Nation communities; thereby decreasing air emissions and greenhouse gases. 	<ul style="list-style-type: none"> ▪ As per previous Project proposal.
Water quantity or quality	<ul style="list-style-type: none"> ▪ No change in effects from previous Project proposal. ▪ Decrease in potential negative effect to water quality due to elimination of submarine crossing of the Berens River. All watercourse crossings will be overhead. ▪ Positive benefit of decreased risk of accidental spills of diesel that could affect water quality. 	<ul style="list-style-type: none"> ▪ As per previous Project proposal. ▪ If required, access roads or water crossings would be constructed in accordance with MNR's Environmental Guidelines for Access Roads and Water Crossings (1990). ▪ Follow DFO Measures to Avoid Causing Harm to Fish and Fish Habitat Including Aquatic Species at Risk (DFO 2016).



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Table 6: Update to Potential Effects as Compared to Previous Proposal, and Proposed Mitigation

Environment	Potential Effects as Compared with Previous Proposal	Proposed Mitigation
Species at risk (SAR) or their habitat	<ul style="list-style-type: none"> ▪ Positive benefit with the removal of the submarine crossing of the Berens River reduces potential direct habitat impact to Lake Sturgeon. Potential temporary crossing at different location on the Berens River. Implementation of the mitigation measures identified under Water Quality and Fish and Aquatic Species reduce potential impacts to Lake Sturgeon. ▪ Wataynikaneyap will implement the identified mitigation measures that resulted in a low negative effect rating in the MNRF screening and determination of no significance in the federal EA. ▪ See Appendix B for Species At Risk report for baseline, effects assessment and mitigation for terrestrial species. ▪ For SAR species, except for bats and woodland caribou, the Project Case and the RFD Case are not predicted to result in significant effects with the implementation of identified mitigation. ▪ Bats - The population at Base Case is predicted to be significantly affected. However with effective implementation of mitigation, the Project is predicted to have a small but negative effect on the bats, and have no to little contribution to the combined effects from the Base Case. No significant effects are predicted from the Project Case. The RFD Case is conservatively predicted to be significant due to uncertainty associated with future forestry activities, climate change and population demographic rates. However, the Project is expected to contribute little to the significance of RFD Case. ▪ Woodland Caribou - No significant effects are predicted from the Project Case. The RFD Case is conservatively predicted to be significant due to uncertainty associated with future forestry activities, climate change and population demographic rates. However, the Project is expected to contribute little to the significance of the RFD Case. 	<p>Mitigation measures that will be implemented by Wataynikaneyap include the following:</p> <ul style="list-style-type: none"> ▪ Minimize footprint. ▪ Where possible, avoid areas of sensitive wildlife habitat (e.g., calving, rearing, denning). ▪ Where possible, implement construction timing windows to avoid sensitive lifecycle periods (e.g., rearing). (See last bullet). ▪ Where possible, use or follow existing disturbances. The preliminary proposed corridor follows existing and planned all season roads to the extent practical and will utilize the existing empty utility corridor on the north side of Berens River. ▪ Revegetation of any temporary construction areas to wildlife end use objectives. ▪ Limits effects of noxious and invasive plants on natural vegetation. ▪ Limit traffic speed for vehicles during construction. ▪ Use of wildlife-proof waste receptacles. ▪ If required, complete appropriately timed nest and den surveys in advance of construction clearing. <p>Additional details on mitigation relevant to terrestrial species are provided in Appendix B Species At Risk report. Additional details on mitigation relevant to Lake Sturgeon are provided under <i>fish or other aquatic species, communities, populations or their habitat</i> heading.</p>
Significant earth or life science features	None identified within the limits of work.	



PIKANGIKUM DISTRIBUTION LINE PROJECT UPDATED PROJECT DESCRIPTION

Table 6: Update to Potential Effects as Compared to Previous Proposal, and Proposed Mitigation

Environment	Potential Effects as Compared with Previous Proposal	Proposed Mitigation
Fish or other aquatic species, communities, populations or their habitat	<ul style="list-style-type: none"> ▪ Potential temporary crossing at Berens River. ▪ Decrease to negative effects due to elimination of submarine crossing of the Berens River that could affect fish and other aquatic organisms. ▪ Decreased risk of accidental spills of diesel that could affect water quality thereby affecting fish and other aquatic organisms. 	<ul style="list-style-type: none"> ▪ As per previous Project proposal for aerial water crossings; including measures for sediment and erosion control, as well as spills prevention and response (this Project will not include fording of waterbodies or watercourses). ▪ If required, access roads or water crossings would be constructed in accordance with MNR’s Environmental Guidelines for Access Roads and Water Crossings (1990). ▪ If required, implement Department of Fisheries and Oceans (DFO) Measures to Avoid Causing Harm to Fish and Fish Habitat Including Aquatic Species at Risk (DFO 2016). ▪ For temporary access during construction, use existing crossing structures or open an ice crossing at the Berens River to avoid work below the high water mark. The restricted activity timing windows are not applicable if all work is completed above the high water mark, or if the waterbody is frozen and an ice crossing is constructed. Restricted activity timing windows are assigned to avoid work during sensitive life history periods or life stages for all fish that may be present in each waterbody, including movements to spawning areas, spawning and egg incubation, or eggs and newly hatched fry. ▪ Minimize clearing of vegetation along the ROW where possible, especially below the high water mark of the water body. The high water mark will be determined and marked. Clearing of vegetation below the high water mark may need to follow the restricted activity timing window for the water body. ▪ Install and remove the ice crossing in a manner that protects the banks from erosion. ▪ Other than crossing with the ROW, maintain a buffer (30 m) around water bodies, watercourses and wetlands to the degree possible.
Land subject to natural or human-made hazards	Not applicable to the Project	



PIKANGIKUM DISTRIBUTION LINE PROJECT UPDATED PROJECT DESCRIPTION

Table 6: Update to Potential Effects as Compared to Previous Proposal, and Proposed Mitigation

Environment	Potential Effects as Compared with Previous Proposal	Proposed Mitigation
Recovery of a species under a special management program (e.g., elk restoration)	<ul style="list-style-type: none"> Woodland caribou, boreal population is under a federal recovery strategy, Recovery Strategy for the Woodland Caribou, Boreal population (<i>Rangifer tarandus caribou</i>) in Canada (Environment Canada 2012). Potential effects to woodland caribou and mitigation are provided in Section B Species at Risk report. No significant effects are predicted from the Project Case. The RFD Case is conservatively predicted to be significant due to uncertainty associated with future forestry activities, climate change and population demographic rates. However, the Project is expected to contribute little to the significance of RFD Case. 	<ul style="list-style-type: none"> Mitigation measures for this Project specific to woodland caribou identified above under Species At Risk and provided in Appendix B Species At Risk report.
Ecological integrity	<ul style="list-style-type: none"> No predicted change in effects from previous Project proposal. 	<ul style="list-style-type: none"> As per previous Project proposal Additional mitigation measures referenced above under Species At Risk and provided in Appendix B Species At Risk report related to limiting effects of noxious and invasive plant species (e.g., cleaning and inspection of vehicles and equipment prior to Project site entry/movement to weed free areas; locating and managing cleaning locations on the Project site).
Terrestrial wildlife (including numbers, diversity and movement of resident or migratory species)	<ul style="list-style-type: none"> No predicted change in effects from previous Project proposal. Terrestrial species at risk discussed above and in Appendix B Species At Risk report. 	<ul style="list-style-type: none"> As per previous Project proposal. Mitigation measures specific to species at risk identified above under Species At Risk and provided in Appendix B Species At Risk report.
Natural vegetation and terrestrial habitat linkages or corridors through fragmentation, alteration and/or critical loss	<ul style="list-style-type: none"> No predicted change in effects from previous Project proposal. No vegetation species at risk located in the limits of work. Terrestrial species at risk habitat addressed under Appendix B Species At Risk Report. 	<ul style="list-style-type: none"> As per previous Project proposal. Mitigation measures identified above under Species At Risk and provided in Appendix B Species At Risk report.
Permafrost	No predicted change in effects from previous Project proposal.	



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Table 6: Update to Potential Effects as Compared to Previous Proposal, and Proposed Mitigation

Environment	Potential Effects as Compared with Previous Proposal	Proposed Mitigation
Soil and sediment quality	No predicted change in effects from previous Project proposal.	<ul style="list-style-type: none"> ▪ As per previous Project proposal. ▪ If required, access roads or water crossings would be constructed in accordance with MNR's Environmental Guidelines for Access Roads and Water Crossings (1990). ▪ Follow DFO Measures to Avoid Causing Harm to Fish and Fish Habitat Including Aquatic Species at Risk (DFO 2016).
Drainage and flooding	Does not apply to Project.	
Sediment or erosion	No predicted change in effects from previous Project proposal.	<ul style="list-style-type: none"> ▪ As per previous Project proposal. ▪ If required, access roads or water crossings would be constructed in accordance with MNR's Environmental Guidelines for Access Roads and Water Crossings (1990). ▪ Follow DFO Measures to Avoid Causing Harm to Fish and Fish Habitat Including Aquatic Species at Risk (DFO 2016)
Release of contaminants in soils or sediments	No predicted change in effects from previous Project proposal.	
Natural heritage features (e.g., areas of natural and scientific interest, provincially significant wetlands)	None located within the limits of work.	
Land Use, Resource Management Considerations		
Access to trails or inaccessible areas (land or water)	No predicted change in effects from previous Project proposal.	<ul style="list-style-type: none"> ▪ As per previous Project proposal. ▪ Discussions with Whitefeather Forest Land Use Strategy Implementation Team (WFLUSIT) and WFISG will provide consistency between proposed Project and existing strategic direction.
Or obstruct navigation	Does not apply to Project.	
Traffic patterns or traffic infrastructure	No predicted change in effects from previous Project proposal.	



PIKANGIKUM DISTRIBUTION LINE PROJECT UPDATED PROJECT DESCRIPTION

Table 6: Update to Potential Effects as Compared to Previous Proposal, and Proposed Mitigation

Environment	Potential Effects as Compared with Previous Proposal	Proposed Mitigation
Recreational importance – public or private	No predicted change in effects from previous Project proposal.	
Or create excessive waste materials	No predicted change in effects from previous Project proposal.	
Or commit a significant amount of a non-renewable resource (e.g., aggregates, agricultural land)	Does not apply to the Project.	
Noise levels	<ul style="list-style-type: none"> ▪ New substation location is not located near a sensitive receptor, such as a community. ▪ No predicted change in effects from previous Project proposal. 	As per previous Project proposal.
Views or aesthetics	The Project crosses the DPA, which results in alteration of view that is not predicted to result in significant effects.	<ul style="list-style-type: none"> ▪ Parallel existing or planned structures to minimize visual effects.
Or be a precondition or justification for implementing another project	The Pikangikum Project is a precondition for implementing the Wataynikaneyap Phase 2: Connecting 17 Remote First Nation communities.	
Adjacent or nearby uses, persons or property	No predicted change in effects from previous Project proposal.	
Land Use	<ul style="list-style-type: none"> ▪ Potential effects to the BDE DPA not addressed in previous assessment. ▪ Potential effects of crossing the DPA are discussed in Section 8.2. No significant effects on the DPA are predicted from the Project Case and RFD Case. ▪ No predicted change in effects to other land use from previous Project proposal. 	<ul style="list-style-type: none"> ▪ As per previous Project proposal. ▪ Project right-of way aligned to follow existing or proposed right-of-way and structure through the DPA to minimize potential effects.



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Table 6: Update to Potential Effects as Compared to Previous Proposal, and Proposed Mitigation

Environment	Potential Effects as Compared with Previous Proposal	Proposed Mitigation
Social, Cultural and Economic Considerations		
Cultural heritage resources – including archaeological sites, built heritage, and cultural heritage landscapes	<ul style="list-style-type: none"> ▪ A Stage 1 Archaeology Assessment has been completed and is included in Appendix D and summarized in Section 8.5. With the implementation of mitigation measures through the staged assessment process, no significant effects are predicted from the Project Case. ▪ Potential effects to built heritage and cultural heritage landscapes are addressed in Section 8.4. There is no built heritage within the limits of work. There will be Project clearing required within the DPA that will affect the cultural heritage landscapes within the DPA. However, the Project clearing will be adjacent to existing or proposed right-of-way minimize the linear corridor intrusion into the cultural heritage landscape. No significant effects to the cultural heritage landscapes are predicted from the Project Case. 	<p>Mitigation measures that will be implemented by Wataynikaneyap include the following:</p> <ul style="list-style-type: none"> ▪ Complete Stage 2 (or Stage 3 and 4) archaeology assessments. ▪ Project clearing will be adjacent to existing or proposed right-of-way minimize the linear corridor intrusion into the cultural heritage landscape. ▪ Implement a Chance Find Procedure during construction. ▪ Continue to engage with First Nation communities during construction.
Or displace people, businesses, institutions, or public facilities	Not applicable to the Project.	
Community character, enjoyment of property, or local amenities	No predicted change in effects from previous Project proposal.	
Or increase demands on government services or infrastructure	Not applicable to the Project.	
Public health or safety	No predicted change in effects from previous Project proposal.	
Local, regional or provincial economics or businesses	No predicted change in effects from previous Project proposal.	



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Table 6: Update to Potential Effects as Compared to Previous Proposal, and Proposed Mitigation

Environment	Potential Effects as Compared with Previous Proposal	Proposed Mitigation
Tourism values (e.g., resource-based tourist lodge)	No predicted change in effects from previous Project proposal.	
Aboriginal Considerations		
First Nation Reserves or Aboriginal communities	No predicted change in effects from previous Project proposal.	As per previous Project proposal.
Sacred, spiritual or ceremonial sites	<ul style="list-style-type: none"> ▪ Wataynikaneyap engaged with First Nation communities to identify traditional land and resource use activities, site or values within the limits of work that could be affected by the Project (see Section 8.5 Archaeology and Record of Engagement). ▪ Through design changes and proposed mitigation, potential effects of the Project on identified activities and sites have been avoided or minimized. ▪ No significant effects are predicted from the Project case. 	<ul style="list-style-type: none"> ▪ Wataynikaneyap incorporated traditional land and resource use activities, sites and values into Project design to avoid or minimize potential effects. ▪ A sensitive site was identified by a member of Wabauskang First Nation within the limits of work. Wataynikaneyap has worked with this community member to identify and implement appropriate mitigation to avoid potential effects to this site. ▪ A member of Lac Seul First Nation expressed their desire to have the power line shift to the opposite side of the road in a particular area. Wataynikaneyap evaluated the request and was unable to make the requested change. Wataynikaneyap remains open to discussion with the community member. ▪ Wataynikaneyap will continue to engage with First Nations to incorporate Project design changes, to the extent practical, should additional traditional land and resource use activities, sites or values be identified within the limits of work that could be affected.
Traditional land or resources used for harvesting, activities		
Aboriginal values		
Lands subject to land claims	Not applicable to the Project.	



10.0 POTENTIAL PERMITS AND APPROVALS

Table 7 provides a summary of potential permits and approvals.

Table 7: Summary of Potential Permits and Approvals from Provincial and Federal Agencies and Other Organizations

Agency	Applicability to the Project
Provincial	
Ministry of the Environment and Climate Change (MOECC)	<ul style="list-style-type: none">▪ <i>Ontario Water Resources Act</i>: Water Taking Regulation O. Reg. 387/04 Permit to Take Water if Project construction requires taking more than 50,000 litres (L) in a day from a lake, stream, river or groundwater source.▪ <i>Ontario Water Resources Act</i>: Section 53 Environmental Compliance Approval (ECA) for Industrial Sewage Works. An ECA may be required for the wastewater treatment systems (leaching beds) at the temporary camps.▪ <i>Environmental Protection Act</i>: Section 9 ECA for Waste Disposal. An ECA may be required for the storage, transportation and disposal of domestic and industrial wastes, including sewage, from the temporary construction camps.▪ <i>Environmental Protection Act</i>: Section 9 or Section 27 Environmental Compliance Approval (ECA) for Noise and Vibration may be required for operation of the substation.▪ A Generator Registration Number is required under O. Reg. 347 of the <i>Environmental Protection Act</i> in the event Hazardous and Liquid Industrial Wastes are generated during Project construction.



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Table 7: Summary of Potential Permits and Approvals from Provincial and Federal Agencies and Other Organizations

Agency	Applicability to the Project
Provincial	
Ministry of Natural Resources and Forestry (MNRF)	<ul style="list-style-type: none"> ■ Permit under Section 17 of the <i>Endangered Species Act, 2007</i> if the project affects a listed species or its habitat. ■ Authorization under the <i>Fish and Wildlife Conservation Act, 1997</i> in the event Project construction/operation is anticipated to destroy the nests or eggs of birds, a beaver dam, or the den of a black bear or some furbearing mammals, or interfere with a black bear in its den. Fish and Wildlife Scientific Collector permits for pre-construction surveys to relocate if needed. ■ Forest Resource Licence (Cutting Permit) is required to harvest and/or cut timber on Crown land under the <i>Crown Forest Sustainability Act, 1994</i>. A discussion with the Whitefeather Forest Community Resource Management Authority will determine if Crown timber cleared under the FRL can be sent to a processing facility. ■ Burn Permit under the <i>Forest Fires Prevention Act (1990)</i> to enable burning of materials from forest clearing, if required. ■ Work Permits under the <i>Public Lands Act (1990)</i> to authorize works on public lands and/or shore lands including geotechnical investigations, construction/upgrade of access roads and trails, culverts/bridges, and distribution lines. ■ Land Use Permits required for distribution line, access roads (to and within the Project site) and for temporary laydown and/or spoil areas. The holder of Land Use Permits will be Wataynikaneyap Power L.P. ■ Approval under Section 20 of the Provincial Parks and Conservation Reserves Act (2006). ■ Work permits and land use permits under the <i>Provincial Parks and Conservation Reserves Act (2006)</i> for any activities noted in the Act, regardless of whether lands are occupied under the authority of a lease, land use permit or licence of occupation. ■ Aggregate Permit under the <i>Aggregate Resources Act (1990)</i> to extract aggregate on all Crown Land. ■ Licence of Occupation under the <i>Public Lands Act (1990)</i> as construction works are to occur on Crown lands. ■ Crown Lease may be required under the <i>Public Lands Act (1990)</i> for proposed transformer station. This will require Ontario Crown Land Surveyor engagement and survey instructions from Red Lake office.
Ontario Ministry of Transportation (MTO)	<ul style="list-style-type: none"> ■ Under the <i>Public Transportation and Highway Improvement Act</i>, the following permits may be required: <ul style="list-style-type: none"> – An Entrance Permit is required for any entrance onto a provincial highway, including a temporary entrance to construct or service such a proposed development; – A Building and Land Use Permit is required for any development/construction occurring within 45 metres (m) of the right-of-way (ROW) limit of any provincial highway, within 180 m of the intersection of a side road and a “King’s” highway; within 395 m of a controlled access highway; and for any power or distribution line within 400 m of a controlled access highway; – An Encroachment Permit is required for any work within, under, or over a provincial highway ROW; – A Sign Permit is required for all signage erected within 400 m of the limit of a provincial highway; and – Permit/Agreement to occupy the ROW.



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Table 7: Summary of Potential Permits and Approvals from Provincial and Federal Agencies and Other Organizations

Agency	Applicability to the Project
Provincial	
Ontario Ministry of Labour	<ul style="list-style-type: none"> Notice of Project under Section 23(2) of the <i>Occupational Health and Safety Act</i> (1990).
Ontario Ministry of Tourism, Culture and Sport (MTCS)	<ul style="list-style-type: none"> Archaeological assessment, to be conducted by a licensed archaeologist as part of the EA under the <i>Ontario Heritage Act</i> (1990) and submitted to the Ontario Public Register of Archaeological Reports. Built heritage and cultural heritage landscape screening and, where required, heritage impact assessments (HIAs) submitted to the MTCS for review under Ontario's <i>Environmental Assessment Act</i>.
Ontario Energy Board (OEB)	<ul style="list-style-type: none"> Approval of Leave to Construct application may be required.
Federal	
Environment Canada	<ul style="list-style-type: none"> Permit under Section 73 of the <i>Species at Risk Act</i> (2002) should any Project activities occur on federal lands (including First Nations Reserve lands) and affect a species listed under the <i>Species at Risk Act</i>, or its habitat.
Fisheries and Oceans Canada (DFO)	<ul style="list-style-type: none"> Authorization under the Section 35 of the <i>Fisheries Act</i> (1985) for harmful alteration, disruption and/or destruction of fish and fish habitat, related to in-water works such as blasting, cofferdam construction and/or diversion of water flows. <ul style="list-style-type: none"> Self-Assessment completed by Wataynikaneyap Power to determine if the project is likely to affect a Commercial, Recreation or Aboriginal Fisheries and therefore subject to a Project Review or Authorization.
Transport Canada	<ul style="list-style-type: none"> Lighting and marking requirements under the Canadian Aviation Regulations Standard 621 – Obstruction Marking and Lighting in the event the distribution line is located in the vicinity of an airport and could interfere with air navigation.
Indigenous and Northern Affairs Canada (INAC)	<ul style="list-style-type: none"> Section 67 of the <i>Canadian Environmental Assessment Act, 2012</i>. Indigenous and Northern Affairs Canada (INAC) must authorize activities on First Nations Reserve lands by means of Section 28(2) of the <i>Indian Act</i> whereby: <p>“The Minister may by permit in writing authorize any person for a period not exceeding one year, or with the consent of the council of the band for any longer period, to occupy or use a reserve or to reside or otherwise exercise rights on a reserve.”</p>
Other	
Local Municipality	<ul style="list-style-type: none"> Building Permits in accordance with <i>Building Code Act</i> (1992) and by-laws of relevant municipality. Municipality of Red Lake - By-Law No. 1083-08 - Noise Exemption if construction work for the Project is expected to make noise between 9 pm and 7 am, a noise by-law exemption will be required.



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Report Signature Page

GOLDER ASSOCIATES LTD.

Karen Saunders, MES, R. P. F.
Environment and Aboriginal Engagement Specialist

ASE/KB/AB/wlm

Allen Eade
Senior ESIA Specialist, Associate

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