APPENDIX 6.4-A

Terrestrial Baseline Report

Table of Contents

Tables

Figures

Appendices

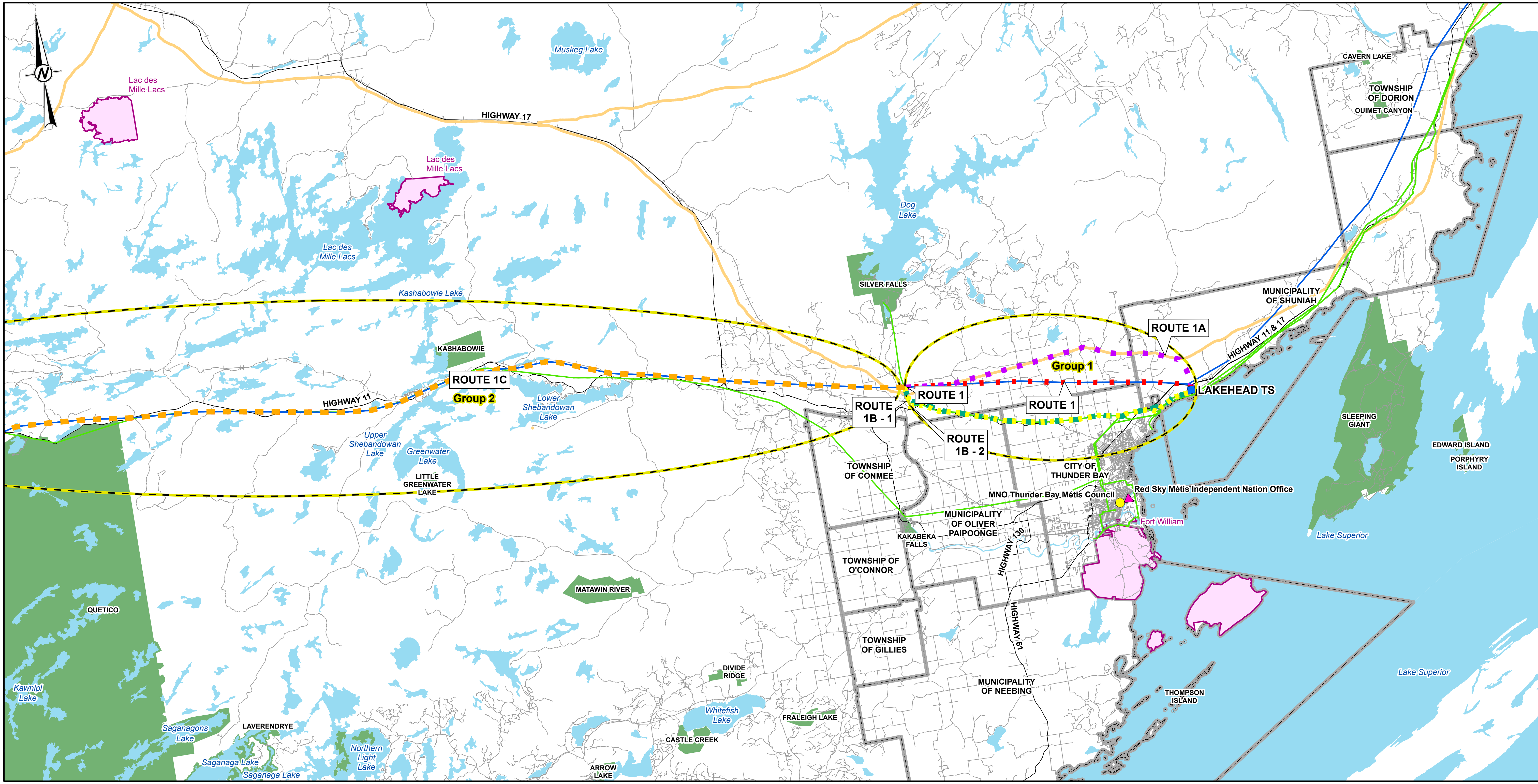
1.0 Introduction

Hydro One Networks Inc. (Hydro One) is proposing to construct a new double-circuit 230 kilovolt (kV) transmission line between Lakehead Transformer Station (TS) in the Municipality of Shuniah and Mackenzie TS in the Town of Atikokan, and a new single-circuit 230 kV transmission line between Mackenzie TS and Dryden TS in the City of Dryden. The purpose of the Project is to ensure an adequate, safe, reliable, and affordable supply of power to support future growth in northwestern Ontario. In particular, the Project will maintain reliable electricity supply to areas west of Atikokan and north of Dryden. Figure 1.1-1 illustrates the location of the Project.

1.1 Rationale for Baseline Program

The objective of the terrestrial baseline program was to gather necessary data about vegetation, wetlands, wildlife, and wildlife habitat to support the completion of a comprehensive environmental assessment (EA) under the *Environmental Assessment Act* (EAA) 2022. This report describes baseline conditions for vegetation, wetlands, wildlife, and wildlife habitat. The baseline program was designed to:

- Characterize existing conditions in the study area defined for the Project;
- Identify potential environmental constraints associated with the Project; and
- Compile sufficient baseline data to allow an assessment of direct and indirect effects from the Project on vegetation, wetlands, wildlife, and wildlife habitat.



LEGEND

GROUP 1

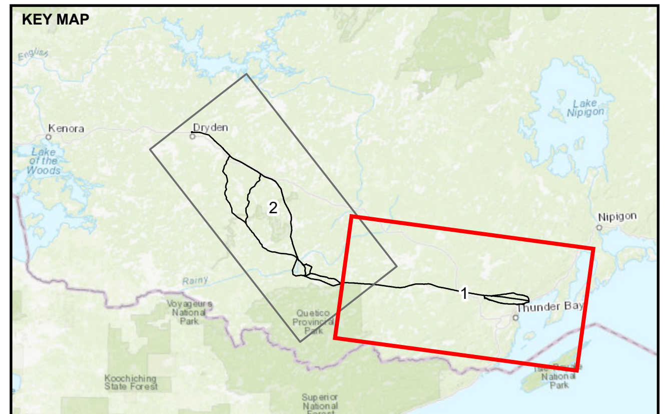
- ALTERNATIVE ROUTE 1
- ALTERNATIVE ROUTE 1A
- ALTERNATIVE ROUTE 1B - 2
- ALTERNATIVE ROUTE 1B - 1

GROUP 2

- ALTERNATIVE ROUTE 1C

- MNO COUNCIL OFFICE
- RED SKY MÉTIS INDEPENDENT NATION OFFICE
- 230 KV TRANSFORMER STATION (TS)
- HIGHWAY
- LOCAL ROAD
- RAILWAY
- NATURAL GAS PIPELINE
- TRANSMISSION LINE (115 KV)
- TRANSMISSION LINE (230 KV)
- FIRST NATIONS RESERVE
- WATERBODY
- PROVINCIAL PARK
- MUNICIPAL BOUNDARY

KEY MAP



0 20 40

1:500,000 KILOMETRES

REFERENCE(S)

1. BASE DATA OBTAINED FROM THE MRNF JUNE 2020
2. ROUTE ALTERNATIVES PROVIDED BY HYDRO ONE, AUGUST 2020
3. PROJECTION: UTM ZONE 15 DATUM: NAD 83

CLIENT	PROJECT
HYDRO ONE NETWORKS INC.	WAASIGAN TRANSMISSION LINE

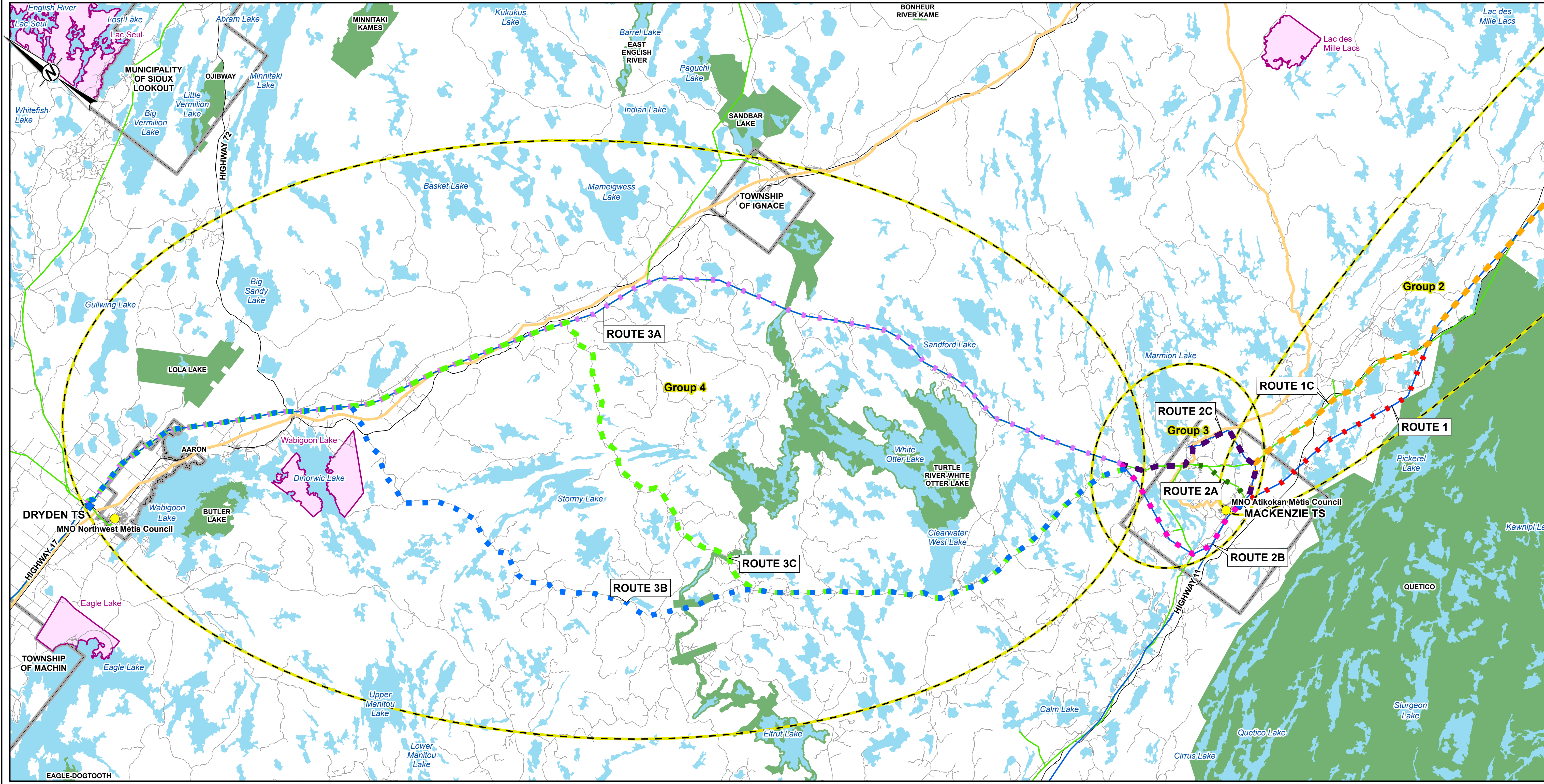
CONSULTANT		
wsp	YYYY-MM-DD	2023-05-09
	DESIGNED	HK
	PREPARED	MM
	REVIEWED	HK
	APPROVED	CS

TITLE

PROJECT LOCATION AND ALTERNATIVE ROUTES

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0028	C	1.1-1-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

GROUP 1
- ALTERNATIVE ROUTE 1

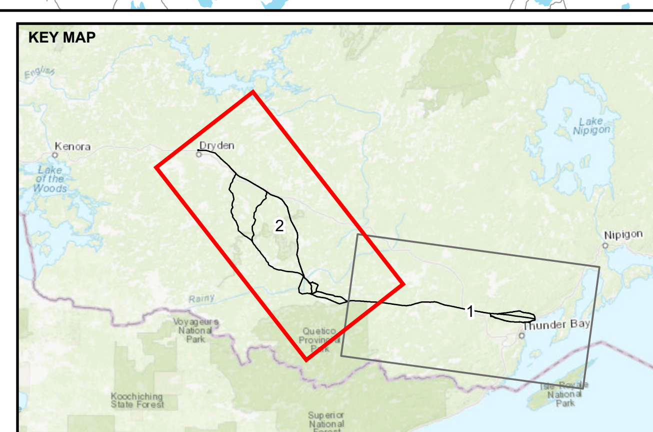
GROUP 2
- ALTERNATIVE ROUTE 1C

GROUP 3
- ALTERNATIVE ROUTE 2A
- ALTERNATIVE ROUTE 2B
- ALTERNATIVE ROUTE 2C

GROUP 4
- ALTERNATIVE ROUTE 3A
- ALTERNATIVE ROUTE 3B
- ALTERNATIVE ROUTE 3C

- MNO COUNCIL OFFICE
- 230 KV TRANSFORMER STATION (TS)
- HIGHWAY
- LOCAL ROAD
- RAILWAY
- NATURAL GAS PIPELINE
- TRANSMISSION LINE (115 KV)
- TRANSMISSION LINE (230 KV)
- FIRST NATIONS RESERVE
- WATERBODY
- PROVINCIAL PARK
- MUNICIPAL BOUNDARY

KEY MAP



0 20 40

1:500,000 KILOMETRES

REFERENCE(S)
1. BASE DATA OBTAINED FROM THE MRNF JUNE 2020
2. ROUTE ALTERNATIVES PROVIDED BY HYDRO ONE, AUGUST 2020
3. PROJECTION: UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

CONSULTANT

wsp

YYYY-MM-DD	2023-05-09
DESIGNED	HK
PREPARED	MM
REVIEWED	HK
APPROVED	CS

TITLE
PROJECT LOCATION AND ALTERNATIVE ROUTES

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0028	C	1.1-1-2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

PATH: S:\Clients\HydroOne\Waasigan\99_PROJ\20137728\40_PROD\0028_Terr_Study_Areas\20137728-0028-G-0000.aprx PRINTED ON: AT: 2:07:29 PM

1.2 Project Description Overview

In general, the Project includes the construction, operation and maintenance of a proposed 230 kV transmission line originating in the Municipality of Shuniah and terminating in the City of Dryden in northwestern Ontario (Figure 1.1-1). The Project includes the following main components:

- An overhead alternating current (AC) 230 kV transmission line and associated components that will be located within a typical 46 metre (m) wide transmission line right-of-way (ROW), approximately 360 kilometres (km) in length.
- Modification to existing infrastructure Lakehead TS, Mackenzie TS, and Dryden TS, and separation of existing transmission lines (circuits F25A and D26A) out of the Mackenzie TS in Atikokan.
- Development of temporary infrastructure associated with construction including, but not limited, to temporary access roads or trails, temporary workspace (including helicopter staging areas), construction camps, laydown areas, and waterbody crossings.
- Development of aggregate pits to support the Project.
- Development of associated permanent infrastructure, such as access roads and water crossings, to support the operation and maintenance phase of the Project.

A preferred route for the Project was identified as discussed in Section 2.0 of the EA. Baseline studies were completed on all alternative routes based on feedback from Indigenous communities and agencies.

1.3 Study Areas

Study areas were developed for the vegetation, wetlands, wildlife, and wildlife habitat valued components to define the spatial extent of the baseline studies and effects assessments for the Project. These study areas are outlined herein and consider the alternative routes listed in Table 1.3-1 shown on Figure 1.1-1, generally occur from southeast to northwest (consistent with the alternative routes that were presented in the Amended Terms of Reference (ToR) [Hydro One 2021], albeit renumbered into four groupings).

Table 1.3-1: Alternative Routes and Section

Section	Alternative Routes
Thunder Bay (Lakehead TS to Node 1)	• Alternative Route 1 • Alternative Route 1A • Alternative Route 1B-1 • Alternative Route 1B-2

Section	Alternative Routes
Thunder Bay to Atikokan (Node 1 to Node 3)	• Alternative Route 1 • Alternative Route 1C
Atikokan (Node 3 to Node 5)	• Alternative Route 2A • Alternative Route 2B • Alternative Route 2C
Atikokan to Dryden (Node 5 to Dryden TS)	• Alternative Route 3A • Alternative Route 3B • Alternative Route 3C

TS = Transformer Station

A preliminary Project footprint was identified for each alternative route. The components included in the preliminary Project footprint are listed in Table 1.3-2. The Project includes the creation of new access roads and the use of existing access roads. Existing access roads include roads that require no improvements and roads that will require improvements such as additional clearing, expansion of the graded area, and new or upgraded water crossings.

The existing access roads that do not require improvements were not evaluated during the terrestrial baseline surveys or assessed during the EA for vegetation, wetlands, wildlife, and wildlife habitat as the potential for direct impacts resulting from construction was considered nil and the indirect effects from noise, vibration, dust are bounded by the assessment of site preparation and construction activities on all criteria.

Table 1.3-2: Vegetation, Wetlands, Wildlife and Wildlife Habitat Study Areas

Valued Component	Spatial Boundaries	Area (ha)	Description	Rationale
• Vegetation and Wetlands-Ecosystems; • Vegetation and Wetlands-Plant Species; • Wildlife and Wildlife Habitat; and • Wildlife and Wildlife Habitat-Species at Risk.	Project footprint (of all route alternatives)	7,373	The Project footprint of all route alternatives includes: • Typical 46 m wide transmission line ROW; • Widened 1 km of ROW for the separation of circuits F25A and D26A; • Modification of the Lakehead TS, Mackenzie TS, and Dryden TS; • Access roads (improved existing roads and new); • Temporary supportive infrastructure associated with construction including fly yards, construction/stringing pads, laydown areas, construction camps, and helicopter pads; and • Aggregate pits.	• Designed to capture the direct effects of the physical footprints of the Project.

Valued Component	Spatial Boundaries	Area (ha)	Description	Rationale
• Vegetation and Wetlands-Ecosystems; • Vegetation and Wetlands-Plant Species; • Wildlife and Wildlife Habitat; and • Wildlife and Wildlife Habitat-Species at Risk (excluding gray fox [*Urocyon cinereoargenteus*]).	Local Study Area (LSA)	170,156	• Includes a 1 km buffer around the Project footprint of all route alternatives	• The LSA is defined as the area outside of the Project footprint where measurable changes to the environment resulting from the proposed activities from any Project stage may be anticipated. Defined to capture local effects of the Project activities, infrastructure and facilities on vegetation, wetlands, wildlife, and wildlife habitat criteria that may extend beyond the footprints (e.g., dust and noise).
• Wildlife and Wildlife Habitat-Gray Fox	Gray Fox LSA	75, 464	• Includes a 1 km buffer around the Project footprint, extending from Shuniah to Atikokan, associated with Alternative Routes 1, 1A, 1B-1, 1B-2, 1C, 2A, 2B, and 2C.	• Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB) comments from April 14, 2022 on the Terrestrial Field Work Plan (Golder 2022) indicate studying the population of gray fox between the area surrounding the City of Thunder Bay and Atikokan (specifically the within the LSA associated with former Alternative Routes 1, 1A, 1B-1, 1B-2, 1C, 2A, 2B, and 2C) where there are some known occurrence records but a more comprehensive understanding of their distribution was recommended. Therefore, field studies for gray fox were performed in this LSA which is being carried forward to the effects assessment.

Valued Component	Spatial Boundaries	Area (ha)	Description	Rationale
• Vegetation and Wetlands-Ecosystems; • Vegetation and Wetlands-Plant Species; • Wildlife and Wildlife Habitat (excluding moose [*Alces alces*]); and • Wildlife and Wildlife Habitat-Species at Risk (excluding gray fox).	Regional Study Area (RSA)	627,235	• Extends 5 km from the Project footprint of all route alternatives	• The rational for this RSA is as follows: • Directly linked to land cover classification for vegetation and wetlands criteria; • Defined as an ecologically relevant scale for wildlife species with small to moderate breeding home ranges; and • Provides a large enough area to assess the cumulative effects on populations of bats and birds criteria that are likely to be distributed inside but extend outside the RSA and is the scale at which significance is determined.
• Wildlife and Wildlife Habitat-Moose and gray wolf	Moose and gray wolf RSA	4.7 million	• Wildlife management units (WMUs) 5, 8, 9A, 11B, 12A, 12B, and 13	• The rational for this RSA is as follows: • Defined using regional population management boundaries established by the Ministry of Natural Resources and Forestry (MNRF); • Provides broader scale context to capture and assess Project effects on species with large home ranges and predator-prey dynamics that may be influenced by the Project; and • Appropriate scale for a cumulative effects assessment on moose and gray wolf and the scale at which significance was determined.

Valued Component	Spatial Boundaries	Area (ha)	Description	Rationale
• Wildlife and Wildlife Habitat-Gray Fox	Gray Fox RSA	256, 329	• Includes a 5 km buffer around the Project footprint, extending from Shuniah to Atikokan, associated with Alternative Routes 1, 1A, 1B-1, 1B-2, 1C, 2A, 2B, and 2C.	• Building upon the revised gray fox LSA as outlined above, the development of a gray fox RSA was warranted to capture potential population effects and consider cumulative effects and significance. • Defined as an ecologically relevant scale for gray fox, a species with small to moderate sized breeding home ranges.

LSA = Local Study Area; MNRF = Ontario Ministry of Natural Resources and Forestry; ROW = right-of-way; RSA = Regional Study Area; TS = Transformer Station; WMU = wildlife management unit.

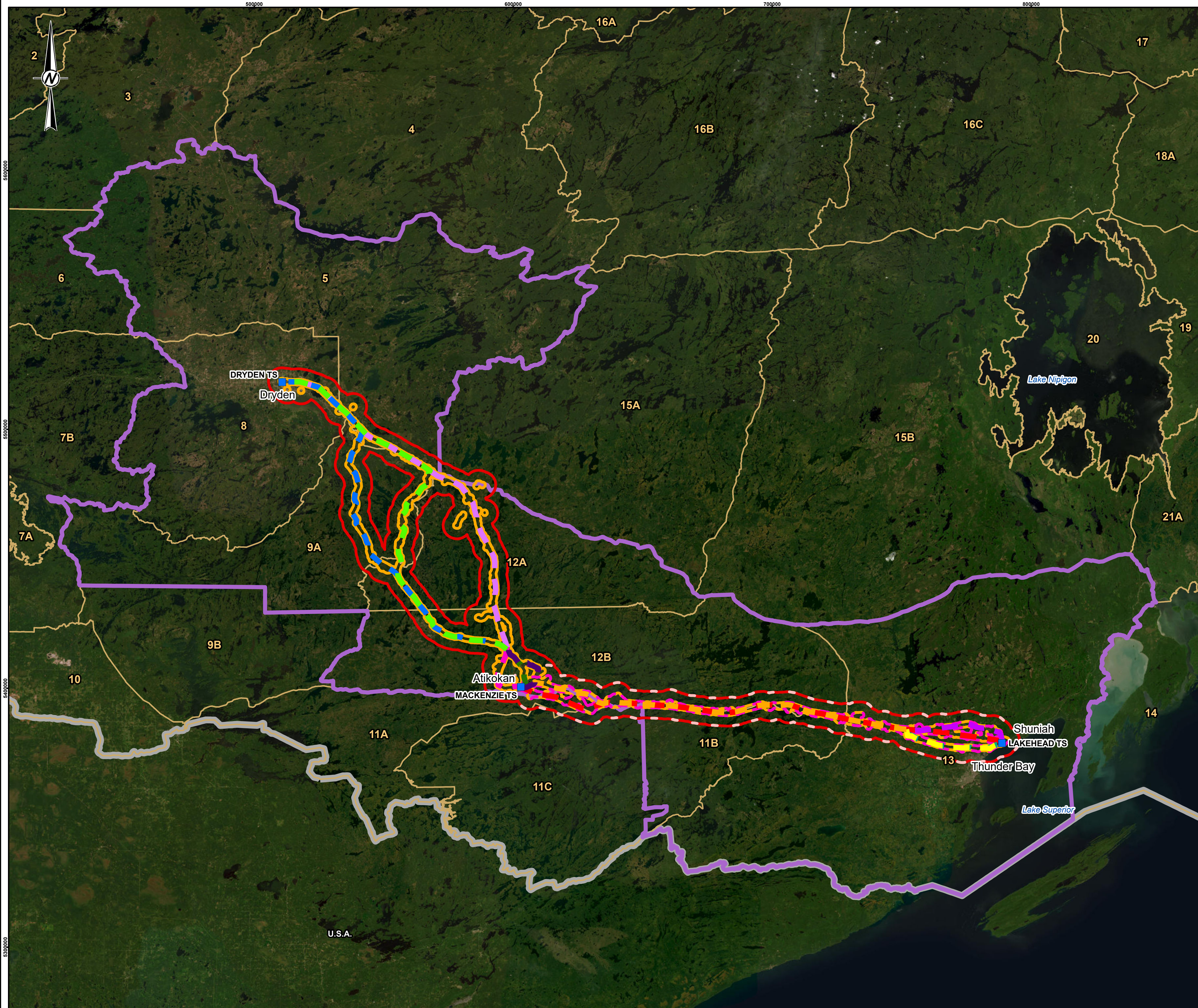
1.3.1 Local Study Area

The LSA, which is 170,156 ha, is defined as a 1 km buffer around the preliminary footprint for each alternative route, as shown on Figure 1.3-1. The LSA is designed to capture the area where direct and immediate indirect effects from the Project on soils, vegetation, wetlands, wildlife, and wildlife habitat will occur at the local scale. Direct effects include mortality to individuals from Project-related hazards (e.g., towers, transmission lines and vehicles), and physical changes to terrain, soils, vegetation, wetlands, wildlife and wildlife habitat from construction, operation, and maintenance of the Project. Indirect effects from the Project may extend beyond the physical footprint, such as air and dust emissions that can alter soil and water chemistry and plant communities. Effects of dust on vegetation have been detected within 50 m of roads, with some lesser effects outward to 500 m (Meininger and Spatt 1988; Walker and Everett 1987). Sensory disturbances (e.g., noise, lights, and smells) from the Project can also influence wildlife movement and behaviour. Some animals may perceive the presence of human activity as a decrease in habitat quality and avoid the area. For example, avoidance of noise disturbance from compressor stations by forest songbirds has been documented within 300 m (Bayne et al. 2008). Activity setbacks are commonly recommended to limit human disturbance near heron rookeries, and many studies suggest an activity setback distance of 250 to 300 m around active rookeries (Gebauer and Moul 2001; Vennesland and Butler 2020). Laurian et al. (2008) found that moose avoided areas up to 500 m from highways. American toad (*Anaxyrus americanus*) abundance was reduced at distances up to 300 m from a major highway (Eigenbrod et al. 2009). Therefore, sensory disturbance can reduce habitat availability for wildlife even where vegetation remains structurally and functionally intact.

The 1 km buffer also reflects anticipated activity setback distance requirements for *Endangered Species Act, 2007*, S.O. 2007, c. 6 (ESA) permitting (e.g., for bat hibernacula), and also accommodates recommended setbacks from various significant wildlife habitats (SWH) (e.g., 120 m forested buffer from moose aquatic feeding areas).

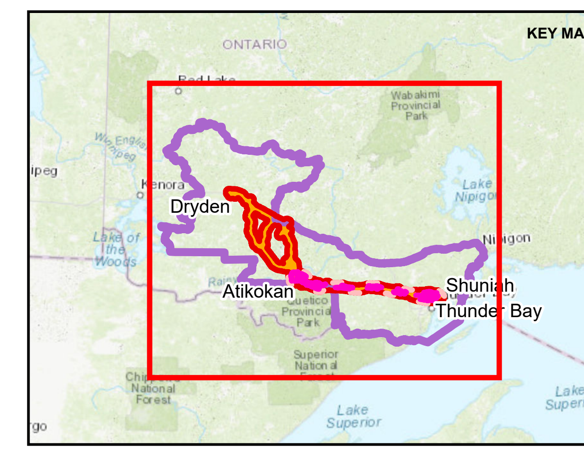
1.3.2 Gray Fox Local Study Area

The gray fox LSA, which is 75, 464 ha in size, is defined as a 1 km buffer around the preliminary footprint for alternative routes between Thunder Bay and Atikokan, including routes 1, 1A, 1B-1, 1B-2, 1C, 2A, 2B, and 2C, as shown on Figure 1.3-1. The rationale for the gray fox LSA is similar to that outlined in Section 1.3.1., with the exception of only including routes extending from Thunder Bay to Atikokan. Current and historical gray fox occurrence records and distribution are concentrated around Thunder Bay and Atikokan and extend west to Fort Frances, but do not extend north towards Dryden (MECP 2019). Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB) comments from April 14, 2022 on the Terrestrial Field Work Plan (Golder 2022) indicate studying the population of gray fox between the area surrounding the City of Thunder Bay and Atikokan where there are some known occurrence records but a more comprehensive understanding of their distribution was recommended.



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- INTERNATIONAL BORDER
- ALTERNATIVE ROUTE 1
- ALTERNATIVE ROUTE 1A
- ALTERNATIVE ROUTE 1B - 1
- ALTERNATIVE ROUTE 1B - 2
- ALTERNATIVE ROUTE 1C
- ALTERNATIVE ROUTE 2A
- ALTERNATIVE ROUTE 2B
- ALTERNATIVE ROUTE 2C
- ALTERNATIVE ROUTE 3A
- ALTERNATIVE ROUTE 3B
- ALTERNATIVE ROUTE 3C
- LOCAL STUDY AREA (TERRESTRIAL)
- REGIONAL STUDY AREA (TERRESTRIAL)
- LOCAL STUDY AREA (GRAY FOX)
- REGIONAL STUDY AREA (GRAY FOX)
- REGIONAL STUDY AREA (MOOSE AND GRAY WOLF)
- WILDLIFE MANAGEMENT UNIT



0 50 100

1:1,500,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
TERRESTRIAL STUDY AREAS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-11
DESIGNED	MB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0028	C	1.3-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

PATH: S:\Clients\HydroOne\Waasigan\99_PROJ\20137728\40_PROD\0028_Terr_Study_Areas\20137728-0028-G-0000.aprx PRINTED ON: AT: 10:31:03 AM

1.3.3 Regional Study Area

RSAs are necessary to capture the maximum predicted direct and indirect effects from the Project and cumulative effects from previous, existing, and reasonably foreseeable developments on criteria populations. The RSA is also developed to capture the variation in wildlife species home range sizes and is the scale at which environmental significance is determined.

For moose, the populations can be reasonably defined based on existing data (e.g., WMUs); however, information is not available to delineate the population boundaries for every population, such as those important for the bats and birds' criteria. Therefore, for the wildlife criteria with small to moderate breeding home ranges (i.e., wildlife criteria, except moose), the RSA was defined by an approximate 5 km area around the Project footprint, extending 4 km from the wildlife and wildlife habitat LSA boundary (627,235 ha; Figure 1.3-1). The assessment area is anticipated to be large enough to contain important cumulative effects on populations of wildlife criteria that are distributed inside the assessment area, but probably also extend beyond its boundaries. A recent metanalyses showed that effects from infrastructure on bird and mammal populations typically extended over distances of up to approximately 1 and 5 km, respectively (Benítez López et al. 2010).

The RSA for wildlife criteria is also directly linked to the analysis of vegetation and wetlands criteria and indicators, which provides support for the assessment of listed species, such as little brown myotis (*Myotis lucifugus*), bobolink (*Dolichonyx oryzivorus*), Canada warbler (*Cardellina canadensis*) and eastern whip-poor-will (*Caprimulgus vociferus*), which use the same land cover classification system.

1.3.4 Moose and Gray Wolf Regional Study Area

Moose in Ontario are managed at the WMU level according to the Cervid Ecological Framework Guidelines (MNR 2009a). The geographic extent for the moose and gray wolf RSA, which is defined by WMUs that overlap with the Project, captures the moose population at an ecologically appropriate scale to assess the dynamics between moose and their predators in the region and assess potential effects for this wide-ranging species. This spatial boundary is also appropriate for gray wolf as wolf habitat selection is primarily dependent on the presence and abundance of prey species and moose is the main prey of gray wolf. Ten WMUs are intersected by the alternative routes Project footprint and LSA (Figure 1.3-1). Two of these WMUs (11A, 15A) were excluded from the moose RSA (5.3 million ha) because only the LSA intersects at the boundary of the WMU and overlaps less than 4% of the total WMU area. Four other WMUs (13, 8, 5, 11C) also overlap less than 3% of the total WMU area; however, these were included in the moose and gray wolf RSA because they intersect the middle of large WMUs and/or because of they are geographically located at the ends of the route or are comprised of a provincial park (WMU 11C, Quetico Provincial Park) and their inclusion supports an assessment of habitat connectivity in the region (Figure 3.2-1).

1.3.5 Gray Fox Regional Study Area

The gray fox RSA, which is 256, 329 ha in size, is defined as a 5 km buffer around the preliminary footprint for the alternative routes between Shuniah and Atikokan, including routes 1, 1A, 1B-1, 1B-2, 1C, 2A, 2B, and 2C, as shown on Figure 1.3-1. The rationale for the gray fox RSA is similar to that outlined in Section 1.3.3., with the exception of only including routes extending from Shuniah to Atikokan. Current and historical gray fox occurrence records and distribution are concentrated around the Thunder Bay area and Atikokan and extend west to Fort Frances, but do not extend north towards Dryden (MECP 2019).

Table 1.3-3: Area of All Alternative Route Footprints and Local Study Area in the Wildlife Management Units

Cervid Ecological Zone	WMU	Alternative Route(s) that intersect the WMU	Amount of the Alternative Route Footprints in the WMU (ha)[a]	Amount of the LSA in the WMU (ha)	WMU Area (ha)	Portion of WMU that is overlapped by LSA (%)	WMU included in Moose and Gray wolf RSA?
C1	13	1, 1A, 1B-1, 1B-2, 1C	1,395	32,374	1,349,634	2.4	Yes
C1	11B	1, 1C	590	9,435	196,619	4.8	Yes
C1	11C	1, 1C	0.2	820	472,306	0.2	No
D1	11A	1, 1C	333	9,506	290,959	3.3	No
C1	12B	1, 1C, 2A, 2B, 2C, 3A, 3B, 3C	2,227	50,825	660,601	7.7	Yes
C1	12A	3A, 3B, 3C	829	25,720	401,891	6.4	Yes
B	15A	3A	6	584	1,060,479	0.1	No
C1	9A	3A, 3B, 3C	817	24,183	466,505	5.2	Yes
C1	8	3A, 3B, 3C	576	7,732	552,235	1.4	Yes
C1	5	3A, 3B, 3C	601	8,977	1,081,754	0.8	Yes
Total Area (ha)			**7,373**	**170,156**	**7 million**	**n/a**	**5 million**

Numbers have been rounded for presentation purposes.

a) The areas (ha) presented in this column are cumulative for all alternative route footprints that were assessed for this baseline report.

LSA = Local Study Area; n/a = not applicable; RSA = Regional Study Area; WMU = Wildlife Management Unit.

1.4 Valued Component, Criteria and Indicators

The following draft list of criteria and indicators was taken from Appendix D of the Amended Terms of Reference (ToR) and augmented based on feedback from Indigenous communities, government agencies, and interested persons and organizations.

Considering the feedback received, and the background and field data collected to date and presented in this report, the appropriateness and relevance of each criterion was reviewed and a final set have been selected for the use in the net effects assessment of the preferred route in the environmental assessment. Additional details regarding changes to the criteria and indicators since the approved Amended ToR are provided in Section 6.5 of the EA.

The baseline conditions presented herein will provide the data to inform the indicators presented in Table 1.4-1. As such, the table references where the data for each criterion and indicator can be found.

Table 1.4-1: Criteria and Indicators

Valued Component	Criteria	Indicator(s)	Section References
• Vegetation and Wetlands Ecosystems	• Upland ecosystems; • Riparian ecosystems; and • Wetland ecosystems.	• Ecosystem quantity: Change to area (ha) of vegetation communities in the Project footprint, by type as appropriate (e.g., bog, fen, swamp wetlands). • Ecosystem distribution: Change to spatial configuration of vegetation communities (e.g., fragmentation) in the study area. • Ecosystem condition: Change to the integrity or naturalness of vegetation communities in the study area, including their ability to support the communities of organisms naturally associated with them.	• Section 3.1.1

Valued Component	Criteria	Indicator(s)	Section References
• Vegetation and Wetlands – Plant Species	• Plant Species at Risk (SAR); • Plant Species of Conservation Concern (SOCC); and • Plants of Traditional Use.	• Habitat quantity: Change to amount (ha) of mapped suitable habitat with high potential to support plant SAR, plant SOCC, traditional use plants in the study area. • Habitat distribution: Change to spatial configuration of habitat in the study area, including the effects on plant dispersal and population distribution. • Survival and reproduction: Changes to plant SAR, plant SOCC, traditional use plants populations (i.e., relative abundance) through changes in survival and recruitment, as well as changes in the number of documented occurrences of plant (i.e., abundance in the study area).	• Section 3.1.2
• Wildlife and Wildlife Habitat	• Ungulates (moose); • Furbearers (pine marten, beaver, gray wolf); • Raptors (bald eagle); • Barn swallow (*Hirundo rustica*); • Songbirds (Canada warbler, olive-sided flycatcher [*Contopus cooperi*]); • Land birds (common nighthawk [*Chordeiles minor*]);	• Habitat quantity: Anticipated changes to amount (ha) of wildlife habitat in the study area. • Habitat distribution: Anticipated changes to spatial configuration of habitat in the study area, including the effects on wildlife movement and habitat connectivity.	• Section 3.2.1; • Section 3.2.2; and • Section 3.2.3.

Valued Component	Criteria	Indicator(s)	Section References
	• Marsh birds (waterfowl and waterbirds); and • Herpetofauna (snapping turtle [*Chelydra serpentina*], spring peeper [*Pseudacris crucifer*]).	• Survival and recruitment: Anticipated changes to wildlife populations through changes in survival and recruitment.	
• Wildlife and Wildlife Habitat (Species at Risk)	• Little brown myotis and northern myotis (*Myotis septentrionalis*); • Eastern whip-poor-will; • Bank swallow (*Riparia riparia*); • Bobolink; • Chimney swift (*Chaetura pelagica*); and • Gray fox (*Urocyon cinereoargenteus*).	• Habitat quantity: Change to amount (ha) of wildlife habitat in the study area. • Habitat distribution: Change to spatial configuration of habitat in the study area, including the effects on wildlife movement and habitat connectivity. • Survival and recruitment: Change to wildlife populations through changes in survival and recruitment.	• Section 3.2.1.3; • Section 3.2.3.6; and • Section 3.2.1.4.

ha = hectare; SAR = Species at Risk; SOCC = Species of Conservation Concern.

2.0 Methods

The following sections discuss the methods used to support the consultation and engagement for the Project, and the baseline data characterization including the background data review, field studies and data analysis.

2.1 Regulatory Agency Consultation

A high-level overview of the planned field studies was included in the Amended ToR and a commitment was included to develop a field work plan for Indigenous community and agency review. A key comment from agencies during the ToR process was that additional field work should be completed on all alternative routes to support the selection of a preferred route. This requirement was not included in the ToR given the significant effort required to survey multiple alternative routes on a 360 km transmission Project, but after approval of the Amended ToR Hydro One decided to complete this additional field work to address comments received from Indigenous communities and agencies, and to support a timely EA review by agencies.

Hydro One prepared the Terrestrial Field Work Plan for agency review and comment on March 22, 2022. Comments were received by agencies and addressed prior to the field work starting. Key comments received from agencies in relation to the baseline studies, and how they were addressed, are provided in Table 2.1-1.

The Terrestrial Field Work Plan was finalized in September 2022, after comments from Indigenous communities were also received and addressed, which is discussed in Section 2.2. A high-level summary of the field results for the 2022 field program was provided to the Government Review Team on November 22, 2022.

Table 2.1-1: Summary of Issues Raised during Engagement – Regulatory Agencies

Issue	How Addressed in the Baseline	Indigenous Community or Stakeholder
• Field studies should be completed on all alternative routes.	• Significant additional effort was added to the scope and field programs were expanded to survey each of the alternative routes instead of just a preferred route.	• MNRF; and • Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB).

Issue	How Addressed in the Baseline	Indigenous Community or Stakeholder
• Additional field studies should be completed for gray fox.	• During the 2022 field surveys, effort was expanded to opportunistically search for potential gray fox denning features and habitat. Remote cameras were deployed at five potential den features. • Baited remote cameras were set up throughout the study area to determine the presence of gray fox within the LSA. Results are reported in Section 3.1.2.4.	• MECP SARB.
• Targeted field studies for least bittern should be completed.	• Least bittern surveys were completed as part of the baseline field program as outlined in Sections 2.4.2.7 and 3.2.3.6.5	• MECP SARB.

LSA = Local Study Area; MECP = Ministry of the Environment, Conservation and Parks; MNRF = Ministry of National Resources and Forestry SARB = Species at Risk Branch.

2.2 Indigenous Engagement

Indigenous communities also noted during the ToR process that additional field surveys should be completed on each of the alternative routes. This was factored into the decision to survey the alternative routes for baseline studies, although it was not committed to in the Amended ToR that was approved.

The draft Terrestrial Field Work Plan was provided to Indigenous communities for review on March 22, 2022. Comments received from Indigenous communities were addressed in the final Terrestrial Field Work Plan in September 2022. Comments received from Indigenous communities related to baseline studies, and how they were addressed, are provided in Table 2.2-1

Table 2.2-1: Summary of Issues Raised during Engagement Related – Indigenous Communities

Issue	How Addressed in the Baseline	Indigenous Community or Stakeholder
• Turtle are of cultural significance and additional field surveys should be completed.	• Turtle visual encounter surveys were completed throughout the LSA to determine presence/absence and habitat use of various turtle species that bask out of the water as outlined in Section 3.2.2.2.1. • Additionally, during the 2022 field surveys, effort was expanded to opportunistically search for potential turtle nesting features and habitat.	• Gwayakocchigewin Limited Partnership (GLP)
• Additional field surveys should be completed on mammals.	• Significant additional effort was added to the scope and field programs were expanded to survey each of the alternative routes instead of just a preferred route. • During the 2022 field surveys, effort was expanded to opportunistically search for potential gray fox denning features and habitat. Remote cameras were deployed at potential five den features. • Baited remote cameras were set up throughout the study area to determine the presence of gray fox within the LSA.	• GLP
• One proposed turtle field survey location was identified as being culturally sensitive.	• This location was visited once prior to receiving the comment and then it was not visited again to respect the protocols of the First Nation.	• Lac des Mille Lacs First Nation
• Before field work could proceed in Wabigoon Lake Ojibway Nation territory, the community wanted to address their cultural ceremonial protocols and monitoring requirements.	• Community ceremonial protocols and monitoring requirements were respected by field crews. • Based on the timing of field preparation and the onset of the spring season, round one of anuran call count (ACC) surveys was delayed in Wabigoon Lake Ojibway Nation territory which resulted in some stations receiving two visits instead of three.	• Wabigoon Lake Ojibway Nation
• One section of the Alternative Route 3B was identified as being culturally sensitive.	• Field surveys were avoided in this area to respect the protocols of the Wabigoon Lake Ojibway Nation.	• Wabigoon Lake Ojibway Nation

ACC = anuran call count; GLP = Gwayakocchigewin LP; LSA = Local Study Area; TVES = Turtle Visual Encounter Survey.

Notices were provided to Indigenous communities ahead of planned field activities, which provided details about the proposed field surveys, methods, locations and a request for Indigenous participants in the surveys. Maps were available for download and an online platform was made available for Indigenous communities to review proposed field survey locations to identify any concerns. Hydro One also completed open house sessions with Indigenous communities where the field plans and maps were made available.

As well, bi-weekly field summary reports were provided to Indigenous communities to provide regular updates on the field survey progress and results throughout the field season.

2.2.1 Indigenous Participation

Hydro One believes that the Project benefits greatly with the active engagement of Indigenous communities since they hold Indigenous Knowledge and traditional land and resource use (IK/TLRU) information for the area. Indigenous communities identified interested community members to participate in field work as equal members of the field team.

Incorporation of Indigenous participation and other considerations in the field work and baseline studies included the following:

- Indigenous field crew members were included as valued core team members for field surveys;
- Indigenous field crew members were provided with training and technology to assist with data and field collections;
- Mapping of proposed survey locations was provided prior to during field work;
- Field study schedules were shared with Indigenous communities and modified based on availability of field monitors;
- Monitors from Wabigoon Lake Ojibway Nation were present for the field work completed within its traditional territory;
- Field crew members completing work within the traditional territory of Wabigoon Lake Ojibway Nation completed the community’s own cultural awareness training;
- All non-Indigenous field crew members completed an internal Indigenous cultural awareness training; and
- Indigenous businesses were used during field work for gas, food, and accommodation.

The Project team thanks and acknowledges the support from Indigenous communities to identify participants for the field surveys. In total, there were 17 representatives from Indigenous communities that participated in the field surveys. Participation varied based on the preferences from the Indigenous community and included joining the field crew as monitors to represent the interests and concerns of their community, joining as Indigenous field crew members to gain technical training and build capacity for their communities, or participating in Hydro One-facilitated site visits to meet with field crews to observe and learn about the field work.

Thirteen of these community representatives participated in the terrestrial field program, and this included two members of Fort William First Nation, five members of Wabigoon Lake Ojibway Nation, two members of Lac des Mille Lacs First Nation, one member of Couchiching First Nation, one member from Red Sky Métis Independent Nation, one member from Lac Seul First Nation, and one member from Whitesand First Nation (Whitesand First Nation was not identified as a potentially affected community by the Crown for the Project).

2.2.2 Indigenous Knowledge

Hydro One is committed to considering Indigenous Knowledge at all stages of the Project. Indigenous Knowledge considered in characterization of the baseline environment in this report was shared through a variety of sources, including from Indigenous field crew members, as part of the review process for the draft Terrestrial Field Work Plan and/or through engagement with Indigenous communities. Indigenous Knowledge information shared in relation to the preferred route is described in the assessment of the effects of the Project within applicable sections of this EA. As noted in Section 2.2, areas of cultural significance were identified by two Indigenous communities and field surveys in these areas were limited to respect the protocols of those communities.

2.3 Background Data Review

Existing literature and digital data provided by Hydro One, available in-house at WSP (formerly WSP Golder) (including MNRF Land Information Ontario [LIO] and Natural Heritage Information Centre [NHIC] data), and obtained through publicly available databases, published reports, and grey literature, as well as Indigenous Knowledge (i.e., traditional knowledge/traditional land and resource use) studies received from Indigenous communities, were reviewed, and compiled to determine which data are available to support the requirements for the wildlife baseline.

The information sources included are listed in Table 2.3-1.

Table 2.3-1: List of Records Reviewed and Sources

Record Source	Records Reviewed
• MNRF Restricted Datasets requested and/or accessed June 2019 (updated November 2022).	• Data obtained includes: • Cultural heritage values; • Mineral licks; • Nesting sites; • Wildlife wintering areas; and • Wildlife concentration areas.

Record Source	Records Reviewed
• LIO data requested and/or accessed June 2019 (updated November 2022).	• Data obtained includes: ◦ Aggregate pit – active; ◦ Aggregate pit – inactive; ◦ Ministry of Transportation (MTO) Aggregate Sites; ◦ Areas of Natural and Scientific Interest (ANSIs); ◦ Aquatic feeding areas; ◦ Aquatic Resource Area water line/water polygon segment; ◦ Crown land Use Policy Atlas (CLUPA); ◦ Conservation reserves (CLUPA, GapTool); ◦ Forest Resource Inventory (FRI) Ecosite and Wetland Layer (LIO); ◦ Waterbody; ◦ Wetlands; ◦ Woodlands; ◦ National parks; ◦ Ontario Trail Network and Segments (recreation features); ◦ Fishing access points (recreation features); ◦ Significant Ecological Area; and ◦ Provincial parks (CLUPA, GapTool).
• NHIC data accessed June 2019 (updated September 2022).	• Data obtained includes: ◦ Species Observations (e.g., SAR, regionally rare plant records); ◦ Plant community occurrences; and ◦ Provincially tracked species.
• MNRF Species at Risk in Ontario List (SARO List), accessed November 2022.	• Accessed to determine the status of wildlife or plant species as a SOCC or SAR.
• Significant Wildlife Habitat Technical Guide (MNR, 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 3W (MNRF, 2017a).	• Significant Wildlife Habitat Criteria.
• The Ecosystems of Ontario, Part I: Ecozones and Ecoregions (Crins et al., 2009).	• Ecozones; and • Ecoregions.
• Ontario Breeding Bird Atlas (OBBA) online data, 2022.	• Digital data files of species' range distributions.

Record Source	Records Reviewed
• Important Bird Areas - online data, 2019.	• Digital data files of Important Bird Areas.
• Mammals of the Western Hemisphere v3.0, accessed via NatureServe, 2022.	• Digital data files of species' range distributions.
• Ontario Nature Reptile and Amphibian Atlas, 2022.	• Digital data files of species' range distributions.
• Ministry of Mines	• CLAIMaps; • Bedrock Geology of Ontario (MRD 126-Rev 1, 1:250,000 scale Bedrock Geology of Ontario, Ontario Geological Service (OGS), 2011); • Abandoned Mines Information System (AMIS) Database; and • Virtual meeting with OGS to discuss areas where the geology can support the natural formation of caves.
• Ontario Parks.	• GapTool dataset, including reports and shapefiles for underrepresented Landform/Vegetation (L/V) associations for Ecodistricts and critical L/V associations within protected areas; and • iNaturalist data, including for provincial parks and conservation reserves.
• Other data.	• Waasigan Transmission Line Route Alternatives Assessment Prepared for Lac des Mille Lacs First Nation (Honsberger 2020); • iNaturalist; and • eBird.

ANSIs = Areas of Natural and Scientific Interest; CLUPA = Crown land Use Policy Atlas; Ministry of Mines; FRI = Forest Resource Inventory; LIO = Land Information Ontario; L/V – Landform/Vegetation; MNRF = Ministry of Natural Resources and Forestry; MTO = Ministry of Transportation; NHIC = Natural Heritage Information Centre; OBBA = Ontario Breeding Bird Atlas; OGS = Ontario Geological Service; SAR = Species at Risk; SARO List = Species at Risk in Ontario List.

Specific to gray fox, a request was made to the Thunder Bay Field Naturalist for occurrence data from their Gray Fox Monitoring Project. The MECP SARB also provided some recent occurrence records for this SAR, and iNaturalist occurrence data has been downloaded for consideration in the preparation of the gray fox assessment and field studies program.

A virtual meeting was held with local geologists from Ontario Ministry of Mines to discuss the potential for natural caves that could hold potential to be SAR bat hibernaculum.

For the purposes of report, SAR are defined as the following:

- Any species listed under Schedule 1 of the *Species at Risk Act*, S.C. 2002, c. 29 (SARA) as Threatened, Endangered, or Extirpated; and/or
- Any species listed under the *Endangered Species Act, 2007*, S.O. 2007, c. 6 (ESA) as Threatened, Endangered, or Extirpated.

For the purposes of this report, SOCC are defined as:

- Any species listed under Schedule 1 of SARA as Special Concern;
- Any species designated Threatened, Endangered, or Extirpated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (unless otherwise listed as SAR under SARA or the ESA);
- Any species listed under the ESA as Special Concern (unless otherwise listed as SAR under SARA); and/or
- Any species with a subnational rank (SRank) of SH, S1 – S3 as designated by the NHIC.

2.4 Field Studies

2.4.1 Vegetation and Wetlands

Surveys to characterize baseline conditions for vegetation and wetlands were completed in the LSA as follows:

- Field verification surveys to confirm plant community classifications available from desktop mapping;
- Botanical surveys to verify the location of plant SAR, rare plants and traditional use/culturally significant plants; and
- Observation and documentation of introduced and invasive plants within the LSA.

2.4.1.1 Pre-field Mapping

Preliminary mapping was completed to support selection of field survey stations within the LSA. Mapping was developed with provincial geographic information system (GIS) spatial data (MNRF 2022a), including Forest Resource Inventory (FRI) data and Wetland data, and data obtained through an NHIC inquiry for SAR, plant communities, and provincially tracked species. As part of the mapping exercise, complementary data, including waterbodies, watercourses, active pits, roadways, and other data were also incorporated.

FRI data were reviewed to understand the ecosite types throughout the LSA, including both upland and wetland communities. GIS analysis provided a total area and percentage of each ecosite type that occurred within the LSA, which was also analyzed on a broader scale of general habitat types (e.g., coniferous forest, deciduous forest, meadow, and rock outcrop). This allowed proportional selection of survey stations to reflect the relative habitat distribution within the LSA, and to aid in selection of wildlife survey stations as discussed further in this report.

The FRI wetland ecosite communities were isolated and served as one of two layers to support wetland analysis. The second layer – “Wetland” (LIO), was also reviewed. Unlike the FRI wetland layer, this layer differentiated between provincially significant wetlands (PSW) (evaluated wetlands) and unevaluated wetlands. Similar analysis methods are used by the province to identify and map the limits of FRI wetlands and LIO Wetlands, and 99% of both layers aligned. The LIO Wetland layer is regularly updated and presumed to be more reliable for current wetland information, which may account for the minor discrepancy. For the purpose of baseline mapping, the outermost limit of these wetland layers was applied.

Riparian habitat or the riparian zone is captured by the upland and wetland communities that occur adjacent to a water feature and influence the adjacent aquatic habitat through various biophysical processes, such as erosion, filtration, and shading (Collison & Gromack 2022). As such, the riparian zone or buffer width from a water feature’s top of bank differs for each feature. Understanding that a study to establish a more precise riparian zone for watercourses and waterbodies within the LSA would be unreasonable for this level and size of study, a more streamlined approach was applied. A 30 m riparian zone was applied to watercourses with a stream order of one through four, and waterbodies. For larger watercourses with a stream order of five or six, presumed to be more sensitive to anthropogenic influences, an 80 m riparian zone was applied from the centreline of the watercourse. GIS analysis was undertaken to determine the total area of each ecosite type which occurs within the riparian zone.

Rare plant communities, which constitute SWH, including rock barren, sand dunes, artic-alpine plants, wild rice (*Zizania aquatica*) stands and milkweed (*Asclepias incarnata*, *A. syriaca*) patches were reviewed. Further discussion related to pre-field mapping related to SWH is located in Section 2.4.1.4.

The MNRF advised, given the absence of an Ecoregion-specific schedule that captures the LSA, that draft Ecoregion Schedule 3W (MNRF 2017a) be used. This criterion identifies special criteria for ecodistrict 3W-1, where 12 unique ecosites are considered SWH for rare treed type: black ash (*Fraxinus nigra*). Since publication of the draft Ecoregion Schedule 3W (MNRF 2017a), black ash has been listed as Endangered under the ESA. It is presumed that black ash habitat would no longer be protected as SWH, but rather exclusively as SAR habitat. The 12 ecosites in which black ash are possible were isolated from FRI data and mapped as “candidate” black ash habitat.

2.4.1.2 Ecological Land Classification

Ecological Land Classification (ELC) is a standardized method of defining landscapes from broadscale ecoregions, down to refined ecosites. Ecosites of the LSA were assessed and analyzed. Ecosite information is not only valuable in understanding the vegetation resources within the area, but also contributes to the understanding of wildlife and aquatic habitats.

Through the province's effort to inventory forest resources across most of northern Ontario, existing ecosite information is available for the LSA through the FRI modelling work completed between 2007 and 2011. FRI mapping was completed individually for each forest management unit (FMU), which has resulted in a narrow overlap area where ecosite polygons extend outside of the respective FMUs. The overlap areas contain two ecosites assigned to any one area. In most cases, overlapping areas were assigned different ecosite identifiers, which may be attributed to the timing of when each FRI mapping effort was completed for each FMU.

FRI ecosite data was mapped by various methods, a combination of aerial imagery interpretation via Digital Surface Models and stereo imagery analysis, and LiDAR. The multi-analysis approach has resulted in a variety of information for each ecosite, including vegetation types, heights, and soil moisture, which has allowed for a best estimate of the ecosite type (MNR 2009b). The FRI has served as an extremely useful resource for this Project, not only for the Project-specific ELC analysis, but also to support wildlife and aquatic assessment work.

In most cases, the FRI ecosites have not been field-verified, so some level of error should be considered when used. Field staff completed visits during the early and late growing seasons to sample a variety of ecosites within the LSA. ELC field data was collected as part of both the ELC field program at 81 stations, and as part of the SWH assessments, at 114 stations. Early and late growing season surveys were conducted during the spring and summer of 2022: ELC-specific visits between June 4-11, July 24-26, and August 19-23, and SWH assessments completed between August 9-18, and September 8-13. Each station was visited once, either during the early or late season depending on access permissions, and/or the suspected presence of vegetative species whose identification would be apparent during the early or late growing period. ELC-specific survey stations were selected based on the following considerations:

- The intent to place an equal number of stations along each of the alternative routes within the LSA;
- Proximity to roadways to minimize mobilization;
- Areas that were likely to support rare or SAR vegetation;
- Areas with established landowner access permissions; and
- With a focus on visiting a diversity of FRI ecosite types.

Each ELC-specific survey station was assigned a Global Positioning System (GPS) coordinate, which field staff would visit and then expand the study area to include up to a 50 m radius surrounding each point. The polygon limit of each ecosite was not ground-truthed and existing FRI ecosite limit maintained for the purpose of streamlining the field assessment and allowing staff to visit as many stations as reasonably possible within the allotted survey timeframe.

At each station, key information such as stand characteristics (e.g., standing snags), vegetation cover rankings, vegetation Identification, and soil analysis was recorded. Soil analysis focussed on determining the dominant type – organic or mineral, and identification of wetland soil indicators (e.g., gley soils).

Following completion of the ELC-specific field program, ecosite mapping was updated with ground-truthed data. It is noted that 58% of the FRI ecosite types assessed were revised in accordance with field assessment data. This, in additional ELC data collected as part of the targeted SWH assessments, was updated to replace the FRI ecosite data. Additionally, areas of black ash observations were added to the mapping, and the associated ecosite was updated and identified as confirmed black ash habitat.

2.4.1.3 Botanical Survey

The botanical survey expanded upon the ELC-specific survey work described above and entailed vegetation species identification at 81 stations (same stations as ELC program surveys). Lists of the plant species identified during the botanical surveys were compiled and are attached as Attachment 6.4-A-2.

The botanical survey focused on SAR, rare species, invasive plants, and traditional use plants. Black ash is provincially Endangered and is known to occur within northern Ontario. Lowland areas were targeted for the purpose of ground-truthing candidate habitat for this species. Additionally, the NHIC (MNRF 2022b) maintains records of six rare plants within the LSA with a subnational or Srank of S1 to S3, namely; ryegrass sedge (*Carex loliacea*; S1S2), quill spikerush (*Eleocharis nitida*; S2?), slender bulrush (*Schoenoplectus heterochaetus*; S3?), Clinton's clubrush (*Trichophorum clintonii*; S2S3), Vasey's rush (*Juncus vaseyi*; S3) and auricled twayblade (*Neottia auriculata*; S3). Habitat consideration for these species contributed to selection of ELC-specific survey stations. These occurrence records are discussed further in the results section.

2.4.1.4 Candidate Significant Wildlife Habitat Vegetation Related Categories

SWH includes a broad range of habitats known to be key to sustaining populations of wildlife and plants. SWH is defined in the Natural Heritage Reference Manual (MNR 2010) and the Significant Wildlife Habitat Technical Guide (SWHTG; OMNR 2000), as it relates specifically to vegetation, as follows.

Rare vegetation communities:

- Areas that contain a provincially rare vegetation community.
- Areas that contain a vegetation community that is rare within the planning area.

In addition, there are two types of specialized wildlife habitat SWH that correspond directly to the presence of a single species of plant:

- Wild rice; and
- Milkweed patches.

The draft criteria schedules for Ecoregion 3W (MNRF 2017a) were consulted to define specific SWH types contained under the broad categories defined above. Criteria schedules have not been prepared for the other ecoregions (4S, 4W) that the Project overlaps. In the absence of criteria schedules for these ecoregions, the draft criteria schedules for Ecoregion 3W, as well as the Significant Wildlife Habitat Technical Guide (OMNR 2000), were consulted.

Pre-field Mapping

At the request of the MNRF (MNRF 2020a), a desktop screening of SWH was completed to identify candidate SWH rare vegetation communities, wild rice, and milkweed patches in the LSA. The desktop screening was conducted by overlaying the LSA on the FRI land cover layer (LIO 2020). The full suite of SWH and applicable ecosites was informed by MNRF's technical guide (OMNR 2000) and the criteria for Ecoregion 3W (MNRF 2017a). Where the Ecoregion criterion schedules specified a buffer to the candidate SWH ecosite, it was not mapped as part of this exercise. Rare vegetation communities and ecosites suitable for supporting wild rice or milkweed patches were screened for at the desktop level (Table 2.4-1).

Table 2.4-1: Desktop Screening of Candidate Significant Wildlife Habitat (Rare Vegetation Communities, Wild Rice and Milkweed Patches) in the Local Study Area

Significant Wildlife Habitat Type[a]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Cliff and Cliff Rim	3	2/2	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH is rare in the LSA. Additional desktop screening was completed using topography mapping to supplement desktop ecosite screening. These polygons were included in the field surveys.
Diverse and Sensitive Orchid Communities	4,352	2,003/n/a	• Desktop screening of ecosites determined that ecosites suitable for supporting this type of candidate SWH is widespread in the LSA. As sensitive orchid communities may be found in a wide range of ecosites, it is not possible to target areas where they may be found, or to target specific time periods for each species. For this reason, opportunistic searches for orchids were conducted during field surveys at appropriate ecosites for this type of SWH during verification of other candidate SWH types and during other wildlife and vegetation surveys. This approach confirmed presence but can not confirm absence.
Rare Tree: Elm	15	5/6[b]	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are rare in the LSA. Elm can be identified during field surveys. These polygons were included in the field surveys.

Significant Wildlife Habitat Type[a]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Rare Tree: Red and Sugar Maple	52	27/29[b]	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are rare in the LSA. Maple can be identified during field surveys. These polygons were included in the field surveys.
Rare Tree: Red and White Pine	539	294/9	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are rare in the LSA. Additional desktop screening was conducted to refine the number of polygons classified as candidate for this type of SWH being greater than 2 ha in size. Red pine (*Pinus resinosa*) and white pine (*Pinus strobus*) can be identified during field surveys. A subset of these polygons were included in the field surveys.
Rock Barren	12	10/9	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are rare in the LSA. Rock barrens can be identified during the field surveys. As such, these polygons were included in the field surveys. Surveyors looked for exposed bedrock areas (mostly exposed rock with <5 centimetres (cm) mineral or <10 cm organic material) and <25% vascular vegetation.

Significant Wildlife Habitat Type[(a)]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Sand Dunes	n/a	n/a	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are absent in the LSA. Sand dunes are visible from aerial imagery and from aerial reconnaissance. This habitat type was not observed in the study area during any desktop or field reconnaissance and, as such, is not considered any further in the assessment.
Arctic - Alpine Plant Communities	n/a	n/a	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are absent in the LSA. This habitat type was not observed in the study area during any desktop or field reconnaissance and, as such, is not considered any further in the assessment.
Wild Rice Stand	1,199	496/23	• Desktop screening of ecosites determined that ecosites suitable for supporting this type of candidate SWH is widespread in the LSA. Additional desktop screening was conducted to refine the number of polygons classified as candidate wild rice stands based on the ecosite being greater than 0.5 ha in size. Wild rice can be identified during field surveys. A subset of these polygons were included in the field surveys.

Significant Wildlife Habitat Type[(a)]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Milkweed Patch	5,951	2,679/n/a	• Desktop screening of ecosites determined that ecosites suitable for supporting this type of candidate SWH is widespread in the LSA. Milkweed can be identified during field surveys. Opportunistic searches for milkweed were conducted during field surveys at appropriate ecosites for this type of SWH during verification of other candidate SWH types and during other wildlife and vegetation surveys.

a) Reference for SWH: MNR 2000; MNRF 2017a.

b) Number of field stations exceeds number of candidate SWH in LSA within 250 m of a road due to change in LSA pre- versus post-fieldwork.

In addition to the ecosite-based analysis performed as described above, digital information provided by the MNRF (2022) was also used to identify and map areas of wild rice SWH in both the LSA and RSA.

LSA = Local Study Area; SWH = Significant Wildlife Habitat.

Based on the desktop screening, the most commonly occurring type of candidate rare vegetation communities in the study area is diverse and sensitive orchid communities. Both milkweed patch and wild rice were also abundant.

At the request of MNRF, a field program was completed to field truth a portion of the candidate SWH identified during the pre-field mapping exercise in the LSA. This confirmed the presence of candidate SWH identified in the desktop screening results, given the FRI base mapping (LIO 2020) and ecosite types in the SWH criteria report (MNRF 2017a) only identify potential habitats where SWH features may be located.

For the candidate SWH field surveys, to address the accessibility issues (i.e., high number of candidate SWH polygons located remotely, land access permission not acquired) along the LSA, site selection for the candidate SWH field surveys was limited to the permissible parcels and areas within 250 m from existing roads and trails. This approach reduced the number of ecosite polygons categorized as one or multiple types of SWH to a more reasonable number to consider for the candidate SWH field program (Table 2.4-8).

Four types of candidate vegetation-specific SWH had less than 30 occurrences in the area within 250 m of existing trails and roads, consisting of cliff and cliff rim, rare tree – elm, rare tree – red and sugar maple, and rock barren. These candidate SWH polygons were included in site selection for the field surveys to confirm desktop screening results (see Figure 3.1-1, in Attachment 6.4-A-1). Targeting the rarer types of SWH in the LSA allowed for adequate surveys within rare habitats.

Of those candidate SWH types that had greater than 30 occurrences (more common types of candidate SWH), a random selection of approximately 2% of the total number of occurrences of each SWH type across each route alternatives was selected. Given the objective of the field survey to ground-truth the desktop screening of the ecosite types in the SWH criteria reports (MNRF 2017a), not to confirm the sites are significant habitat, a random selection of sites allowed for an unbiased approach to ground-truthing. However, sites were reviewed and slightly modified to have spatial coverage across the routes (see Figure 3.1-1, in Attachment 6.4-A-1).

Data collected during the vegetation and wetlands fieldwork, described in Section 2.4 above, were also used to refine ecosite mapping and ultimately inform updated mapping of rare vegetation communities, wild rice, and milkweed patches within the LSA. Candidate SWH ecosites/features identified at the desktop level, and not field verified, remained as candidate SWH for the purposes of this report. Those candidate SWH ecosites/features that were reviewed in the field and verified to retain their candidacy were also considered as candidate SWH for the purposes of this report; however, those candidate SWH ecosites/features that were determined through ground-truthing and characterization of the habitat to not hold potential as candidate SWH were removed from of the candidate SWH data layers.

Field Surveys

A subset of candidate SWH polygons (see Table 2.4-1) were surveyed by three field crews (August 9-18; August 10-12; September 8-13, 2022). The field surveys were intended to confirm the presence of candidate SWH (i.e., ecosites where rare vegetation communities, wild rice or milkweed patches are more likely to occur) identified via desktop analysis, but not to confirm that the candidate features are SWH.

The field survey methods involved surveying a subset of the mapped candidate SWH (ecosites) categorized as rare vegetation communities, wild rice, and milkweed patches. Sites were selected in a desktop exercise using GIS, with stations placed along the alternative routes. Each feature was screened to confirm access and if any special equipment (e.g., all-terrain vehicle) or permissions (e.g., private land access) were required to conduct the surveys.

Field maps were downloaded onto tablets for use in the field. Characteristics of ecosites were documented, using the technical guide (OMNR 2000) and 3W criteria schedule (MNRF 2017a) to confirm whether the candidate SWH met the criteria. Additionally, habitat characterization of the survey sites was verified in the field using the FRI base mapping as a starting point, along with noting areas of recent logging or other disturbance.

During the visual assessment and characterization surveys noted above, field crews also documented any other potential SWH features (e.g., stick nests, seeps/springs, mineral licks) within habitats being investigated.

Additional SWH features that are of cultural importance (e.g., wild rice) already confirmed by the province and available in provincial datasets were verified in the field where possible, but not re-evaluated under provincial SWH guidelines and protocols.

2.4.1.5 Data Quality Assurance and Control

A Quality Assurance/Quality Control (QA/QC) program was implemented to verify that data collection, data entry and data analysis was completed with confidence. The QA/QC program was used for the Project to minimize the possibility of error during data collection, data entry, and data analysis.

As a means of consistency and to control the quality of data collected, standardized datasheets and methods were used. Technical procedure manuals and specific work instructions were written for this purpose. Data entry was evaluated for errors or omissions by reviewing each datasheet to verify that the electronic database accurately reflected field observations. For consistency and accuracy, vegetation and wetlands data QA/QC was completed in the field during the baseline field programs for the data collected that day. Field photos and GPS coordinates were backed up to laptops daily. The specific tasks for post-field data management and QA/QC included:

- Preparing daily field summary reports;
- In-office review of the field data collected;
- Downloading photographs and GPS locations to the file server;
- Review of GPS coordinates for accuracy;
- Scanning copies of the datasheets and field notebooks to the file server;

- Renaming photographs according to site identification and photographer;
- Entering the relevant data into database; and
- Submitting species inventory data to the NHIC.

Calculations conducted as part of the Project were checked to make sure that the correct formulas, procedures and data sources were used. The following tasks were completed to maintain quality assurance for field data, data manipulation, and data summary calculations.

- **Data integrity –** After each field program was completed, the data collected was transferred to a designated secure network, which includes nightly back-ups. The data forms were checked for accuracy before leaving each site in the field. Data forms were also reviewed prior to data entry to check for errors such as inaccurate spelling and dates. A QA/QC process was also in place as part of the data entry task so that data were entered accurately into the vegetation and wetlands database.
- **Downloading –** At the end of each day, GPS coordinates and photos were downloaded to a laptop for safe storage. After the field program was completed, these datasets were transferred to a secure network, which includes nightly back-ups.
- **Survey locations –** The survey locations that were uploaded to the Project base map were cross-checked against plot locations marked on field maps to confirm they were accurately projected.

2.4.2 Wildlife and Wildlife Habitat

2.4.2.1 Bat Maternity Roost Habitat Assessment and Acoustic Monitoring

Little brown myotis and northern myotis are both designated as endangered under the ESA and the SARA, and both have potential to occur in the LSA. Maternity roosting sites have been identified as critical habitat for SAR bats and are protected under the ESA. Little brown myotis typically roost in large dead trees, in specific stages of decay that extend above the canopy. Northern myotis usually roost in hollows, crevices, and under loose bark of mature trees. Maternity roosts of other tree-roosting bat species (big brown bat [*Eptesicus fuscus*] and silver-haired bat [*Lasionycteris noctivagans*]) are a form of SWH. Forested areas in the LSA may provide suitable bat maternity roosting habitat the above-mentioned bat species as well as for eastern red bats (*Lasiurus borealis*).

2.4.2.1.1 Pre-field Mapping

Initially, a GIS analysis of ecosites was conducted to identify the potential SAR bat maternity roost habitat polygons. This was based on MECP guidance regarding suitable forest types (i.e., ecosites) using available FRI data. FRI ecosite metadata contains the forest ecosites classification data that was used in the screening. The MECP provided a list of suitable forest ecosites considered suitable for SAR bat maternity roost habitat (Buck 2015, McColm 2021). The forest ecosites have been classified according to the Ecosites of Ontario (Boreal) Operational Draft, April 2009 (Banton et al.2009):

- B015-019 Very Shallow: Dry to Fresh: Mixedwood/hardwood;
- B023-028 Very Shallow: Humid: Conifer/Mixedwood;
- B039-043 Dry, Sandy: Hardwood/Mixedwood;
- B054-059 Dry to Fresh: Coarse: Mixedwood/Hardwood;
- B069-076 Moist, Coarse: Mixedwood/Hardwood;
- B087-092 Fresh, Clayey: Mixedwood/hardwood;
- B103-108 Fresh, Silty to Fine Loamy: Mixedwood/Hardwood;
- B118-125 Moist. Fine: Mixedwood/Hardwood; and
- B130-133: Swamps.

Based on the most recent guidance from the MECP, any plant communities listed above are considered candidate maternity roost habitat if they contain trees with a minimum diameter at breast height (DBH) of 10 cm (McColm 2021).

The resultant habitat mapping is depicted on Figure 2.4-1, in Attachment A, and is being considered candidate maternity roost habitat for SAR bats.

2.4.2.1.2 Acoustic Surveys

A sub-sample of the candidate bat maternity roost habitats determined from the mapping exercise discussed above were targeted for acoustic monitoring to establish the presence (or non-detection) of bats, particularly little brown myotis and northern myotis, during the maternity roosting season in 2022.

Twenty-five bat acoustic monitoring stations were established in order to achieve adequate coverage within candidate bat habitat throughout the LSA while also only selecting stations on lands where access permission was granted. The sub-sample of 25 bat stations is evenly distributed throughout the LSA along the route alternatives in the ecosites screened as candidate maternity roost habitat for SAR bats (Figure 2.4-1, in Attachment 6.4-A-1). Efforts were made to establish an even distribution of acoustic monitoring stations across the route alternatives. The 25 acoustic monitoring stations provide adequate sampling effort to cover the study area and provide for the collection of data that can then be extrapolated to other candidate maternity roost habitat mapped in the LSA. Preliminary bat acoustic monitoring stations were determined using the mapped ecosites along with the results of the 2020 aerial reconnaissance. The final bat acoustic station locations, as depicted on Figure 2.4-1 in Attachment 6.4-A-1, were confirmed in the field based on habitat assessment and accessibility.

Details of the bat detector locations are provided in Table 2.4-2 and are shown on Figure 2.4-1 in Attachment 6.4-A-1.

Table 2.4-2: Bat Detector Locations

Station Name	Zone	Location Easting	Location Northing	Date of Deployment	Survey Durations (Nights)	Ecosite Code	Habitat Description
Bat Maternity Roost (BMR)-1	16U	308935	5381673	June 15, 2022	21	B055TtD n	• Immature open-canopy upland mixed forest dominated by black ash. Surrounding forest was semi-mature black ash, trembling aspen (*Populus tremuloides*) and white spruce (*Picea glauca*). The detector was deployed in open immature black ash forest. The microphone was deployed 5 m above the ground with a 95º orientation.
BMR-2	15U	685765	5391173	June 7, 2022	30	B055TtM n	• Tiered, open clearing dominated by balsam fir (Abies balsamea) and white birch (Betula papyrifera). This rocky outcropping and mixed forest contains minimal standing snags. The detector was deployed at the top of a ridge. The microphone was deployed 2 m above the ground with a northern orientation.
BMR-3	15U	627812	5397839	June 6, 2022	32	B055TtM n	• Tiered and cluttered mixed forest dominated by spruce (*Picea sp.)* and birch (*Betula sp.)*. The site is on an electrical transmission corridor adjacent to a pond. The detector was deployed on top of a rocky slope. The microphone was deployed 2 m above the ground with a southern orientation.

Station Name	Zone	Location Easting	Location Northing	Date of Deployment	Survey Durations (Nights)	Ecosite Code	Habitat Description
BMR-4	15U	611461	5397478	June 6, 2022	32	B055TlM n	• Tiered, cluttered mixed forest dominated by jack pine (*Pinus banksiana*), poplar (*Populus sp.)* and spruce. Located along an electricity transmission corridor adjacent to a marsh. The detector was deployed 50 m in proximity to water. The microphone was positioned 3 m above the ground with a southeastern orientation.
BMR-5	15U	645941	5393725	June 5, 2022	32	B055TtD n	• Tiered coniferous forest comprised of 80% jack pine and 20% poplar. Detector was deployed at the edge of a clear cut. The microphone was positioned 2 m above the ground in a western orientation.
BMR-6	15U	718628	5390419	June 7, 2022	30	B055TtD n	• Open, even-aged young birch forest. Old cut, less than 10 years old. Clearing in the distance appears to have a few large trees and some old snags. The site was about 500 m from a lake in the eastern direction. The microphone was positioned 2 m above the ground with a southeastern orientation.
BMR-7	15U	522640	5517149	June 6, 2022	35	B040TlD n	• Forest clearing that is dominated by grass with sparse large trees. The microphone was positioned 2.25 m above the ground with an 85º orientation.

Station Name	Zone	Location Easting	Location Northing	Date of Deployment	Survey Durations (Nights)	Ecosite Code	Habitat Description
BMR-8	15U	545873	5497492	June 6, 2022	0 -detector failed	B055TtD n	• Located on ridge on the side of the road. The site is an even-aged, open uniform deciduous forest. Rocky outcrop along side of a gravel road. The detector was zip tied to a trembling aspen. The microphone was positioned 3.6 m above the ground with an orientation of 75º.
BMR-09	16U	330312	5377900	June 12, 2022	24	B055TtD n	• Tiered, cluttered mixed forest comprised of large aspen, black spruce (*Picea mariana*), balsam fir and paper birch (*Betula papyrifera*). The understorey is mainly comprised of Manitoba maple (*Acer negundo*). The detector was deployed in a forest opening. The microphone was positioned 2 m above the ground with an orientation of 3º.
BMR-10	16U	313723	5377666	June 15, 2022	19	B055TtD n	• Tiered, open mature mixed forest comprised of trembling aspen and balsam fir. Many standing snags were observed within the plotted areas. The microphone was positioned 3.5 m above the ground with an orientation of 330º.
BMR-11	16U	341196	5379486	June 4, 2022	30	B055TlM n	• Tiered, cluttered upland forest dominated by balsam fir. Site is adjacent to a gravel road. The detector was deployed on a young poplar. No standing snags were found within the three plotted areas. The microphone was positioned 2.5 m from the ground with a southern orientation.

Station Name	Zone	Location Easting	Location Northing	Date of Deployment	Survey Durations (Nights)	Ecosite Code	Habitat Description
BMR-12	16U	309024	5379063	June 3, 2022	33	B040TtM n	• Low-lying forest opening with large trees. Wet open canopy mixed forest with spruce, balsam fir and aspen. Moist soils. The microphone was positioned 2.25 m above the ground with an orientation of 185º.
BMR-13	16U	314973	5380433	June 15, 2022	19	B055TtD n	• Linear trail with an open canopy surrounded by large trees. The canopy is dominantly comprised of trembling aspen and white spruce. The microphone was positioned 3 m above the ground with an orientation of 230º.
BMR-14	16U	312772	5381191	June 3, 2022	31	B055TtD n	• Located along a ridge adjacent to an electricity transmission corridor. The corridor features large trees and rock structure. This mixed forest is dominated by balsam fir, spruce, and trembling aspen. The detector was deployed at the peak of the ridge. The microphone was positioned 2.5 m above the ground with an orientation of 210º.
BMR-15	15U	608726	5404644	June 14, 2022	25	B104TtM n	• Located along the top of a rocky ridge. The mixed forest was dominated by balsam fir, trembling aspen, jack pine, black spruce, and red maple (*Acer rubrum*). The detector was deployed above a rocky structure with many crevices. The microphone was positioned 2.2 m above the ground in a southwestern orientation.

Station Name	Zone	Location Easting	Location Northing	Date of Deployment	Survey Durations (Nights)	Ecosite Code	Habitat Description
BMR-16	15U	598555	5413833	June 17, 2022	21	B040TtD n	• Mature forest dominated by large aspen trees. The dominating species was bigtooth aspen (*Populus grandidentata*) followed by trembling aspen and mountain maple (*Acer spicatum*). There were several standing snags found in the three plots that were completed. The microphone was positioned 3 m above the ground with an orientation of 10º.
BMR-17	15U	597137	5412624	June 15, 2022	23	B055TtM n	• Tiered and cluttered mixed forest atop a rocky ridge. There were no standing snags found within the three plots that were completed. The detector was deployed at the edge of a rocky ridge. The microphone was positioned 2 m above the ground with a northern orientation.
BMR-18	15U	597056	5400140	June 6, 2022	32	B055TtM n	• Located along an electricity transmission corridor adjacent to a rocky feature. The mixed forest present was dominated by large spruce and aspen trees. Minimal standing snags were found within the three plots completed. The detector was deployed on top of a rocky feature. The microphone was positioned 2.5 m above the ground with a northern orientation.

Station Name	Zone	Location Easting	Location Northing	Date of Deployment	Survey Durations (Nights)	Ecosite Code	Habitat Description
BMR-19	15U	604647	5402047	June 17, 2022	21	B055TtM n	• Tiered and cluttered mixed forest along a rocky ridge. The mixed forest was dominated by birch and aspen. The detector was deployed adjacent to an electricity transmission corridor and a landfill facility. The microphone was positioned 2 m above the ground in a southern orientation.
BMR-20	15U	566718	5479298	June 5, 2022	36	B055TlM n	• Tiered and cluttered mixed forest dominated by spruce and aspen with some pine trees. Detector was deployed along an opening with a large pile of blasted rock. The large rock possesses many crevices and is adjacent to a pond. The microphone was positioned 2.5 m above the ground with an orientation of 195º.
BMR-21	15U	593299	5437386	June 18, 2022	34	B054TtD n	• Tiered and cluttered mixed forest dominated by balsam fir, aspen, and spruce trees. No standing snags were observed in the three plots that were completed. The microphone was positioned 2 m above the ground in a southern orientation.
BMR-22	15U	564895	5486256	June 5, 2022	7	B055TtD n	• Even-aged and cluttered mixed forest dominated by large paper birch and pine trees. Some standing snags were observed in the three plots that were completed. The detector was deployed at an opening in the forest and at the top of a ridge. The microphone was positioned 2.1 m above the ground at an orientation of 90º.

Station Name	Zone	Location Easting	Location Northing	Date of Deployment	Survey Durations (Nights)	Ecosite Code	Habitat Description
BMR-23	15U	579363	5420307	June 16,2022	23	B055TtD n	• Tiered and cluttered forest surrounding open water. Moderate standing snags were observed in the three plots completed. The detector was deployed over a small depression of open water. The microphone was positioned 2 m from the ground.
BMR-24	15U	539479	5493974	June 6, 2022	36	B104TlD n	• Linear clearing through mixed forest dominated by aspen with some spruce trees. Detector deployed facing linear clearing. The microphone was positioned 2.3 m above the ground with an orientation of 40º.
BMR-25	15U	545599	5451241	June 16, 2022	Unknown - the data has been confiscated by members of Wabigoon First Nation for reasons of cultural sensitivity.	B055TtM n	• Even-aged and cluttered balsam fir dominated forest with some white birch present. No cavity trees were found within the three plots although the detector was deployed in front of a large cavity tree. The microphone was positioned 2 m above the ground.

BMR = Bat Maternity Roost Station

Bat Detector Settings

Wildlife Acoustics Song Meter SM4BAT FS acoustic monitors were deployed and programmed to record from 30 minutes before sunset to 30 minutes after sunrise for a period of at least 10 nights during the bat maternity roosting season (MNR 2011a). The detectors were deployed between June 3 and June 18, 2022. The detectors were collected between July 4 and July 12, 2022, with the exception of BMR-21 which was collected on July 22, 2022.

Adjustable detector settings for the Wildlife Acoustics Song Meter SM4BAT FS detectors were as follows:

- Nightly recording period duration: between 30 minutes before sunset until 30 minutes after sunset (regular sunset, not civil or nautical sunset);
- Mic model SMM-U2 (for BMR04, BMR16, BMR19, BMR21, and BMR24);
- Mic model SMM-U1 (for the other BMR stations);
- Gain: 12 decibels (dB) (a unit used to express the intensity of a sound);
- Sample rate: 256 kilohertz (kHz) (a measure of frequency equivalent to 1,000 cycles per second);
- Minimum duration: 1.5 milliseconds;
- Min Trig Frequency: 16 kHz;
- Trigger level: 12 dB;
- Trigger window: 3 seconds; and
- Maximum length: 15 seconds.

Acoustic Data Analysis

The data were analyzed and auto-classified using SonoBat 4.4.5 nnE call analysis software (SonoBat, Arcata, CA, USA) with the north-northeast classifier for automated classification. To identify calls to the species level, SonoBat measures numerous variables of call sequences (e.g., maximum frequency, minimum frequency, duration, and call slope; see Table 2.4-3). SonoBat regional classifiers are based on the most robust, species-confirmed full-spectrum reference library available, and also integrate quantitative machine learning with algorithms that incorporate more than two decades of expert acoustic classification. Manual call analysis on a subset of the acoustic files was performed to determine at what threshold the software's species attributions become unreliable. Manual call analysis was also performed to test attribution of call sequences to the non-bat category (i.e., birds, rodents or static discharge). The same call analysis criteria used by SonoBat 4.4.5 was applied during manual analysis in addition to visual comparison to reference files. Manual call analysis effort is shown in Table 2.4-4. Call analysis software may give false positive identifications or false negative non-identifications and the likelihood of these erroneous identifications is related to the presence of various factors, including echoes, multiple bats, naturally overlapping call characteristics and poor recording quality. Calls were grouped as undetermined high- or low-frequency species (i.e., characteristic frequency above or below 35 kHz), or undetermined bats when species or group determinations could not be made. A myotis category was also created that included calls identified as myotis species, as well as high-frequency calls not identified to the species level.

Bat passes cannot always be identified to species level; this can be due to either poor quality of the recording (i.e., high signal to noise ratio) or ambiguity of the call type. Some bat species have very similar calls, and all bats have variability in their call repertoires. Some bat calls are quite diagnostic and can be confidently identified to species while other bat passes can only be identified to a Genus or to a group of species.

Table 2.4-3: Bat Call Analysis Criteria Used to Inform SonoBat 4.4.5 Auto-Classification and Manual Call Analysis

Bat Species or Group	Criteria[(a)]
Bat	• Calls with poor recording quality that hinders discrimination of other call characteristics.
High-frequency bat	• Broad band Frequency Modulation (FM) calls with a Lo f >35Khz but where poor recording quality hinders discrimination of other call characteristics.
Little brown myotis	• Lo f 35-38 kHz, f_c 38-41 kHz, Hi f 61-78 kHz, upper 6.7-14, lower 2.3-4.6, dur 4.9-6.7 Longer duration calls (duration >7 and lower slope <3) are distinctive.
Northern myotis	• Lo f 32-42 kHz, f_c 40-47 kHz, Hi f 95-114 kHz, upper 18-30, lower 7.4-16, dur 3.1-4.6.
Eastern small-footed myotis	• Lo f 42-39 kHz, f_c 42-46 kHz, Hi f 86-104 kHz, upper 27-40, lower 7-12, dur 2.5-3.9 Frequency modulation sweep a smooth curve (i.e., no inflection), beginning steeply and then increasing in curvature. May have a well-defined downward tail. Some calls may have an inflection, but the smoothly curved variant is diagnostic.
Tri-colored bat	• Lo f 40-43 kHz, f_c 37-44 kHz, Hi f 54-81 kHz, upper 1.7-14, lower 0.4-1.7, dur 5.8-8.4 Strongly inflected, almost vertical frequency modulation changing to low slope below 47 kHz for most of the call.
Eastern red bat	• Lo f 37-43 kHz, f_c 37-44 kHz, Hi f 54-81 kHz, upper 4.4-16, lower 0.7-3.2, dur 4.6-9.1 U-shaped calls (up–turn at end of call); may exhibit variable f_c across sequence.
Low-frequency bat	• Short band FM calls with a Lo f <35Khz but where poor recording quality hinders discrimination of other call characteristics.

Bat Species or Group	Criteria[(a)]
Big brown bat	• Lo ƒ 25-28 kHz, f_c 26-30 kHz, Hi ƒ 42-56 kHz, upper 3.3-8.3, lower 0.7-2.9, dur 5.3-11. Calls with Hi ƒ above 65kHz are diagnostic (distinguished from silver-haired bat).
Silver-haired/big brown bat	• Lo ƒ 25-27 kHz, f_c 26-28 kHz, Hi ƒ 42-51 kHz, upper 3.3-8.3, lower 0.7-2.7, dur 5.3-11.
Silver-haired bat	• Lo ƒ 24-27 kHz, f_c 25-28 kHz, Hi ƒ 33-51 kHz, upper 1.7-9.3, lower 0-2.7, dur 4.8-13, calls with flat slope ≥26 kHz are diagnostic (distinguished from big brown bat).
Hoary bat (*Lasiurus cinereus*),	• Lo ƒ 18-22 kHz, f_c 18-22 kHz, Hi ƒ 21-31 kHz, upper 0.3-4.1, lower -0.1-0.2, dur 7-15, call may have pronounced or subtle U-shape.

a) Values indicated are one standard deviation below and above each respective mean.

Table 2.4-4: Manual Call Analysis – Percentage of Files Manually Reviewed

Station	All Files	High Frequency Files	Low Frequency Files
BMR-1	287/515 (55.7%)	8/8 (100%)	279/507 (55%)
BMR-2	221/497 (44.5%)	68/68 (100%)	153/429 (35.7%)
BMR-3	848/2008 (42.2%)	400/400 (100%)	448/1608 (27.9%)
BMR-4	511/2723 (18.8%)	53/53 (100%)	458/2670 (17.2%)
BMR-5	575/1729 (33.3%)	29/29 (100%)	546/1700 (32.1%)
BMR-6	160/451 (35.5%)	15/15 (100%)	145/436 (33.3%)
BMR-7	245/518 (47.3%)	18/18 (100%)	227/500 (45.4%)
BMR-9	59/59 (100%)	3/3 (100%)	56/56 (100%)
BMR-10	212/212 (100%)	97/97 (100%)	115/115 (100%)
BMR-11	458/2322 (19.7%)	66/66 (100%)	392/2256 (17.4%)
BMR-12	287/287 (100%)	48/48 (100%)	239/239 (100%)
BMR-13	121/121 (100%)	2/2 (100%)	119/119 (100%)
BMR-14	256/585 (43.8%)	8/8 (100%)	248/577 (43%)
BMR-15	224/426 (52.6%)	17/17 (100%)	207/409 (50.6%)
BMR-16	234/477 (49.1%)	65/65 (100%)	169/412 (41%)
BMR-17	238/459 (51.9%)	34/34 (100%)	204/425 (48%)
BMR-18	320/972 (32.9%)	21/21 (100%)	299/951 (31.4%)
BMR-19	203/760 (26.7%)	8/8 (100%)	195/752 (25.9%)

Station	All Files	High Frequency Files	Low Frequency Files
BMR-20	231/580 (39.8%)	53/53 (100%)	178/527 (33.8%)
BMR-21	851/2258 (37.7%)	362/362 (100%)	489/1896 (25.8%)
BMR-22	97/97 (100%)	2/2 (100%)	95/95 (100%)
BMR-23	248/476 (52.1%)	34/34 (100%)	214/442 (48.4%)
BMR-24	196/528 (37.1%)	21/21 (100%)	175/507 (34.5%)
All Stations Combined	**7082/19060 (37.2%)**	**1432/1432 (100%)**	**5650/17628 (32.1%)**

BMR = Bat Maternity Roost Station

2.4.2.1.3 Rapid Bat Maternity Roost Habitat Characterization

At each bat maternity roost acoustic monitoring station, additional habitat characterization was completed during the 2022 spring and summer surveys to document the quality of the candidate bat maternity roost treed habitat within 200 m of the acoustic stations.

A rapid cavity tree density survey was conducted at the 25 acoustic survey stations. The surveys were based on a modified approach based on provincial guidelines outlined in *Survey Protocol for Species at Risk Bats within Treed Habitats* (MNRF 2017b) and Bat and Bat Habitat: Guidelines for Wind Power Projects (MNR 2011a). Each rapid cavity tree density survey consisted of three randomly selected plots per station. Each plot consisted of a circle with 12.6 m radius to equal an area of 0.05 ha. Field data collected in each plot included any standing live or dead tree ≥10 cm DBH with cracks, crevices, hollows, cavities, and/or loose or naturally exfoliating bark (MNRF 2017b). Photographs were also be taken to record habitat conditions.

2.4.2.2 Bat Hibernacula Visual Assessment and Bat Hibernacula Swarming Acoustic Monitoring

Bats are particularly vulnerable during winter hibernation when they congregate in large numbers and are torpid. Features used as hibernacula, such as caves, adits, and other mine features, and rock overhangs, are also far less common on the landscape than those that support other life requisites (e.g., roosting, foraging) and therefore are considered limiting factors for the distribution of bat species that hibernate. Three species of bats hibernate in northwestern Ontario, including two SAR, little brown myotis and northern myotis, both designated as endangered under the ESA. Hibernacula that support SAR bats are protected under the ESA. Those that support non-SAR bats, such as big brown bat, are a form of SWH.

2.4.2.2.1 Pre-field Mapping

Candidate bat hibernaculum in proximity to the Project footprint were determined prior to field studies by cross-referencing spatial information from the AMIS database (ENDM 2020), orthophotography and topographic maps, consultation with MECP and MNRF, and aerial reconnaissance.

AMIS data were overlayed with SAR bat element occurrence data and bat hibernacula data provided by the MNRF and MECP to identify which mine features had been previously confirmed as bat hibernacula.

The desktop criteria used to determine whether an abandoned mine feature was a candidate bat hibernaculum were:

- Characteristics of the feature (e.g., keywords such as adit or shaft hold more potential than trench or open excavation);
- Dimensions of the feature (i.e., minimum of 15 m deep, referred to as either depth or length of feature in AMIS dataset); and
- Additional details on natural or anthropogenic alterations to these features.

Further bat hibernaculum suitability mapping was undertaken with orthophotography and topographic maps to identify natural features, such as caves or bedrock openings, that may serve as appropriate hibernacula features, warranting field investigation to confirm candidacy. OGS was consulted for additional records of known naturally occurring caves, and to request information on any geological formations in the study area that may be conducive to the formation of natural caves. No areas conducive to the formation of caves were identified.

Additionally, a feature was noted by the MECP SARB in their comments on the draft Alternative Routes Field Work Plan and was investigated as a candidate hibernaculum.

An aerial reconnaissance of the study area was conducted in the fall of 2020. The aerial reconnaissance surveyed a 500 m buffer on either side of the alternative routes. As a result of the aerial survey, two additional candidate hibernacula were identified.

A total of 29 desktop candidate bat hibernacula stations were identified as part of the above exercises, summarized in Table 2.4-5. In instances where the preliminary footprints of the alternative routes were altered, those new areas were screened for additional AMIS features within the LSA. Any additional features with potential as bat hibernacula were incorporated into the field program. Any features where land access permission was not granted were not visited in the field.

Table 2.4-5: Candidate Bat Hibernacula

Survey	Desktop Candidate Hibernacula Site	Data Source	Assessment
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Agnico Eagle, 8513 AMIS feature: 79929.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Andowan, 08538 AMIS feature 79976.	LIO	Visually assessed in 2020.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Andowan, 08538 AMIS feature: 79975 / 79977.	LIO	Visually assessed in 2020.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Big Six, 08504 AMIS feature 85971.	LIO	Visually assessed in 2020.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Big Six, 08504 AMIS feature: 79914 / 79915.	LIO	Visually assessed in 2020.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Big Six, 08504 AMIS feature: 85972.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Canadian Charelson, 8534 AMIS feature: 94951.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Elizabeth, 8533 AMIS feature: 79963.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Elizabeth, 8533 AMIS feature: 79964.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Elizabeth, 8533 AMIS feature: 79965.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Elizabeth, 8533 AMIS feature: 85763.	LIO	Visually assessed in 2022.

Survey	Desktop Candidate Hibernacula Site	Data Source	Assessment
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Eye Lake, 08517 AMIS feature 85973.	LIO	Visually assessed in 2020.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Eye Lake, 08517 AMIS feature 85974.	LIO	Visually assessed in 2020.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Gorham, 8496 AMIS feature: 85784.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Quinn, 8524 AMIS feature: 79949.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Shuniah, 8429 AMIS feature: 79792.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Shuniah, 8429 AMIS feature: 79793.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Shuniah, 8429 AMIS feature: 85867.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Steeprock Zone C, 8521 AMIS feature: 83781.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Thunder Bay Silver, 8449 AMIS feature: 79820.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Thunder Bay Silver, 8449 AMIS feature: 79821.	LIO	Not assessed due to land access permissions.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Thunder Bay Silver, 8449 AMIS feature: 85827.	LIO	Visually assessed in 2022.

Survey	Desktop Candidate Hibernacula Site	Data Source	Assessment
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Thunder Bay Silver, 8449 AMIS feature: 85828.	LIO	Visually assessed in 2022.
• AMIS Site Identified as Desktop Candidate Hibernacula, Field Verified in 2020 and 2022.	• AMIS site: Thunder Bay Silver, 8449 AMIS feature: 85829.	LIO	Visually assessed in 2022.
• Candidate Sites Identified During the 2020 Aerial Survey, Field Verified in 2022.	• Bedrock ridge-cut along hydroline.	Aerial survey 2020	Visually assessed in 2022.
• Candidate Sites Identified During the 2020 Aerial Survey, Field Verified in 2022.	• Cliff/Ridge along lakeshore, two features (Lakeshore Ridge 1A and 1B).	Aerial survey 2020	Visually assessed in 2022.
• Candidate Site Identified by MECP SARB.	• Seine River Dam Spillway Tunnel, two features (inlet and outlet).	MECP SARB	Visually assessed in 2022.

AMIS = Abandoned Mines Information System; LIO = Land Information Ontario; MECP = Ministry of the Environment, Conservation and Parks; SARB = Species at Risk Branch.

2.4.2.2.2 Field Surveys

Features identified through the desktop analysis as candidate bat hibernacula in the LSA were investigated in the field to confirm their suitability. The field investigation of candidate hibernacula was conducted in two stages: 1. visual assessment; and 2. acoustic monitoring.

2.4.2.2.2.1 Visual Assessment of Candidate Hibernacula

Initially, a visual inspection was completed from the exterior of each feature using the methods outlined in the Protocol for Assessing Bat Use of Potential Hibernacula (PGC and USFWS 2012). If a candidate hibernacula feature met any of the following criteria, the habitat was re-classified as low or nil potential to support hibernating bats using the guidance mentioned above as follows:

- There is one horizontal opening, less than 15 cm in diameter, and no or very little airflow is detected;
- The opening is a vertical shaft less than 30 cm in diameter;
- The passage terminates at a distance for which the observer can clearly ascertain by visual inspection from the opening that there are no fissures that bats can access;
- The opening/feature is prone to flooding, collapsed shut and completely sealed, or otherwise inaccessible to bats; or

- It is a “new” opening, which has formed recently (less than one year old) due to subsidence.

The candidate hibernacula features that did not meet the criteria outlined above, were thus confirmed to be candidate hibernacula during the visual assessment and studies proceeded to stage two of the field investigations, acoustic monitoring during the swarming period (approximately August 1, 2022 to late September 2022).

2.4.2.2.2.2 Acoustic Monitoring of Candidate Hibernacula

Ten candidate bat hibernacula features were carried forward to the acoustic monitoring. These stations are shown on Figure 2.4-2 in Attachment 6.4-A-1. Details of deployment dates are shown in Table 2.4-6.

Additional “activity control” stations were selected as an added QA/QC measure. The activity control stations were deployed in proximity (i.e., within 500 m) to the candidate hibernacula in similar habitat. Each candidate hibernaculum had an associated activity control station (e.g., candidate hibernaculum #1 will have activity control station #1).

Activity control stations were used to differentiate peaks in activity recorded at a candidate hibernaculum feature from activity unrelated to swarming that would reflect high activity due to the presence of a travel corridor or foraging feature on the landscape. For instance, landscape features that are known to have higher bat activity are:

- Linear cleared areas or other landscape features acting as travel corridors; and
- Wetlands, ponds, or lakes (areas typically associated with high foraging activity).

In addition to the 10 candidate bat hibernacula stations and their associated activity control stations, two features identified as bat hibernacula by the NHIC in proximity to the Project footprint were acoustically monitored to confirm the monitoring of candidate hibernacula captured the appropriate timing window for swarming activity within the region, during the year of 2022. Additionally, three known hibernacula (features identified as bat hibernacula by the MNRF) within proximity to the Project footprint were acoustically surveyed by the MNRF in 2012 but were not surveyed by in 2022.

Table 2.4-6: Acoustic Monitoring Program-Station Details

Station ID and Type	AMIS Site	AMIS Feature	Dates Monitored
Andowan, candidate hibernaculum	8,538	79,976	• August 14 – September 28, 2022.
Andowan Control, activity control	n/a	n/a	• August 14 – September 28, 2022.
Big Six, candidate hibernaculum	8,504	85,971	• July 24 – September 27, 2022.
Big Six Control, activity control	n/a	n/a	• July 24 – September 27, 2022.

Station ID and Type	AMIS Site	AMIS Feature	Dates Monitored
Eye Lake, candidate hibernaculum	8517	85973	• July 24 – September 27, 2022.
Eye Lake, candidate hibernaculum	8,517	85,974	• July 24 – September 27, 2022.
Eye Lake Control, activity control	n/a	n/a	• July 24 – September 27, 2022.
Gorham, candidate hibernaculum	8,496	85,784	• July 21 – September 26, 2022.
Gorham Control, activity control	n/a	n/a	• July 21 – September 26, 2022.
Lakeshore Ridge (1A), candidate hibernaculum	n/a	n/a	• July 25 – September 28, 2022.
Lakeshore Ridge (1B), candidate hibernaculum	n/a	n/a	• July 25 – September 28, 2022.
Lakeshore Control, activity control	n/a	n/a	• July 25 – September 28, 2022.
Shuniah, candidate hibernaculum	8,429	79,793	• August 4 – October 3, 2022.
Shuniah Control, activity control	n/a	n/a	• August 4 – October 3, 2022.
Spillway Inlet, candidate hibernaculum	n/a	n/a	• August 5 – September 27, 2022.
Spillway Inlet Control, activity control	n/a	n/a	• August 5 – September 27, 2022.
Spillway Outlet, candidate hibernaculum	n/a	n/a	• August 5 – September 27, 2022.
Spillway Outlet Control, activity control	n/a	n/a	• August 5 – September 27, 2022.
Steeprock, Reference Atikokan Region	8521	n/a	• July 23 – September 28, 2022.
Thunderhead, Reference Thunder Bay Region	8,495	79,904	• July 21 – September 26, 2022.

AMIS = Abandoned Mines Information System.; n/a = not available/not applicable

At each candidate hibernaculum station, additional habitat characterization was completed at the time of initial detector deployment to document the quality of the adjacent habitat particularly to serve as roosting habitat. Field data collected included any standing live or dead tree ≥10 cm DBH with cracks, crevices, hollows, cavities, and/or loose or naturally exfoliating bark (MNRF 2017b). Photographs were taken of habitat conditions at each location, and of each candidate hibernaculum to support the ranking (i.e., nil, low, moderate, high).

Although no bat handling or entry into potential bat hibernacula was required, guidance from the Canadian Wildlife Health Cooperative (CWHC) with respect to white-nose syndrome (WNS) and severe acute respiratory system coronavirus 2 (SARS-CoV-2) was followed as a precaution to avoid potential transmission of these diseases. Measures included the following:

- Surveyors wore nitrile gloves, surgical masks and long-sleeved coveralls when deploying and retrieving acoustic monitors, in accordance with CWHC guidance against SARS-CoV-2 transmission (CWHC 2020);
- Surveyors' boots were sprayed with fungicide between visits to candidate hibernacula; and
- Provincial agencies were contacted ahead of the surveys to determine if any of the planned survey locations have confirmed WNS, to determine appropriate level of decontamination, per CWHC guidelines (CWHC 2017).

Bat Detector Settings

At each acoustic monitoring station, a Wildlife Acoustics Song Meter SM4BAT FS was deployed. The acoustic monitors were set to record from 30 minutes before sunset to 30 minutes after sunrise.

Adjustable detector settings for the Wildlife Acoustics Song Meter SM4BAT FS detectors were as follows:

- Nightly recording period duration: between 30 minutes before sunset until 30 minutes after sunset (regular sunset, not civil or nautical sunset);
- Mic model SMM-U2 (for BMR04, BMR16, BMR19, BMR21, and BMR24);
- Mic model SMM-U1 (for the other BMR stations);
- Gain: 12 dB (a unit used to express the intensity of a sound);
- Sample rate: 256 kHz (a measure of frequency equivalent to 1,000 cycles per second);
- Minimum duration: 1.5 milliseconds;
- Min Trig Frequency: 16 kHz;
- Trigger level: 12 dB;
- Trigger window: 3 seconds; and
- Maximum length: 15 seconds.

Acoustic Data Analysis

Prior to acoustic analysis, the call files were run through the Sonobat 5.9 Batch Scrubber set to accept calls of medium quality or better (accepts all but poor-quality recordings) while excluding the signals below 20 kHz. A subset of excluded call files was manually vetted to ensure that scrubber settings were not excluding valuable or useful information. Although some hoary bat calls are potentially scrubbed due to the 20 kHz cut-off, this is not an issue since they are not a species of interest (i.e., they are a migratory species and not expected to partake in swarming activities).

Bat call files were processed with SonoBat 4.4.5 call analysis software (SonoBat, Arcata, CA, USA) with the north-northeast classifier for automated classification (SonoBat 2019). To identify calls to the species level, SonoBat measures numerous variables of call sequences (e.g., maximum frequency, minimum frequency, duration, and call slope; see Table 2.4-3). SonoBat regional classifiers are based on the most robust, species-confirmed, full-spectrum reference library available and also integrate quantitative machine learning with algorithms that incorporate more than two decades of expert acoustic classification (SonoBat 2018). The same call analysis criteria used by SonoBat 4.4.5 was applied during manual analysis in addition to visual comparison to reference files. Call analysis software may give false positive identifications or false negative non-identifications and the likelihood of these erroneous identifications is related to the presence of various factors, including echoes, multiple bats, naturally overlapping call characteristics and poor recording quality.

Manual call analysis was performed on the SAR and potential SAR bat call files. Additionally, the calls attributed to eastern red bats were also manually vetted since some of their call characteristics overlap with little brown myotis. The files flagged by Sonobat as high-frequency bat, as well as those files with no species attribution, were also manually vetted. Many species attributions by Sonobat were for low-frequency species (e.g., hoary, silver-haired, and big-brown bats), but priority for analysis effort was given to federally listed species, and low-frequency call files for a station were often not completely vetted.

If a species classification was unable to be assigned to a call file, they were grouped as undetermined high- or low-frequency species (i.e., characteristic frequency above or below 35 kHz). Although the typical frequency range of the eastern red bat potentially places them into the unidentified high-frequency category, they are usually discernible from the myotis calls except in the case of very poor call quality. A myotis category was also created for calls that displayed myotis characteristics but where species differentiation was not possible. Manual call analysis was also performed to exclude call files that were attributed to the non-bat category (i.e., birds, rodents or static discharge).

Since multiple myotis species are known to co-swarm at locations in eastern Canada, and specifically little brown myotis and northern myotis (e.g., Fenton 1969; Burns and Broders 2015), calls from potentially swarming myotis species were grouped together for analysis of swarming activity and hibernacula potential. This grouping included little brown myotis and northern myotis, as well as unidentified high-frequency calls, to achieve a grouping of calls from listed or potentially listed myotis species. Ontario is considered a WNS-affected province in

Canada (EC 2015). Given the potential reduction in most (but locally unconfirmed) Ontario populations of little brown myotis and northern myotis from WNS, this grouping of call data also served to increase the likelihood of detecting mixed species swarming events by individuals within these potentially decreased populations.

Timing of activity for recorded bat passes was determined relative to sunset. Sunset times changed over the course of the acoustic monitoring period and the time for each night was calculated using the formula created by the National Oceanic & Atmospheric Administration (Pelletier 2005). Two locations, centred around Atikokan and Thunder Bay (latitude 48.76, longitude -91.62 and latitude 48.40, longitude -89.28, respectively) were used to calculate station nightly sunset times for the duration of the survey period.

Once the entire dataset was analyzed and call data were sorted into the number of calls by species group by 30-minute windows, it was possible to determine data characteristics that would be useful to make determinations on the likelihood of hibernacula presence. The characteristics ultimately chosen for determination of whether candidate hibernaculum had likely swarming activity and inferred use by the two ESA-listed myotis species (little brown bat and northern myotis) were as follows:

- The overall and relative magnitude of bat passes recorded (i.e., a strict threshold of minimum number of passes per night is too simplistic to consider alone when not in context with the other considerations);
- The magnitude of bat passes within a 30-minute block (activity peaks);
- The occurrence of bat passes late in the swarming season (i.e., mid-to-late September), when bats are expected to be active near their hibernation site;
- The time of night when elevated activity level was initiated (the MNR 2011a and Buck 2015 guidance suggests visual emergence monitoring should occur within the first five hours after sunset, inferring swarming activity should occur within that time period); and
- Consideration of potential recording of non-swarming related activity due to the presence of a linear travel corridor or foraging feature (i.e., comparison to activity at paired activity control locations).

Information on the activity levels and timing for peak swarming activity at features identified as bat hibernacula by the MNRF (reference sites) were used as guidance for cross-referencing to acoustic activity levels recorded at the candidate hibernacula and allow for QA/QC. For instance, activity patterns at the candidate hibernacula can be compared to the pattern of activity at known hibernacula to decipher if the pattern resembles swarming activity.

2.4.2.3 Barn Swallow Surveys

Barn swallow, which has potential to occur in the LSA, was designated as threatened under the ESA, but was downlisted to special concern as of January 2023. Barn swallows breed in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in anthropogenic structures including barns, buildings, sheds, bridges, and culverts, and suitable nests from previous years are often reused. Mud nests are fastened to vertical walls or built on a ledge underneath an overhang.

2.4.2.3.1 Pre-field Mapping

A desktop analysis of available aerial imagery and watercourse mapping was completed to identify features that could support barn swallow nests (e.g., bridges and buildings). Documented barn swallow nesting sites and element occurrence records that imply nesting habitat available from provincial mapping were also considered for field survey planning. Candidate barn swallow nesting habitat was mapped prior to field surveys; however, only those features that could support barn swallow nesting and have the potential to be altered for construction of the Project were visited during the field program, where land access permission was granted prior to field surveys, in accordance with the Field Work Plan (Hydro One 2022).

2.4.2.3.2 Field Surveys

Ground-based visual surveys of features determined to be candidate barn swallow nesting habitat were conducted in the LSA. In total, 42 stations were surveyed for barn swallow (see Figure 3.2-1). These features, as well as other candidate habitats identified in the field, were visually inspected for the presence of nesting barn swallows during the peak breeding season (late May to early July). Surveys consisted of the surveyor scanning the candidate habitat from a distance with binoculars to search for individuals and listening for their calls, followed by closer inspection of the area for nests or other signs, where accessible. Survey effort focussed on candidate habitats that intersected the preliminary Project footprint for each alternative route, as this is where highest disturbance is anticipated. The rationale for this effort is due to the specificity of the habitat of the species (nesting structure) and the prevalence of potential habitat in the LSA and the unlikelihood of impact to the nesting habitat of this species by the Project works and activities unless the Project footprint was proposed on top of, or in close proximity to, the feature.

2.4.2.4 Bank Swallow Surveys

Bank swallow is designated as threatened under the ESA and has potential to occur in the LSA. Bank swallows breed in a variety of natural and anthropogenic habitats, including lake bluffs, stream and riverbanks, sand, and gravel pits, and roadcuts. Nests are generally built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands, and riparian woods. Bluffs, steep riparian banks, sand and gravel pits, and roadcuts in the LSA may provide suitable nesting habitat for bank swallow.

2.4.2.4.1 Pre-field Mapping

A desktop analysis of available aerial imagery was completed; LIO data on aggregate sites and the results of the aerial reconnaissance flight were used to identify features that could support bank swallow nests (i.e., candidate bank swallow nesting habitat) within the LSA. Documented bank swallow nesting sites and element occurrence records (available from provincial mapping) that imply nesting habitat available were also identified to be surveyed. Candidate bank swallow nesting sites were mapped prior to field surveys; however, only those features that had the potential to be altered for construction of the Project were visited during the field program, and where land access permission was granted prior to field surveys, in accordance with the Field Work Plan (Hydro One 2022).

2.4.2.4.2 Field Surveys

Ground-based visual surveys of features determined to be candidate bank swallow nesting habitat were conducted in the LSA. In total, 51 stations were surveyed for bank swallow (see Figure 3.2-7 and Figure 3.2-10 in Attachment 6.4-A-1). These features, as well as other candidate habitats identified in the field, were visually inspected for the presence of nesting bank swallows during the peak breeding season (late May to early July). Surveys consisted of the surveyor scanning the habitat from a distance with binoculars to search for individuals and listening for their calls, followed by closer inspection of the area for nests or other signs, where accessible. Survey effort focused on features that intersected with the preliminary Project footprint for each alternative route where highest disturbance would be anticipated. The rationale for this effort was due to the specificity of the habitat of the species (nest on banks of rivers or anthropogenic features in aggregate pits) and the unlikelihood of impact to these nesting features by the Project works and activities unless the Project footprint would be in close proximity to the feature.

2.4.2.5 Breeding Bird Surveys

Diurnal breeding bird surveys were conducted to describe bird community composition, relative abundance and habitat associations in the LSA, including occurrences of bird SAR. Breeding birds are commonly studied in baseline and monitoring programs because they provide practical indicators of habitat quality and habitat change (Cumming et al. 2010).

2.4.2.5.1 Pre-field Mapping

Target locations for breeding bird surveys were identified using available land cover mapping (e.g., FRI data) compiled during the desktop analysis. Survey stations were distributed throughout the LSA in representative habitats that are likely to support breeding birds, with an emphasis on SAR such as Canada warbler, olive-sided flycatcher (*Contopus cooperi*) and bobolink. Effort was made to ensure there were equal numbers of stations along the alternative routes to allow for a comparison of bird data for the evaluation of the alternative routes.

Given that bobolink habitat is very limited in the LSA, the potential habitat for this species identified during the desktop and aerial reconnaissance was confirmed and targeted if deemed suitable and land access was granted. Sensitive avian features identified from provincial mapping were also targeted for field investigations. Examples include documented nesting sites and element occurrence records that imply nesting habitat of SAR.

Survey stations were selected based on the percent composition of various ecosites within the LSA. For instance, if mixed forest ecosites composed 40% of the LSA, then 40% of the breeding bird survey stations were placed within mixed forest ecosites. Efforts were made to situate survey stations entirely within single plant community polygons to facilitate future evaluation of habitat associations of various species. A subset of survey stations were placed in “edge habitat” to target those species, including SAR, which may use these areas. A small sub-set of station locations were refined in the field based on access and other logistical constraints. Breeding bird survey effort consisted of 99-point count stations in addition to the targeted candidate SAR bird surveys (i.e., bobolink surveys at 42 stations) (see Figure 3.2-7 in Attachment 6.4-A-1). Effort was made to distribute the breeding bird point counts stations throughout the LSA. As the objective of the sampling design was to assess breeding bird species distribution and composition throughout the LSA, the rationale for this effort is based on achieving a broad distribution of survey stations throughout the LSA and equal distribution along alternative routes.

2.4.2.5.2 Field Surveys

Breeding bird surveys were conducted by qualified avian field biologists during the active breeding season. According to the Ontario Breeding Bird Atlas (Cadman et al. 2007), the survey window for breeding bird surveys in northern Ontario was June 1 to July 10, 2022.

The surveys were conducted in accordance with methods outlined in the Canadian Breeding Bird Survey (Downes and Collins 2003) and the Ontario Breeding Bird Atlas (Cadman et al. 2007) and consisted of five-minute point counts. Each plot was surveyed once to maximize survey coverage in a manner that is both cost effective and sufficient for an assessment of potential effects of the Project on breeding birds. Of exception are areas identified as suitable habitat for bobolink, which were resurveyed in accordance with the provincial guidelines for surveying threatened grassland birds (MNR 2011b).

Breeding bird surveys were performed using a point count method. Survey stations consisted of a 100 m radius circular plot. Any birds observed outside of 100 m or as fly-throughs were also noted, where possible. Survey stations were spaced a minimum of 250 m apart to avoid double counting individuals. Breeding bird surveys began approximately 30 minutes before sunrise and ended no later than 10:00 a.m. Surveys were not completed during periods of high winds or inclement weather. Environmental conditions were recorded for each survey including time, temperature, and precipitation, as they are known to influence the activity levels of birds and their probability of detection.

2.4.2.6 Marsh Bird Surveys

Marsh habitat may provide breeding habitat for SOCC (e.g., yellow rail) and/or a diverse assemblage of marsh breeding species that are considered indicators for SWH.

2.4.2.6.1 Pre-field Mapping

According to the provincial datasets that were acquired for the Project (e.g., LIO, NHIC), there were no previously identified and mapped marsh bird breeding habitat within the LSA for the alternative routes; therefore, these existing secondary source datasets were not used as a data source to inform the selection of survey locations.

Desktop wetland mapping was used to determine features with potential to support marsh bird breeding; a subset of these were selected within which marsh bird breeding surveys and least bittern surveys were completed. The desktop wetland mapping includes a combination of wetland data from FRI, LIO and the Lakehead Region Conservation Authority (LRCA) to provide a more complete account of wetland communities. Preliminary survey locations were selected within the LSA in advance of the field program. Features where survey effort was focused included mapped wetlands and land cover polygons identified as suitable wetland types (i.e., marsh, shallow open water).

2.4.2.6.2 Field Surveys

A total of five marsh bird survey stations were completed (see Figure 3.2-7 in Attachment 6.4-A-1). The surveys were conducted between May 20 and July 5, 2022, either at dawn (beginning approximately 30 minutes before sunrise and ending no later than 10:00 a.m.) or dusk (beginning no earlier than 4 hours before sunset and completed before dark). At each identified station, call playback was utilized to detect secretive marsh birds.

Each survey was 11 minutes in duration and consisted of 5 minutes of listening followed by 6 minutes of call playback for targeted species. During the call playback period, the calls of 6 species were played in sequence, with each call played for 30 seconds, followed by 30 seconds of listening. Calls were broadcast for the following species:

- Yellow rail (*Coturnicops noveboracensis*);
- Sora (*Porzana carolina*);
- Virginia rail (*Rallus limicola*);
- American bittern (*Botaurus lentiginosus*);
- Pied-billed grebe (*Podilymbus podiceps*); and
- Least bittern.

Observers recorded the birds detected within a 100 m radius of the station centre point, including fly-throughs, with the latter recorded as such. Any birds observed outside of the 100 m radius were also noted, where possible.

The marsh bird surveys were completed in accordance with the Marsh Monitoring Program protocol (Bird Studies Canada 2009).

2.4.2.7 Least Bittern Surveys

Least bittern is designated as threatened under the ESA and has limited potential to breed within the LSA. Habitat of this species is protected under the ESA. Least bittern is found at the northern edge of its geographical range within northern Ontario.

Least bittern's preferred and most detectable breeding habitats are marshes with tall emergent vegetation, such as cattail species (*Typha spp*.), surrounded with open waters, known as a hemi-marsh. This species is known to prefer larger marsh sizes greater than (>) 5 ha (COSEWIC 2009).

Based on the preferred habitat and low occurrence records of this species within the study area, only marsh habitats that fit the above criteria (i.e., >5 ha) and occur within the LSA were surveyed for least bittern by following the National Least Bittern Survey Protocol (Jobin et al. 2011).

2.4.2.7.1 Pre-field Mapping

Preliminary survey locations were selected within the LSA in advance of the field program through a desktop analysis of available land cover mapping (e.g., FRI, LIO, LRCA) and the screening of candidate Marsh Bird SWH (Section 2.4.2.6). Features where survey effort was focused included mapped wetlands and land cover polygons identified as suitable wetland types (i.e., marsh, shallow open water). Given the extreme rarity of the species within the LSA, only marsh habitats >5 ha were surveyed.

According to the provincial datasets that were acquired for the Project (e.g., LIO, NHIC), there was no previously identified and mapped marsh bird breeding habitat within the LSA for the alternative routes; therefore, these existing secondary source datasets were not used to inform the selection of survey locations for any of the preliminary Project footprints for the alternative routes.

2.4.2.7.2 Field Surveys

Least bittern surveys were conducted between June 1 and July 15, 2022, either at dawn (beginning approximately 30 minutes before sunrise and ending no later than 10:00 a.m.) or dusk (beginning no earlier than 6:00 p.m. and completed before sunset).

A total of 15 least bittern survey stations were sampled (see Figure 3.2-7 in Attachment 6.4-A-1). Survey stations were distributed throughout the LSA in accessible lands. At each identified station, call playback surveys were conducted to detect least bittern.

Each survey was 13 minutes in duration, and consisted of 5 minutes of passive listening, 5 minutes of call broadcasts (each minute is 30 seconds of the least bittern call, followed by 30 seconds of silence, followed by 3 minutes of passive listening).

Observers recorded the birds detected within and outside of 100 m of the station centre point, including fly-throughs, with the latter recorded as such.

The least bittern surveys were repeated three times, per the National Least Bittern Survey Protocol (Jobin et al. 2011).

2.4.2.8 Common Nighthawk Surveys

Common nighthawk is designated as special concern under the ESA and threatened under the SARA and has the potential to occur in the LSA. Species designated as threatened under the SARA are considered SOCC, whose habitat is a form of SWH. This species requires large areas of open habitat for nesting, such as clearcuts, burns, rock outcrops, bogs, fens, gravel pits, and flat roofs in developed areas.

2.4.2.8.1 Pre-field Mapping

Given the broad range of potential foraging and nesting habitat of this species, no pre-field mapping was conducted.

2.4.2.8.2 Field Surveys

Overlapping with other field programs (e.g., breeding bird point counts and eastern whip-poor-will surveys), crepuscular (around dusk and dawn) point counts were conducted in the month of June using an unlimited-radius point count sampling design and methods adapted from the Canadian Nightjar Survey Protocol (Knight 2019). Point count surveys were 10 minutes in duration. When common nighthawks were detected, distance and direction at first detection was estimated and recorded. Surveys were not completed during periods of high winds or inclement weather.

Data on common nighthawk were also collected opportunistically during other field programs.

2.4.2.9 Eastern Whip-poor-will Surveys

Eastern whip-poor-will is designated as threatened under the ESA and has the potential to occur in the LSA. Habitat of this species is protected under the ESA. This species occupies a combination of open and sparsely forested habitat required to meet both nesting and foraging needs. Various forest and open habitats, including utility corridors in the LSA, may be suitable nesting and/or foraging habitat.

Eastern whip-poor-will is a nocturnal species and is not effectively surveyed by diurnal breeding bird surveys.

2.4.2.9.1 Pre-field Mapping

A candidate eastern whip-poor-will habitat mapping exercise was completed. Initially a GIS analysis of ecosites and other habitat attributes was conducted to identify the potential eastern whip-poor-will breeding habitat. Suitable habitat was assessed based on MECP guidance regarding suitable forest types (i.e., ecosites) and other habitat attributes (e.g., proximity to open foraging habitats). Ecosites are based on Banton et al. (2012), using numerous FRI datasets to cover the Project study area, including the most recent available FRI data. The GIS exercise focussed on the following habitat characteristics, as provided by the MECP.

Suitable nesting habitat if adjacent (within 30 m) to suitable open foraging habitat, as defined below:

- Forested areas suitable for nesting, such as:
    - Conifer, deciduous, mixedwood forest stands 10 – 40 years;
    - Very shallow, dry to fresh ecosites;

    - Dry, sandy ecosites;
    - Fresh sandy or dry to fresh coarse loam ecosites;
    - Dense forest cover (e.g., canopy closure > 75%); and
    - Sparse to moderate shrub and herbaceous ground cover (e.g., understorey ≤ 50%).
- Open areas suitable for foraging, such as:
    - Bedrock and sand barren ecosites;
    - Conifer, deciduous, mixedwood forest stands 0-10 years (e.g., recent cutovers and/or burns);
    - Sparse forest cover (e.g., canopy closure ≤ 25%);
    - Field and shrub ecosites (e.g., meadow, sparse shrub, shrub, etc.);
    - Anthropogenic clearings (e.g., agricultural fields, aggregate pits, etc.);
    - Linear features (e.g., roads, transmission lines, etc.);
    - Wetland ecosites (e.g., marsh, swamp, bog, fen, etc.); and
    - Waterbodies (e.g., lakes, rivers, etc.).
- Habitat suitable for both nesting and foraging as defined below:
- Conifer, deciduous, mixedwood forest stands 10 – 30 years (i.e., young regenerating forests):
    - Very shallow, dry to fresh ecosites;
    - Dry, sandy ecosites;
    - Fresh sandy or dry to fresh coarse loam ecosites;
    - Sparse to moderate forest cover (e.g., canopy closure ≤ 75%); and
    - Sparse to moderate shrub and herbaceous ground cover (e.g., understorey ≤ 50%).

FRI ecosites were updated upon completion of the ELC field program; in tandem the eastern whip-poor-will habitat mapping was updated accordingly. In addition to this GIS analysis, the most recent available imagery was used, where possible, to verify these ecosites at a desktop level. Ecosite verification was conducted by a qualified senior avian specialist using visual assessment of aerial imagery. The resultant habitat mapping is considered candidate nesting habitat for eastern whip-poor-will.

FRI ecosites were updated upon completion of the ELC field program and thus the eastern whip-poor-will habitat mapping was updated accordingly.

Since eastern whip-poor-will surveys are primarily roadside for safety concerns (i.e., avoid traversing difficult terrain at night), land access was not a limiting factor for most of these surveys. However, the preliminary Project footprints of the alternative routes were required to select the field survey locations.

The final eastern whip-poor-will locations were confirmed in the field based on habitat assessment and accessibility. Eighty survey stations were selected throughout the LSA within candidate nesting habitats (see Figure 3.2-7 and Figure 3.2-10 in Attachment 6.4-A-1). Survey stations were selected to achieve an equal number of stations along alternate routes (i.e., spatial coverage across the entire project as well as equal coverage across alternative routes). Where potentially suitable habitat overlapped with a road, stations were selected. This approach is to allow for roadside access for health and safety reasons as these are nighttime surveys.

2.4.2.9.2 Field Surveys

Eastern whip-poor-will surveys were completed in accordance with the Draft Survey Protocol for Eastern whip-poor-will in Ontario (MNRF 2014b). The surveys were completed by qualified biologists between June and the end of July during the appropriate lunar phases (i.e., one week on either side of the full moon). Two rounds of surveys took place between June 7 and 21 and a third round of surveys took place between July 6 to 13.

Each survey was completed by two surveyors. Point count surveys were 10 minutes in duration. When eastern whip-poor-wills were detected, the time of each detection, as well as the distance and direction at first detection, was estimated and recorded.

The environmental conditions (e.g., cloud cover, precipitation, percentage of moon illuminated, wind noise [Beaufort scale], and temperature) were also recorded during the surveys. Surveys were not completed during periods of high winds or inclement weather.

2.4.2.10 Gray Fox Surveys

Gray fox is designated as threatened under the ESA. While breeding has not been fully confirmed in northwestern Ontario, there has been evidence of family groups near Thunder Bay from the last decade and there are recent occurrence records from Thunder Bay west to the Fort Frances/Rainy River area (MECP 2019).

Gray foxes are habitat generalists and have been known to use a variety of habitats ranging from forests to agricultural lands to urban areas. This species uses dens within a wide variety of features in which to rear pups and to rest. The diversity of features where dens have been reported include hollow trees, hollow logs, wood piles, brush piles, rocky outcrops, rock piles, cavities under rocks, and abandoned buildings (MECP 2019).

2.4.2.10.1 Pre-field Mapping

Den Survey

Most potential den features are small, not visible on imagery, not related to specific ecosites, and not well surveyed during aerial surveys. Given the potential for thousands or even hundreds of thousands of potential features in the gray fox LSA for the alternative routes, no pre-field mapping was completed for gray fox dens.

Gray fox occurrence data was gathered from the Thunder Bay Field Naturalist Gray Fox Monitoring Project. Additionally, iNaturalist records of gray fox and recent occurrence records from the MECP SARB were gathered.

Presence Survey

Little is known about the distribution of gray fox between the area surrounding the City of Thunder Bay and Atikokan, and there has been little to no survey effort across this area for gray fox. The federal recovery strategy, as adopted by the province of Ontario, also sets a main objective in their Schedule of Studies to Identify Critical Habitat, "to improve understanding of the distribution and habitat use of gray foxes in northwestern Ontario to determine biophysical attributes required for recovery and survival".

To inform the presence and distribution of gray fox in the gray fox LSA, and appropriately characterize baseline conditions in the EA, surveys were completed to detect presence of gray fox.

To determine survey locations, the following stepwise process was performed:

- Existing occurrence records acquired from MECP and from iNaturalist were plotted and a home range average of 274 ha was identified surrounding each occurrence record (MECP 2019).

- Gaps in the distribution of gray fox records in the gray fox LSA were identified and stations were plotted, spaced every 5-10 km in the gray fox LSA associated with Alternative Routes 1, 1A, 1B-1, 1B-2, 1C, 2A, 2B, and 2C.

- Stations were manually screened to identify land where access permission is allowed (Crown lands) or has been obtained and to avoid putting scent lure stations that attract predators near to residences, cabins, campgrounds, etc.

The rationale for the study design above is taken from the Recovery Strategy for the gray fox in Ontario (MECP 2019) that indicates that home ranges for gray fox are variable, depending on access to the resources needed to complete their life stages. However, an average home range size of 274 ha has been adopted in the Recovery Strategy to be used to map the extent of suitable habitat from an occurrence record of gray fox. In addition to suitable habitats, the definition of critical habitat for gray fox includes habitat occupancy which is defined as follows (Excerpt from the Recovery Strategy, MECP 2019):

Habitat is considered occupied when:

- A record from the breeding season (February 15-August 31) is in close proximity to at least one other record of a gray fox (from any time of year); and

- The breeding season record and at least one other record in close proximity occurs at least one year apart.

Following NatureServe (2009) guidelines for gray fox element occurrence separation distances, records are considered in close proximity when:

- They occur within 5 km of one another; or
- They occur within 15 km of one another but are linked by continuous suitable habitat.

Therefore, the presence surveys target areas with a lack of occurrence records and proposed survey locations are spaced 5-10 km apart.

2.4.2.10.2 Field Surveys

Den Survey

Gray fox habitat surveys were conducted opportunistically during other field surveys (e.g., bird surveys, botanical surveys, candidate SWH surveys). Habitats or features with gray fox denning potential identified in the field were assessed for evidence of gray fox use. Where feasible, if a potential den was found, a trail camera was set up to monitor and help identify the occupant (e.g., red fox versus gray fox). The location of potential den features that were monitored with a camera are depicted on Figure 3.2-4 in Attachment 6.4-A-1.

Presence Survey

Throughout the gray fox LSA, 33 stations were set up, as shown in Figure 3.2-4 in Attachment 6.4-A-1. Each station consisted of a trail camera mounted to a tree and scent lure applied to a piece of carpet and fastened to another tree to lure gray fox. Stations were set up in late June through late September which cover a portion of the denning period and dispersal period following independence of the pups. Each station was checked monthly and scent lure was reapplied.

2.4.2.11 Anuran Call Count Surveys

There are no existing records of anuran SAR occurrence in northwestern Ontario; however, amphibian breeding habitat is a form of SWH. Amphibians are dependent on aquatic habitats for breeding, and are thereby valuable indicators of wetlands, riparian areas, and water quality. The objective of this field program was to determine the diversity and abundance of breeding anurans (frogs and toads) in the LSA.

2.4.2.11.1 Pre-field Mapping

Preliminary survey locations were selected in advance of the field program through a desktop analysis of available land cover mapping (e.g., FRI, Land Information Ontario, conservation authority mapping) and the screening of candidate Amphibian Breeding SWH (Section 2.4.2.11). Features where survey efforts were focused included mapped wetlands and land cover polygons identified as suitable wetland types (i.e., marsh, bog, fen, swamp, shallow open water).

The anuran call count stations were distributed throughout the LSA with a random distribution while screening for:

- Wetland in proximity to roads for health, safety, security and environment (HSSE) reasons due to nighttime surveys;
- Selected wetland stations according to proportional representation in the LSA (e.g., 50% marsh, 30% swamp, 10% fen, 5% bog, 5% unknown); and
- Aim to achieve equal number of stations along alternate route groupings (e.g., 2A/2B/2C).

2.4.2.11.2 Field Surveys

At each station, three rounds of anuran call count surveys were conducted during spring and early summer to capture early and mid-season calling anurans. The surveys followed the call count method outlined in the Marsh Monitoring Program (Bird Studies Canada 2008). The survey timing is temperature dependent; however, the three rounds of surveys were planned to take place roughly between May 1-15 (round 1), June 1-15 (round 2), and July 1-15 (round 3). Surveys are each three minutes in duration. The survey period begins 30 minutes after sunset and ends by midnight. Anuran species were identified based on their distinctive calls and a rough estimate of breeding chorus size was made by rating the chorus on a call index scale.

Eighty-two anuran call count stations were distributed across suitable breeding habitat within the LSA, with focus on habitats that intersect the preliminary Project footprints, with roadside access (Figure 3.2-5 in Attachment 6.4-A-1). Stations were spaced a minimum of 500 m apart to avoid double counting individuals. Efforts were made to distribute stations evenly throughout the LSA and among the various route segments as detailed in Table 2.4-7.

Table 2.4-7: Number of Anuran Call Count (ACC) Stations Distributed Along Alternative Routes

Grouping	Alternative Routes	Number of ACC Stations
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	7
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	10
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-1	9
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-2	9
Group 2 (Node 1 to Node 3)	Alternative Route 1	18
Group 2 (Node 1 to Node 3)	Alternative Route 1C	16
Group 3 (Node 3 to Node 5)	Alternative Route 2A	7
Group 3 (Node 3 to Node 5)	Alternative Route 2B	7
Group 3 (Node 3 to Node 5)	Alternative Route 2C	9
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	9
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	13
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	16

ACC = anuran call count; TS = Transformer Station.

2.4.2.12 Turtle Surveys

The Project area is known to be inhabited by two species of turtles: western painted turtle (*Chrysemys picta bellii*) and the snapping turtle, which is listed as a species of "Special Concern" in Ontario. In Ontario, snapping turtle uses a wide range of waterbodies, but shows preference for areas with shallow, slow-moving water, soft substrates and dense aquatic vegetation. Hibernation takes place in soft substrates under water. Nesting sites consist of sand or gravel banks along waterways or roadways (COSEWIC 2008; COSEWIC 2016a).

Hydro One expanded the approach for turtles after receiving information from Indigenous communities indicating that turtles are a culturally significant species. As such, the approach for surveying turtles included a turtle visual encounter survey program as well as incidental turtle nesting surveys. The turtle visual encounter program was completed during spring/early summer 2022 in which crews visited wetlands and waterbodies that have potential to support overwintering turtles and visually assessed them to determine the abundance and diversity of turtles using these features for basking. The presence of basking turtles early in the spring gives an indication that they use the wetlands/waterbodies for overwintering.

2.4.2.12.1 Pre-field Mapping

To get comprehensive base mapping for wetlands in the study area, the wetland communities contained within the following spatial files were combined: FRI wetlands, LIO wetlands layer and the LRCA wetland mapping.

Turtle Visual Encounter Surveys

To identify habitats likely to support overwintering turtles, survey locations were selected based on suitable aquatic features (e.g., ponds, wetlands with open water) that occur in the LSA. These locations were pre-selected using GIS base maps. The main considerations when choosing survey locations were access, area coverage, and habitat suitability. Each survey station was also selected based on land access and a clear line of sight from a publicly accessible road or trail.

Incidental Turtle Nesting Surveys

Candidate turtle nesting habitat was screened according to the guidance provided in the draft criteria schedules for Ecoregion 3W (MNRF 2017a) as well as the Significant Wildlife Habitat Technical Guide (MNR 2000) for this type of specialized wildlife habitat, as discussed in detail in Section 2.4.2.13.

2.4.2.12.2 Field Surveys

Turtle Visual Encounter Surveys

The purpose of turtle visual encounter survey was to determine presence/absence and habitat use of various turtle species that bask out of the water. Turtle visual encounter surveys are performed by searching favourable habitats during the spring and early summer when turtles are actively basking to increase their body temperatures following the hibernation period.

Surveys occurred after the ice cover had melted up to the time at which the water temperature was becoming warmer than the air temperature.

When wetland vegetation did not obstruct the view of the shoreline and other available basking sites (such as floating logs or hummocks), surveyors used binoculars with a minimum magnification of 10 times from a distance to scan the entire perimeter of the shoreline and the potential basking sites. Care was taken when approaching wetlands and ponds so as not to disturb any basking turtles.

Turtles generally bask close to the water on logs, rocks, vegetation hummocks, sedge/grass tussocks, floating mats of aquatic vegetation, muskrat mounds and lodges. Crews looked for dark shapes (edge of shell) against the vegetation; shiny areas among vegetation could indicate a recently emerged wet turtle. Snapping turtles rarely bask on land and will float on the water surface or bury itself in soft substrate.

In addition to recording any turtles observed, the potential basking sites, nesting sites and suitable summer and winter habitat was described. This information, particularly potential nesting sites, can help inform subsequent survey effort (i.e., nesting survey locations).

Thirty-seven turtle visual encounter stations were distributed across suitable overwintering habitat within the LSA, with focus on habitats that intersect the preliminary alternative route footprints, with roadside access (Figure 3.2-5 in Attachment 6.4-A-1).

Incidental Turtle Nesting Surveys

Incidental turtle nesting surveys consisted of crews performing visual encounter surveys in habitats identified during the pre-field mapping as potentially suitable for turtle nesting. Techniques included looking in potentially suitable nesting areas for sightings of nesting female turtles or sign of recent nesting activity (e.g., dug soils, presence of eggshells indicating a predated nest).

2.4.2.13 Candidate Significant Wildlife Habitat Surveys

SWH includes a broad range of habitats known to be key to sustaining populations of wildlife and plants. SWH is defined in the Natural Heritage Reference Manual (MNR 2010) as the following:

- Habitats of seasonal concentrations of animals:
  - Areas where animals occur in relatively high densities for the species at specific periods in their life cycles and/or in particular seasons (e.g., moose late winter habitat and colonial bird nesting sites); and
  - Seasonal concentration areas, which tend to be localized and relatively small in relation to the area of habitat used at other times of the year (e.g., reptile hibernacula and bat hibernacula).
- Rare vegetation communities (discussed in Section 2.4.1.4 – the SWH in the veg section above).

- Specialized wildlife habitats:
  - Areas that support wildlife species that have highly specific habitat requirements (e.g., amphibian woodland breeding ponds and turtle nesting habitat);
  - Areas with exceptionally high species diversity or community diversity;
  - Areas that provide habitat that greatly enhances species' survival (e.g., moose calving areas, mink, otter, marten, and fisher denning sites); and
  - Habitat of SOCC.

Animal movement corridors are also considered SWH but were not assessed as part of this study.

The draft criteria schedules for Ecoregion 3W (MNRF 2017a) were consulted to define specific SWH types contained under the broad categories defined above. Criteria schedules have not been prepared for the other ecoregions (4S, 4W) that the Project overlaps. In the absence of criteria schedules for these ecoregions, the draft criteria schedules for Ecoregion 3W, and the Significant Wildlife Habitat Technical Guide (MNR 2000), were consulted.

2.4.2.13.1 Pre-field Mapping

At the request of the MNRF (MNRF 2020a), a desktop screening of SWH was completed to identify candidate SWH. The desktop screening was conducted by overlaying the LSA on the FRI land cover layer (LIO 2020). The full suite of SWH and applicable ecosites was informed by the MNRF's technical guide (MNR 2000) and the criteria for Ecoregion 3W (MNRF 2017a). Candidate seasonal concentration areas and candidate specialized habitats for were screened for at the desktop level (Table 2.4-1).

Based on the desktop screening, the most commonly occurring type of candidate SWH in the study area (excluding previously discussed rare vegetation communities) was colonially nesting bird breeding: trees shrubs, and amphibian breeding habitat.

At the request of the MNRF, a field program was planned to field truth a portion of the candidate SWH identified during the pre-field mapping exercise in the LSA. This was intended confirm the presence of candidate SWH identified in the desktop screening results, given the FRI base mapping (LIO 2020) and ecosite types in the SWH criteria report (MNRF 2017a) only identify potential habitats where SWH features may be located.

For the candidate SWH field surveys, to address the accessibility issues (i.e., high number of candidate SWH polygons located remotely, land access permission not acquired) along the LSA, site selection for the candidate SWH field surveys was limited to the permissible parcels and areas within 250 m from existing roads and trails. This approach reduced the number of ecosite polygons categorized as one or multiple types of SWH to a more reasonable number to consider for the candidate SWH field program (Table 2.4-8).

Three types of candidate SWH (excluding rare vegetation communities previously discussed) had less than 30 occurrences in the area within 250 m of existing trails and roads, consisting of colonially nesting bird breeding: bank and cliff, sharp tailed grouse lek and shorebird migratory stopover habitat. These candidate SWH polygons were included in site selection for the field surveys to confirm desktop screening results (see Figure 3.2-2 in Attachment 6.4-A-1). Targeting the rarer types of SWH in the LSA allowed for adequate surveys within rare habitats.

Of those candidate SWH types that had greater than 30 occurrences (i.e., the more common types of candidate SWH as rarer types of SWH were targets for field investigations), a random selection of approximately 2% of the total number of occurrences of each SWH type across the alternative routes were selected. Given the objective of the field survey to ground-truth the desktop screening of the ecosite types in the SWH criteria reports (MNRF 2017a), not to confirm the sites are significant habitat, a random selection of sites allowed for an unbiased approach to ground-truthing. However, sites were reviewed and slightly modified to have spatial coverage across the routes (see Figure 3.2-2 in Attachment 6.4-A-1).

Data collected during the vegetation and wetlands fieldwork, described in Section 2.4.1, were also used to refine ecosite mapping and ultimately inform updated mapping of candidate SWH. Candidate SWH ecosites/features not field assessed remained as candidate SWH for the purposes of this report. Those candidate SWH ecosites/features that were reviewed in the field and verified to retain their candidacy were also considered as candidate SWH for the purposes of this report; however, those candidate SWH ecosites/features that were determined through ground-truthing and characterization of the habitat to not hold potential as candidate SWH were removed from of the candidate SWH data layers.

Table 2.4-8: Desktop Screening of Candidate Significant Wildlife Habitat in Local Study Area

Significant Wildlife Habitat Type[a]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Amphibian Breeding	6,252	2,844/82[b]	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are abundant in the LSA. Additional desktop screening was completed to confirm ecosites greater than 0.05 ha. Field surveys confirmed if candidate breeding habitat was present at a subset of the ecosites.
Colonially Nesting Bird Breeding: Ground	1,296	580/35	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are abundant in the LSA. A subset of the ecosites for this type of candidate SWH were included in the field surveys, with a focus on-sites that occurred on peninsulas where land access permission is granted.
Colonially Nesting Bird Breeding: Bank and Cliff	3	2/2	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are rare in the LSA. Both sites were ground-truthed to search for nest holes during the field surveys.

Significant Wildlife Habitat Type[(a)]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Colonially Nesting Bird Breeding: Trees Shrubs	14,618	7,997/57	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are abundant in the LSA. A subset of the ecosites for this type of candidate SWH were included in the field surveys. Additional desktop review of aerial imagery was conducted to interpret for heron rookeries.
Marsh Bird Breeding	3,447	1,545/66	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are abundant in the LSA. Any wetlands with shallow water and emergent vegetation were considered suitable candidate marsh bird breeding habitat. A subset of the ecosites for this type of candidate SWH were included in the field surveys
Open Country Bird Breeding	1,200	515/44	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are abundant in the LSA. Additional desktop screening was conducted to refine the number of polygons classified as candidate open country bird breeding based on the ecosite being greater than 30 ha of field meadow areas. A subset of these polygons were included in the field surveys.

Significant Wildlife Habitat Type[(a)]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Sharp Tailed Grouse Lek	36	19/2	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are rare in the LSA. Additional desktop modelling was conducted to refine the number of polygons classified as candidate sharp tailed grouse lek habitat based on a combination of grassy fields/meadows or peatlands (fens, bogs) separated by greater than 15 ha from adjacent shrubland and greater than 30 ha from adjacent treed areas. These polygons were included in the field surveys.
Shorebird Migratory Stopover	2	2/3[(c)]	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are rare in the LSA. These polygons were included in the field surveys.
Turtle Nesting	129	110/5	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are infrequent in the LSA. Verification of areas identified during the desktop assessment as potential turtle nesting areas were verified during field surveys at appropriate ecosites for this type of SWH during verification of other candidate SWH types and during other wildlife and vegetation surveys.

Significant Wildlife Habitat Type[a]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Turtle Wintering Areas	5,691	2,553/37[b]	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are abundant in the LSA. Verification of a subset of ecosites identified during the desktop assessment as potential turtle over-wintering areas were verified during field surveys at appropriate ecosites for this type of SWH during verification of other candidate SWH types and during other wildlife and vegetation surveys.
Waterfowl Nesting Area	2,779	1,293/28	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are abundant in the LSA. Additional desktop screening was conducted to refine the number of polygons classified as candidate waterfowl nesting areas based on the ecosite being greater than 0.5 ha in size and with 120 m adjacent natural upland area. A subset of these polygons were included in the field surveys.
Waterfowl Stopover Staging Areas Aquatic	1,502	624/23	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are abundant in the LSA. Ecoregion 3W criteria schedule notes that "sites with wild rice have a high likelihood of being a waterbird stopover and staging area". As such, a subset of wetlands identified as suitable for supporting wild rice were included in the field surveys.

Significant Wildlife Habitat Type[a]	Frequency of candidate SWH screened within the LSA	Frequency of candidate SWH screened within 250 m from existing roads and trails / number of SWH field stations selected and visited	Desktop Analysis and Rationale for Field Surveys
Waterfowl Stopover Staging Areas Terrestrial	85	72/3	• Desktop screening of ecosites determined that ecosites associated with this type of candidate SWH are infrequent in the LSA. Ecoregion 3W criteria schedule notes that “sites with wild rice have a high likelihood of being a waterbird stopover and staging area”. As such, a subset of wetlands identified as suitable for supporting wild rice were included in the field surveys.

a) Reference for SWH: MNR 2000; MNRF 2017a.

b) Completed as part of the Amphibian Surveys.

c) Number of field stations exceeds number of candidate SWH in LSA within 250 m of a road due to change in LSA pre- versus post-fieldwork.

LSA = Local Study Area; SWH = Significant Wildlife Habitat.

In addition to the desktop analysis of ecosites described above, additional sources of information were used at the desktop level to map SWH occurrences in the LSA and RSA, including information provided by the MNRF (2022a) relating to known locations of features, such as heronries, raptor nest sites, moose aquatic feeding areas, etc.

2.4.2.13.2 Field Surveys

A subset of candidate SWH polygons (Table 2.4-8) were surveyed in the field by three crews (August 9-18, August 10-12, and September 8-13, 2022). The field surveys were intended to confirm the presence of candidate SWH (i.e., ecosites where seasonal concentration or specialized habitats for wildlife are more likely to occur) identified via desktop analysis, but not to confirm that the candidate features are SWH. If a significant amount of discrepancy was detected between the subset of sites that were ground-truthed during the field program versus from the desktop analysis, additional desktop work was necessary to determine if the specific type of SWH for which significant discrepancies are observed should be included further in the assessment.

The field survey methods involved surveying a subset of the mapped candidate SWH categorized as seasonal concentration areas and specialized habitat for wildlife in the LSA. Sites were selected in a desktop exercise using GIS. Each feature was screened to confirm access and if any special equipment (e.g., all-terrain vehicle) or permissions (e.g., private land access) were required to conduct the surveys.

Field maps were downloaded onto tablets for use in the field. Characteristics of ecosites were documented using the technical guide (MNR 2000) and 3W criteria schedule (MNRF 2017a) to confirm whether the candidate SWH met the criteria. Additionally, habitat characterization of the survey sites were verified in the field using the FRI base mapping as a starting point, along with noting areas of recent logging or other disturbance.

During the visual assessment and characterization surveys noted above, field crews also documented any other potential SWH features (e.g., stick nests, seeps/springs, mineral licks) within habitats being investigated.

Additional SWH features that are of cultural importance (e.g., moose habitats, great blue heron rookeries) already confirmed by the province and available in provincial datasets were verified in the field where possible, but not re-evaluated under provincial SWH guidelines and protocols.

3.0 Results

3.1 Vegetation and Wetlands

3.1.1 Ecological Land Classification

Observations recorded during the 2022 field program indicated that the vegetation cover within the LSA is representative of the Pigeon River (4W), Lake Nipigon (3W), and Lake Wabigoon (4S) ecoregions. ELC ecosite information for natural habitats is available for 144,443 ha (84.9%), the majority of the LSA, and based on the combination of FRI data, wetland data and field-verified data (Figure 3.1-1 in Attachment 6.4-A-1).

For the study, ecosites within the LSA were divided in three primary ecosite groupings/ecosystems: upland, wetland, and riparian. For a breakdown of the ecosite groupings, refer to Attachment 6.4-A-3.

Upland ecosites cover an area of 117,490 ha (69.0%) of the LSA, while wetlands cover 26,953 ha (15.8%). Of the wetland and upland types, riparian habitat comprises approximately 13,077 ha (7.7% of the LSA). The remaining 15.1% of the LSA is generally categorized as anthropogenically influenced; FRI ecosite types categorizes these as constructed and unclassified (e.g., commercial lands, residential areas, utility lines) equating to 5.3%, while the remaining 9.8% represents unknown areas or areas described as lakes, watercourses, and other areas absent of trees (MNR 2009b).

Spatial data separate of FRI data was also reviewed to gauge the area that has been impacted by both natural and anthropogenic factors. Approximately 640 ha (<1% of the LSA) has been recently logged for timber, with Route 3A comprising about half of this area (369 ha). Approximately 1,696 ha (1% of the LSA) is identified as an active aggregate site, of which, Route 1A contains more than half of this area (929 ha). Burned habitat is also recorded for the LSA, although considered negligible (<1% of the LSA).

The following Table 3.1-1 provides a summary of general vegetation types found in the LSA and described based on the various alternative routes.

Table 3.1-1: Forest Resource Inventory Analysis of Vegetation Type Across the Local Study Area and Route Segments

						Group 1[(a)]	Group 1	Group 1	Group 1	Group 2	Group 2	Group 3[(b)]	Group 3	Group 3	Group 4c[(c)]	Group 4	Group 4
		LSA (ha)	LSA (%)	Riparian Habitat (ha)[(d)]	Riparian Habitat (%)	Route 1 (ha)	Route 1A (ha)	Route 1B-1 (ha)	Route 1B-2 (ha)	Route 2-1 (ha)	Route 1C (ha)	Route 2A (ha)	Route 2B (ha)	Route 2C (ha)	Route 3A (ha)	Route 3B (ha)	Route 3C (ha)
LSA	**Total**	**170,156**	**100.0%**	**13,970**	**8.2%**	**9,883**	**12,809**	**9,421**	**9,899**	**42,409**	**41,566**	**5,358**	**7,133**	**7,777**	**46,260**	**42,450**	**41,925**
Ecosite Grouping/Ecosystem[(e)]	**General Habitat Type**	**144,443**	**84.9%**	**13,077**	**7.7%**	**8,683**	**11,450**	**7,248**	**7,689**	**35,347**	**34,515**	**4,385**	**5,944**	**6,317**	**39,566**	**37,139**	**36,453**
Upland Ecosite	Coniferous Forest	62,484	36.7%	4,870	2.9%	1,124	1,643	1,037	1,074	14,655	13,927	964	1,390	1,633	22,468	19,506	19,625
Upland Ecosite	Deciduous Forest	52,621	30.9%	2,647	1.6%	6,388	8,173	4,755	5,132	13,552	13,566	2,461	3,127	3,160	8,966	9,179	9,276
Upland Ecosite	Mixed Forest	19	<1%	3	<1%	0	0	0	0	14	18	0	0	0	0	0	0
Upland Ecosite	Shrub	610	<1%	38	<1%	14	24	50	50	124	124	0	0	0	403	376	399
Upland Ecosite	Field	351	<1%	9	<1%	20	21	93	93	105	105	0	0	0	142	165	165
Upland Ecosite	Meadow	479	<1%	30	<1%	0	0	0	0	16	17	0	0	0	151	219	202
Upland Ecosite	Barren	926	<1%	41	<1%	153	372	86	86	52	97	78	38	105	159	153	176
Upland Ecosites	**Upland Total**	**117,490**	**69%**	**7,638**	**4.5%**	**7,699**	**10,233**	**6,021**	**6,435**	**28,518**	**27,854**	**3,503**	**4,555**	**4,898**	**32,289**	**29,598**	**29,843**
Wetland Ecosite	Bog	113	<1%	6	<1%	0	0	11	11	48	35	0	0	0	30	16	4
Wetland Ecosite	Fen	5,320	3.1%	1,273	<1%	174	276	124	134	1,058	930	113	161	344	1,092	2,091	1,275
Wetland Ecosite	Marsh	3,600	2.1%	1,823	1.1%	90	124	107	115	1,171	1,293	207	291	375	915	958	1,011
Wetland Ecosite	Swamp	17,920	10.5%	2,337	1.4%	720	817	985	994	4,552	4,403	562	937	700	5,240	4,476	4,320
Wetland Ecosites	**Wetland Total**	**26,953**	**15.8%**	**5,439**	**3.2%**	**984**	**1,217**	**1,227**	**1,254**	**6,829**	**6,661**	**882**	**1,389**	**1,419**	**7,277**	**7,541**	**6,610**
Upland and Wetland Ecosites	**Riparian Habitat Total**	**13,970**	**8.2%**	**n/a[(f)]**	**n/a**	**909**	**1,284**	**648**	**728**	**3,222**	**3,162**	**435**	**660**	**690**	**3,424**	**2,798**	**2,831**

a) The four Thunder Bay alternative routes (Group 1) include the modification of the Lakehead TS.
b) The three Atikokan alternative routes (Group 3) include the modification of the Mackenzie TS and the additional ROW required for the separation of Circuits D26A and F25A.
c) The three Atikokan to Dryden alternative routes (Group 4) include the modification of the Dryden TS.
d) Riparian habitat for watercourses and waterbodies.
e) Ecosite grouping/ecosystem from FRI data analysis. A full list of ecosites is located in Attachment 6.4-A-3.
f) Not applicable.

Note: Some of the numbers are rounded for presentation purposes. Therefore, it may appear that the totals do not equal the sum of the individual values.

% = percentage; ha; hectare; LSA = Local Study Area; n/a = not applicable/available.

3.1.1.1 Upland Ecosites

Upland ecosites represent 69% (117,490 ha) of the LSA, of which forest habitats comprise 98% (115,124 ha). Figure 3.1-1-1 through Figure 3.1-1-39 in Attachment 6.4-A-1 depict field confirmed ecosites within the LSA.

Upland habitats were dominated by coniferous and deciduous forests, particularly black spruce, and jack pine in association with paper birch, trembling aspen, white spruce, balsam fir, tamarack (*Larix laricina*), eastern white cedar (*Thuja occidentalis*), white pine, and red maple. The following assessment of forest ecosites was made for the LSA.

- Coniferous Forest comprised 62,484 ha (covers 36.7% of the LSA).
  - *Dry to Fresh, Coarse: Pine - Black Spruce Conifer* (B050) and *Dry to Fresh, Coarse: Jack–Pine - Black Spruce* (B049) dominated this type with total areas of 20,938 ha and 19,066 ha, respectively, representing 64.0% of coniferous forest types.
- Deciduous Forests comprised 52,621 ha (covers 30.9% of the LSA).
  - *Dry to Fresh, Coarse: Aspen - Birch Hardwood* (B055) comprised 76.2% (40,108 ha) of the deciduous forest types, or 23.6% of the LSA.
- Mixed Forests comprised 19 ha (covers <1% of the LSA).
  - Dry to Fresh, Coarse: Mixedwood (B059) and Very Shallow, Humid: Black spruce-Pine Conifer (B024) represent 72.1% (14 ha) of this forest type.

Other habitats found in upland ecosites included shrub (610 ha, <1%), field (351 ha, <1%), meadow (479 ha, <1%), and barren (926 ha, <1%) habitats. While coniferous forest ecosites cover the largest area in total, the greatest area covered by one ecosite alone is a deciduous forest–unit - *Dry to Fresh, Coarse: Aspen - Birch Hardwood* covering 40,108 ha of the LSA. Comparatively, the ecosites with the least amount of area coverage are shrub dominated (*Very Shallow, Dry to Fresh: Shrub*; B010 and *Dry, Sandy: Shrub*; B032) and a mixed forest type (*Moist, Fine: White Pine Mixedwood*; B118); each ecosite covering <1 ha of the LSA.

3.1.1.2 Wetland Ecosites

Wetland habitats were dominated by treed swamp types, comprised of black spruce, balsam fir, eastern white cedar, white pine, tamarack, and trembling aspen.

Two different approaches were used to assess wetland coverage within the LSA. First, the province's unique spatial wetland layer (LIO; MNRF 2022a) was reviewed and determined to comprise of 27,079 ha or 15.9% of the LSA. A second analysis was completed where wetland ecosite codes, as documented through the ELC work (described above), were isolated and coverage within the LSA assessed. It was determined that wetland-associated ecosites comprised 26,953 ha or 15.8% of the LSA.

Six PSWs intersect the LSA, specifically the areas between Thunder Bay and Atikokan, and include:

- Basin A (Alternative Route 2A and Route 2C);
- Kivikoski (Alternative Route 1B-2);
- Little Falls (Alternative Route 2A and Route 2B);
- McVicars Creek (Alternative Route 1 and Route 1B-2);
- Neebing River (Alternative Route 1B-2); and
- Sawmill Bay (Alternative Route 2B).

The remaining non-PSWs, known as “unevaluated” wetlands, are established based on aerial analysis from the province’s resource management efforts, similar to the FRI program described in Section 2.4.1.1. While considering the ecosite codes assigned to each wetland unit, the following assessments were made.

- Swamp habitats represented the most frequent type within the LSA, comprising 17,920 ha (10.5%) of the LSA.
  - *Intermediate Conifer Swamp* (B128) comprised 11,277 ha or 62.9% of the swamp habitats.
- Fen habitats comprised 5,320 ha (3.1%) of the LSA.
  - *Sparse Treed Fen* (B136) was the most prominent type of fen, comprising 2,824 ha or 53.1% of the fen habitats.
- Marsh habitats cover 3,600 ha (2.1%) of the LSA.
  - Meadow marsh (B142, B143, B144) comprises almost the entirety of this type (3,537 ha or 98.3% of marsh habitats), while shallow marsh comprises a very small amount.
- Bog habitats cover 113 ha (<1%) of the LSA.
  - *Treed bog* (B126) represents the majority of this type (99 ha or 87.1% of bog habitats).

3.1.1.3 Riparian Ecosites

Riparian habitats represent the vegetation community that occurs adjacent to a waterbody or watercourse, either a wetland or upland type. As discussed in Section 2.4.1.1, a riparian zone was established throughout the LSA based on stream order and water feature type. A 30 m riparian zone was applied to smaller watercourses and waterbodies, and a 60 m riparian zone was applied to larger watercourses.

An analysis of FRI ecosites that occur within the riparian zone was completed, and the following assessments were made (Table 3.1-1):

- Riparian zones were comprised of 7,638 ha (4.5% of the LSA) of upland ecosites and 5,439 ha (3.2% of the LSA) of the wetland ecosites.
- Riparian zones were primarily comprised of coniferous forest (4,870 ha, 2.9% of the LSA), deciduous forest (2,647 ha, 1.6% of the LSA), swamp (2,337 ha, 1.4% of the LSA), and marsh (1,823 ha, 1.1% of the LSA) habitats.
- Coniferous forests (4,870 ha, 2.9% of the LSA) comprised the largest portion of riparian habitat, while deciduous forests (2,647 ha, 1.6% of the LSA) comprise the second largest portion of riparian habitat.

Attachment 6.4-A-3 and Figure 3.1-1 in Attachment 6.4-A-1 contains the summary of ecosites which were field verified.

3.1.2 Candidate Significant Wildlife Habitat Vegetation Related Categories

Significant wildlife habitat is grouped into several broad categories: seasonal concentration areas, rare vegetation communities, and specialized habitats for wildlife and SOCC. This section will discuss rare vegetation communities and specialized wildlife habitat that are tied to the presence of specific plant species, namely wild rice and milkweed patches.

Significant wildlife habitat associated with seasonal concentration areas, specialized habitats for wildlife, and wildlife SOCC are discussed in Section 3.2. Plant SOCC and regionally rare plants are discussed in Section 3.1.3.

The SWH category of rare vegetation communities are significant because they often contain rare species, particularly plants and small invertebrates, which depend on such habitats for their survival and cannot readily move to or find alternative habitats (MNRF 2017a). A rare vegetation community is defined to include areas that contain a provincially rare vegetation community and/or areas that contain a vegetation community that is rare within the planning area, as outlined in the SWHTG (OMNR 2000).

Specialized habitat for wildlife is a community or diversity-based category; therefore, the more wildlife species a habitat contains, the more significant the habitat becomes to the planning area (MNRF 2017a). There are two types of specialized wildlife habitat that are tied to the presence of specific plant species, namely wild rice and milkweed patches. Wetlands containing large stands of wild rice are important as a food source for waterfowl during migration and rearing. Milkweed patches are rare in the ecoregion, and are important, specialized habitat for monarch.

The abundance in the LSA of rare vegetation communities identified within Ecoregion 3W (MNRF 2017a) and specialized wildlife habitats that are tied to the presence of wild rice and milkweed patches, are presented in Table 3.1-2. This information is based on the ecosite-based desktop analysis as well as the field results and is presented on Figure 3.1-1 in Attachment 6.4-A-1. The term “candidate” is used to indicate that these habitats are likely to function as SWH as determined by spatial analysis; however, all areas were not assessed in-field and therefore have not been confirmed as SWH. Discrepancies between the desktop and field values presented in Table 3.1-1 are the result of changes to FRI ecosites based on the field results.

Table 3.1-2: Candidate Rare Vegetation Communities, Wild Rice and Milkweed Patches in the Local Study Area

Significant Wildlife Habitat Type[(a)]	Desktop Frequency in the LSA	Desktop Area in the LSA (ha)	Field Results (SWH and ELC) Frequency in the LSA	Field Results (SWH and ELC) Area in the LSA (ha)	Field Results (SWH and ELC) % of LSA
Cliff and Rim	3	32	3	32	<1%
Diverse and Sensitive Orchid Communities	4,352	22,392	4,357	22,426	13%
Rare Tree: Elm	15	34	13	33	<1%
Rare Tree: Red and Sugar Maple	52	594	47	588	<1%
Rare Tree: Red and White Pine	539	5,954	534	5,816	3%
Rock Barren	12	16	8	10	<1%
Sand Dunes	n/a	n/a	n/a	n/a	n/a
Arctic-Alpine	n/a	n/a	n/a	n/a	n/a
Wild Rice Stand	1,199	3,582	1,238	3,686	2%
Milkweed Patch	5,951	26,897	5,957	26,953	16%

a) Reference for SWH: MNR 2000; MNRF 2017a.

ELC = Ecological Land Classification; LSA = Local Study Area; SWH = Significant Wildlife Habitat.

Information on frequency and area of each of the SWH types listed is presented for each alternative route segment in Attachment 6.4-A-4.

Sixty-four percent of the ecosites visited during the SWH field surveys did not match the desktop ecosite mapping, indicating a measurable amount of discrepancy between the existing background ecosite data (FRI mapping) and the actual field conditions. Most of the discrepancies were at the finer scale, such as open versus sparse treed fen ecosites or forested areas differing in their tree composition compared to the mapped ecosites. Additional ecosite changes were made as a result of the plant community surveys. However, given the size of the study area and the amount of habitat, minor discrepancies such as these are unlikely to significantly affect the information presented in Table 3.1-1 when applied across the LSA.

In addition to the ecosite desktop and field results discussed above, occurrences of some rare vegetation community SWH, wild rice and milkweed patches were identified through review of background data sources and incidental observations during field surveys (all survey types).

During the field surveys, no wild rice was observed; however, wild rice occurrences were mapped in background sources (MNRF 2022a) and are mapped on Figure 3.1-1 in Attachment 6.4-A-1. Milkweed patches were observed in four locations during field surveys (see Figure 3.1-1 in Attachment 6.4-A-1). Although no ecosites matching those listed in the ecoregion criterion schedules for arctic-alpine plant communities were present in the LSA based on the desktop mapping, two arctic-alpine species were observed during field surveys: tea-leaved willow (*Salix planifolia*; stations ELC-148, ELC-152, ELC-153, ELC-154, ELC-131) and northern firmoss (*Huperzia selago*; station ELC-130). To qualify as SWH for rare arctic–alpine plant communities, more than two arctic–alpine plant species must be present in the ecosite. This criterion was not met at any of the SWH or ELC stations during the field program.

Significant wildlife habitat in the form of rare vegetation communities and specialized habitat for wildlife (wild rice and milkweed patches) can be expected to be similar in the RSA in terms of abundance and distribution. This is based on the fact that both the LSA and RSA are similar in that they are both dominated by natural habitats typical of this ecoregion. Discrete occurrences of SWH identified in the RSA through a review of background data sources included additional occurrences of wild rice (MNRF 2022a).

3.1.3 Plant Species at Risk or Species of Special Concern, Regionally Rare Plants and Related Habitat

Species at risk, species of special concern, and regionally and provincially rare plant species were documented as part of botanical surveys. One SAR plant species was confirmed in the LSA: black ash, as well as one regionally rare plant species: ragged fringed orchid (*Platanthera lacera*).

Black Ash

Black ash is designated as endangered under the ESA and threatened under SARA. It was recently listed on the SARO list due to the susceptibility of Ontario’s black ash population to infestation by the emerald ash borer; however, there is a temporary suspension of protection until January 2024 (MECP 2022). It is estimated that 53-99% of the Ontario range is susceptible to infestation and predicted population declines of mature trees will occur over the next 80 years (MECP 2022).

Black ash is commonly found in moist ecosystems and, in northern Ontario, particularly swampy woodlands (MNRF 2022b). It typically grows on mucky or peaty soils and is considered a facultative wetland species (Reznicek et al. 2011). Black ash was identified at two ELC-stations, eight SWH stations, and incidentally observed six times during targeted wildlife and aquatic field assessments (Figure 3.1-1 in Attachment 6.4-A-1). Spatially, black ash was confirmed in ecosites that comprise 139 ha (<1%) of the LSA. This species was found in thicket swamp (B134, B135), deciduous forest (B104), and treed swamp (B130, B131) ecosites. These ecosites represent 10,920 ha (6.4%) of the LSA; therefore, black ash can potentially occur in the remaining 10,781 ha that was not assessed in-field. Black ash trees identified in the LSA primarily occurred along Route 1B-1 and Route 1B-2 (Table 3.1-3, Figure 3.1-1 in Attachment 6.4-A-1).

The draft SWH Criteria Schedules for Ecoregion 3W (MNRF 2017a) identifies 12 ecosite types within the 3W-1 ecodistrict area that may provide candidate habitat for black ash. It is noted that ecodistrict 3W-1 occurs outside the LSA; however, because of its proximity, it was still used as tool to guide analysis for the potential occurrence of this species. The candidate ecosites consist of mixed and deciduous forest types. Of the 12 types, four occur within the LSA, representing <1% of the LSA. Black ash candidate ecosites predominantly occur along Route 2-1 and Route 1C (Table 3.1-3, Table 3.1-4).

Table 3.1-3: Black Ash Confirmed and Candidate Area across the Local Study Area and Route Segments

			Group 1[(a)]	Group 1	Group 1	Group 1	Group 2	Group 2	Group 3[(b)]	Group 3	Group 3	Group 4[(c)]	Group 4	Group 4
	LSA (ha)	LSA (%)	Route 1 (ha)	Route 1A (ha)	Route 1B-1 (ha)	Route 1B-2 (ha)	Route 2-1 (ha)	Route 1C (ha)	Route 2A (ha)	Route 2B (ha)	Route 2C (ha)	Route 3A (ha)	Route 3B (ha)	Route 3C (ha)
Total	**170,156**	**100.0%**	**9,883**	**12,809**	**9,421**	**9,899**	**42,409**	**41,566**	**5,358**	**7,133**	**7,777**	**46,260**	**42,450**	**41,925**
Candidate Area[(d)]	33	<1%	0	0	5	5	16	17	3	4	3	0	0	0
Confirmed Area[(e)]	139	<1%	15	17	102	102	15	15	22	5	24	3	1	1

a) The four Thunder Bay alternative routes (Group 1) include the expansion of the Lakehead TS.
b) The three Atikokan alternative routes (Group 3) include the expansion of the Mackenzie TS and the additional ROW required for the separation of Circuits D26A and F25A.
c) The three Atikokan to Dryden alternative routes (Group 4) include the expansion of the Dryden TS.
d) Candidate black ash ecosites were identified following the draft SWH Criteria Schedules for Ecoregion 3W (MNRF 2017a).
e) Confirmed black ash from botanical surveys and incidental findings.
LSA = Local Study Area.

Ragged fringed orchid

Ragged fringed orchid is a regionally rare plant in northwestern Ontario and was observed during SWH surveys (Attachment 6.4-A-2). Ragged fringed orchid is commonly found in moist ecosystems that have full or partial sun, and acidic soil composed of sand, silt-loam, peaty material, or some gravel (North Carolina State University 2022). It is commonly found in moist prairies, sand prairies, sandy swamps, moist open woodlands, shrubby bogs, low areas along streams, sandy fields, and ditches (North Carolina State University 2022).

Ragged fringed orchid was identified at one SWH station. This species was found in a fen (B139) ecosite, this type of ecosite covers 1,569 ha (1.0%) of the LSA. The confirmed location of ragged fringed orchid occurs along Route 3A (Figure 3.1-1 in Attachment 6.4-A-1).

Other Rare Plants in the Local Study Area/Regional Study Area

The draft SWH Criteria Schedules for Ecoregion 3W (MNRF 2017a) also contains a category for ecosites that are considered rare. Designated ecosites or ecosites that contain a rare plant species, either provincially or regionally listed, are commonly captured under this criterion.

Six rare plants were revealed among background information as having potential to occur within the LSA (see Section 2.4.1.2); however, none were confirmed during the field assessments.

3.1.4 Traditional Use Plant Species and Related Habitat

Traditional use plant species were documented as part of botanical surveys and included eastern white cedar, paper birch, showy mountain ash (*Sorbus decora*), chokecherry (*Prunus virginiana*), common bearberry (*Arctostaphylos ura-ursi*), early lowbush blueberry (*Vaccinium angustifolium*), highbush cranberry (*Viburnum opulus*), Labrador tea (*Rhododendron groenlandicum*), Saskatoon berry (*Amelanchier alnifolia*), Canada wild ginger (*Asarum canadense*), common yarrow (*Achillea millefolium*), prickly rose (*Rosa acicularis*), and various grasses including sweetgrass (*Hierochloe odorata*) and wild rice.

The Anishinaabe languages in the northwest region of Ontario include dialects from both Cree and Ojibway (Kenny and Parker 2004). The Anishinaabe nomenclature and ethnobotany (i.e., study of a region's plants and their practical uses through the traditional knowledge of a local culture and people) of each aforementioned plant were reviewed, and additional information on traditional use plant species came from Indigenous communities involved during the field programs and events.

Eastern white cedar is known as "kiizhig, giizhik/oog, gizhikens giizhikaandag/oog" in Oji-Cree and Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005, Kenny and Parker 2004). This plant is traditionally used for medicinal and ritual purposes (Davidson-Hunt et al. 2005; Marles et al. 2000). The eastern white cedar plant structures utilized are the bough and leaf (Davidson-Hunt et al. 2005). An Indigenous monitor from Wabigoon Lake Ojibway Nation observed eastern white cedar in the field and indicated this plant is traditionally used for protection, ceremony, and medicinal purposes (Indigenous Monitor Wabigoon Lake Ojibway Nation, personal communication, July 30, 2022). Eastern white cedar was identified at three ELC stations in the LSA. This species was found in a conifer forest (B012), conifer swamp

(B129), and hardwood swamp (B133) representing approximately 3,105 ha (1.8%) of the LSA. In northwestern Ontario, eastern white cedar is commonly found in conifer forest, deciduous forest, mixed forest, marsh, fen, bog, swamp, shoreline, cliff, and bluff habitats.

Paper birch is known as “wiigwaas (-an) (-ag), wiigwaasaatig/oog, wiigwaasi-mitig, wiigwaasimizh” in Oji-Cree and Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005, Kenny and Parker 2004). This plant is traditionally used for food, medicinal, technological, and ritual purposes (Davidson-Hunt et al. 2005; Marles et al. 2000). The paper birch plant structures traditionally utilized are bark, sap, twig, bud, wood, and branch (Davidson-Hunt et al. 2005). Paper birch was identified at 22 ELC stations in the LSA. This species was found in coniferous forest (B037, B049, B050), deciduous forest (B055 B070, B104), mixed forest (B059), treed swamp (B129), treed fen (B136), and marsh (B148) representing approximately 95,586 ha (56.2%) of the LSA. In northwestern Ontario, paper birch is commonly found in deciduous forest, conifer forest, mixed forest, meadow, swamp, shoreline, cliff, bluff, rock barren, and talus habitats.

Showy mountain ash is known as “makwaminaatig/oog, makwamin/an, adjimag, mahkwaomiinaatig” in Oji-Cree and Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005, Kenny and Parker 2004). This plant is traditionally used for food and ritual purposes (Davidson-Hunt et al. 2005). The showy mountain ash plant structures traditionally utilized are berry, outer bark, inner bark, peeled branch, root, and stem (Davidson-Hunt et al. 2005). An Indigenous monitor from Wabigoon Lake Ojibway Nation observed showy mountain ash in the field and noted this plant is traditionally used as a preservative in the community (Indigenous Monitor Wabigoon Lake Ojibway Nation, personal communication, August 20, 2022). Showy mountain ash was identified at 10 ELC stations in the LSA. This species was found in coniferous forest (B049, B050, B114), deciduous forest (B055, B119), and mixed forest (B059) representing approximately 81,762 ha (48.1%) of the LSA. In northwestern Ontario, showy mountain ash is commonly found in open forests, thickets, and rocky shores of rivers and lakes.

Chokecherry is known as “osisaweminaatig/oog, osisawemin/an, asa/isaweminagaawanzh” in Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005). This plant is traditionally used for food, medicinal and technological purposes (Davidson-Hunt et al. 2005). The showy mountain ash plant structures traditionally utilized are fruit, leaf, young stem, bark, root, and branch (Davidson-Hunt et al. 2005). An Indigenous monitor from Lac des Mille Lacs First Nation observed chokecherry in the field and noted this plant is traditionally used for food purposes (Indigenous Monitor Lac des Mille Lacs First Nation, personal communication, August 24, 2022). Chokecherry was identified at three ELC stations in the LSA. This species was found in coniferous forest (B037), deciduous forest (B119), and thicket swamp (B134) representing approximately 780 ha (0.5%) of the LSA. In northwestern Ontario, chokecherry is commonly found in forest edge, swamp, on hillside, talus slope, rocky ridge, open ledge, and open habitats.

Common bearberry is known as “kinnikinnik, menozhaatig” in Oji-Cree dialects of northwestern Ontario (Kenny and Parker 2004). An Indigenous monitor from Lac des Mille Lacs First Nation observed common bearberry and indicated this plant is traditionally used for food and medicinal purposes; berries are used for baking and tea from dried leaves treat bladder infections (Indigenous Monitor Lac des Mille Lacs First Nation, personal communication, August 24, 2022). Common bearberry was identified at one ELC station in the LSA. This species was found in coniferous forest (B049) representing approximately 19,066 ha (11.2%) of the LSA. In northwestern Ontario, common bearberry is commonly found in semi-open coniferous forests, as well as dry, sandy, open, and rock barren habitats.

Early lowbush blueberry is known as “miinens, miin/an, miinaatig/oog” in Oji-Cree and Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005, Kenny and Parker 2004). This plant is traditionally used for food, medicinal, technological, and ritual purposes (Davidson-Hunt et al. 2005). The blueberry plant structures traditionally utilized are berry, leaf, flower, stem, root, and the whole plant (Davidson-Hunt et al. 2005). An Indigenous monitor Lac des Mille Lacs First Nation observed early lowbush blueberry in the field and noted this plant is traditionally used for food purposes (Indigenous Monitor Lac des Mille Lacs First Nation, personal communication, August 24, 2022). Early lowbush blueberry was identified at 21 ELC stations in the LSA. This species was found in coniferous forest (B035, B037, B049, B050, B054, B098, B101), sparse shrub (B046), meadow (B008, B030), treed fen (B136), and treed swamp (B046) representing approximately 59,027 ha (34.7%) of the LSA. It is commonly found in open coniferous forest, deciduous forest, mixed forest, meadow (including ROW and roadsides), rock barren, and bog habitats.

Highbush cranberry is known as “aniibiminaatig/oog, aniibimin/an” in Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005). This plant is traditionally used for food and medicinal purposes (Davidson-Hunt et al. 2005). The main plant structure used of highbush cranberry is berry, stem, root, and inner bark (Davidson-Hunt et al. 2005). An Indigenous monitor from Lac des Mille Lacs First Nation observed highbush cranberry in the field and noted this plant is traditionally used for food purposes (Indigenous Monitor Lac des Mille Lacs First Nation, personal communication, August 24, 2022). Highbush cranberry was identified at three ELC stations in the LSA. This species was found in conifer forest (B114), deciduous forest (B119), and thicket swamp (B134) representing approximately 1662 ha (1.0%) of the LSA. In northwestern Ontario, highbush cranberry is commonly found in moist forest, bog, swamp, and thicket habitats.

Labrador tea is known as “mashkiigobag/oon, mashkiikaang niibiish, waabashkikiibag” in Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005). This plant is traditionally used for food, medicinal, and ritual purposes (Davidson-Hunt et al. 2005; Marles et al. 2000). The main plant structure used of Labrador tea is the leaf (Davidson-Hunt et al. 2005). An Indigenous monitor from Wabigoon Lake Ojibway Nation observed Labrador tea in the field and noted this plant is traditionally used for medicinal properties; it is traditionally used to reduce migraine symptoms (Indigenous Monitor Wabigoon Lake Ojibway Nation, personal communication, August 9, 2022). Labrador tea was identified at 25 ELC stations in the LSA. This species was found in conifer forest (B012, B049, B050, B054, B114), deciduous forest (B055), shrub (B046), thicket swamp (B135), treed swamp (B128, B129, B133), fen (B136), and marsh (B142) representing approximately 105,544 ha (62%) of the LSA. In northwestern

Ontario, Labrador tea is commonly found in conifer forest, shrub, meadow, swamp, bog, and fen habitats.

Saskatoon berry is known as “ozigwaakominaatig/oog, ozigwaakomin/an, gozigwaakominagaawanzh, gozigwaakomin(-an), ozagadigon, zhigaagomiinen, zhigaagomiinaatig” in Oji-Cree and Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005, Kenny and Parker 2004). This plant is traditionally used for food, medicinal, and technological purposes (Davidson-Hunt et al. 2005). The main plant structure used of Saskatoon berry is berry, stem, bud, wood, root, and bark (Davidson-Hunt et al. 2005). An Indigenous monitor from Lac des Mille Lacs First Nation observed Saskatoon berry in the field and noted this plant is traditionally used for food purposes (Indigenous Monitor Lac des Mille Lacs First Nation, personal communication, August 24, 2022). Saskatoon berry was identified at one ELC station in the LSA. This species was found in a treed swamp (B133) representing approximately 35 ha (<0.1%) of the LSA. In northwestern Ontario, Saskatoon berry is commonly found in thicket, edge of forest, and rock barren habitats.

Canada wild ginger is known as “namepin” in Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005). This plant is traditionally used for food and medicine (Davidson-Hunt et al. 2005). The Canada wild ginger plant structure traditionally utilized is the root (Davidson-Hunt et al. 2005). Canada wild ginger was identified at one ELC station in the LSA. This species was found in a deciduous forest (B119) representing approximately 644 ha (0.4%) of the LSA. It is commonly found in rich deciduous, coniferous, and mixed forest habitats.

Common yarrow is known as “waabigooniinzens” in Oji-Cree dialect of northwestern Ontario (Kenny and Parker 2004). An Indigenous monitor from Wabigoon Lake Ojibway Nation observed common yarrow and noted this plant is traditionally used for medicinal properties; it is traditionally used to stop bleeding (Indigenous Monitor Wabigoon Lake Ojibway Nation, personal communication, August 15, 2022). Common yarrow was identified at one ELC station in the LSA. This species was found in a meadow (B008) representing approximately 32 ha (<0.1%) of the LSA. It is commonly found in open forest and moist meadow habitats.

Prickly rose is known as “oginiiwaabigwanaatig/oog, oginiiwaabigwan/iin” in Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005). An Indigenous monitor from Lac des Mille Lacs First Nation observed prickly rose and indicated this plant is traditionally used for food purposes (Indigenous Monitor Lac des Mille Lacs First Nation, personal communication, August 24, 2022). Prickly rose was identified at 14 ELC stations in the LSA. This species was found in conifer forest (B049, B050, B101, B114), deciduous forest (B055, B088, B104), sparse shrub (B046), and marsh (B148) representing approximately 90,797 ha (53.4%) of the LSA. In northwestern Ontario, prickly rose is commonly found in open forest, meadow, and rock barren habitats.

Although sweetgrass and wild rice were not identified in the field at any ELC survey stations, these are found in northwest region of Ontario and have potential to occur within the LSA. Sweetgrass is known as “mishkosiiwiingoshk” in Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005). This plant is traditionally used for rituals (Davidson-Hunt et al.

2005). The whole aboveground plant structure of sweetgrass is utilized traditionally (Davidson-Hunt et al. 2005). It is commonly found in open moist habitat such as meadow marshes, moist meadows, edge of lakes and rivers, and wetlands.

Wild rice is known as “manoomin, manoominaatig/oon, manoominashk/oon” in Ojibway dialects of northwestern Ontario (Davidson-Hunt et al. 2005). The seeds of the wild rice plant are harvested and traditionally used for food (Davidson-Hunt et al. 2005). This species is associated with open water marsh, riverine and lacustrine habitats (see Section 3.1.2 above).

Eastern white cedar, paper birch, American mountain ash, chokecherry, common bearberry, early lowbush blueberry, highbush cranberry, Labrador tea, Saskatoon, Canada wild ginger, common yarrow, prickly rose, sweetgrass, and wild rice are commonly found in a variety of ecosites across the LSA footprint, as summarized in Table 3.1-4. These habitats, both confirmed and candidate, were documented along each route (see Table 3.1-1).

Table 3.1-4: Traditional Use Plant Species and Related Habitats

General Habitat Type	Eastern White Cedar	Paper Birch	Showy Mountain Ash	Chokecherry	Common Bearberry	Early Lowbush Blueberry	Highbush Cranberry	Labrador Tea	Saskatoon Berry	Canada Wild Ginger	Common Yarrow	Prickly Rose	Sweetgrass	Wild Rice
Coniferous Forest	**Confirmed**[(a)]	**Confirmed**	**Confirmed**	**Confirmed**	**Confirmed**	**Confirmed**	**Confirmed**	**Confirmed**	**Suitable**[(b)]	**Suitable**	Not suitable	**Confirmed**	Not suitable	Not suitable
Deciduous Forest	**Suitable**	**Confirmed**	**Confirmed**	**Confirmed**	**Suitable**	**Suitable**	**Confirmed**	**Confirmed**	**Suitable**	**Confirmed**	Not suitable	**Confirmed**	Not suitable	Not suitable
Mixed Forest	**Suitable**	**Confirmed**	**Confirmed**	**Suitable**	**Suitable**	**Suitable**	**Suitable**	Not suitable	**Suitable**	**Suitable**	Not suitable	**Suitable**	Not suitable	Not suitable
Shrub	Not suitable	Not suitable	**Suitable**	**Suitable**	**Suitable**	**Confirmed**	**Suitable**	**Confirmed**	**Suitable**	Not suitable	**Suitable**	**Confirmed**	Not suitable	Not suitable
Field	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable
Meadow	Not suitable	**Suitable**	Not suitable	**Suitable**	**Suitable**	**Confirmed**	Not suitable	**Suitable**	Not suitable	Not suitable	**Confirmed**	**Suitable**	**Suitable**	Not suitable
Barren	**Suitable**	**Suitable**	**Suitable**	**Suitable**	**Suitable**	**Suitable**	Not suitable	Not suitable	**Suitable**	Not suitable	Not suitable	**Suitable**	Not suitable	Not suitable
Bog	**Suitable**	Not suitable	Not suitable	Not suitable	Not suitable	**Suitable**	**Suitable**	**Suitable**	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable
Fen	**Suitable**	**Confirmed**	Not suitable	Not suitable	Not suitable	**Confirmed**	Not suitable	**Confirmed**	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable
Marsh	**Suitable**	**Confirmed**	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable	**Confirmed**	Not suitable	Not suitable	Not suitable	**Confirmed**	**Suitable**	**Suitable**
Swamp	**Confirmed**	**Confirmed**	Not suitable	**Confirmed**	Not suitable	**Confirmed**	**Confirmed**	**Confirmed**	**Confirmed**	Not suitable	Not suitable	Not suitable	Not suitable	Not suitable

a) Confirmed = Presence confirmed in general habitat type from botanical field surveys.

b) Suitable/Not suitable was determined from general habitat types identified in Farrar 1995; Soper 1982; Newmaster 1997.

3.1.5 Introduced and Invasive Plant Species

Non-native species occurring within the natural environment are commonly described as either introduced or invasive. Introduced species are those that may have been introduced to an area outside of their native range, while invasive species are introduced and negatively impact the environment or human health.

Introduced and invasive plants were opportunistically documented as part of the botanical inventory work. *The Early Detection & Distribution Mapping System Ontario* was developed in partnership with MNRF among other provincial stakeholders and maintains distribution mapping of invasives species across Ontario (University of Georgia 2022). Two of the species identified during ELC surveys, and that are considered introduced and invasive in accordance with this database, are Canada thistle (*Cirsium arvense*) and narrow-leaved cattail (*Typha angustifolia*). In addition, 12 introduced species were confirmed during the botanical inventory survey, and are: common buttercup (*Ranunculus acris*), common dandelion (*Taraxacum officinale*), common timothy (*Phleum pratense*), common yarrow (*Achillea millefolium*), coralberry (*Symphoricarpos orbiculatus*), creeping buttercup (*Ranunculus repens*), european red currant (*Ribes rubrum*), garden bird's-foot trefoil (*Lotus corniculatus*), large bird's-foot trefoil (*Lotus uliginosus*), oxeye daisy (*Leucanthemum vulgare*), red clover (*Trifolium pratense*), and sweet-scented bedstraw (*Galium odoratum*).

Canada thistle grows in full sun in various soil types and thrives in disturbed areas. This species is highly competitive with surrounding forb/grass species due to its extensive root system and aggressive growth of shoots (University of Georgia 2022). Canada thistle was identified at three ELC stations located along Route 3A, Route 3B, and Route 3C (Group 4) of the LSA. This species was found in meadows (B030, B078, B110) representing approximately 444 ha (<1%) of the LSA. Canada thistle is not listed under the prohibited invasive species or restricted invasive species of the *Invasive Species Act* (Ontario 2015).

Narrow-leaved cattail grows in wetlands with new plants emerging from established rhizomes in the substrate. This species' rhizomes compete with native wetland plants and are able to populate in open water thus forming dense vegetated monocultures (University of Georgia 2022). Narrow-leaved cattail was identified at one ELC station located along Route 2-1 and Route 1C (Group 2) of the LSA. This species was found in a shallow marsh (B148) representing approximately 32 ha (<1%) of the LSA. Narrow-leaved cattail is not listed under the prohibited invasive species or restricted invasive species of the *Invasive Species Act* (Ontario 2015).

3.2 Wildlife and Wildlife Habitat

3.2.1 Mammals

Twenty-five mammal species were observed during baseline surveys: American marten (Martes americana), beaver (Castor canadensis), big brown bat (Eptesicus fuscus), black bear (Ursus americanus), bobcat (Lynx rufus), Canada lynx (Lynx canadensis), coyote (Canis latrans), deer mouse (Peromyscus maniculatus), eastern red-bat (Lasiurus borealis), fisher (Martes pennanti), gray wolf (*Canis lupus*), ground hog (Marmota monax), hoary bat, least chipmunk (*Neotamias minimus*), little brown myotis (*Myotis lucifugus*), moose (*Alces alces*), North American porcupine (*Erethizon dorsatum*), northern flying squirrel (*Glaucomys sabrinus*), northern myotis (*Myotis septentrionalis),* red fox (Vulpes vulpes), red squirrel (*Sciurus vulgaris*), silver-haired bat (*Lasionycteris noctivagans*), snowshoe hare (Lepus americanus), striped skunk (Mephitis mephitis), white-tailed deer (*Odocoileus virginianus*). A report provided by Lac des Mille Lacs First Nation notes red squirrel, flying squirrel, muskrat, mink, fox, timber wolf, fisher, otter, skunk, weasel, lynx, and racoon are trapped near the preferred preliminary route. The report also indicated small mammals and birds are hunted in the area including:

- Snowshoe hares
- Beaver
- Ruffed grouse
- Spruce grouse
- Sharp-tailed grouse
- Muskrat
- Canada geese
- Mallards
- Blue-winged teal ducks
- Goldeneyes (Lac des Mille Lacs First Nation 2023).

Additionally, 20 mammals and 10 birds were observed during gray fox presence remote camera surveys, including: American crow (*Corvus brachyrhynchos),* American robin (*Turdus migratorius*), black bear, blue jay (*Cyanocitta cristata),* bobcat, coyote, deer mouse, domestic dog (*Canis lupus familiaris*), eastern chipmunk (*Tamias striatus*), fisher, gray wolf, ground hog, grouse species, hawk species, hermit thrush (*Catharus guttatus*), lynx, moose, northern flying squirrel, northern waterthrush (*Parkesia noveboracensis*), pine marten, porcupine, racoon, raven (*Corvus corax*), red fox, red squirrel, skunk, snowshoe hare, spruce grouse (*Falcipennis canadensis*), squirrel, white tailed deer, white throat sparrow (*Zonotrichia albicollis*)*.* A report provided by Lac des Mille Lacs First Nation indicates cougar sightings in the area on several different occasions (Lac des Mille Lacs First Nation 2023). An outline of the wildlife observations at each gray fox presence station can be found in Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results.

3.2.1.1 Ungulates

Portions of the Project alternative route segments intersects 10 Wildlife Management Units (WMUs) in Cervid Ecological Zone C1, D1 and B (MNR 2009a). The moose and gray wolf RSA is constrained to seven WMUs which are located in Zone C1 (Table 3.2-3). Within Zone C1, the

MNRF aims to manage ungulate species with a priority on maintaining moderate to high densities of moose and low densities of white-tailed deer. Elk is an uncommon species in Zone C1, and their habitat management is not emphasized (MNR 2009a).

Although moose are not a provincially or federally listed species, they were selected as a criterion because they are an important subsistence and cultural species to Indigenous peoples, have large home ranges, and represent key sources of protein and energy for predators (natural and human) and scavengers in the boreal forest (Popp et al. 2019; McLaren et al. 2021). Moose are herbivores with linkages to aquatic environments and therefore may be affected by changes in environmental conditions both on land and in water.

There were no targeted field surveys for ungulates conducted in 2022; however, incidental observations of moose and white-tailed deer sign (visual observations, tracks, scat) were recorded during other baseline field surveys, and remote cameras deployed for gray fox also captured photographs of both species (Section 3.2.1.4).

3.2.1.1.1 Moose

Population Status and Distribution

Moose occur across Canada in boreal and mixed forests below the Arctic (Franzman 1981). Moose populations in some parts of North America, including central Canada, are experiencing declines (Ranta and Lankester 2017; Timmermann and Rodgers 2017; Priadka et al. 2022). Threats to moose populations in Ontario and in adjacent populations include direct and indirect habitat loss, altered predator/prey relationships, disease and parasites, hunting, and climate change (Environmental Commissioner of Ontario 2016; Timmermann and Rodgers 2017; Severud et al. 2022).

Moose populations have demonstrated a range shift northward which has been attributed to warming seasonal temperatures and the range expansion of white-tailed deer (Ranta and Lankester 2017; Timmermann and Rodgers 2017; Priadka et al. 2022). A study across 50 WMUs in northwest and central Ontario examined moose density and mid-winter recruitment of calves between 1980 and 2015; their results indicated population response to climate varies by habitat type, whereby moose in sparse forest cover were more susceptible to direct or indirect climate effects. Their study also demonstrated that density and recruitment were partially driven by the previous years' North Atlantic Oscillation (NAO) index, which supports findings from other studies that have demonstrated climate-driven changes to population dynamics of harvested ungulates across large geographic distributions (Priadka et al. 2022). The expansion of white-tailed deer range has negatively impacted moose because of increased abundance of shared predators and because deer are hosts to parasites (winter tick [*Dermacentor albipictus*] and meningeal worm [*Parelaphostrongylus tenuis*]) which can lead to high mortality rates for moose (Ranta and Lankester 2017; Priadka et al. 2022; Severud et al. 2022). The primary predators for both deer and moose in Ontario are wolves and black bears (Section 3.2.1.1.1), and the expansion of deer populations results in a larger predator population and an increased risk of predation on moose calves in particular (although adult moose can also be killed by wolves and black bears; Ballard and van Ballenberghe 2008). Predation risk is also related to snow conditions; snow depth over 60 to 70 cm greatly hinders moose movements, which increase the risk of predation, and reduces the availability of suitable browse species above the snowpack (Franzman 1981). The interrelated factors can affect moose survival and recruitment.

Adult females have consistently high pregnancy rates (average 84% across several North American studies between 1951 and 1986; Boer 1992) but yearling pregnancy rates vary widely (between 0-93%; Boer 1992). Cow moose regularly give birth to twins, and in years with high rates of yearling pregnancy and twinning there is a substantial increase in population growth rates (Boer 1992). High mobility allow moose to exploit suitable habitat patches in variable landscapes, and subadults may disperse long distances (Hoffman et al. 2006). Moose can have home ranges as large as 1,000 km^2, particularly in areas with low primary productivity (Stenhouse 1995; Dodge et al. 2004). A study of 60 collared female moose in northwestern Ontario between 1995-2000 showed total home range areas varied by individual, from 5.8-278 km^2 (Vander Wal and Rodgers 2012). Site fidelity of moose is influenced by anthropogenic disturbance, weather, reproductive status and natal philopatry. Movement and space use varies more often in areas with greater disturbances and severe winters because preferred habitat and forage availability is more scattered across the landscape. In central Ontario, female moose had lower site fidelity during winter than in the other seasons (McLaren and Patterson 2021). Moose carrying capacity varies across the geographic extent within which they occur, and is linked to abundance of forage, deciduous and mixedwood cover, disturbance regimes (e.g., timber harvest), hunting and predation pressures (Street et al. 2015a).

Moose are managed in Ontario as a big game species by the provincial government at the scale of WMUs. The moose RSA was defined using the regional population management boundaries established by MNRF (Section 1.3.4) because it allows for a consistent assessment of potential impacts relative to population metrics determined by the province. Estimates of moose abundance were obtained from the Moose Aerial Inventory surveys which have been conducted by MNRF since 1975 (when the WMU boundaries were established). Survey results from 1975 to 2022 and estimates for moose populations in the WMUs overlapped by the LSA were received from MNRF in November 2022. The time between surveys in each WMU varies, ranging from one to 16 years). The population estimates in the 7 WMUs intersected by the LSA and 10 WMUs included in the moose RSA vary greatly, as expected, given the size of the units vary from 196,619 ha in WMU 11B to over one million hectares in WMUs 13, 15A and 5 (Table 3.2-1).

Moose populations in the province increased from the early 1980s to the early 2000s and have declined during the past decade, although a population increase was noted for WMU 11A in 2023 (MNRF 2023a). These population declines were evident in the survey results received from MNRF for the WMUs intersected by the LSA and moose RSA (Table 3.2-1). For example, in WMU 13, at the most southeast end of the Project footprint, the projected moose population peaked in 1988 (estimated 5,043 animals), rose again in 2004 (estimated 4,778 animals) and has been in decline since, although no change was detected between 2022 and 2023. The surveys in 2022 and 2023 resulted in estimate of 1,699 animals in both years (Figure 3.2-1, Table 3.2-1, and Table 3.2-2).

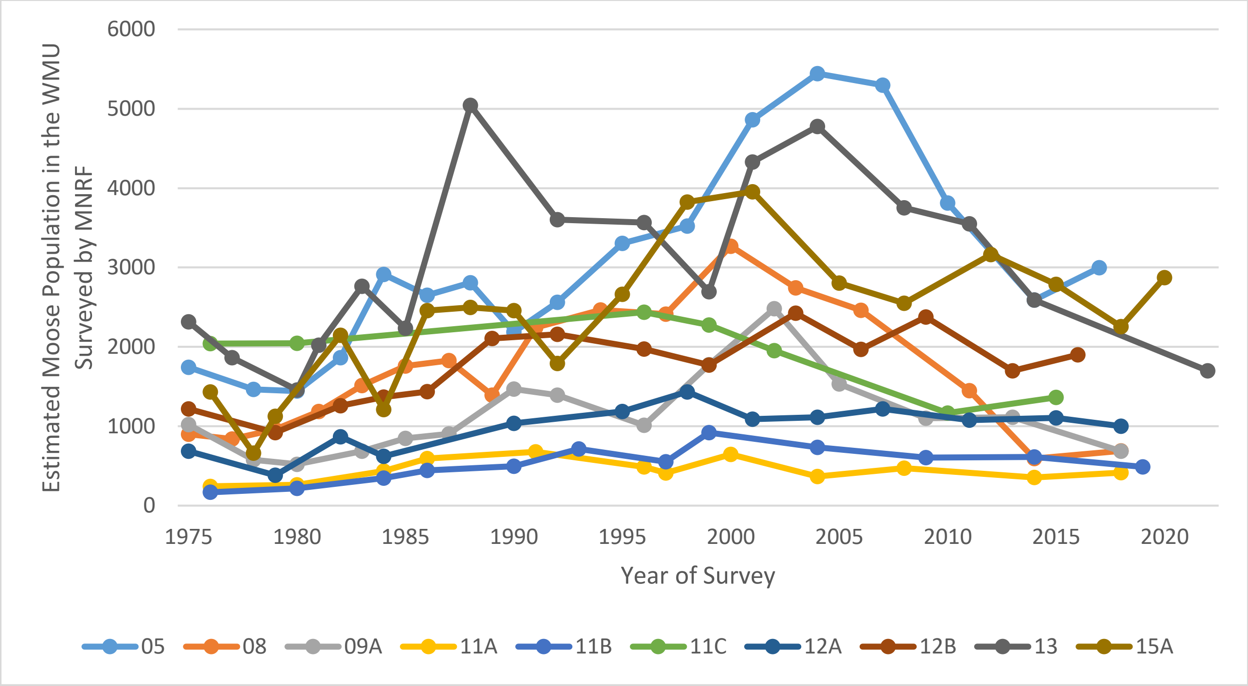


Figure 3.2-1: Moose Population Estimates in the Wildlife Management Units intersected by the Local Study Area (1975 to 2022)

Aerial inventory surveys cannot be conducted in every WMU each year, so models provide an annual estimated population for those WMUs where surveys were not conducted (Table 3.2-1). With the exception of WMU 15A, the 2022 population estimates for moose in the WMUs that are intersected by the LSA are below the 2030 population objectives (Table 3.2-1). Population estimates and objectives were not available for WMU 11C. However, surveys completed by the Minnesota Department of Natural Resources in northeastern Minnesota, including the Boundary Waters Canoe Area, which borders Quetico Provincial Park (i.e., WMU 11C), indicates that the moose population in the area has declined since its peak in the mid-2000s (Giudice 2023). At the population peak there were estimated to be greater than 8,000 moose in northeastern Minnesota; in 2023, there were estimated to be 3,290 moose. The population appears to be stable with estimates of around 3,000 moose since 2012 (Giudice 2023).

In northeastern Minnesota, the population for moose in 2023 was estimated to consist of 45% bulls, 40% cows, and 15% calves (Giudice 2023). The primary cause of moose population declines in northeastern Minnesota is thought to be low calf survival (Giudice 2023). In 2023, the estimated cow:calf ratio in northeastern Minnesota was 0.38 (Giudice 2023). However, the Minnesota Department of Natural Resources notes that adult moose survival has the greatest long-term impact on annual changes in moose populations (Lenarz et al. 2010).

Table 3.2-1: 2022 Moose population estimates and 2030 population targets within Wildlife Management Units intersected by the Local Study Area

Wildlife Management Unit	Area (ha)	2023 Population Estimate	2030 Population Objective - Lower	2030 Population Objective - Upper
5	1,081,754	2,996	3,300	3,900
8	552,235	692	950	2,400
9A	466,505	687	1,300	1,700
11A	290,959	841	550	850
11B	196,619	514	600	850
11C	472,306	Not available	Not available	Not available
12A	401,891	1,204	1,200	1,500
12B	660,601	1,902	2,000	2,500
13	1,349,634	1,699	3,300	4,400
15A	1,060,479	2,873	1,800	3,100
15B		4,967	3,400	4,600

Source: MNRF 2023a
ha = hectare.

In suitable habitat with limited risk of predation, moose density can exceed 40 moose per 100 km^2 (MNR 2009c). The desired ecological density for moose in suitable habitat (that does not overlap caribou ranges) can vary from less than 20 to more than 40 moose per 100 km^2, but the presence of wolf and bear populations in the LSA and moose RSA is expected to limit the density (MNR 2009c). Moose densities in the WMUs intersected by the LSA were calculated using total population estimates from the most recent surveys in each WMU, which occurred between 2015 and 2022. Densities varied from 12.5 moose per 100 km^2 (in WMU 8) up to 28.8 moose per 100 km^2 (in WMUs 11C and 12B; Table 3.2-2). This is at or below the population density objective for WMUs in Zone C1, which prioritizes moderate to high densities of moose (MNR 2009a).The moose density estimate for northeastern Minnesota, in 2023, was 21.3 moose per 100 km^2 (Giudice 2023).

Table 3.2-2: Summary of moose population estimates and estimated density from most recent survey in Wildlife Management Units intersected by the Local Study Area

Wildlife Management Unit	WMU Area (km^2)	Most Recent Survey Year	Estimated # of bulls	Estimated # of cows	Estimated # of calves	Total estimated population in survey area[(a)]	Estimated density per 100 km^2
13	13,496	2022	605	850	230	1,699	12.6
11B	1,966	2019	180	215	79	489	24.9
11C	4,723	2015	470	673	160	1,362	28.8
11A	2,910	2018	167	168	74	414	14.2
12B	6,606	2016	861	798	214	1,901	28.8
12A	4,019	2018	394	499	104	1,001	24.9
15A	10,605	2020	767	1,504	498	2,874	27.1
9A	4,665	2018	244	307	125	687	14.7
8	5,522	2018	233	336	121	692	12.5
5	10,818	2017	954	1,542	342	2,996	27.7

Source: Survey results received from MNRF, November 1, 2022

a) The total estimated population in the survey area includes moose seen and estimated moose missed based on track aggregates (MNR 2009c).

= number; km = kilometres; km^2 = kilometres squared; WMU = Wildlife Management Unit.

Moose hunting is a popular recreational activity in Ontario by resident and non-resident hunters and is managed through a tag allocation system designed to sustain a healthy moose population. Since 2019, provincially licensed moose hunters have been required to submit harvest reports annually, and annual summaries of moose harvest in each WMU are publicly available. Moose are also harvested by Indigenous hunters, but the number of animals harvested are not included in provincial reports. Between 2006 and 2022, a reported 15,614 moose were harvested in the WMUs that are intersected by the RSA (MNRF 2023b). In 2022, the most recent year of available data, the annual moose harvest for the entire province of Ontario was approximately 3,930 animals, of which 357 (9.1%) were harvested in the WMUs that are intersected by the RSA (MNRF 2023b). The total estimated harvest for the 2022 season in the WMUs that are intersected by the RSA ranged from 10 animals (in WMU 8) to 92 animals (in WMU 12B) (MNRF 2023b).

Habitat Selection and Foraging

Moose are habitat generalists but have shown preference for deciduous aspen, shrubland and wetland habitats interspersed with trees and shrubs (Street et al. 2015a). Optimal habitat for moose consists of deciduous shrub and ground strata within deciduous, mixed, and coniferous forest; these habitat types offer seasonal forage, movement and cover. Habitat that includes edge or disturbed area with early successional vegetation is also selected by moose because of the increased availability of browse in the regenerating shrub layer (Courtois et al. 2002; Ranta and Lankester 2017). Moose often select areas that have recently burned because of the abundance of browse in the regenerating shrub layer, however, the trajectory of vegetation successional response after a fire depends on fire intensity and severity, area of burn, and community structure prior to a fire; therefore, the speed at which the burned area is selected by moose varies (Street et al. 2015b). For example, functional habitat for moose is expected to become available 6 to 10 years after disturbance in upland habitats (Nelson et al. 2008) whereas burned peatlands take longer to regenerate (DeMars et al. 2019). Burned areas six to 20 years post fire where high densities of shrubs are available for browsing would provide attractive habitat patches for moose on the landscape.

During the fall and winter, moose typically prefer habitats where adequate browse is available. As such, early winter habitat for moose is primarily made up of mature, open canopy, mixedwood stands with less than 60% tree cover, as well as disturbed areas (burn or areas of forest harvest) that are six to 20 years post-disturbance. In Ontario, late winter habitat is defined by dense conifer forests with at least 60% canopy cover and trees at least six metres tall (MNR 2000); mixedwood stands will be used if pure conifer stands are not available (MNRF 2016b). Preferred fall and winter browse includes red-osier dogwood (*Cornus sericea*), willow species (*Salix* sp.), trembling aspen, white birch, balsam poplar (*Populus balsamifera*), balsam fir, mountain ash (*Montana fraxinus S. aucuparia*), mountain maple, green alder (*Alnus viridis*), pin cherry (*Prunus pensylvanica*), juneberry (*Amelanchier canadensis*) and beaked hazelnut (*Corylus cornuta*) (Cumming 1987; Timmermann and McNicol 1988). To access this forage, habitats with high cover of shrub species, such as shrubby fens and bogs, and riparian habitats with open canopies are usually preferred.

In the spring, moose seek out mineral licks to consume sodium (MNR 2000). In the summer moose may travel up to 30 km to aquatic feeding areas that provide an abundance of sodium-rich aquatic plants (MNR 2000). Ideal aquatic feeding areas have large amounts of pondweeds (*Potamogeton* spp.), water milfoil (*Myriophyllum spicatum*), and yellow water lily (*Nuphar lutea*) and are adjacent to stands of lowland conifers (for shade and hiding cover) (MNR 2000).

Linear features may be an attractant or deterrent for moose. Narrow or less permanent anthropogenic disturbances may attract moose as a source of early successional foraging habitat and are unlikely to affect connectivity (Higgelke 1994; Serrouya and D'Eon 2002; Poole and Stuart-Smith 2003). Moose have been documented showing a preference for utility lines, seismic lines, and logging roads (Higglke 1994; Serrouya and D'Eon 2002) and an avoidance of highways and forest roads, although the avoidance distance may vary seasonally (Laurian et al. 2012) and moose may be drawn to salt on highways in the winter (Miller and Litvaitis 1992).

Existing disturbance in the LSA and moose and gray wolf RSA includes highways, secondary roads, trails, railroad, utility lines, natural gas pipelines, logged areas, and aggregates sites. Wildfire disturbance in the LSA from 1960 to 2021 is minimal, with only two fires recorded (in 1961 and 1984) and a total of 1,900 ha burned. In the moose and gray wolf RSA, there has been 145,501 ha burned between 1960 and 2021 in 89 fire events. Of these, 29,984 ha burned between 2001 and 2017 (Table 3.2-3); the regenerating habitat in these areas that burned five to 20 years ago may provide forage habitat for moose depending on the dominant regenerating cover (i.e., deciduous or coniferous). Most fires affecting the RSA occurred over 40 years ago (82,383 ha).

Significant Wildlife Habitat (SWH) microhabitat features for moose within the LSA include aquatic feeding areas and mineral licks. There were 550 aquatic feeding habitat areas identified in the LSA through review of background information (LIO 2022), which made up a total of 1,147 ha (Figure 3.2-2 in Attachment 6.4-A-1). These aquatic feeding areas are concentrated along route alternatives 3B and 3C, and to a lesser extent along 3A and 1. A few aquatic feeding areas are also located along route alternatives 1C, 2B and 2C. There are four confirmed mineral licks in the LSA, and three additional ones identified in the RSA (LIO 2022) (Section 3.2.4; Figure 3.2-2 in Attachment 6.4-A-1).

Table 3.2-3: Land Cover and Disturbances in the Local Study Area and Moose and Gray Wolf Regional Study Area

Habitat Type	Local Study Area Area (ha)	Local Study Area Percent (%)	Area (ha)	Percent (%)
Natural Disturbances[(a)]	0.0	0.0	29,984	0.7
Anthropogenic Disturbances[(b)]	9,189	5.4	67,037	1.5
All other ELC ecosites	143,828	84.9	3.7 million	80.9
Open Water[(c)]	16,373	9.7	766,115	16.9
Total[(d)(e)]	**169,390**	**100**	**4.5 million**	**100**

a) Wildfires based on a fire history period 2001 and 2017.

b) Anthropogenic disturbances include linear and non-linear disturbances, including but not limited to trails, rough roads, existing access roads, highway, airstrips, clearings, forest harvest areas, pipelines, landfill, residential areas, and unknown.

c) Open Water includes lakes, ponds, beaver pond and rivers. Wetlands are included in “All Other ELC ecosites”.

d) Total values in the LSA and RSA do not equal the full extent of the study areas because the provincial vegetation layers have gaps, particularly in the area near Lake Superior.

e) Some numbers are rounded for presentation purposes. Therefore, it may appear that the totals do not equal the sum of the individual values.

% = percent; ha = hectare.

3.2.1.1.2 Incidental Observations of Ungulates During Baseline Studies

During field studies, visual observations and signs of moose were recorded within the LSA. There were 45 detections of moose on cameras at the baited stations; of the thirty-three cameras deployed at baited stations, moose were captured in photos at 13 stations (40% of locations). In addition, 10 moose were observed incidentally (including two incidents with a group of two animals) and scat and tracks were recorded 15 times during other baseline surveys. Moose visual observations occurred along roads that were adjacent to wetlands, open marsh, conifer forest, and the existing right of way.

Feedback from Indigenous communities, including an assessment of the alterative routes by Lac des Mille Lacs First Nation, highlights the importance of moose and their habitat to communities (NorthWinds 2020).

White-tailed deer is an additional ungulate known to occur in the LSA. White-tailed deer are not a provincially or federally listed as a SAR. The range and population growth of white-tailed deer in Ontario is primarily limited by winter severity, and thus their range and density changes over time in response to short-term weather fluctuations and long-term changes in climate (MNRF 2017c; Kennedy-Slaney et al. 2018). White-tailed deer prefer early seral deciduous forests as these areas may provide both food and cover (Bowman et al. 2010). White-tailed deer are managed as a big game species for harvest by licensed and Indigenous hunters. Between 2008 and 2022, a reported 53,731 white-tailed deer were harvested in the WMUs that are intersected by the RSA (MNRF 2023c). In 2022, the most recent year of available data, the annual white-tailed deer harvest for the entire province of Ontario was approximately 55,302 animals, of which 1,824 (3.4%) were harvested in the WMUs that are intersected by the RSA (MNRF 2023c). The total estimated harvest for the 2022 season in the WMUs that are intersected by the RSA ranged from 1 animal (in WMU 12A) to 942 animals (in WMU 13) (MNRF 2023c).

There were 60 white-tailed deer observations recorded in the LSA on the baited camera stations. Of the 33 cameras deployed, 10 captured photos of deer (30% of locations).

3.2.1.2 Furbearers

3.2.1.2.1 Beaver

Population Status and Distribution

Beavers can be found across Ontario and are considered secure provincially (ESA 2007) and federally (SARA 2016). Beaver populations are estimated to be between 6-12 million, although habitat loss has restricted populations in many areas. There is also a lack of beaver activity in the Canadian arctic tundra, most likely due to the lack of woody vegetation required for winter food (Baker & Hill 2003).

Home range size for beavers can vary greatly depending on many factors including age, sex, season, type of habitat and social organization of the family. A study showed that the mean home range was 12 ± 6 ha, but when three outliers were included, the home range increased to 21 ± 27 ha. The study also showed that a minimum of 0.8 km of stream length or 1.3 km^2 of lake must be available for beaver colonization to occur (Touihri et al 2018).

In 2020 (the latest year of data available) the total beaver harvest in Ontario was 29,228 animals. While WMU specific statistics are not currently available, the beaver harvests per year have decreased substantially since the early 1990s when the dataset begins (MNRF 2022c).

Beavers are monogamous animals. Desertion of a mate is rare although beavers will re-mate with another following the death of one of their partners. Colonies typically consist of a monogamous pair and their young, usually around eight beavers per colony (Baker & Hill 2003). The yearlings born the previous year and the newborn kits will stay with the parental adults. Prior to the birth of the new young, the eldest young are forced out of their parental colony to create their own lodge and dam (Boonstra 2021). Beavers will typically breed in the winter and give birth in late spring. The gestation period ranges from 98-111 days (Baker & Hill 2003).

There were no beaver observations at any of the gray fox baited camera stations or the potential gray fox dens monitored with cameras. However, during the July re-bait on the gray fox baited stations, a beaver skull was found near GF-11 although the camera did not capture any beaver activity.

Habitat Selection and Foraging

Beavers have the ability to alter existing habitat in order to meet the conditions they require (Baker & Hill 2003; Cassola 2016). The beaver is one of the only mammals that is able to construct their own home (Boonstra 2021). This allows them to adapt to a variety of natural and human-made habitats throughout North America (Baker & Hill 2003). Beavers are very dependent on water level; even slight variations can have dramatic effects on the beavers. While dams allow beavers to control the stability of the water depth to some degree, there are still limitations. Beavers are not able to colonize in very deep water or heavy-fluctuating streams or rivers. Beavers tend to construct their dams on lower order streams and rivers (4th order and lower) as higher order streams are at risk of being damaged or destroyed by spring floods and high-water levels. Beavers are known to occupy slow-flowing streams where they construct their dams of sticks, logs, debris and mud (Touihri et al 2018). Beaver activity can dramatically impact an ecosystem (Cassola 2016).

Beavers are herbivores. Their diet consists mainly of twigs, bark, buds, and leaves. They also consume trees, typically deciduous over coniferous, and eat herbaceous pond vegetation (Boonstra 2021; Henker 2009). Beavers tend to be generalists and consume whichever tree species and vegetation are available. When it is available, there is a preference shown for aspen species (*Populus* spp) with a secondary preference for a variety of willow species (*Salix* spp.) (Henker 2009; Touihri et al 2018). Studies have suggested a preference for aspen over willow, but also highlight the importance of various willow species, particularly during twilight hours. It has been suggested that it is easier to retrieve willow species at this time as it grows at water's edge, therefore safer to retrieve before it is dark enough to venture for aspen procurement (Henker 2009).

Incidental Observations of Beaver and Beaver Activity During Baseline Studies

During field studies, evidence of beaver was recorded within the LSA including incidental observation records, browsing and trails. In total 62 incidental beaver sightings/signs were noted during 2022 field surveys, including 48 beaver dams, 9 occurrences of beaver activity (e.g., beaver clippings, runs, fallen trees), four beaver lodges, and one beaver individual observed. Table 3.2-4 outlines incidental beaver observations that were noted during 2022 field surveys. Group 1 had the highest proportion of beaver observations, followed by Group 2, 3, and 4.

Table 3.2-4: Incidental Beaver Observations within the Local Study Area

Grouping	Alternative Route	Beaver Dam	Beaver Activity	Beaver Lodge	Beaver Individual Observed
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	17	2	2	0
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	2	2	0	0
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B	5	0	0	0
Group 2 (Node 1 to Node 3)	Alternative Route 1	17	2	2	0

Grouping	Alternative Route	Beaver Dam	Beaver Activity	Beaver Lodge	Beaver Individual Observed
Group 2 (Node 1 to Node 3)	Alternative Route 1C	1	1	0	0
Group 3 (Node 3 to Node 5)	Alternative Route 2A	4	1	0	0
Group 3 (Node 3 to Node 5)	Alternative Route 2B	1	1	0	0
Group 3 (Node 3 to Node 5)	Alternative Route 2C	7	1	0	0
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	5	0	0	0
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	3	0	1	1
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	2	1	1	0
Group 4 (Node 5 to Dryden TS)	Alternative Route 4	1	0	0	0

TS = Transformer Station.

3.2.1.2.2 Gray Wolf

Population Status and Distribution

The gray wolf is considered secure provincially (ESA 2007) and federally (SARA 2016). In Ontario, the current range of the gray wolf extends from Lake Simcoe to the James and Hudson Bay shorelines (Dobbyn 1994). Biologists currently estimate the number of wolves in Ontario to be over 8,800 based on the availability of prey species and measured densities of wolves in comparable locations across the country (MNR 2005). Wolf densities in Ontario currently have an average population density of 61.5 wolves per 1,000 km. This is an increase from the previous population density found in 2001, of 38.6 wolves per 100 km, and is likely related to the increase in pup survival (Gable et al 2022). The LSA is in wolf ecological zones two and three where the wolves mainly feed on deer and moose and have an intermediate population in comparison to the other ecological zones of Ontario (MNR 2005).

Packs in Ontario typically average 4.6 individuals and maintain territory sizes of 106.4 km^2 (Gable et al 2022). The gray wolf prefers heavily forested areas and research shows that wolves can adapt to the presence of humans (Mech 1995; Thiel et al. 1998; Boitani 2000; Hebblewhite and Merrill 2008), although studies have demonstrated changes to habitat use in response to high levels of human activity (Houle et al. 2010).

Gray wolves become sexually mature anytime from 22 to 34 months of age and females will typically give birth to litters of three to eight pups (most commonly five to six pups; Pattie and Fisher 1999; MNR 2005). Breeding peaks in mid to late February. Gestation lasts about 63 days; hence most pups are born in April. Most often, pups are born in dens, and on occasion born in beaver lodges, hollow logs, and rock caves. Pup survival rates in their first year range from 0.40 to 0.70 and increase considerably beyond that time (MNR 2005).

Current threats facing gray wolf populations in Ontario include hunting and trapping, alteration of habitat, disease, and human interference (MNR 2007a; MNR 2005). The number of wolves harvested by trappers in Ontario has fluctuated throughout the years with numbers decreasing in more recent years (396 in 2005/2006 compared to over 700 in 1993/1994; MNR 2007a). The exact number of animals killed annually through hunting activity in Ontario is not known; however, broad estimates of 1,000 to 1,600 individuals per year have been made by the MNRF (2005). The two main diseases affecting wolves include rabies and sarcoptic mange, which have implications to human health and cause significant canid mortality (MNR 2005). A number of wild canids live near agricultural areas and prey on livestock, which in some cases leads to landowners removing the species for killing or damaging their livestock (MNR 2005).

There were 24 gray wolves observed at the gray fox baited camera stations (Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results). Of the 33 cameras deployed at baited gray fox stations, 14 captured clear photos of gray wolves. There were no gray wolves observed at the potential gray fox den stations monitored with cameras.

Habitat Selection and Foraging

Gray wolf habitat preference is likely dependent on optimizing fitness by reducing travel costs, while maintaining potential for encountering prey (Alexander et al. 2005). Wolves will use cutlines and other linear disturbances for ease of movement (Paquet and Callaghan 1996; James and Stuart-Smith 2000; Gurarie et al. 2011). Wolves in the boreal forests of Quebec primarily selected open areas, conifer stands with a lichen understorey, and mixedwood forest stands during the spring and summer months (Houle et al. 2010). Similar habitat selections were made during the winter months; however, wolves avoided conifer-dominated forests and areas where snow accumulation was high (Houle et al. 2010). Wolves use upland areas more often than peatlands, possibly due to a higher density of moose in upland areas (McLoughlin et al. 2005). Maternity dens are located in burrows or depressions on the ground (Reid 2006).

The wolf is an opportunistic hunter, primarily targeting weak, young, or old animals; however, wolves are also capable of bringing down healthy prey (Mech 1974). Moose are the primary prey species of many wolf populations in the northern boreal forest (Fuller and Keith 1980; Tremblay et al. 2001) although their diets can vary to include caribou, white-tailed deer and beaver depending on the distribution of available prey species (Fuller and Keith 1980; Forbes and Theberge 1996; Tremblay et al. 2001; MNR 2005). Depending on the area and the time of year, wolves may also consume snowshoe hare (*Lepus americanus*) and muskrat (*Ondatra zibethicus*) (Voigt et al. 1976).

3.2.1.2.3 American Marten

Population Status and Distribution

Historically, marten have been trapped for fur in North America, and populations have declined since European contact (Buskirk and Ruggiero 1994). American marten are important to some Indigenous communities.

The American marten is not a provincial or federal SAR (ESA 2007; COSEWIC 2016b; SARA 2021). The IUCN Red List has identified the species as least concern since 2008, but has noted population declines due to hunting and habitat loss. The decline in population is currently not of concern due to a wide range of the species even in unprotected areas (Helgen & Reid 2016). In Ontario, marten is considered a “provincially featured species” by the Environmental Assessment Boards ruling on timber management on Crown lands (Watt et al. 1996).

Martens breed between July and August, and the young are born in March or April of the following year (Strickland 1982). Female martens produce litters of one to six individuals (usually three or four) and generally have their first litter when they are two or three years old (Pattie and Fisher 1999). Martens occupy larger home ranges than would be expected for a mammal of their size (Buskirk and Ruggiero 1994), with adult males in Canada occupying ranges of 0.8 to 45 km^2, and adult females occupying ranges of 0.42-27 km^2 (Burnett 1981; Mech and Rogers 1977; Latour et al. 1994; Smith and Schaefer 2002). The average home range for males and females in Canada is 9.19 km^2 and 6.64 km^2 respectively (Environment and natural resources 2014). Home ranges vary as a function of geographic area, habitat type, and prey density (Soutiere 1979; Thompson and Colgan 1987). Marten movements have not been rigorously studied, and reports on the dispersal period ranges from August to October (Buskirk and Ruggiero 1994).

There were a total of four pine marten observations at the baited gray fox camera stations (Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results). Of the 33 cameras deployed at baited stations, two stations (two observations per station) presented pine marten observations. There were no clear photographs of pine marten captured at the potential den sites monitored with cameras.

Habitat Selection and Foraging

Marten have been classified as requiring late successional forests and are intolerant of habitat types with sparse canopy cover (Buskirk and Ruggiero 1994; Chapin et al. 1997; Smith and Schaefer 2002). Some studies suggest that marten are closely associated with late-succession mesic conifer forests that have complex physical structure near the ground (Buskirk and Ruggiero 1994). American martens in the boreal forests of Quebec preferred deciduous and mixed forest stands over coniferous stands and selected sites with a dense coniferous shrub layer (Potvin et al. 2000). However, other studies suggest that requirements of canopy cover and structure near the ground can be met in a variety of habitat types (Chapin et al. 1997; Andruskiw et al. 2008; Mergey et al. 2011; Caryl et al. 2012). Forests 30-60 years old could support self-sustaining marten populations, although densities may be lower and there is a higher risk of population decline due to chance events compared to populations in forests greater than 60 years of age (Fryxell et al. 2008). Regenerating forests that are younger than 30 years may also be used by marten for foraging (Andruskiw et al. 2008; Mergey et al. 2011; Caryl et al. 2012). In Ontario, marten require large unbroken tracks of coniferous or mixed wood forest with abundant large trees for denning sites (OMNR 2000).

Although there is little information available on denning sites that are preferred by marten, especially in western and northern North America, studies have reported marten to be highly sensitive of sites used for denning. Marten have separate denning sites for parturition and raising their young with both den types reported to be found only in old-growth forest (Ruggiero et al. 1998). Marten dens are most often found in old woodpecker cavities (MNR 2000).

Marten diet varies seasonally. In summer, marten eat bird eggs and nestlings, insects, fish, and small mammals. Their winter diet is more restricted and is comprised of small to medium sized mammals. Snowshoe hare is an important prey species for marten and can consist of 3% to 64% of marten diet by biomass. Marten diet, body fat, ovulation rates, and juvenile recruitment vary with snowshoe hare density (Poole and Graf 1996).

3.2.1.2.4 Incidental Observations of Furbearers During Baseline Studies

Black Bear

Black bears are widely distributed across central and northern Ontario and are considered secure provincially (ESA 2007) and federally (SARA 2016). The black bear population in Ontario is conservatively estimated to be between 85,000 and 105,000 bears (MNRF 2020). The study areas are within Ontario bear ecological zone F1, which contains an estimated population density of 25 black bears per 100 km^2 (MNRF 2014a).

Bears will migrate more than 100 km to blueberry (*Vaccinium* spp.) patches (Obbard and Kolenosky 1994) or to oak (*Quercus* spp.) and beech (*Fagus* spp.) stands (MNR 2009d). Apart from seasonal migrations, home ranges of adult female bears average 15-25 km^2 in northern Ontario (Schenk et al. 1998). Home ranges of adult males can be ten times the size of female home ranges (MNR 2009d). Individuals of either sex are not territorial where food is abundant (Horner and Powell 1990), although boreal forest offers minimal growing periods and therefore home ranges are larger and herbaceous foods are sparser (Mosnier et al 2008). Home ranges of many bears can overlap (Schenk et al. 1998). However, where habitat productivity is low, females may show territoriality to other females (Powell 1987). Black bear populations are sensitive to over-harvest due to their life history characteristics of late maturity, alternate year reproduction, and low recruitment. Human hunting activity therefore poses a substantial risk to black bear population sustainability in the province of Ontario (MNR 2009d).

In 2022 (the latest available year of data), the annual black bear harvest for Ontario was approximately 4,350 animals (MNRF 2023d). In WMUs 5, 8, 09A, 11A, 11B, 12A, 12B, 13, and 15A the total estimated harvest for the 2022 season was 175, 55, 26, 19, 5, 18, 42, 166, and 66 individuals, respectively (MNRF 2023d).

Females in Ontario produce their first litter when they are between five and eight years old (Kolenosky 1990; Obbard and Howe 2008). Mating generally occurs in June and July and the fertilized egg floats freely in the uterus until the female is ready to enter the den, typically in early to mid-October in Ontario. Eggs become implanted and active gestation of about 60 days begins. Cubs are born in the den, usually in early January and they remain with their mother for up to 18 months (MNR 2009d). Litter size varies from one to four cubs in Ontario, with most litters having either two or three cubs (Kolenosky 1990). A single female will produce a litter every two to four years (Kolenosky 1990; Obbard and Howe 2008).

Black bears are primarily inhabitants of forested areas where they are best able to meet their needs for cover, food, and security from predators (MNR 2009d). Several studies found that black bears preferred dense deciduous forests, dense mixed forests, marshes and areas of open water over other land cover types (Obbard et al. 2010; Mosnier et al. 2008). Due to the short growing season in the Boreal forest and the absence of fatty mast-producing trees, black bears tend to be smaller and have more biophysical constraints in northwestern Ontario. Habitat selection for the fall and winter months is driven by the availability of suitable denning sites, which black bears use to hibernate. Denning sites in Ontario are primarily located in upland forested areas although dens can occur in forested lowland areas with good drainage and dominated by black spruce, tamarack, and cedar (Kolenosky and Strathearn 1987). Upland denning sites generally occur in mixed wood or deciduous stands that are moderately to well-drained (Kolenosky and Strathearn 1987).

Bears are opportunists and consume a variety of food items as they become available throughout the year. In the spring, bears feed on willow catkins, grasses, dandelions (*Taraxacum officinale*), clover (*Trifolium* spp.), and aspen leaves. Although not a major component of their diet, black bears have been known to opportunistically target and prey on young or winter-killed white-tailed deer, moose (Wilton et al. 1984; Austin et al. 1994), and caribou calves (Mahoney et al. 1990; Ballard 1994). In summer, ant colonies and nests of bumblebees and wasps are excavated and eaten, providing a source of protein. Berries are eaten as they become available throughout the summer. In fall, graminoids and sorbs are the favoured foods, likely due to their easy availability on roadsides (Mosnier et al 2008). Black bears will also prey on livestock and are attracted to agricultural crops, such as grains and orchards, during the summer and fall (MNR 2009d).

There was a total of 84 black bears observed at the baited gray fox stations (Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results) and the potential gray fox dens. Many of these observations were in dense mixed forest. As expected, the scent lure attracted black bears to most of the baited stations (25 of 33 baited stations presented clear black bear observations). There was a total of 81 black bear observations at baited stations. There were an additional three black bears observed at the potential gray fox dens that were monitored with cameras.

Red fox

Red fox populations are common throughout mainland Canada (Lariviére and Pasitschniak-Arts 1996; Reid 2006). It is not considered a SAR in Ontario (ESA 2007) or Canada (SARA 2016). The largest threats facing red fox populations in Ontario include disease (e.g., mange, distemper), hunting/trapping pressure, and predation from wolves, coyotes and birds of prey (MNR 2007b). Habitat loss is of less of a concern for this species as they are adaptable and have shown resilience to human disturbance (Adkins and Stott 1998; Gosselink et al. 2007; MNR 2007b).

There were a total of 31 red fox observed throughout the study period. Of these observations, 18 were at the baited stations, each of which was in dense mixed forest (Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results). Of the 33 cameras deployed at baited stations, only three captured clear photographs of red fox. There were an additional eight observations of red fox during the incidental gray fox den surveys, as well as five incidental red fox observations.

Fisher

Fisher is not considered a SAR in Ontario (ESA 2007) or Canada (SARA 2016) and their populations are currently listed as least concern by the IUCN Red List. While habitat loss and trapping are major threats to the species, the fisher is widely distributed and occurs in many protected areas. There have also been protective regulations implemented and reintroductions have recovered the decline of the past (Helgen & Reid 2018).

There were a total of 15 fisher observations during baseline gray fox surveys (Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results). There were no clear photographs of fisher captured at the potential gray fox dens monitored with cameras. Of the 33 baited camera stations; nine stations had fisher.

Lynx

Lynx is not considered a SAR in Ontario (ESA 2007) and were redesignated as “not at risk” in Canada in 2001 and classified as secure in 2010 by the General Status of Species in Canada (Environment and Natural Resources 2014). Population trends, harvesting statistics and information gathered from harvest specimens report a stable or increasing population (Environment and Natural Resources 2014). While the population is currently stable and not of concern, some of the threats facing the Lynx include residential and commercial areas, transportation and service corridors, and human interference (Vashon 2016).

There were a total of 14 Canada lynx observations. Eleven of these observations took place at the baited camera stations (Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results). Of the 33 baited camera stations, 8 captured clear photographs of lynx. There were three Canada lynx observed incidentally, one pair was observed and one was observed individually. The three incidental observations took place on the side of the road.

Coyote

The coyote is not considered a SAR in Ontario (ESA 2007) or Canada (SARA 2016) and their population is currently stable and increasing in Ontario and Canada. It has been identified as least concern by the IUCN Red List. Coyote population densities vary with climate, food abundance and geographically. There are currently no major threats to the coyote populations as they tend to adapt to most habitats, including urban areas (Kays 2020).

There was a total of 15 coyote observations during the baseline gray fox surveys. These observations took place at baited stations in different forest types (Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results). Of the 33 cameras deployed, 4 captured clear photographs of coyotes. These four cameras were in different habitats: poplar dominated, balsam fir dominated, jack pine dominated and a red pine stand. There were no photographs of coyote on the potential gray fox den cameras.

Raccoon

The raccoon is not considered a SAR in Ontario (ESA 2007) or Canada (SARA 2016) and is currently increasing in population. It has been identified by the IUCN Red List as least concern. The northern raccoon is common and quite adaptable to the human environment. Populations are increasing in suburban areas. Threats facing the species include transportation and service corridors and hunting and trapping (Timm et al 2016).

A report provided by Lac des Mille Lacs First Nation notes increases in racoon sightings which may disturb trapping in the area. The report suggests racoons are now able to survive winters in Northern Ontario due to climate change (Lac des Mille Lacs First Nation 2023). There were nine raccoon observations during the baseline gray fox surveys. These observations took place at baited stations. Almost all the observations were in mixed forest, with only one observation taking place in a black spruce stand. There were no photographs of raccoon on the potential gray fox den cameras.

Skunk

The skunk is not considered a SAR in Ontario (ESA 2007) or Canada (SARA 2016) and their population is currently stable. In Ontario and Canada It is identified as least concern by the IUCN Red List. Due to a reduction in top predator populations, alterations to land use and reduced skunk harvest, populations have increased in most regions in recent years. Current threats facing the skunk population include droughts and temperature extremes and pollution (Helgen & Reid 2016).

There were a total of seven skunk observations during baseline gray fox surveys. The observations that took place at baited stations were in mixed forest habitat, this was a total of five observations between three stations. The other two observations took place on the potential gray fox den cameras.

3.2.1.3 Bats

There are eight species of bats that occur in Ontario: little brown myotis, northern myotis, eastern small-footed myotis (*Myotis leibii*), tri-colored bat (*Perimyotis subflavus*), big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), silver-haired bat (*Lasionycteris noctivagans*), and hoary bat (*Lasiurus cinereus*) (Naughton 2012). The eight species are insectivorous bats (Naughton 2012). Little brown myotis, northern myotis, eastern small-footed myotis and tri-colored bat are designated as endangered under the provincial ESA, while little brown myotis, northern myotis and tri-colored bat are also designated as endangered under the federal SARA (SARA 2016).

Six species have ranges that are known to overlap with the study area: little brown myotis, northern myotis, silver-haired bat, eastern red bat, hoary bat, and big brown bat (Humphrey and Fotherby 2019; Naughton 2012; Mills et al. 2013). The study area is beyond the known range of the eastern small-footed myotis (Humphrey 2017). Tri-colored bat may also occur in the study area, although the northern and western range limit of this species is not well understood (Layng et al*.* 2019; Mills et al. 2013).

The results of the bat habitat screenings and field surveys are discussed below.

Population Status and Distribution Little Brown Myotis and Northern Myotis

Until recently, little brown myotis and northern myotis have been common throughout much of Canada and the United States. It is thought that the Canadian population of each *Myotis* species was over one million individuals prior to the arrival of WNS in eastern Canada in the winter of 2009/2010 (COSEWIC 2013). WNS, a disease caused by a fungus and affects hibernating bats, was first discovered in North America in 2006. Mortality from WNS is thought to be caused by wing lesions leading to dehydration, emaciation and ultimately death (ECCC 2018). WNS is the most significant threat to little brown myotis and northern myotis and has been recorded in Ontario, Saskatchewan, Manitoba, Quebec, Newfoundland and Labrador, New Brunswick, Nova Scotia, and Prince Edward Island, in Canada (CWHC 2022). It is estimated that WNS killed between 5.7 and 6.7 million bats in eastern North American from 2006 to 2012. In hibernacula in Ontario, it is estimated that little brown and northern myotis populations have declined by 93% from winter 2009/2010 to 2012 (COSEWIC 2013). The overall abundance of little brown myotis in maternity colonies in Ontario has decreased by 71% from 2009/10 to 2012. Current global populations of little brown myotis populations are unknown, but it is estimated that they are likely exceeding 100,000 individuals. Likely due to their range and habitat requirements, northern myotis are less common than little brown myotis in Canada, though population size is unknown (ECCC 2018).

Evidence suggests that survival rates of little brown myotis and northern myotis are increasing in areas where WNS is present. Although individuals are surviving WNS infections, this evidence does not support a positive population growth trend (ECCC 2018).

In addition to WNS, other severe threats to the population and distribution of bats include habitat loss and, direct disturbance or harm to individuals. Housing, commercial, and industrial areas where renovations, demolition and building alteration occurs may evict and eliminate access to bats. This results in roosting and overwintering habitat loss. In addition to habitat loss through the removal or alteration of anthropogenic structures, loss of foraging and natural roosting habitat for agriculture purposes also threatens bat species. Oil and gas drilling outside of hibernacula can cause changes to the suitability of overwintering features if entrances or airflow passages collapse, flooding or changes in microclimatic conditions occur. Rehabilitation activities at old mine sites can also result in hibernacula loss. Additionally, wind farms pose a risk to bats through direct collision with turbine blades or barotrauma through air pressure changes. In 2013, it was estimated that 47,400 bats are killed each year from wind turbines, with little brown myotis accounting for 13% of the documented mortalities (ECCC 2018).

Little brown myotis and northern myotis mate during the late summer/autumn swarming periods (COSEWIC 2013). Female bats may produce young during their first year, but males do not breed until the end of their second summer (Saunders 1988). Little brown myotis and northern myotis breed every year during their lives (COSEWIC 2013). Females store sperm and ovulate in the spring. One pup is born after a 44 to 60-day gestation period (usually late June or early July) (COSEWIC 2013).

Habitat Selection and Foraging Little Brown Myotis and Northern Myotis

Habitat for the SAR bats is composed of hibernacula for overwinter survival and suitable foraging areas within commuting range to structures used for roosting or maternity colonies during the spring to autumn (COSEWIC 2013). Both species of bats will use old growth forest habitat for summer home ranges as this land cover provides abundant snags for roosting and a closed canopy, which is ideal for foraging bats (COSEWIC 2013). Northern myotis in Nova Scotia and British Columbia selected home ranges with higher density of snags and large diameter trees (Sasse and Pekins 1996; Broders et al. 2006). Abandoned buildings are also used for roosting.

Little brown myotis and northern myotis will generally hibernate in caves, rock outcrops and abandoned mine shafts during the winter months. Overwintering bats require certain temperature (little brown myotis: -4-13°C; northern myotis: 0.6-14°C) and humidity conditions, which limits the availability of suitable hibernacula sites (Webb et al. 1996). The quality and quantity of nearby autumn foraging habitat may influence the selection of hibernacula sites (Raesly and Gates 1987).

3.2.1.3.1 Species at Risk Bat Maternity Roost Habitat

3.2.1.3.1.1 Maternity Roost Habitat Screening

During the summer, bats occupy a variety of day and night roosts including buildings and cavity trees (Gerson 1984; MNR 2011a; ECCC 2018). Little brown myotis and northern myotis are not habitat specialists and have been documented in a wide variety of coniferous and deciduous forest types (COSEWIC 2013). Maternity roost sites for little brown myotis are typically in buildings, under bridges, in rock crevices, or in cavities in tall, large-diameter trees that are in the early to middle stages of decay (COSEWIC 2013). Northern myotis typically roost in cavities in tall, large-diameter trees that are in the early to middle stages of decay, but are also known to occasionally roost in human made structures (COSEWIC 2013). Although there is considerable variation in the species of trees in which these bats roost, Lacki et al. (2007) most often identified little brown myotis roosts in large trembling aspen, but also in white spruce and red spruce (*Picea rubra*). Olson and Barclay (2013) found the majority of roosts in large diameter trembling aspen or balsam poplar.

In the boreal forest and northward into the Hudson Bay lowlands, the predominance of small-diameter conifers may limit the number of suitable bat roosts for cavity roosting species including little brown myotis and northern myotis (Thomas and Jung 2019). Studies indicate that little brown myotis and northern myotis are not likely to travel far (1 to 2 km maximum) from their maternity roosts for feeding when young are present (ECCC 2018; Henry et al. 2002). Insectivorous bats generally prefer to forage near waterbodies where aerial insects are more abundant (Thomas and Jung 2019). The young are born in June and by late July or August the nursery colonies are abandoned for other roosts (Fenton 1969; Gerson 1984).

In the study area, deciduous trees such as trembling aspen and white birch are the primary tree species that are likely to provide sufficiently large cavities required by little brown myotis and northern myotis females with pre-volant young (Psyllakis and Brigham 2006; Willis et al. 2006; Park and Broders 2012). Bats that roost in tree cavities have less fidelity to roost sites than species that roost in buildings or caves (Lewis 1995).

Suitable maternity roost habitat for northern myotis and little brown myotis was identified in the study area through ecosite mapping using FRI data. Where FRI ecosite classification differed from ecosites classified during the baseline field work, the field verified classification was accepted and the mapping was updated. Maternity roost habitat is widespread and abundant within the LSA and is located along each of the route alternatives.

There is a total of 54,697 ha of maternity roost habitat within the LSA. The area of maternity roost habitat for each route alternative is provided in Table 3.2-5. The distribution of maternity roost habitat is illustrated on Figure 2.4-1 in Attachment 6.4-A-1.

Table 3.2-5: Species at Risk Bat Maternity Roost Habitat in the Local Study Area

Grouping	Alternative Routes	Area of Maternity Roost Habitat (ha)[(a)]
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	6,380
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	8,153
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-1	4,846
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-2	5,224
Group 2 (Node 1 to Node 3)	Alternative Route 1	14,501
Group 2 (Node 1 to Node 3)	Alternative Route 1C	14,103
Group 3 (Node 3 to Node 5)	Alternative Route 2A	2,540
Group 3 (Node 3 to Node 5)	Alternative Route 2B	3,236
Group 3 (Node 3 to Node 5)	Alternative Route 2C	3,228
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	9,184
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	9,020
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	9,458

a) Total area (54,680 ha) does not equal the sum of the areas of all alternatives because of overlapping habitat located along more than one alternative.

3.2.1.3.1.2 Bat Maternity Season Acoustic Surveys

Passive acoustic surveys were conducted at 25 stations within potential bat maternity roost habitat in the study area during the maternity seasons of 2022. The bat detector at station BMR-08 malfunctioned and did not collect any data. Data from station BMR25 will not be analyzed at the request of Wabigoon Lake Ojibway Nation for reasons of cultural sensitivity. Acoustic data from the remaining 23 stations is discussed below.

Bat activity was recorded at each of the 23 stations. A total of 19,060 bat passes were recorded at the stations combined. The most commonly recorded species was hoary bat (6,343 passes), followed by silver-haired bat (5,312 passes), big brown bat (1,500), little brown myotis (586), eastern red bat (120 passes), and northern myotis (8). In addition to these six species, several recordings could not be classified to species and were classified as low-frequency unknown species (4,473 passes), undifferentiated myotis species (381 passes), and high-frequency unknown species (337 passes). These recordings could not be classified to species due to poor recording quality (low signal to noise ratio) or ambiguous call characteristics. High-frequency unknown species passes are considered potential SAR bat passes.

Bat Activity by Station

Table 3.2-6 provides a summary of the number of nights surveyed and the total number of passes recorded for the entire maternity roost monitoring period for each species and species group at each acoustic survey station.

Table 3.2-7 provides mean bat passes per night for each survey station.

The number of bat passes recorded by a detector may include multiple passes by the same bat individual and therefore are only indicative of presence/absence, rather than the number of bats that are potentially using the study area. However, the number of bat passes is used as an indication of the level of bat activity at each station.

Overall, bat activity varied greatly between stations. The highest overall bat activity was recorded at stations BMR-04 and BMR-11 with averages of 85.09 and 77.4 total bat passes per night respectively. The majority of bat passes at both stations were hoary bat passes.

The habitat at BMR-04 and BMR-11 was similar. Both stations were located in mature, tiered forests adjacent to a linear disturbance (ROW and gravel road respectively) which may provide a travel corridor.

The lowest overall bat activity was recorded at stations BMR-09 and BMR-13 with averages of 2.46 and 6.37 total bat passes per night. The most commonly recorded species at both stations was silver-haired bat.

Table 3.2-6: Total Bat Passes (all nights combined)

Station	Number of Nights Surveyed	Big Brown Bat	High Frequency Unknown Species	Eastern Red Bat	Hoary Bat	Silver-haired Bat	Low Frequency Unknown Species	Little Brown Myotis	Northern Myotis	Unknown Myotis Species	Total Passes
BMR-1	21	0	1	0	212	135	160	6	0	1	515
BMR-2	30	3	8	2	113	233	80	39	0	19	497
BMR-3	32	751	25	1	292	371	194	309	8	57	2,008
BMR-4	32	202	10	3	1,580	602	286	33	0	7	2,723
BMR-5	32	26	3	3	416	895	363	18	0	5	1,729
BMR-6	30	0	6	3	135	187	114	6	0	0	451
BMR-7	35	2	4	0	80	223	195	13	0	1	518
BMR-9	24	0	0	0	11	27	18	3	0	0	59
BMR-10	19	4	22	0	4	63	44	21	0	54	212
BMR-11	30	181	4	14	1,684	173	218	48	0	0	2,322
BMR-12	33	10	10	0	98	68	63	4	0	34	287
BMR-13	19	5	1	0	16	50	48	0	0	1	121
BMR-14	31	39	1	0	262	199	77	5	0	2	585
BMR-15	25	3	1	0	79	154	173	8	0	8	426
BMR-16	21	4	15	0	40	185	183	4	0	46	477
BMR-17	23	4	16	4	160	116	145	0	0	14	459
BMR-18	32	223	0	2	151	341	236	17	0	2	972
BMR-19	21	26	7	0	249	155	322	0	0	1	760
BMR-20	36	9	15	1	88	320	110	32	0	5	580
BMR-21	34	8	156	83	422	416	1,050	9	0	114	2,258
BMR-22	7	0	0	0	22	66	7	2	0	0	97
BMR-23	23	0	16	4	181	126	135	9	0	5	476
BMR-24	36	0	16	0	48	207	252	0	0	5	528
All Stations Combined	**626**	**1,500**	**337**	**120**	**6,343**	**5,312**	**4,473**	**586**	**8**	**381**	**19,060**

Notes: Some of the numbers are rounded for presentation purposes. Therefore, it may appear that the totals do not equal the sum of the individual values.

BMR = Bat Maternity Roost.

Table 3.2-7: Mean Bat Passes per Night

Station	Number of Nights Surveyed	Big Brown Bat	High Frequency Unknown Species	Eastern Red Bat	Hoary Bat	Silver-haired Bat	Low Frequency Unknown Species	Little Brown Myotis	Northern Myotis	Unknown Myotis Species	All Species Combined
BMR-1	21	0(0)	0.05(0.22)	0(0)	10.1(11.41)	6.43(7.24)	7.62(7.88)	0.29(0.72)	0(0)	0.05(0.22)	24.52(17.07)
BMR-2	30	0.1(0.31)	0.27(0.52)	0.07(0.25)	3.77(2.5)	7.77(6.11)	2.67(2.41)	1.3(1.02)	0(0)	0.63(0.93)	16.57(9.67)
BMR-3	32	23.47(35.53)	0.78(0.87)	0.03(0.18)	9.13(23.6)	11.59(9.35)	6.06(4.51)	9.66(4.88)	0.25(0.8)	1.78(1.41)	62.75(51.53)
BMR-4	32	6.31(9.23)	0.31(0.59)	0.09(0.3)	49.38(79.6)	18.81(11.82)	8.94(6.09)	1.03(1.2)	0(0)	0.22(0.49)	85.09(81.36)
BMR-5	32	0.81(1.55)	0.09(0.3)	0.09(0.39)	13(13.02)	27.97(23.1)	11.34(9.43)	0.56(0.56)	0(0)	0.16(0.51)	54.03(39.26)
BMR-6	30	0(0)	0.2(0.41)	0.1(0.31)	4.66(2.66)	6.23(5.81)	3.8(2.44)	0.2(0.48)	0(0)	0(0)	15.03(7.63)
BMR-7	35	0.06(0.24)	0.11(0.32)	0(0)	2.29(1.41)	6.37(4.77)	5.74(4.69)	0.37(0.65)	0(0)	0.03(0.17)	14.8(8.82)
BMR-9	24	0(0)	0(0)	0(0)	0.46(0.78)	1.13(1.33)	0.75(0.94)	0.13(0.34)	0(0)	0(0)	2.46(1.72)
BMR-10	19	0.21(0.54)	1.16(1.57)	0(0)	0.21(0.54)	3.32(2.71)	2.32(2.81)	1.11(1.1)	0(0)	2.84(1.92)	11.16(6.54)
BMR-11	30	6.03(14.09)	0.13(0.35)	0.47(1.33)	56.13(54.96)	5.77(4.5)	7.27(6.31)	1.6(2.16)	0(0)	0(0)	77.4(69.49)
BMR-12	33	0.3(0.81)	0.3(0.98)	0(0)	2.97(2.66)	2.06(2.12)	1.91(1.68)	0.12(0.33)	0(0)	1.03(3.76)	8.7(6.31)
BMR-13	19	0.26(0.56)	0.05(0.23)	0(0)	0.84(1.54)	2.63(2.67)	2.53(2.06)	0(0)	0(0)	0.05(0.23)	6.37(5.08)
BMR-14	31	1.26(1.57)	0.03(0.18)	0(0)	8.45(8.2)	6.42(5.61)	2.48(1.9)	0.16(0.45)	0(0)	0.06(0.25)	18.87(12.67)
BMR-15	25	0.12(0.33)	0.04(0.2)	0(0)	3.16(4.36)	6.16(3.98)	6.92(5.48)	0.32(0.56)	0(0)	0.32(0.48)	17.04(10.85)
BMR-16	21	0.19(0.51)	0.71(0.9)	0(0)	1.9(2.1)	8.81(7.45)	8.71(9.47)	0.19(0.6)	0(0)	2.19(2.11)	22.71(17.09)
BMR-17	23	0.17(0.39)	0.7(0.82)	0.17(0.58)	6.96(5.4)	5.04(3.71)	6.3(4.46)	0(0)	0(0)	0.61(0.72)	19.96(10.32)
BMR-18	32	6.97(12.37)	0(0)	0.06(0.25)	4.72(6.52)	10.66(9.45)	7.38(7.5)	0.53(1.14)	0(0)	0.06(0.25)	30.38(28.75)
BMR-19	21	1.24(1.14)	0.33(0.66)	0(0)	11.86(10.79)	7.38(6.34)	15.33(13.23)	0(0)	0(0)	0.05(0.22)	36.19(26.55)
BMR-20	36	0.25(0.55)	0.42(0.91)	0.03(0.17)	2.44(2.17)	8.89(6.36)	3.06(2.65)	0.89(2.07)	0(0)	0.14(0.49)	16.11(9.52)
BMR-21	34	0.24(0.55)	4.59(4.68)	2.44(5.21)	12.41(9.24)	12.24(12.75)	30.88(23.28)	0.26(0.62)	0(0)	3.35(2.75)	66.41(46.7)
BMR-22	7	0(0)	0(0)	0(0)	3.14(4.49)	9.43(5.62)	1(1.53)	0.29(0.49)	0(0)	0(0)	13.86(6.54)
BMR-23	23	0(0)	0.7(0.76)	0.17(0.58)	7.87(6.35)	5.48(3.88)	5.87(4.12)	0.39(0.5)	0(0)	0.22(0.42)	20.7(10.8)
BMR-24	36	0(0)	0.44(0.69)	0(0)	1.33(1.43)	5.75(6.22)	7(5.9)	0(0)	0(0)	0.14(0.42)	14.67(11.61)

Notes: Some of the numbers are rounded for presentation purposes. Therefore, it may appear that the totals do not equal the sum of the individual values.

BMR = Bat Maternity Roost.

Species at Risk Bats

SAR bats were recorded at all acoustic survey stations where data was collected. Little brown myotis and northern myotis were confirmed to be present in the study area. Little brown myotis was recorded throughout the study area, whereas northern myotis was only confirmed to be present at one station. Additional SAR and potential SAR bat passes were classified as undifferentiated myotis and high-frequency unknown species.

For all stations combined, the highest SAR or potential SAR activity levels were for little brown myotis (586 passes), followed by undifferentiated myotis species (381 passes), high-frequency unknown species (337 passes), and northern myotis (8 passes). Based on the data, it can be inferred that the majority of undifferentiated myotis passes, and the high-frequency passes are most likely little brown myotis passes. However, it cannot be ruled out that northern myotis passes were included in the undifferentiated myotis category, and it cannot be ruled out that northern myotis or eastern red bat (non-SAR) passes were included in the high-frequency unknown species category.

Table 3.2-8 provides total SAR bat passes/station for the survey period, and the maximum nightly high count of SAR and potential SAR bat passes.

Table 3.2-8: Total Passes and Nightly High Passes for Species at Risk and Potential Species at Risk Bats

Station	Total Unknown High Frequency	Max Unknown High Frequency	Total Little Brown Myotis	Max Little Brown Myotis	Total Northern Myotis	Max Northern Myotis	Total Unknown Myotis Species	Max Unknown Myotis Species
BMR-1	1	1	6	3	0	0	1	1
BMR-2	8	2	39	4	0	0	19	4
BMR-3	25	3	309	21	8	4	57	5
BMR-4	10	2	33	5	0	0	7	2
BMR-5	3	1	18	2	0	0	5	2
BMR-6	6	1	6	2	0	0	0	0
BMR-7	4	1	13	2	0	0	1	1
BMR-9	0	0	3	1	0	0	0	0
BMR-10	22	6	21	3	0	0	54	8
BMR-11	4	1	48	9	0	0	0	0
BMR-12	10	5	4	1	0	0	34	20
BMR-13	1	1	0	0	0	0	1	1
BMR-14	1	1	5	2	0	0	2	1
BMR-15	1	1	8	2	0	0	8	1
BMR-16	15	3	4	2	0	0	46	8
BMR-17	16	2	0	0	0	0	14	2
BMR-18	0	0	17	4	0	0	2	1
BMR-19	7	2	0	0	0	0	1	1
BMR-20	15	4	32	9	0	0	5	2
BMR-21	156	21	9	3	0	0	114	11
BMR-22	0	0	2	1	0	0	0	0
BMR-23	16	2	9	1	0	0	5	1
BMR-24	16	2	0	0	0	0	5	2

BMR = Bat Maternity Roost.

Based on the habitat assessment and the bat acoustic data, there is maternity roost habitat for little brown myotis throughout the study area. Northern myotis was only confirmed to be present at one acoustic monitoring station (BMR-03). However, obtaining diagnostic recordings of this species is difficult because there is high overlap between the call characteristics of northern myotis and little brown myotis, and northern myotis vocalizations are quiet and high frequency (Thorne et al. 2021). Therefore, a portion of the unknown myotis species passes may have been northern myotis vocalizations which lacked diagnostic characteristics.

3.2.1.3.1.3 Rapid Bat Maternity Roost Habitat Characterization

Rapid bat maternity roost habitat characterization was conducted at each bat acoustic monitoring stations, consisting of a habitat description and three cavity tree density plots. The results of the rapid bat maternity roost habitat characterization are provided in Table 3.2-9.

Table 3.2-9: Cavity Tree Density Plot Results

Station ID	Number of Cavity Trees/ Circle Plots (12.6 m radius)	Number of Cavity Trees Observed	Cavity Tree Density/ha	Habitat Description
BMR-1	3	3	20	• Immature open-canopy upland mixed forest dominated by black ash. Surrounding forest was semi-mature black ash, trembling aspen (*Poplus tremuloides*) and white spruce.
BMR-2	3	1	6.7	• Tiered, open clearing dominated by balsam fir and white birch. This rocky outcropping and mixed forest contains minimal standing cavity trees. The detector was deployed at the top of a ridge.
BMR-3	3	2	13.3	• Tiered and cluttered mixed forest dominated by spruce and birch. The site is on an electrical transmission corridor adjacent to a pond. The detector was deployed on top of a rocky slope.
BMR-4	3	3	20	• Tiered, cluttered mixed forest dominated by jack pine, poplar, and spruce.
BMR-5	3	5	33.3	• Tiered coniferous forest comprised of 80% jack pine and 20% poplar. Detector was deployed at the edge of a clear cut.

Station ID	Number of Cavity Trees/ Circle Plots (12.6 m radius)	Number of Cavity Trees Observed	Cavity Tree Density/ha	Habitat Description
BMR-6	3	0	0	• Open even aged young birch forest. Old cut, less than 10 years old. Clearing in the distance appears to have a few large trees and some old cavity trees. The site was about 500 m from a lake in the eastern direction.
BMR-7	3	3	20	• Forest clearing that is dominated by grass with sparse large trees.
BMR-8	3	2	13.3	• Located on ridge on the side of the road. The site is an even-aged, open uniform deciduous forest. Rocky outcrop along side of a gravel road.
BMR-09	3	11	73.3	• Tiered, cluttered mixed forest comprised of large aspen, black spruce, balsam fir, and paper birch. The understorey is mainly comprised of Manitoba maple.
BMR 10	3	2	13.3	• Tiered, open mature mixed forest comprised of trembling aspen and balsam fir.
BMR-11	3	0	0	• Tiered, cluttered upland forest dominated by balsam fir. Site is adjacent to a gravel road.
BMR-12	3	6	40	• Low lying forest opening with large trees. Wet open canopy mixed forest with spruce, balsam fir, and aspen. Moist soils.
BMR-13	3	3	20	• Linear trail with an open canopy surrounded by large trees. The canopy is comprised of trembling aspen and white spruce.

Station ID	Number of Cavity Trees/ Circle Plots (12.6 m radius)	Number of Cavity Trees Observed	Cavity Tree Density/ha	Habitat Description
BMR-14	3	3	20	• Located along a ridge adjacent to an electricity transmission corridor. The corridor features large trees and rock structure. This mixed forest is dominated by balsam fir, spruce, and trembling aspen.
BMR-15	3	0	0	• Located along the top of a rocky ridge. The mixed forest was dominated by balsam fir, trembling aspen, jack pine, black spruce, and red maple.
BMR-16	3	5	33.3	• Mature forest dominated by large aspen trees. The dominate species was bigtooth aspen followed by trembling aspen and mountain maple.
BMR-17	3	0	0	• Tiered and cluttered mixed forest atop a rocky ridge.
BMR-18	3	1	6.7	• Located along an electricity transmission corridor adjacent to a rocky feature. The mixed forest present was dominated by large spruce and aspen trees.
BMR-19	3	2	13.3	• Tiered and cluttered mixed forest along a rocky ridge. The mixed forest was dominated by birch and aspen.
BMR-20	3	2	6.7	• Tiered and cluttered mixed forest dominated by spruce and aspen with some pine trees.
BMR-21	3	0	0	• Tiered and cluttered mixed forest dominated by balsam fir, aspen and spruce trees.
BMR-22	3	3	20	• Even-aged and cluttered mixed forest dominated by large paper birch and pine trees.
BMR-23	3	2	13.3	• Tiered and cluttered forest surrounding open water.
BMR-24	3	0	0	• Linear clearing through mixed forest dominated by aspen with some spruce trees.

Station ID	Number of Cavity Trees/ Circle Plots (12.6 m radius)	Number of Cavity Trees Observed	Cavity Tree Density/ha	Habitat Description
BMR-25	3	0	0	• Even-aged and cluttered balsam fir dominated forest with some white birch present.
Average	**3**	2.4	15.5	• n/a

BMR = Bat Maternity Roost.

Cavity tree density ranged from 0 to 73.3 cavity trees/ha. The average cavity tree density for all stations combined was 15.5/ha.

3.2.1.3.1.4 *Bat Maternity Colony Significant Wildlife Habitats*

The screening of SAR bat maternity roost habitat encompasses ecosites considered candidate bat maternity colony SWH for silver-haired bats (*Lasionycteris noctivagans*) and big brown bats (*Eptesicus fuscus*) and are most often located in mature (dominant trees >80 years old) deciduous or mixed forest stands with >10/ha large diameter (>25 cm DBH) wildlife trees (MNRF 2017a). Based on this definition, candidate SWH of this type would represent a sub-set of the SAR bat maternity colony habitats identified in the LSA (see Table 3.2-5), as the analysis of bat maternity colony habitats for SAR was more conservative (i.e., included all forests and swamps; not restricted to forests only of a certain age class).

3.2.1.3.2 Bat Hibernation Habitat

3.2.1.3.2.1 *Bat Hibernacula Visual Assessments*

Twenty-nine desktop candidate bat hibernacula stations were visually assessed during the 2020 and 2022 baseline surveys (Table 2.4-5), and a total of 10 features were identified as having low or moderate hibernacula potential as follows:

- Andowan (AMIS feature 79976): open exposed shaft with boulders and waste rock in front of entrance with no discernible airflow, low potential;
- Big Six (AMIS feature 85971): open shaft with vertical rock faces and fissures and unknown airflow, low potential;
- Eye Lake (AMIS feature 85973): large adit cut in cliff face, blocked by concrete with 1 m x 0.15 m opening with no discernible airflow, low potential;
- Eye Lake (AMIS feature 85974): large adit cut into cliff face, blocked by concrete with 1.5 m x 0.5 m opening and light, cool airflow, moderate potential;

- Gorham (AMIS feature 85784): large adit cut into rockface with waste rock in front of entrance and no discernible airflow, low potential;
- Lakeshore Ridge 1A: Bedrock ridge with opening approximately 1.5 m by 0.75 m with no discernible airflow, depth unknown low potential;
- Lakeshore Ridge 1B: Bedrock ridge with opening approximately 1 m by 0.3 m, depth of opening unknown with no discernible airflow, low potential;
- Shuniah (AMIS feature 79793): open shaft approximately 4 m by 4 m and unknown depth, not clear if shaft has been back-filled, no discernible airflow, moderate potential;
- Spillway Inlet: Inlet opening is approximately 2 m by 6 m, inlet is cut into exposed rock cut with flowing water running through opening, forming a stream, moderate potential; and
- Spillway Outlet: Outlet opening is approximately 2 m by 4 m, outlet is cut into exposed rock cut with flowing water running through opening, forming a stream. 95 m directly between inlet and outlet, unsure if spillway runs in straight line, moderate potential.

Additionally, the two features identified as bat hibernacula in the LIO database, Thunderhead (AMIS Site 8495) and Steeprock (AMIS Site 8521), were visually assessed and found to have hibernacula features intact.

One site (Thunder Bay Silver AMIS feature 79821) was not able to be accessed due to land access permissions; therefore, it was assumed to provide a suitable hibernacula site.

Three additional features have been identified hibernacula in the NHIC data: Steeprock WCA-72, Steeprock WCA-79, and Steeprock WCA-81. These features are associated with Alternative Route 2A and are located within one kilometre of each other in an area northwest of Atikokan (Figure 2.4-2 in Attachment 6.4-A-1). The MNRF conducted habitat assessments and bat acoustic surveys at these features in 2012 and determined that they were bat hibernacula. The MNRF's descriptions of these features are provided below:

- Steeprock WCA 72 -Tunnel open; average 30-60 cm water depth; tunnel has 2 openings and water flows into large pond at outlet; private land and active gravel pit at inlet; tunnel runs under highway but depth unknown; songmeter deployed Aug 9/12; 563 files.
- Steeprock WCA 79 -Adit partly backfilled but 1 m opening at top which is obstructed by steel mushroom trays behind backfill; knee deep water; contractors noted a few bats near entrance in Nov 2011; BC04 deployed Aug 8/12; 16 files mostly northern myotis but battery only lasted ~30 minutes so likely more activity.
- Steeprock WCA 81 -Tunnel open; avg 30-60 cm water depth; tunnel has 2 openings and water flows into large pond at outlet; private land and active gravel pit at outlet; tunnel runs under hwy but depth unknown; BC03 deployed Aug 9/12; 361 files.

Information on location, AMIS database feature description, habitat evaluation, hibernacula potential and alternative route location is summarized in (Table 3.2-10).

Table 3.2-10: Bat Hibernacula Study

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[(a)]	Hibernacula Potential after Visual Assessment[(b)]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Andowan, candidate hibernaculum	8538	79976	• 2020 Assessment; open shaft incline 2 x 2 x 5 m cut into bedrock.	• Opening with 2 m x 2 m opening, 5 m deep cut into bedrock. Large boulders and rocks in front of opening. Unknown if adit or shaft. No discernible airflow, opening very exposed.	• Semi-open canopy, mature mixed upland forest dominated by balsam poplar, jack pine and white spruce. 30 m from rock outcrop on existing right-of-way.	n/a	Low	2020	Yes	1
Andowan Control, activity control	n/a	n/a	n/a	n/a	• Activity control approximately 120 m northeast of Andowan candidate station. Semi-open canopy, mature mixed upland forest dominated by balsam poplar, jack pine and white spruce. 30 m from rock outcrop on existing right-of-way.	n/a	n/a	n/a	Yes	1
Big Six, candidate hibernaculum	8504	85971	• 2000 Assessment; shaft is open and unlined. Walls consist of vertical rock faces. Shaft appears to be dry at bottom. Low log walls have been constructed around shaft collar. These walls are 1 m high. Plastic snow fence partially collapsed has been affixed to these walls. A 7 x 7 x 2 m chain link fence enclosure surrounds the shaft. Plywood signage on fencing has faded and is now unreadable.	• Shaft with opening dimension of 3 m x 2 m. Fissures are present but no additional passageways seen. Feature entirely fenced in, no recent disturbance.	• Young to mid-aged upland mixed forest dominated by balsam fir, mountain ash, mountain maple, white birch, and trembling aspen with some understorey cover. Air space above the feature is relatively open canopy.	n/a	Low	2020	Yes	2B

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[(a)]	Hibernacula Potential after Visual Assessment[(b)]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Big Six Control, activity control	n/a	n/a	n/a	n/a	• Activity control approximately 100 m north of Big Six candidate station. • Young to mid-aged upland mixed forest dominated by balsam fir, mountain ash, mountain maple and white birch, with some understorey cover. Air space above detector deployment is relatively open canopy.	n/a	n/a	n/a	Yes	2B
Eye Lake, candidate hibernaculum	8517	85973	• 2000 Assessment; adit is 8-10 m lower in elevation than pit-1. Adit is cut into west side of rock cliff. Waste rock pile extends 10 m to west almost to lake shore. Adit portal is cemented. Area in front of portal is flat, dry and covered with leaves and waste rock. The length of the adit is unknown.	• Large adit in cliff face, west facing, blocked by concrete with 1 m x 0.15 m opening along ground. Cannot see inside. No discernible airflow. Approximately 15 m from opening of Eye Lake 85974.	• Semi-closed canopy, mid-aged upland mixed forest. Dominantly balsam fir, eastern white cedar, and white birch. Feature approximately 40 m from shoreline of Eye Lake.	n/a	Low	2020	Yes	2B
Eye Lake, candidate hibernaculum	8517	85974	• 2000 Assessment; adit is cut into west cliff face with concrete, but a 0.3 m gap exists below the portion of the concrete. The gap is caused by slumping waste rock.	• Adit mostly sealed with concrete, with 1.5 m x 0.5 m opening. Adit in cliff face, west facing. Can only see approximately 3 m horizontally, but adit then turns sharply vertical. Depth unknown. Light, cool airflow. Guano seen on rock outside entrance in 2020. Approximately 15 m from opening of Eye Lake 85973.	• Semi-closed canopy, mid-aged upland mixed forest. Dominantly balsam fir, Eastern white cedar, and white birch. Feature approximately 40 m from shoreline of Eye Lake.	n/a	Moderate	2020	Yes	2B

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[a]	Hibernacula Potential after Visual Assessment[b]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Eye Lake Control, activity control	n/a	n/a	n/a	n/a	• Activity control approximately 78-88 m north of Eye Lake candidate stations. Semi-closed canopy, mid-aged upland mixed forest on slope of partially exposed bedrock. Dominated by balsam fir, white birch, and trembling aspen with variable understorey growth. Station approximately 45 m from shoreline of Eye Lake.	n/a	n/a	n/a	Yes	2B
Gorham, candidate hibernaculum	8496	85784	• 2000 Assessment; adit portal filled and obscured by muck and rubble. The only feature remaining is a trench and muck pile extending in front of the adit. The length of the adit is unknown.	• Filled in adit with trench east of former opening. Adit area appears to be bedrock cut with rock filling the adit opening. Rocks are moss covered with small openings between rocks and tree roots, and no discernible airflow.	• Semi-closed canopy, mid-aged mixed forest dominated by balsam fir, trembling aspen, balsam poplar, and white birch. Linear road cut/trail nearby.	n/a	Low	2022	Yes	1
Gorham Control, activity control	n/a	n/a	n/a	n/a	• Activity control approximately 120 m north of Gorham candidate station. Semi-closed canopy, mid-aged mixed forest dominated by balsam fir, trembling aspen, and white birch with a linear opening in forest nearby.	n/a	n/a	n/a	Yes	1

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[a]	Hibernacula Potential after Visual Assessment[b]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Lakeshore Ridge (1A), candidate hibernaculum	n/a	n/a	n/a	• Bedrock ridge with opening approximately 1.5 m by 0.75 m with no discernible airflow. Depth unknown. Potentially secondary access 15 m above feature opening on bedrock ridge.	• Mature semi-closed canopy mixed forest, dominantly white spruce, white birch, red pine, balsam fir, and trembling aspen. Feature approximately 45 m from lakeshore. Feature on a long bedrock ridge running parallel with lakeshore.	n/a	Low	2022	Yes	2A
Lakeshore Ridge (1B), candidate hibernaculum	n/a	n/a	n/a	• Bedrock ridge with opening approximately 1 m by 0.3 m with no discernible airflow. Depth of opening unknown. Potentially secondary access within bedrock wall face, just below main feature.	• Mature semi-closed canopy mixed forest, dominantly Eastern white cedar, trembling aspen, and red pine. Feature 70 m from lakeshore. Feature on a long bedrock ridge running parallel with lakeshore.	n/a	Low	2022	Yes	2A
Lakeshore Control, activity control	n/a	n/a	n/a	n/a	• Activity control approximately 55 m east of Lakeshore 1A candidate station and 50 m west of Lakeshore 1B candidate station. Mature semi-closed canopy mixed forest, dominantly Eastern white cedar, trembling aspen, and red pine. Feature 70 m from lakeshore. Feature on a long bedrock ridge running parallel with lakeshore.	n/a	n/a	n/a	Yes	2A

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[a]	Hibernacula Potential after Visual Assessment[b]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Shuniah, candidate hibernaculum	8429	79793	• 2000 Assessment; interpreted location of shaft marked by shallow depression in ground surrounded by mine rock dump. Also remnants of slush concrete collar and timbers. Shaft presumed to be filled in.	• Open shaft approximately 4 m by 4 m and unknown depth, not clear if shaft has been back-filled. Shaft appears to go straight down, potentially changing direction, with some pooling water where shaft changes direction. No apparent airflow. Shaft inaccessible to public due to fencing. Located within a public-use mountain bike trail system.	• Semi-closed canopy conifer dominant upland forest, dominated by balsam fir and balsam poplar.	n/a	Moderate	2022	Yes	1B-1
Shuniah Control, activity control	n/a	n/a	n/a	n/a	• Activity control approximately 105 m west of Shuniah candidate station. Semi-closed canopy conifer dominant upland forest, dominated by balsam fir and balsam poplar.	n/a	n/a	n/a	Yes	1B-1
Spillway Inlet, candidate hibernaculum	n/a	n/a	n/a	• Inlet opening is approximately 2 m by 6 m. Inlet is cut into exposed rock cut with flowing water running through opening, forming a stream.	• Rock cut surrounded by young mixed forest consisting of red pine, jack pine, balsam fir, balsam poplar, mountain maple and Eastern white cedar surrounding the inlet with areas of exposed bedrock. Area surrounding the inlet has open air space with no closed canopy. The draining area downstream of the adjacent waterbody consists of robust emergents and shrubs including willows and cattails. Approximately 40 m from lakeshore.	n/a	Moderate	2022	Yes	2A, 2B

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[(a)]	Hibernacula Potential after Visual Assessment[(b)]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Spillway Inlet Control, activity control	n/a	n/a	n/a	n/a	• Activity control approximately 110 m north of Spillway Inlet candidate station. Opening in semi-mature mixed forest consisting of red pine, balsam fir, Eastern white cedar, and trembling aspen. Some exposed bedrock. Approximately 44 m from lakeshore.	n/a	n/a	n/a	Yes	2A, 2B
Spillway Outlet, candidate hibernaculum	n/a	n/a	n/a	• Outlet opening is approximately 2 m by 4 m. and cut into exposed bedrock with flowing water running through opening, forming a stream.	• Closed canopy semi-mature mixed forest consisting of balsam fir, trembling aspen, white birch, and mountain maple. Exposed bedrock and boulders surrounding outlet near road.	n/a	Moderate	2022	Yes	2A, 2B
Spillway Outlet Control, activity control	n/a	n/a	n/a	n/a	• Activity control approximately 350 m northwest of Spillway Outlet candidate station. Closed canopy semi-mature mixed forest consisting of balsam fir, trembling aspen, white birch, and mountain maple, near road.	n/a	n/a	n/a	Yes	2A, 2B

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[a]	Hibernacula Potential after Visual Assessment[b]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Steeprock, Reference Atikokan Region	8521	n/a	• No description found in AMIS database.	• Adit entrance with a bat gate and cool air flow. Adit faces an old rail bed clearing running east west. Pooled shallow open water located approximately 30 m from adit opening.	• Feature cut into bedrock with open airspace above the feature and sparse young white birch and mountain maple in front of entrance. Surrounding forest consist of mature mixed upland forest, dominated by Eastern white cedar and white birch. Trembling aspen, balsam fir, white spruce and red pine were also observed in surrounding forests.	• Entrance mostly blocked by timbers but ~1m opening at top; opposite end has similar sized openings; tunnel inside has ~10 m ceilings similar to west tunnel; songmeter deployed Aug 8 & 9/12; 1800 files in 2 nights. LARGE HIBERNACULA.	Confirmed	2022	Yes	2A, 2B
Thunderhead, Reference Thunder Bay Region	8495	79904	• 2000 Assessment; open adit 80 m in length, 1 m wide and 2 m high. Adit is next to and trends underneath a main road.	• Approximately seven to eight foot by nine-foot adit opening. Extends east under Hazelwood Drive, unclear how deep. Cool airflow. Good wall texture and timbers for bats. Pooling water in some areas on floor of feature.	• Semi-open canopy, mid-aged mixed forest dominated by white birch and balsam poplar. Balsam fir, trembling aspen and white spruce were also observed on-site. Small flowing creek 14 m from feature.	• Site surveyed on Aug 20/11 by Lesley Hale and Jeff Black. Adit is open and not gated; easy access; reported to be 80 m long in AMIS so extends underneath road; likely commonly accessed by public and residential homes nearby. Bat detector BC02 deployed Aug 20-21 (2 nights); 80 files; weather 5-13° wind 4-7 km/hr clear	Confirmed	2022	Yes	1

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[(a)]	Hibernacula Potential after Visual Assessment[(b)]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Thunder Bay Silver	8449	79821	• Feature not reported in the year 2000 survey.	• Not surveyed by Golder, due to lack of land access permission.	n/a	n/a	Unknown	Not Assessed - No land access permission	No	1B-1, 1B-2
Features ruled out at desktop after habitat assessment										
Agnico Eagle	8513	79929	• Feature not reported in the year 2000 survey.	• No feature found. Surrounding area is middle-aged to mature forest with no clear signs of shaft/adit/ disturbance.	n/a	n/a	None	2022	No	n/a
Andowan	8538	79975, 79977	• 79977 - 2000 Assessment; old shaft 2 m east of shaft 1, the shaft is cut into bedrock at the base 10 x 10 x 1 m dump, water filled to immediate below-ground level. 79975 - 2000 Assessment; shaft cut into outcrop, small rock dump 10 x 10 x 1 m for two shafts, water filled to 0.25 m of surface.	• Openings completely filled with water.	n/a	n/a	None	2020	No	n/a
Big Six	8504	85972	• 2000 Assessment; shaft has been completed filled with waste rock. Site consists of waste rock pile, partially overgrown which has been disturbed some years ago by backhoe or dozer. Former shaft appears to have been at the north end of the waste rock pile.	• Adit is filled in with waste rock. No openings apparent.	n/a	n/a	None	2020	No	n/a
Big Six	8504	79914, 79915	• Feature not reported in the year 2000 survey.	• Adit is backfilled with waste rock, three backfilled depressions.	n/a	n/a	None	2020	No	n/a

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[a]	Hibernacula Potential after Visual Assessment[b]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Canadian Charleson	8534	94951	• 2015 - historical record indicate that a 90-foot shaft was sunk on the property in 1954. No further reference to the shaft appears in the literature and no shaft was reported to have been observed during the 2000 site inspection by DST.	• No feature found. Semi-mature conifer forest with little shrub undergrowth.	n/a	n/a	None	2022	No	n/a
Elizabeth	8533	79964,79965, 79963, 85763	• Feature no reported in the year 2000 survey.	• No evidence of lateral workings, some old ruts around the area, but no recent human disturbance. Site is on top of bedrock area and completely overgrown forest.	n/a	n/a	None	2022	No	n/a
Hydroline Rock Ridge	n/a	n/a	n/a	• Exposed bedrock ridge, with shallow crevices approximately 50 cm deep. No potential as hibernaculum.	n/a	n/a	None	2022	No	n/a
Quinn	8524	79949	• Feature not located in the 2000 site assessment report.	• No feature found. Previously cut block with rutting and 90% coverage of pioneer trees <5 m tall. Active harvesting and hauling in the area.	n/a	n/a	None	2022	No	n/a
Shuniah	8429	79792	• 2000 Assessment; interpreted shaft location marked by a shallow depression in the ground surface surrounded by waste rock dump. Shaft presumed to have been backfilled.	• Feature not found. Surrounding area is heavily used mountain bike trails.	n/a	n/a	None	2022	No	n/a
Shuniah	8429	85867	• Feature not reported in the year 2000 survey.	• Feature not found. Surrounding area is heavily used mountain bike trails.	n/a	n/a	None	2022	No	n/a

Feature Name and Type	AMIS Site	AMIS Feature	Feature Description (AMIS Database)	Feature Evaluation Description (WSP)	Habitat Description (WSP)	Feature Evaluation Description (MNRF)[(a)]	Hibernacula Potential after Visual Assessment[(b)]	Year of Visual Assessment	Acoustic Survey Conducted	Alternative Route
Steeprock Zone C	8521	83781	• Original AMIS record reports this feature as a shaft of unknown depth. 2000 Assessment; shaft, headframe and service building open and accessible. Extensively vandalized and various small amounts of steel scrap litter the area. Headframe building can be accessed to the top with many unprotected decks with openings to lower floors. Shaft is collared. Shaft area can be reached via service openings in the collar.	• No evidence of shaft, very few waste rock piles.	n/a	n/a	None	2022	No	n/a
Thunder Bay Silver	8449	79820	• 2000 Assessment; backfilled shaft, opening marked by area of subsidence and adjacent waste rock pile.	• Filled in with fill, completely flat area with mineral soil exposed. No apparent openings.	n/a	n/a	None	2022	No	n/a
Thunder Bay Silver	8449	85827	• 2000 Assessment; backfilled shaft, position interpreted from depression in ground and adjacent waste rock pile.	• Opening that's been filled in, in large depression, but no access to underground. No clear signs of vertical shaft. Shaft filled in, no apparent opening, bare mineral soil with large boulders on top.	n/a	n/a	None	2022	No	n/a
Thunder Bay Silver	8449	85828	• 2000 Assessment; backfilled shaft, position interpreted from depression in the ground with an adjacent pile of waste rock.	• Shaft back-filled, overgrown forest floor. No apparent openings.	n/a	n/a	None	2022	No	n/a
Thunder Bay Silver	8449	85829	• 2000 Assessment; backfilled shaft, position interpreted from shallow depression in the ground and adjacent waste rock pile.	• Shaft back-filled, overgrown forest floor. No apparent openings.	n/a	n/a	None	2022	No	n/a

a) Feature description known hibernacula from the LIO database.

b) The methods of the Visual Assessment are described in Section 2.4.2.2.2.1

° = degrees; AMIS = Abandoned Mines Information System; cm = centimetre; km = kilometre; km/hr = kilometre per hour; m = metre; MNRF = Ministry of Natural Resources and Forestry.; n/a = not applicable/not available.

3.2.1.3.2.2 Swarming Activity Acoustic Monitoring

In 2022, acoustic monitors were deployed at ten candidate hibernacula features, two features identified as bat hibernacula by the MNRF, and eight activity control stations during the swarming period (early August to late September) (Figure 2.4-2 in Attachment 6.4-A-1). A photo log of the hibernacula monitored in 2022 for the program are included in Attachment 6.4-A-7. A summary of identified species, including the total number of passes recorded for myotis species or groupings (SAR and potential SAR bats), is the provided in Table 3.2-11 for all monitoring stations. Activity levels varied widely between detector stations, from 5 to 4,361 call passes for myotis species or species groupings potentially including myotis species. The only myotis call passes identified to the species level were for little brown myotis and northern myotis bats (at 19 and 11 stations, respectively). Hoary and silver-haired bats call passes were identified at all stations. Big brown bats were identified at seven of the stations and red bats were identified at 15 stations. Since little brown myotis and northern myotis were the only SAR bats identified at the recording stations, potential SAR bat activity, used here as a category, shall include either identified myotis species and groupings that could include these species (i.e., myotis grouping and high frequency grouping).

Table 3.2-11: Acoustic Analysis Summary – Bat Hibernacula Swarming Activity Assessment

Hibernacula Feature Name and Type	AMIS Site	AMIS Feature	Survey recording period (2022)	Other bat species identified[(a)]	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period High Frequency	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period Myotis sp. passes	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period Little Brown Myotis (M. lucifugus)	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period Northern Myotis (M. septentrionalis)	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period Total # Passes
Steeprock, reference station Atikokan region	8,521	n/a	July 31 - September 27	Epfu, Labo, Laci, Lano	148	2,865	1,281	67	4,361
Thunderhead, reference station Thunder Bay Region	8,495	79,904	July 31 -September 25	Labo, Laci, Lano	5	24	2	15	46
Andowan, candidate hibernaculum	8,538	79,976	August 14 – September 24	Labo, Laci, Lano	0	20	12	0	32
Andowan Control, activity control	n/a	n/a	August 14 – September 25	Labo, Laci, Lano	0	19	13	0	32
Big Six, candidate hibernaculum	8,504	85,971	July 31 – September 26	Labo, Laci, Lano	20	56	44	0	120
Big Six, activity control	n/a	n/a	July 31 – September 26	Labo, Laci, Lano	9	50	37	0	96
Eye Lake, candidate hibernaculum	8,517	85,973	July 31 – September 26	Labo, Laci, Lano	125	514	28	109	776
Eye Lake, candidate hibernaculum	8,517	85,974	July 31 – September 26	Labo, Laci, Lano	39	97	14	46	196
Eye Lake Control, activity control	n/a	n/a	July 31 – September 26	Labo, Laci, Lano	10	13	8	1	32
Gorham, candidate hibernaculum	8,496	85,784	July 31-September 25	Labo, Laci, Lano	3	17	16	0	36
Gorham Control, activity control	n/a	n/a	July 31 – September 25	Labo, Laci, Lano	9	12	26	0	47
Lakeshore Ridge (1A), candidate hibernaculum	n/a	n/a	July 31 – September 27	Laci, Lano	34	166	10	25	235
Lakeshore Ridge (1B), candidate hibernaculum	n/a	n/a	July 31 – September 27	Laci, Lano	2	0	0	3	5

Hibernacula Feature Name and Type	AMIS Site	AMIS Feature	Survey recording period (2022)	Other bat species identified[a]	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period High Frequency	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period Myotis sp. passes	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period Little Brown Myotis (M. lucifugus)	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period Northern Myotis (M. septentrionalis)	Myotis or Potential Myotis Bat Passes – Entire Monitoring Period Total # Passes
Lakeshore Control, activity control	n/a	n/a	July 31 – September 27	Epfu, Laci Lano	6	33	53	0	92
Shuniah, candidate hibernaculum	8,429	79,793	August 4 – October 2	Epfu, Labo, Laci, Lano	16	285	122	5	428
Shuniah Control, activity control	n/a	n/a	August 4 – October 2	Laci, Lano	12	203	47	0	262
Spillway Inlet, candidate hibernaculum	n/a	n/a	August 5 – September 26	Epfu, Labo, Laci, Lano	67	256	1092	3	1,418
Spillway Inlet Control, activity control	n/a	n/a	August 5 – September 26	Epfu, Labo, Laci, Lano	20	62	80	0	162
Spillway Outlet, candidate hibernaculum	n/a	n/a	August 5 – September 26	Epfu, Laci, Lano	5	113	45	2	165
Spillway Outlet Control, activity control	n/a	n/a	August 5 – September 26	Epfu, Labo, Laci, Lano	58	116	133	1	308

a) Epfu - *Eptesicus fuscus* (big brown bat), Labo – *Lasiurus borealis* (eastern red bat), Laci – *Lasiurus cinereus* (hoary bat) and Lano - *Lasionycteris noctivagans* (silver-haired bat).

= number; AMIS = Abandoned Mines Information System.

In consideration of only potential SAR bat activity, the highest overall activity levels of any station was recorded at the Steeprock reference hibernaculum (Figure 3.2-2 in Attachment 6.4-A-1). From this overall potential myotis species activity plot (without consideration of the time of night or duration of elevated activity within each monitoring night), it can be inferred there were three major peaks in myotis species swarming activity recorded at Steeprock: on early August, early September, and late September. Activity at the other reference hibernaculum, Thunderhead, was minimal (46 call passes in total) and sporadic, with only two call passes recorded after August 17, 2022 (Figure 3.2-2 in Attachment 6.4-A-1) and considered not useful for reference comparisons. The paucity of call passes at Thunderhead could indicate that this feature no longer (or never did) supports a hibernation colony. For this reason, Steeprock was considered the only reference hibernacula or activity level guide for the potential timing of myotis species swarming activity across the other candidate hibernaculum monitored in 2022.

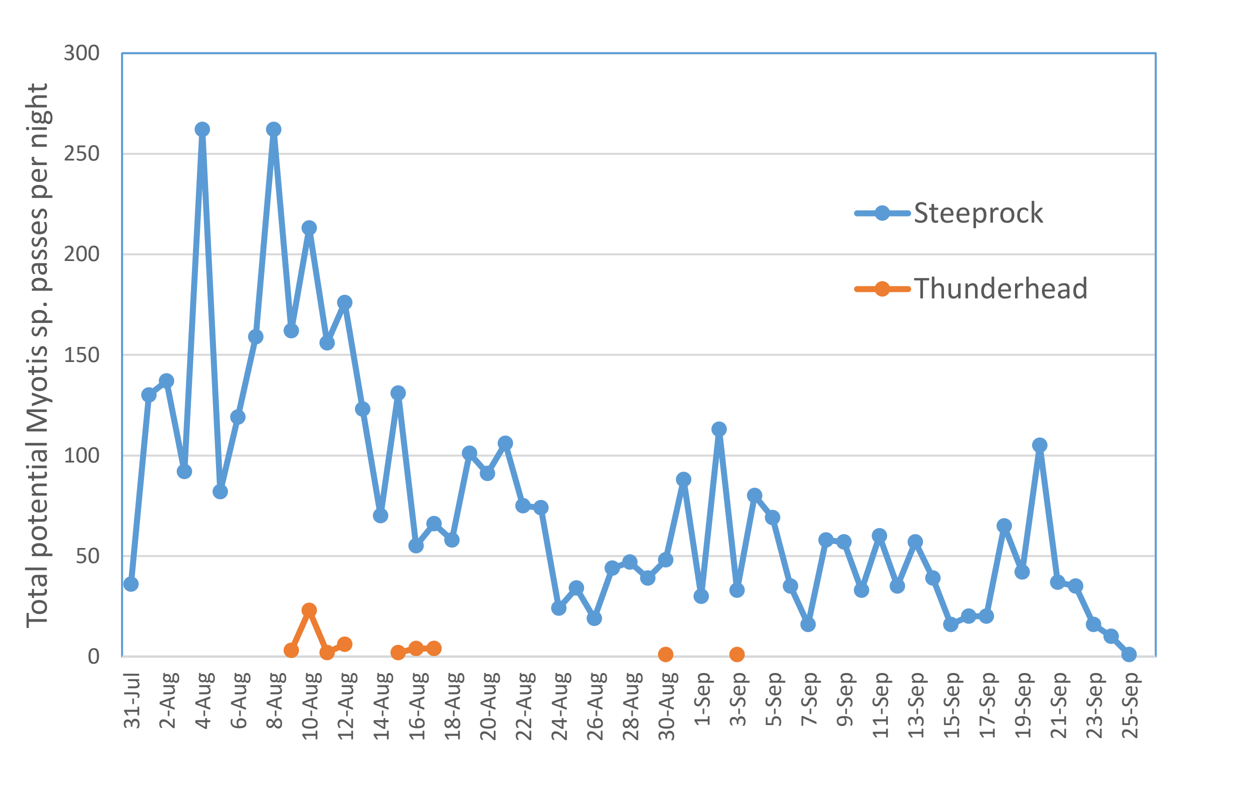


Figure 3.2-2: Total Potential Myotis Species Passes Per Night at Steeprock and Thunderhead Stations.

Summary tables of potential SAR bat activity monitoring results for each of the 20 monitoring stations are provided in Attachment 6.4-A-6. Conditional formatting has been applied to facilitate identification of elevated activity trends across successive 30-minute blocks of time within each night, and across successive nights of monitoring. The magnitude of bat passes corresponds to the intensity of red shading within each monitoring station dataset.

A description of the multiple lines of evidence used as decision criteria and rationale for the ultimate determination of hibernacula presence and inferred use is provided in Table 3.2-12.

Table 3.2-12: Results of Bat Hibernacula Swarming Activity Assessment (2022) – Description of Decision Criteria and Rationale Used to Determine Likelihood of Bat Hibernacula Presence and Inferred Use

Hibernacula Monitoring Station	AMIS Site	AMIS Feature	Magnitude of Activity (maximum # passes recorded in a 30-minute block)[(a)]	Activity after September 15 (total # of bat passes)[(b)]	Comparison to Activity Control, Reference Hibernacula (Steeprock), and General Comments / Rationale	Conclusion – Active Hibernacula Presence
Steeprock, reference station Atikokan region	8521	n/a	August: 77 September: 20	351 bat passes	• Consistent activity levels. Activity peaks in late September at similar levels as peaks in early September and late August. Nightly activity peaks occur throughout evening, typically not associated with sunset.	Likely – high use
Thunderhead, reference station Thunder Bay Region	8495	79904	August: 7 September: 1	None	• Although a few nights in August had some activity, only two bat passes were recorded after August 17, and none after September 3. LIO metadata indicates that hibernacula status was based on one night's data collected on August 20, 2011 (MNRF 2019).	Unlikely use
Andowan, candidate hibernaculum	8538	79976	August: 3 September: 1	1 bat pass	• Activity pattern at feature and control are very similar with very little September activity and overall low activity. No more than one pass per evening in September.	Unlikely use
Andowan Control, activity control	n/a	n/a	August: 2 September: 1	1 bat pass	• Activity pattern at feature and control are very similar with very little September activity and overall low activity. No more than one pass per evening in September.	n/a

Hibernacula Monitoring Station	AMIS Site	AMIS Feature	Magnitude of Activity (maximum # passes recorded in a 30-minute block)[a]	Activity after September 15 (total # of bat passes)[b]	Comparison to Activity Control, Reference Hibernacula (Steeprock), and General Comments / Rationale	Conclusion – Active Hibernacula Presence
Big Six, candidate hibernaculum	8504	85971	August: 2 September: 3	Two bat passes	• Activity pattern similar at feature and control although activity level at feature was slightly higher. Generally low levels of activity; typically, single passes in 30-minute blocks. A couple passes in later September at feature.	Possible - low
Big Six, activity control	n/a	n/a	August: 9 September: 1	Four bat passes	• Activity pattern similar at feature and control although activity level at feature was slightly higher. Generally low levels of activity; typically, single passes in 30-minute blocks. A couple passes in later September at feature.	n/a
Eye Lake, candidate hibernaculum	8517	85973	August: 34 September: 18	156 bat passes	• Activity levels at the two features were much higher than at the control. For feature 85973, activity peaks in late September were at similar levels as peaks in early September and late August. Nightly activity peaks at 85973 were often associated with sunset occur but also occurred throughout evening. • That pattern of activity at 85794 closely matched that of 85973 but at a reduced rate.	Likely – moderate use

Hibernacula Monitoring Station	AMIS Site	AMIS Feature	Magnitude of Activity (maximum # passes recorded in a 30-minute block)[a]	Activity after September 15 (total # of bat passes)[b]	Comparison to Activity Control, Reference Hibernacula (Steeprock), and General Comments / Rationale	Conclusion – Active Hibernacula Presence
Eye Lake, candidate hibernaculum	8517	85974	August: 12 September: 3	15 bat passes	• Feature 85974 is in close proximity to 85793 and it is uncertain whether activity at this station is related to hibernation or just a spill-over of activity from the adjacent station.	Likely – moderate use
Eye Lake Control, activity control	n/a	n/a	August: 6 September: 2	1 bat pass	• n/a	n/a
Gorham, candidate hibernaculum	8496	85784	August: 2 September: 1	None	• Activity pattern at feature and control are very similar with very little September activity and overall low activity. No more than one pass per evening in September.	Unlikely use
Gorham Control, activity control	n/a	n/a	August: 2 September: 1	None	• Activity pattern at feature and control are very similar with very little September activity and overall low activity. No more than one pass per evening in September.	n/a
Lakeshore Ridge (1A), candidate hibernaculum	n/a	n/a	August: 15 September: 8	None	• Activity at the control and feature 1A was primarily centred around late August and early September. Activity at feature 1A was more than double that of the control, although activity at the control site persisted until 23 September, 13 days after activity ended at 1A.	Possible - low

Hibernacula Monitoring Station	AMIS Site	AMIS Feature	Magnitude of Activity (maximum # passes recorded in a 30-minute block)[a]	Activity after September 15 (total # of bat passes)[b]	Comparison to Activity Control, Reference Hibernacula (Steeprock), and General Comments / Rationale	Conclusion – Active Hibernacula Presence
Lakeshore Ridge (1B), candidate hibernaculum	n/a	n/a	August: 2 September: 0	None	• Feature 1B only had 5 passes in total and none after August 16.	Possible - low
Lakeshore Control, activity control	n/a	n/a	August: 11 September: 3	Five bat passes	• Maximum 3 bat passes in one night and 3 in a 30-minute period.	n/a
Shuniah, candidate hibernaculum	8429	79793	August: 11 September: 42	21 bat passes	• Highest activity levels at the feature and control were centred around late August and early September. Activity at feature was higher than control and persisted up to October 1.	Possible - low
Shuniah Control, activity control	n/a	n/a	August: 69 September: 11	Seven bat passes	• Highest activity levels at the feature and control were centred around late August and early September. Activity at feature was higher than control and persisted up to October 1.	n/a
Spillway Inlet, candidate hibernaculum	n/a	n/a	August: 99 September: 76	52 bat passes	• Highest activity levels at the feature and control were centred around late August and early September. Activity at feature was higher than control and persisted up to September 25.	Possible - moderate

Hibernacula Monitoring Station	AMIS Site	AMIS Feature	Magnitude of Activity (maximum # passes recorded in a 30-minute block)[(a)]	Activity after September 15 (total # of bat passes)[(b)]	Comparison to Activity Control, Reference Hibernacula (Steeprock), and General Comments / Rationale	Conclusion – Active Hibernacula Presence
Spillway Inlet Control, activity control	n/a	n/a	August: 4 September: 4	15 bat passes	• Control was centred around late August and early September. Activity at feature was higher than control and persisted up to September 25.	n/a
Spillway Outlet, candidate hibernaculum	n/a	n/a	August: 12 September: 3	Four bat passes	• Activity was higher at control when compared to feature. Although activity persisted until September 23, only 4 bat call passes were recorded after September 14.	Possible - low
Spillway Outlet Control, activity control	n/a	n/a	August: 4 September: 3	17 bat passes	• Activity was higher at control when compared to feature. Although activity persisted until September 23, only 4 bat call passes were recorded after September 14.	n/a

a) Magnitude of activity within a 30-minute block may indicate multiple bats present at once and/or social activity.

b) Activity that persists beyond mid-September may indicate the presence of a hibernacula as bats are expected to be located near their hibernation site at that time.

= number; AMSI = Abandoned Mined Information System; LIO = Land Information Ontario.

Based on the analysis of the swarming season acoustic data it has been determined that the following sites are considered likely or possible SAR bat hibernacula:

- Eye Lake ([both features] likely);
- Spillway ([entire feature including inlet and outlet] likely);
- Big Six (possible);
- Lakeshore Ridge ([entire feature] possible); and
- Shuniah (possible).

It has been determined that Andowan and Gorham are considered unlikely to be hibernacula and have been ruled out. Additional rationale for ruling out Andowan and Gorham is provided below.

Andowan

Andowan was ruled out as a hibernaculum based on the following:

- Similar activity levels and patterns were observed at the control and the feature.
- No peaks of activity were observed, only one half hour block with three passes, all other with fewer than three.
- Activity levels are very low and could possibly be from one bat.
- Activity drops off in September.

Gorham

Gorham was ruled out as a hibernaculum based on the following:

- Similar, low, activity levels were observed at the control and the feature.
- No peaks of activity were observed, never more than two passes within a half hour block.
- Activity at the feature was lower than at the control.
- Activity drops off in September.

It should be reiterated that visual confirmation of swarming activity and visual confirmation of individual bats hibernating within candidate hibernacula features were not made at any site; therefore, no confirmation of hibernacula use is possible based on the field data collected in 2022. Swarming activity and hibernacula use is strictly inferred through acoustic monitoring alone. Bat passes recorded at each site are assumed to reflect swarming activity when it can be ruled out that activity does not reflect foraging or commuting.

3.2.1.3.2.3 *Bat Hibernaculum Significant Wildlife Habitats*

Bat hibernaculum SWH includes confirmed hibernaculum for SAR bats, as well as big brown bat (*Eptesicus fuscus*), and the SWH includes a 200 m radius around the entrance of the hibernaculum (MNRF 2017a). For the purposes of this report, the candidate and confirmed bat hibernacula identified in the LSA (Table 3.2-12) are also conservatively considered candidate SWH of this type.

3.2.1.4 *Gray Fox*

Population Status and Distribution

Gray fox are currently found from southern Canada to northern Venezeula and Columbia, but absent from the Great Plains and northwestern United States (COSEWIC 2015, MECP 2019). In Canada two sub-populations in Ontario have been reported in Pelee Island and northwestern Ontario (MECP 2019). Gray fox has also been reported in Alberta, Manitoba, Quebec, and New Brunswick; however, breeding evidence is lacking (COSEWIC 2015, MECP 2019). Population data on gray fox is lacking, particularly in Canada where no population studies have been conducted (MECP 2019). In Canada there have been approximately 160 confirmed records of gray fox since the 1940s; however, COSEWIC estimates the Canadian population to be fewer than 110 mature individuals (COSEWIC 2015, MECP 2019).

It was thought that Pelee Island in Ontario was the only region in Canada where gray fox breeding has been confirmed; however, in more recent years evidence has suggested that there is a sub-population of breeding individuals from Thunder Bay west to the Fort Frances/Rainy River area (MECP 2019). In northwestern Ontario, the first gray fox was recorded in 1944 in Rainy River District with 25 to 28 individuals confirmed since 1944. In 2015, the northwestern Ontario sub-population was estimated to be less than 50 mature individuals (COSEWIC 2015). However, the number of provincial occurrence records and citizen science observations in recent years has increased, indicating that populations are likely higher than 2015 estimations (MNRF 2022d). The gray fox is listed as threatened under the ESA and SARA.

The largest threat facing gray fox populations in Canada is trapping and hunting (MECP 2019). Although Ontario has a zero-quota set on trapping licences for gray foxes, they are frequently captured and killed as by-catch in traps. According to trapping records between 1979 and 2014, an average of seven gray foxes were trapped each year, increasing by 0.33 captures per year over this time. Currently, gray foxes are not known to be hunted anywhere in Canada; however, there was a bounty on gray foxes on Pelee Island until the 1980s. It is estimated that hunters shot six to ten individuals on the island every winter in the 1990s (MECP 2019). Understanding the impact of trapping on gray fox populations is difficult to evaluate due to the lack of data on population sizes. However, due to low population densities in Canada, trap by-catch is thought to limit the establishment of breeding populations (MECP 2019). Currently in the United States, where trapping is legally permitted, hunting, and trapping is the leading cause of gray fox mortality. However, research has suggested that gray fox can maintain population sizes when under considerable harvest pressure, though United States populations are not directly comparable to Canadian populations and should not be assumed to respond similarly to harvest pressures (MECP 2019). In addition to trapping, gray fox populations are also threatened by road mortality and diseases such as canine distemper and rabies (MECP 2019).

It is anticipated that gray fox population changes are linked to changes in adjacent United States populations as gray fox is at the northern extent of its range in Canada. (COSEWIC 2015, MECP 2019). Currently most gray fox populations in the United States are stable or increasing, and northward expansions of populations in Wisconsin and Minnesota have been documented. Northward expansion of United States populations has been attributed to climate change and warming temperatures. Due to this, it has been noted that there is a potential for climate change to improve survival conditions for gray fox in Canada (COSEWIC 2015). Natural expansion in both population size and distribution of Canadian sub-populations is anticipated if natural dispersion into Canada continues (MECP 2019).

Habitat Selection and Foraging

Gray foxes are habitat generalists and have been known to use a variety of habitats ranging from forests to agricultural lands to urban areas. Though they are thought to use a higher proportion of wooded habitat than other fox species and are most strongly associated with deciduous forest.

Gray fox diets are quite variable as they feed opportunistically and are dependent on food availability, season and geography. They are thought to be the most omnivorous of all species (COSEWIC 2015, MECP 2019). In the fall, fruit and vegetable matter make up an important part of their diet, while small mammals in the winter, and insects in the summer are more dominant. Carrion and birds are often consumed throughout the year as well.

Home range sizes vary greatly throughout the literature, though Kelt and Van Vuren (2015) estimated home range size based on published estimates to be 274 ha. The mating season for gray fox in Canada is estimated to be between mid-February to mid-March. A number of features are known to be used as dens, for pup rearing, resting, and avoiding predators. Dens can be found in modified burrows of other animals, hollow trees, hollow logs, woodpiles, rocky outcrops, cavities under rocks, piles of brush, slab, wood or sawdust, and abandoned buildings. Though in Ontario only five dens have been found, including three in brush piles, one under a shed, and one under armour stone at the base of a dock (MECP 2019).

3.2.1.4.1.1 Den Survey

During the 2022 field surveys, effort was expanded to opportunistically search for potential gray fox denning features and habitat. During surveys, potential denning habitat was noted at 74 sites, including areas with burrows, aggregate pits, log and slash piles, large rock piles, and bedrock outcrops with crevices. Attachment 6.4-A-8 outlines the surveys that opportunistically searched for potential gray fox denning features and habitat.

Additionally, five den features that were observed during field surveys were monitored with remote cameras and mapped on Figure 3.2-2 in Attachment 6.4-A-1. Review of the remote camera photos indicated that none of the observed features were actively being used as gray fox dens:

- GF-59 and GF-345 had no wildlife observations.
- GF-330 station had five red fox observations, though it is unlikely this feature is being used as an active den.
- GF-342 had various bird and mammal observations, but no fox species were noted.
- GF-344 had three red fox observations, though it is unlikely this feature is being used as an active den.

Table 3.2-13 outlines remote camera deployment dates, habitat and feature descriptions, and wildlife observations including number of occurrences of each species in parentheses of each potential gray fox denning feature.

Table 3.2-13: Potential Gray Fox Denning Features Identified During Field Surveys

Station	Deployment Dates	Habitat and Feature Description	Wildlife Observations, (number of occurrences)
GF-59	June 13 – August 15, 2022	• Potential den located in slash pile with bones and signs of active denning near entrance.	• No wildlife observations.
GF-330	June 16 – September 28, 2022	• Immature upland deciduous stand dominated by young white birch, balsam poplar and trembling aspen, adjacent to cultural meadow. Potential den in large rocks, but no evidence of animal remains nearby.	• Red fox (5); • White-tailed deer (1); • Grouse (1); and • Black bear (1).

GF-342	June 18 – September 28, 2022	• Upland forest dominated by white birch and trembling aspen, adjacent to cliff. Rocky outcrop with multiple fissures / cracks offering multiple (~10) denning spots. No evidence of active denning or animal remains. Two remote cameras (A and B) facing one feature at two different angles.	• Camera A:
			  ◦ Red squirrel (88);
			  ◦ Deer mouse (9);
			  ◦ Black bear (2);
			  ◦ Eastern chipmunk (2);
			  ◦ Grouse (2);
			  ◦ Skunk (1);
			  ◦ Hermit thrush (1); and
			  ◦ Blue jay (1).
			• Camera B:
			  ◦ Red Squirrel (14).

Station	Deployment Dates	Habitat and Feature Description	Wildlife Observations, (number of occurrences)
GF-344	June 20 – September 29, 2022	• Heavily forested shoreline of creek, dominated by white birch, trembling aspen, and alders. Potential den in rocky cliff wall. No animal remains or signs of active denning.	• Ground hog (11); • Red squirrel (7); • Red fox (3); • American robin (1); • Skunk (1); and • White throated sparrow (1).
GF-345	September 21 – 29, 2022	• Conifer dominant forest adjacent to a small pond. Potential den near the bank of the pond with remnants of old bird carcasses.	• No wildlife observations.

3.2.1.4.1.2 Gray Fox Occurrences

Thirty-three gray fox presence stations were established in late June 2022 and were retrieved at the end of September. During this time, no gray fox were observed at the stations. Thirty species were observed including 20 mammals and 10 birds. An outline of the wildlife observations at each gray fox presence station can be found in Attachment 6.4-A-5 - Gray Fox Presence Survey Remote Camera Results.

Although no gray fox were observed during the 2022 field surveys, gray fox occurrence data was gathered from the Thunder Bay Field Naturalist Gray fox Monitoring Project, iNaturalist, and the MECP SARB during pre-field mapping. Prior to mapping, the occurrence records were vetted to ensure observations were not double counted between information sources. Occurrence records with the same location but different observation dates were considered to be separate occurrences.

Within the LSA from 2010 to 2022, 32 observations were made, often with multiple individuals noted in each observation. Thirty-one were within the Thunder Bay area, and one observation within the Atikokan area. Of the 32 observations, 29 were observed on or near rural residential property, and the remaining observed on remote Crown land, and from roadkill or incidental trapping. Nine observations noted gray fox individuals feeding at deer baiting stations, bird feeders, and fruit trees.

Figure 3.2-4 in Attachment 6.4-A-1 outlines the locations of the gray fox occurrence records within the LSA. The largest proportion of gray fox occurrence records occurs along Alternative Route 1B-1 / 1B-2. Note that some observations are double-counted (Table 3.2-14) as some occurrences are located within the vicinity of multiple alternative routes.

Table 3.2-14: Gray Fox Occurrence Records within the Local Study Area

Grouping	Alternative Route	Gray Fox Occurrences
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	5
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	3
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B	27
Group 2 (Node 1 to Node 3)	Alternative Route 1	5
Group 2 (Node 1 to Node 3)	Alternative Route 1C	0
Group 3 (Node 3 to Node 5)	Alternative Route 2A	1
Group 3 (Node 3 to Node 5)	Alternative Route 2B	1
Group 3 (Node 3 to Node 5)	Alternative Route 2C	0
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	0
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	0
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	0
Group 4 (Node 5 to Dryden TS)	Alternative Route 4	0

TS = Transformer Station.

Within the RSA from 1982 to 2022, 17 observations of gray fox were made. Thirteen observations were within the Thunder Bay area, two observations between Thunder Bay and Atikokan, and two within the Atikokan area. Of the 17 observations, 13 were observed on or near rural residential property, and the remaining observed on remote Crown land. Four observations noted gray fox individuals feeding at bird feeders or near bird feeders.

Gray fox occurrence record locations and observation notes within the LSA and RSA are outlined in Table 3.2-15 and mapped on Figure 3.2-4 in Attachment 6.4-A-1.

Table 3.2-15: Gray Fox Observations within the Local Study Area and Regional Study Area

Alternative Route / Location	Study Area	Observation Date	Mapping	Observation Details	Source
1	LSA	Saturday, June 4, 2022	iNAT-17817	• No observation notes.	iNaturalist
1 / 1A	LSA	Sunday, October 27, 2019	MECP-2	• Observed on trail camera on rural residential property.	MECP

Alternative Route / Location	Study Area	Observation Date	Mapping	Observation Details	Source
1 / 1A	LSA	Wednesday, December 30, 2020	MECP-9	• One individual observed spring 2020 at bird feeder and deer food station. Multiple visits following first sighting.	Thunder Bay Field Naturalists, Gray Fox Project
1 / 1A	LSA	2020-2022	NHIC-15	• Two individuals observed at bird feeder on rural residential property.	NHIC
1 / 2A / 2B	LSA	February 1, 2020	MECP-11	• One individual observed at bird feeder on residential property. First sighting winter 2019 and observed again February 2020.	Thunder Bay Field Naturalists, Gray Fox Project
1B-1 / 1B-2	LSA	2010-2019	NHIC-12	• Observed at deer bait station on rural residential property.	NHIC
1B-1 / 1B-2	LSA	November 7, 2019 - June 27, 2021	MECP-1	• Multiple trail camera photos taken between November 7, 2019 to June 27, 2021 on rural residential property.	MECP
1B-1 / 1B-2	LSA	January 1, 2020	MECP-5	• Citizen noted multiple observations of individuals over the years, with the most recent correspondence in February 2021 confirmed one gray fox was still observed. One occurrence of five individuals feeding at bird feeder on rural residential property, no date specified.	Thunder Bay Field Naturalists, Gray Fox Project
1B-1 / 1B-2	LSA	July 10, 2020	iNAT-9361	• Mature pair observed with two young on rural residential property.	iNaturalist

Alternative Route / Location	Study Area	Observation Date	Mapping	Observation Details	Source
1B-1 / 1B-2	LSA	October 27, 2020	iNAT-10679	• One individual observed eating deer feed on rural residential property. First sighting October 2020, observed again April 2021.	iNaturalist
1B-1 / 1B-2	LSA	March 15, 2021	MECP-3	• Incidental harvest by trapper.	MECP
1B-1 / 1B-2	LSA	April 29, 2021	iNAT-12988	• One individual observed rural residential property. First sighting October 2020, observed again April 2021.	iNaturalist
1B-1 / 1B-2	LSA	June 26, 2021	iNAT-17422	• One individual observed at bird feeder on rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	September 13, 2021	iNAT-14729	• Roadkill.	iNaturalist
1B-1 / 1B-2	LSA	November 20, 2021	iNAT-15555	• No observation notes. Located near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	January 8, 2022	iNAT-17811	• No observation notes. Located near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	January 12, 2022	iNAT-17812	• One individual observed near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	January 13, 2022	iNAT-17344	• Single individual observed over several nights, near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	January 15, 2022	iNAT-17813	• One individual observed crossing snowshoe trail, near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	January 17, 2022	iNAT-17814	• Two individuals observed near rural residential property.	iNaturalist

Alternative Route / Location	Study Area	Observation Date	Mapping	Observation Details	Source
1B-1 / 1B-2	LSA	January 23, 2022	iNAT-17815	• No observation notes. Located near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	January 30, 2022	iNAT-17816	• One individual observed near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	April 2, 2022	iNAT-17421	• Five individuals observed on trail camera on rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	April 12, 2022	iNAT-17343	• Single individual observed over several nights, near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	June 24, 2022	iNAT-17818	• Three individuals observed at rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	August 28, 2022	iNAT-17819	• One adult female and two kits observed at rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	November 16, 2022	iNAT-17820	• One individual observed near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	November 18, 2022	iNAT-17821	• One individual observed near rural residential property.	iNaturalist
1B-1 / 1B-2	LSA	2020-2022	NHIC-14	• Two individuals observed on snowshoe trail, no bait or feeder in the area.	NHIC
1B-1 / 1B-2	LSA	2020-2022	NHIC-16	• One individual observed at crab apple tree on rural residential property.	NHIC
1B-1 / 1B-2	LSA	2020-2022	NHIC-18	• One individual observed at suet feeder on rural residential property in 2020.	NHIC

Alternative Route / Location	Study Area	Observation Date	Mapping	Observation Details	Source
1B-1 / 1B-2	LSA	2020-2022	NHIC-19	• Three individuals observed at deer food station (corn, seeds, oats), and apple trees on rural residential property.	NHIC
Between Thunder Bay and Atikokan	RSA	February 22, 1982	NHIC-1	• No observation notes.	NHIC
Between Thunder Bay and Atikokan	RSA	February 22, 1982	NHIC-2	• No observation notes.	NHIC
Atikokan	RSA	December 1, 1997	NHIC-3	• No observation notes.	NHIC
Atikokan	RSA	January 11, 2021	NHIC-8	• One individual observed. Lakeshore trail between two lakefront properties. Forest is mature jack pine with trembling aspen and birch understorey. Three bird feeders are present within 200 m of observation.	NHIC
Thunder Bay	RSA	April 23, 2019	iNAT-5488	• Two individuals observed. Multiple visits throughout night. Rural residential property.	iNaturalist
Thunder Bay	RSA	April 27, 2019	iNAT-5489	• Likely same individuals returning from April 23, 2019 observation. Rural residential property.	iNaturalist
Thunder Bay	RSA	May 12, 2019	iNAT-5490	• Likely same individuals returning from April 23, 2019 observation. Rural residential property.	iNaturalist
Thunder Bay	RSA	November 22, 2019	MECP-12	• No observation notes. Rural residential property.	MECP

Alternative Route / Location	Study Area	Observation Date	Mapping	Observation Details	Source
Thunder Bay	RSA	January 1, 2020	MECP-8	• Landowner noting they saw them occasionally since 2012-2013. Rural residential property.	Thunder Bay Field Naturalists, Gray Fox Project
Thunder Bay	RSA	January 1, 2020	MECP-7	• No observation notes.	Thunder Bay Field Naturalists, Gray Fox Project
Thunder Bay	RSA	May 12, 2020	iNAT-12077	• No observation notes.	iNaturalist
Thunder Bay	RSA	November 8, 2020	iNAT-11606	• No observation notes.	iNaturalist
Thunder Bay	RSA	November 19, 2021	iNAT-15648	• One pair of individuals observed near rural residential property.	iNaturalist
Thunder Bay	RSA	December 10, 2021	iNAT-15858	• One individual at bird feeder on rural residential property. Observed on trail camera trying to catch a flying squirrel that was also using the feeder.	iNaturalist
Thunder Bay	RSA	December 11, 2021	iNAT-15885	• One individual at bird feeder on rural residential property. Repeat visit.	iNaturalist
Thunder Bay	RSA	December 13, 2021	iNAT-15886	• One individual at bird feeder on rural residential property. Repeat visit.	iNaturalist
Thunder Bay	RSA	January 26, 2022	iNAT-16376	• One individual observed. Rural residential property.	iNaturalist

iNAT = iNaturalist; LSA = Local Study Area; RSA = Regional Study Area; MECP = Ministry of the Environment, Conservation and Parks; NHIC = Natural Heritage Information Centre.

As outlined in the provincial Recovery Strategy (MECP 2019), the critical habitat for gray fox is based on two components: habitat occupancy and habitat suitability. As such, the known occurrence records within the LSA and RSA were plotted and a home range average of 274 ha was identified surrounding each occurrence record. This home range size corresponds with recent published estimates (Kelt and Van Vuren (2015) and guidance in the recovery strategy which states, “the extent of suitable habitat is defined as the entire ELC community series polygon(s) (listed above), located within a radial distance of 934 m of a known record of a Grey Fox. If the habitat patch extends beyond the radial distance it is included in suitable habitat (MECP 2019).”

Within each home range, ecosites were mapped according to the Project FRI data. Throughout the home ranges of the occurrence records within the gray fox LSA and RSA, 10 different ecosites were mapped, including anthropogenic, coniferous forest, deciduous forest, fen, field/meadow, marsh, mineral barren, shrub, swamp and water/islands. Anthropogenic ecosites are comprised of constructed, utility, residential, and industrial areas.

Deciduous forest cover is found to be mapped in the occurrence record home ranges within the LSA and RSA, making up an average 47% of cover. Swamp accounts for 17% of the home range composition in the LSA and RSA, followed by anthropogenic (16%), coniferous forest (10%), water/islands (3%), field/meadow (2%), shrub (2%), and marsh (1%). Barren and fen ecosites make up the remaining ecosite composition, accounting for less than 1% of the home range composition each. Table 3.2-16 outlines total ecosite composition in the LSA and RSA.

Table 3.2-16: Ecosite Composition within Gray Fox Home Ranges in the Local Study Area and Regional Study Area

Ecosite	Total (ha)	Total (%)
Deciduous Forest	6,360	47.36%
Swamp	2,305	17.16%
Anthropogenic	2,146	15.98%
Coniferous Forest	1,372	10.21%
Water/Islands	415	3.09%
Field/Meadow	270	2.01%
Shrub	263	1.96%
Marsh	129	0.96%
Fen	103	0.77%
Barren	66	0.49%

% = percent; ha = hectare.

From the data, it can be inferred that gray fox rely on deciduous forest cover as it accounts for nearly half (47%) of the total ecosite cover within their home ranges and is present in all mapped home ranges within the gray fox LSA and RSA. This finding aligns with the federal recovery strategy for gray fox, where a strong association between gray fox habitat and deciduous forest cover is outlined (MECP 2019).

Anthropogenic ecosites were present in all home ranges within the gray fox LSA and RSA, except for one occurrence record within the gray fox RSA, and account for 16% of total home range ecosite cover. During presence survey station selection, residential areas were avoided due to the presence of bait, though occurrence records suggest that gray fox are attracted to anthropogenic food sources such as deer bait, bird feeders, and fruit trees. Additionally, in 2014 a vehicle killed a non-breeding gray fox pair in Rainy River. Necropsy revealed that the pair's stomach contents consisted of crab apple fruit, cracked corn, and sunflower seed hulls, suggesting that prior to their death they were feeding in a residential area (MECP 2019). Evidence through necropsy and occurrence records suggest that gray fox populations in northwestern Ontario could be concentrated around anthropogenic and residential areas that provide potential food sources.

Similarly, to deciduous forest, swamps (17% cover) and coniferous forests (10% cover) play an important role in gray fox home range habitats. The federal recovery strategy for gray fox suggests that they are thought to use a higher proportion of wooded habitat than other fox species (MECP 2019). Wooded habitats provide gray fox with both foraging and burrowing habitat.

The remaining ecosites found within gray fox home ranges within the gray fox LSA and RSA account for 10% cover, and consist of combinations of water/island, shrub, field/meadow, marsh, barren, and fen ecosite cover.

3.2.1.5 American Badger

Population Status and Distribution

American badger *jacksoni* subspecies is one of four subspecies of American badger that are present in North America. The *jacksoni* subspecies are currently found on both sides of the Canada-United States border, around Lake Superior, Lake Huron, and Lake Erie; specifically, throughout Minnesota, Wisconsin, and parts of Illinois, Ohio, Michigan, and Indiana, with Ontario being the northern extent of its range. Because the American badger *jacksoni* subspecies population spans across the Great Lakes region, which includes St. Clair and Detroit rivers, the Ontario population is isolated from neighbouring populations, often being referred to as an 'island' population in literature. As a result, Ontario populations are smaller and lack the genetic diversity of their American counterparts. American badger *jacksoni* subspecies is listed as endangered under the ESA and SARA.

In Ontario, the *jacksoni* subspecies are present along the north shore of Lake Erie, and along the Minnesota border in northwestern Ontario. The southwestern Ontario population is presumed to be larger than the northwestern Ontario population, with reproductive evidence among both populations. It is estimated that there are less than 200 total individuals in Ontario, however, accurate assessments of the *jacksoni* population are absent. The Ontario American Badger Recovery Team has compiled 144 sightings of badger in Ontario from 1895 to 2008, with 18 sightings occurring in northwestern Ontario, with the majority occurring from Rainy River to Fort Frances, and only one sighting in Thunder Bay. Northwestern Ontario populations are likely being supplemented by northern Minnesota populations, which exhibit heathy, sustainable populations.

Major threats to the American badger population in Ontario include habitat loss and road mortality, while predation, disease, and incidental trapping are possible contributors but are of low concern. Badgers rely on tallgrass prairies for foraging, and it is estimated that less than 1% of Ontario's tall prairie and savannah habitat remain in the province. Suitable grassland habitat within Ontario is also highly fragmented, potentially causing individuals to increase their home ranges in search of prey. Habitat loss is one of the main threats to badger populations, followed by road mortalities, particularly in Ontario. More than 25% of sightings in Ontario have been of roadkill animals, suggesting that vehicular collisions could limit survival and recovery (Environment Canada 2013).

Habitat Selection and Foraging

American badgers require large habitats that support sufficient prey populations and are suitable for den formation. Historically, badgers preferred tallgrass prairie and oak savanna ecosites, but today are more commonly found in sand plains, grasslands, scrublands, woodlots, pastureland, agricultural fields and orchards (Environment Canada 2013). Badgers are burrowing mammals and prefer coarse silts to find sands for den formation (ECCC 2021). They are not true hibernators, rather, overwintering in a state of torpor, also using their dens for rearing young and resting. American badgers are opportunistic carnivores, commonly preying on groundhogs, eastern cottontails, voles, mice, ground squirrels, and ground-nesting birds (Environment Canada 2013).

In 2022, targeted American badger *jacksoni* presence surveys were not completed; however, gray fox presence survey baited remote camera stations were configured to capture any furbearer in proximity to the station. Additionally, during the 2022 field surveys, effort was expanded to opportunistically search for potential badger dens; however, no features were observed that would provide suitable denning habitat. During 2022 field surveys there were no observations of badger on remote cameras or opportunistically during other surveys.

There are no known occurrence records of badger in the LSA or RSA for the Project. The closest known occurrences were recorded in 2000 and 1975, southwest of Thunder Bay over 50 km from the LSA, and west of Dryden over 30 km from the LSA, respectively. Most northwestern Ontario observations of badger have occurred in Rainy River and Fort Frances, west of the LSA and RSA (Environment Canada 2013.

In Ontario, the majority of badger observations have occurred in sand plains, an ecosite that is not present within the LSA or RSA (Environment Canada 2013). In addition to sandy habitats, badger require specific grassland and tallgrass prairies which are ecosites that are limited across the LSA and RSA. Due to lack of badger observations and suitable habitat within the LSA and RSA, it is unlikely that there is a substantial population of badger within the Project area.

3.2.2 Herpetofauna

3.2.2.1 Anurans (Frogs and Toads)

Population Status and Distribution

Eight of the thirteen species of anurans (frogs and toads) known to occur in Ontario have ranges that are known to overlap with the study area: American toad (*Anaxyrus americanus*), boreal chorus frog (*Pseudacris maculata*), gray treefrog (*Hyla versicolor*), green frog (*Lithobates clamitans*), mink frog (*Lithobates septentrionalis*), northern leopard frog (*Lithobates pipiens*), spring peeper, and wood frog (*Lithobates sylvaticus*). Each of these eight species is considered stable (S5) in Ontario (NatureServe 2022). While each of these species' populations are secure in Ontario, they face a myriad of threats (Lesbarrères et al. 2014), including road mortality (Hels and Buchwald 2001; Gibbs and Shiver 2005; Eigenbrod et al. 2008), pollution (Hecnar 1995; Sanzo and Hecnar 2006), infectious disease (Lesbarrères et al. 2011; D'Aoust-Messier et al. 2015), climate change (Walpole et al. 2012; Klaus and Lougheed 2013), and habitat modification and loss (Cushman 2006).

Habitat Selection and Foraging

American toad – American toads are found in a wide variety of terrestrial habitats and only inhabit ponds (typically warm shallow ponds, streams or river margins, but can also use marshes, fens, swamps, and vernal pools) during the breeding season and as larvae. Individuals often return to the same breeding site in subsequent years and will travel considerable distances between their breeding sites, summer habitat, and hibernation sites (Canadian Herpetological Society 2022). American toads hibernate below the frost line in burrows they excavate or in existing burrows or crevices. They are generalist feeders on small insects and other invertebrates (Canadian Herpetological Society 2022).

Boreal chorus frog – Boreal chorus frogs inhabit forest openings around woodland ponds and will breed in almost any shallow pond including wet meadows and swamps. Individuals hibernate below the frost line in underground cavities. They are a generalist feeder on small insects and other invertebrates (Canadian Herpetological Society 2022).

Gray treefrog – Gray treefrogs are generally found on trees and shrubs in close proximity to permanent or ephemeral water, preferring mature woodlands. They enter any type of shallow woodland breeding ponds from their treed habitat at night during the breeding season. Gray treefrogs hibernate underground. They are a generalist feeder on small insects and other invertebrates (Canadian Herpetological Society 2022).

Green frog – Green frogs are found in or near shallow, permanent water such as swamps, streams, and pond and lake margins, using this habitat for breeding and hibernation. They tend to associate with aquatic vegetation for protection against predation (Canadian Herpetological Society 2022). They hibernate by burying into the soft substrate at the bottom of a waterbody. They have been known to disperse considerable distances (i.e., 1 km) from their hibernation site (Birchfield and Deters 2005). They are a generalist feeder on small insects and other invertebrates (Canadian Herpetological Society 2022).

Northern leopard frog – Northern leopard frogs use a wide variety of habitats and can often be found far from water. They breed in permanent and semi-permanent ponds, wetlands, streams and margins of lakes and rivers (Canadian Herpetological Society 2022). They hibernate in the mud at the bottom of lakes and ponds. They have been known to disperse considerable distances (i.e., 2-3 km) from their hibernation site (Knutson et al. 2018). They are a generalist feeder on small insects and other invertebrates (Canadian Herpetological Society 2022).

Mink frog – Mink frogs are rarely found on land as they are highly aquatic, preferring large permanent ponds, lakes or slow-moving streams and rivers. They hibernate in the mud at the bottom of lakes and ponds. They are a generalist feeder on small aquatic insects and other aquatic invertebrates (Canadian Herpetological Society 2022).

Spring peeper – Spring peepers are usually the earliest frog species to begin calling in the spring. They will breed in a wide variety of habitat types as long as there is water, including temporary woodland ponds (Canadian Herpetological Society 2022). Outside of breeding season, spring peepers spend the majority of their time in leaf litter of forested areas, in close proximity to their breeding sites. Spring peepers hibernate below the frost line in a variety of underground cavities or in some cases, under logs or thick leaf litter. They are a generalist feeder on small insects and other invertebrates (Canadian Herpetological Society 2022).

Wood frog – Wood frogs are commonly found in moist woodlands and vernal pools. They are an early breeder, often beginning to call when ice is still on ponds. They breed in shallow ephemeral features located in forested areas (Canadian Herpetological Society 2022). Movement from breeding habitats is generally limited (e.g., within 25 m) in urban habitats while long distance migratory movements are less common, but do occur, more commonly in larger forested habitats (Bellis 1965; Taylor and Paszkowski 2018). Wood frogs hibernate under leaf litter on the forest floor. They are a generalist feeder on small insects and other invertebrates (Canadian Herpetological Society 2022).

3.2.2.1.1 Anuran Call Count Surveys

A total of 82 stations were surveyed by anuran call counts (ACC) (Figure 3.2-5 in Attachment 6.4-A-1). The majority (75%) of those stations were able to be surveyed during all three rounds of the breeding period (Table 3.2-17). Due to some issues encountered in the field (e.g., access permission), a small number (18%) of stations were only surveyed during two rounds, and a smaller number of stations (7%) were only surveyed during one round. The dates and temperatures of the survey periods are provided in Table 3.2-18.

Table 3.2-17: Number of Survey Rounds Completed for Anuran Call Count Stations

Number of ACC Rounds	Number of ACC Stations (N=82)
3 Rounds	61 (75%)
2 Rounds	15 (18%)
1 Round	6 (7%)

% = percent; ACC = anuran call count.

Table 3.2-18: Dates and Temperatures of Anuran Call Count Surveys

Survey Round	Dates	Air Temperature (Low-High)
Round 1	May 18, 2022 – May 22, 2022	0° C – 11° C
Round 2	June 2, 2022 – June 18, 2022	7° C – 17° C
Round 3	July 4, 2022 – July 20, 2022	10° C – 19° C

° = degrees.

Targeted surveys documented all eight of the anuran species within the LSA. From the ACC surveys, at least one species of anuran was documented calling at 90% of the survey stations and 68% of all stations had two or more species documented calling (Table 3.2-19). The maximum number of species heard at a station was six, which occurred at only one station (ACC-046). The most frequent species encountered calling across all stations was spring peeper (present at 74% of all stations), followed by gray treefrog (39%) and American toad (33%). See Table 3.2-21 for a breakdown of each species.

A full chorus (call level 3) was documented at 49 of the stations. Twenty-one of those stations were documented as having a full course during two rounds of surveys. Six stations (ACC-048, ACC-049, ACC-063, ACC-102, ACC-105 and ACC-137) were documented as having two distinct species calling at full chorus. The most common species was spring peeper (83% of all full chorus observations). Full results of the Anuran Call Count surveys are included in Attachment 6.4-A-9.

Table 3.2-19: Record of Anuran Call Count Stations with Full Chorus (Call Level 3) Observations

Station ID	Date	Survey Round	Species
ACC-002	May 20, 2022	Round 1	Spring peeper
ACC-003	May 21, 2022	Round 1	Spring peeper
ACC-006	May 21, 2022	Round 1	Spring peeper
ACC-006	June 3, 2022	Round 2	Spring peeper
ACC-007	May 20, 2022	Round 1	Spring peeper
ACC-008	May 20, 2022	Round 1	Spring peeper
ACC-014	May 19, 2022	Round 1	Spring peeper
ACC-015	May 19, 2022	Round 1	Spring peeper
ACC-015	June 2, 2022	Round 2	Spring peeper
ACC-016	May 19, 2022	Round 1	Spring peeper
ACC-016	June 2, 2022	Round 2	Spring peeper
ACC-017	May 19, 2022	Round 1	Spring peeper
ACC-017	June 2, 2022	Round 2	Spring peeper
ACC-018	May 19, 2022	Round 1	Spring peeper
ACC-022	May 18, 2022	Round 1	Spring peeper

Station ID	Date	Survey Round	Species
ACC-022	June 2, 2022	Round 2	Spring peeper
ACC-024	May 18, 2022	Round 1	Spring peeper
ACC-024	June 2, 2022	Round 2	Spring peeper
ACC-025	May 18, 2022	Round 1	Spring peeper
ACC-025	June 2, 2022	Round 2	Spring peeper
ACC-026	May 18, 2022	Round 1	Spring peeper
ACC-026	June 2, 2022	Round 2	Spring peeper
ACC-027	May 21, 2022	Round 1	Spring peeper
ACC-027	June 4, 2022	Round 2	Spring peeper
ACC-033	May 20, 2022	Round 1	Spring peeper
ACC-037	July 22, 2022	Round 3	Green frog
ACC-039	May 20, 2022	Round 1	Spring peeper
ACC-039	June 6, 2022	Round 2	Spring peeper
ACC-042	May 20, 2022	Round 1	Spring peeper
ACC-046	May 19, 2022	Round 1	Spring peeper
ACC-047	May 20, 2022	Round 1	Spring peeper
ACC-048	May 21, 2022	Round 1	Spring peeper
ACC-048	June 11, 2022	Round 2	Gray treefrog
ACC-049	May 20, 2022	Round 1	Spring peeper
ACC-049	July 8, 2022	Round 3	Gray treefrog
ACC-050	May 20, 2022	Round 1	Spring Peeper
ACC-050	June 5, 2022	Round 2	Spring Peeper
ACC-051	May 21, 2022	Round 1	Spring Peeper
ACC-051	June 5, 2022	Round 2	Spring Peeper
ACC-055	May 20, 2022	Round 1	Spring Peeper
ACC-058	July 10, 2022	Round 3	Gray treefrog
ACC-059	May 19, 2022	Round 1	Spring peeper
ACC-063	May 19, 2022	Round 1	Spring peeper; wood frog
ACC-063	June 15, 2022	Round 2	Spring peeper
ACC-068	June 14, 2022	Round 2	Spring peeper
ACC-069	July 11, 2022	Round 3	Gray treefrog
ACC-071	June 4, 2022	Round 2	Spring peeper
ACC-074	July 11, 2022	Round 3	Gray treefrog
ACC-075	June 7, 2022	Round 2	Spring peeper
ACC-076	June 7, 2022	Round 2	Spring peeper
ACC-080	June 6, 2022	Round 2	Gray treefrog
ACC-101	May 21, 2022	Round 1	Spring peeper
ACC-101	June 4, 2022	Round 2	Spring peeper
ACC-102	May 20, 2022	Round 1	Spring peeper
ACC-102	June 3, 2022	Round 2	American toad

Station ID	Date	Survey Round	Species
ACC-103	May 20,2022	Round 1	Spring peeper
ACC-103	June 3, 2022	Round 2	Spring peeper
ACC-105	June 3, 2022	Round 2	Spring peeper; boreal chorus frog
ACC-106	May 2, 2022	Round 1	Spring peeper
ACC-107	May 19, 2022	Round 1	Spring peeper
ACC-107	June 2, 2022	Round 2	Spring peeper
ACC-108	May 20, 2022	Round 1	Spring peeper
ACC-110	May 18, 2022	Round 1	Spring peeper
ACC-111	May 18, 2022	Round 1	Spring peeper
ACC-111	June 2, 2022	Round 2	Spring peeper
ACC-112	May 18, 2022	Round 1	Spring peeper
ACC-122	May 19, 2022	Round 1	Spring peeper
ACC-136	June 6, 2022	Round 2	Spring peeper
ACC-137	June 6, 2022	Round 2	American toad
ACC-137	July 13, 2022	Round 3	Gray treefrog

ACC = anuran call count.

Table 3.2-20: Number of Species Heard Calling at Anuran Call Count Stations

Number of Anuran Species Heard Calling	Number of ACC Stations (% representation) (N=82)
0	8 (10%)
1	18 (22%)
2	27 (33%)
3	17 (21%)
4	9 (11%)
5	2 (2%)
6	1 (1%)

% = percent; ACC = anuran call count.

Table 3.2-21: Proportion of Stations with Each Species Heard Calling at Anuran Call Count Stations

Anuran Species	Number of ACC Stations (% representation) (N=82)
American toad	27 (33%)
boreal chorus frog	17 (21%)
gray treefrog	32 (39%)
green frog	20 (24%)
mink frog	1 (1%)
northern leopard frog	2 (2%)

Anuran Species	Number of ACC Stations (% representation) (N=82)
spring peeper	61 (74%)
wood frog	15 (18%)

% = percent; ACC = anuran call count.

Every route segment contained stations with calling anurans present. Along four route segments (Group 1 – Alternative Route 1, Group 1 – Alternative Route 1A, Group 3 – Alternative Route 2B, and Group 4 – Alternative Route 3A) anurans were heard calling at 100% of surveyed stations (Table 3.2-22).

Table 3.2-22: Proportion of Anuran Call Count Stations with Species Heard Calling Along Alternative Route Segments

Grouping	Alternative Routes	Proportion of Anuran Call Count Stations with Anuran Species Heard Calling (%)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	7/7 (100%)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	10/10 (100%)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-1	8/9 (89%)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-2	8/9 (89%)
Group 2 (Node 1 to Node 3)	Alternative Route 1	16/18 (89%)
Group 2 (Node 1 to Node 3)	Alternative Route 1C	14/16 (88%)
Group 3 (Node 3 to Node 5)	Alternative Route 2A	5/7 (71%)
Group 3 (Node 3 to Node 5)	Alternative Route 2B	7/7 (100%)
Group 3 (Node 3 to Node 5)	Alternative Route 2C	7/9 (78%)
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	9/9 (100%)
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	12/13 (92%)
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	14/16 (88%)

% = percent; TS = Transformer Station.

3.2.2.1.2 Incidental Observations

While crews were performing all additional field studies in the LSA, they recorded incidental observations. Crews documented incidental observations of the following species within the LSA: spring peeper (six occurrences), gray treefrog (two occurrences), boreal chorus frog (one occurrence), green frog (one occurrence), and wood frog (one occurrence).

3.2.2.1.3 Amphibian Breeding Habitat Significant Wildlife Habitat

Amphibian Breeding Habitat is a Seasonal Concentration Area SWH. Based on the habitat criteria for significance, wetlands and pools need to persist until August (MNRF 2017a). Presence of shrubs and logs increase the significance for some species because of available structure for calling (MNRF 2017a).

The information presented below is a result of the desktop analysis undertaken as described in Section 2.4.2.13 and fieldwork completed as part of field surveys for SWH and vegetation (i.e., ecosite verification) which identified suitable ecosites that may support these types of SWH. See Table 3.2-23 and Table 3.2-24 for a list of the frequency and area of Amphibian Breeding Habitat along each Alternative Route segment and total within the LSA, respectively.

Table 3.2-23: Frequency and Area (ha) of Amphibian Breeding Habitat Significant Wildlife Habitat Along Alternative Routes

Grouping	Alternative Routes	Frequency of Amphibian Breeding Habitat	Area of Amphibian Breeding Habitat (ha)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	39	22
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	50	18
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-1	28	22
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-2	28	23
Group 2 (Node 1 to Node 3)	Alternative Route 1	275	149
Group 2 (Node 1 to Node 3)	Alternative Route 1C	235	135
Group 3 (Node 3 to Node 5)	Alternative Route 2A	29	13
Group 3 (Node 3 to Node 5)	Alternative Route 2B	40	24
Group 3 (Node 3 to Node 5)	Alternative Route 2C	51	17
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	251	145
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	240	138
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	213	153

ha = hectare; TS = Transformer Station.

Table 3.2-24: Frequency and Area (ha) of Amphibian Breeding Habitat Significant Wildlife Habitat within the Local Study Area

Significant Wildlife Habitat Type	Desktop Frequency in the LSA (number of occurrences)	Desktop Area in the LSA (ha)	Field Results Frequency in the LSA	Field Results Area in the LSA (ha)	Field Results % of LSA
Amphibian Breeding Habitat	6,252	28,923	6,261	29,034	17%

% = percent; ha = hectare; LSA = Local Study Area.

Criteria for confirmed Amphibian Breeding Habitat SWH is based on anuran presence of four or more of the listed frog or toad species including either northern leopard frog, green frog or mink frog and at least 20 breeding individuals (MNRF 2017a). Based on this criteria, five (ACC-046, ACC-050, ACC-063, ACC-102, and ACC-105) of the 82 stations (6%) are confirmed Amphibian Breeding Habitat SWH based on data collected.

3.2.2.2 Reptiles

Population Status and Distribution

Two of the ten species of native turtles that occur in Ontario have ranges that are known to overlap with the study area: western painted turtle (*Chrysemys picta bellii*) and snapping turtle (*Chelydra serpentina*). Both species are Apparently Secure (S4) in Ontario (NatureServe 2022). The snapping turtle is listed as Special Concern under the ESA and SARA (COSEWIC 2008). Western painted turtle is not considered a SAR in Ontario (ESA 2007) or Canada (SARA 2016).

Snapping turtles are a very long-lived species and are very slow to reach maturity. Delayed sexual maturity, low reproductive success, and high mortality of embryos (nest predation) and hatchlings make populations of snapping turtle particularly vulnerable to population level declines. Other threats include road mortality and persecution (Canadian Herpetological Society 2022).

The western painted turtle is one of two subspecies of painted turtle that occurs in Ontario (the other being the midland painted turtle, *C. p. marginata*). Western painted turtles occur north and west of Lake Superior, with a zone of overlap between both species occurring in the Algoma district. Their populations in Ontario are stable through most of their range (Canadian Herpetological Society 2022).

Habitat Selection and Foraging

Western painted turtle – Western painted turtle can be found in wetlands, ponds, lakes, creeks, and rivers with slow-moving water. They typically prefer smaller bodies of water that have soft substrates and plenty of aquatic vegetation and basking sites (Canadian Herpetological Society 2022). They are commonly seen basking close to water. Females emerge from their aquatic habitat to nest in sunny areas with sandy soil during late spring/summer (typically May to July). Hatchlings can emerge either in the fall or the following spring. Western painted turtles are opportunistic omnivorous feeders. Their diet includes algae, vegetation, invertebrates, fish, frogs, and carrion. Hibernation occurs in mud at the bottom of waterbodies (Canadian Herpetological Society 2022).

Snapping turtle – Snapping turtle occur in almost any freshwater habitat (e.g., lakes, rivers, swamps, etc.), but it most often associated with slow-moving waterbodies with soft substrates (i.e., mud or sand) and aquatic vegetation (Canadian Herpetological Society 2022). Females emerge from their aquatic habitat and dig a nest during late spring/early summer (typically May or June) and deposit eggs that will incubate and hatch in the fall. They prefer to select open areas with loose sandy or fine gravel soil. Snapping turtles are omnivorous – eating a variety of aquatic plants, invertebrates, fish, frogs, snakes, aquatic birds, and fresh carrion. Snapping turtles hibernate in the soft bottoms of ponds, lakes, and slow-moving rivers (Canadian Herpetological Society 2022). Snapping turtles are highly aquatic, spending only a small proportion of their time basking, thus basking type surveys are not always indicative of their presence.

3.2.2.2.1 Turtle Visual Encounter Surveys

Targeted surveys documented both of these species within the LSA. A total of 37 stations were visited for turtle visual encounter surveys as depicted on Figure 3.2-6 in Attachment 6.4-A-1. The majority (73%) of those stations were able to be surveyed twice (Table 3.2-25). Due to some issues encountered in the field (e.g., access permission), a small number (27%) of stations were only surveyed once.

Table 3.2-25: Number of Survey Rounds Completed for Turtle Visual Encounter Survey Stations

Number of TVES Rounds	Number of TVES Stations (% representation) (N=37)
2 Rounds	27 (73%)
1 Round	10 (27%)

% = percent; TVES = Turtle Visual Encounter Surveys.

From the TVES, western painted turtle was observed at nine of the stations, while snapping turtle was observed at only one station (Table 3.2-26). A total of twenty-three western painted turtle and two snapping turtle observations were documented (Table 3.2-27).

Table 3.2-26: Number of Species Observed Turtle Visual Encounter Survey Stations

Turtle Species	Number of TVES Stations (% representation) (N=37)
western painted turtle	8 (22%)
snapping turtle	1 (3%)

% = percent; TVES = Turtle Visual Encounter Surveys.

Table 3.2-27: Turtle Species, Abundance, Life-Stage, and Behaviour Observation at Turtle Visual Encounter Survey Stations

Station ID	Turtle Species	Observation
TVES-013	western painted turtle	• 1 Adult basking on bank.
TVES-017	western painted turtle	• 4 Adults basking on log.
TVES-019	western painted turtle	• 3 Adults basking on log.
TVES-021	western painted turtle	• 4 Juveniles basking on log; • 5 Juveniles swimming; • 1 Adult basking on log; and • 1 Juvenile mortality on road.
TVES-022	western painted turtle	• 1 Adult basking on log.
TVES-027	western painted turtle	• 1 Adult swimming.
TVES-035	western painted turtle	• 1 Adult basking on log.
TVES-036	snapping Turtle	• 1 Adult swimming; and • 1 Adult mortality on road shoulder.
TVES-037	western painted turtle	• 1 Juvenile basking on road.

TVES = Turtle Visual Encounter Surveys.

Turtle observations were documented at one or more stations along each route segment except those in Group 1 (Lakehead TS to Node 1), where no stations resulted in turtle observations (Table 3.2-28).

Table 3.2-28: Proportion of Turtle Visual Encounter Survey Stations with Turtle Observations Along Alternative Route Segments

Grouping	Alternative Routes	Proportion of TVES Stations with Turtle Species Observed (%)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	0/5 (0%)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	0/5 (0%)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-1	0/4 (0%)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-2	0/4 (0%)
Group 2 (Node 1 to Node 3)	Alternative Route 1	7/16 (44%)
Group 2 (Node 1 to Node 3)	Alternative Route 1C	5/14 (36%)
Group 3 (Node 3 to Node 5)	Alternative Route 2A	1/2 (50%)
Group 3 (Node 3 to Node 5)	Alternative Route 2B	1/3 (33%)
Group 3 (Node 3 to Node 5)	Alternative Route 2C	1/2 (50%)

Grouping	Alternative Routes	Proportion of TVES Stations with Turtle Species Observed (%)
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	1/4 (25%)
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	1/5 (20%)
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	1/4 (25%)

% = percent; TS = Transformer Station; TVES = Turtle Visual Encounter Surveys.

3.2.2.2.2 Incidental Observations

While crews were performing other field studies in the LSA, crews recorded incidental observations. The following table presents the incidental observations of turtles within the LSA, including road mortalities observed (Table 3.2-29).

Table 3.2-29: Incidental Observations of Turtles within the Local Study Area

Date	Turtle Species	Abundance	Observation
June 18, 2022	western painted turtle	1	• Crossing road.
June 18, 2022	western painted turtle	1	• Crossing road.
June 20, 2022	western painted turtle	1	• Adult female crossing road.
June 20, 2022	western painted turtle	1	• Adult male crossing road.
June 20, 2022	western painted turtle	33	• Adult females observed nesting.
July 8, 2022	western painted turtle	2	• Road mortality (one Adult female); • Swimming (one Juvenile); and • 25 nests observed on road embankment.
July 8, 2022	western painted turtle	1	• Adult female crossing road.
July 8, 2022	western painted turtle	3	• Adult females crossing road (two); Road mortality (one Adult female).
July 9, 2022	western painted turtle	1	• Adult road mortality.
July 9, 2022	western painted turtle	1	• Adult female crossing road.
July 9. 2022	western painted turtle	1	• Adult female crossing road.

Date	Turtle Species	Abundance	Observation
July 9, 2022	western painted turtle	1	• Adult female looking to nest.
July 9, 2022	western painted turtle	1	• Adult female nesting on road.
July 9, 2022	western painted turtle	1	• Adult female nesting on road.
July 9, 2022	western painted turtle	1	• Adult female looking to nest.
July 9, 2022	western painted turtle	1	• Adult female road mortality.
July 9, 2022	western painted turtle	1	• Adult female road mortality.
July 10, 2022	western painted turtle	1	• Adult female road mortality.
July 10, 2022	western painted turtle	1	• Adult female crossing road.
July 10, 2022	western painted turtle	1	• Adult female crossing road.
July 11, 2022	western painted turtle	1	• Adult female road mortality.
July 11, 2022	western painted turtle	1	• Adult female crossing road.
July 11, 2022	western painted turtle	1	• Adult female crossing road.
July 11, 2022	western painted turtle	1	• Adult male road mortality.
July 11, 2022	western painted turtle	1	• Adult female crossing road.
July 11, 2022	western painted turtle	1	• Adult female crossing road.
July 11, 2022	western painted turtle	1	• Adult female crossing road.
July 12, 2022	western painted turtle	1	• Adult female road mortality.
July 14, 2022	western painted turtle	1	• Adult female nesting on road.
July 22, 2022	western painted turtle	2	• Crossing road (one); and • Swimming (one).
August 18, 2022	western painted turtle	1	• Crossing road.
June 16, 2022	snapping turtle	1	• Road mortality.

Date	Turtle Species	Abundance	Observation
July 8, 2022	snapping turtle	1	• Adult female road mortality; and • Seven turtle nests on road embankment.

3.2.2.2.3 Turtle Wintering Area and Turtle Nesting Area Significant Wildlife Habitat

Turtle Wintering Area is a Seasonal Concentration Area SWH. For most turtles, wintering areas are in the same general area as their core habitat. The water of the permanent waterbodies has to be deep enough not to freeze completely to the bottom and have soft mud substrates (MNRF 2017a). The results obtained from the TVES program provided project data on turtle wintering areas which can be used to confirm the presence of SWH at those sites.

Turtle Nesting Area is a Specialized Habitat for Wildlife SWH. In early spring and summer, turtles lay their eggs in areas that are relatively soft substrates, such as sand or fine gravel, that allows turtles to easily dig their nests, and are located in open, sunny areas. Nesting sites close to water, away from roads, and sites less prone to egg predation are the highest quality (MNRF 2017a).

The information presented below and on Figure 3.2-6 in Attachment 6.4-A-1 is a result of the desktop analysis undertaken as described in Section**Error! Reference source not found.** 3.1.2 and fieldwork completed as part of field surveys for SWH and vegetation (i.e., ecosite verification) which identified suitable ecosites that may support these types of SWH.

Table 3.2-30: Frequency and Area (ha) of Turtle Wintering Areas and Turtle Nesting Areas Significant Wildlife Habitat within the Local Study Area

Significant Wildlife Habitat Type	Desktop Frequency in the LSA	Desktop Area in the LSA (ha)	Field Results Frequency in the LSA	Field Results Area in the LSA (ha)	Field Results % of LSA
Candidate Turtle Wintering Areas	5,691	25,270	5,680	25,288	15%
Candidate Turtle Nesting Areas	129	880	130	884	<1%

< = less than; % = percent; ha = hectare; LSA = Local Study Area.

Table 3.2-31: Frequency and Area (ha) of Candidate Turtle Nesting Areas Significant Wildlife Habitat along Alternative Routes

Grouping	Alternative Routes	Frequency of Turtle Nesting Areas	Area of Turtle Nesting Areas (ha)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	4	8
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	6	8
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-1	2	2
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-2	2	1
Group 2 (Node 1 to Node 3)	Alternative Route 1	4	2
Group 2 (Node 1 to Node 3)	Alternative Route 1C	8	5
Group 3 (Node 3 to Node 5)	Alternative Route 2A	3	3
Group 3 (Node 3 to Node 5)	Alternative Route 2B	4	5
Group 3 (Node 3 to Node 5)	Alternative Route 2C	3	<1
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	8	7
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	9	6
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	6	5

< = less than; ha = hectare; TS = Transformer Station.

Table 3.2-32: Frequency and Area (ha) of Candidate Turtle Wintering Areas Significant Wildlife Habitat along Alternative Routes

Grouping	Alternative Routes	Frequency of Turtle Wintering Areas	Area of Turtle Wintering Areas (ha)
Group 1 (Lakehead TS to Node 1)	Alternative Route 1	34	21
Group 1 (Lakehead TS to Node 1)	Alternative Route 1A	45	17
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-1	24	15
Group 1 (Lakehead TS to Node 1)	Alternative Route 1B-2	24	15
Group 2 (Node 1 to Node 3)	Alternative Route 1	241	126

Grouping	Alternative Routes	Frequency of Turtle Wintering Areas	Area of Turtle Wintering Areas (ha)
Group 2 (Node 1 to Node 3)	Alternative Route 1C	203	117
Group 3 (Node 3 to Node 5)	Alternative Route 2A	24	10
Group 3 (Node 3 to Node 5)	Alternative Route 2B	40	24
Group 3 (Node 3 to Node 5)	Alternative Route 2C	47	17
Group 4 (Node 5 to Dryden TS)	Alternative Route 3A	218	116
Group 4 (Node 5 to Dryden TS)	Alternative Route 3B	185	88
Group 4 (Node 5 to Dryden TS)	Alternative Route 3C	175	117

ha = hectare; TS = Transformer Station.

Criteria for confirmed Turtle Wintering Area SWH is based on presence of one or more western painted turtle or snapping turtle over-wintering within a wetland (MNRF 2017a). Observations of basking or swimming turtles in suitable overwintering habitat during turtle visual encounter surveys were considered to represent confirmed locations of turtle wintering (Table 3.2-27). Criteria for confirmed Turtle Nesting Area SWH is one or more nests being present (MNRF 2017a),but excludes nesting along provincial or municipal roads. Although evidence of turtle nesting was confirmed during field investigations (see Table 3.2-27), these observations were made along the sides or provincial or municipal roads, which does not qualify as SWH.

3.2.3 Birds

Targeted and incidental breeding bird surveys documented a total of 113 species, comprising 2,822 individuals. For a full record of breeding bird observations refer to Attachment 6.4-A-10. In 2022, the following breeding bird surveys were completed as part of the Project:

- Forest breeding bird surveys at 99 stations;
- Grassland breeding bird surveys at 42 stations;
- Bank swallow surveys at 51 stations;
- Barn swallow surveys at 42 stations;
- Least bittern surveys at 15 stations;

- Five marsh breeding bird surveys; and
- Eastern whip-poor-will surveys at 80 stations.

The breeding bird surveys stations are depicted on Figure 3.2-7 in Attachment 6.4-A-1. Results for each of the major guilds and each bird SAR and SOCC is provided in greater detail, in the following sections.

3.2.3.1 Forest Breeding Birds

A total of 914 individuals representing 73 species of birds were recorded within 100 m of observers during the forest breeding bird surveys, as summarized in Table 3.2-33. An additional 10 bird species were recorded as incidental observations (i.e., flyovers, or forest breeding bird observations that were outside of the 100 m survey radius) during the forest breeding bird surveys. Canada warbler, common nighthawk, and olive-sided flycatcher were the only SOCC recorded within 100 m of observers; there were no SAR observed during surveys. Bald eagle and eastern wood-pewee were detected incidentally or >100 m from observers during forest breeding bird surveys. The overall most abundant species across all habitats and breeding bird surveys were Nashville warbler (*Leiothlypis ruficalpilla*) (N=114 individuals), red-eyed vireo (*Vireo olivaceus*) (N=60 individuals), white-throated sparrow (*Zonotrichia albicollis*) (N=51 individuals), yellow-rumped warbler (*Setophaga coronata*) (N=47 individuals), and ovenbird (*Seiurus aurocapilla*) (N=43 individuals).

Refer to Table 3.2-33 for a summary of the species abundances, % total observations and % of stations recorded at during the forest breeding bird surveys in 2022. The percent (%) of stations in which each species was detected ranged from 1 to 84%, with Nashville warbler (84%), white-throated sparrow (64%), and red-eyed vireo (59%) being the most observed species at each survey station.

Table 3.2-33: Species Abundances, Percent (%) Total Observations and Percent (%) of Stations Recorded During Forest Breeding Bird Surveys in 2022

Common Name	Scientific Name	# of Ind. <100 m	# of Ind. >100 m / Flyover	% of Total Obs.	# of Stations	% of Stations
alder flycatcher	*Empidonax alnorum*	18	0	1.5%	13	13%
American bittern	*Botaurus lentiginosus*	0	1	0.1%	1	1%
American crow	*Corvus brachyrhynchos*	1	6	0.6%	6	6%
American goldfinch	*Spinus tristis*	0	1	0.1%	1	1%
American redstart	*Setophaga ruticilla*	18	0	1.5%	15	15%
American robin	*Turdus migratorius*	14	6	1.6%	20	20%
American three-toed woodpecker	*Picoides dorsalis*	2	0	0.2%	2	2%
bald eagle	*Haliaeetus leucocephalus*	0	>2	0.0%	2	2%
bay-breasted warbler	*Setophaga castanea*	2	0	0.2%	2	2%
belted kingfisher	*Megaceryle alcyon*	1	0	0.1%	1	1%
black-and-white warbler	*Mniotilta varia*	14	1	1.2%	14	14%
black-backed woodpecker	*Picoides arcticus*	1	1	0.2%	2	2%
black-billed cuckoo	*Coccyzus erythropthalmus*	3	10	1.1%	10	10%
blackburnian warbler	*Setophaga fusca*	27	0	2.2%	20	20%
black-capped chickadee	*Poecile atricapillus*	15	0	1.2%	11	11%
black-throated green Warbler	*Setophaga virens*	5	0	0.4%	3	3%
blue jay	*Cyanocitta cristata*	12	4	1.3%	16	16%
blue-headed vireo	*Vireo solitarius*	10	4	1.2%	13	13%
broad-winged hawk	*Buteo platypterus*	2	2	0.3%	4	4%
brown creeper	*Certhia americana*	13	0	1.1%	13	13%
brown-headed cowbird	*Molothrus ater*	0	1	0.1%	1	1%
Canada jay	*Perisoreus canadensis*	5	1	0.5%	4	4%
Canada warbler	*Cardellina canadensis*	4	0	0.3%	3	3%
Cape may warbler	*Setophaga tigrina*	3	0	0.3%	3	3%
cedar waxwing	*Bombycilla cedrorum*	10	19	2.4%	17	17%

Common Name	Scientific Name	# of Ind. <100 m	# of Ind. >100 m / Flyover	% of Total Obs.	# of Stations	% of Stations
chestnut-sided warbler	*Setophaga pensylvania*	23	1	2.0%	19	19%
chipping sparrow	*Spizella passerina*	10	2	1.0%	11	11%
common goldeneye	*Bucephala clangula*	1	0	0.1%	1	1%
common grackle	*Quiscalus quiscula*	1	0	0.1%	1	1%
common loon	*Gavia immer*	2	8	0.8%	9	9%
common nighthawk	*Chordeiles minor*	1	0	0.1%	1	1%
common raven	*Corvus corax*	6	9	1.2%	8	8%
common yellowthroat	*Geothlypis trichas*	15	2	1.4%	16	16%
dark-eyed junco	*Junco hyemalis*	10	4	1.2%	14	14%
downy woodpecker	*Picoides pubescens*	4	0	0.3%	4	4%
eastern wood-pewee	*Contopus virens*	0	1	0.1%	1	1%
golden-crowned kinglet	*Regulus satrapa*	14	0	1.2%	14	14%
hairy woodpecker	*Leuconotopicus villosus*	4	1	0.4%	5	5%
hermit thrush	*Catharus guttatus*	25	18	3.5%	34	34%
house wren	*Troglodytes aedon*	1	0	0.1%	1	1%
killdeer	*Charadrius vociferus*	0	1	0.1%	1	1%
least flycatcher	*Empidonax minimus*	13	0	1.1%	10	10%
Lincoln's sparrow	*Melospiza lincolnii*	9	3	1.0%	12	12%
magnolia warbler	*Setophaga magnolia*	34	4	3.1%	31	31%
merlin	*Falco columbarius*	0	2	0.2%	2	2%
mourning warbler	*Geothlypis philadelphia*	13	5	1.5%	16	16%
Nashville warbler	*Leiothlypis ruficalpilla*	114	17	10.8%	83	84%
northern flicker	*Colaptes auratus*	2	3	0.4%	5	5%
northern parula	*Setophaga americana*	16	1	1.4%	17	17%
northern waterthrush	*Parkesia noveboracensis*	1	1	0.2%	2	2%
olive-sided flycatcher	*Contopus cooperi*	3	2	0.4%	5	5%
ovenbird	*Seiurus aurocapillus*	43	15	4.8%	47	47%

Common Name	Scientific Name	# of Ind. <100 m	# of Ind. >100 m / Flyover	% of Total Obs.	# of Stations	% of Stations
palm warbler	*Setophaga palmarum*	8	2	0.8%	10	10%
Philadelphia vireo	*Vireo philadelphicus*	2	0	0.2%	2	2%
pileated woodpecker	*Dryocopus pileatus*	3	4	0.6%	7	7%
pine siskin	*Spinus pinus*	1	1	0.2%	1	1%
purple finch	*Haemorhous purpureus*	3	1	0.3%	4	4%
red crossbill	*Loxia curvirostra*	1	0	0.1%	1	1%
red-breasted nuthatch	*Sitta canadensis*	13	3	1.3%	16	16%
red-eyed vireo	*Vireo olivaceus*	60	26	7.1%	58	59%
red-tailed hawk	*Buteo jamaicensis*	0	1	0.1%	1	1%
red-winged blackbird	*Agelaius phoeniceus*	0	2	0.2%	1	1%
rose-breasted grosbeak	*Pheucticus ludovicianus*	2	1	0.3%	3	3%
ruby-crowned kinglet	*Regulus calendula*	32	13	3.7%	34	34%
ruby-throated hummingbird	*Archilochus colubris*	3	0	0.3%	2	2%
ruffed grouse	*Bonasa umbellus*	8	2	0.8%	9	9%
sandhill crane	*Grus canadensis*	1	0	0.1%	1	1%
song sparrow	*Melospiza melodia*	2	0	0.2%	2	2%
swainson's thrush	*Catharus ustulatus*	16	7	1.9%	21	21%
swamp sparrow	*Melospiza georgiana*	13	15	2.3%	9	9%
tennessee warbler	*Leiothlypis peregrina*	26	3	2.4%	25	25%
tree swallow	*Tachycineta bicolor*	1	0	0.1%	1	1%
trumpeter swan	*Cygnus buccinator*	0	1	0.1%	1	1%
veery	*Catharus fuscescens*	28	7	2.9%	27	27%
white-throated sparrow	*Zonotrichia albicollis*	51	41	7.6%	63	64%
white-winged crossbill	*Loxia leucoptera*	4	5	0.7%	4	4%
Wilson's snipe	*Gallinago delicata*	2	1	0.3%	3	3%
Wilson's warbler	*Cardellina pusilla*	5	1	0.5%	4	4%
winter wren	*Troglodytes hiemalis*	13	7	1.6%	20	20%

Common Name	Scientific Name	# of Ind. <100 m	# of Ind. >100 m / Flyover	% of Total Obs.	# of Stations	% of Stations
yellow warbler	*Setophaga petechia*	1	0	0.1%	1	1%
yellow-bellied flycatcher	*Empidonax flaviventris*	19	1	1.6%	17	17%
yellow-bellied sapsucker	*Sphyrapicus varius*	4	0	0.3%	4	4%
yellow-rumped warbler	*Setophaga coronata*	47	0	3.9%	32	32%
83 species		**914**	**304**	**99.8%**	**951**	

Notes: Some of the numbers are rounded for presentation purposes. Therefore, it may appear that the totals do not equal the sum of the individual values.
% = percent; # = number; m = metres.

Of the species recorded during the forest breeding bird surveys, the total number of species recorded per station ranged from 3 to 16 (Table 3.2-34). Stations Breeding Bird Survey (BBS)-23 and BBS-81, along Alternative Route 1C and 3C respectively, recorded the most species (16 species), while station BBS-68, along Alternative Route 3C, recorded the fewest species (three species).

Forest breeding bird diversity and abundances across the survey season are shown in Table 3.2-35. It should be noted that survey effort (i.e., the number of survey days and number of stations surveyed) varied from week to week, making it difficult to draw conclusions regarding changes in diversity and abundances across time; however, no obvious discrepancies were observed based on the timing of surveys (see Mean Individual Per Station column in Table 3.2-35).

The total number of individuals per species across stations, including all birds observed during targeted breeding bird surveys, as well as those observed incidentally within the LSA, is shown in Table 3.2-35. The fewest individuals observed was during the week of July 10-16, possibly due to the late date in the phenology of breeding birds, when males would typically start singing less. The most individuals observed was during the week of July 3-9, possibly due to the increase in birds due to young fledging, adults actively feeding young, and while males are still actively singing and defending breeding territories from other rival males.

Table 3.2-34: Total Number of Species Per Breeding Bird Station Recorded During Forest Breeding Bird Surveys (2022)

Station #	# of Species	Station #	# of Species	Station #	# of Species	Station #	# of Species	Station #	# of Species
ALT-BBS-5	8	BBS-10	9	BBS-32	10	BBS-56	6	BBS-79	10
ALT-BBS-23	11	BBS-12	5	BBS-33	4	BBS-57	12	BBS-80	14
ALT-BBS-38	7	BBS-13	10	BBS-34	8	BBS-58	8	BBS-81	16
ALT-BBS-39	12	BBS-14	11	BBS-35	12	BBS-59	7	BBS-82	13
ALT-BBS-45	9	BBS-15	8	BBS-36	8	BBS-60	11	BBS-83	13
ALT-BBS-49	7	BBS-16	8	BBS-37	11	BBS-61	11	BBS-84	6
ALT-BBS-51	5	BBS-17	8	BBS-38	11	BBS-62	6	BBS-85	9
ALT-BBS 54	13	BBS-18	11	BBS-39	7	BBS-63	14	BBS-86	9
ALT-BBS-56	9	BBS-19	11	BBS-40	16	BBS-64	10	BBS-88	8
ALT-BBS-70	10	BBS-20	8	BBS-42	13	BBS-65	5	BBS-89	8
ALT-BBS-89	8	BBS-21	11	BBS-43	11	BBS-67	11	BBS-90	8
ALT-BBS-94	12	BBS-22	9	BBS-44	5	BBS-68	3	BBS-91	8
BBS-01	13	BBS-23	16	BBS-45	14	BBS-69	6	BBS-92	8
BBS-02	6	BBS-24	8	BBS-46	9	BBS-70	7	BBS-93	7
BBS-03	6	BBS-25	8	BBS-48	7	BBS-71	8	BBS-94	13
BBS-04	15	BBS-26	14	BBS-50	8	BBS-72	10	BBS-95	10
BBS-05	11	BBS-27	9	BBS-51	12	BBS-73	9	BBS-97	13
BBS-07	9	BBS-29	8	BBS-53	9	BBS-74	14	BBS-98	10
BBS-08	9	BBS-30	13	BBS-54	10	BBS-75	10	BBS-99	8
BBS-09	13	BBS-31	12	BBS-55	7	BBS-76	10	-	-

= number.

Table 3.2-35: Forest Breeding Bird Diversity and Abundances Across the 2022 Survey Season

Survey Week	# of Survey Days	# of Stations	# of Species	# of Ind.	Mean Species/ Station	Mean Ind./ Station
Week 1 (May 29, 2022 to Jun 4, 2022)	2	2	17	21	8.50	10.50
Week 2 (Jun 5, 2022 to June 11, 2022)	1	8	36	101	4.50	12.63
Week 3 (Jun 12, 2022 to June 18, 2022)	2	25	58	314	2.32	12.56
Week 4 (Jun 19, 2022 to June 25, 2022)	1	5	26	44	5.20	8.80
Week 5 (Jun 26, 2022 to July 2, 2022)	3	20	51	252	2.55	12.60
Week 6 (July 3, 2022 to July 9, 2022)	3	38	60	464	1.58	12.21
Week 7 (July 10, 2022 to July 16, 2022)	1	1	13	17	13.00	17.00

= Number.

Forest breeding bird survey results were assessed based on habitat, with 10 habitat types being surveyed. Belted kingfisher (*Megaceryle alcyon*) was only observed in bog habitat (Table 3.2-36. Common nighthawk, house wren (*Troglodytes aedon*), pine siskin (*Spinus pinus*), rose-breasted grosbeak (*Pheucticus ludovicianus*), and yellow warbler (*Setophaga petechia*) were only observed in coniferous forest habitat. Common goldeneye (*Bucephala clangula*) was only observed in coniferous swamp habitat. Black-backed woodpecker, common grackle (*Quiscalus quiscula*), red crossbill (*Loxia curvirostra*), and ruby-throated hummingbird (*Archilochus colubris*) were only observed in deciduous forest habitat. American crow was only observed in deciduous swamp habitat. Northern waterthrush (*Parkesia noveboracensis*) and sandhill crane (*Grus canadensis*) were only observed in marsh habitat. Tree swallow (*Tachycineta bicolor*) was only observed in thicket swamp habitat. No birds were exclusively observed in the fen, mixed forest, or thicket habitats.

The following species were observed the most abundantly, in each respective habitat:

- Bog – swamp sparrow (*Melospiza georgiana*) and yellow-bellied flycatcher (*Empidonax flaviventris*);
- Coniferous forest – Nashville warbler;
- Coniferous swamp – common raven (*Corvus corax*), American redstart, white-winged crossbill (*Loxia leucoptera*), and black-throated green warbler;
- Deciduous forest – red-eyed vireo;
- Deciduous swamp – least flycatcher (*Empidonax minimus*) and hermit thrush (*Catharus guttatus*);
- Fen – ruby-crowned kinglet (*Regulus calendula*);
- Marsh – black-capped chickadee;
- Mixed forest – blackburnian warbler, black-throated green warbler, and ruby-throated hummingbird;
- Thicket – blackburnian warbler; and
- Thicket swamp – white-throated sparrow.

Mean density by habitat for species recorded during forest breeding bird surveys is outlined, below, in Table 3.2-36.

Table 3.2-36: Mean Density (Birds per Hectare) by Habitat of Species Recorded Within <100 m of Survey Station During Forest Breeding Bird Surveys (2022)

Common Name	Scientific Name	Bird Conservation Regions (BCR)-12ON Priority Species	Bog (N=5)	Coniferous Forest (N=27)	Coniferous Swamp (N=11)	Deciduous Forest (N=25)	Deciduous Swamp (N=5)	Fen (N=5)	Marsh (N=5)	Mixed Forest (N=5)	Thicket (N=4)	Thicket Swamp (N=5)
alder flycatcher	*Empidonax alnorum*	–	0.5	0.3	0.	–	–	0.3	0.5	–	–	0.3
American crow	*Corvus brachyrhynchos*	–	–	–	–	–	0.3	–	–	–	–	–
American redstart	*Setophaga ruticilla*	–	–	0.3	0.6	0.4	0.3	–	–	–	–	0.6
American robin	*Turdus migratorius*	–	0.3	0.3	0.3	0.3	–	0.3	0.3	0.3	–	0.3
American three-toed woodpecker	*Picoides dorsalis*	–	–	0.3	–	–	–	–	0.3	–	–	–
bay-breasted warbler	*Setophaga castanea*	LB	0.3	–	–	0.3	–	–	–	–	–	–
belted kingfisher	*Megaceryle alcyon*	LB	0.3	–	–	–	–	–	–	–	–	–
black-and-white warbler	*Mniotilta varia*	–	–	0.5	0.3	0.3	0.3	–	–	0.3	0.3	–
black-backed woodpecker	*Picoides arcticus*	–	–	–	–	0.3	–	–	–	–	–	–
black-billed cuckoo	*Coccyzus erythropthalmus*	LB	–	–	0.3	0.3	–	–	–	0.3	–	–
blackburnian warbler	*Setophaga fusca*	LB	–	0.4	0.3	0.4	0.3	–	–	0.6	0.6	–
black-capped chickadee	*Poecile atricapillus*	–	–	0.3	0.3	0.6	–	–	0.6	0.3	0.3	–
black-throated green warbler	*Setophaga virens*	LB	–	–	0.6	0.3	–	–	–	0.6	–	–
blue jay	*Cyanocitta cristata*	–	0.3	0.3	0.3	0.3	–	–	0.3	–	0.3	0.3
blue-headed vireo	*Vireo solitarius*	–	0.3	0.3	0.3	–	0.3	0.3	0.3	–	–	–
broad-winged hawk	*Buteo platypterus*	LB	–	–	–	0.3	–	–	–	0.3	–	–
brown creeper	*Certhia americana*	–	–	0.3	0.3	0.3	–	0.3	0.3	0.3	–	–
Canada jay	*Perisoreus canadensis*	–	–	–	–	–	–	0.5	–	–	–	0.6
Canada warbler	*Cardellina canadensis*	LB	–	0.6	0.3	0.3	–	–	–	–	–	–
cape may warbler	*Setophaga tigrina*	–	–	0.3	–	0.3	–	–	0.3	–	–	–
cedar waxwing	*Bombycilla cedrorum*	–	–	0.4	–	0.6	–	0.3	–	–	–	–
chestnut-sided warbler	*Setophaga pensylvania*	LB	–	0.3	0.3	0.6	–	–	0.3	–	–	0.3
chipping sparrow	*Spizella passerina*	–	–	0.3	0.3	–	–	0.3	–	–	–	0.6
common goldeneye	*Bucephala clangula*	WF	–	–	0.3	–	–	–	–	–	–	–
common grackle	*Quiscalus quiscula*	–	–	–	–	0.3	–	–	–	–	–	–
common loon	*Gavia immer*	–	–	0.3	–	0.3	–	–	–	–	–	–
common nighthawk	*Chordeiles minor*	LB	–	0.3	–	–	–	–	–	–	–	–
common raven	*Corvus corax*	–	–	0.6	0.6	0.6	–	–	–	–	–	–
common yellowthroat	*Geothlypis trichas*	LB	0.5	0.3	0.3	–	–	0.3	0.3	–	–	0.3
dark-eyed junco	*Junco hyemalis*	–	0.	0.3	–	–	–	0.3	0.3	0.3	–	–
downy woodpecker	*Picoides pubescens*	–	–	–	0.3	0.3	0.3	–	–	–	–	–
golden-crowned kinglet	*Regulus satrapa*	–	0.3	0.3	0.3	0.3	–	0.3	–	0.3	0.3	–
hairy woodpecker	*Leuconotopicus villosus*	–	0.3	–	–	0.3	–	–	0.3	–	–	–
hermit thrush	*Catharus guttatus*	–	0.5	0.4	0.4	0.3	1.0	0.3	0.3	0.3	0.3	–

Common Name	Scientific Name	Bird Conservation Regions (BCR)-12ON Priority Species	Bog (N=5)	Coniferous Forest (N=27)	Coniferous Swamp (N=11)	Deciduous Forest (N=25)	Deciduous Swamp (N=5)	Fen (N=5)	Marsh (N=5)	Mixed Forest (N=5)	Thicket (N=4)	Thicket Swamp (N=5)
house wren	*Troglodytes aedon*	–	–	0.3	–	–	–	–	–	–	–	–
least flycatcher	*Empidonax minimus*	LB	–	0.3	–	0.4	1.0	–	0.3	0.3	–	0.3
Lincoln's sparrow	*Melospiza lincolnii*	–	0.3	0.3	–	0.3	–	0.3	–	–	0.3	0.3
magnolia warbler	*Setophaga magnolia*	–	0.3	0.4	0.3	1.2	–	0.3	0.5	–	0.3	0.3
mourning warbler	*Geothlypis philadelphia*	LB	--	0.4	0.3	0.5	0.3	0.3	0.3	0.3	–	0.3
Nashville warbler	*Leiothlypis ruficalpilla*	LB	0.6	1.5	0.6	1.1	0.4	0.6	0.5	0.5	0.3	0.5
northern flicker	*Colaptes auratus*	LB	–	0.3	–	0.3	–	–	–	–	–	–
northern parula	*Setophaga americana*	–	0.3	0.3	0.3	0.3	0.3	–	0.3	–	–	0.3
northern waterthrush	*Parkesia noveboracensis*	–	–	–	–	–	–	–	0.3	–	–	–
olive-sided flycatcher	*Contopus cooperi*	LB	0.3	0.3	–	–	–	0.3	--	–	–	–
ovenbird	*Seiurus aurocapillus*	–	--	0.4	0.3	0.4	0.5	–	–	0.3	0.3	0.3
palm warbler	*Setophaga palmarum*	–	0.3	0.	0.3	–	–	0.3	–	–	–	0.3
Philadelphia vireo	*Vireo philadelphicus*	–	–	0.3	–	0.3	–	–	–	–	–	–
pileated woodpecker	*Dryocopus pileatus*	–	–	–	–	0.3	–	–	–	0.3	–	–
pine siskin	*Spinus pinus*	–	–	0.3	–	–	–	–	–	–	–	–
purple finch	*Haemorhous purpureus*	LB	0.3	–	–	0.3	–	0.3	–	0.3	–	–
red crossbill	*Loxia curvirostra*	LB	–	–	–	0.3	–	–	–	–	–	–
red-breasted nuthatch	*Sitta canadensis*	–	–	0.3	0.3	0.3	0.3	–	0.3	–	–	–
red-eyed vireo	*Vireo olivaceus*	–	–	0.4	0.4	1.4	0.7	0.3	0.3	0.4	–	0.3
rose-breasted grosbeak	*Pheucticus ludovicianus*	LB	–	0.3	–	–	–	–	–	–	–	–
ruby-crowned kinglet	*Regulus calendula*	LB	0.5	0.4	0.5	0.3	0.3	1.0	0.5	0.5	–	0.3
ruby-throated hummingbird	*Archilochus colubris*	–	–	–	–	0.3	–	–	–	0.6	–	–
ruffed grouse	*Bonasa umbellus*	LB	0.3	0.3	–	0.3	0.3	–	–	–	–	0.3
sandhill crane	*Grus canadensis*	WB	–	–	–	–	–	–	0.3	–	–	–
song sparrow	*Melospiza melodia*	LB	–	0.3	–	0.3	–	–	–	–	–	–
swainson's thrush	*Catharus ustulatus*	–	–	0.3	0.3	0.3	0.3	0.6	0.3	–	0.3	–
swamp sparrow	*Melospiza georgiana*	LB	0.6	–	–	–	–	0.6	0.5	–	–	0.3
Tennessee warbler	*Leiothlypis peregrina*	LB	0.4	0.3	0.4	0.5	0.3	0.3	0.3	–	0.3	0.3
tree Swallow	*Tachycineta bicolor*	LB	–	–	–	–	–	–	–	–	–	0.3
veery	*Catharus fuscescens*	LB	0.3	0.3	0.5	1.2	0.5	–	0.3	0.3	–	0.5
white-throated sparrow	*Zonotrichia albicollis*	LB	0.4	0.4	0.4	0.3	0.6	0.3	0.3	--	0.3	1.7
white-winged crossbill	*Loxia leucoptera*	–	–	0.3	0.6	–	–	–	–	–	–	–
Wilson's snipe	*Gallinago delicata*	SB	–	–	–	0.3	–	–	–	–	0.3	–
Wilson's warbler	*Cardellina pusilla*	–	0.3	–	–	0.6	–	0.3	–	–	–	0.3
winter wren	*Troglodytes hiemalis*	–	–	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Common Name	Scientific Name	Bird Conservation Regions (BCR)-12ON Priority Species	Bog (N=5)	Coniferous Forest (N=27)	Coniferous Swamp (N=11)	Deciduous Forest (N=25)	Deciduous Swamp (N=5)	Fen (N=5)	Marsh (N=5)	Mixed Forest (N=5)	Thicket (N=4)	Thicket Swamp (N=5)
yellow warbler	*Setophaga petechia*	–	–	0.3	–	–	–	–	–	–	–	–
yellow-bellied flycatcher	*Empidonax flaviventris*	–	0.6	0.3	0.4	0.3	0.3	0.3	–	–	–	–
yellow-bellied sapsucker	*Sphyrapicus varius*	LB	–	–	–	0.3	0.3	–	–	0.3	–	–
yellow-rumped warbler	*Setophaga coronata*	–	0.3	0.7	0.5	0.3	0.3	0.3	0.3	0.3	–	0.3

Notes: Some of the numbers are rounded for presentation purposes.

– = not available/not applicable; LB = Landbird Priority Species; m = metres; N = number of sites surveyed; SB = Shorebird Priority Species; WB = Waterbird Priority Species; WF = Waterfowl Priority Species.

3.2.3.2 Grassland Breeding Birds

A total of 567 individuals representing 52 species of birds were recorded within 100 m of observers during the grassland breeding bird surveys. An additional 26 bird species were recorded as incidental observations (i.e., flyovers, or breeding bird observations that were outside of the 100 m survey radius). No federally or provincially listed species were observed within 100 m of observers; however, bobolink, Canada warbler and eastern wood-pewee were detected incidentally or >100 m from observers during these surveys. Refer to Table 3.2-37 for a summary of the species abundances, % total observations and % of stations recorded at during grassland breeding bird surveys in 2022.

Of species recorded during the grassland breeding bird survey, the total number of species recorded per station ranged from 7-30 (Table 3.2-38) and the percent (%) of stations in which each species was detected ranged from 3-79 (Table 3.2-38). The overall most abundant species observed during the grassland breeding bird surveys were American crow (N=188 individuals), Canada goose (*Branta canadensis*) (N=107 individuals), white-throated sparrow (N=67 individuals), savannah sparrow (*Passerculus sandwichensis*) (N=95 individuals), American robin (*Turdus migratorius*) (N=58 individuals), song sparrow (*Melospiza melodia*) (N=58 individuals), and red-eyed vireo (N=56 individuals).

Of species recorded during the grassland breeding bird surveys, the percent (%) representation of each species in total observations is shown in Table 3.2-38. The total number of individuals per species across stations (including all birds observed during targeted breeding bird surveys as well as those observed incidentally within the LSA) is shown in Attachment 6.4-A-10.

Table 3.2-37: Species Abundances, % Total Observations and % of Stations Recorded At During Grassland Breeding Bird Surveys in 2022

Common Name	Scientific Name	# of Individuals <100 m	# of Individuals >100 m / Flyover	% of Total Observations	# of Stations (recorded at)	% of Stations (recorded at)
alder flycatcher	*Empidonax alnorum*	5	6	0.8%	7	18%
American black duck	*Anas rubripes*	–	1	0.1%	1	3%
American crow	*Corvus brachyrhynchos*	25	163	14.3%	31	79%
American goldfinch	*Spinus tristis*	1	17	1.4%	9	23%
American kestrel	*Falco sparverius*	5	6	0.8%	10	26%
American redstart	*Setophaga ruticilla*	6	7	1.0%	12	31%
American robin	*Turdus migratorius*	33	25	4.4%	31	79%
bald eagle	*Haliaeetus leucocephalus*	–	1	0.1%	1	3%
barred owl	*Strix varia*	–	1	0.1%	1	3%
bay-breasted warbler	*Setophaga castanea*	–	1	0.1%	1	3%
belted kingfisher	*Megaceryle alcyon*	–	2	0.2%	2	5%
black-and-white warbler	*Mniotilta varia*	8	–	0.6%	5	13%
black-billed cuckoo	*Coccyzus erythropthalmus*	1	7	0.6%	7	18%
black-capped chickadee	*Poecile atricapillus*	8	8	1.2%	12	31%
black-throated green warbler	*Setophaga virens*	–	5	0.4%	5	13%
blue jay	*Cyanocitta cristata*	4	27	2.4%	20	51%

Common Name	Scientific Name	# of Individuals <100 m	# of Individuals >100 m / Flyover	% of Total Observations	# of Stations (recorded at)	% of Stations (recorded at)
blue-headed vireo	*Vireo solitarius*	–	3	0.2%	3	8%
broad-winged hawk	*Buteo platypterus*	1	2	0.2%	3	8%
Canada goose	*Branta canadensis*	94	13	8.1%	6	15%
Canada jay	*Perisoreus canadensis*	–	3	0.2%	1	3%
Canada warbler	*Cardellina canadensis*	–	5	0.4%	3	8%
Cedar waxwing	*Bombycilla cedrorum*	2	16	1.4%	11	28%
chestnut-sided warbler	*Setophaga pensylvanica*	14	8	1.7%	15	38%
chipping sparrow	*Spizella passerina*	20	21	3.1%	22	56%
clay-colored sparrow	*Spizella pallida*	11	4	1.1%	9	23%
common goldeneye	*Bucephala clangula*	–	4	0.3%	3	8%
common grackle	*Quiscalus quiscula*	6	11	1.3%	8	21%
common merganser	*Mergus merganser*	–	1	0.1%	1	3%
common raven	*Corvus corax*	3	17	1.5%	15	38%
common yellowthroat	*Geothlypis trichas*	21	7	2.1%	16	41%
dark-eyed junco	*Junco hyemalis*	1	1	0.2%	2	5%
downy woodpecker	*Picoides pubescens*	1	4	0.4%	5	13%
eastern phoebe	*Sayornis phoebe*	6	–	0.5%	4	10%
eastern wood-pewee	*Contopus virens*	–	3	0.2%	3	8%

Common Name	Scientific Name	# of Individuals <100 m	# of Individuals >100 m / Flyover	% of Total Observations	# of Stations (recorded at)	% of Stations (recorded at)
European starling	*Sturnus vulgaris*	1	4	0.4%	5	13%
golden-crowned kinglet	*Regulus satrapa*	–	3	0.2%	3	8%
gray catbird	*Dumetella carolinensis*	–	1	0.1%	1	3%
great blue heron	*Ardea herodias*	–	3	0.2%	2	5%
hairy woodpecker	*Picoides villosus*	–	3	0.2%	3	8%
hermit thrush	*Catharus guttatus*	–	9	0.7%	7	18%
herring gull	*Larus argentatus*	10	19	2.2%	5	13%
house wren	*Troglodytes aedon*	3	2	0.4%	3	8%
indigo bunting	*Passerina cyanea*	1	–	0.1%	1	3%
least flycatcher	*Empidonax minimus*	5	2	0.5%	4	10%
Lincoln's sparrow	*Melospiza lincolnii*	5	6	0.8%	7	18%
magnolia warbler	*Setophaga magnolia*	4	13	1.3%	14	36%
mallard	*Anas platyrhynchos*	–	5	0.4%	3	8%
mourning warbler	*Geothlypis philadelphia*	18	27	3.4%	28	72%
Nashville warbler	*Oreothlypis ruficapilla*	18	21	3.0%	24	62%
northern flicker	*Colaptes auratus*	4	11	1.1%	11	28%
northern harrier	*Circus cyaneus*	2	–	0.2%	2	5%
northern parula	*Setophaga americana*	–	3	0.2%	2	5%

Common Name	Scientific Name	# of Individuals <100 m	# of Individuals >100 m / Flyover	% of Total Observations	# of Stations (recorded at)	% of Stations (recorded at)
ovenbird	*Seiurus aurocapilla*	7	31	2.9%	23	59%
pileated woodpecker	*Dryocopus pileatus*	3	4	0.5%	4	10%
pine siskin	*Spinus pinus*	1	–	0.1%	1	3%
purple finch	*Carpodacus purpureus*	–	3	0.2%	2	5%
red-breasted nuthatch	*Sitta canadensis*	–	12	0.9%	10	26%
red-eyed vireo	*Vireo olivaceus*	15	41	4.3%	31	79%
red-winged blackbird	*Agelaius phoeniceus*	1	3	0.3%	4	10%
ring-billed gull	*Larus delawarensis*	2	9	0.8%	8	21%
rose-breasted grosbeak	*Pheucticus ludovicianus*	1	–	0.1%	1	3%
ruby-crowned kinglet	*Regulus calendula*	–	1	0.1%	1	3%
ruffed grouse	*Bonasa umbellus*	–	2	0.2%	1	3%
savannah sparrow	*Passerculus sandwichensis*	91	4	7.2%	27	69%
sedge wren	*Cistothorus platensis*	1	–	0.1%	1	3%
sharp-tailed grouse	*Tympanuchus phasianellus*	5	–	0.4%	1	3%
song sparrow	*Melospiza melodia*	49	9	4.4%	22	56%
swainson's thrush	*Catharus ustulatus*	–	3	0.2%	3	8%

Common Name	Scientific Name	# of Individuals <100 m	# of Individuals >100 m / Flyover	% of Total Observations	# of Stations (recorded at)	% of Stations (recorded at)
swamp sparrow	*Melospiza georgiana*	–	1	0.1%	1	3%
Tennessee warbler	*Oreothlypis peregrina*	1	1	0.2%	2	5%
tree swallow	*Tachycineta bicolor*	20	3	1.8%	8	21%
trumpeter swan	*Cygnus buccinator*	–	2	0.2%	2	5%
veery	*Catharus fuscescens*	3	16	1.4%	13	33%
white-throated sparrow	*Zonotrichia albicollis*	4	63	5.1%	29	74%
Wilson's snipe	*Gallinago delicata*	4	6	0.8%	4	10%
winter wren	*Troglodytes hiemalis*	3	2	0.4%	3	8%
yellow warbler	*Setophaga petechia*	6	–	0.5%	4	10%
yellow-rumped warbler	*Setophaga coronata*	3	3	0.5%	6	15%
78 species	–	**567**	**751**	**100%**	–	–

Notes: Some of the numbers are rounded for presentation purposes. Therefore, it may appear that the totals do not equal the sum of the individual values.

– = not available/not applicable; # = number; % percent; m = metres.

Table 3.2-38: Total Number of Species Per Breeding Bird Station Recorded During Grassland Breeding Bird Surveys in 2022

Station #	# of Species	Station #	# of Species	Station #	# of Species	Station #	# of Species
Grassland Breeding Bird Surveys (GBS)-01	16	GBS-18	30	GBS-29	19	GBS-39	14
GBS-02	11	GBS-19	20	GBS-30	18	GBS-40	11
GBS-04	12	GBS-20	20	GBS-31	20	GBS-41	15
GBS-05	22	GBS-21	18	GBS-32	9	GBS-42	10
GBS-06	18	GBS-22	20	GBS-33	13	GBS-43	12
GBS-08	21	GBS-23	25	GBS-34	16	GBS-44	13
GBS-09	19	GBS-25	10	GBS-35	11	GBS-45	12
GBS-15	20	GBS-26	7	GBS-36	22	GBS-46	11
GBS-16	14	GBS-27	12	GBS-37	18	GBS-47	10
GBS-17	23	GBS-28	13	GBS-38	19	-	-

= number; GBS = Grass Breeding Bird.

Grassland breeding bird diversity and abundances across the survey season are shown in Table 3.2-39. It should be noted that survey effort (i.e., the number of survey days and number of stations surveyed) varied from week to week, making it difficult to draw conclusions regarding changes in diversity and abundances across time; however, no obvious discrepancies were observed based on timing of surveys.

Table 3.2-39: Grassland Breeding Bird Diversity and Abundances Across the 2022 Survey Season

Survey Week	# of Days Surveys Completed	# of Stations Surveyed	# of Species Recorded	# of Individuals Recorded	Mean Species/ Station	Mean Individuals/ Station
Week 1 (May 29, 2022 to Jun 4, 2022)	1	16	49	137	3.1	8.6
Week 2 (June 5, 2022 to June 11, 2022)	1	17	34	202	2.0	11.9
Week 3 (June 12, 2022 to June 18, 2022)	0	0	0	0	–	–
Week 4 (June 19, 2022 to June 25, 2022)	3	28	48	425	1.7	15.2
Week 5 (June 26, 2022 to July 2, 2022)	3	22	65	685	3.0	31.1
Week 6 (July 3, 2022 to July 9, 2022)	0	0	0	0	0	0
Week 7 (July 10, 2022 to July 16, 2022)	1	3	25	48	8.3	16.0

Notes: Some of the numbers are rounded for presentation purposes. Therefore, it may appear that the totals do not equal the sum of the individual values.

– = not applicable/not available; # = number.

Based on the results of the grassland breeding bird surveys, no indicator species for ‘open country bird breeding’ SWH were recorded at any of the survey stations within the LSA. Furthermore, although a bobolink was observed incidentally within the LSA while driving (it flew across the road >100 m from station GBS-09), the meadow habitat near this location (see Figure 3.2-8 in Attachment 6.4-A-1) does not meet the size criteria for significance (i.e., the meadow is <30 ha and is comprised of parcels separated by woodland).

3.2.3.3 Priority Landbird Species

Birds Canada has identified Priority Landbird species for various regions, known as Bird Conservation Regions (BCR). These are species that are experiencing population declines, or are highly vulnerable to population declines and future threats, and include species of Continental Concern (Partners in Flight Continental Watch List) with important populations in a particular region (e.g., bay-breasted warbler [*Setophaga castanea*]), species with small global range and populations that are considered vulnerable to future change (e.g., golden-winged warbler [*Vermivora chrysoptera*]), and common widespread species that have experienced population declines and face ongoing threats on their breeding or wintering grounds (e.g., wood thrush [*Hylocichla mustelina*]). The Project is situated within BCR-12ON. Therefore, the breeding bird data have been analyzed to determine the relative abundance of Priority Landbird species across various habitat types in the LSA, which will be useful in the assessment of effects to these vulnerable birds.

Overall, 34 Priority Landbird Species were documented within the LSA, including 29 species recorded during the forest breeding bird surveys and an additional five species recorded incidentally or during other targeted surveys (see Table 3.2-40).

Table 3.2-40: Priority Landbird Species Recorded within the Local Study Area (2022)

Common Name	Scientific Name	Observed During
American kestrel	*Falco sparverius*	Grassland Breeding Bird Surveys
bald eagle	*Haliaeetus leucocephalus*	Forest Breeding Bird Surveys
bank swallow	*Riparia riparia*	Bank Swallow Nesting Habitat Surveys
bay-breasted warbler	*Setophaga castanea*	Forest Breeding Bird Surveys
belted kingfisher	*Megaceryle alcyon*	Forest Breeding Bird Surveys
black-billed cuckoo	*Coccyzus erythropthalmus*	Forest Breeding Bird Surveys
blackburnian warbler	*Setophaga fusca*	Forest Breeding Bird Surveys
black-throated green warbler	*Setophaga virens*	Forest Breeding Bird Surveys
bobolink	*Dolichonyx oryzivorus*	Incidental Observation
broad-winged hawk	*Buteo platypterus*	Forest Breeding Bird Surveys
Canada warbler	*Cardellina canadensis*	Forest Breeding Bird Surveys
chestnut-sided warbler	*Setophaga pensylvanica*	Forest Breeding Bird Surveys
common nighthawk	*Chordeiles minor*	Forest Breeding Bird Surveys
common yellowthroat	*Geothlypis trichas*	Forest Breeding Bird Surveys

Common Name	Scientific Name	Observed During
eastern whip-poor-will	*Antrostomus vociferus*	Eastern Whip-poor-will Surveys
eastern wood-pewee	*Contopus virens*	Forest Breeding Bird Surveys
least flycatcher	*Empidonax minimus*	Forest Breeding Bird Surveys
mourning warbler	*Geothlypis philadelphia*	Forest Breeding Bird Surveys
Nashville warbler	*Oreothlypis ruficapilla*	Forest Breeding Bird Surveys
northern flicker	*Colaptes auratus*	Forest Breeding Bird Surveys
olive-sided flycatcher	*Contopus cooperi*	Forest Breeding Bird Surveys
purple finch	*Haemorhous purpureus*	Forest Breeding Bird Surveys
red crossbill	*Loxia curvirostra*	Forest Breeding Bird Surveys
rose-breasted grosbeak	*Pheucticus ludovicianus*	Forest Breeding Bird Surveys
ruby-crowned kinglet	*Regulus calendula*	Forest Breeding Bird Surveys
ruffed grouse	*Bonasa umbellus*	Forest Breeding Bird Surveys
sedge wren	*Cistothorus platensis*	Incidental Observations
song sparrow	*Melospiza melodia*	Forest Breeding Bird Surveys
swamp sparrow	*Melospiza georgiana*	Forest Breeding Bird Surveys
tennessee warbler	*Oreothlypis peregrina*	Forest Breeding Bird Surveys
tree swallow	*Tachycineta bicolor*	Forest Breeding Bird Surveys
veery	*Catharus fuscescens*	Forest Breeding Bird Surveys
white-throated sparrow	*Zonotrichia albicollis*	Forest Breeding Bird Surveys
yellow-bellied sapsucker	*Sphyrapicus varius*	Forest Breeding Bird Surveys

See Table 3.2-40 for relative abundance of Priority Landbird Species across various habitat types within the LSA (note that this table only includes species that were recorded within 100 m of survey stations during the forest breeding bird surveys). Breeding bird survey results documented a high diversity of priority landbird species within the LSA, representative of the regions overall diverse ecology. The top three most abundant landbird priority species documented were Nashville warbler, white-throated sparrow, and ruby-crowned kinglet.

See Attachment 6.4-A-10 for all BCR-12ON Priority Species documented within the LSA across all surveys (47 species in total, including 35 landbirds, 3 shorebirds, 3 waterbirds and 6 waterfowl).

3.2.3.4 Raptors

Population Status and Distribution

The Atlas of Breeding Birds of Ontario (Cadman et al. 2007) contains breeding categories for all birds in the province in relation to regional sections. Regions 38 (Thunder Bay), 39 (English River) and 40 (Lake of the Woods) were used to determine the breeding category of raptor species with the potential to occur in the LSA. Twenty-one raptor species are assigned breeding codes for Regions 38, 39 and 40 of Ontario as part of the Ontario Breeding Bird Atlas (Cadman et al. 2007) (Table 3.2-41). Twelve species were classified as confirmed breeders across all three regions, while nine species had variable breeding status across the three regions.

Table 3.2-41: Breeding Category of Raptor Species in Regions 38, 39, and 40 of the Ontario Breeding Bird Atlas

Common Name	Scientific Name	Breeding Category[(a)] Region 38	Breeding Category[(a)] Region 39	Breeding Category[(a)] Region 40	NHIC (SRank[(b)])
American kestrel	*Falco sparverius*	Confirmed	Confirmed	Confirmed	S4
bald eagle	*Haliaeetus leucocephalus*	Confirmed	Confirmed	Confirmed	S4
barred owl	*Strix varia*	Confirmed	Confirmed	Confirmed	S5
boreal owl	*Aegolius funereus*	Confirmed	Confirmed	Confirmed	S4
broad-winged hawk	*Buteo platypterus*	Confirmed	Confirmed	Confirmed	S5B
cooper's hawk	*Accipiter cooperii*	Probable	Confirmed	Possible	S4
great gray owl	*Strix nebulosa*	Probable	Confirmed	Probable	S4
great horned owl	*Bubo virginianus*	Confirmed	Confirmed	Confirmed	S4
long-eared owl	*Asio otus*	Confirmed	Confirmed	Probable	S4
merlin	*Falco columbarius*	Confirmed	Confirmed	Confirmed	S5
northern goshawk	*Accipiter gentillis*	Confirmed	Probable	Possible	S4
northern harrier	*Circus hudsonius*	Confirmed	Confirmed	Confirmed	S5B, S4N
northern hawk owl	*Surnia ulula*	Confirmed	Confirmed	Confirmed	S4
northern saw-whet owl	*Aegolius acadicus*	Confirmed	Probable	Probable	S5
osprey	*Pandion haliaetus*	Confirmed	Confirmed	Confirmed	S5B
peregrine falcon	*Falco peregrinus*	Confirmed	n/a	Confirmed	S4
red-shouldered hawk	*Buteo lineatus*	n/a	n/a	Possible	S4B, S2N
red-tailed hawk	*Buteo jamaicensis*	Confirmed	Confirmed	Confirmed	S5
sharp-shinned hawk	*Accipiter striatus*	Confirmed	Confirmed	Confirmed	S5
short-eared owl	*Asio flammeus*	Confirmed	Probable	Confirmed	S4?B, S2S3N
turkey vulture	*Cathartes aura*	Probable	Confirmed	Confirmed	S5B, S3N

a) Breeding category assigned by Cadman et al. (2007).

b) Based on Provincial ranking definitions NHIC (2022):

n/a = not available/not applicable; NHIC = Natural Heritage Information Centre; S1 = Critically imperiled in Ontario; S2 = Imperiled in Ontario; S3 = Vulnerable in Ontario; S4 = Apparently secure in Ontario; S5 = Secure in Ontario; SZN = Non-breeding migrants; S#B = Breeding individuals.

Population trend data from the North American breeding bird survey are available for all species with the exception of boreal owl (*Aegolius funereus*) (Smith and Edwards 2020). Of the 21 raptor species observed in Regions 38, 39, and 40, 14 of these species have exhibited long-term population increases between 1970 and 2019, with turkey vulture (7.9%), peregrine falcon (6.8%), and bald eagle (5.1%) increasing the most across Canada (Smith and Edwards 2020). American kestrel, long-eared owl (*Asio otus*), northern goshawk (*Accipiter gentillis*), northern harrier (*Circus hudsonius*), northern saw-whet owl (*Aegolius acadicus*), and short-eared owl (*Asio flammeus*) have experienced declines across Canada between 1970 and 2019, with short-eared owl declining the most in this period at an annual rate of 2.4% (Smith and Edwards 2020).

Background Data

Background data indicate that American kestrel, bald eagle, barred owl, broad-winged hawk, merlin, red-tailed hawk, osprey, sharp-shinned hawk and turkey vulture have been observed within the LSA and adjacent areas in the last 10 years (e.g., eBird 2022). NHIC data indicate two known bald eagle nest sites within the LSA, located in the Town of Atikokan (NHIC 1992) and at Nym Lake (NHIC 2017). LIO data indicate 24 known bald eagle nest sites, 11 osprey nest sites, three red-tailed hawk nest sites and two unidentified raptor nest sites within the LSA (see Figure 3.2-9 in Attachment 6.4-A-1).

Field Survey Results

Eight raptor species were recorded during the breeding bird surveys or incidentally observed in the LSA during the 2022 field surveys (Table 3.2-42).

Table 3.2-42: Raptor Observations Within the LSA During 2022 Field Surveys

Common Name	Number Observed	Locations Observed	Active Nests
American kestrel	11	• GBS stations: 5, 6, 8, 18, 30, 34, 35, 36, 37, 39, 41.	0
bald eagle	>5	• BBS stations: 19, Alt-39; GBS stations: 27; Other stations: TVES-31, TVES-35.	0
barred owl	7	• GBS stations: 29; EWPW stations: 1, 38, 48, 59, 78.	0
broad-winged hawk	12	• BBS stations: 60, 90, Alt-23, Alt-38; GBS stations: 9, 18, 20; Other stations: LEBI-5, LEBI-15, BKSW-52, BMR-Alt-10.	2
great horned owl	1	• EWPW-91.	0
merlin	2	• BBS stations: 13, 42.	0
northern harrier	2	• GBS stations: 36, 37.	0
red-tailed hawk	1	• BBS-99.	0

> = Greater than; BBS = Breeding Bird Survey; BKSW = Bank Swallow; BMR = Bat Maternity Roost; EWPW = Eastern Whip-poor-will; GBS = Grassland Bird Survey; LEBI = Least Bittern station; TVES = Turtle Visual Encounter Survey.

Candidate woodland raptor nesting SWH is present in all forested ecosites within the LSA. Six of the 17 indicator species for woodland raptor nesting SWH were recorded within the LSA, including American kestrel, barred owl, broad-winged hawk, common raven, merlin and red-tailed hawk. Common raven is included as an indicator species since its nests may be used by raptors in subsequent years.

Based on the results of the 2022 field surveys, woodland raptor nesting SWH was confirmed for one species: two active broad-winged hawk nests were documented within the LSA (see Figure 3.2-2 in Attachment 6.4-A-1). For broad-winged hawk nests, the SWH includes the nest and a 100 m radius around the nest, comprising a total of 6.28 ha in total for both nests. Although an active common raven nest was also documented within the LSA, it was on a bridge structure and thus does not provide woodland raptor nesting SWH.

3.2.3.5 Marsh Breeding Birds

Population Status and Distribution

Two of the six focal species targeted during marsh bird surveys (i.e., least bittern and yellow rail) are listed as at risk in Ontario. Yellow rail is listed as special concern both provincially and federally and least bittern is listed as threatened both provincially and federally.

Smith and Edwards (2020) describe population change information for North American marsh bird species, as estimated from the North American Breeding Bird Survey (NABBS). Estimates of population trends are available for various regions, states, and provinces. Population trends in the province of Ontario have been documented for all of the focal species targeted by the NABBS except yellow rail. For all of the focal species with population trends in Ontario, all have shown slight long-term population increases; however, data reliability has been mixed (i.e., low to high) during the period of 1970 to 2019 (Smith and Edwards 2020). Nationally, yellow rail has also shown a slight long-term population increase; however, with a low reliability for the period of 1970 to 2019 (Smith and Edwards 2020).

American bittern is dependent on wetlands throughout its life cycle. Populations in Canada showed declines in the 1970s that have been linked to habitat loss and degradation (Lowther et al. 2020). Populations have rebounded since this time, and the species is widely scattered throughout Ontario, with highest abundances in the southern shield and Hudson Bay lowlands (Cadman et al. 2007).

Pied-billed grebe is widespread across the provinces of Canada and is a wetland-obligate species (Muller and Storer 2020). The species is predominately found in southern Ontario although populations have also been recorded west of Lake Superior and as far north as Moosonee and Big Trout Lake during the breeding season (Cadman et al. 2007, eBird 2022).

The sora is a secretive, wetland-obligate species that has experienced large population fluctuations in Canada for the past 40 years (Melvin and Gibbs 2020). It is the most widespread and abundant North American rail species and is found throughout Canada (Melvin and Gibbs 2020). The species is most common in southern Ontario in association with coastal Great Lakes wetlands (Cadman et al. 2007).

Virginia rail has experienced recent population increases in the province of Ontario and elsewhere in Canada (Smith and Edwards 2020). The majority of observations made in Ontario have occurred in the southeast; however, like the other focal marsh birds listed above, some populations occur northwest of Lake Superior (Cadman et al. 2007).

Relatively little is known about the yellow rail in Ontario; however, populations are most well-known from the area immediately adjacent to Lake of the Woods and the Hudson and James Bay lowlands in particular (Cadman et al. 2007). Yellow rail has shown slight increases nationally; however, the reliability is low (Smith and Edwards 2020).

Least bittern is a secretive wetland-obligate species, which has shown fluctuating trends in population, with recent population increases noted in Ontario (Smith and Edwards 2020). Least bittern is found almost exclusively in southern Ontario, predominantly in association with coastal Great Lakes wetlands (Cadman et al. 2007). The species may be present in direct association with wetlands surrounding Lake of the Woods (eBird 2022); however, records in Ontario away from southern Ontario are deemed extralimital records in Ontario (Burrell et al. 2019).

Habitat Selection and Foraging

Marsh birds occupy the fringes and shorelines of freshwater wetlands dominated by tall, emergent vegetation (Tozer et al. 2020). Their nests often occur in dense patches of emergent vegetation (e.g., cattails and bulrushes) and are generally a platform of reeds or other emergent vegetation, lined with grasses (Lowther et al. 2020). In the case of the pied-billed grebe, this platform is often floating and may be in the open (Muller and Storer 2020).

American bittern and least bittern are stealth hunters and generally feed on insects, small fish and mammals, amphibians, and snakes along the fringes of wetlands (Lowther et al. 2020, Poole et al. 2020). Virginia rail and sora primarily feed on seeds, wetland plants and invertebrates (Melvin and Gibbs 2020). They will probe muddy or inundated areas with their bills to capture aquatic beetles, snails, and spiders. Pied-billed grebe will primarily forage during underwater dives. Main prey for this species includes small fish, crustaceans, and aquatic invertebrates (Muller and Storer 2020).

Background Data

Background data indicate that the focal species targeted during marsh bird surveys (American bittern, least bittern, sora, Virginia rail, and yellow rail) are rare to uncommon in the LSA; however, several indicator species for ‘marsh bird breeding SWH’ are regularly observed within the LSA and adjacent areas, including common loon (*Gavia immer*), green-winged teal, ring-necked duck (*Aythya collaris*), sandhill crane (*Grus canadensis*), spotted sandpiper, and trumpeter swan (eBird 2022). Background data reveal that confirmed ‘marsh bird breeding SWH’ occurs >5 km beyond the LSA, within Butler/Wabigoon Lake where breeding evidence for 10 indicator species has been documented, including American bittern, black tern, common loon, green-winged teal, ring-necked duck, pied-billed grebe, ring-necked grebe, marsh wren, sedge wren, and sora (eBird 2022). LIO data indicate the presence of two known trumpeter swan nest sites within the LSA (see Figure 3.2-9 in Attachment 6.4-A-1).

Field Survey Results

Eight of the 17 indicator species for 'marsh bird breeding SWH' were observed during surveys within the LSA, including: American bittern, common loon, pied-billed grebe, ring-necked duck, sandhill crane, sedge wren (*Cistothorus platensis*), trumpeter swan, and Virginia rail. One of the indicator species was observed during marsh breeding bird surveys (i.e., sandhill crane), while the remainder were observed incidentally during other breeding bird or wildlife surveys within the LSA. Three species displayed probable breeding evidence (common loon, sandhill crane, and sedge wren) while the remaining species displayed possible breeding evidence. Based on the results of the surveys, criteria for 'marsh bird breeding SWH' were not met, as none of the marsh ecosites within the LSA maintained greater than or equal to five of the indicator species or greater than or equal to one breeding pair of trumpeter swans. See Attachment 6.4-A-10 for details regarding breeding evidence, abundances, and locations for each species.

3.2.3.6 Species at Risk Birds

3.2.3.6.1 American White Pelican

Population Status and Distribution

American white pelican is classified as threatened in Ontario (ESA 2007); however, the species is not listed federally (SARA 2002). American white pelican populations have rebounded in recent years after declines due to dichlorodiphenyltrichloroethane (DDT) and historical hunting pressure (Knopf and Evans 2020). Within northwestern Ontario, the species is known to nest on Lake of the Woods and Lake Nipigon and recently within Lake Superior; however, its population has increased in recent years and the population in northwestern Ontario is now estimated to be >8,000 pairs (Cadman et al. 2007).

Habitat Selection and Foraging

American white pelicans begin breeding in their third year, annually thereafter (Sloan 1982). Typical clutch size is two eggs, while fledgling rate is highly variable due to temperature and water levels (Knopf and Evans 2020).

American white pelicans nest primarily on sufficiently isolated (e.g., several kilometres from mainland), unvegetated islands in freshwater lakes, and forage on inland marshes, lakes, and rivers, favouring shallow water (Knopf and Evans 2020). The species is highly mobile and individuals commonly forage >100 km from nest sites (Knopf and Evans 2020).

Background Data

Background data indicate that American white pelicans are regularly observed within the LSA and adjacent areas, with >50 occurrences within the Thunder Bay area alone (eBird 2022). Additional records of concentration occur within the Dryden area, while the remainder of the LSA have few records (eBird 2022). No known nesting sites are within 30 km of the LSA, with the nearest nesting colonies being in Lake Superior, Lake of the Woods, and Lake Nipigon.

Field Survey Results

Wildlife surveys in 2022 documented a single flock of six individuals in flight, approximately 2.5 km inland from the shoreline of Lake Superior (see Figure 3.2-8 in Attachment 6.4-A-1). The flock observed was noted to be flying overhead towards Lake Superior and did not constitute breeding evidence. No other individuals were documented within the LSA and no known nesting sites are located within the LSA. Based on the species unique habitat requirements, there is no candidate habitat present within the LSA (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.6.2 Bank Swallow

Population Status and Distribution

The bank swallow is listed as threatened in Ontario (ESA 2007) and Canada (SARA 2002). Like other aerial insectivores, bank swallow has declined significantly in North America since the 1970s, and in Canada the rate of decline between 1970 and 2019 is 5.3% per year (Smith and Edwards 2020). In Ontario, the highest abundance of the species is found in the Carolinian ecozone, while significant populations are also present and occur along some of the large rivers in the Hudson Bay Lowlands, including the Albany River (Cadman et al. 2007).

Habitat Selection and Foraging

Bank swallows nest colonially in soft substrates; naturally they nest along shoreline banks, while in anthropogenic sites they typically nest in sand and gravel pits, along roadsides, and in soil stockpiles (Garrison and Turner 2020).

Bank swallows forage aerially on insects and form large communal roosts following fledging, typically in early to mid-July (Cadman et al. 2007, Garrison and Turner 2020). Optimal foraging sites are present near water, while communal roosts may be several kilometres from known nesting sites (Cadman et al. 2007).

Background Data

Background data indicate that bank swallow is present sporadically throughout the LSA and adjacent areas (e.g., Cadman et al. 2007, eBird 2022, see Figure 3.2-10 in Attachment 6.4-A-1). Background records documented the presence of 18 records in the LSA, of which three are confirmed element occurrences.

Field Survey Results

Targeted and incidental surveys in 2022 documented a nesting colony consisting of at least 15 individuals within the LSA (see Figure 3.2-10 in Attachment 6.4-A-1). The nesting colony was located in an aggregate pit and constitutes confirmed breeding, comprising 6 ha of regulated habitat in accordance with provincial habitat guidelines (MNRF 2015). Although licensed aggregate pits do not qualify as SWH for 'colonially-nesting bird breeding habitat (bank and cliff swallow)', the habitat of this threatened species is nonetheless protected under the provincial ESA. No other records of the species were documented as part of wildlife surveys in 2022. A total of 4,017 ha of candidate habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitats for the species).

3.2.3.6.3 Bobolink

Population Status and Distribution

The bobolink is listed as threatened in Ontario (ESA 2007) and Canada (SARA 2002). It inhabits Canada's grassland and agricultural areas from the interior of British Columbia to the east coast. The North American breeding bird survey data suggest an average annual decline of 2.6% in the bobolink population across Canada and 2.8% in Ontario between 1970 and 2019 (Smith and Edwards 2020). Current threats facing the bobolink include incidental mortalities caused by farm equipment, loss of habitat following conversion of pasture and hayfield to cereal crop lands, and habitat fragmentation (COSEWIC 2010).

Habitat Selection and Foraging

Bobolinks depend on grassland habitat, which includes hayfields, pastures, old or abandoned fields, and remnant prairies and savannahs (COSEWIC 2010). Minimum area requirements to support breeding habitat for the species have been reported to range from 5-30 ha (McCracken et al. 2013). Many studies have demonstrated that bobolink require grassy patches much larger than their territory size to persist (Renfrew et al. 2020). Nests are built on the ground beneath a cover of tall grasses and forbs and are used daily during the breeding season. During the breeding season, adult bobolinks primarily feed on insects and seeds (COSEWIC 2010).

Background Data

Background data indicate that bobolink is present in two scattered locations throughout the LSA and adjacent areas: Thunder Bay and Dryden (e.g., Cadman et al. 2007, eBird 2022). There are no background records within the LSA (see Figure 3.2-8 in Attachment 6.4-A-1).

Field Survey Results

Wildlife surveys in 2022 documented a single individual incidentally, within 1 km of station GBS-9 (see Figure 3.2-8 in Attachment 6.4-A-1). Targeted grassland breeding bird surveys did not document the species. A total of 830 ha of candidate and known habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitats for the species).

3.2.3.6.4 Chimney Swift

Population Status and Distribution

The chimney swift is listed as threatened in Ontario (ESA 2007) and Canada (SARA 2002). The chimney swift breeds across eastern North America as far north as central Saskatchewan (COSEWIC 2018). In Ontario, the species is found predominantly in the Carolinian and southern Shield regions; however, the species has been found nesting sporadically as far north as the 49th parallel (Cadman et al. 2007).

The North American breeding bird survey data suggest an average annual decline of 4.28% in the chimney swift population across Canada and 6.4% in Ontario between 1970 and 2019 (Smith and Edwards 2020). Like other aerial insectivores, it appears that habitat loss and decreases in insect abundance, likely due to insecticides, are the main drivers for this population decline (Steeves et al. 2020).

Habitat Selection and Foraging

Before European settlement, chimney swifts primarily nested on cave walls and in cavities within large trees (Steeves et al. 2020). Today, chimney swifts primarily nest in anthropogenic locations, where they nest and roost in the chimneys of man-made structures and buildings (Cadman et al. 2007). Due to their reliance on aerial insects, chimney swifts are typically found in proximity to water, where insect abundance and diversity is typically higher than adjacent surroundings (Steeves et al. 2020).

Background Data

Background data indicate that chimney swift are known to inhabit locations in Atikokan and Thunder Bay, within the LSA; however, due to their flight behaviour are difficult to pinpoint exact breeding locations (eBird 2022, see Figure 3.2-8 in Attachment 6.4-A-1). NHIC background data documented the presence of 11 records; however, none are linked to element occurrences. Based on background data and the species' biology, chimney swift is likely not present in other areas of the LSA (i.e., away from the urban centres of Atikokan and Thunder Bay).

Field Survey Results

Wildlife surveys in 2022 did not document the species within the LSA. Given that the LSA is located at the far northern edge of the species' breeding range in Ontario, and the habitat present is largely not suitable, it is unlikely that the species is found outside of Atikokan and Thunder Bay. A total of 3,335 ha of candidate and known habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.6.5 Eastern Whip-poor-will

Population Status and Distribution

The eastern whip-poor-will is listed as threatened in Ontario (ESA 2007) and Canada (SARA 2002). The breeding range in Canada for this species extends east from east-central Saskatchewan to Nova Scotia (COSEWIC 2009). Canadian avian survey data from the 1990s have generated an estimated population size of approximately 66,000 adult eastern whip-poor-will in Canada.

The North American breeding bird survey data suggest an average annual decline of 0.9% in the eastern whip-poor-will population across Canada and 1.3% in Ontario between 1970 and 2019 (Smith and Edwards 2020). Although causes of decline are not clear for populations in Canada, losses have been attributed to habitat degradation and loss, vehicle collisions, changes in food supply (due to pesticides, climate change, and poor air/water quality) and predation from cats and raccoons (COSEWIC 2009).

Habitat Selection and Foraging

Suitable breeding habitats generally include open and sparsely treed areas such as savannahs, open woodlands, or openings in mature forest stands (MNR 2013a). Eastern whip-poor-wills do not construct a traditional nest and instead lay eggs directly on leaf litter (Peck and James 1983). Nests require tree cover, shade, sparse ground cover, and proximity to open areas for foraging on flying insects (MNR 2013a).

Background Data

Background data indicate that eastern whip-poor-will is present in scattered locations throughout the LSA and adjacent areas (see Figure 3.2-10 in Attachment 6.4-A-1). Within northwestern Ontario, eastern whip-poor-will is known from areas near Atikokan, Ignace, Sunshine, Thunder Bay, and Wabigoon, albeit in low abundance (Cadman et al. 2007, eBird 2022).

Field Survey Results

Field surveys in 2022 documented 15 individuals at 10 locations within the LSA (see Figure 3.2-10 in Attachment 6.4-A-1). Of the 15 individuals observed, 10 individuals were documented at targeted survey stations, while an additional five individuals were observed incidentally at five distinct locations (see Figure 3.2-10 in Attachment 6.4-A-1). The highest breeding evidence documented was probable breeding, consisting of individuals heard on more than one date a week or more apart in the same location. A summary of eastern whip-poor-will observations during targeted surveys are provided in Table 3.2-43, below.

Table 3.2-43: Targeted Eastern Whip-poor-will Survey Results (2022)

Station ID	Date(s)	Number of Individuals	Highest Breeding Evidence
EWPW-24	June 16, 2022	1	• Possible – singing male.
EWPW-73	June 16, 2022 June 17, 2022 July 8, 2022	Max of 5	• Probable – singing males observed >1 week apart.
EWPW-83	June 16, 2022	1	• Possible – singing male.
EWPW-85	July 10, 2022	1	• Possible – singing male.
EWPW-105	June 19, 2022	2	• Possible – singing males.

EWPW = Eastern Whip-poor-will

A total of 6,551 ha of confirmed habitat and an additional 98,400 ha of candidate habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements present within the LSA (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.6.6 Least Bittern

Population Status and Distribution

The least bittern is listed as threatened in Ontario (ESA 2007) and Canada (SARA 2002). In Canada, least bittern is found almost exclusively in southern Ontario, predominantly in association with coastal lower Great Lakes wetlands (Cadman et al. 2007, COSEWIC 2009, Poole et al. 2020, eBird 2022). The species may be present in direct association with wetlands surrounding Lake of the Woods (eBird 2022); however, records in Ontario away from southern Ontario are deemed extralimital records (e.g., Burrell et al. 2019). The population is estimated to contain approximately 1,500 pairs in Canada, with the vast majority thought to occur in southern Ontario (Cadman et al. 2007).

The North American breeding bird survey data suggest an average annual increase of 0.07% in the least bittern population across Canada and Ontario between 1970 and 2019 (Smith and Edwards 2020). Although causes of this apparent increase are not clear, recent high-water levels throughout the lower Great Lakes are thought to be responsible for recent population growth.

Habitat Selection and Foraging

The least bittern is a secretive wetland-obligate species. The species breeds exclusively in marshes of emergents (typically cattails, *Typha* spp.) that have stable water levels with scattered areas of open water (COSEWIC 2009). Least bitterns typically require larger marshes (i.e., >5 ha), with average home ranges varying from 9.7 to 98 ha in size (COSEWIC 2009, Poole et al. 2020).

Background Data

Background data indicate that least bittern is very rare within Thunder Bay, Rainy River, and Kenora Districts (e.g., Cadman et al. 2007, eBird 2022). A single record is known from background data within the RSA, which is >20 years old and is not linked to an element occurrence (see Figure 3.2-8 in Attachment 6.4-A-1). Given their extreme rarity in northern Ontario, least bittern records observed in northern Ontario are treated as vagrants by the Ontario Bird Records Committee (Burrell et al. 2019).

Field Survey Results

Targeted and incidental breeding bird surveys did not detect least bittern within the LSA. Based on the species background data and surveys completed in 2022, there is no confirmed or known habitat for least bittern within the LSA (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.7 Bird Species of Conservation Concern

3.2.3.7.1 Bald Eagle

Population Status and Distribution

Bald eagle is classified as special concern in Ontario (ESA 2007); however, the species is not listed federally (SARA 2002). Bald eagle populations severely declined in the 1950s and 1960s due to the use of synthetic organic chemicals such as DDT, but populations have rebounded significantly with an estimated 100,000 individuals in North America in 1999 (Buehler 2000). The majority of the Ontario population is located in the northwestern portion of the province, while the species is increasing significantly throughout southern Ontario (Cadman et al. 2007, eBird 2022).

Habitat Selection and Foraging

Bald eagles generally nest in forested areas adjacent to large, fish-bearing waterbodies (i.e., within 500 m of the waterbody); however, they will nest on cliffs, large rocks, and the ground if suitable trees are not available (Buehler 2022). They prefer nesting in forests with 30% to 50% canopy cover, with large trees suitable for nests and perching (MNR 1987). In northern Ontario, bald eagles use trembling aspen almost exclusively for nesting (MNR 1987). Bald eagles prey primarily on fish, but they will also consume carrion, muskrats, hares, and waterfowl if available (Buehler 2022).

Background Data

Background data indicate that bald eagles are regularly observed within the LSA and adjacent areas, with >50 occurrence records known from eBird (2022) and 121 records from NHIC background data; however, only 10 records are linked to breeding locations (see Figure 3.2-11 in Attachment 6.4-A-1).

Field Survey Results

Wildlife surveys in 2022 documented five individuals (five observations) within the LSA (Figure 3.2-11 in Attachment 6.4-A-1). Breeding evidence was noted to be possible in all observations. Targeted surveys were not completed for the species. No active nests were observed within the LSA. A total of 56,538 ha of candidate habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.7.2 Barn Swallow

Population Status and Distribution

The barn swallow is listed as special concern in Ontario (ESA 2007) and threatened in Canada (SARA 2002). The species experienced a substantial population decline in North America over more than two decades, beginning in the mid- to late 1980s. However, the Canadian population has remained largely stable over the past 10 years (2009-2019) (COSEWIC 2021). The main causes for the previous declines are believed to be loss of nesting and foraging habitat associated with modern farming techniques, declines in insect prey biomass, and mortality associated with climate perturbations (cold snaps) on the breeding grounds (COSEWIC 2021). Barn Swallow is widespread in Canada and Ontario, primarily breeding south of the treeline (COSEWIC 2021).

Habitat Selection and Foraging

Barn swallows nest on artificial structures, such as buildings and bridges, where they fasten mud nests to vertical walls in proximity to open habitat for foraging (COSEWIC 2021). Barn swallows are aerial insect eaters that generally feed at low altitudes (below 10 m from the ground) and rely on open areas like waterbodies, woodland edges, and pastureland for foraging (Brown and Brown 2020).

Background Data

Background data indicate that barn swallow is present rarely throughout the LSA and adjacent areas (e.g., Cadman et al. 2007, eBird 2022, see Figure 3.2-8 in Attachment 6.4-A-1). Background records documented the presence of 39 observations in the LSA (NHIC 2022), of which three were linked to element occurrences.

Field Survey Results

Targeted and incidental surveys in 2022 did not document the species within the LSA. However, based on the species habitat requirements, a total of 2 ha of nesting habitat is present within the LSA (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitats for the species).

3.2.3.7.3 Canada Warbler

Population Status and Distribution

The Canada warbler is listed as special concern in Ontario (ESA 2007) and threatened in Canada (SARA 2002). The Canada warbler breeds across the southern boreal forest of Canada from the Maritime Provinces west to the Peace River lowlands of British Columbia (Reitsma et al. 2020).

The North American breeding bird survey data suggests an average annual decline of 1.46% in the Canada warbler population across Canada and 1.2% in Ontario between 1970 and 2019 (Smith and Edwards 2020). Habitat loss and degradation in the wintering breeding range for Canada warbler are thought to be responsible for their decline (COSEWIC 2020; Reitsma et al. 2020). On their wintering grounds in the northern Andes, approximately 90% of the primary forest has been lost to deforestation, which the species uses for over-wintering (COSEWIC 2020; Reitsma et al. 2020). Canada warblers have also lost habitat on their breeding range due to the draining of swamp forest for agriculture and urban expansion in the northeastern portion of their range and the clearing of boreal mixedwood forests for agriculture and industrial expansion associated with the pulp and paper and oil and gas sectors in the western part of the range (COSEWIC 2020; Reitsma et al. 2020). The occurrence of breeding Canada warblers appear to be adversely affected by the proximity and length of paved roads in forested landscapes (COSEWIC 2020). Another threat to the Canada warbler is the parasitism of nests by brown-headed cowbirds (Reitsma et al. 2020). In general, the species is anticipated to respond favourably to habitat changes that increase density of understorey vegetation within forests, but adversely to changes that decrease forest understorey or severely reduce forest canopy.

Habitat Selection and Foraging

Canada warblers require older mixedwood stands that have a dense understorey and will breed in riparian thickets and shrubs along forest edges (Semenchuk 1992; Reitsma et al. 2020). Canada warblers typically nest on or near the ground in areas with dense shrubs, high concealment, and coarse woody debris (Reitsma et al. 2020). Canada warblers feed in shrubs and lower branches on flying insects and caterpillars.

Background Data

Background data indicate that Canada warbler is present throughout the LSA and adjacent areas, with a total of 35 occurrence records; however, the species is anticipated to be present throughout the entire study area in low abundance (e.g., Cadman et al. 2007, eBird 2022; see Figure 3.2-11 in Attachment 6.4-A-1).

Field Survey Results

Field surveys in 2022 documented 11 individuals at 10 locations within the LSA (see Figure 3.2-11 in Attachment 6.4-A-1). Of the 11 individuals observed, 10 individuals were documented during targeted surveys, while an additional one individual was observed incidentally at one location (see Figure 3.2-11 in Attachment 6.4-A-1). The highest breeding evidence documented was probable breeding, consisting of two individuals (i.e., a pair) at breeding bird station ALT-5, and a singing male observed more than seven days apart at GBS-34. A summary of Canada warbler observations during targeted surveys are provided in Table 3.2-44, below.

Table 3.2-44: Canada Warbler Survey Results during Breeding Bird Surveys (2022)

Station ID	Date(s)	Number of Individuals	Highest Breeding Evidence
ALT-5	June 24, 2022	2	• Probable – pair observed.
ALT-39	June 12, 2022	1	• Possible – singing male.
ALT-54	June 12, 2022	1	• Possible – singing male.
GBS-34	June 11, 2022 June 20, 2022	1	• Probable – singing male observed >7 days apart at same location.
GBS-35	June 1, 2022	1	• Possible – singing male.
GBS-47	June 24, 2022 June 27, 2022	1	• Possible – singing male.
LEBI-3	July 9, 2022	1	• Possible – singing male.
LEBI-5	July 11, 2022	1	• Possible – singing male.
LEBI-10	July 13, 2022	1	• Possible – singing male.

GBS = Grassland Bird Surveys; LEBI = Least Bittern; ALT = Alternate Survey Station

A total of 71,013 ha of candidate habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements, of which 646.03 ha is known habitat based on field observations in 2022 (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.7.4 Common Nighthawk

Population Status and Distribution

The common nighthawk is listed as special concern in Ontario (ESA 2007) and Canada (SARA 2002). The breeding range in Canada includes all provinces and territories (COSEWIC 2018b). In Ontario, the species occurs throughout the province and its highest abundances are located throughout the James Bay lowlands and the boreal forest region of the province (Cadman et al. 2007). In Canada, the species has shown declines of 1.9% per year nation-wide and 0.7% in Ontario between 1970 and 2019 (Smith and Edwards 2020).

Causes of declines in common nighthawk abundance in both its summer and winter range include threats that reduce the numbers of aerial insects on which this species forages, which can be attributed to agricultural operations, and changes in precipitation, temperature and hydrological regimes (COSEWIC 2018b). Proximate factors affecting populations throughout its range include habitat loss, increases in predation and vehicle collision (COSEWIC 2018b).

Habitat Selection and Foraging

Common nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings (Brigham et al. 2020). Although the species also nests in human-altered habitat (e.g., cultivated fields, urban parks, mine tailings and along gravel roads), they tend to occupy natural sites (COSEWIC 2018b). Common nighthawks feed primarily at dawn and dusk and are insectivorous, catching prey on the wing (Cadman et al. 2007).

Background Data

Background data indicate that common nighthawks are known to occur in the LSA, with a total of 11 occurrence records (see Figure 3.2-11 in Attachment 6.4-A-1). Based on the species range and background data records, it is anticipated that the species breeds throughout the LSA, albeit in low abundance (e.g., Cadman et al. 2007, eBird 2022).

Field Survey Results

Field surveys in 2022 documented nine individuals at seven locations within the LSA (see Figure 3.2-11 in Attachment 6.4-A-1). Of the nine individuals observed, seven individuals were documented during targeted breeding bird surveys, while an additional two individuals were observed incidentally at two locations (see Figure 3.2-11 in Attachment 6.4-A-1). The highest breeding evidence documented was possible breeding, consisting of individuals observed in suitable breeding habitat.

A summary of common nighthawk observations during targeted surveys are provided in Table 3.2-45, below.

Table 3.2-45: Common Nighthawk Survey Results during Breeding Bird Surveys (2022)

Station ID	Date(s)	Number of Individuals	Highest Breeding Evidence
BBS-23	July 8, 2022	1	• Possible – individual observed in suitable habitat.
LEBI-15	June 26, 2022	1	• Possible – individual observed in suitable habitat.
EWPW-66	July 8, 2022	2	• Possible – individuals observed in suitable habitat.
EWPW-80	July 9, 2022	1	• Possible – individual observed in suitable habitat.
EWPW-91	July 9, 2022	1	• Possible – individual observed in suitable habitat.

EWPW = Eastern Whip-poor-will.

A total of 1,721 ha of candidate habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements, of which 10 ha is known habitat based on field observations in 2022 (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.7.5 Eastern Wood-Pewee

Population Status and Distribution

The eastern wood-pewee is listed as special concern in Ontario (ESA 2007) and Canada (SARA 2002). The breeding range in Canada includes all provinces east of Alberta, except Newfoundland and Labrador, while the population stronghold is in Ontario (COSEWIC 2012). In Ontario, the species occurs throughout the province and its highest abundances are located throughout the Great Lakes – St. Lawrence ecozones (Cadman et al. 2007). In Canada, the species has shown declines of 2% per year nation-wide and 1.6% in Ontario between 1970 and 2019 (Smith and Edwards 2020).

Declines in Eastern wood-pewee abundance in both its summer and winter range have been attributed to habitat loss or degradation on its wintering grounds in South America or changes in availability of insect prey (COSEWIC 2012, Watt et al. 2020).

Habitat Selection and Foraging

Eastern wood-pewee is often associated with forest clearings and edges and has been recorded breeding in both deciduous and coniferous habitats (Watt et al. 2020); however, in Ontario, eastern wood-pewee is most typically associated with rich deciduous forest (Cadman et al. 2007, COSEWIC 2012). Pewees favour open forest areas which facilitate aerial foraging activities; its diet consists primarily of small, flying insects that are ‘hawked’ in short flights from a perch in the subcanopy (COSEWIC 2012).

Background Data

Background data indicates that eastern wood-pewee are known to occur in the LSA, with 25 records (see Figure 3.2-11 in Attachment 6.4-A-1). Based on this species range, background data records, and biological habitat requirements, it is anticipated that the species is found throughout the LSA, albeit in low abundance (e.g., Cadman et al. 2007, eBird 2022).

Field Survey Results

Field surveys in 2022 documented five individuals at five locations within the LSA (see Figure 3.2-11 in Attachment 6.4-A-1). Of the five individuals observed, four individuals were documented during targeted breeding bird surveys, while an additional individual was observed incidentally (see Figure 3.2-11 in Attachment 6.4-A-1). The highest breeding evidence documented was possible breeding, consisting of individuals observed in suitable breeding habitat.

A summary of eastern wood-pewee observations during targeted surveys are provided in Table 3.2-46, below.

Table 3.2-46: Eastern Wood-Pewee Survey Results during Breeding Bird Surveys (2022)

Station ID	Date(s)	Number of Individuals	Highest Breeding Evidence
ALT-45	June 24, 2022	1	• Possible – singing male.
GBS-29	June 20, 2022	1	• Possible – singing male.
GBS-36	June 20, 2022	1	• Possible – singing male.
GBS-37	June 20, 2022	1	• Possible – singing male.

GBS = Grassland Breeding Bird Surveys; ALT = Alternate Survey Station

A total of 55,244.56 ha of candidate habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements, of which 771.92 ha is known habitat based on field observations in 2022 (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.7.6 Olive-sided Flycatcher

Population Status and Distribution

The olive-sided flycatcher is listed as special concern in Ontario (ESA 2007) and Canada (SARA 2002). The olive-sided flycatcher has experienced widespread decline throughout North America (COSEWIC 2018a). The North American breeding bird survey data suggest an average annual decline of 1.9% in Canada's olive-sided flycatcher population between 1970 and 2019, and an average annual population decline of 1.4% in Ontario during the same time-period (Smith and Edwards 2020).

The consistent population decline across a wide breeding range suggests that habitat loss and alteration on migration and wintering grounds may be implicated (COSEWIC 2018a). It has also been suggested that olive-sided flycatchers were historically most dependent on post-fire habitat (Hutto 1995) and that harvested stands may act as ecological sinks where birds may experience lower nest success compared to post-fire stands (Altman and Sallabanks 2020).

Habitat Selection and Foraging

Olive-sided flycatchers are associated with a range of open areas containing tall trees or snags for perching and foraging (Altman and Sallabanks 2020). Individuals sally from a high perch to catch flying insects (including Hymenoptera, Diptera, Lepidoptera, Odonata, and other insect groups) (Altman and Sallabanks 2020). Open areas typically include burned forest, open to semi-open mature forest stands, forest edges near natural openings, such as meadows, rivers, and wetlands, or forest edges near human made openings, such as logged areas (Altman and Sallabanks 2020). However, preferred habitat in the boreal forest tends to occur in coniferous or mixedwood forest near wetlands (Cadman et al. 2007, COSEWIC 2018a). Most nests are in conifers and are often located beneath thick canopy cover (COSEWIC 2018a).

Background Data

Background data indicates that olive-sided flycatcher is relatively widespread throughout the LSA with nine records known (see Figure 3.2-11 in Attachment 6.4-A-1). Based on this species range, background data records, and biological habitat requirements, it is anticipated that the species is found throughout the LSA, albeit in low abundance (Cadman et al. 2007, eBird 2022).

Field Survey Results

Field surveys in 2022 documented seven individuals at seven locations within the LSA (see Figure 3.2-11 in Attachment 6.4-A-1). All individuals observed were documented during targeted breeding bird surveys. The highest breeding evidence documented was possible breeding, consisting of individuals observed in suitable breeding habitat.

A summary of olive-sided flycatcher observations during targeted surveys are provided in Table 3.2-47, below.

Table 3.2-47: Olive-sided Flycatcher Survey Results during Breeding Bird Surveys, 2022

Station ID	Date(s)	Number of Individuals	Highest Breeding Evidence
BBS-1	June 12, 2022	1	• Possible – singing male.
BBS-14	July 8, 2022	1	• Possible – singing male.
BBS-23	July 8, 2022	1	• Possible – singing male.
BBS-74	June 12, 2022	1	• Possible – singing male.
BBS-79	July 9, 2022	1	• Possible – singing male.
LEBI-8	June 13, 2022	1	• Possible – singing male.
LEBI-9	June 13, 2022	1	• Possible – singing male.

BBS = Breeding Bird Survey; LEBI = Least Bittern.

A total of 85,403 ha of candidate habitat is estimated to be present within the LSA based on species records, field observations and the species habitat requirements, of which 675 ha is known habitat based on field observations in 2022 (see Attachment 6.4-A-11 for an overview on habitat criteria used in mapping suitable habitat for the species).

3.2.3.7.7 Additional Bird Species of Conservation Concern

Several additional bird species of conservation concern are known from background data based on migrants, vagrants, and historical records; however, these species were not observed during targeted and/or incidental wildlife surveys within the LSA. These species are largely not anticipated to breed within the LSA or have breeding habitat that will be significantly impacted by the Project. Figure 3.2-11 in Attachment 6.4-A-1 and Table 3.2-48 provide an overview on the bird species of conservation concern known from the LSA (but were not observed).

Table 3.2-48: Bird Species of Conservation Concern Known from Background Data But Not Observed During Wildlife Surveys

Common Name	Scientific Name	SARO (ESA) Status	COSEWIC Status	SARA Status and Schedule	Sub-national Rank[(a)]
American Coot	*Fulica americana*	–	–	–	S3B, S4N
American Golden-Plover	*Pluvialis dominica*	–	–	–	S2B, S4M
Black Tern	*Chlidonias niger*	SC	NAR	–	S3B, S4M
Black-billed Magpie	*Pica hudsonia*	–	–	–	S2
Blue-winged Teal	*Spatula discors*	–	–	–	S3B, S4M
Brewer's Blackbird	*Euphagus cyanocephalus*	–	–	–	S2
Evening Grosbeak	*Coccothraustes vespertinus*	SC	SC	SC Schedule 1	S4
Golden-winged Warbler	*Vermivora chrysoptera*	SC	THR	THR Schedule 1	S3B
Horned Grebe	*Podiceps auratus*	SC	SC	SC Schedule 1	S1B, S3N
Lapland Longspur	*Calcarius lapponicus*	–	–	–	S3B, S4N
Lesser Yellowlegs	*Tringa flavipes*	–	–	–	S3S4B, S5M
Peregrine Falcon	*Falco peregrinus*	SC	NAR	SC Schedule 1	S4
Purple Martin	*Progne subis*	–	–	–	S3B
Redhead	*Aythya americana*	–	–	–	S2B, S4N
Red-necked Grebe	*Podiceps grisegena*	NAR	NAR	–	S3B
Ruddy Duck	*Oxyura jamaicensis*	–	–	–	S3B, S4N
Rusty Blackbird	*Euphragus carolinus*	SC	SC	SC Schedule 1	S4B, S3N
Semipalmated Sandpiper	*Calidris pusilla*	–	–	–	S2B, S4M
Short-eared Owl	*Asio flammeus*	SC	THR	SC Schedule 1	S2S3, S4?B
Western Meadowlark	*Sturnella neglecta*	–	–	–	S1B

Common Name	Scientific Name	SARO (ESA) Status	COSEWIC Status	SARA Status and Schedule	Sub-national Rank[(a)]
Whimbrel	*Numenius phaeopus*	–	–	–	S3B, S4M
Wood Thrush	*Hylocichla mustelina*	SC	THR	THR Schedule 1	S4B
Yellow Rail	*Coturnicops noveboracensis*	SC	SC	SC Schedule 1	S3B
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	–	–	–	S2B

a) Sub-national ranks are based on designations assigned by the Natural Heritage Information Centre, per below:

S-Ranks (provincial)

Notes: Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks but consider only those factors within the political boundaries of Ontario.

S1 - Critically Imperiled - Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.

S2 - Imperiled - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 - Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4- Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5- Secure - Common, widespread, and abundant in the nation or state/province.

S#S# Range Rank - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

SAN Non-breeding accidental; SE Exotic - not believed to be a native component of Ontario's fauna.; SZN Non-breeding migrants/vagrants.; SZB Breeding migrants/vagrants.; COSEWIC = Committee on the Status of Endangered Wildlife in Canada; ESA = *Endangered Species Act, 2007*, S.O. 2007, c. 6; SARA = *Species at Risk Act;* SARO = Species at Risk in Ontario.

3.2.4 Significant Wildlife Habitat

The various types of significant wildlife habitat are grouped into several broad categories: seasonal concentration areas, rare vegetation communities and specialized habitats for wildlife, and species of conservation concern. Significant wildlife habitat associated with rare vegetation communities and vegetation-dependent specialized habitat for wildlife (i.e., wild rice and milkweed patches) were discussed in Section 3.1.2. Certain specific types of SWH are discussed separately throughout Section 3.1 since they are closely associated with other targeted programs undertaken for this study, as follows:

- Wildlife Species of Conservation Concern – throughout Section 3.2.
- Seasonal Concentration Areas:
  - Eagle / osprey concentrations – Section 3.2.3.7;
  - Bat hibernacula – Section 3.2.1.3.2;
  - Bat maternity colonies – Section 3.2.1.3.1;
  - Amphibian breeding habitat – Section 3.2.2.1.3; and
  - Turtle wintering areas – Section 3.2.2.2.3.
- Specialized Habitats for Wildlife:
  - Bald eagle / osprey nesting – Section 3.2.3.4 and 3.2.3.7.1;
  - Woodland raptor nesting – Section 3.2.3.4;
  - Turtle nesting areas – Section 3.2.2.2.3;
  - Marsh bird breeding habitat – Section 3.2.3.5; and
  - Open-country breeding bird habitat – Section 3.2.3.2.

Seasonal concentration areas are areas where wildlife species occur annually in numbers at certain times of the year, sometimes highly concentrated within relatively small areas (MNRF 2017a), such as resting and feeding areas for migratory wildlife in spring and fall, or over-wintering habitats. Specialized habitat for wildlife is a community or diversity-based category; therefore, the more wildlife species a habitat contains, the more significant the habitat becomes to the planning area (MNRF 2017a).

The abundance in the LSA of seasonal concentration areas and specialized habitats for wildlife identified within Ecoregion 3W (MNRF 2017a) are presented in Table 3.2-49. As noted, there are some specific types of SWH discussed in other sections of this report that are not reflected in the table below. This information is based on the ecosite-based desktop analysis as well as the field results and is presented on and Figure 3.2-2 in Attachment 6.4-A-1. Discrepancies between the desktop and field values presented in Table 3.2-49 are the result of changes to FRI ecosites based on the field results.

Table 3.2-49: Candidate Seasonal Concentration Areas and Specialized Habitat for Wildlife in the Local Study Area

Significant Wildlife Habitat Type[a]	Desktop Frequency in the LSA	Desktop Area in the LSA (ha)	Field Results (SWH and ELC) Frequency in the LSA	Field Results (SWH and ELC) Area in the LSA (ha)	Field Results (SWH and ELC) % of LSA
Seasonal Concentration Areas • Waterfowl Stopover and Staging (Terrestrial)	85	630	83	615	<1%
Seasonal Concentration Areas • Waterfowl Stopover and Staging (Aquatic)	1,502	4,261	1,506	4,279	3%
Seasonal Concentration Areas • Shorebird Migratory Stopover	2	6	0	0	0%
Seasonal Concentration Areas • Colonial Nesting Bird Habitat – Bank and Cliff	3	32	4	35	<1%
Seasonal Concentration Areas • Colonial Nesting Bird Habitat – Tree and Shrub	14,618	136,024	14,628	135,977	80%
Seasonal Concentration Areas • Colonial Nesting Bird Habitat - Ground	1,296	4,097	1,293	4,483	3%
Seasonal Concentration Areas • Sharp-tailed Grouse Lek	36	907	26	1,059	<1%

Significant Wildlife Habitat Type[a]	Desktop Frequency in the LSA	Desktop Area in the LSA (ha)	Field Results (SWH and ELC) Frequency in the LSA	Field Results (SWH and ELC) Area in the LSA (ha)	Field Results (SWH and ELC) % of LSA
Seasonal Concentration Areas • Snake Hibernaculum	n/a	n/a	n/a	n/a	n/a
Specialized Habitat for Wildlife • Waterfowl Nesting Area	2,779	9,561	2,793	9,618	6%
Specialized Habitat for Wildlife • Aquatic Feeding Habitat	550	1,147	550	1,147	<1%
Specialized Habitat for Wildlife • Seeps and Springs	n/a	n/a	n/a	n/a	n/a
Specialized Habitat for Wildlife • Mineral Lick	n/a	n/a	n/a	n/a	n/a
Specialized Habitat for Wildlife • Mammal Denning Site	n/a	n/a	n/a	n/a	n/a

a) Reference for SWH: MNR 2000; MNRF 2017a
Note: Cells with n/a means these types of candidate SWH are not ecosite-based and therefore no assessment is available. See discussion below.

< = Less than; % = Percent; ELC = Ecological Land Classification; ha = hectare; LSA = Local Study Area; n/a/ = not applicable/not available; SWH = Significant Wildlife Habitat.

Information on frequency and area of each of the SWH types listed in Table 3.2-49 is presented for each alternate route segment in Attachment 6.4-A-4.

Sixty-four percent (64%) of the ecosites visited during the SWH field surveys did not match the desktop ecosite mapping, indicating a measurable amount of discrepancy between the existing background ecosite data (FRI mapping) and the actual field conditions. The majority of the discrepancies were at the finer scale, such as open versus sparse treed fen ecosites or forested areas differing in their tree composition compared to the mapped ecosites. Additional ecosite changes were made as a result of the plant community surveys. Minor discrepancies such as these are unlikely to significantly affect the information presented in Table 3.2-49 when applied across the LSA.

In addition to the ecosite desktop and field results discussed above, occurrences of some seasonal concentration areas and specialized habitats for wildlife were identified through review of background data sources and incidental observations during field surveys (all survey types). Four occurrences of herring gull nesting were identified in background sources (LIO 2022), which may be associated with the presence of colonial breeding bird – ground SWH. During the field surveys, 35 features that may represent candidate SWH snake hibernacula were observed by staff, including features such as mammal burrows, deep rock crevices that may lead to chambers, etc. An additional three snake hibernacula are identified in background sources (NHIC 2022). Field staff observed six seeps and springs in the LSA during field investigations, which may constitute candidate SWH. Background sources also identify four mineral licks in the LSA (LIO 2022). Field staff confirmed 14 mammal denning sites that were large enough to potentially be attributed to the species listed in the Ecoregion Criterion Schedules (MNRF 2017a) as being associated with this type of SWH. Species of conservation concern have been discussed throughout other sections of this report; however, two additional species not discussed elsewhere were identified in the LSA through a review of background sources, namely elusive clubtail (*Stylurus notatus*; S3, provincially tracked) and yellow-banded bumblebee (*Bombus terricola*; SC). Each of these features is mapped on Figure 3.2-2 in Attachment 6.4-A-1.

Significant wildlife habitat in the form of seasonal concentration areas and specialized habitat for wildlife can be expected to be similar in the RSA in terms of abundance and distribution. This is based on the fact that both the LSA and RSA are similar in that they are both dominated by natural habitats typical of this ecoregion.

4.0 References

Adkins, C., and P. Stott. 1998. Home ranges, movements and habitat associations of red foxes *Vulpes* in suburban Toronto, Ontario, Canada. Journal of Zoology 244: 335-346.

Alexander, S.M., P.C. Paquet, T.B. Logan, and D.J. Salier. 2005. Snow-tracking versus radiotelemetry for predicting wolf-environment relationships in the Rocky Mountains of Canada. Wildlife Society Bulletin 33: 1216-1224.

Altman, B. and R. Sallabanks. 2020. Olive-sided Flycatcher (*Contopus cooperi*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA.

Andruskiw, M., J.M. Fryxell, I.D. Thompson, and J.A. Baker. 2008. Habitat-mediated variation in predation risk by the American marten. Ecology 89:2273-2280.

Austin, M.A., M.E. Obbard, and G.B. Kolenosky. 1994. Evidence for a black bear, *Ursus americanus*, killing an adult moose, *Alces alces*. Canadian Field Naturalist: 108: 236-238.

Baker, Bruce W. and Hill, Edward P. 2003. Beaver (Castor canadensis). Wild mammals of North America: biology management and conservation 288-310. Wayback Machine (archive.org)

Ballard, W.B. 1994. Effects of black bear predation on caribou: a review. Alces 30: 25–35.

Ballard, W.B., and V. van Ballenberghe. 2008. Predator/prey relationships. Pages 247-274 in A.W. Franzmann and C.C. Schwartz, editors. Ecology and Management of North American Moose, 2nd edition. University Press of Colorado, Boulder CO.

Banton E, Johnson J, Lee H, Racey G, Uhlig P, Wester M. 2009. Ecosites of Ontario, Operational Draft April 20th, 2009.

Banton, E. A., 2012. Boreal Ecosite Factsheets. Ontario Ministry of Natural Resources. Bird Studies Canada, Marsh Monitoring Program, 2000. The Marsh Monitoring Program Quality Assurance Project Plan. Prepared for the U.S. Environmental Protection Agency, Great Lakes National Program Office, Chicago, Illinois.

Bayne, E., R. Moses, and S. Boutin. 2008. Evaluation of winter tracking protocols as a method for monitoring mammals in the Alberta Biodiversity Monitoring Program. University of Alberta, Department of Biological Sciences, Edmonton, AB.

Bellis, E.D. 1965, Home range and movements of the Wood Frog in a northern bog. Ecology 46: 90-98.

Bird Studies Canada. 2012. Bird Surveys Overview. http://www.bsc-eoc.org/volunteer/glmmp/index.jsp?targetpg=glmmpbird&lang=EN

Bird Studies Canada. 2009. Marsh Monitoring Program Participant's Handbook for Surveying Marsh Birds. 2009 Edition. Bird Studies Canada in cooperation with Environment Canada and the United States Environmental Protection Agency. February 2009.

Birchfield, G.L., and J.E. Deters. 2005. Movement paths of displaced northern green frogs (R*ana clamitans melanota*). Southeastern Naturalist 4: 63-76.

Boer, AH. 1992. Fecundity of North American Moose (*Alces alces*): a review. Alces Supplement 1: 1-10.

Boitani, L. 2000. Action plan for the conservation of wolves in Europe (*Canis lupus*). Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), Nature and Environment, No. 113.

Boonstra, Rudy. 2021. Beaver. The Canadian encyclopedia. https://www.thecanadianencyclopedia.ca/en/article/beaver

Bowman, J, Ray JC, Magoun AJ, Johnson DS, Dawson FN. 2010. Roads, logging, and the large-mammal community of an eastern Canadian boreal forest. Canadian Journal of Zoology 88:454-467.

Brigham, R. M., J. Ng, R. G. Poulin, and S. D. Grindal (2020). Common Nighthawk (*Chordeiles minor*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.comnig.01

Broders, H.G., G.J. Forbes, S. Woodley, and I.D. Thompson. 2006. Range extent and stand selection for roosting and foraging in forest-dwelling northern long-eared bats and little brown bats in the Greater Fundy Ecosystem, New Brunswick. Journal of Wildlife Management 70: 1174-1184.

Brown, M. B. and C. R. Brown. 2020. Barn Swallow (*Hirundo rustica*), version 1.0. In Birds of the World (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.barswa.01

Buck G. 2015. Guelph District. Ministry of Natural Resources. Ontario Ministry of Natural Resources and Forestry (MNRF) unpublished guidance document titled "Bat Survey Methods". Obtained by Golder in May 2015

Buehler, D.A. 2000. Bald eagle (Haliaeetus leucocephalus). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Available at: http://bna.birds.cornell.edu/bna/species/506. Accessed March 15, 2016

Buehler, D. A. (2022). Bald Eagle (*Haliaeetus leucocephalus*), version 2.0. In Birds of the World (P. G. Rodewald and S. G. Mlodinow, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.baleag.02

Burnett, G.W. 1981. Movements and habitat use of American marten in Glacier National Park, Montana. Missoula, MT. University of Montana. *M.Sc. Thesis*. 130 pp. Cited in Buskirk, S.W. and L.F. Ruggiero. 1994. American marten. U.S. Forest Service General Technical Report GM-254. pp. 7-37.

Burns, L. E., and Broders, H. G. (2015). Maximizing mating opportunities: higher autumn swarming activity in male versus female Myotis bats. J. Mammal. 96, 1326–1336. doi: 10.1093/jmammal/gyv141

Burrell, M.V.A., B.N. Charlton, K.G.D. Burrell, J.D. Vandermeulen, A.C. Guercio, B.A. Mann, D.A. Sutherland, P.D. Pratt, and W.G. Lamond. 2019. Ontario Bird Records Committee Report for 2018. Ontario Birds, 37(2):52-83.

Buskirk, S.W., and L.F. Ruggiero. 1994. American marten. Pages 7-37 General Technical Report GM-254. U.S. Forest Service.

Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier, Editors. 2007. Co-published by Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp. ISBN 978-1-896059-15-0.

Caryl, F. M., C. P. Quine, and K. J. Park. 2012. Martens in the matrix: the importance of nonforested habitats for forest carnivores in fragmented landscapes. Journal of Mammalogy 93:464–474.

Cassola, F. 2016. Castor canadensis. The IUCN Red List of Threatened Species 2016: e.T4003A22187946. https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T4003A22187946.en.

Chapin, T.G., D.J. Harrison, and D.M. Phillips. 1997. Seasonal habitat selection by marten in an untrapped forest preserve. Journal of Wildlife Management 61:707-717.

Collison, B. R., and Gromack, A. G. 2022. Importance of riparian zone management for freshwater fish and fish habitat protection: analysis and recommendations for Nova Scotia. Canadian technical report of fisheries and aquatic sciences. 3475: viii + 71p.

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2021. COSEWIC assessment and status report on the Barn Swallow Hirundo rustica in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 60 pp. (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.

COSEWIC. 2009. COSEWIC assessment and update status report on the Least Bittern Ixobrychus exilis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 36 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COSEWIC. 2010. COSEWIC assessment and status report on the Bobolink Dolichonyx oryzivorus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

COSEWIC. 2012. COSEWIC assessment and status report on the Eastern Wood-pewee Contopus virens in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp. (www.registrelep-sararegistry.gc.ca/default_e.cfm).

COSEWIC. 2013. COSEWIC assessment and status report on the Little Brown Bat (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-Colored Bat (*Perimyotis subflavus*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.

COSEWIC. 2015. COSEWIC Assessment and Status Report on the Gray Fox Urocyon cinereoargenteus in Canada – 2015. Available at: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/gray-fox-2015.html

COSEWIC. 2016a. COSEWIC assessment and status report on the Western Painted Turtle Chrysemys picta bellii, Pacific Coast population, Intermountain – Rocky Mountain population and Prairie/Western Boreal – Canadian Shield population, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxi + 95 pp

COSEWIC. 2016b. American marten (Martes americana) COSEWIC assessment and status report: chapter 9. Government of Canada. American marten (Martes americana) COSEWIC assessment and status report: chapter 9 - Canada.ca

COSEWIC. 2016. Wildlife Species Search: Database of wildlife species assessed by COSEWIC. Available at: http://www.cosewic.gc.ca/eng/sct1/searchform_e.cfm. Accessed: April 7, 2016.

COSEWIC. 2018. COSEWIC assessment and status report on the Chimney Swift Chaetura pelagica in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 63 pp. (http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1).

COSEWIC. 2018a. COSEWIC assessment and status report on the Olive-sided Flycatcher Contopus cooperi in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 52 pp. (http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1).

COSEWIC. 2018b. COSEWIC assessment and status report on the Common Nighthawk Chordeiles minor in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 50 pp. (http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1).

COSEWIC. 2020. IN PRESS. COSEWIC assessment and status report on the Canada Warbler Cardellina canadensis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 54 pp. (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

Canadian Herpetological Society. 2022. Amphibians and Reptiles of Canada [Accessed November 2022]. https://canadianherpetology.ca/species/index.html

Canadian Wildlife Health Cooperative (CWHC). 2022. WNS Report and Maps. Date: 07 July 2022. Available at http://www.cwhc-rcsf.ca/white_nose_syndrome_reports_and_maps.php#maps

CWHC. 2017. Canadian National White-nose Syndrome Decontamination Protocol for entering bat hibernacula. Date: 07 March 2017. Available at http://www.cwhc-rcsf.ca/docs/WNS_Decontamination_Protocol-Mar2017.pdf.

CWHC. 2020. Wildlife Health and COVID-19 in Canada: Bats. Interim guidance for wildlife management agencies, Version 1.1. Date: 25 June 2020. Available at: http://www.cwhc-rcsf.ca/covid-19.php.

Courtois R, Dussault C, Potvin F, Daigle G. 2002. Habitat selection by moose (Alces alces) in clear-cut landscapes. Alces 38:177-92.

Cumming, S. G., E. Bayne, F.K.A. Schmiegelow, T. Fontaine, S.J. Song, and K. Lefevre. 2010. Toward conservation of Canada's boreal forest avifauna: design and application of ecological models at continental extents. Avian Conservation and Ecology 5(2): 8. [online] Available at http://www.ace-eco.org/vol5/iss2/art8/http://dx.doi.org/10.5751/ACE-00406-050208.

Cumming GH. 1987. Sixteen years of moose browse surveys in Ontario. Alces 23: 125-155.

Cushman, S.A. 2006. Effects of habitat loss and fragmentation on amphibians: a review and prospectus. Biological Conservation 128, 231-240.

D'Aoust-Messier, A-M., Echaubard, P., Billy, V., and D. Lesbarrères. 2015. Amphibian pathogens at northern latitudes: presence of chytrid fungus and ranavirus in northeastern Canada. Diseases of Aquatic Organisms 113, 149-155.

Davidson-Hunt, I.J., Jack, P., Mandamin, E., and Wapioke, B. 2005. Iskatewizaagegan (Shoal Lake) Plant Knowledge: An Anishinaabe (Ojibway) Ethnobotany of Northwestern Ontario. *Journal of Ethnobiology*, 25(2): 189-227.

DeMars CA, Serrouya R, Mumma MA, Gillingham MP, McNay RS, Boutin S. 2019. Moose, caribou, and fire: have we got it right yet? Canadian Journal of Zoology. 97:866-879. dx.doi.org/10.1139/cjz-2018-0319.

Dobbyn, J. S. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Don Mills, Ontario.

Dodge Jr WB, Winterstein SR, Beyer Jr DE, Campa III H. 2004. Survival, reproduction, and movements of moose in the western Upper Peninsula of Michigan. Alces 40:71-85.

Downes, C.M. and B.T. Collins. 2003. Canadian Breeding Bird Survey, 1967-2000. National Wildlife Research Centre, Canadian Wildlife Service. Ottawa.

eBird. 2022. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, NY. Available: (http://www.ebird.org].

Eigenbrod, F., S. J. Hecnar, and L. Fahrig. 2008b. The relative effects of road traffic and forest cover on anuran populations. Biological conservation 141:35–46.

Environment Canada. 2013. Recovery Strategy for the American Badger, jacksoni subspecies (Taxidea taxus jacksoni) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. 14 pp. + Appendices.

Environment Canada. 2015. 3 species of bat: fact sheet on emergency listing order. 3 species of bat: fact sheet on emergency listing order - Canada.ca

Environment and Climate Change Canada (ECCC). 2018. Recovery Strategy for the Little Brown Myotis (Myotis lucifugus), the Northern Myotis (Myotis septentrionalis), and the Tri-colored Bat (Perimyotis subflavus) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. ix + 172 pp.

Environment and Climate Change Canada (ECCC) 2021. Recovery Strategy for the American Badger jeffersonii subspecies (Taxidea taxus jeffersonii) Western population and Eastern population in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. 2 parts, 20 pp. + 36 pp.

Environment and Natural Resources. 2014. Lynx: non-detriment finding. Government of Canada. Lynx: non-detriment finding - Canada.ca

Environmental Commissioner of Ontario. 2016. Small Steps Forward: Environmental Protection Report 2015/2016 Volume Two: Biodiversity. 86 pp. Accessed July 2020. Available at http://docs.assets.eco.on.ca/reports/environmental-protection/2015-2016/EPR-Small-Steps-Forward_Vol2-EN.pdf

ENDM (Ontario Ministry of Energy, Northern Development and Mines). 2020. Abandoned Mine Infrastructure System (AMIS) database. Accessed December 2020. Retrieved from https://www.mndm.gov.on.ca/en/mines-and-minerals/applications/ogsearth/abandoned-mines.

ESA (*Endangered Species Act*). 2007. S.O. 2007, c. 6. Government of Ontario.

Farrar, J.L. (1995) Trees in Canada. Fitzhenry & Whiteside Limited, Markham.

Fenton, M. B. 1969. Summer activity of Myotis lucifugus (Chiroptera: Vespertilionidae) at hibernacula in Ontario and Quebec. Canadian Journal of Zoology 47(4): 597-602.

Forbes, G. L., and J. B. Theberge. 1996. Response by wolves to prey variation in central Ontario. Canadian Journal of Zoology 74: 1511-1520.

Franzman, A. W. 1981. *Alces alces*. Mammalian Species 145: 1-7.

Fryxell J.M., I. Thompson, and J. Baker.2008. Population ecology of marten (*Martes americana*) in the boreal forests of northern Ontario. Final report for NSERC, Forest Ecosystem Research Cooperative Inc, Canadian Forest Service, and Ontario Ministry of Natural Resources. Department of Integrative Biology, University of Guelph.

Fuller, T.K. and L.B. Keith. 1980. Wolf population dynamics and prey relationships in northeastern Alberta. Journal of Wildlife Management 44: 583-602.

Gable, T., Homkes, A. T. and Bump, J. 2022. 2021-2022 Greater Voyageurs Ecosystem Wolf Pack and Population Size Report. https://hdl.handle.net/11299/250487

Garrison, B. A. and A. Turner (2020). Bank Swallow (*Riparia riparia*), version 1.0. In Birds of the World (S. M. Billerman, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.banswa.01

Gerson, H. 1984. Habitat management guidelines for bats of Ontario. MNR. Habitat Mangement Guidelines for Bats of Ontario (dr6j45jk9xcmk.cloudfront.net)

Gibbs, J. P. and W. G. Shriver. 2005. Can road mortality limit populations of pool-breeding amphibians? Wetlands Ecology and Management 13:281–289.

Gosselink T.E., T.R. Van Deelen, R.E. Warner, and P.C. Mankin. 2007. Survival and cause-specific mortality of red foxes in agricultural and urban areas of Illinois. Journal of Wildlife Management 71: 1862–1873.

Government of Ontario (Ontario). 2015. *Invasive Species Act*, S.O. 2015, c. 22.

Government of Ontario. 2022. The Committee on the Status of Species at Risk in Ontario's 2021 annual report on species assessments. Retrieved from: https://ero.ontario.ca/notice/019-5296.

Gurarie, E., Suutarinen, J., Kojola, I., & Ovaskainen, O. (2011). Summer movements, predation and habitat use of wolves in human modified boreal forests. Oecologia, 165, 891–903. https://doi.org/10.1007/s00442-010-1883-y

Hebblewhite, M. and E. Merrill. 2008. Modelling wildlife-human relationships for social species with mixed-effects resource selection models. Journal of Applied Ecology 45:834-844.

Hecnar, S.J. 1995. Acute and chronic toxicity of ammonium nitrate fertilizer to amphibians from southern Ontario. Environmental Toxicology and Chemistry 14, 2131-213.

Helgen, K. & Reid, F. 2016. *Martes americana*. *The IUCN Red List of Threatened Species* 2016: e.T41648A45212861. https://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T41648A45212861.en.

Hels, T. and E. Buchwald, 2001. The effect of road kills on amphibian populations. Biological Conservation 99: 331–340.

Henker, Karen. 2009. What do beaver eat? A literature review for the grand canyon trust. What Do Beaver Eat? Literature review report prepared by Karen Henker for Grand Canyon Trust in August 2009 assessing beaver food supply along Tasha Creek in the Fishlake National Forest, Utah

Henry M. Thomas D. W. Vaudry R. Carrier M. 2002. Foraging distances and home range of pregnant and lactating little brown bats (Myotis lucifugus). Journal of Mammalogy 83:767–774.

Higgelke, P. E. 1994. Simulation analysis of components of Ontario's moose habitat guidelines. Lakehead university. Simulation analysis of components of Ontario's moose habitat guidelines (lakeheadu.ca)

Hoffman, J. D., Genoways, H. H. and Choate, J. R. 2006. Long-distance dispersal and population trends of moose in the central united states. University of Nebraska State. http://digitalcommons.unl.edu/museummammalogy/65

Horner, M.A. and R.A. Powell. 1990. Internal structure of home ranges of black bears and analyses of home –range overlap. Journal of Mammalogy 71: 402-410.

Honsberger, T. 2020. Wassigan Transmission Line Route Alternatives Assessment – Prepared for Lac Des Mille Lacs First Nation. Thunder Bay Ontario.

Houle, M., D. Fortin, C. Dussault, R. Courtois, and J.P. Ouellet. 2010. Cumulative effects of forestry on habitat use by gray wolf (*Canis lupus*) in the boreal forest. Landscape Ecology 25, 419–433.

Humphrey, C. 2017. Recovery Strategy for the Eastern Small-footed Myotis (Myotis leibii) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 76 pp.

Humphrey, C. and H.R. Fotherby. 2019. Recovery Strategy for the Little Brown Myotis (Myotis lucifugus), Northern Myotis (Myotis septentrionalis) and Tri-colored Bat (Perimyotis subflavus) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ministry of the Environment, Conservation and Parks, Peterborough, Ontario. vii + 35 pp. + Appendix. Adoption of the Recovery Strategy for the Little Brown Myotis (Myotis lucifugus), the Northern Myotis (Myotis septentrionalis), and the Tri-colored Bat (Perimyotis subflavus) in Canada (Environment and Climate Change Canada 2018). Retrieved from: https://files.ontario.ca/mecp-rs-bats-2019-12-05.pdf

Hutto, R. L. (1995). USFS Northern Region songbird monitoring program: distribution and habitat relationships. 2nd rep: USFS Region 1 contract no. 570343500012.

Hydro One. 2022. Waasigan Transmission Line Field Work Plan – Terrestrial – Rev 2. Prepared by WSP Golder. 212 pp.

Indigenous Monitor (pers. comm.) Lac des Mille Lacs First Nation. Communication received on August 24, 2022.

Indigenous Monitor (pers. comm.) Wabigoon Lake Ojibway Nation. Communication received on July 30, 2022.

Indigenous Monitor (pers. comm.) Wabigoon Lake Ojibway Nation. Communication received on August 9, 2022.

Indigenous Monitor (pers. comm.) Wabigoon Lake Ojibway Nation. Communication received on August 15, 2022.

Indigenous Monitor (pers. comm.) Wabigoon Lake Ojibway Nation. Communication received on August 20, 2022.

James, A.R. and A.K. Stuart-Smith. 2000. Distribution of caribou and wolves in relation to linear corridors. Journal of Wildlife Management 64: 154-159.

Jobin, B., R. Bazin, L. Maynard, A. McConnell and J. Stewart. 2011. National Least Bittern Survey Protocol. Technical Report Series No. 519, Environment Canada, Canadian Wildlife Service, Quebec Region, Quebec, 26 p.

Kays, R. 2020. *Canis latrans*. *The IUCN Red List of Threatened Species* 2018: e.T3745A163508579. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T3745A163508579.en.

Kelt, D.A., and D.H. Van Vuren. 2015. Home ranges of recent mammals. Ecology 96: 1733-1733

Kennedy-Slaney, L, Bowman J, Walpole AA, Pond BA. 2018. Northward bound: the distribution of white-tailed deer in Ontario under a changing climate. Wildlife research 45(3): 220-228.

Kenny, M.B. and Parker, W.H. 2004. Ojibway Plant Taxonomy at Lac Seul First Nation, Ontario, Canada. *Journal of Ethnobiology,* 24(1): 75-91.

Kolenosky, G.B. 1990. Reproductive biology of black bears in east-central Ontario. International Conference for Bear Research and Management 8: 385-392.

Kolenosky, G.B. and S. M. Strathearn. 1987. Winter denning of black bears in east-central Ontario. International Conference for Bear Research and Management 7:305-316.

Klaus, S.P., and S.C. Lougheed. 2013. Changes in breeding phenology of eastern Ontario frogs over four decades. Ecology and Evolution 3, 835-845.

Knight, E. 2019. Canadian Nightjar Survey Protocol 2019. Collaboration by WildResearch, Bird Studies Canada, Regroupement Québec Oiseaux, and Environment and Climate Change Canada. 11 pp. + appendices.

Knutson, M.G., Herner-Thogmartin, J.H., Thogmartin, W.E., Kapfer, J.M., and J.C. Nelson. 2018. Habitat selection, movement patterns, and hazards encountered by northern leopard frogs (*Lithobates pipiens*) in an agricultural landscape. Herpetological Conservation and Biology 13: 113-130.

Knopf, F.L. and R.M. Evans (2020). American White Pelican (*Pelecanus erythrorhynchos*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.amwpel.01

Lacki, M.J., Amelson, S.K and Baker, M.D. 2007. Foraging ecology of bats in forests. Bats in forests: conservation and management 83(128).

Lariviére, S. and M. Pasitschniak-Arts. 1996. *Vulpes vulpes*. Mammalian Species 537: 1-11.

Latour, P.B., N. Maclean, and K.G. Poole. 1994. Movements of martens, *Martes americana*, in burned and unburned taiga in the Mackenzie Valley, Northwest Territories. Canadian Field-Naturalist 108: 351-354.

Laurian, C., C. Dussault, J.-P. Ouellet, R. Courtois,and M. Poulin. 2012. Interactions between a large herbivore and a road network. *Ecoscience* **19**: 69– 79.

Layng AM, Adams AM, Goertz DE, Morrison KW, Pond BA, Phoenix RD. 2019. Bat species distribution and habitat associations in northern Ontario, Canada. Journal of Mammalogy. 100(1): 249–260.

Lesbarrères, D., Ashpole, S.L., Bishop, C.A., Blouin-Demers, G., Brooks, R.J., Echaubard, P., Govindarajulu, P., Green, D.M., Hecnar, S.J., Herman, T., Houlahan, J., Litzgus, J.D., Mazerolle, M.J., Paszkowski, C.A., Rutrherford, P., Schock, D.M., Storey, K. B., and S.C. Lougheed. 2014. Conservation of herpetofauna in northern landscapes: Threats and challenges from a Canadian perspective. Biological Conservation 170: 48-55.

Lesbarrères, D., Balseiro, A., Brunner, J., Chinchar, V.G., Duffus, A., Kerby, J., Miller, D.L., Robert, J., Schock, D.M., Waltzek, T., and M.J. Gray. 2011. Ranavirus: past, present and future. Biology Letters. doi:10.1098/rsbl.2011.0951

Lewis, S. E. (1995). Roost Fidelity of Bats: A Review. *Journal of Mammalogy*, *76*(2), 481–496. https://doi.org/10.2307/1382357

LIO. 2020. Land Information Ontario. Government of Ontario. Land Information Ontario | ontario.ca

Lowther, P. E., A. F. Poole, J. P. Gibbs, S. M. Melvin, and F. A. Reid (2020). American Bittern (Botaurus lentiginosus), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.amebit.01

Mahoney, S.P., Abbott, H., Russell, L.H., and Porter, B.R. 1990. Woodland caribou calf mortality in insular Newfoundland. In Transactions of the 19th Congress of the International Union of Game Biologists, Trondheim, Norway, 1989. Edited by S. Myrberget. Norwegian Institute for Nature Research, Trondheim, Norway. pp. 592–599.

Marles, R.J., Clavelle, C., Monteleone, L., Tays, N., and Burns, D. 2000. *Aboriginal Plant Use in Canada's Northwest Boreal Forest.* UBC Press, Vancouver.

McColm, Lindsay. 2021. Species at Risk Recovery Biologist. Landscape Species Recovery Section. Species at Risk Branch. Ministry of the Environment, Conservation, and Parks. Email providing MECP guidance on bat habitat in northern Ontario. Dated January 5, 2021.

McCracken, J.D., R.A. Reid, R.B. Renfrew, B. Frei, J.V. Jalava, A. Cowie, and A.R. Couturier. 2013. Draft Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. viii + 86 pp.

McLaren AA, Jamieson SE, Bond M, Rodgers AR, Patterson BR. 2021. Spring diet of American black bears (Ursus americanus) in a moose (Alces alces)–woodland caribou (Rangifer tarandus caribou) system in northern Ontario, Canada. Canadian Journal of Zoology 99(8):721-8.

McLoughlin, P.D., J.S. Dunford, and S. Boutin. 2005. Relating predation mortality to broad-scale habitat selection. Journal of Animal Ecology 74: 701-707.

Mech, L.D. 1974. Mammalian Species: *Canis lupus*. The American Society of Mammalogists. No. 37, pp. 1-6.

Mech, L.D. 1995. The challenge and opportunity of recovering wolf populations. Conservation Biology 9:270 278.

Mech, L.D. and L.L. Rogers. 1977. Status, distribution, and movements of martens in northeastern Minnesota. Res. Pap. NE-143. Radnor, PA: U.S. Department of Agriculture, Northern Forest Experiment Station. 7 pp. Cited in Buskirk, S.W. and L.F. Ruggiero. 1994. American marten. U.S. Forest Service General Technical Report GM-254. pp. 7-37.

Melvin, S. M. and J. P. Gibbs (2020). Sora (*Porzana carolina*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.sora.01

Mergey, M., R. Helder, and J. Roeder. 2011. Effects of forest fragmentation on space-use patterns in the European pine marten (*Martes martes*). Journal of Mammalogy 92: 328-335.

Miller, B. K. and Litvaitis, J. A. 1992. Use of roadside salt licks by moose, Alces alces , in northern New Hampshire.: Canadian field-naturalist. Ottawa ON [CAN. FIELD-NAT.], vol. 106, no. 1, pp. 112-117, 1992.

Mills SC, Adams AM, Phoenix RD. 2013. Bat species diversity in the boreal forest of northeastern Ontario, Canada. Northeast Naturalist. 20(2): 309-324.

Ministry of the Environment, Conservation and Parks (MECP). 2019. Recovery Strategy for the Gray Fox (Urocyon cinereoargenteus) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ministry of the Environment, Conservation and Parks, Peterborough, Ontario. iv + 5 pp. + Appendix. Adoption of the Recovery Strategy for Grey Fox (Urocyon cinereoargenteus) in Canada (Environment Canada 2018).

Ministry of the Environment, Conservation and Parks (MECP). 2022. Black Ash (*Fraxinus nigra*) in Ontario: Ontario Recovery Strategy Series. Available at https://files.ontario.ca/pdf-3_0/mecp-black-ash-recovery-strategy-en-2022-08-10.pdf

MNR (Ministry of Natural Resources). 1987. Bald eagle habitat management guidelines, MNR # 51599, June 1987. Queen's Printer, Ontario.

MNR. 2000. Significant Wildlife Habitat Technical Guide. 151 p.

MNR. 2005. Backgrounder on wolf conservation in Ontario. Queen's Printer for Ontario.

MNR. 2007a. State of Resources Reporting. Wolves in Ontario. Available at: http://wolvesontario.org/wolves-ontario. Accessed: March 16, 2016.

MNR. 2007b. Backgrounder on the red fox (*Vulpes vulpes*). Queen's Printer for Ontario.

MNR. 2009a. Cervid Ecological Framework. June 2009. 19 pp. [accessed November 2022]. https://www.ontario.ca/document/cervid-ecological-framework.

MNR. 2009b. Forest Resources Inventory Technical Specifications. Available at https://dr6j45jk9xcmk.cloudfront.net/documents/2837/fim-tech-spec-forest-resources-inventory.pdf

MNR. 2009c. Moose Population Objectives Setting Guidelines. Updated June 17, 2021. [accessed December 2022]. https://www.ontario.ca/page/moose-population-objective-guidelines.

MNR. 2009d. Backgrounder on black bears in Ontario. Queen's Printer for Ontario. iv + 39 pp.

MNR. 2010. Natural Resource Values Information System.

MNR. 2011a. Bats and Bat Habitats: Guidelines for Wind Power Projects. Ontario Ministry of Natural Resources, Queen's Printer for Ontario, Toronto, ON. 24 pp.

MNR. 2013a. General Habitat Description for the Eastern Whip-poor-will (Caprimulgus vociferous). Queen's Printer for Ontario. Available at: http://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_ghd_whp_pr_wll_en.pdf. Accessed: March 15, 2016.

MNRF. 2014. Eastern whip-poor-will. Eastern whip-poor-will | ontario.ca

MNRF. 2015a. Bald Eagle. [accessed January 2017]. Available at: https://www.ontario.ca/page/bald eagle. Webpage last updated September 28, 2015.

Ministry of Natural Resources and Forestry (MNRF). 2017a. Significant Wildlife Habitat Criteria Schedules for Ecoregion 3W (Draft - October 2017). MNRF Northwest Region Resources Section. 435 James St. South, Suite 221A, Thunder Bay, Ontario. 65 pp. Available at https://ero.ontario.ca/notice/013-2018#supporting-materials.

MNRF. 2017b. Survey Protocol for Species at Risk Bats within Treed Habitats: Little Brown Myotis, Northern Myotis, and Tri-colored Bat. Ontario Ministry of Natural Resources and Forestry, Guelph District.

MNRF. 2017c. White-tailed deer management policy for Ontario. August 2017. 16 pp. [accessed December 2022]. https://www.ontario.ca/page/white-tailed-deer-management-policy-ontario

MNFR. 2020. Ensuring the long-term sustainability of the black bear population in Bruce Peninsula and provincewide. King's printer for Ontario. Ensuring the Long-Term Sustainability of the Black Bear Population in Bruce Peninsula and Provincewide | Ontario Newsroom

MNRF. 2022a. Land Information Ontario. Available at https://www.ontario.ca/page/land-information-ontario

MNRF. 2022b. Black Ash. Available at https://www.ontario.ca/page/black-ash-0

MNRF. 2022c. Factors that affect moose survival. Published July 15, 2015; updated July 11, 2022. [accessed December 2022]. https://www.ontario.ca/page/factors-affect-moose-survival

MNRF. 2022d. Moose Population management. Updated July 13, 2022. [accessed November 2022]. ontario.ca/page/moose-population-management

MNRF. 2022e. Moose hunting activity and harvest – 2012 to 2021. Last Updated March 2, 2022. [accessed November 2022]. https://data.ontario.ca/dataset/moose-hunting-activity-and-harvests

MNRF. 2022f. White tailed deer hunting activity and harvest – 2009 to 2021. Last updated March 2, 2022. [accessed December 2022] https://data.ontario.ca/dataset/white-tailed-deer-hunting-activity-and-harvest

MNRF. 2022g. Trapper harvests (1993-2021). Trapper harvests - Trapper harvests (1993-2021) - Ontario Data Catalogue.

MNRF. 2022h. Gray Fox recovery strategy. Ontario Ministry of Natural Resources and Forestry. Gray Fox recovery strategy | ontario.ca

Mosnier, A., Ouellet, J., and Courtois, R. 2008. Black bear adaption to low productivity in the boreal forest. Ecoscience, 15(4): 485-497.

Muller, M. J. and R. W. Storer. 2020. Pied-billed Grebe (*Podilymbus podiceps*), version 1.0. In Birds of the World (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.pibgre.01

NatureServe. 2009. Animal EO Specs - Separation Distances and Inferred Extent Distances. NatureServe, Arlington, Virginia. [accessed November 2015].

NatureServe. 2022. NatureServe Network Biodiversity Location Data accessed through NatureServe Explorer web application. [Accessed November 2022]. https://explorer.natureserve.org/.

Naughton D. 2012. The Natural History of Canadian/ Mammals. Canadian Museum of Nature. University of Toronto Press, Scholarly Publishing Division, Second Edition. 824 pp.

Nelson JL, Zavaleta ES, Chapin FS III. 2008. Boreal fire effects on subsistence resources in Alaska and adjacent Canada. Ecosystems 11:156–171.

Newmaster S.G., A.G. Harris, L. J. Kershaw. 1997. Wetland Plants in Ontario. Lone Pine. Edmonton.

NHIC (Natural Heritage Information Centre). 1992. Available at: http://www.mnr.gov.on.ca/MNR/nhic/nhic.cfm. Accessed: June, 2019.

NHIC (Natural Heritage Information Centre). 2012. Available at: http://www.mnr.gov.on.ca/MNR/nhic/nhic.cfm. Accessed: May 5, 2012.

NHIC. 2016. Available at: http://www.mnr.gov.on.ca/MNR/nhic/nhic.cfm. Accessed: April 18, 2016.

NHIC (Natural Heritage Information Centre). 2017. Available at: http://www.mnr.gov.on.ca/MNR/nhic/nhic.cfm. Accessed: June, 2019.

NHIC (Natural Heritage Information Centre). 2022. Available at: http://www.mnr.gov.on.ca/MNR/nhic/nhic.cfm. Accessed: September, 2022.

North Carolina State University. 2022. Platanthera lacera. Available at https://plants.ces.ncsu.edu/plants/platanthera-lacera/

NorthWinds Environmental Services. 2020. Waasigan Transmission Line Route Alternatives Assessment; Prepared for: Lac Des Mille Lacs First Nation. Dated: September 23, 2020

Obbard, M.E. and E.J. Howe. 2008. Demography of black bears in hunted and unhunted areas of the boreal forest of Ontario. Journal of Wildlife Management 72: 869-880.

Obbard, M. E., and G. B. Kolenosky. 1994. Seasonal movements of female black bears in the boreal forest of Ontario in relation to timber harvesting. International Conference for Bear Research and Management 9:363.

Obbard, M. E., M. B. Coady, B. A. Pond, J. A. Schaefer, and F. G. Burrows. 2010. A distance-based analysis of habitat selection by American black bears (*Ursus americanus*) on the Bruce Peninsula, Ontario, Canada. Canadian Journal of Zoology 88: 1063–1076.

Olson CR, Barclay RM. 2013. Concurrent changes in group size and roost use by reproductive female little brown bats (Myotis lucifugus). Canadian Journal of Zoology 91: 149– 155.

Paquet, P.C. and C. Callaghan. 1996. Effects of Linear Developments on Winter Movements of Grey Wolves in the Bow River Valley of Banff National Park, Alberta. In Evink, G.L.; Garrett, P.; Ziegler, D.; and J. Berry (Eds.) Trends In Addressing Transportation Related Wildlife Mortality. Proceedings of the Transportation Related Wildlife Mortality Seminar.

Park A. C. and Broders, H. G. 2012. Distribution and roost selection of bats on Newfoundland. Northeast Naturalist 19:165-176.

Pattie, D. and C. Fisher. 1999. Mammals of Alberta. Lone Pine Publishing, Edmonton, Alberta.

Peck, G.K. and R. D. James. 1983. Breeding birds of Ontario: nidiology and distribution. Vol. 2. Toronto: Royal Ontario Museum, 1987.

PGC and USFWS (Pennsylvania Game Commission and United States Fish and Wildlife Service). 2012. Protocol for assessing bat use of potential hibernacula. Available at: https://www.fws.gov/northeast/pafo/pdf/Cave_and_Mine_survey_protocol_appendix%20A_091012.pdf.

Poole, A. F., P. E. Lowther, J. P. Gibbs, F. A. Reid, and S. M. Melvin (2020). Least Bittern (*Ixobrychus exilis*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.leabit.01

Poole, K.G. and R.P. Graf. 1996. Winter diet of marten during a snowshoe hare decline. Canadian Journal of Zoology 74: 456-466.

Poole, K., and A.K. Stuart-Smith. 2003. Winter habitat selection by moose in the east Kootenay, BC: Final Report. Prepared for Tembec Industries Inc. Aurora Wildlife Research, Nelson, British Columbia.

Popp JN, Priadka P, Kozmik C. 2019. The rise of moose co-management and integration of Indigenous knowledge. Human Dimensions of Wildlife 24(2):159-67.

Potvin, F., L. Belanger, and K. Lowell. 2000. Marten habitat selection in a clearcut boreal landscape. Conservation Biology 14:844–857.

Powell, R.A. 1987. Black bear home range overlap in North Carolina and the concept of home range applied to black bears. International Conference for Bear Research and Management 7: 235-242.

Priadka P, GS Brown, PD DeWitt, FF Mallory. 2022. Habitat quality mediates demographic response to climate in a declining large herbivore. Basic and Applied Ecology 58: 50-63.

Psyllakis, J. M. and R. M. Brigham. 2006. Characteristics of diurnal roosts used by female Myotis bats in sub-boreal forests. For. Ecol. Manage., 223:93–102.

R Project for Statistical Computing. 2016. Version 3.2.3.

Raesly, R.L. and J.E. Gates. 1987. Winter habitat selection by northern temperate cave bats. The American Midland Naturalist 118: 15-31.

Ranta B, M Lankester. 2017. Moose and deer population trends in Northwestern Ontario: a case history. Alces 53: 159-179.

Reid, F.A. 2006. A Field Guide to Mammals of North America North of Mexico: Fourth Edition. Houghton Mifflin Company, New York.579 pp.

Reitsma, L. R., M. T. Hallworth, M. McMahon, and C. J. Conway (2020). Canada Warbler (*Cardellina canadensis*), version 2.0. In Birds of the World (P. G. Rodewald and B. K. Keeney, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.canwar.02

Reitsma, L, M. Goodnow, M.T. Hallworth and C.J. Conway. 2010. Canada Warbler (*Cardellina canadensis*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. Available at: http://bna.birds.cornell.edu/bna/species/421. Accessed: January 12, 2015.

Renfrew, R., A. M. Strong, N. G. Perlut, S. G. Martin, and T. A. Gavin (2020). Bobolink (*Dolichonyx oryzivorus*), version 1.0. In Birds of the World (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.boboli.01

Reznicek AA, Voss EG, Walters BS. 2011. Fraxinus nigra. Ann Arbour MI: University of Michigan. Available at https://michiganflora.net/species.aspx?id=1733.

Ruggiero, L.F., E. Pearson, and S.E. Henry. 1998. Characteristics of American marten den sites in Wyoming. Journal of Wildlife Management 62: 663-673.

Sanzo, D., and S.J. Hecnar. 2006. Effects of de-icing salt (NaCl) on larval wood frogs (*Rana sylvatica*). Environmental Pollution 140, 247-256.

Sasse, D.B., and P.J. Pekins. 1996. Summer roosting ecology of northern long-eared bats (*Myotis septentrionalis*) in the White Mountain National Forest. Bats and forests symposium. British Columbia Ministry of Forests Working Paper 23:91-101.

Saunders, D.A. 1988. Adirondack Mammals. State University of New York, College of Environmental Science and Forestry. 216 pp. Available at: http://www.esf.edu/aec/adks/mammals/littlebrownbat.htm. Accessed: April 14, 2016.

Schenk, A., M.E. Obbard, and K.M. Kovacs. 1998. Genetic relatedness and home-range overlap among female black bears (*Ursus americanus*) in northern Ontario, Canada. Canadian Journal of Zoology 76: 1511 1519.

Semenchuk, G. P. 1992. The Atlas of Breeding Birds of Alberta. Federation of Alberta Naturalists. Edmonton, AB. 393 pp.

Severud, WJ, Berg SS, Ernst CA, DeGiudice GD, Moore SA, Windels SK, Moen RA, Isaac EJ, and Wolf TM. 2022. Statistical population reconstruction of moose (Alces alces) in northeastern Minnesota using integrated population models. PLoS ONE 17(9): e0270615. https://doi.org/10.1371/journal.pone.0270615

Sloan, N. F. (1982). Status of breeding colonies of White Pelicans in the United States through 1979. American Birds 36:250-254.

Smith, A. C., & Edwards, B. P. M. (2020). North American Breeding Bird Survey status and trend estimates to inform a wide range of conservation needs, using a flexible Bayesian hierarchical generalized additive model. *The Condor, duaa065*. https://doi.org/10.1093/ornithapp/duaa065

Smith, A.C. and J.A. Schaefer. 2002. Home-range size and habitat selection by American marten (*Martes americana*) in Labrador. Canadian Journal of Zoology 80: 1602-1609.

Soper, J.H. and M.L. Heimburger 1982. Shrubs in Ontario. Royal Ontario Museum. Toronto.

Soutiere, E.C. 1979. Effects of timber harvesting on marten in Maine. Journal of Wildlife Management 43: 850 860.

SARA (Species at Risk Act). S.C. 2002, c. 29. Government of Canada.

SARA. 2012. A to Z Species Index. Species at Risk Public Registry, Government of Canada. Available at: http://www.sararegistry.gc.ca/sar/index/default_e.cfm. Accessed: May 5, 2012.

SARA. 2015. American marten (Martes americana) COSEWIC assessment and status report: chapter 8. American marten (Martes americana) COSEWIC assessment and status report: chapter 8 - Canada.ca SARA (*Species at Risk Act*). S.C. 2002, c. 29. Government of Canada.

SARA. 2016. A to Z Species Index. Species at Risk Public Registry, Government of Canada. Available at: http://www.sararegistry.gc.ca/sar/index/default_e.cfm. Accessed: April 7, 2016.

Species at Risk Act (SARA). 2021. American marten (Martes americana atrata), Newfoundland population. Government of Canada. American Marten (Martes americana atrata), Newfoundland population - Species search - Species at risk registry (canada.ca)

Steeves, T. K., S. B. Kearney-McGee, M. A. Rubega, C. L. Cink, and C. T. Collins (2020). Chimney Swift (*Chaetura pelagica*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.chiswi.01https://doi.org/10.2173/bow.chiswi.01https://doi.org/10.2173/bow.chiswi.01

Stenhouse GB, Latour PB, Kutny N, MacLean N, Glover G. 1995. Productivity, survival, and movements of female moose in a low-density population, Northwest Territories, Canada. Arctic. 48(1): 57-62.

Street GM, Rodgers AR, Avgar T, Fryxell JM. 2015a. Characterizing demographic parameters across environmental gradients: a case study with Ontario moose (Alces alces). Ecosphere 6(8):138. Available at http://dx.doi.org/10.1890/ES14-00383.1

Street GM, Vander Vennen LM, Avgar T, Mosser A, Anderson ML, Rodgers AR, Fryxell JM. 2015b. Habitat Selection Following Recent Disturbance: Model Transferability with Implications for Management and Conservation of Moose (Alces Alces). Canadian Journal of Zoology 93 (11): 813–21. doi:10.1139/cjz-2015-0005.

Strickland, M.A. 1982. Marten (*Martes americana*). Pp. 599-612 in Wild Mammals of North America. J.A. Chapman and G.E. Feldhamer (eds.) The John Hopkins University Press, Baltimore, Maryland. 1,147pp. Cited in Clark, T.W., E. Anderson, C. Douglas, and M. Strickland. 1987. *Martes americana*. Mammalian Species 289: 1-8.

Taylor, M.E.D., and C. A. Paszkowski. 2018. Postbreending movement patterns and habitat use of adult Wood Frogs (*Lithobates sylvaticus*) at urban wetlands. Canadian Journal of Zoology 96: 521-532.

The R Foundation for Statistical Computing. 2016. R Version 3.2.3. ISBN 3-900051-07-0.

Thiel, R. P., S. B. Merrill, and L. D. Mech. 1998. Tolerance by denning wolves, *Canis lupus*, to human disturbance. Canadian Field Naturalist 112:340–342.

Thomas, J. P., Jung, T. S. 2019. Life in a northern town: rural villages in the boreal forest are islands of habitat for an endangered bat. Ecosphere 10(1). https://doi.org/10.1002/ecs2.2563

Thomas, V.G. 1984. Winter diet and intestinal proportions of rock and willow ptarmigan and sharp-tailed grouse in Ontario. Canadian Journal of Zoology 62: 2258-2263.

Thompson, I.D. and P.W. Colgan. 1987. Numerical responses of martens to a food shortage in northcentral Ontario. Journal of Wildlife Management 51: 824-835.

Thorne, Toby J., Eryk Matczak, Melissa Donnelly, Maria C. Franke, and Kevin C. R. Kerr. 2021. Occurrence of a forest-dwelling bat, northern myotis (*Myotis septentrionalis*), within Canada's largest conurbation. Journal of Urban Ecology.1-9.

Timm, R., Cuaron, A.D., Reid, F., Helgen, K., &Gonzalez-Maya, J.F. 2016. Procyon lotor. The IUCN red list of threatened species 2016: e.T41686A45216638. Procyon lotor (Northern Raccoon) (iucnredlist.org)

Timmermann HR, McNicol JG. 1988. Moose habitat needs. The Forestry Chronicle 64(3): 238-245.

Timmermann HR, AR Rodgers. 2017. The status and management of moose in North America - circa 2015. Alces 53: 1-22.

Touihri, Moez; Labbe, Julie; Imbeau, Louis & Darveau, Marcel. 2018. North American beaver (Castor canadensis Kuhl) key habitat characteristics: review of the relative effects of geomorphology, food availability and anthropogenic infrastructure. EcoScience 25(1): 9-23. (PDF) North American Beaver (Castor canadensis Kuhl) Key Habitat Characteristics: Review of the Relative Effects of Geomorphology, Food Availability and Anthropogenic Infrastructure (researchgate.net)

Tozer, D.C., R.L.M. Steward, O. Steele, and M. Gloutney. 2020. Species-Habitat Relationships and Priority Areas for Marsh-Breeding Birds in Ontario. The Journal of Wildlife Management, 84(4):786-801.

Tremblay, J.P., H. Jolicoeur, and R. Lemieux. 2001. Summer food habits of gray wolves in the boreal forest of the Lac Jacques-Cartier Highlands, Quebec. Alces 37: 1-12.

University of Georgia, Center for Invasive Species and Ecosystem Health. 2022. Early Detection & Distribution Mapping System Ontario. Available at https://www.eddmaps.org/ont.ario/species/

Vander Wal E, Rodgers AR. 2012. An individual-based quantitative approach for delineating core areas of animal space use. Ecological Modelling 224(1):48-53.

Vashon, J. 2016. Lynx canadensis. The IUCN red list of threatened species 2016: e.T12518A101138963. Lynx canadensis (Canada Lynx) (iucnredlist.org)

Voigt, D. R., G. B. Kolenosky, and D. H. Pimlott. 1976. Changes in summer foods of wolves in central Ontario. Journal of Wildlife Management 40: 663–668.

Walpole, A.A., Bowman, J., Tozer, D.C., and D.S. Badzinski. 2012. Community-level response to climate change: shifts in anuran calling phenology. Herpetological Conservation and Biology 7, 249-257.

Watt, D. J., J. P. McCarty, S. W. Kendrick, F. L. Newell, and P. Pyle. 2020. Eastern Wood-Pewee (*Contopus virens*), version 1.0. In Birds of the World (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.eawpew.01

Watt, W.R., J.A. Baker, D.M. Hogg, J.G. McNicol, and B.J. Naylor. 1996. Forest management guidelines for the provision of marten habitat. Ontario Ministry of Natural Resources Technical Services, Sault Ste. Marie.

Webb, P. I., Speakman, J. R., & Racey, P. A. (1996). How hot is a hibernaculum? A review of the temperatures at which bats hibernate. Canadian Journal of Zoology,74, 761–765.

Weed Control Act. 2014. R.S.I. 1990, c W 5. Schedule- Noxious Weeds.

Wilton, M. L., D. M. Carlson, and C. I. McCall. 1984. Occurrence of neonatal cervids in the spring diet of black bear in south central Ontario. Alces 20: 95-105.

Willis, C. K. R. et al. 2006. Roost Selection by Forest-Living Female Big Brown Bats (Eptesicus Fuscus). Journal of Mammalogy 87 (2): 345–350.

ATTACHMENT 6.4-A-1

Terrestrial Baseline Figures

Figure 2.4-1: Acoustic Survey Stations, SAR Bat Occurrences and Candidate Bat Maternity Roost Habitat in the LSA

This figure includes confidential species at risk information that cannot be released publicly. The figure will be submitted to applicable regulatory agencies under separate cover.

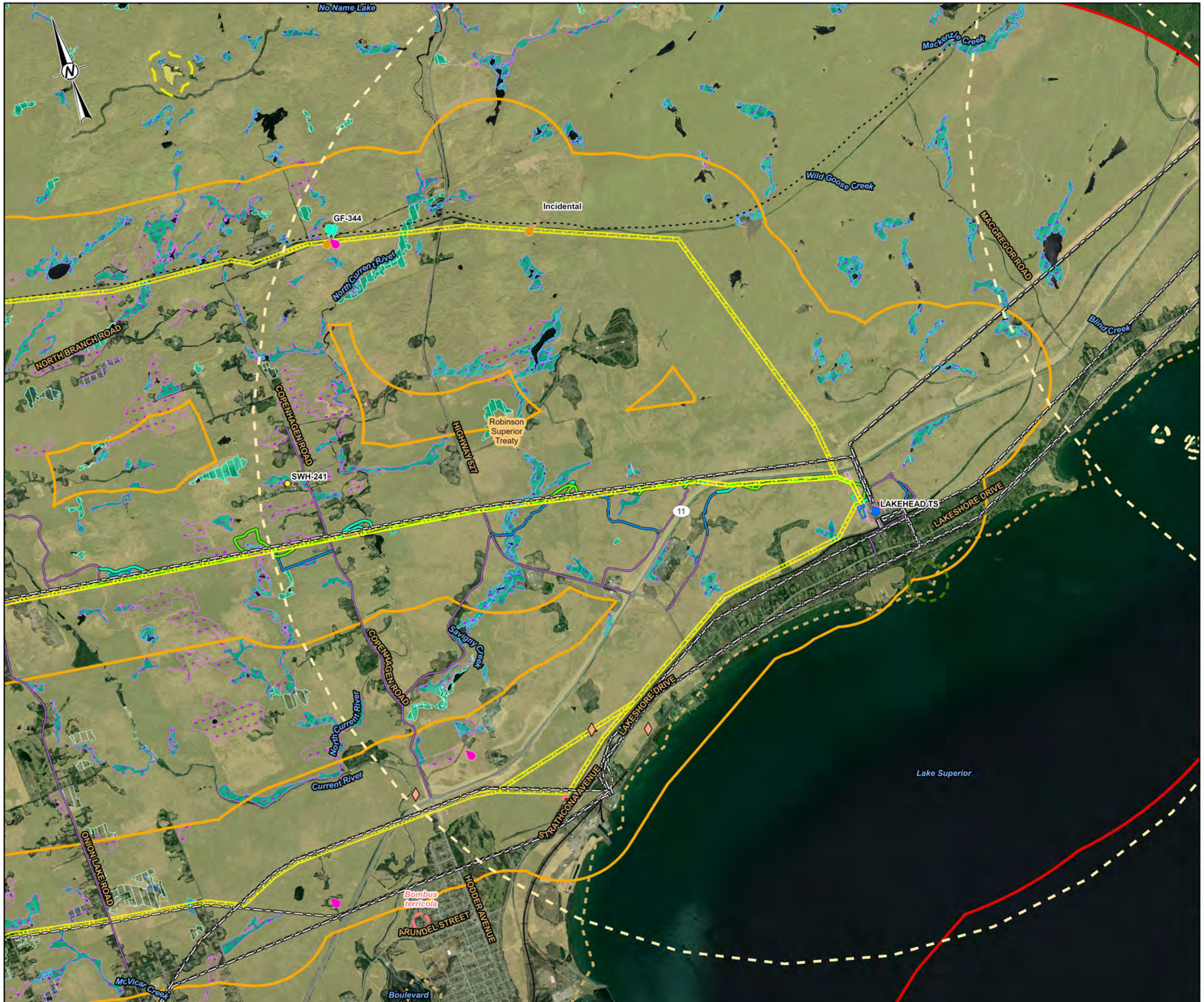
Figure 2.4-2: Bat Hibernacula Survey Locations

This figure includes confidential species at risk information that cannot be released publicly. The figure will be submitted to applicable regulatory agencies under separate cover.

Figure 3.1-1: Vegetation and Vegetation Based Candidate Significant Wildlife Habitat

This figure includes confidential species at risk information that cannot be released publicly. The figure will be submitted to applicable regulatory agencies under separate cover.

Figure 3.2-2: Wildlife Related Candidate Significant Wildlife Habitat

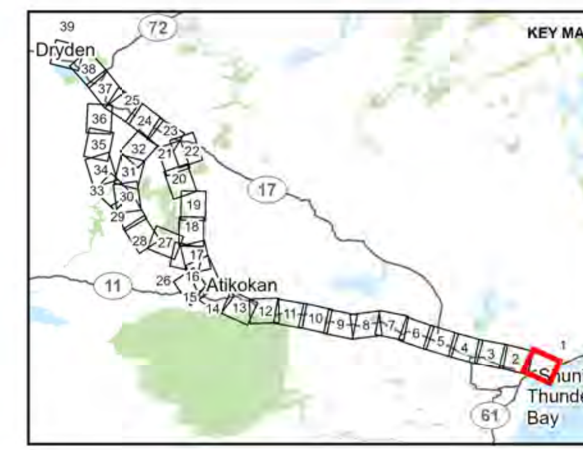


LEGEND

- 230 kV TRANSFORMER STATION (TS)
- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED SEEPS AND SPRINGS (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - GROUND (LIO & NHIC 2022)
- CONFIRMED SPECIES OF CONSERVATION CONCERN (NHIC 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

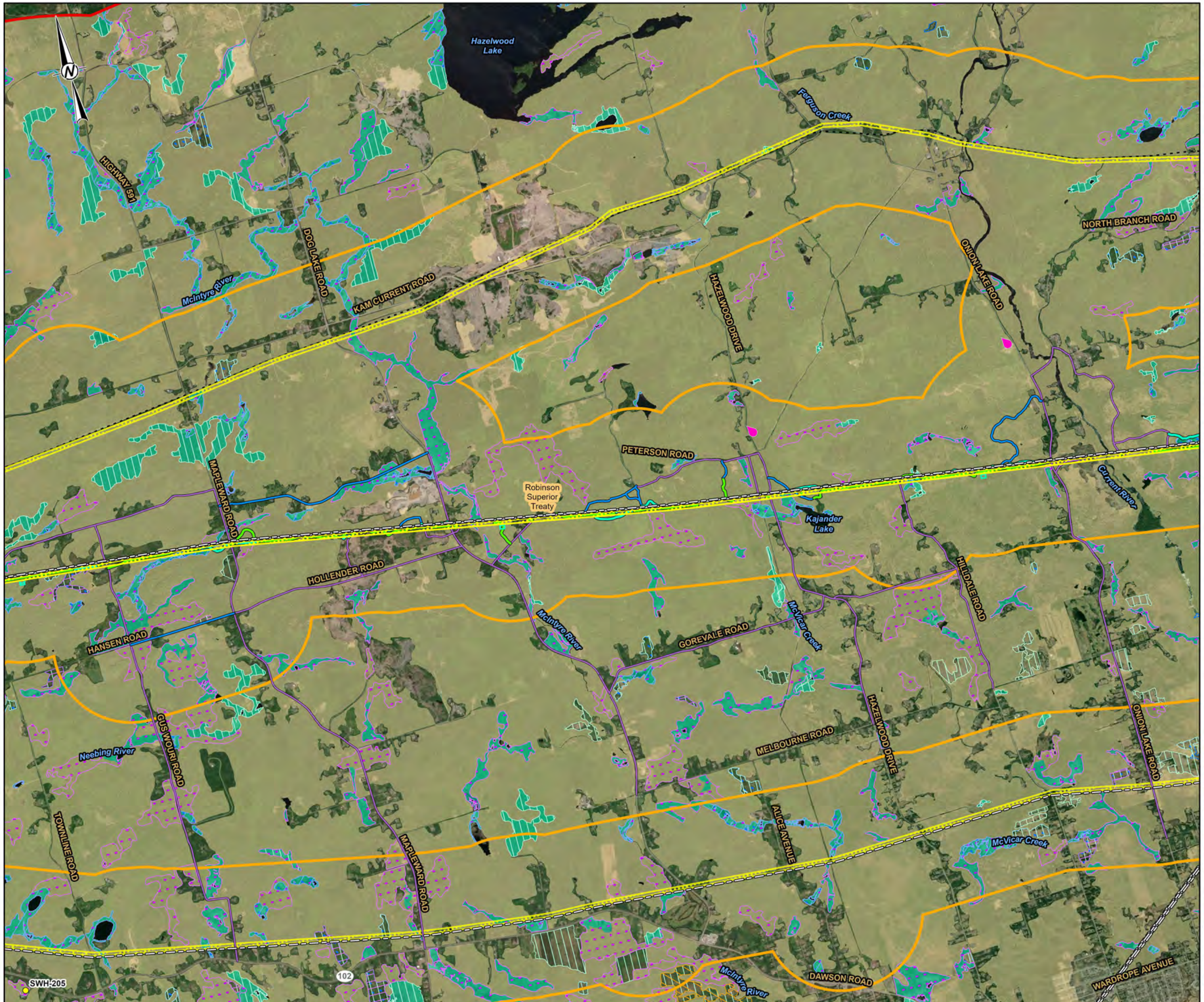
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT
wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-1

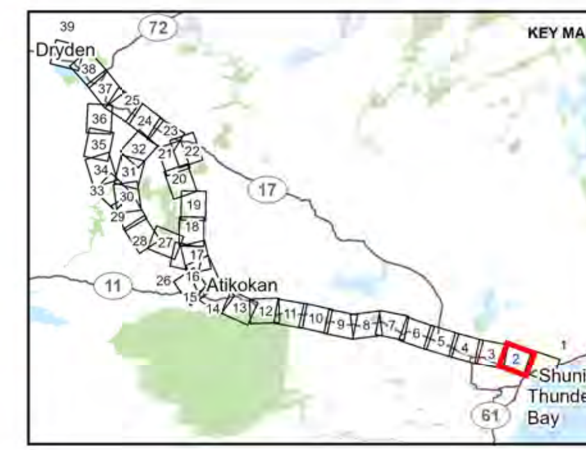


LEGEND

- STATION LOCATION
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

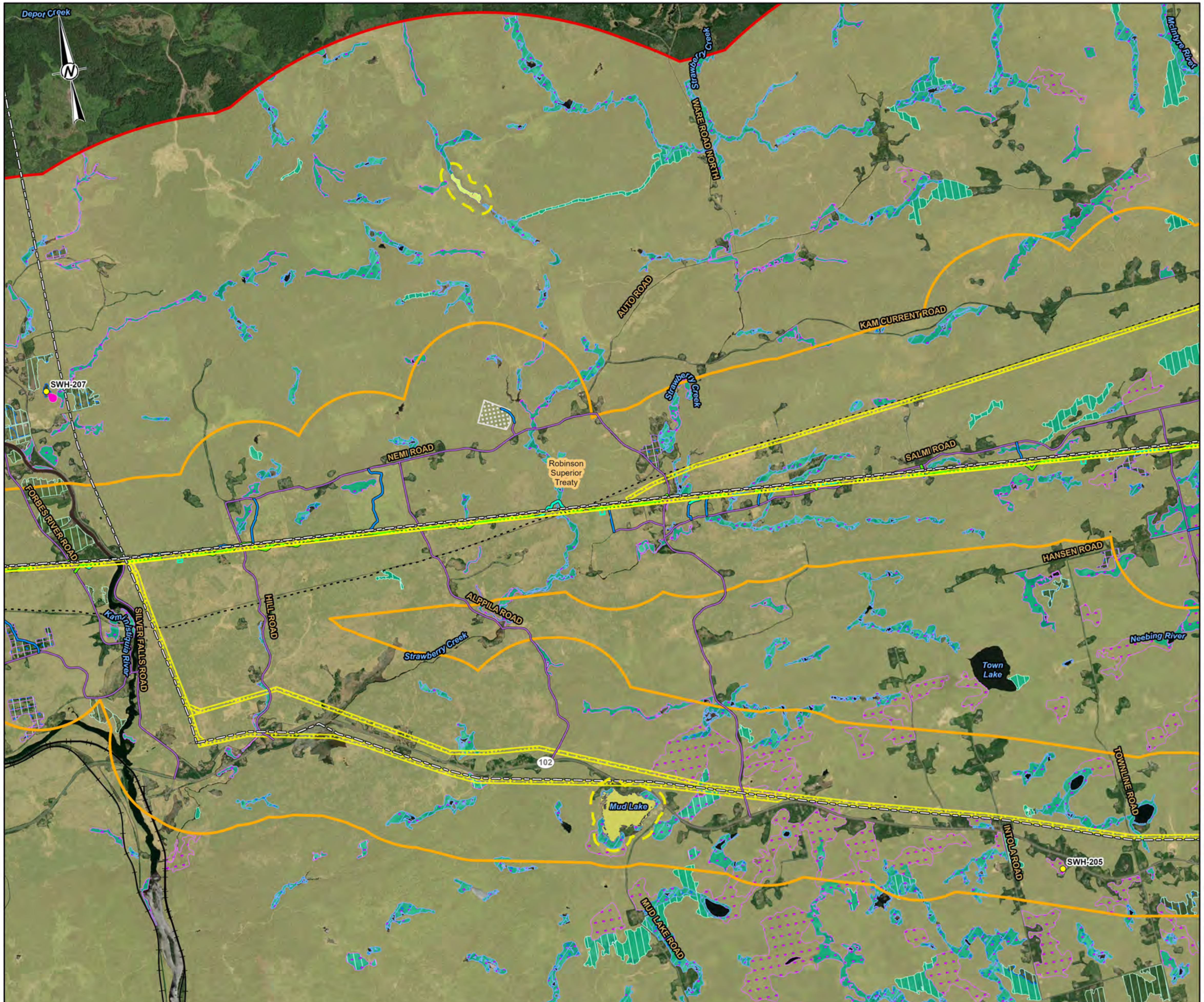
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-2

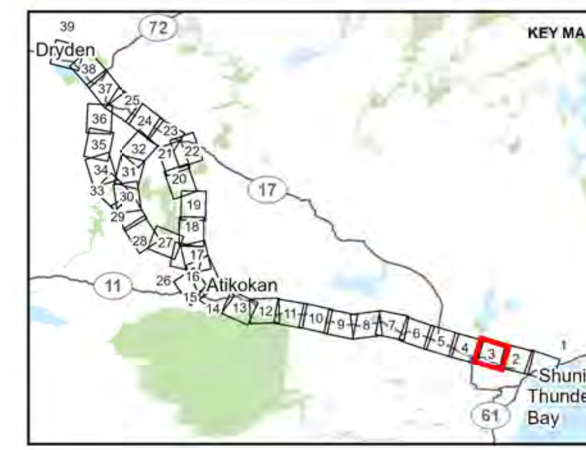


LEGEND

- STATION LOCATION
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

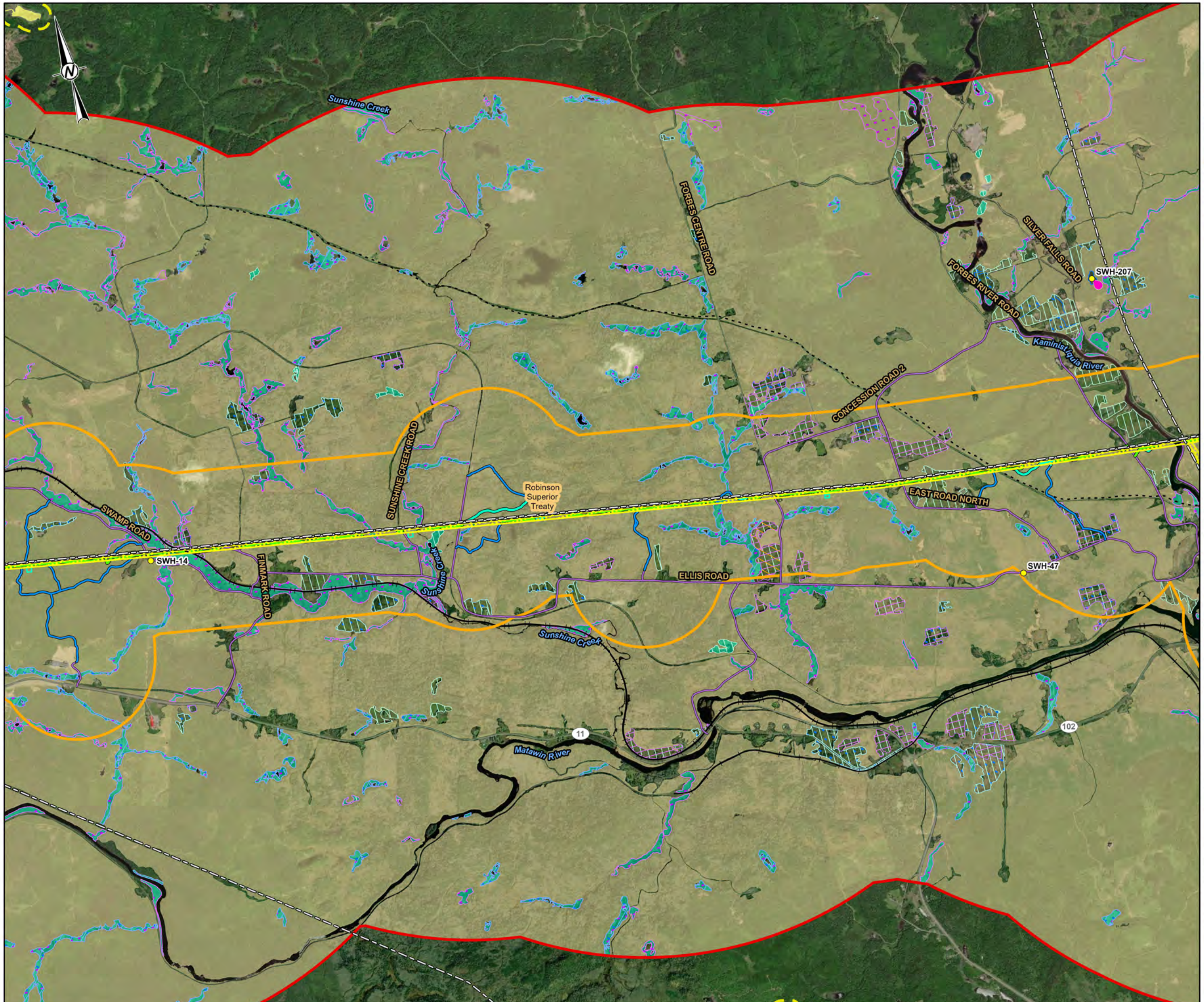
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-3



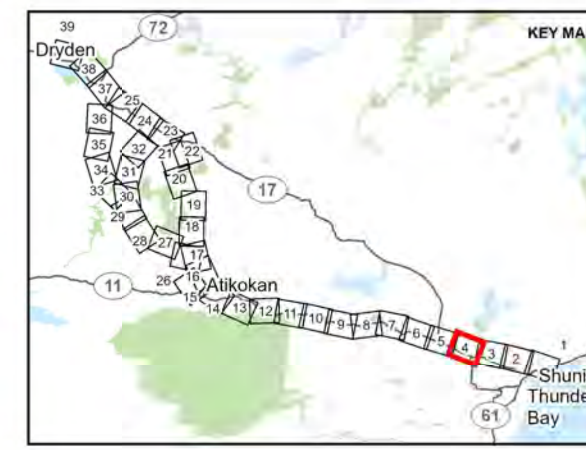
LEGEND

- STATION LOCATION
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

KEY MAP



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-4

LEGEND

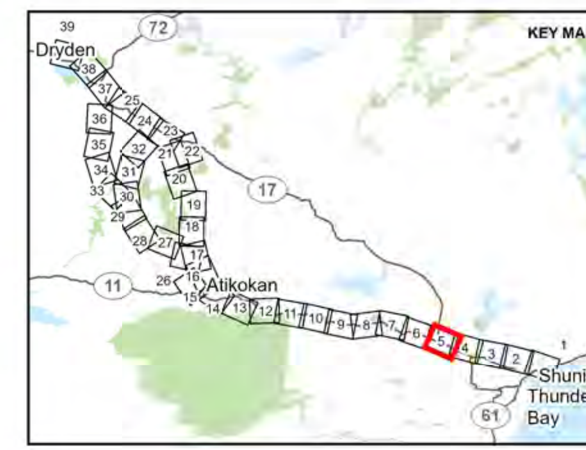
- STATION LOCATION
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD

SYMBOLOGY

- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY AGGREGATE SITE
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

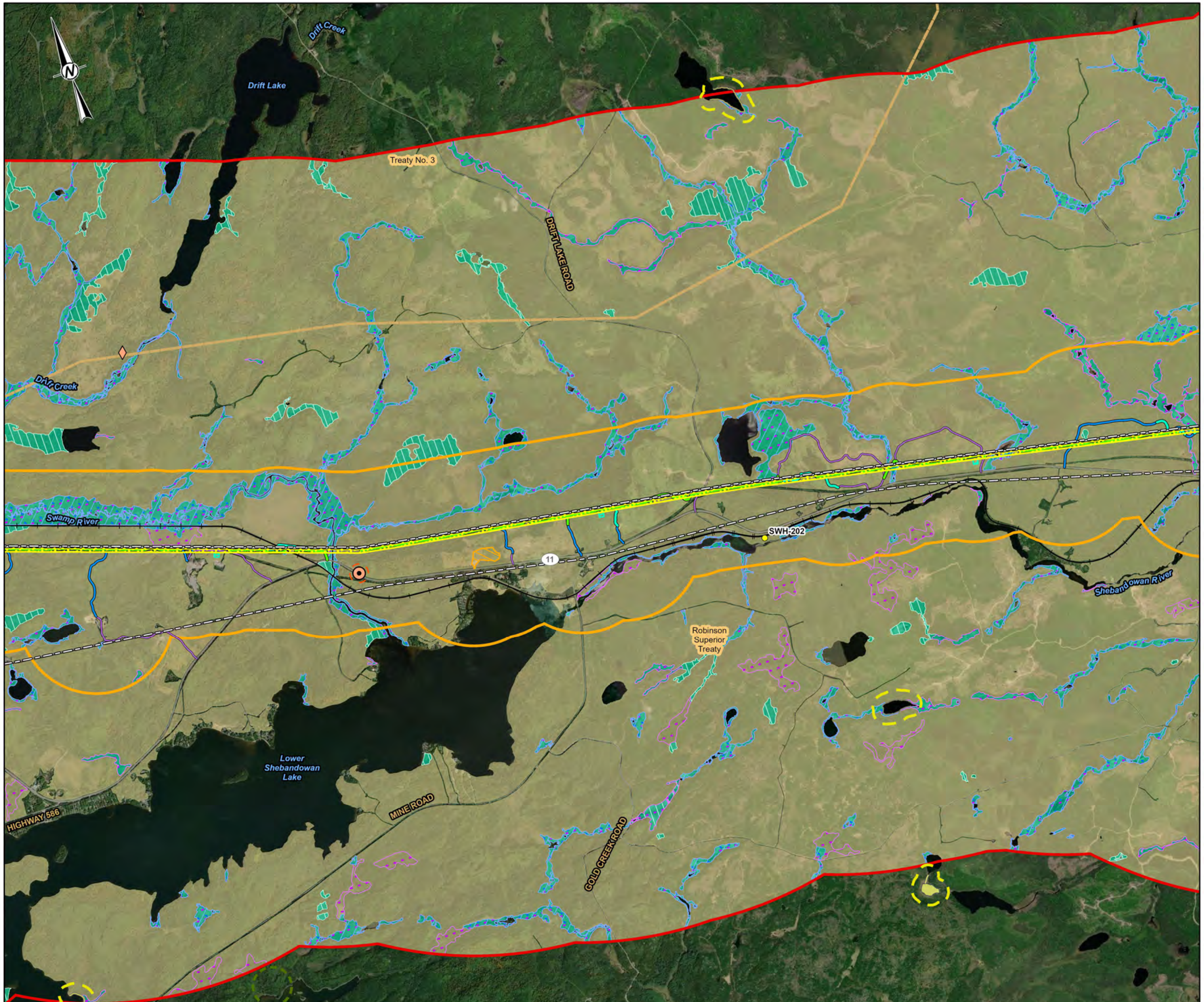
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-5



LEGEND

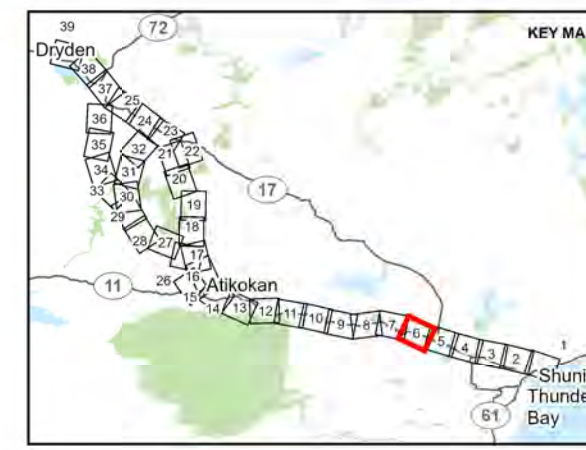
- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CONFIRMED MINERAL LICK (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS
- CONFIRMED MINERAL LICK - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD

SYMBOLOGY

- PRELIMINARY CONSTRUCTION CAMP
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

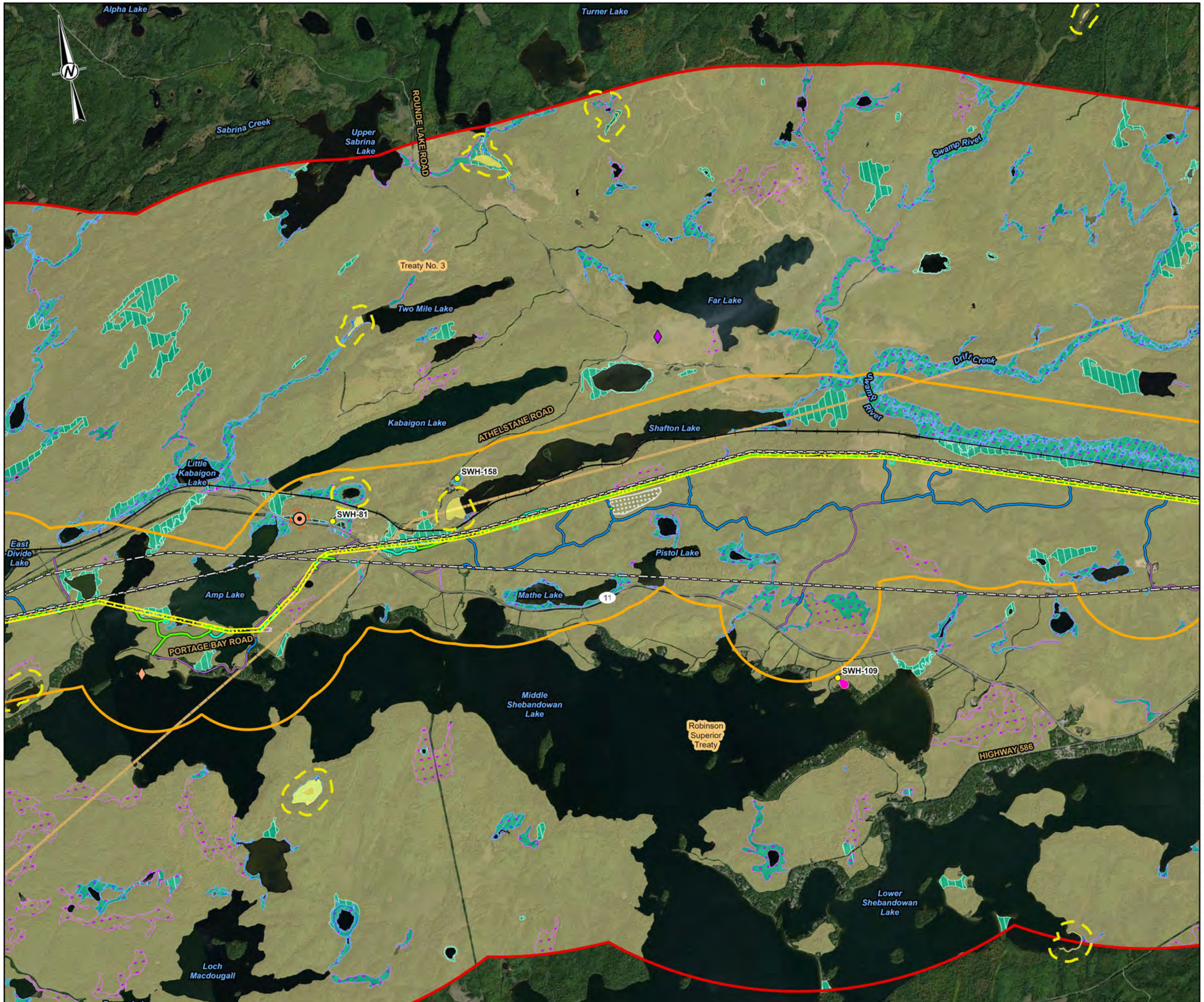
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-6

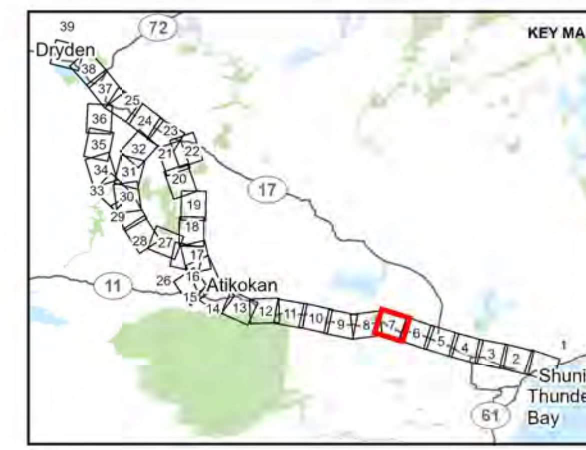


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CONFIRMED MINERAL LICK (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS
- CONFIRMED MINERAL LICK - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

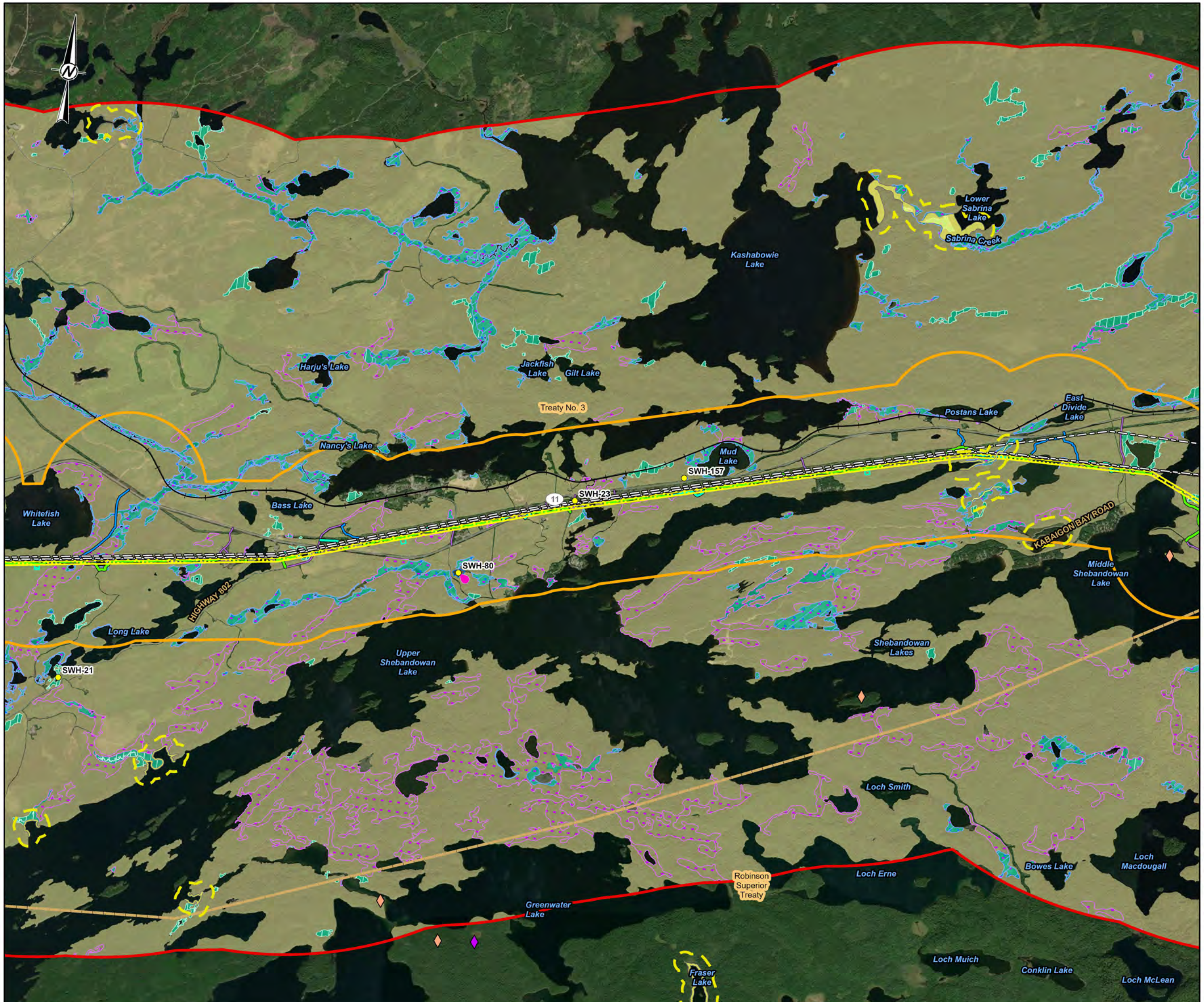
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-7

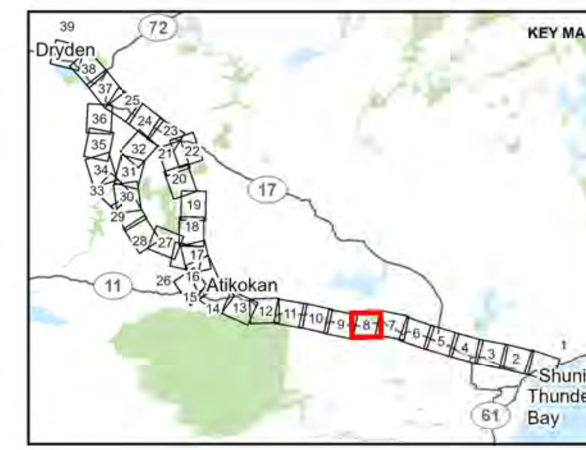


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

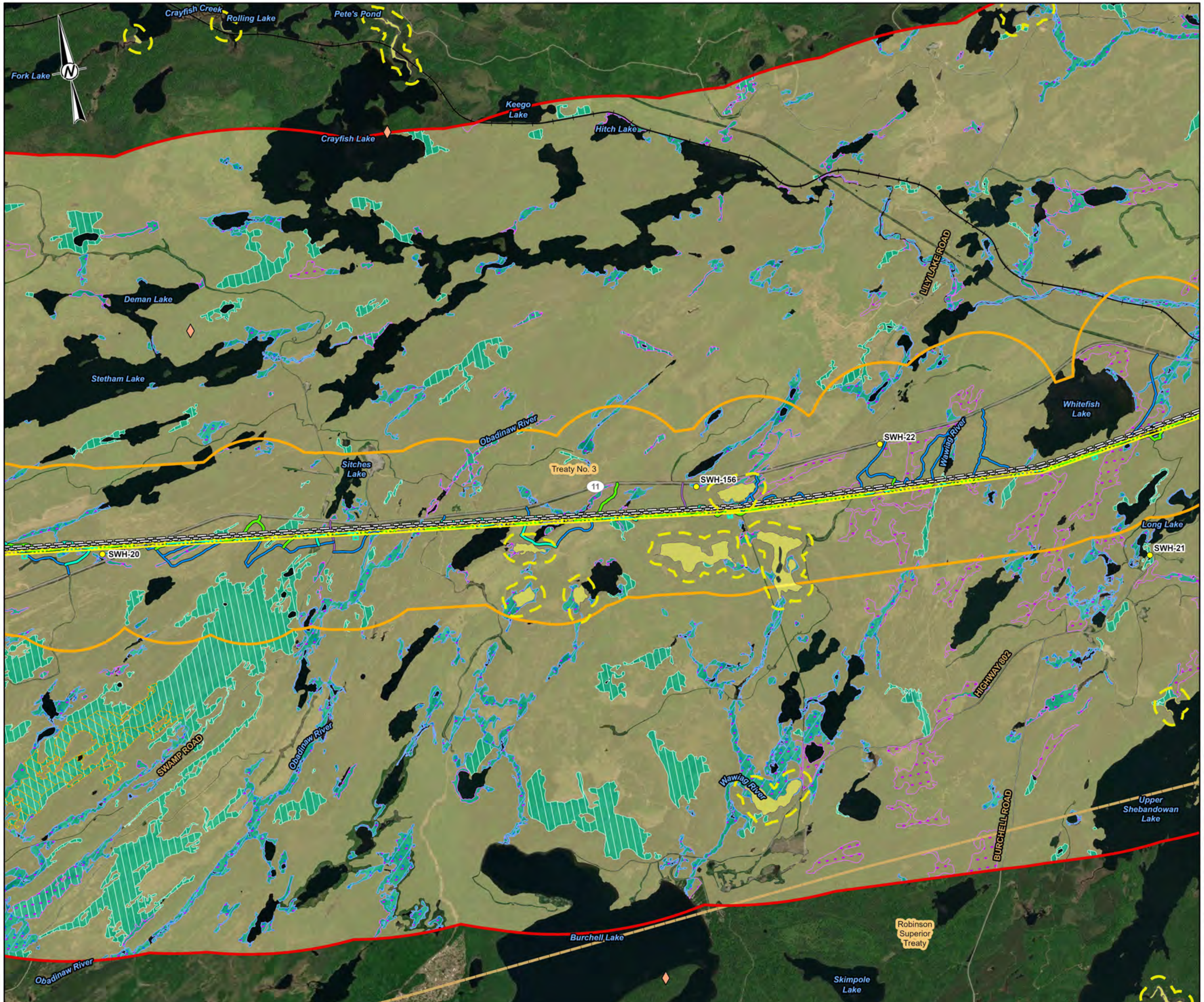
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-8

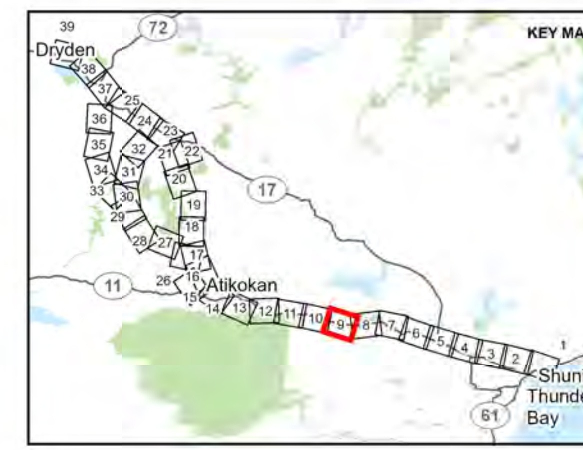


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

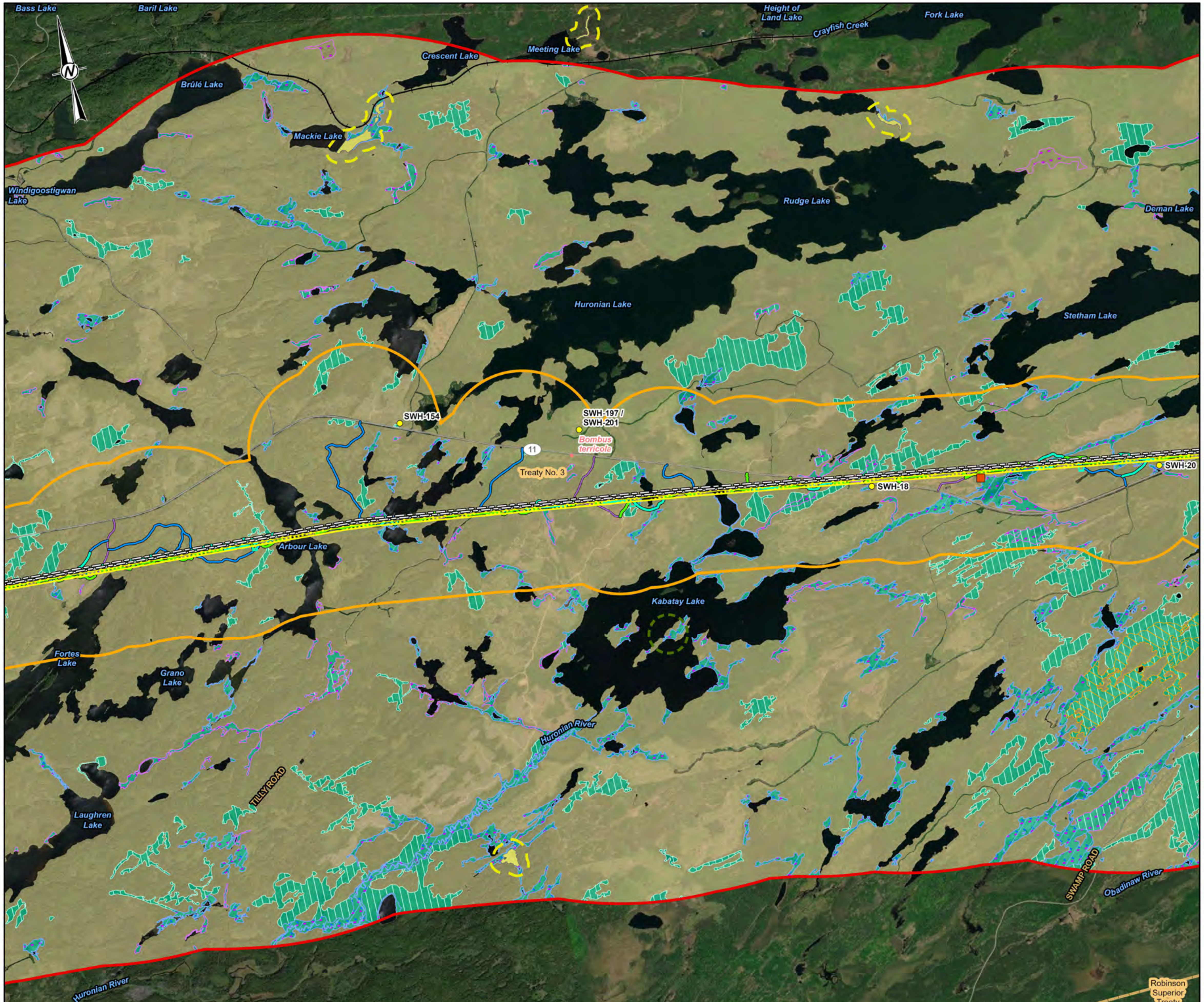
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-9

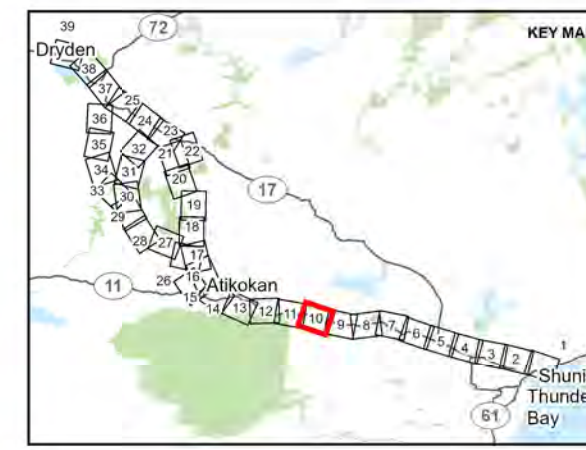


LEGEND

- STATION LOCATION
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CONFIRMED SPECIES OF CONSERVATION CONCERN (NHIC 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

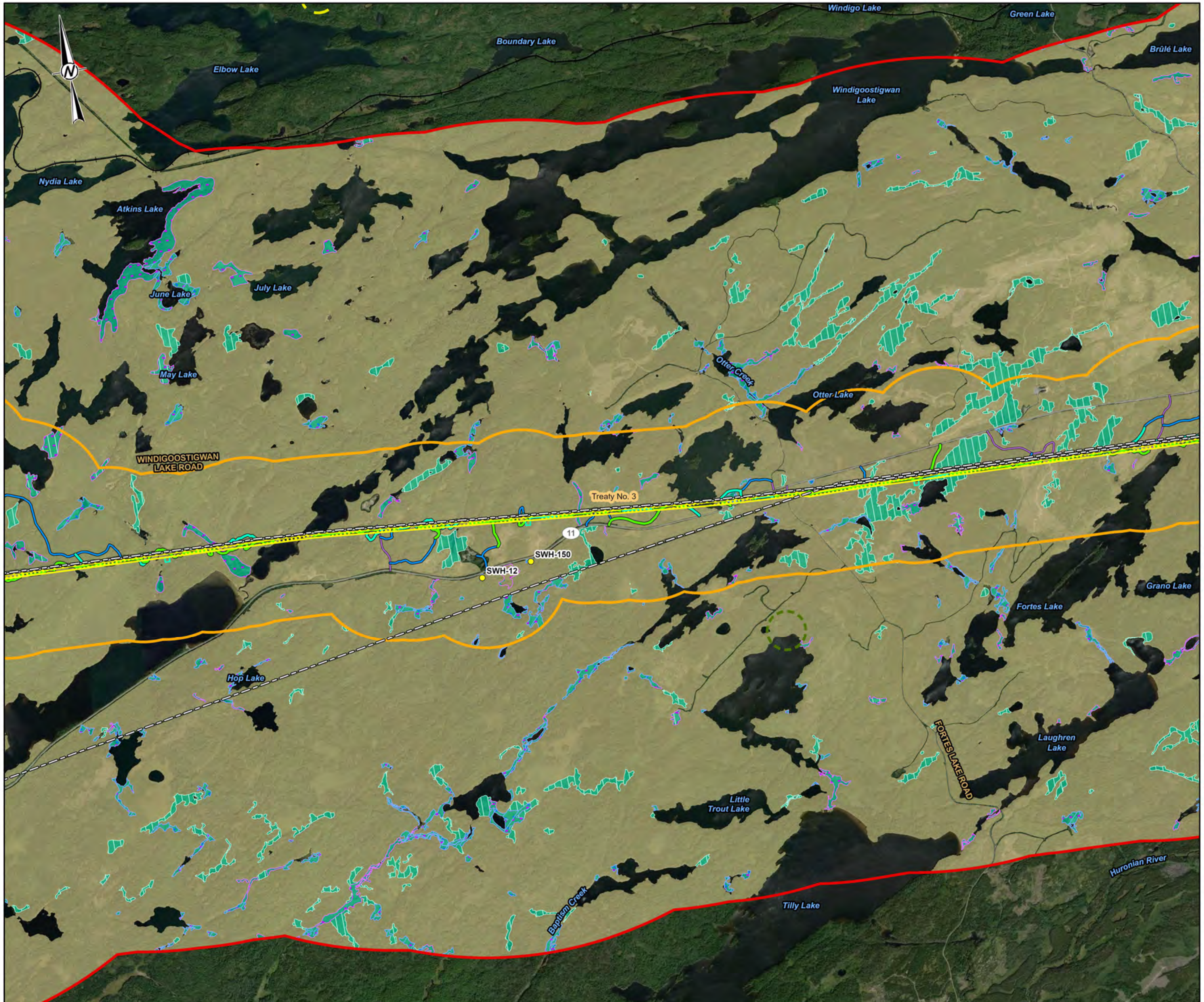
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT: wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-10

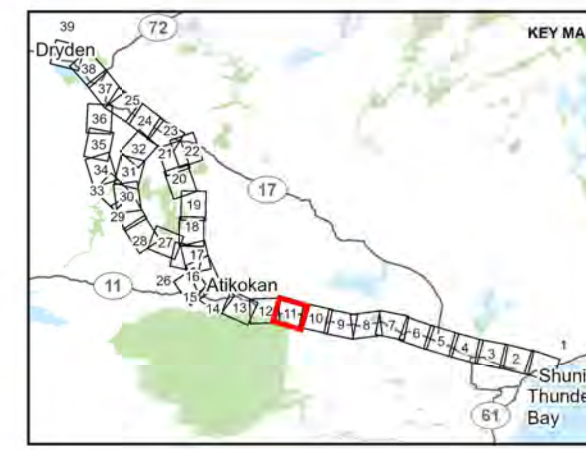


LEGEND

- STATION LOCATION
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

TITLE

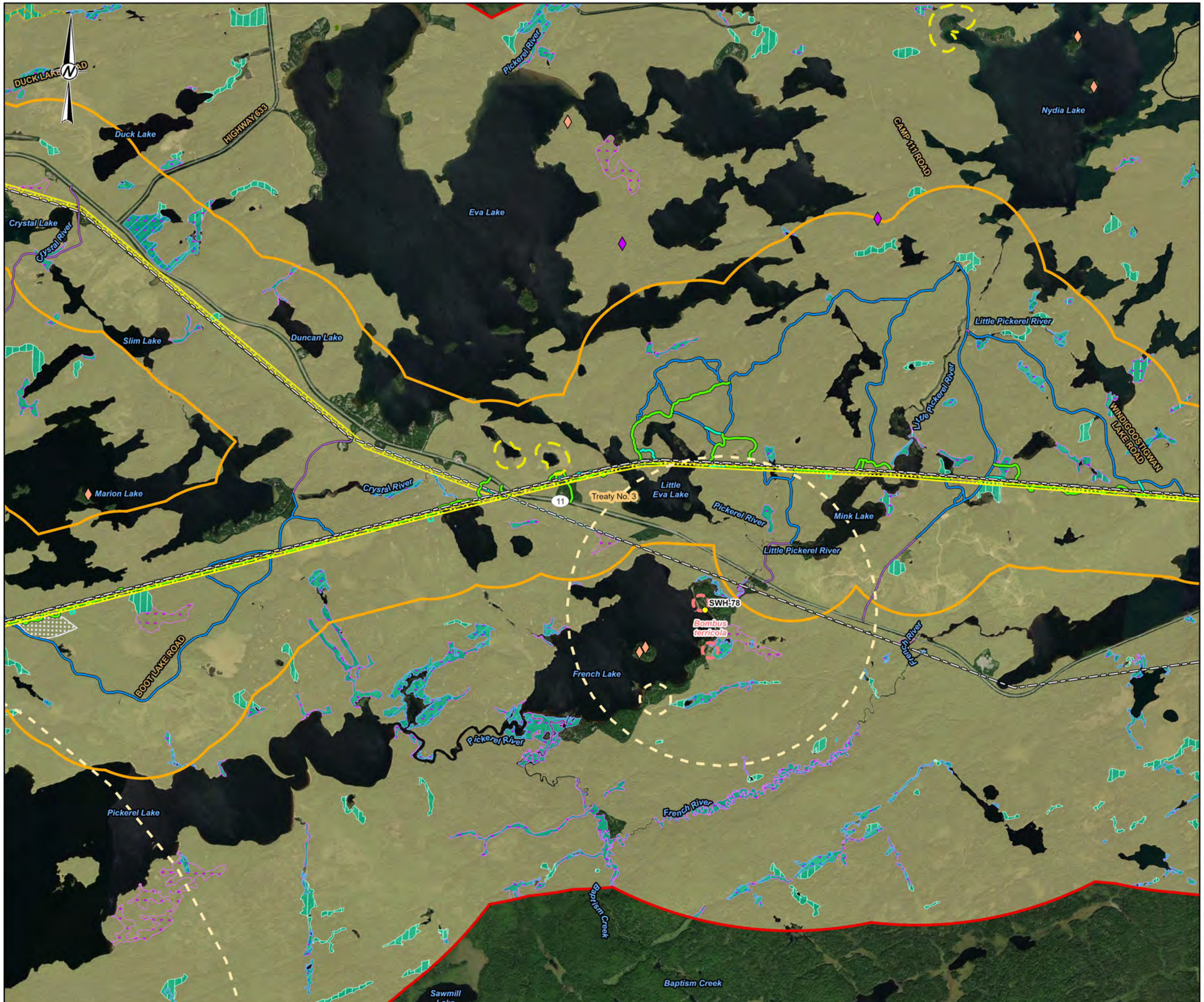
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-11

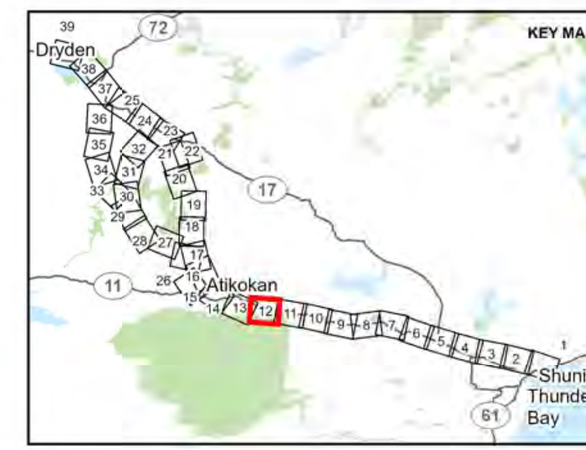


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - GROUND (LIO & NHIC 2022)
- CONFIRMED SPECIES OF CONSERVATION CONCERN (NHIC 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

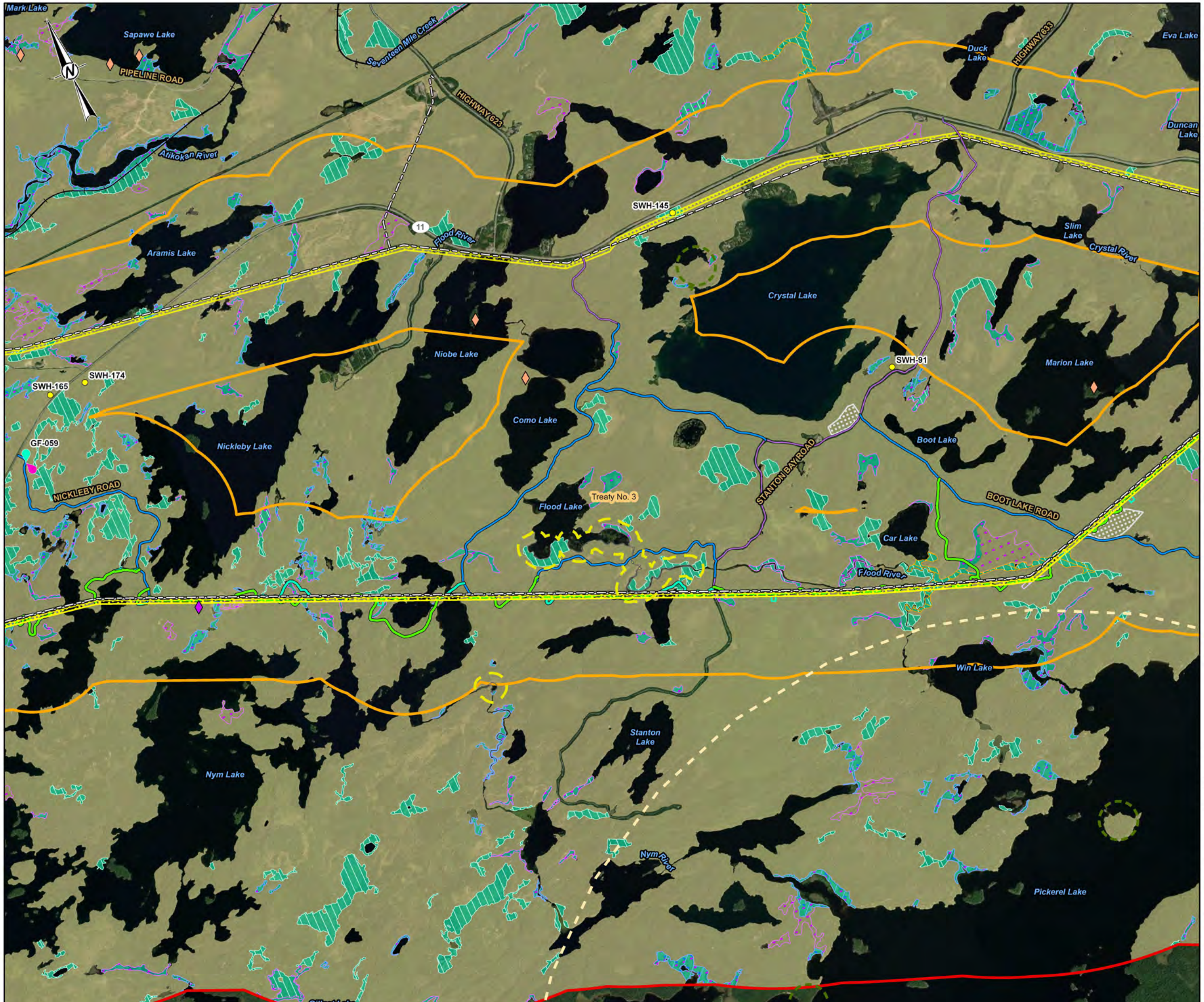
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-12



LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - GROUND (LIO & NHIC 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

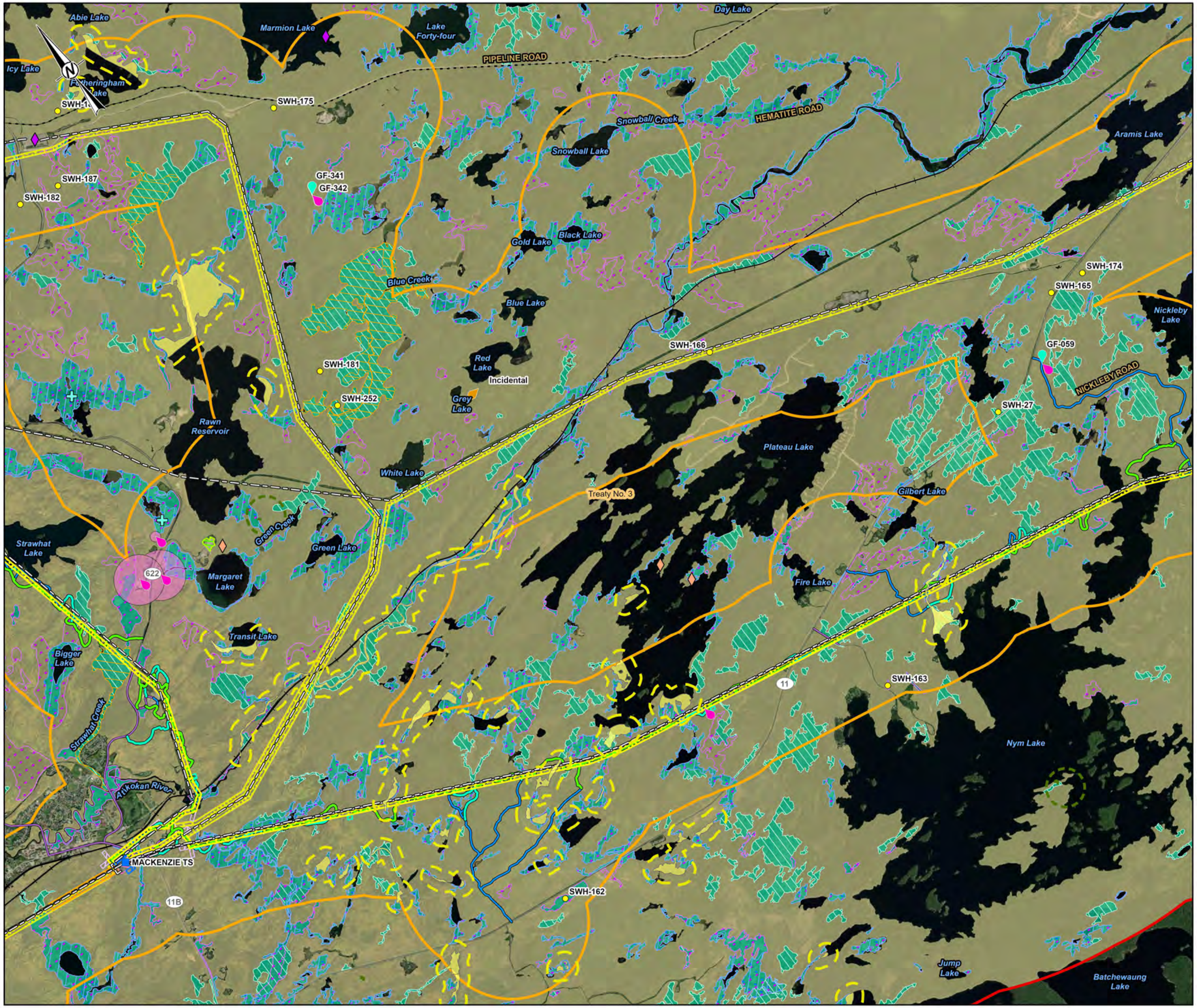
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-13



LEGEND

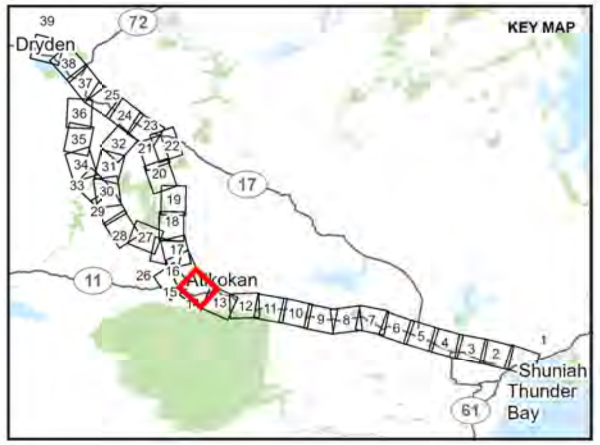
- 230 kV TRANSFORMER STATION (TS)
- STATION LOCATION
- CANDIDATE MARSH BREEDING BIRD (LIO 2022)
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED SEEPS AND SPRINGS (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- CANDIDATE SNAKE HIBERNACULA (NHIC 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD

SYMBOLOGY

- PRELIMINARY LAYDOWN AREA
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

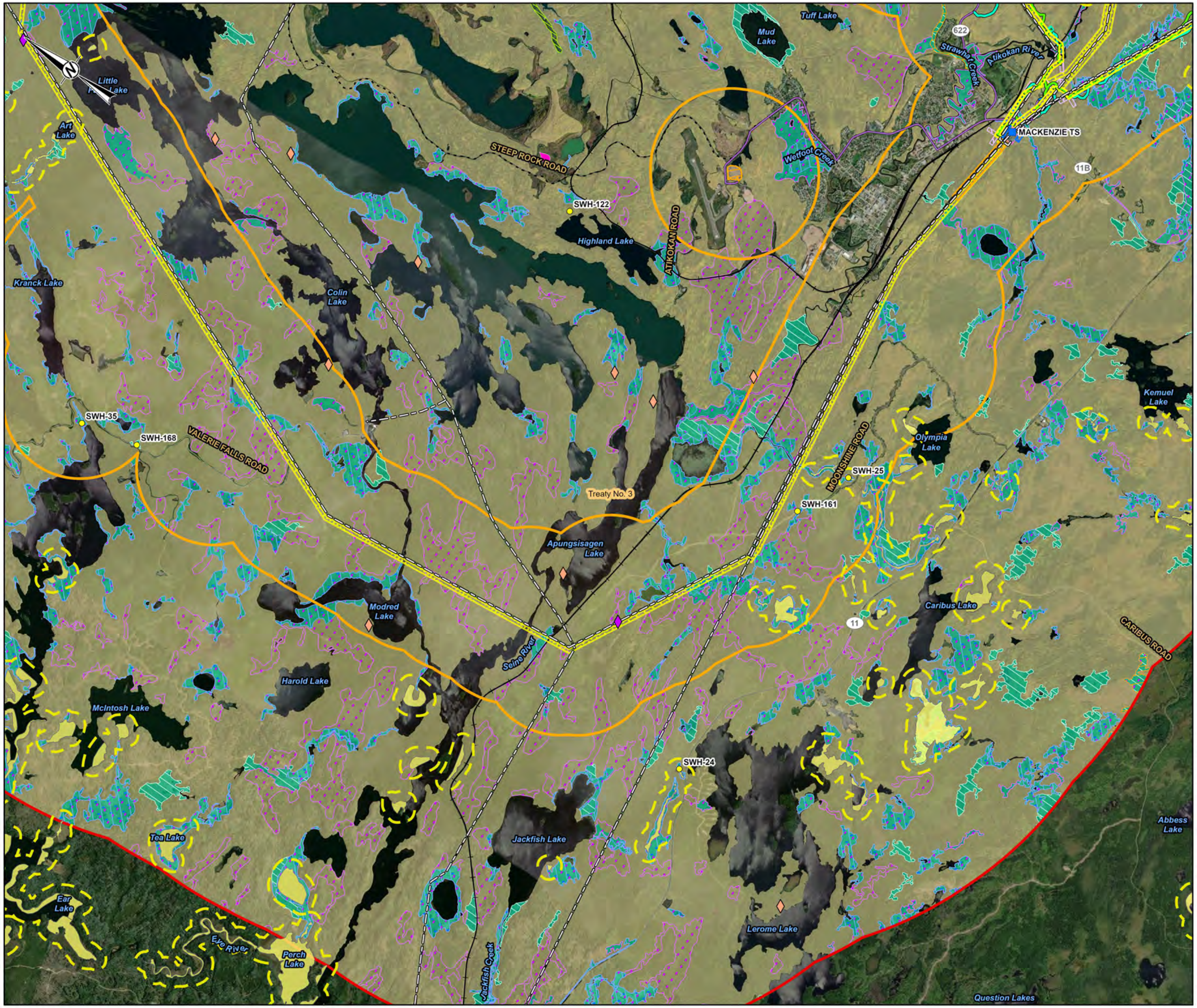
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-14



LEGEND

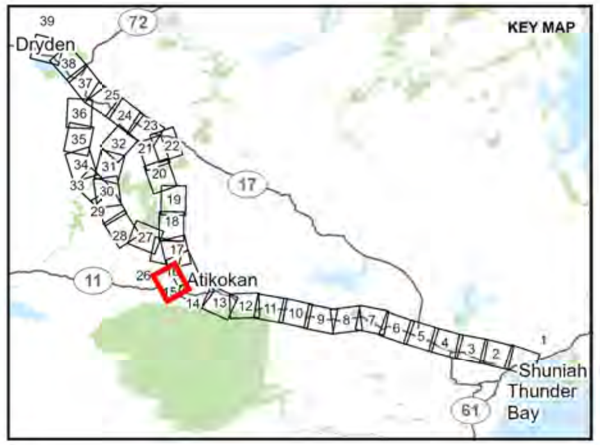
- 230 kV TRANSFORMER STATION (TS)
- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (BANK AND CLIFF)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD

SYMBOLOGY

- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

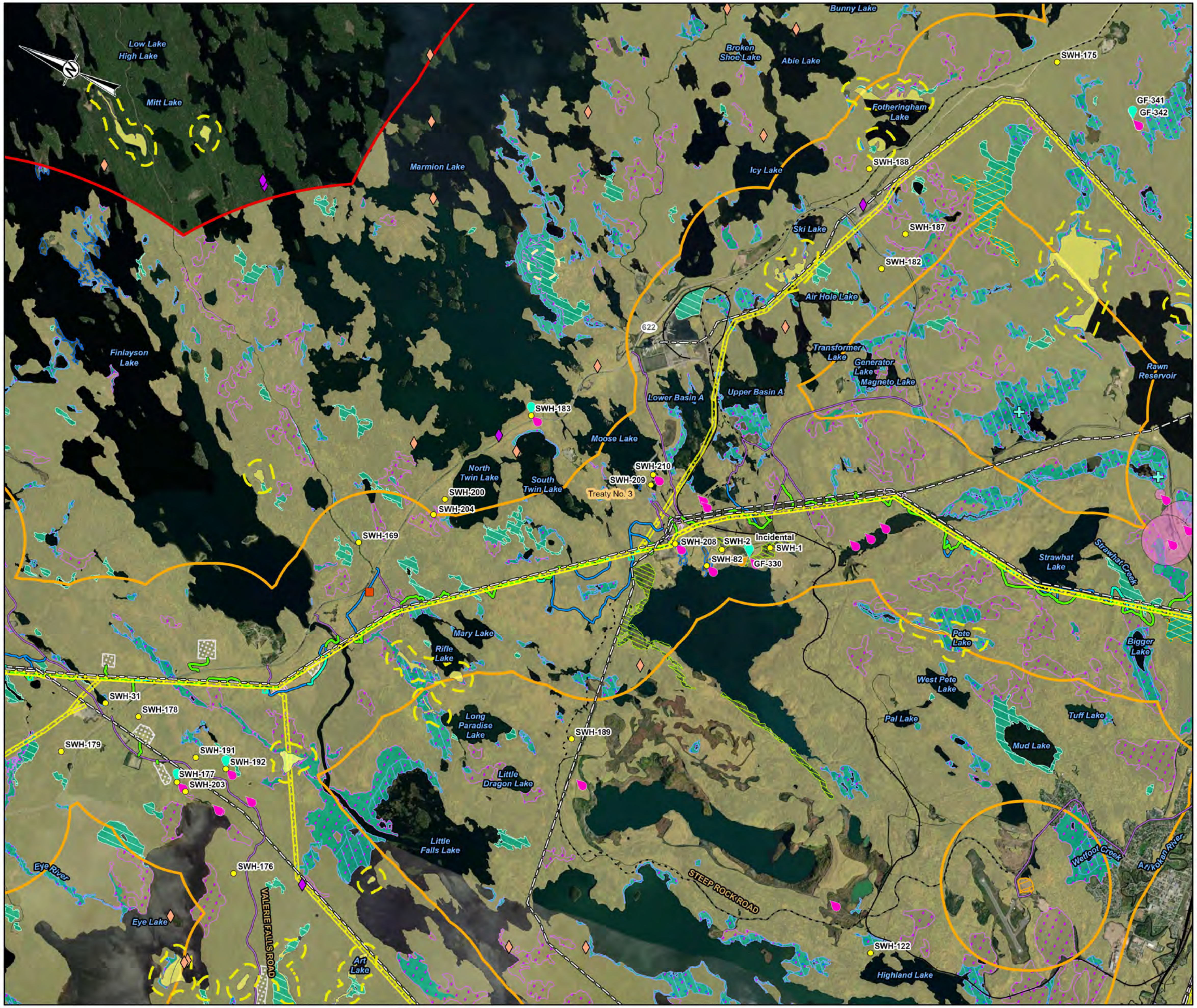
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-15



LEGEND

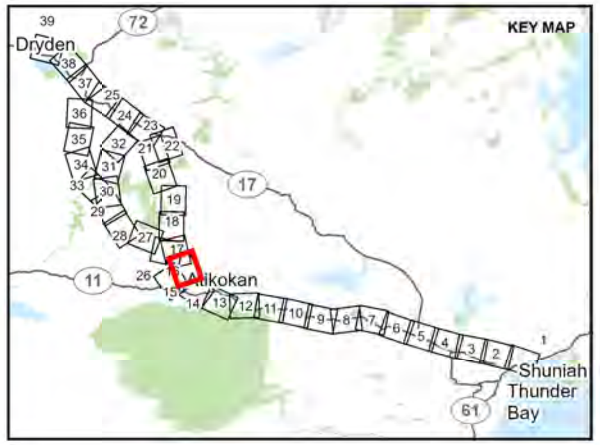
- STATION LOCATION
- CANDIDATE MARSH BREEDING BIRD (LIO 2022)
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED SEEPS AND SPRINGS (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- CANDIDATE SNAKE HIBERNACULA (NHIC 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - GROUND (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (BANK AND CLIFF)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD

SYMBOLOGY

- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE. ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

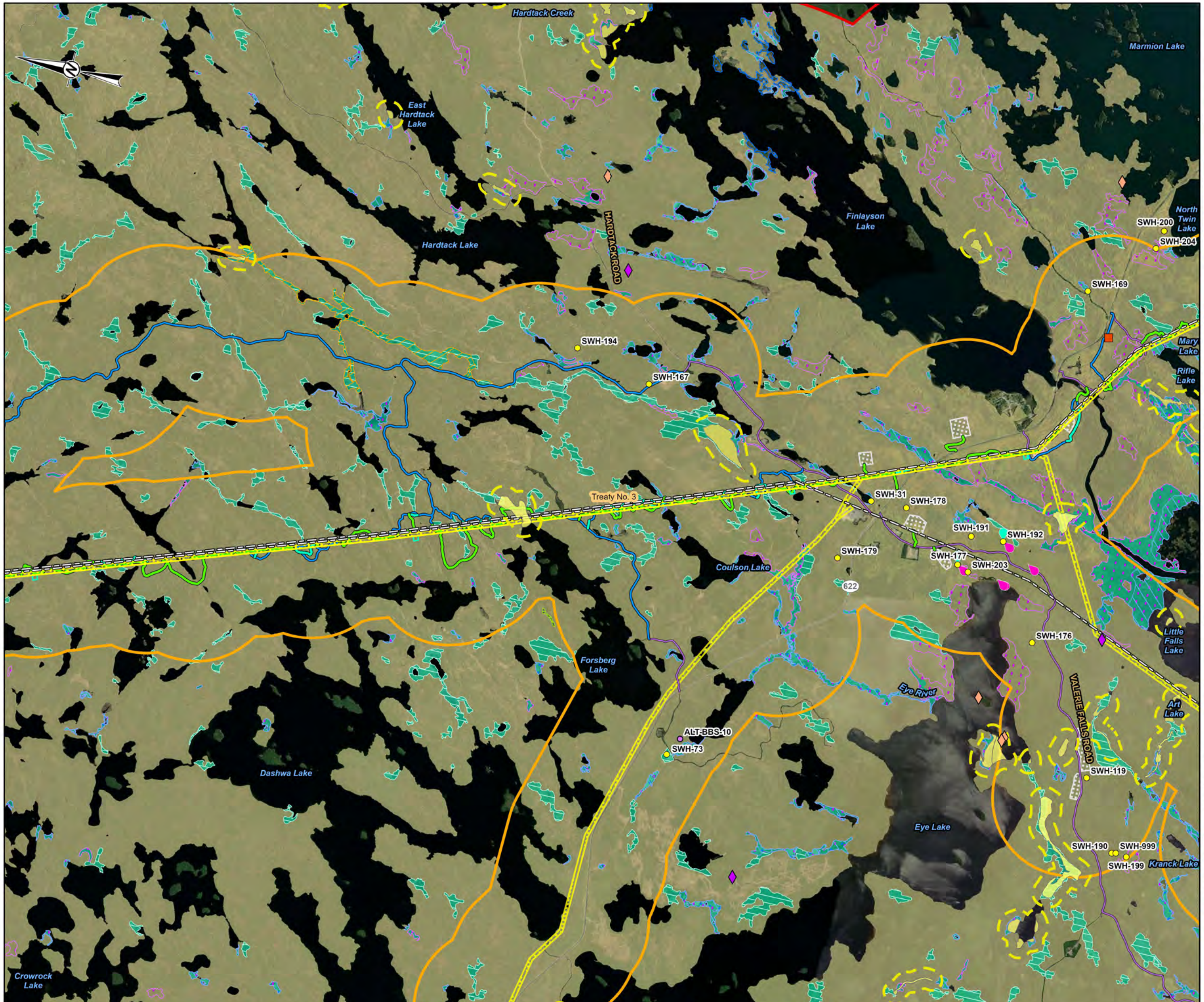
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-16

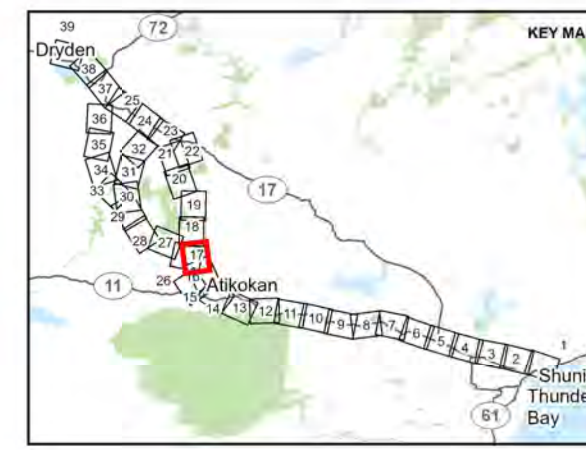


LEGEND

- STATION LOCATION
- BROAD-WINGED HAWK NESTING OBSERVATIONS (GOLDER 2022)
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (BANK AND CLIFF)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

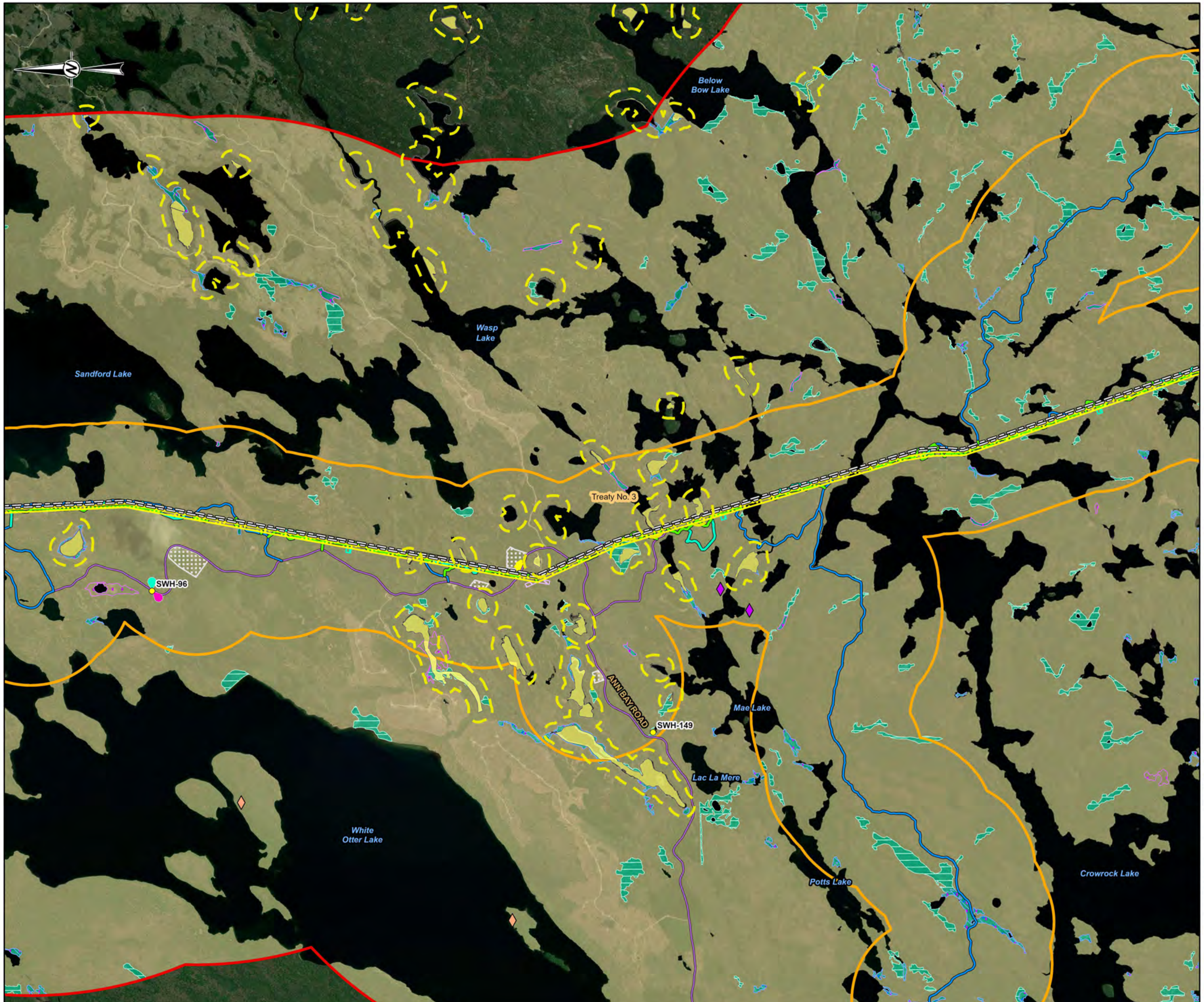
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-17



LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT

- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD

SYMBOLOGY

- PRELIMINARY FLY YARD
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

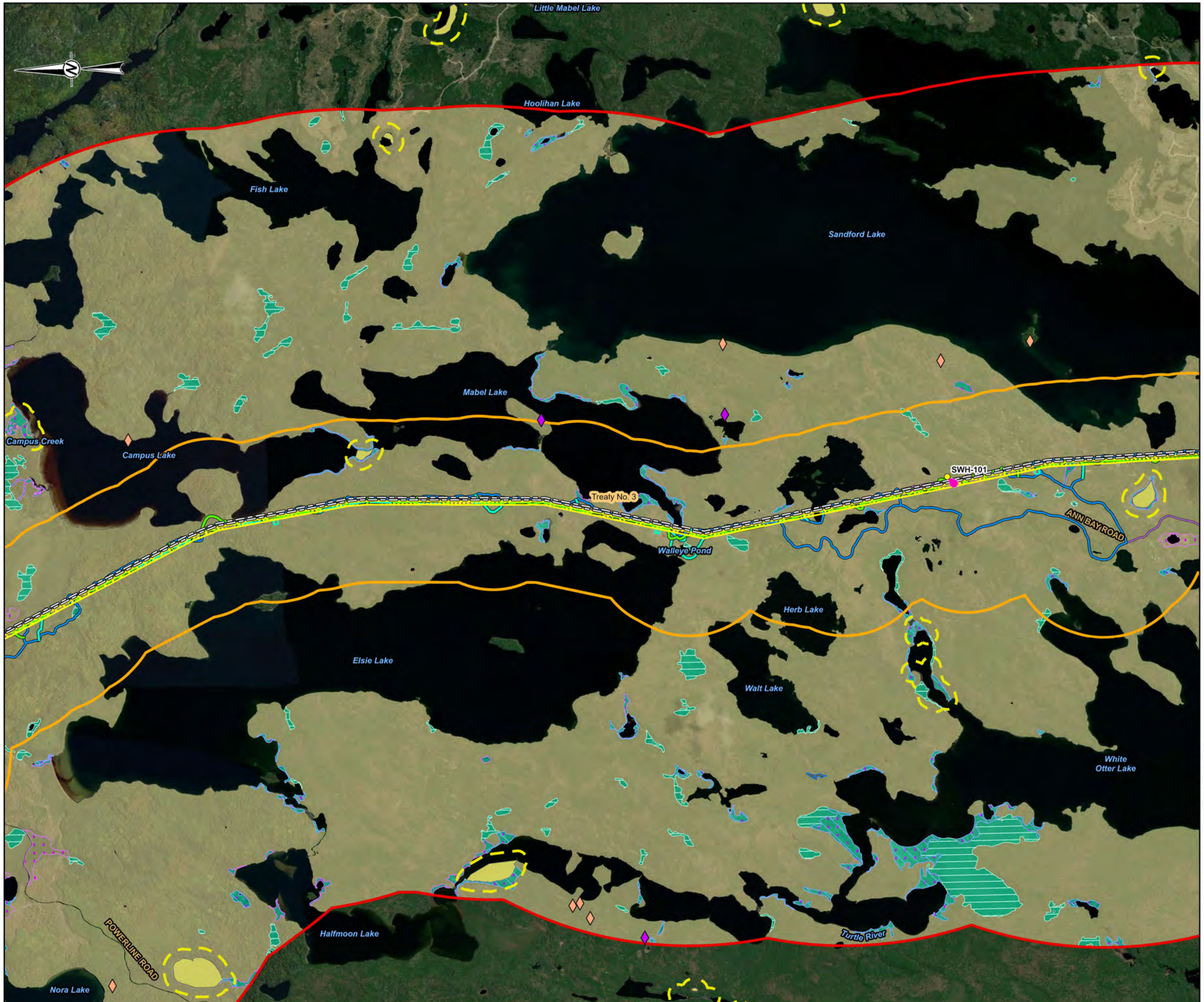
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-18



LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

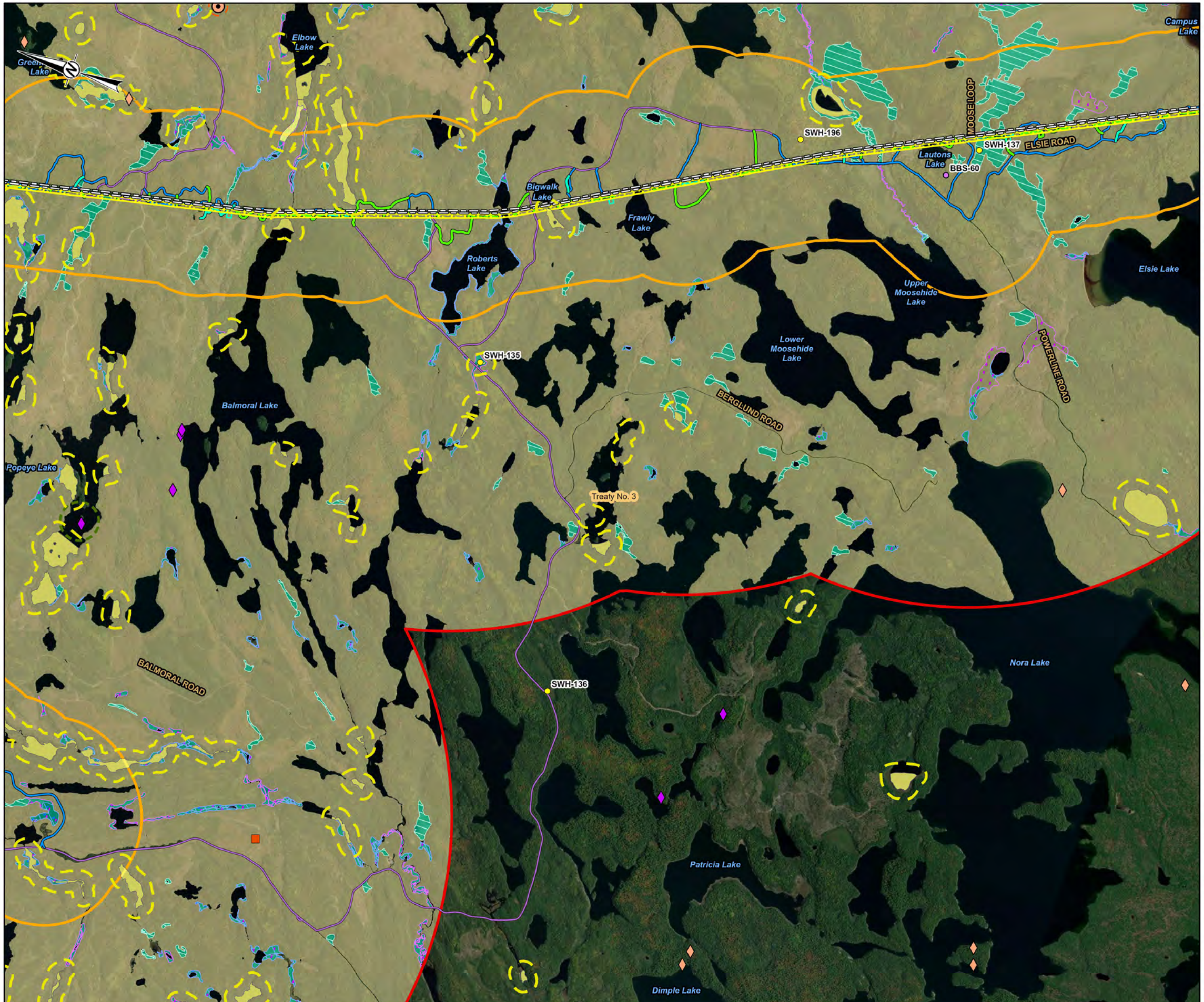
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT
wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-19



LEGEND

- STATION LOCATION
- BROAD-WINGED HAWK NESTING OBSERVATIONS (GOLDER 2022)
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CONFIRMED MINERAL LICK (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS
- CONFIRMED MINERAL LICK - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

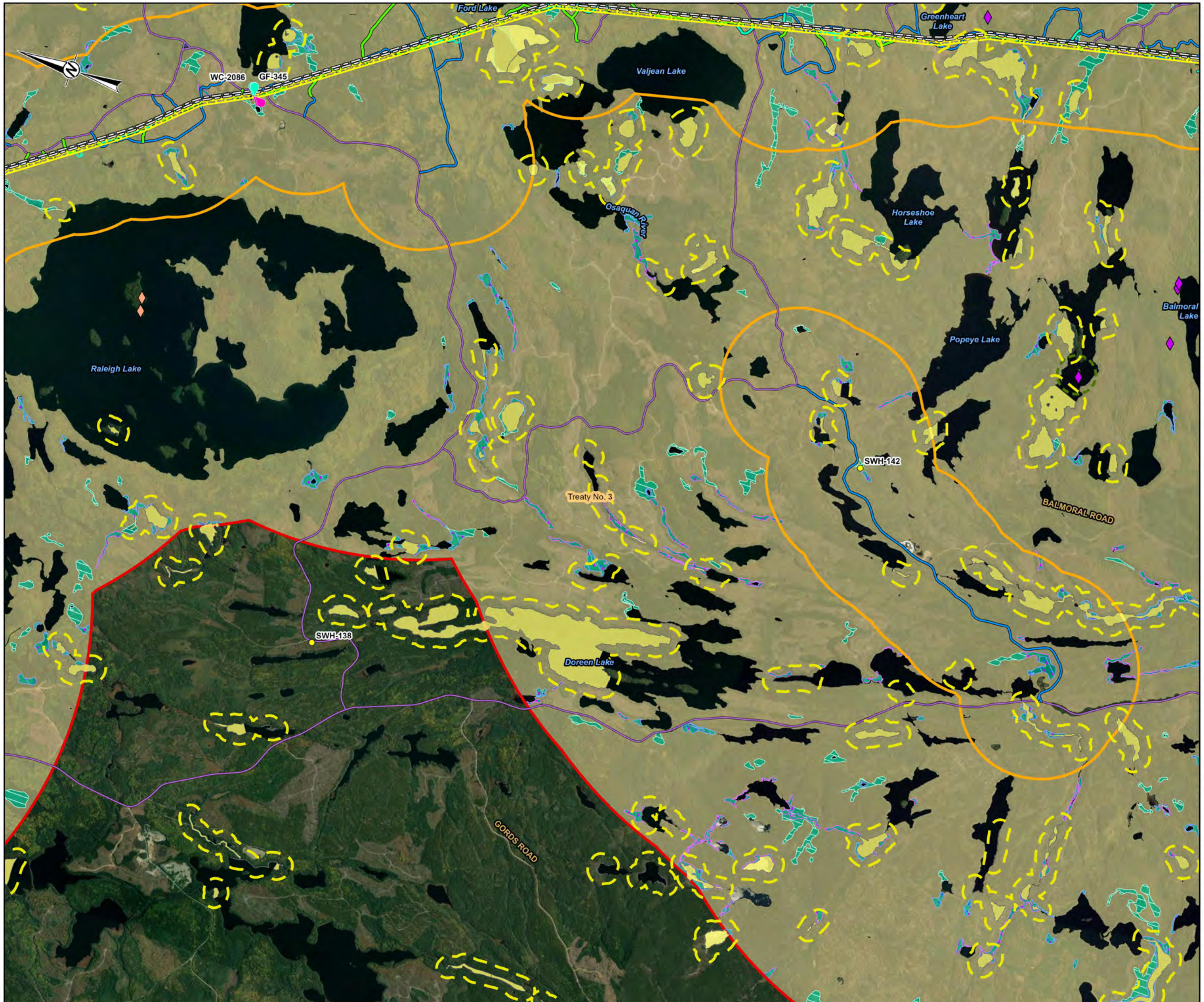
TITLE

WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-20

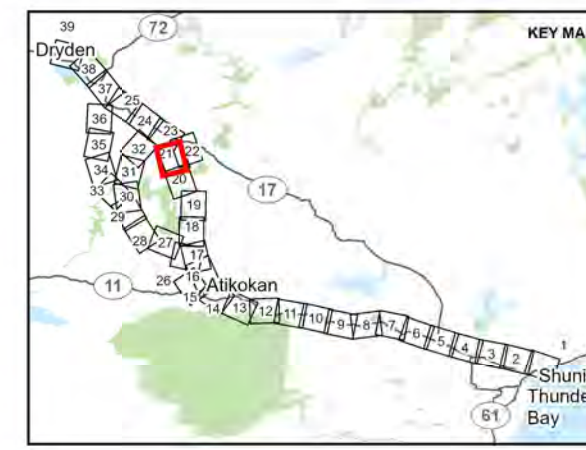


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

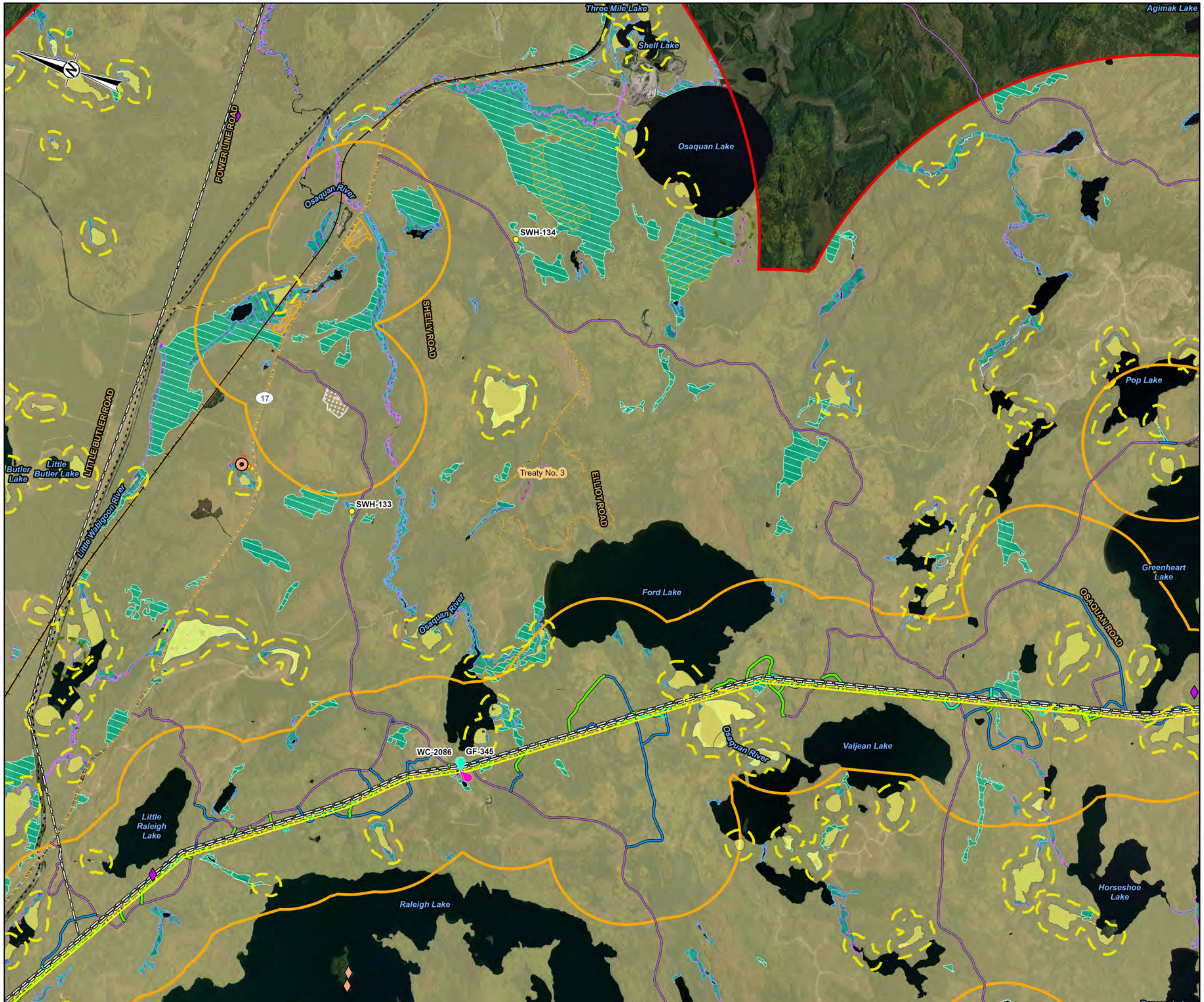
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-21



LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CONFIRMED MINERAL LICK (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS
- CONFIRMED MINERAL LICK - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD

SYMBOLOGY

- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY AGGREGATE SITE
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

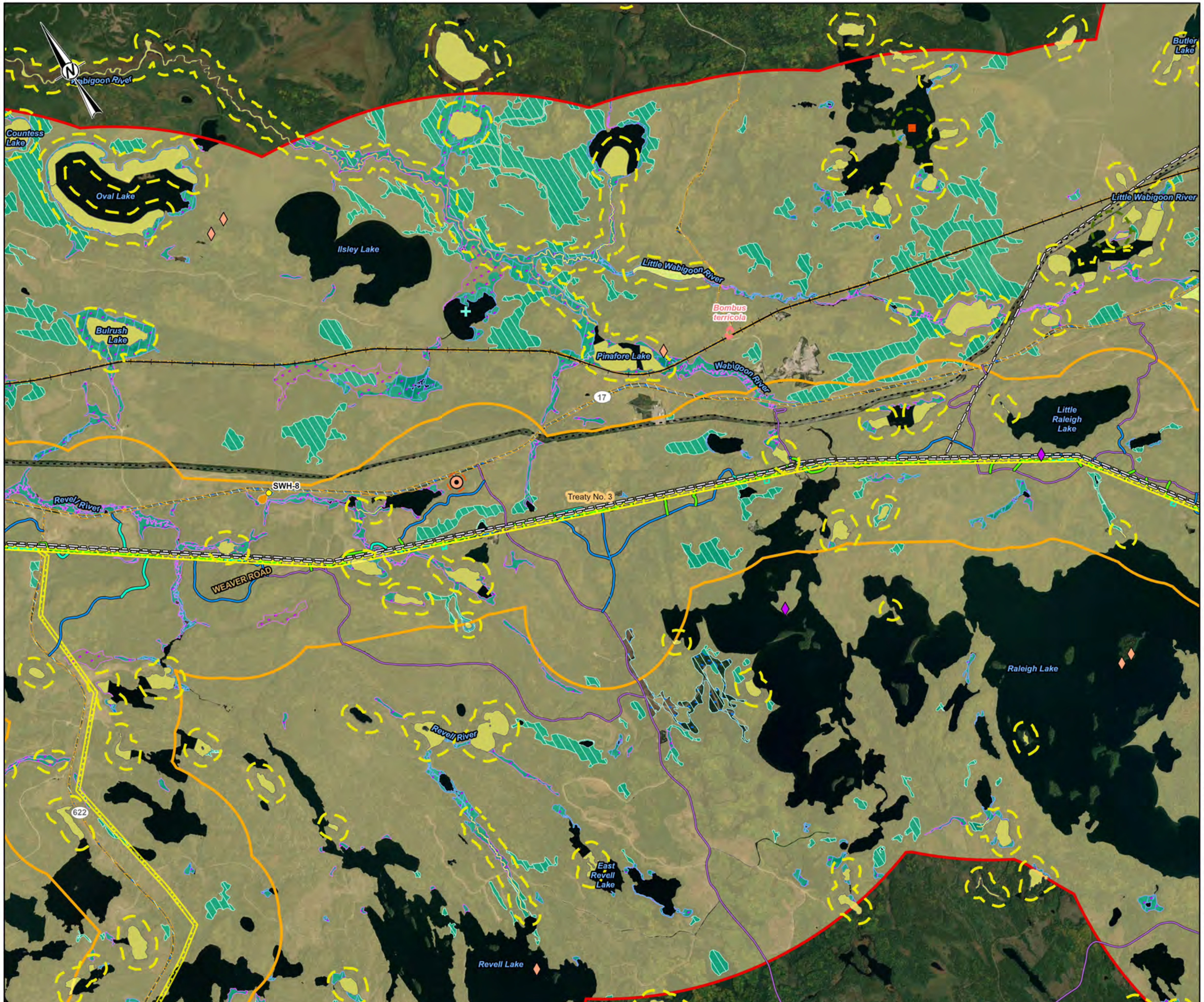
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-22

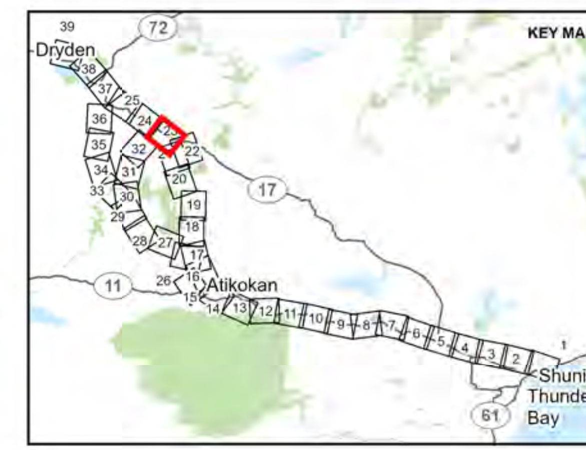


LEGEND

- STATION LOCATION
- CANDIDATE MARSH BREEDING BIRD (LIO 2022)
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CONFIRMED MINERAL LICK (LIO 2022)
- CONFIRMED SEEPS AND SPRINGS (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CONFIRMED SPECIES OF CONSERVATION CONCERN (NHIC 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS
- CONFIRMED MINERAL LICK - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

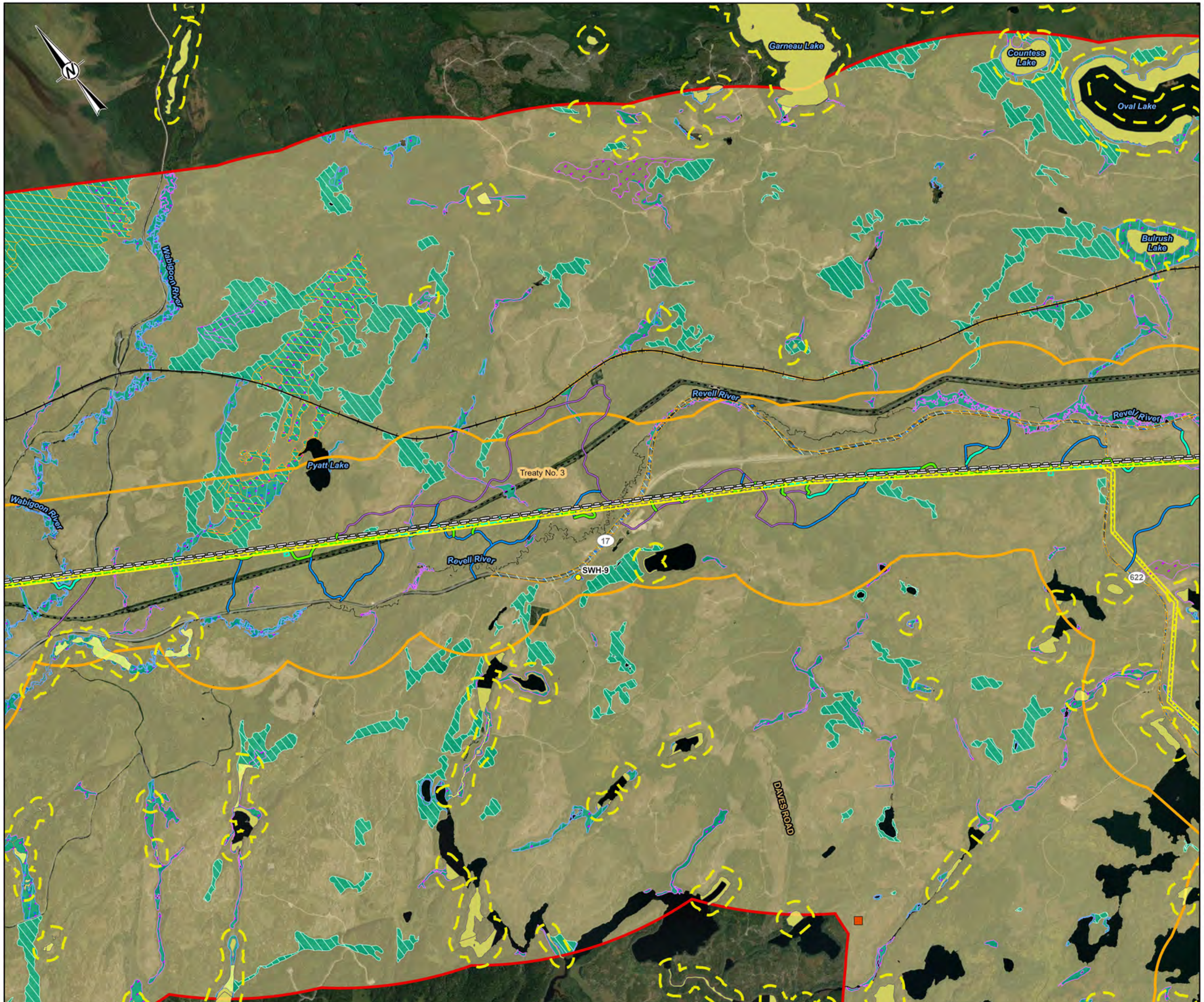
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-23

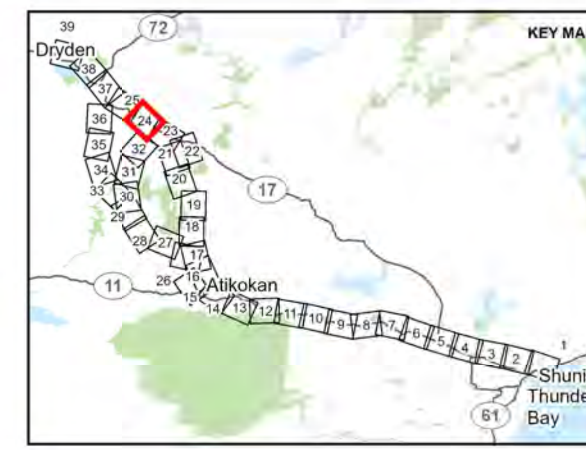


LEGEND

- STATION LOCATION
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

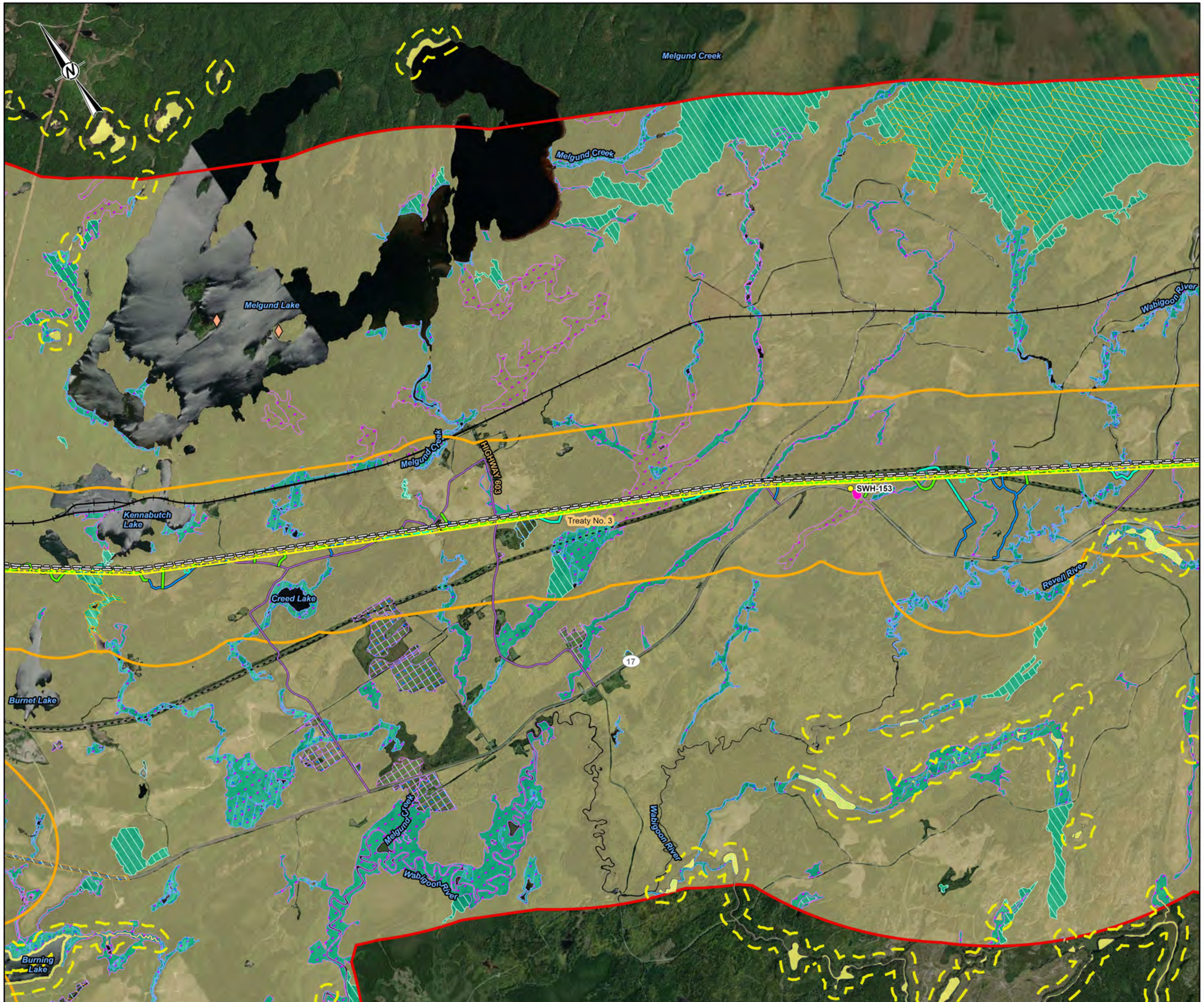
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT
wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-24

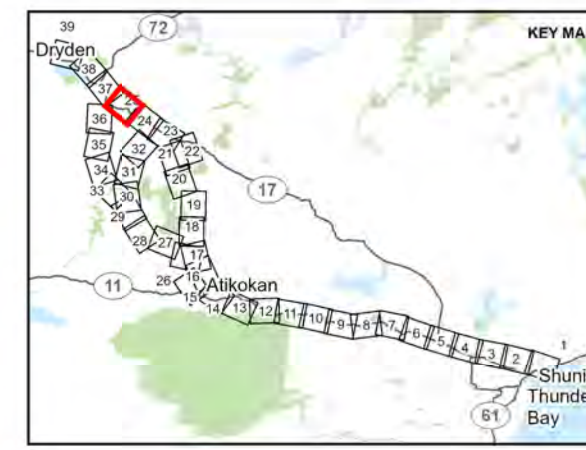


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

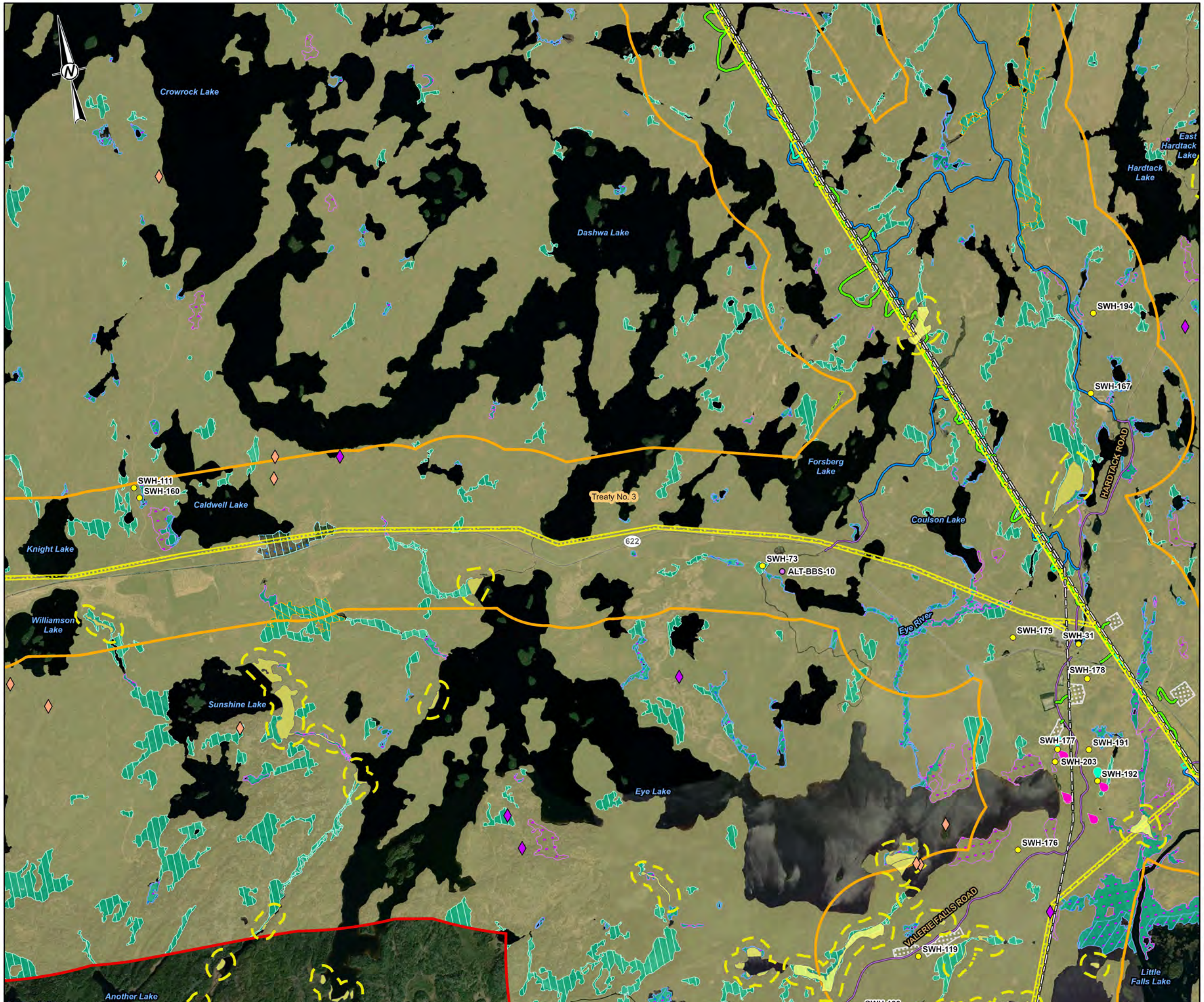
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-25

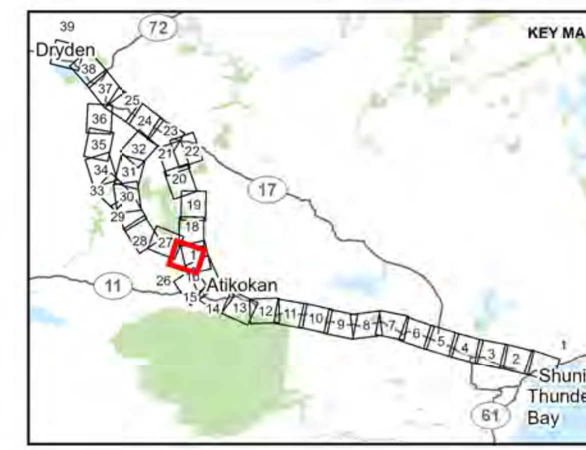


LEGEND

- STATION LOCATION
- BROAD-WINGED HAWK NESTING OBSERVATIONS (GOLDER 2022)
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (BANK AND CLIFF)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

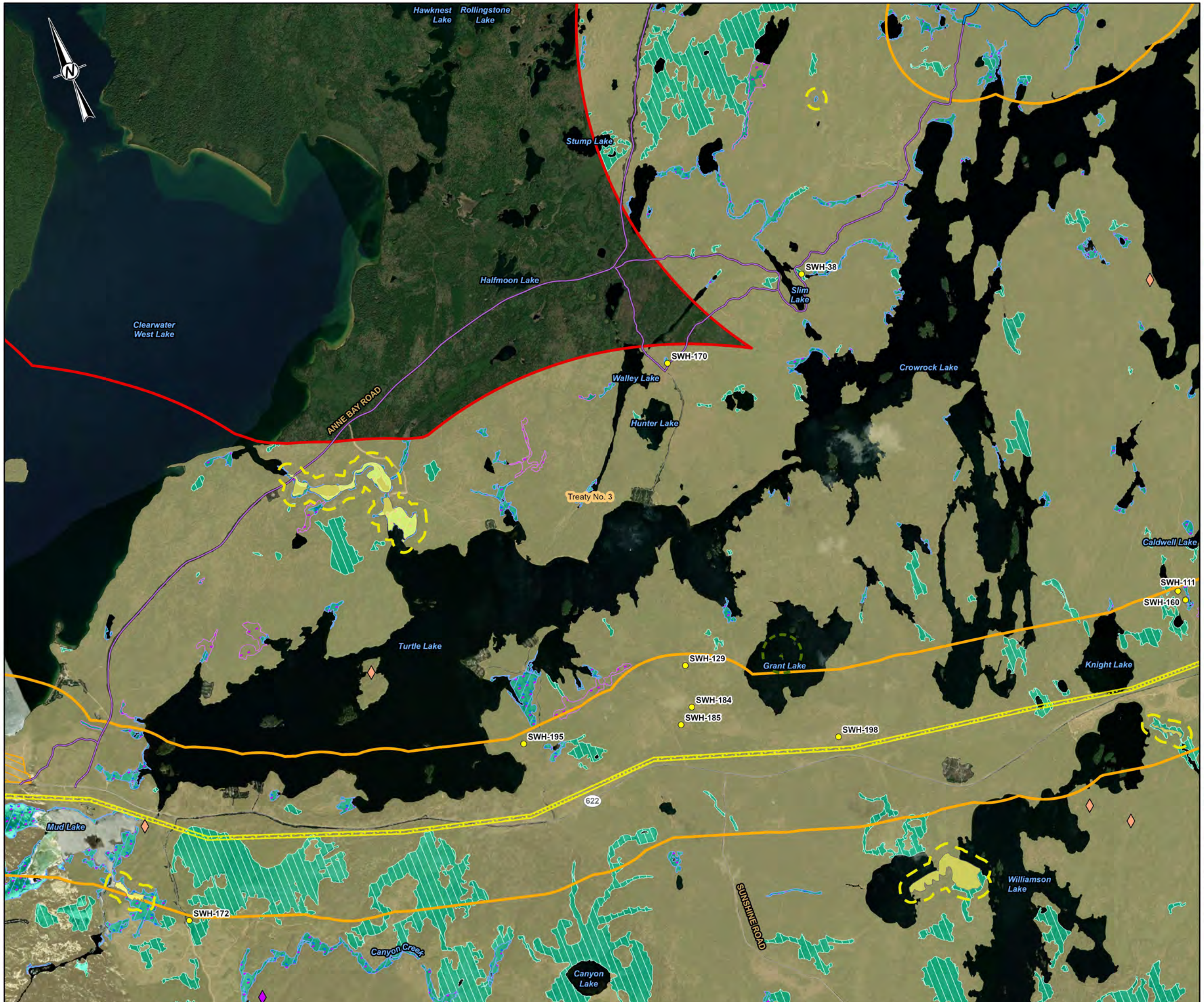
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-26



LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS

SYMBOLOGY

- PRELIMINARY CONSTRUCTION CAMP
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

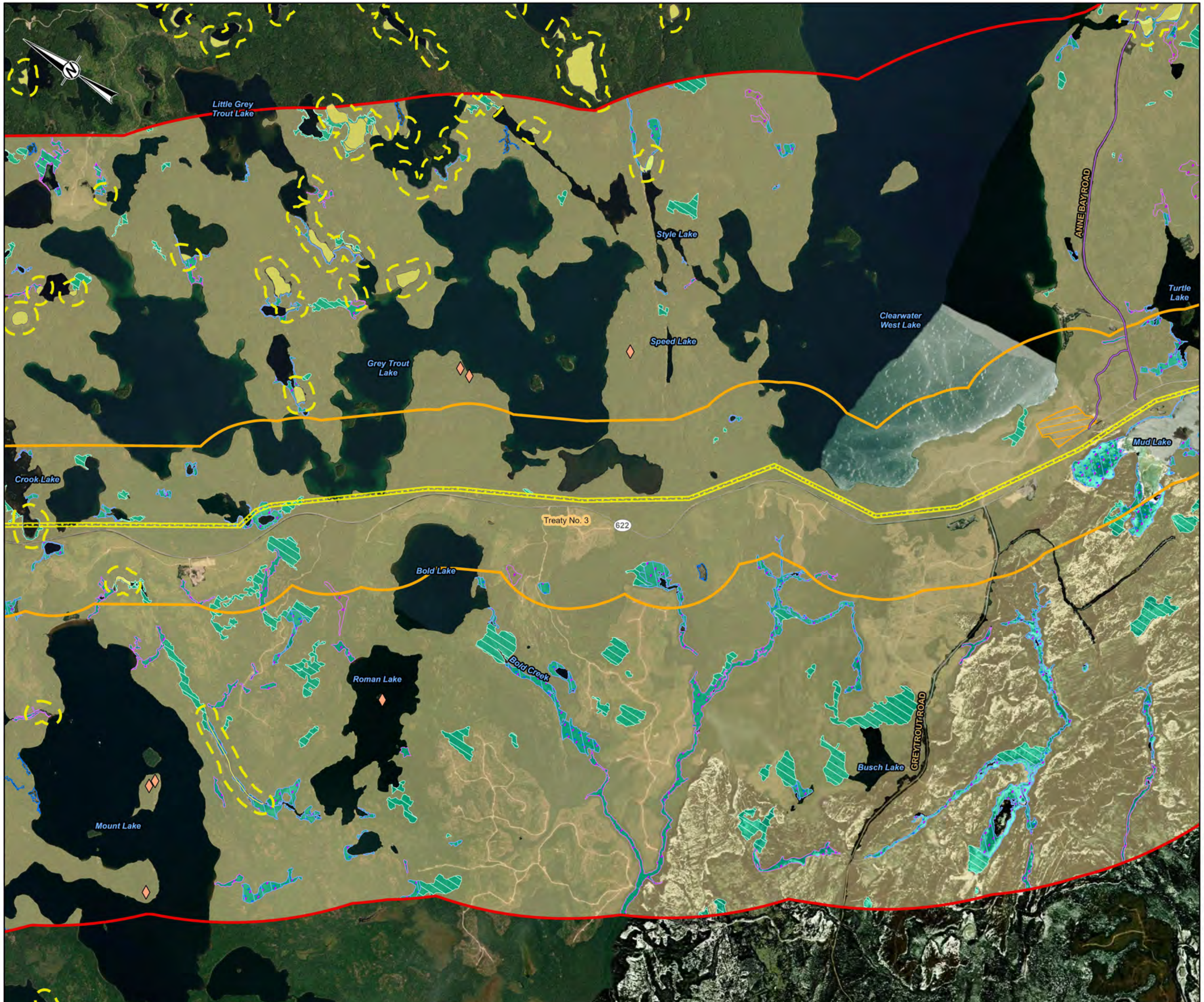
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-27



LEGEND

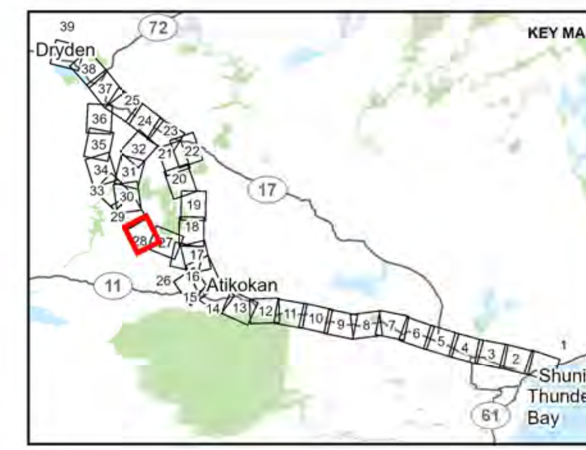
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED

SYMBOLOGY

- PRELIMINARY CONSTRUCTION CAMP
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

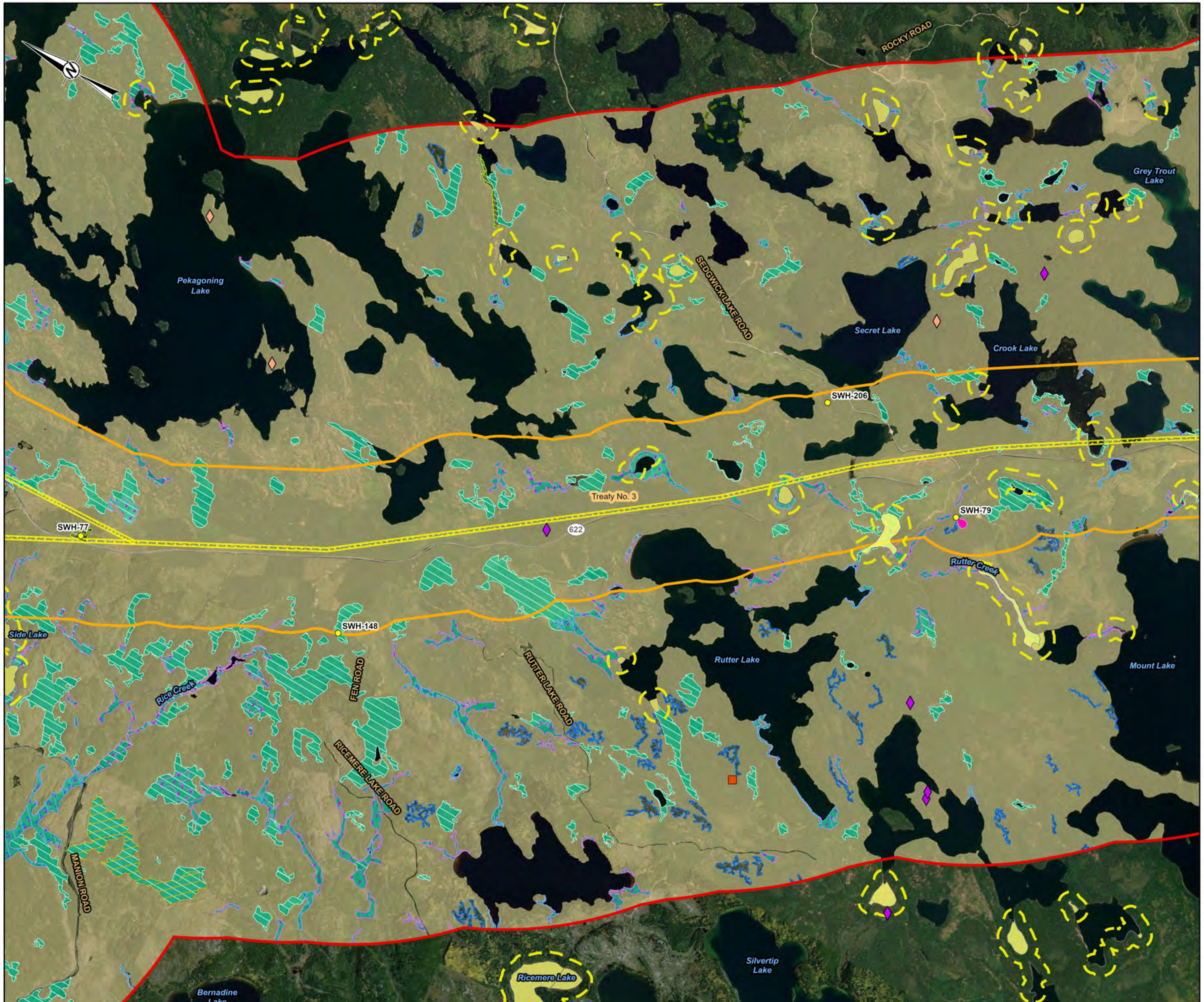
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-28

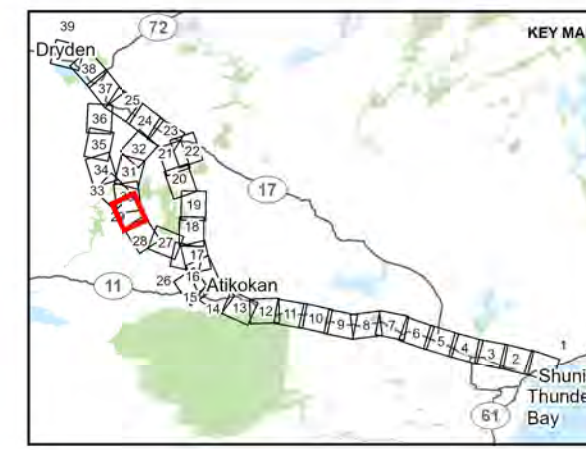


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (BANK AND CLIFF)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

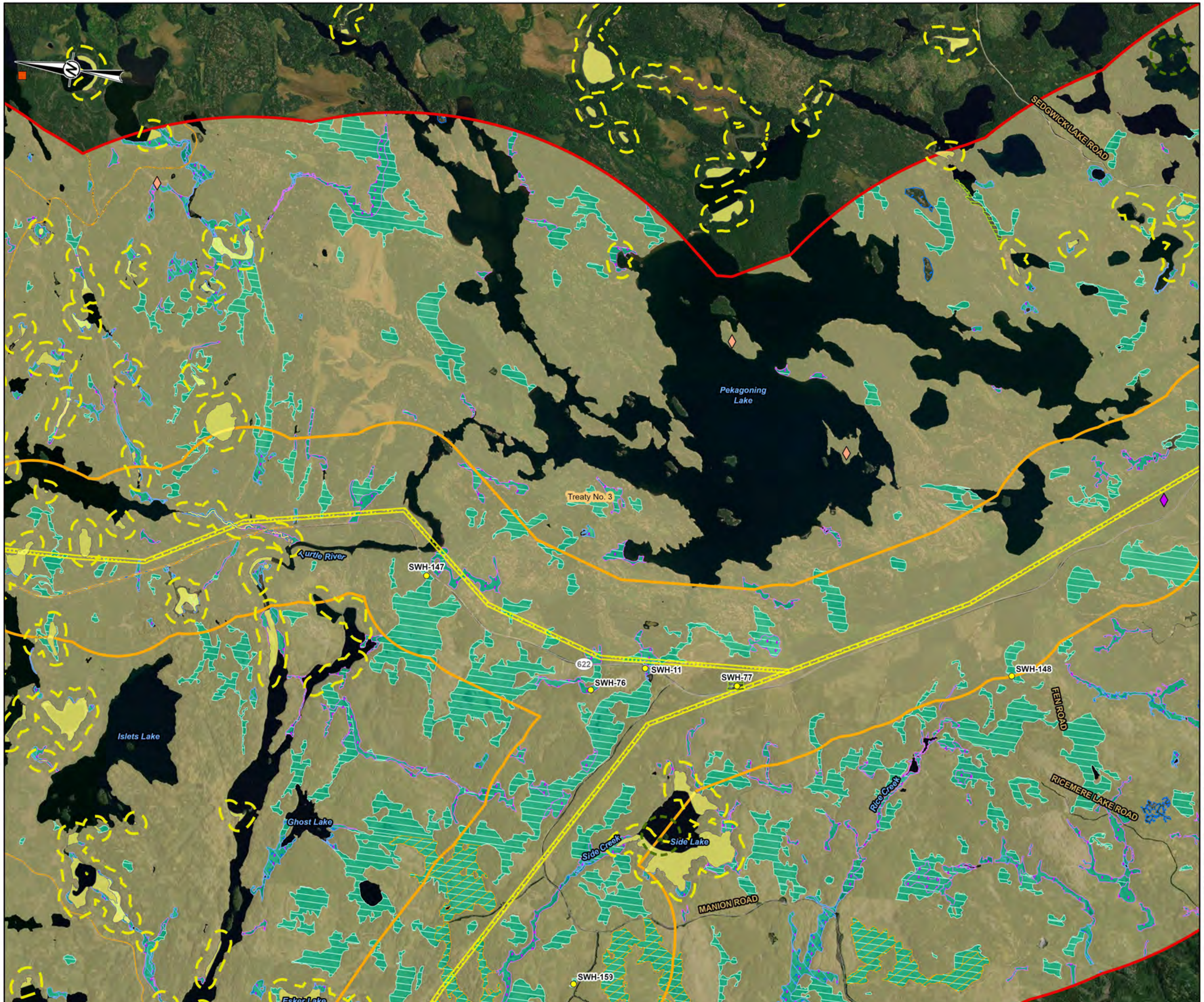
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-29

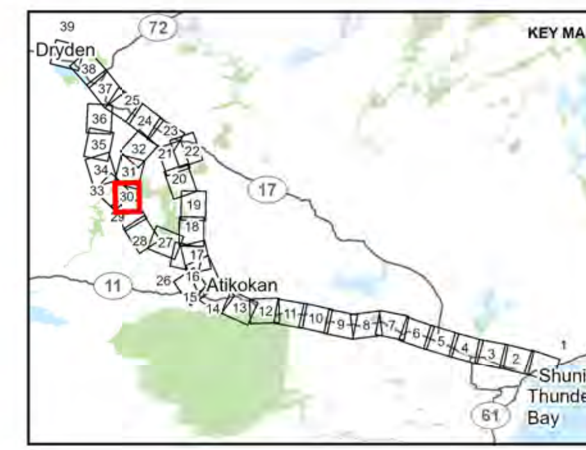


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (BANK AND CLIFF)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

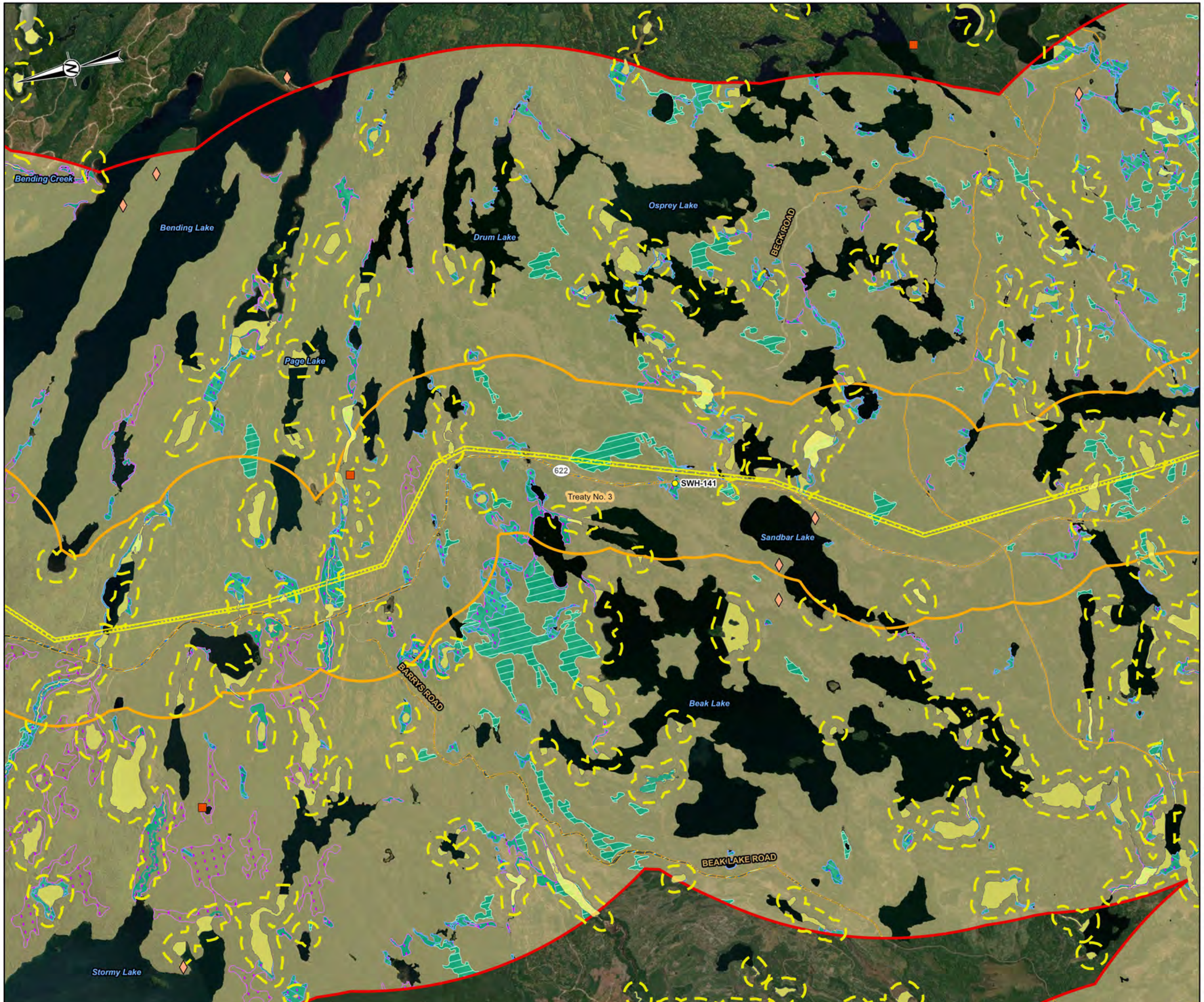
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-30



LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

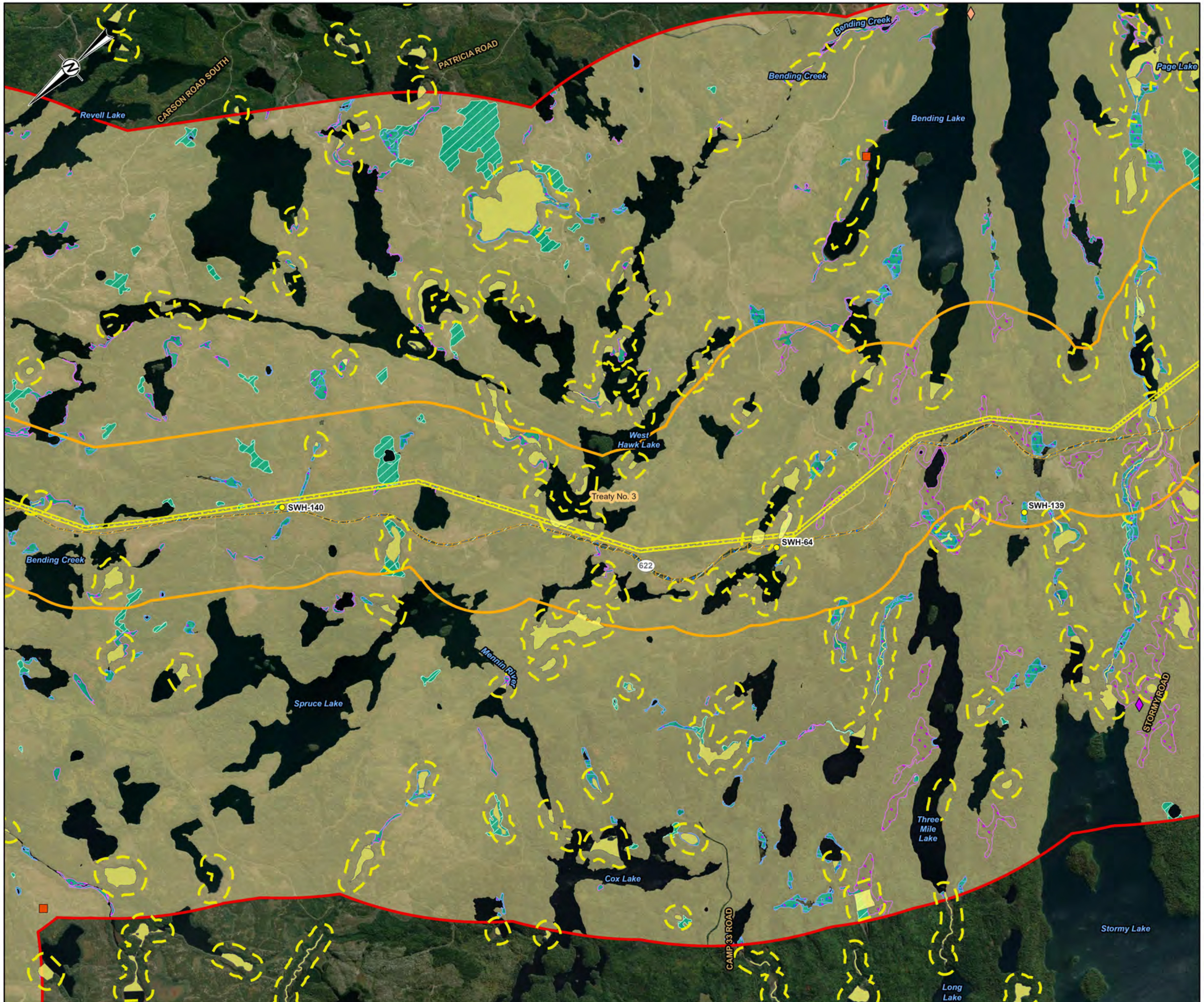
CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT		
wsp	YYYY-MM-DD	2023-05-12
	DESIGNED	GW
	PREPARED	DB
	REVIEWED	HK
	APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-31

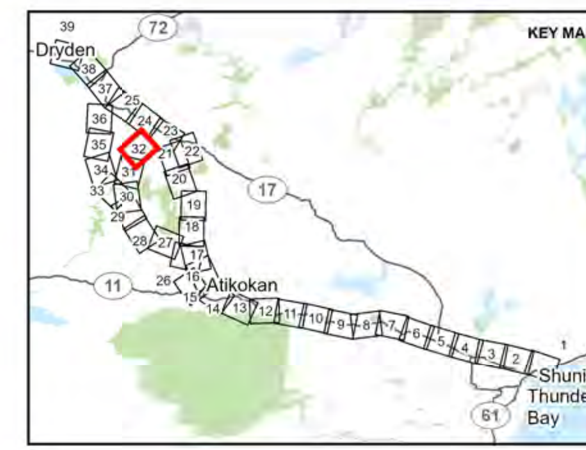


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

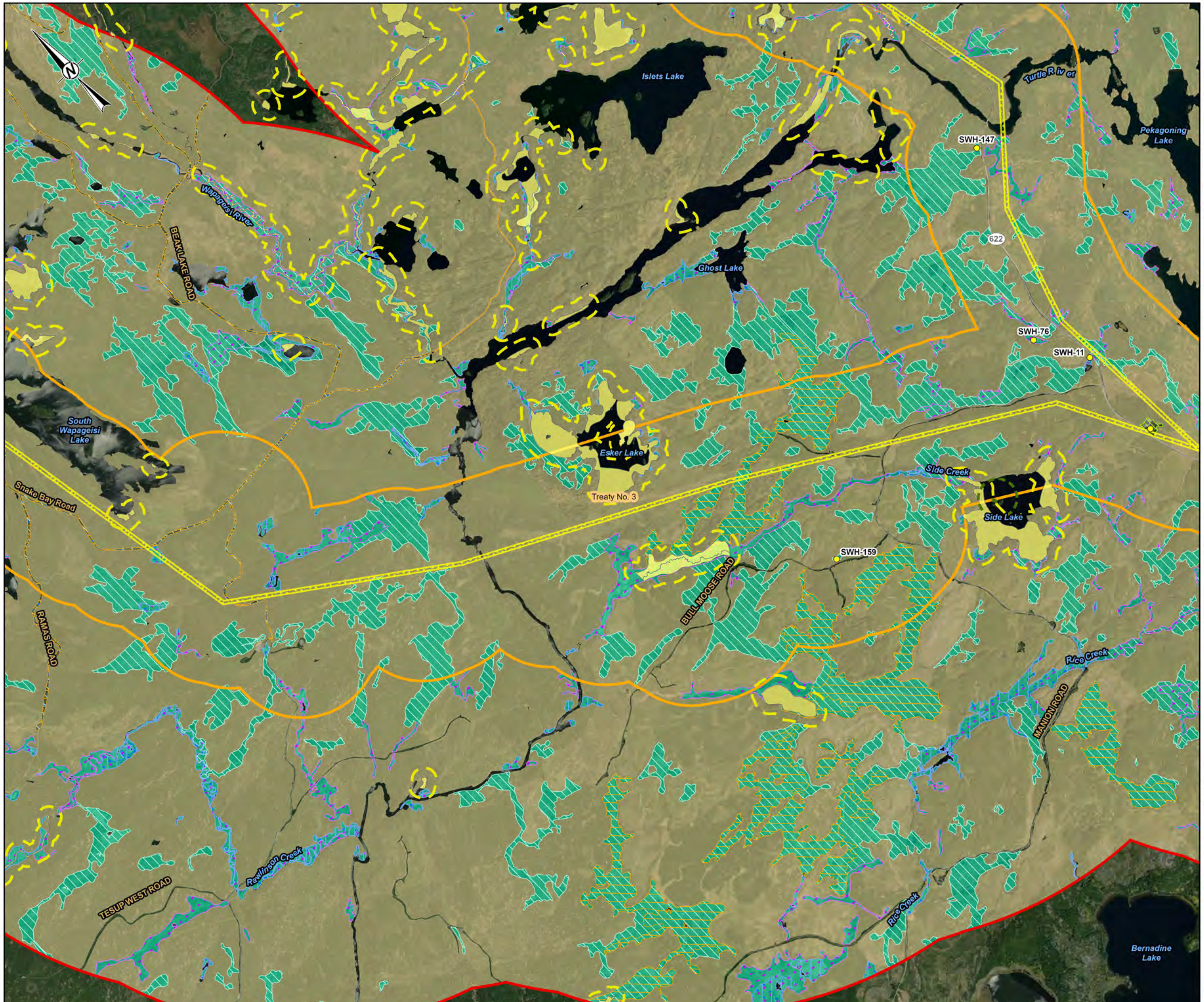
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-32

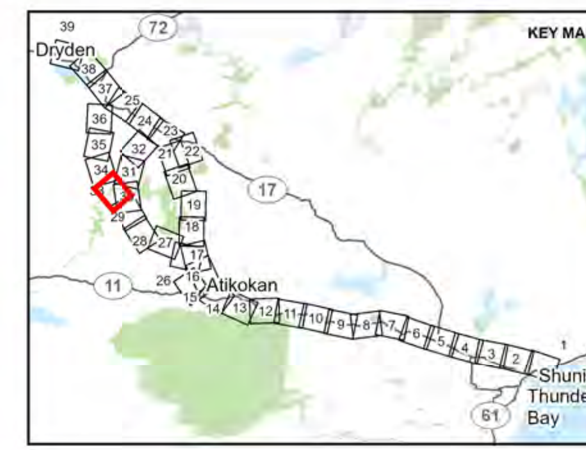


LEGEND

- STATION LOCATION
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (BANK AND CLIFF)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

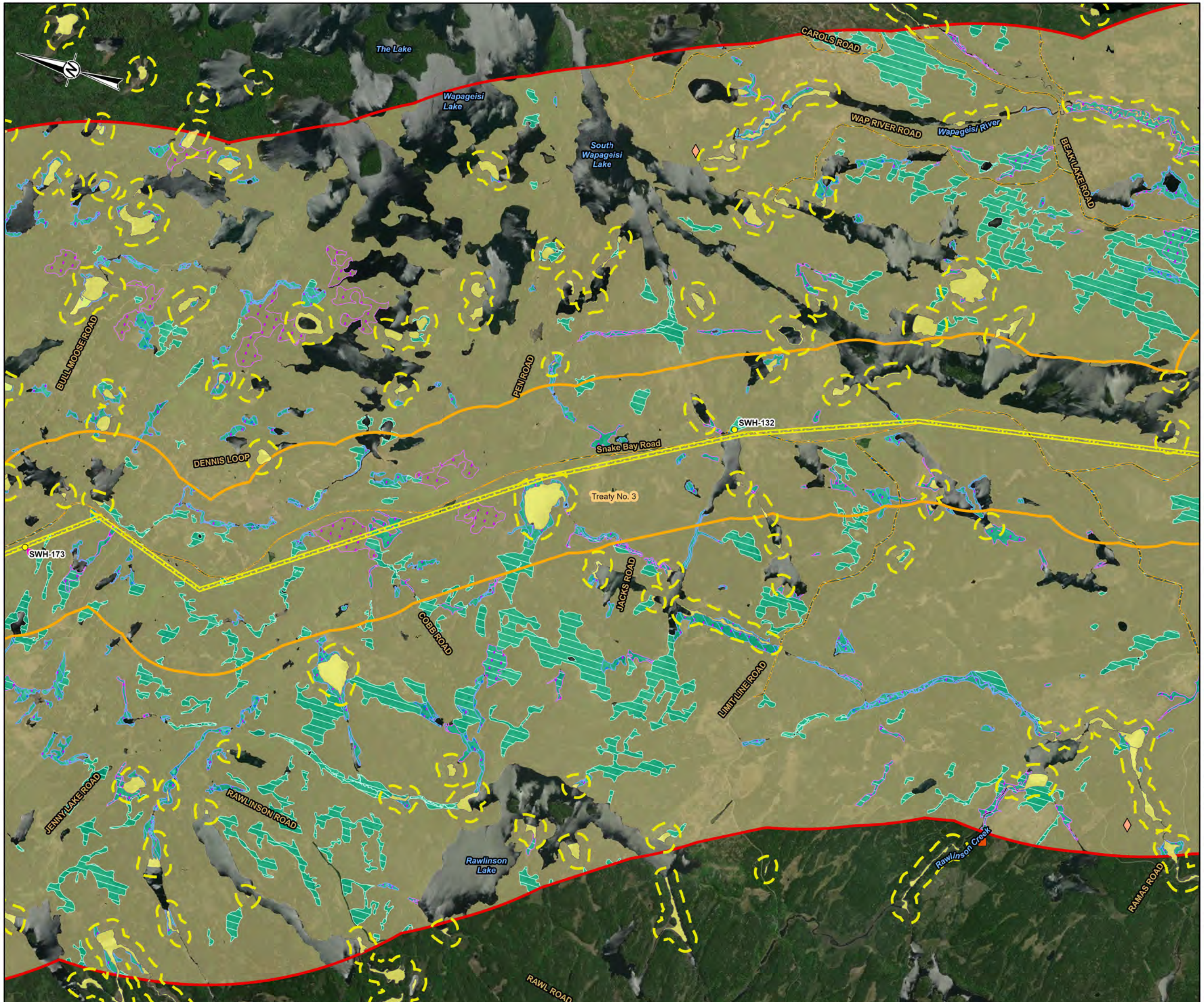
CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT		
wsp	YYYY-MM-DD	2023-05-12
	DESIGNED	GW
	PREPARED	DB
	REVIEWED	HK
	APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-33

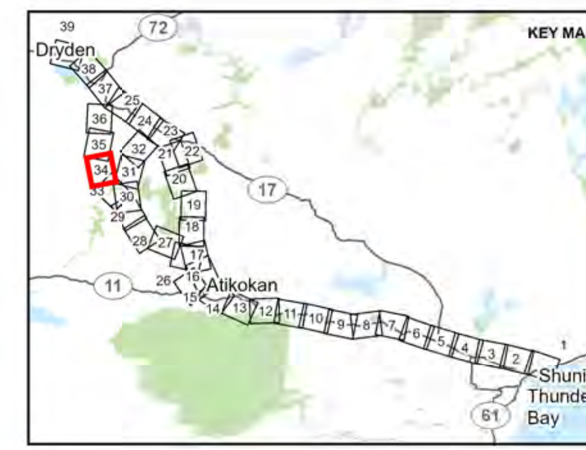


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

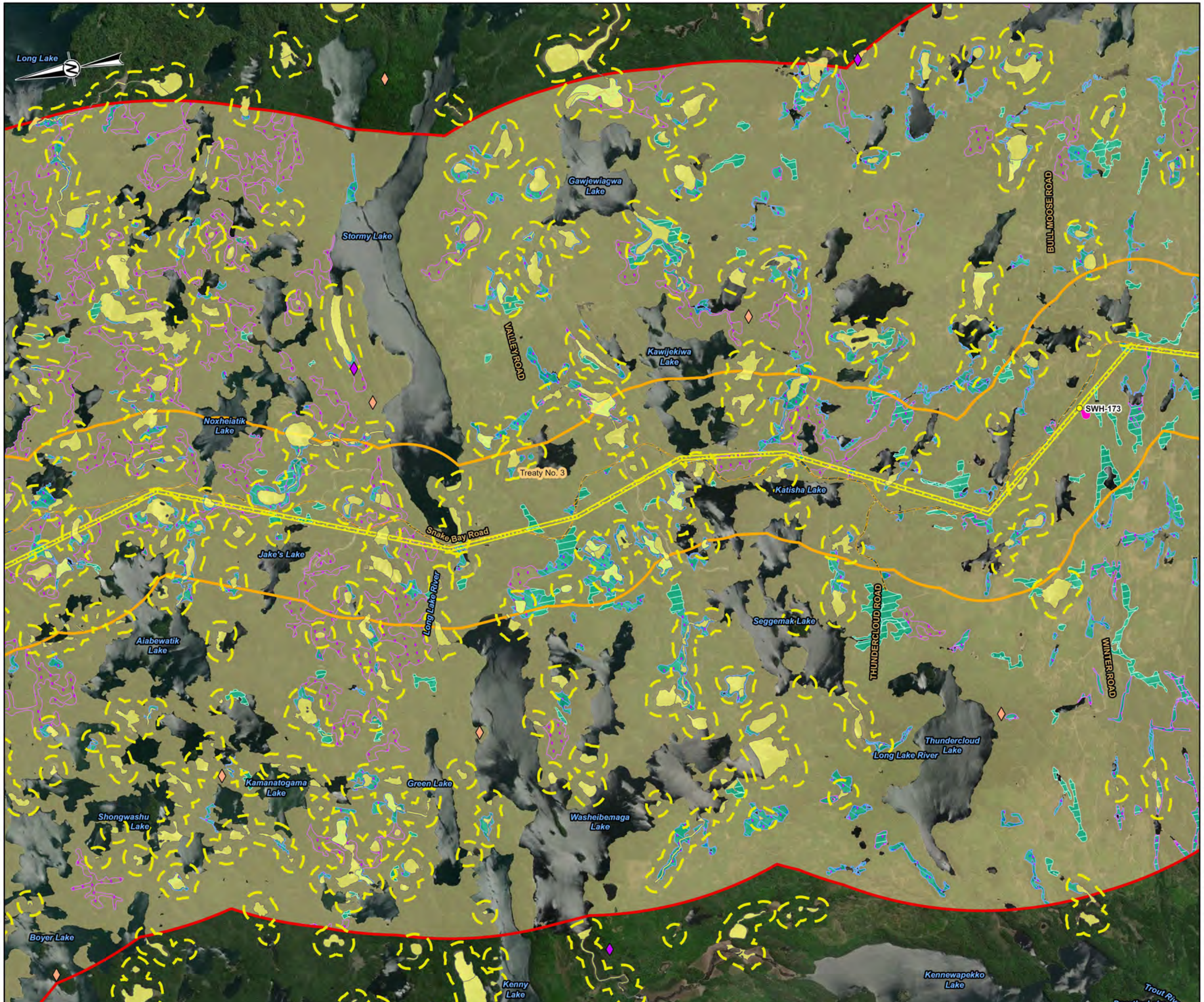
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-34

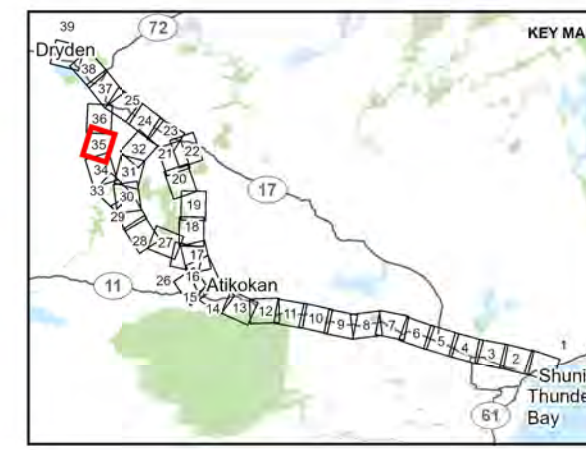


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

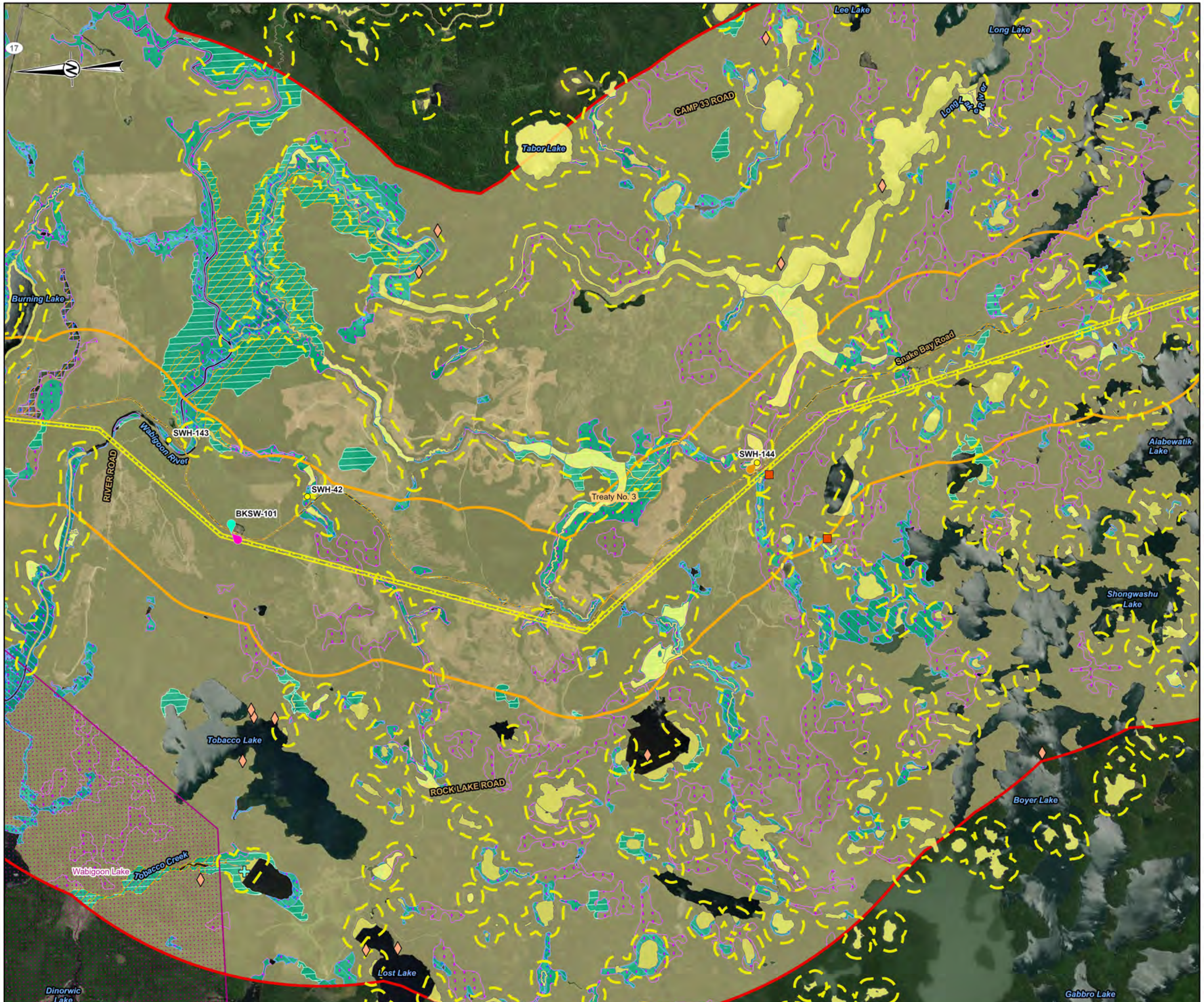
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-35

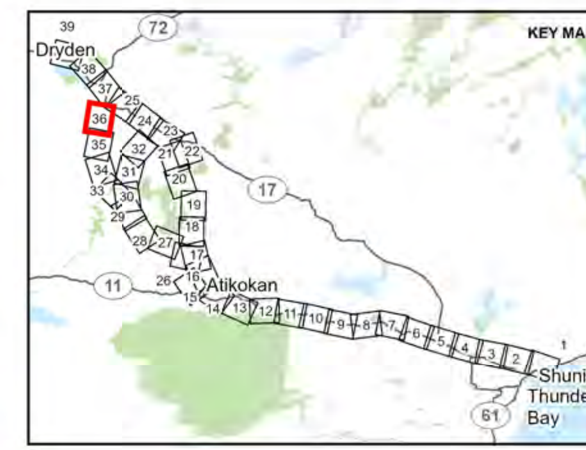


LEGEND

- STATION LOCATION
- CANDIDATE MARSH BREEDING BIRD (LIO 2022)
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CANDIDATE SNAKE HIBERNACULA (GOLDER 2022)
- CONFIRMED SEEPS AND SPRINGS (GOLDER 2022)
- CONFIRMED MAMMAL DENNING SITE (GOLDER 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

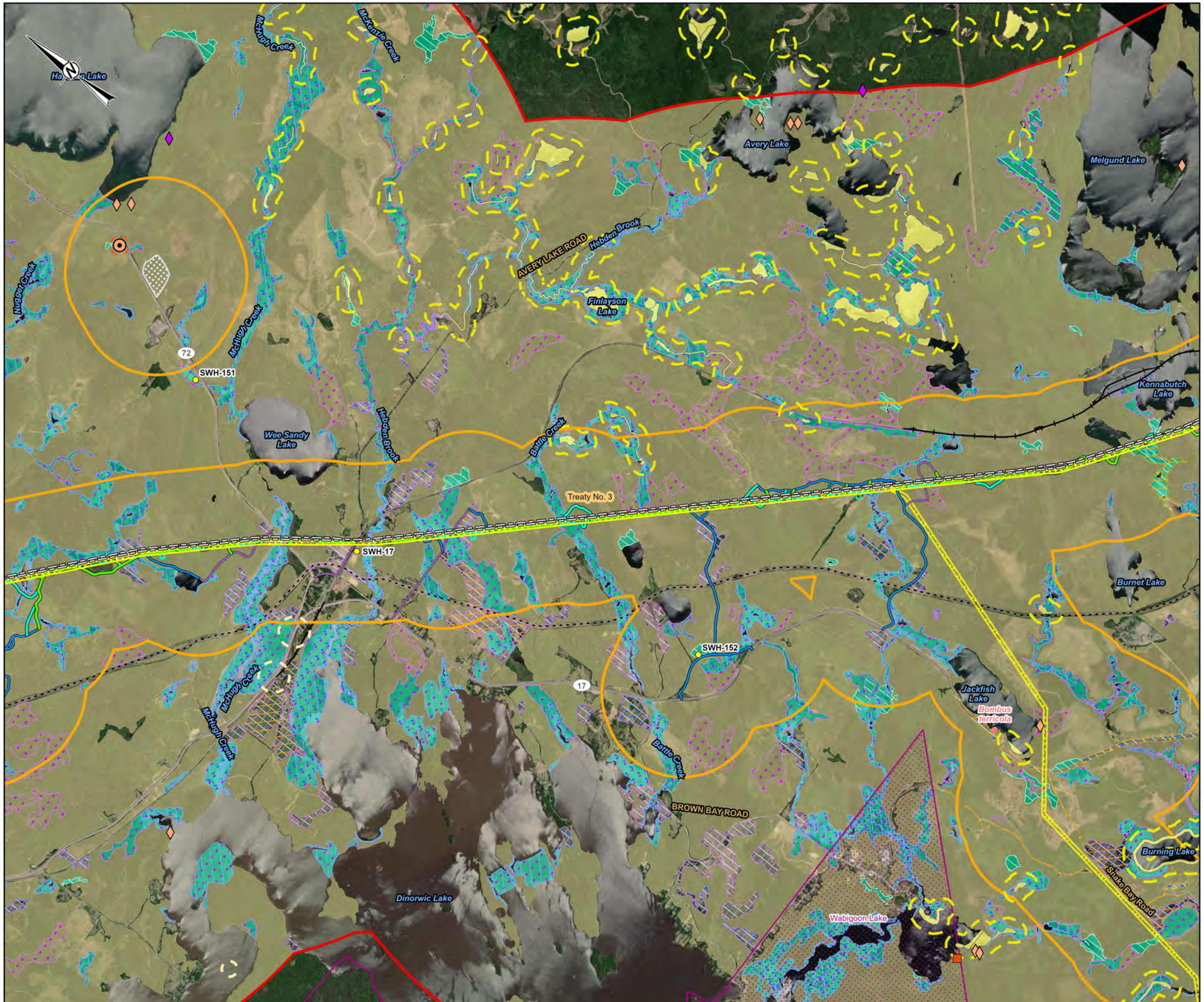
TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-36

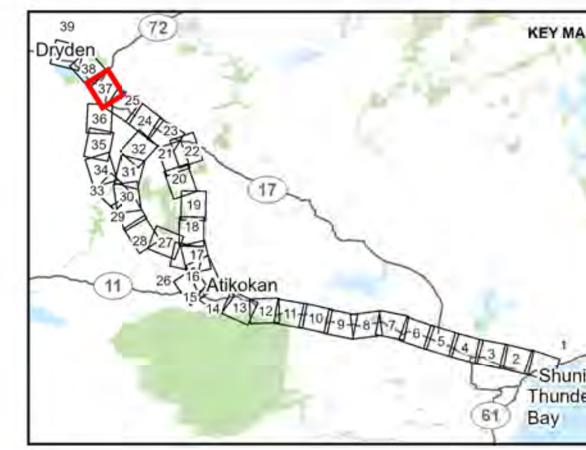


LEGEND

- STATION LOCATION
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE OSPREY NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CONFIRMED MINERAL LICK (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - GROUND (LIO & NHIC 2022)
- CONFIRMED SPECIES OF CONSERVATION CONCERN (NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS
- CONFIRMED MINERAL LICK - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

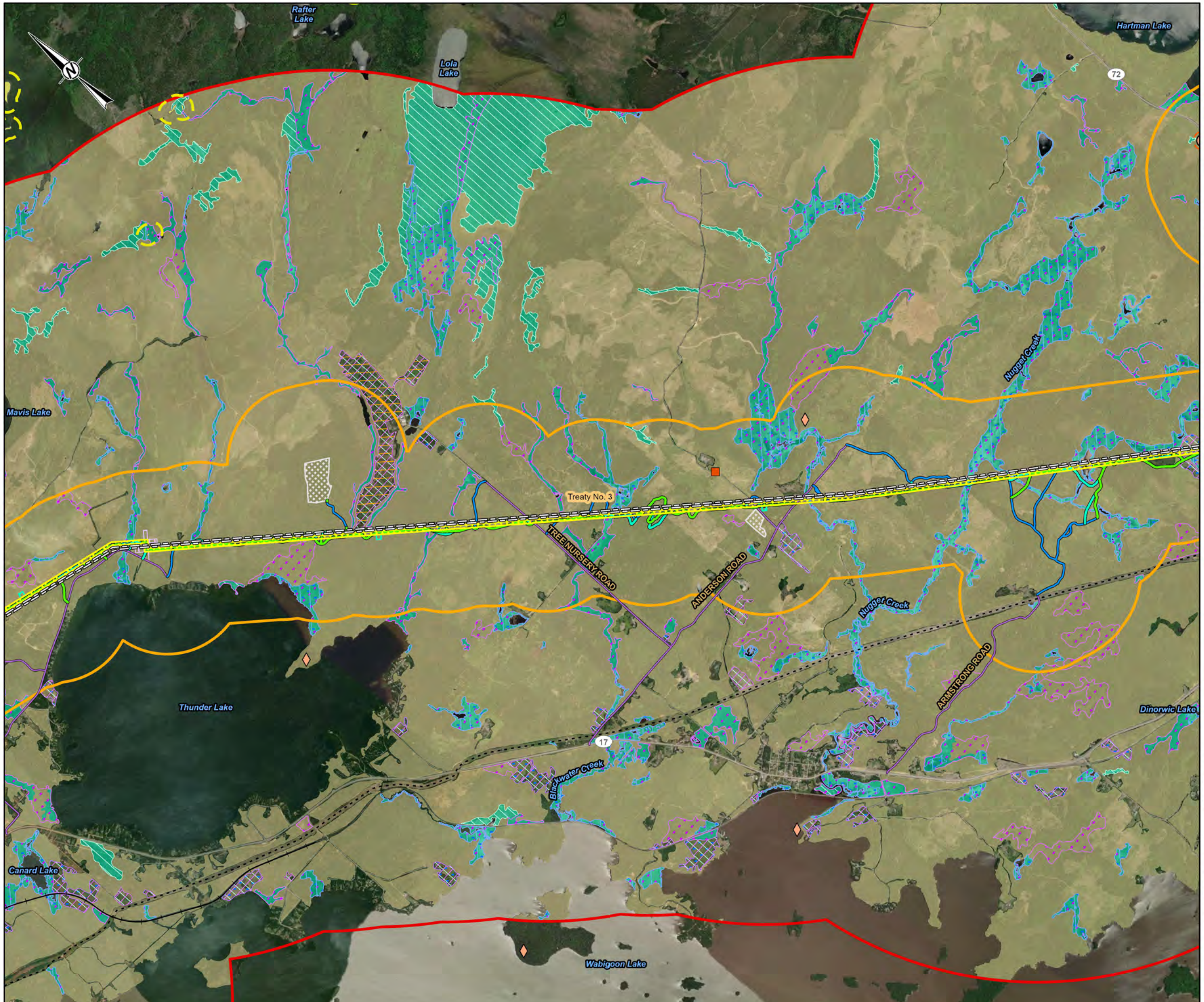
CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT		
wsp	YYYY-MM-DD	2023-05-12
	DESIGNED	GW
	PREPARED	DB
	REVIEWED	HK
	APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-37

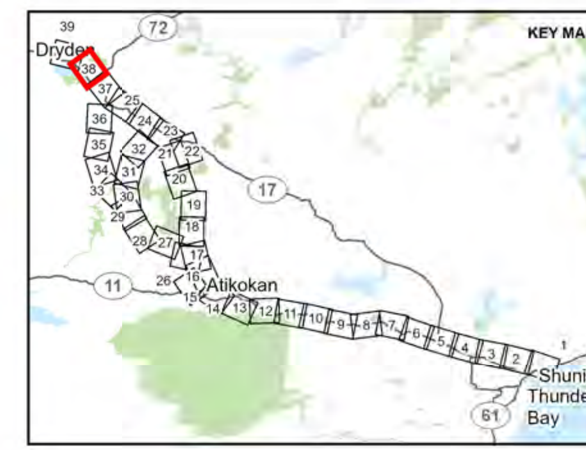


LEGEND

- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CANDIDATE WOODLAND RAPTOR NESTING HABITAT (LIO 2022)
- CONFIRMED MINERAL LICK (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS
- CONFIRMED MINERAL LICK - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

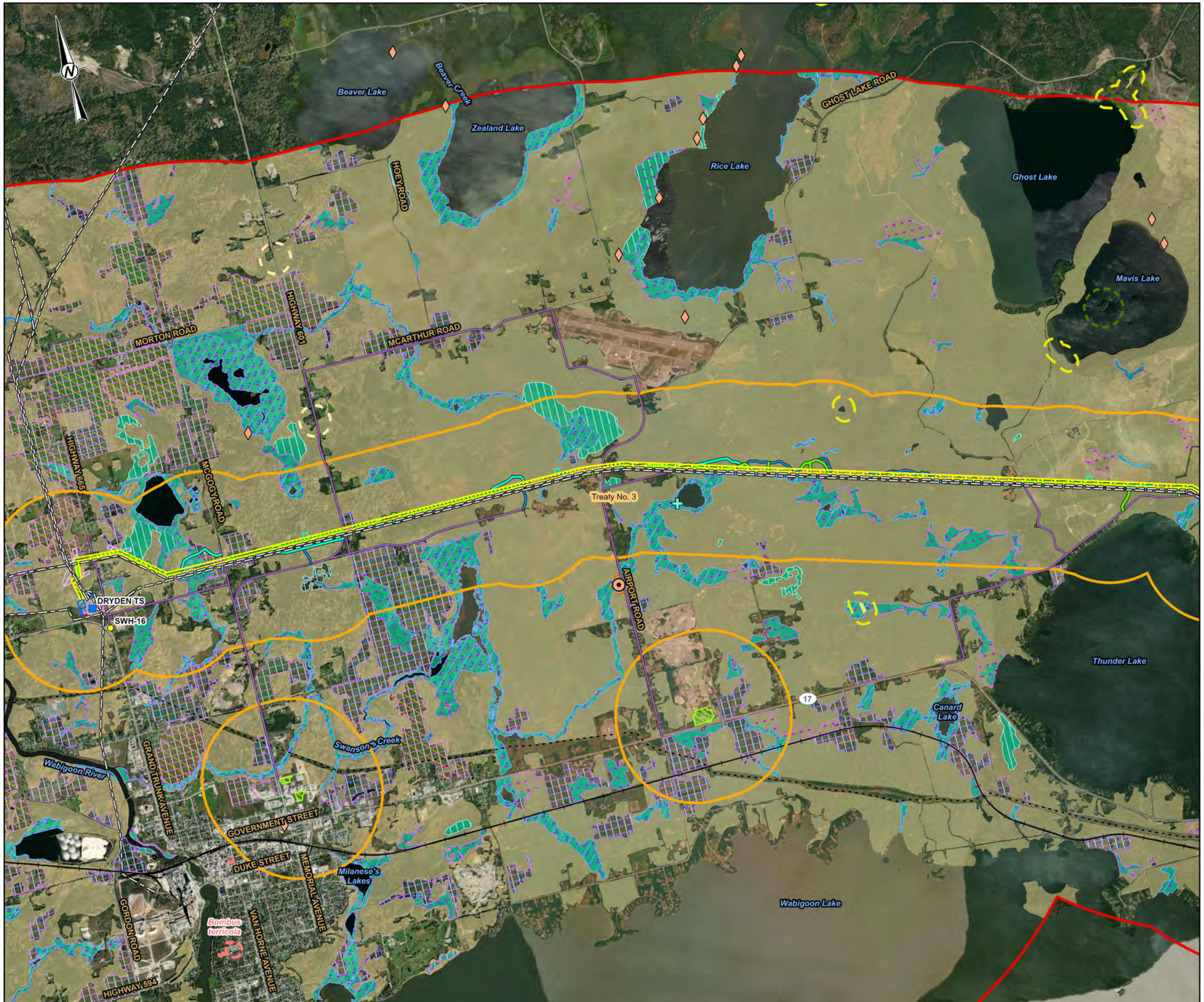
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-38



LEGEND

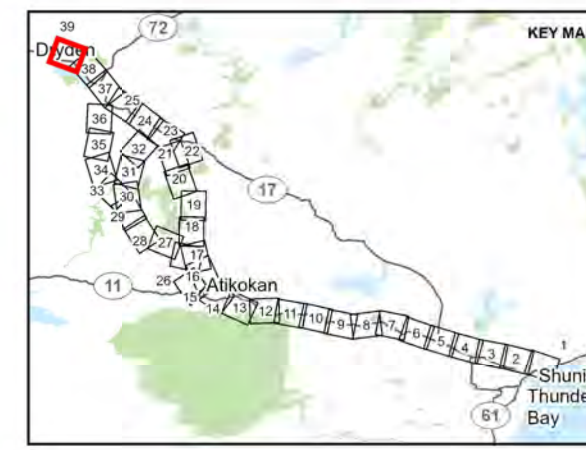
- 230 kV TRANSFORMER STATION (TS)
- STATION LOCATION
- CANDIDATE MARSH BREEDING BIRD (LIO 2022)
- CANDIDATE BALD EAGLE NESTING SITE (LIO 2022)
- CONFIRMED MINERAL LICK (LIO 2022)
- MOOSE AQUATIC FEEDING AREA (LIO 2022)
- CANDIDATE COLONIAL BIRD NESTING - GROUND (LIO & NHIC 2022)
- CONFIRMED SPECIES OF CONSERVATION CONCERN (NHIC 2022)
- CANDIDATE COLONIAL BIRD NESTING - TREE AND SHRUB (LIO & NHIC 2022)
- MOOSE AQUATIC FEEDING AREA - 120m RADIUS
- CONFIRMED MINERAL LICK - 120m RADIUS

CANDIDATE SIGNIFICANT WILDLIFE HABITAT

- COLONIALLY - NESTING BIRD BREEDING HABITAT (GROUND)
- OPEN COUNTRY BIRD BREEDING HABITAT
- SHARP-TAILED GROUSE LEKS
- WATERFOWL NESTING AREA
- WATERFOWL STOPOVER AND STAGING AREAS (AQUATIC)
- WATERFOWL STOPOVER AND STAGING AREAS (TERRESTRIAL)
- COLONIALLY - NESTING BIRD BREEDING HABITAT (TREES/SHRUBS)
- MARSH BIRD BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD

SYMBOLOGY

- PRELIMINARY LAYDOWN AREA
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
WILDLIFE-RELATED CANDIDATE SIGNIFICANT WILDLIFE HABITAT

CONSULTANT

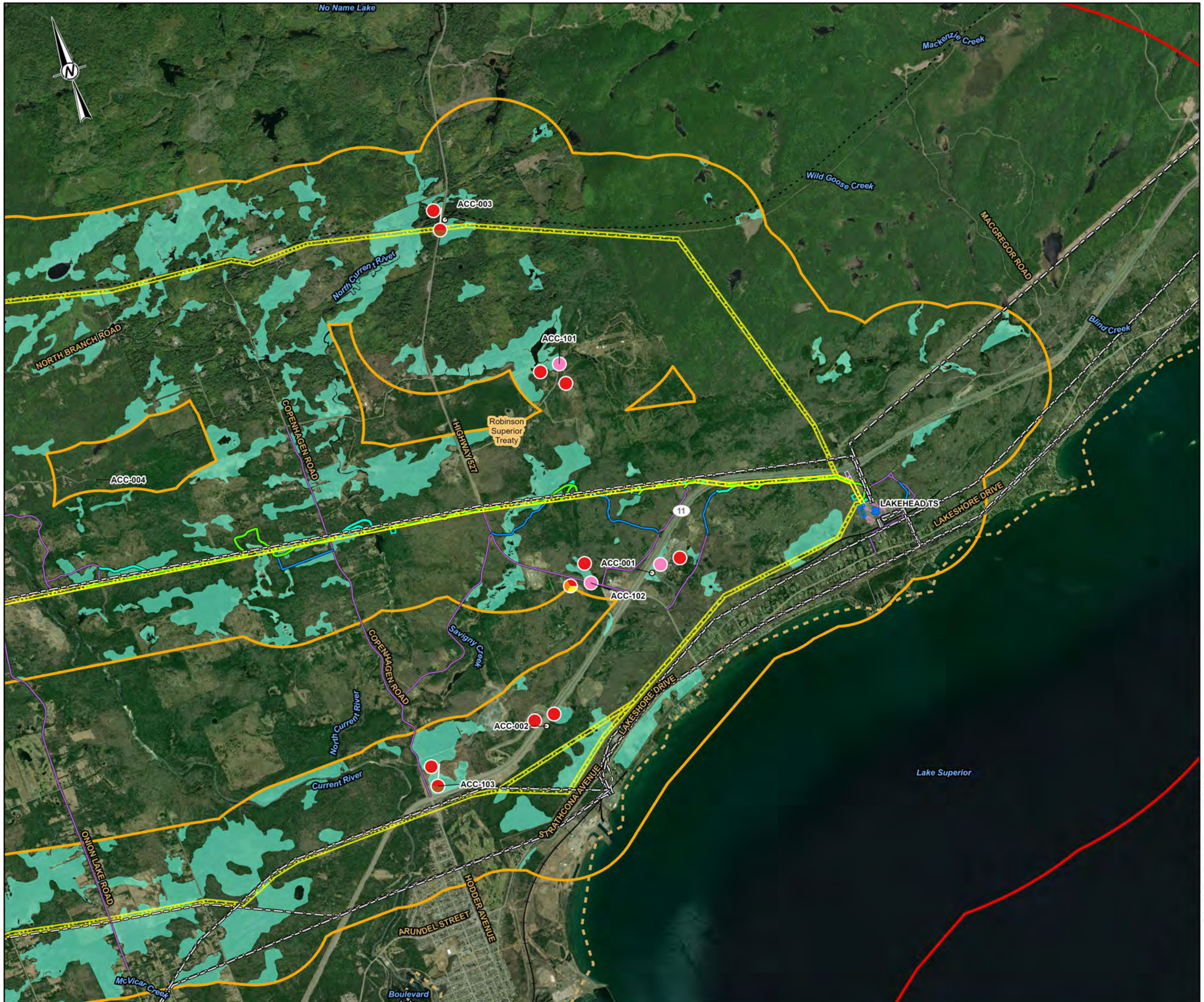
YYYY-MM-DD	2023-05-12
DESIGNED	GW
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0025	A	3.2-2-39

Figure 3.2-4: Gray Fox Field Surveys and Occurrence Records

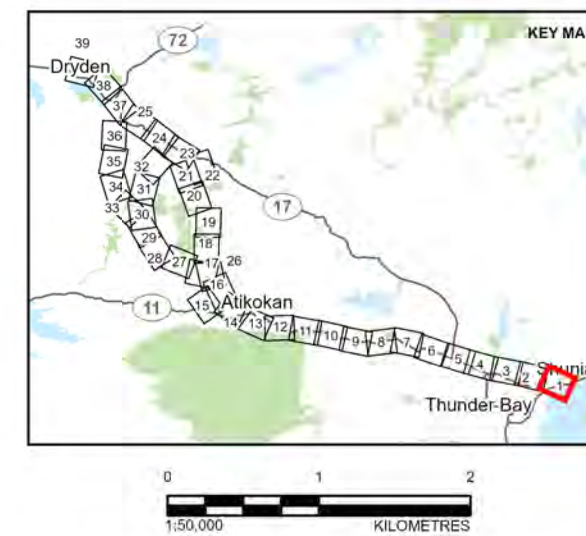
This figure includes confidential species at risk information that cannot be released publicly. The figure will be submitted to applicable regulatory agencies under separate cover.

Figure 3.2-5: Amphibian Candidate Breeding Habitat and Call Count Stations Location



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- SPECIES HEARD
- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

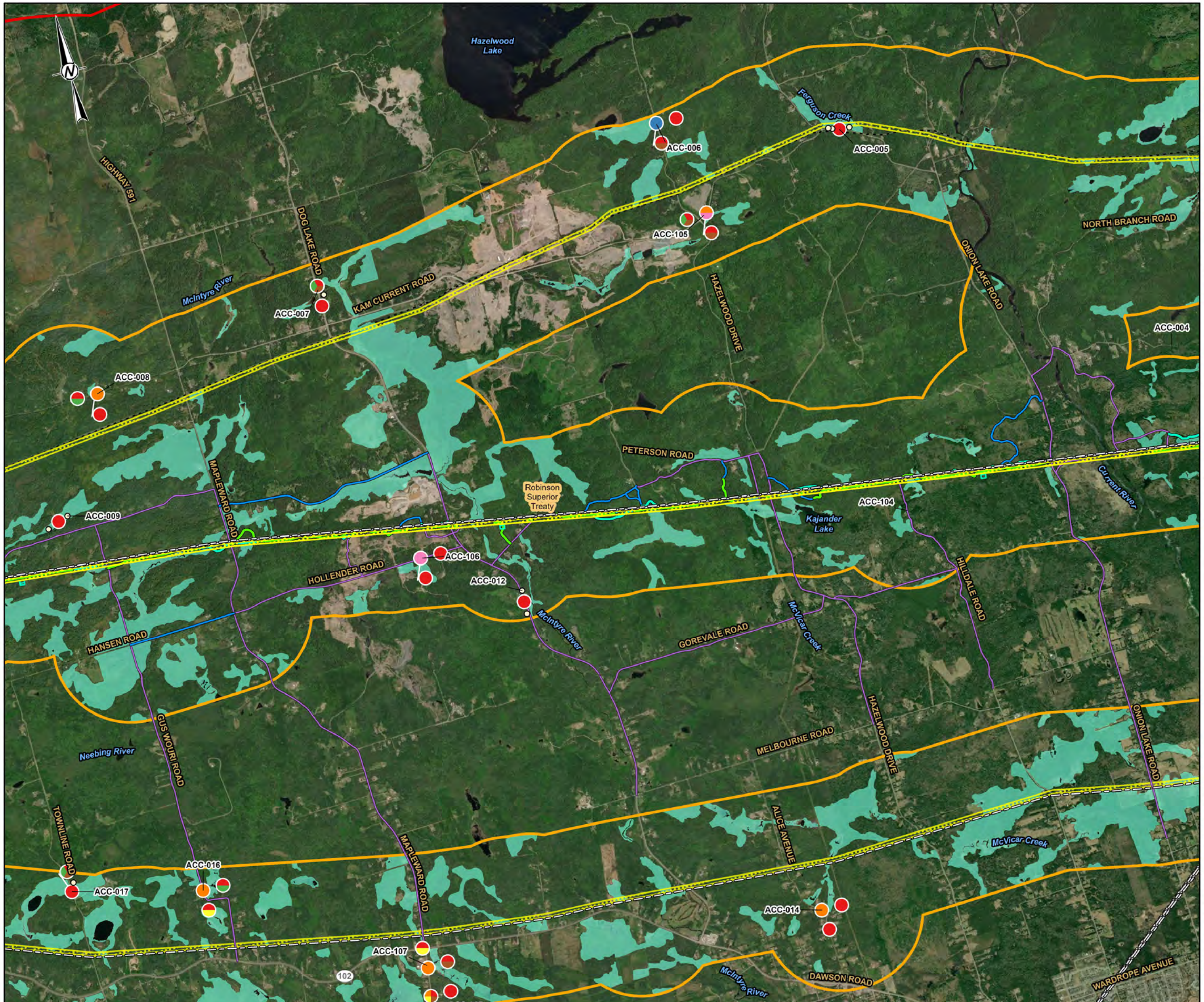
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT
wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-1



LEGEND

SPECIES HEARD
- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

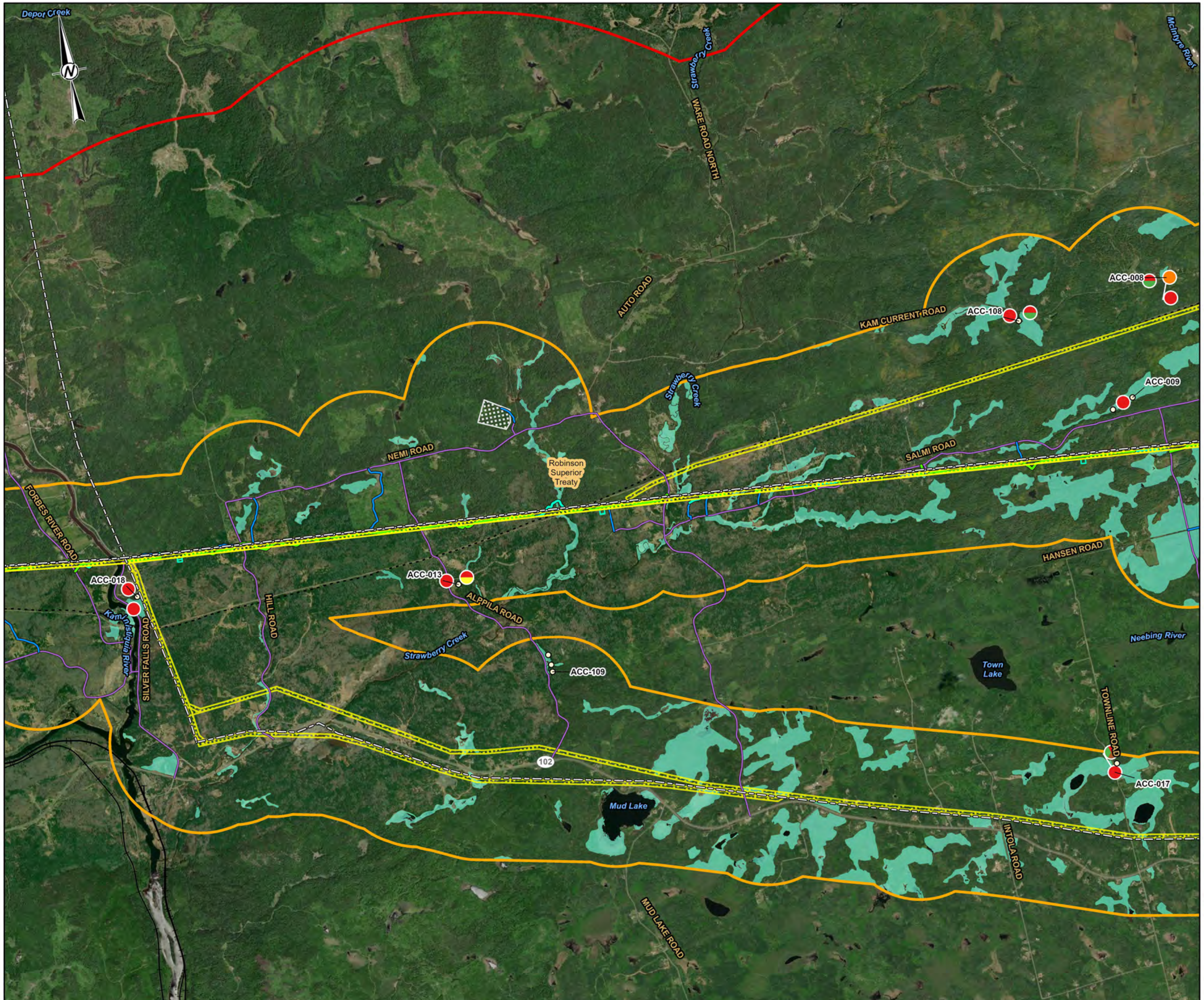
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-2



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

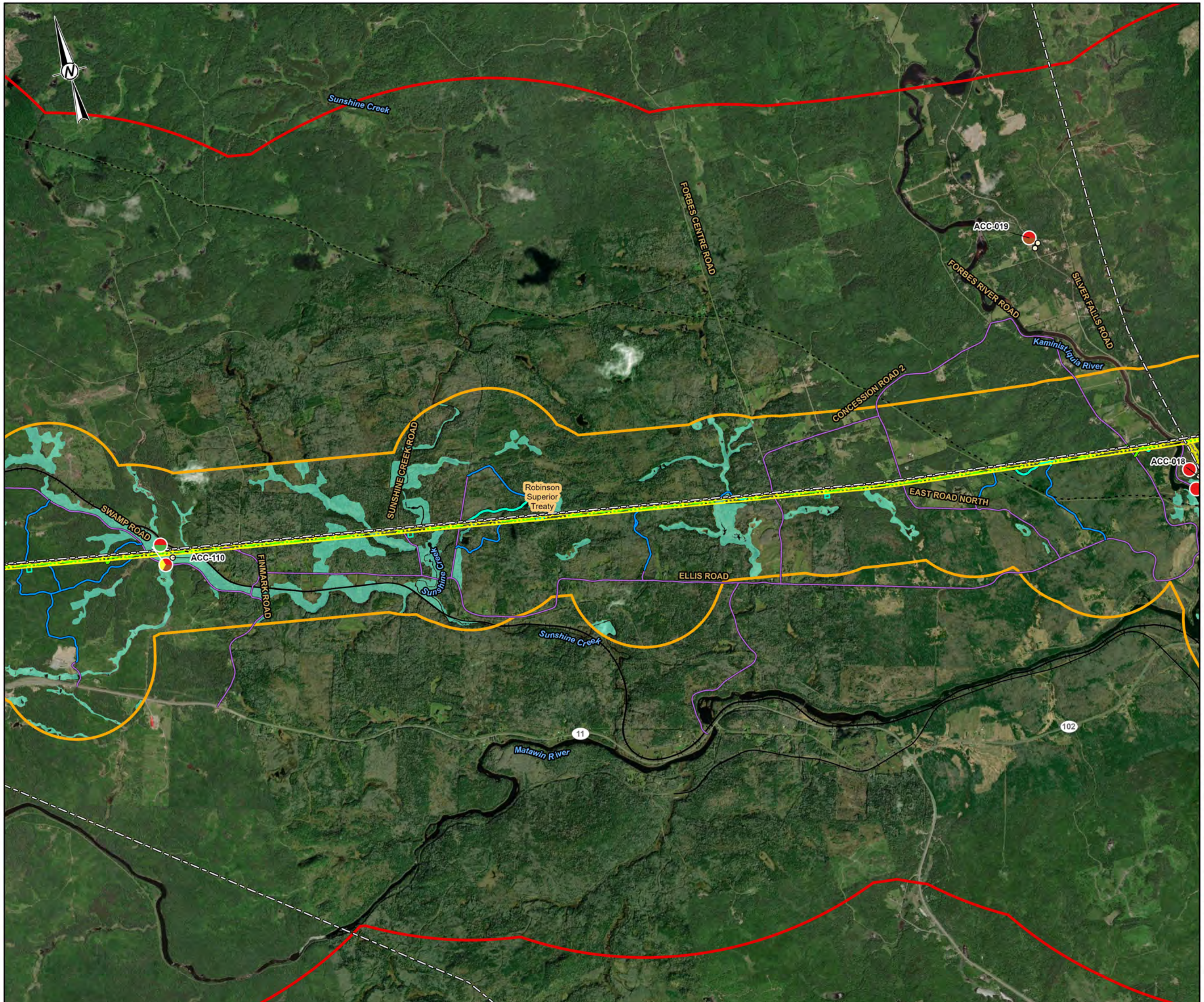
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-3



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

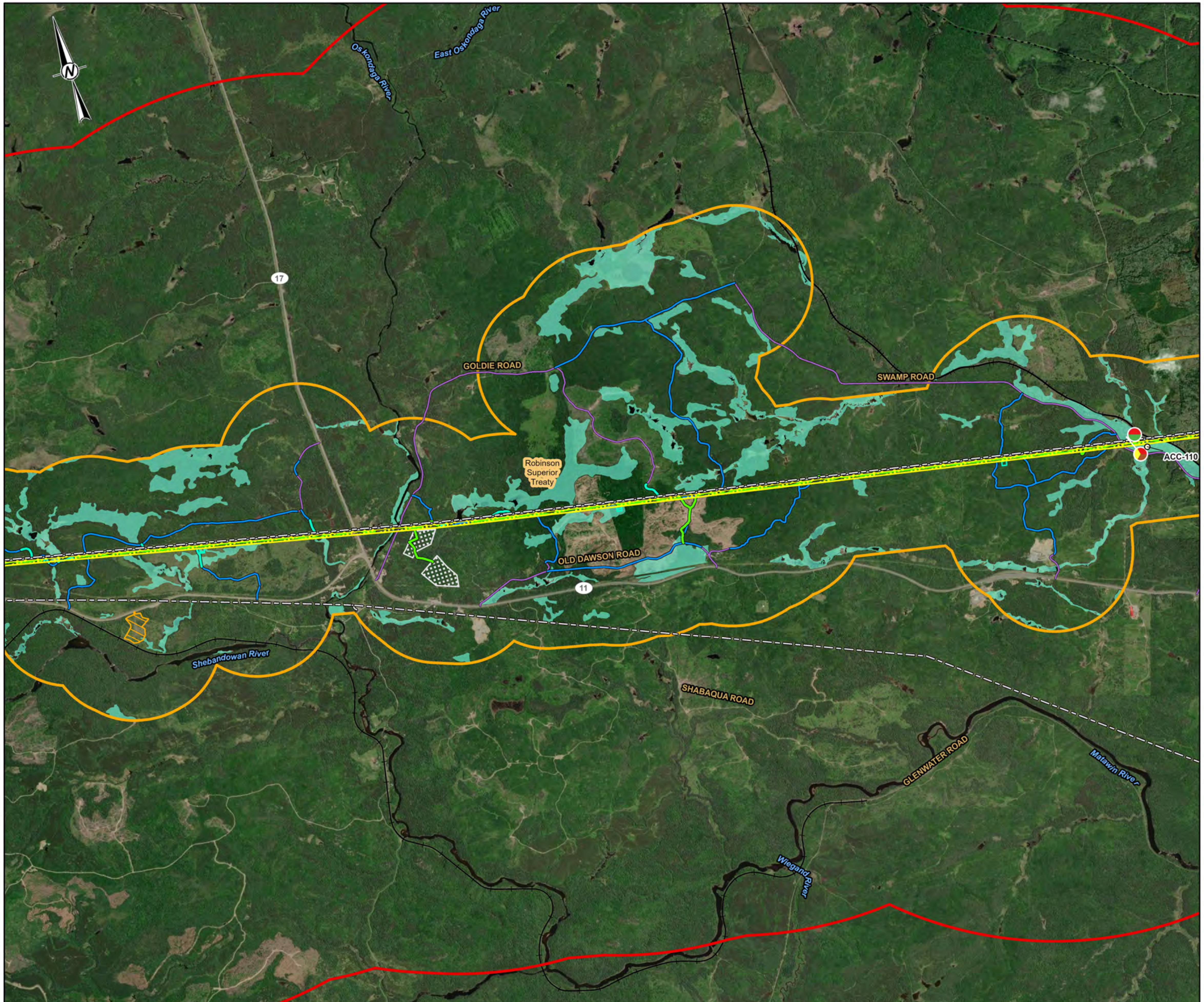
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

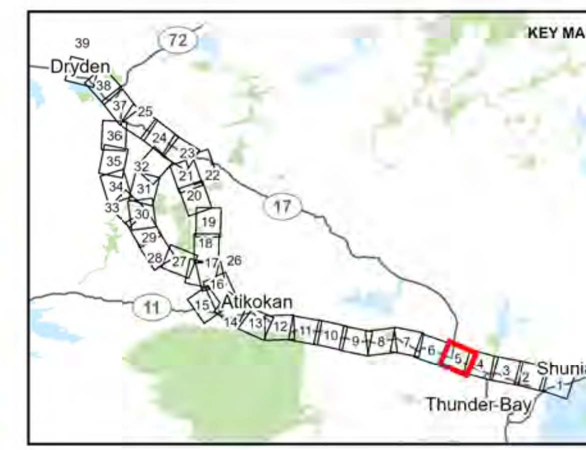
YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-4



LEGEND

SPECIES HEARD
- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

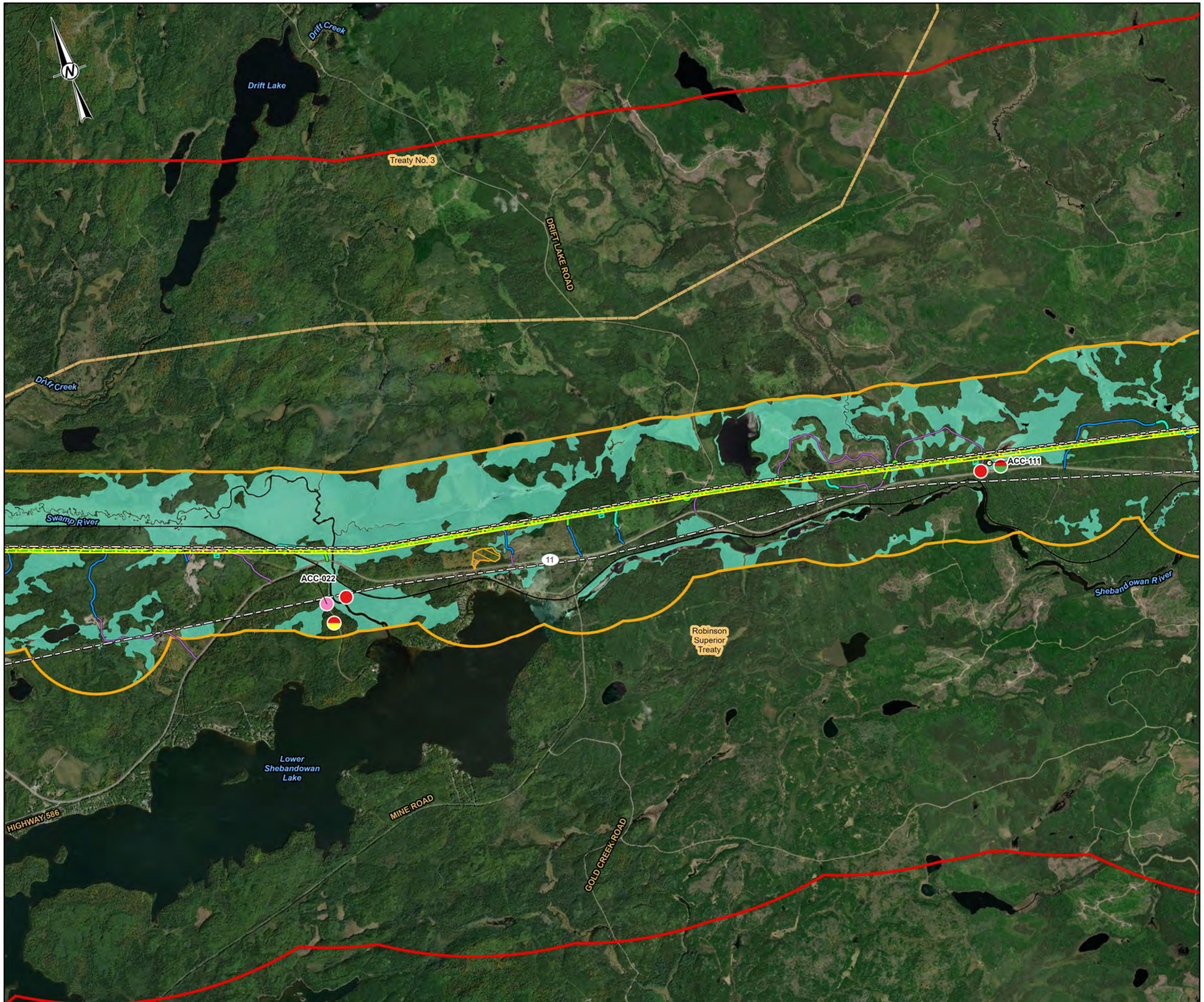
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

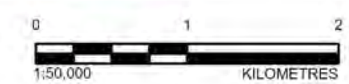
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-5



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

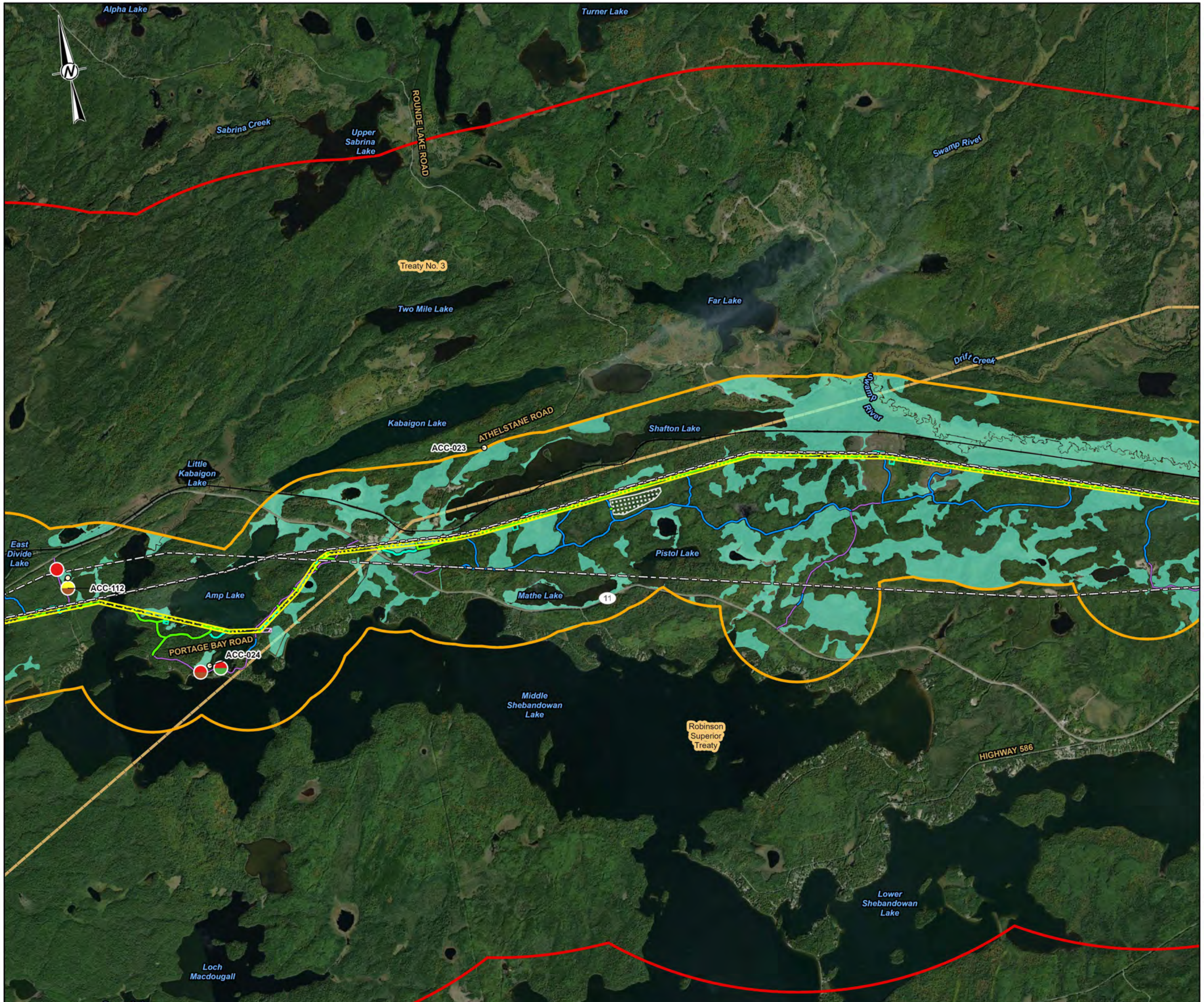
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-6



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

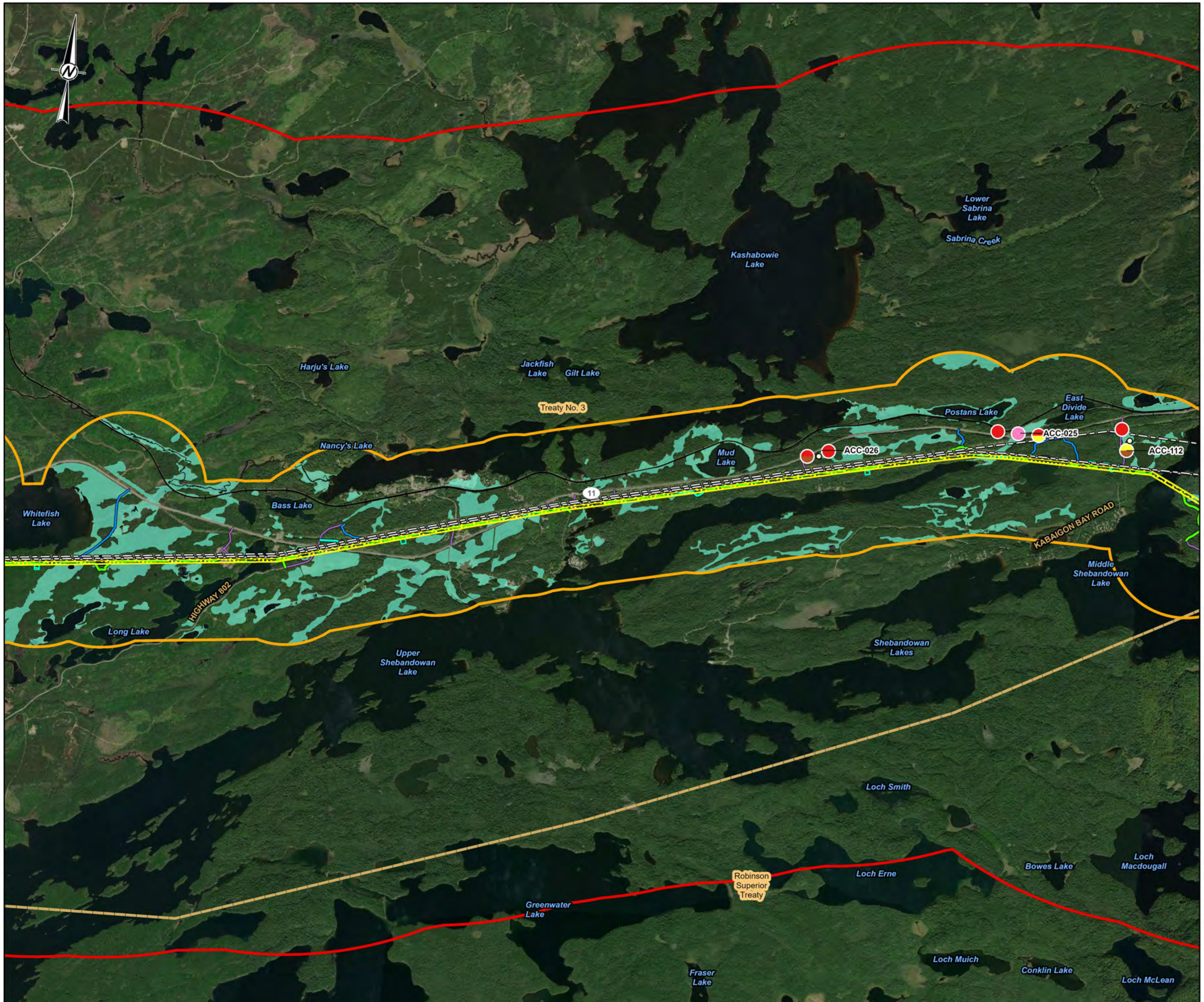
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-7



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

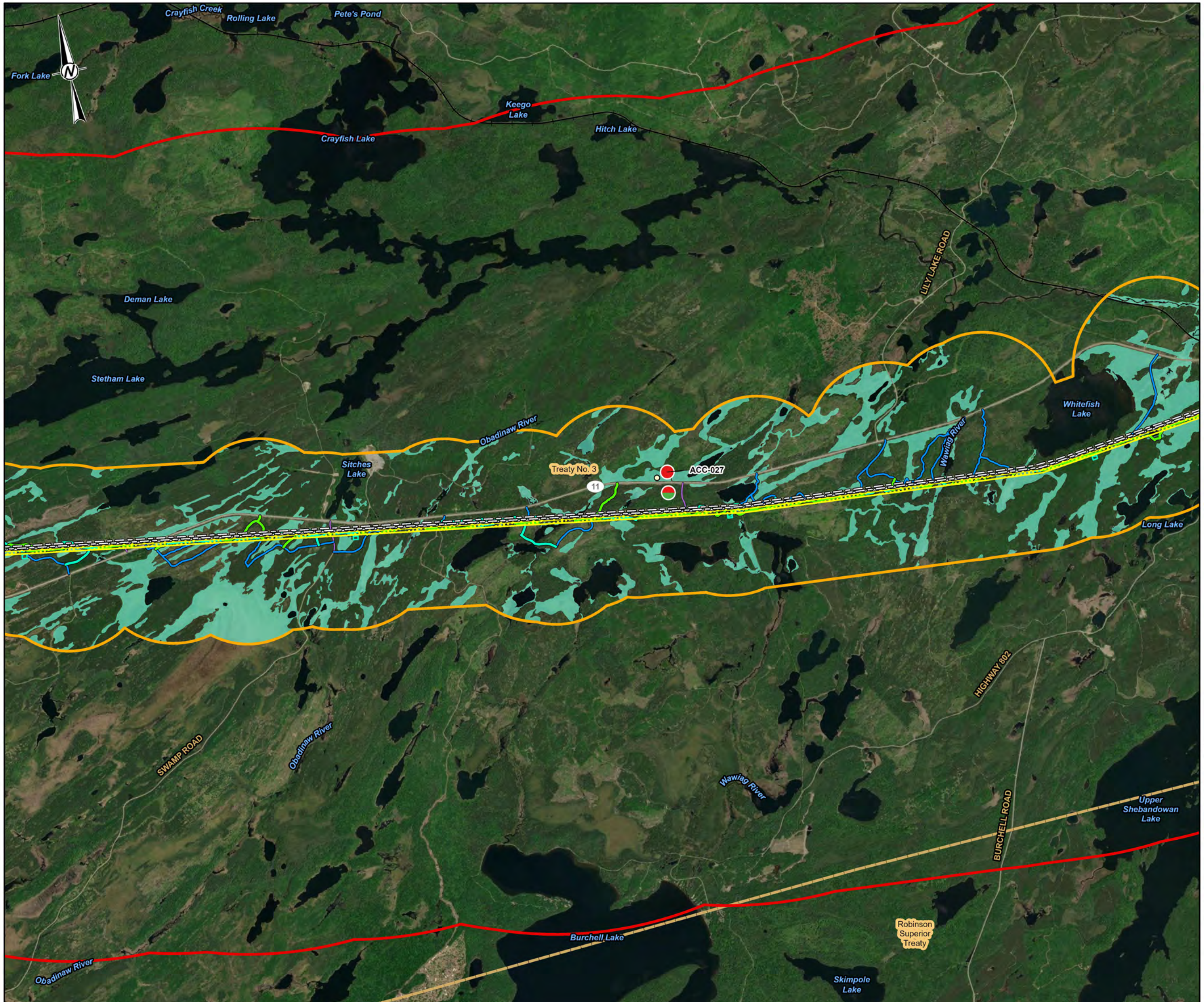
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-8



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

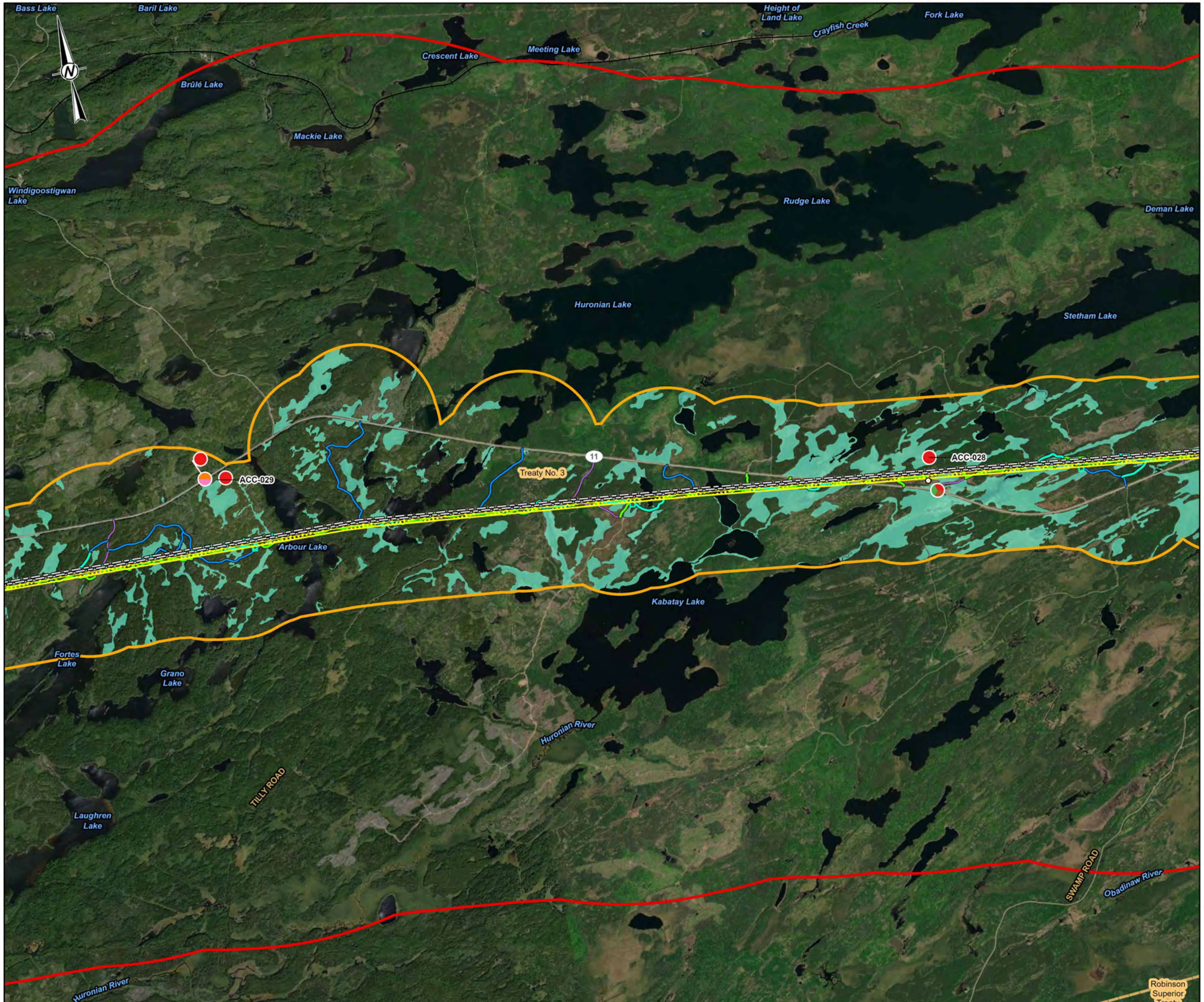
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

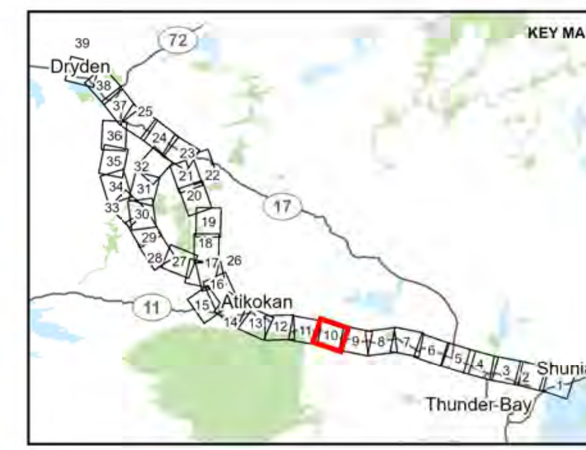
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-9



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

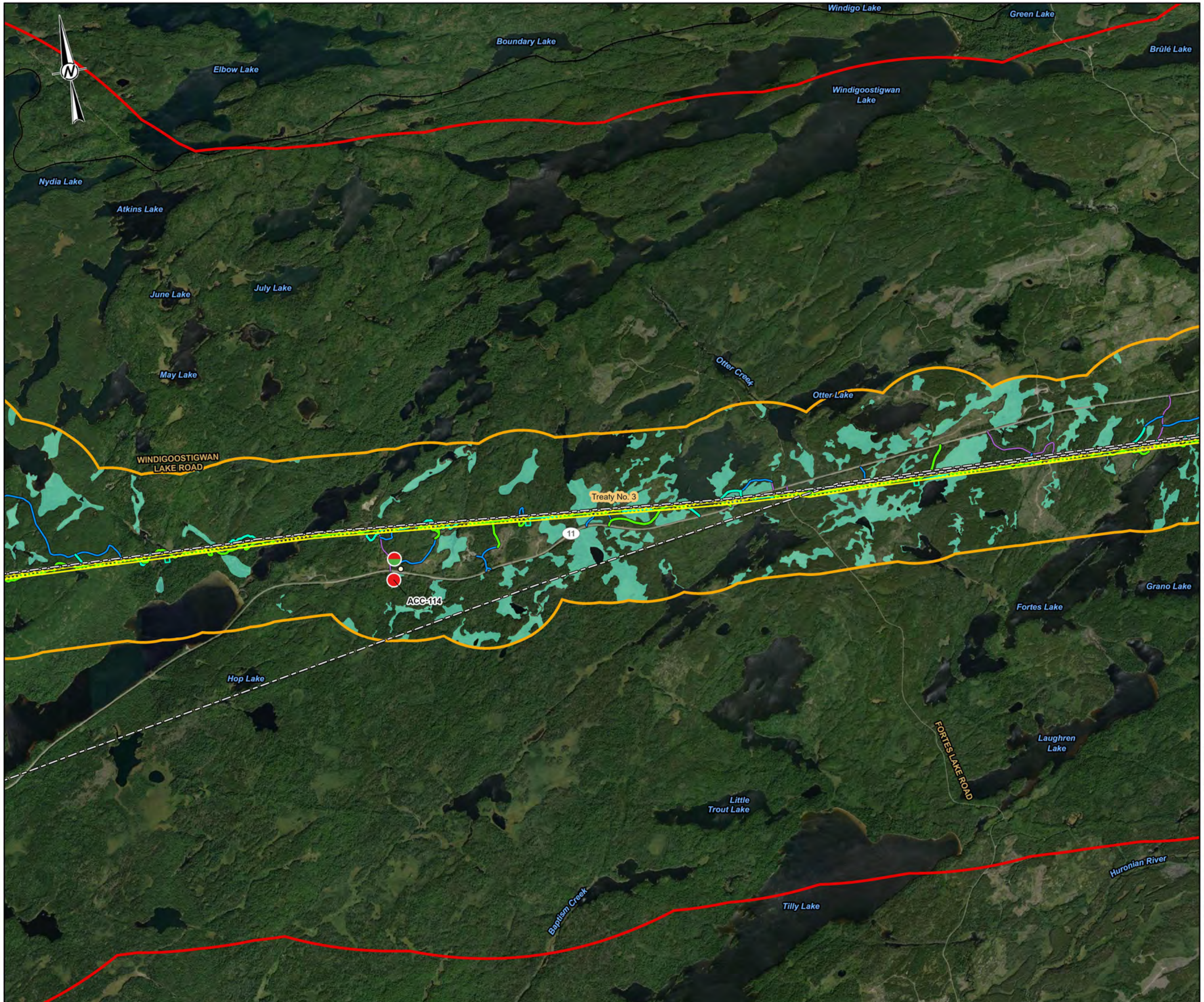
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-10



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

KEY MAP

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

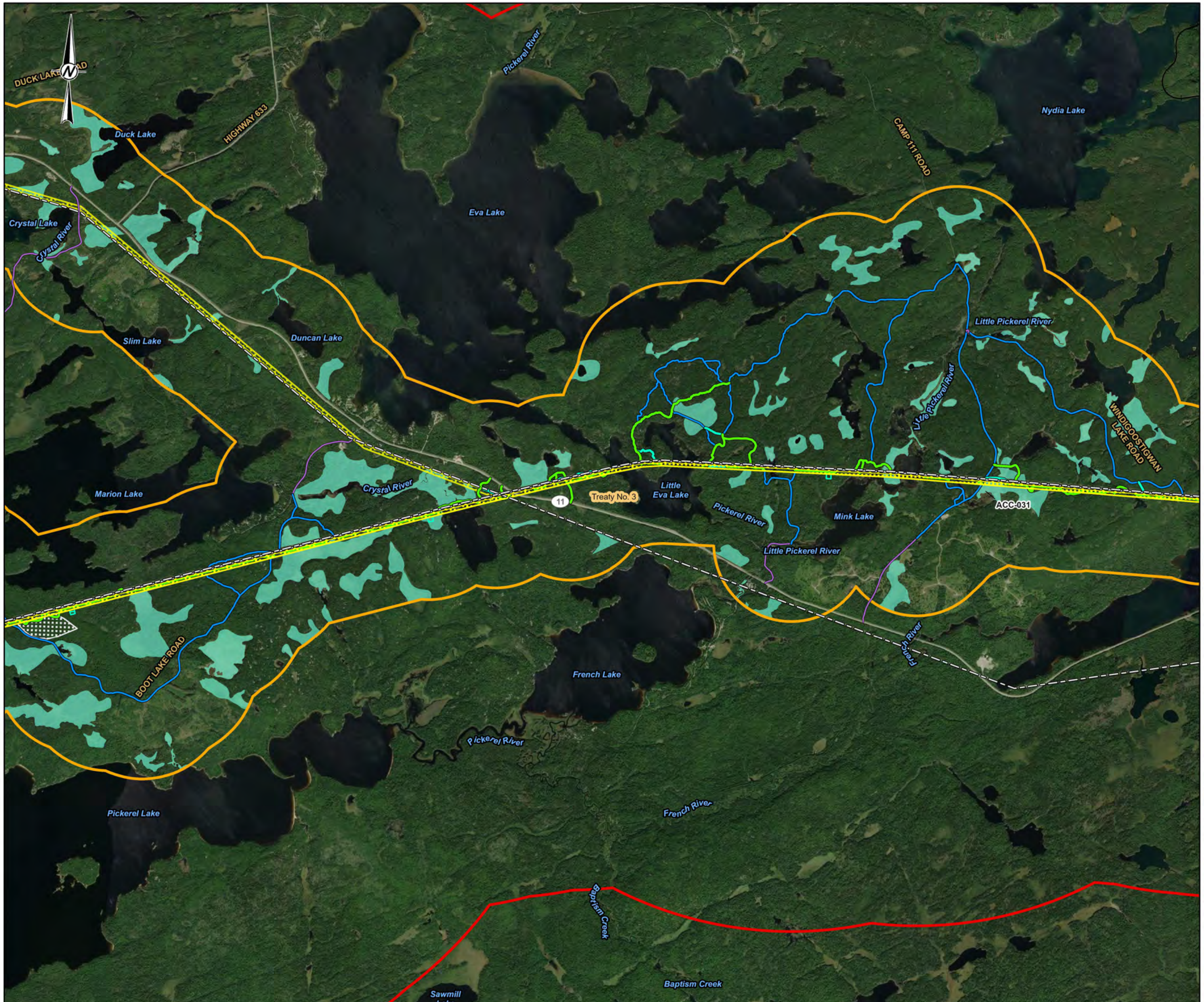
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-11



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

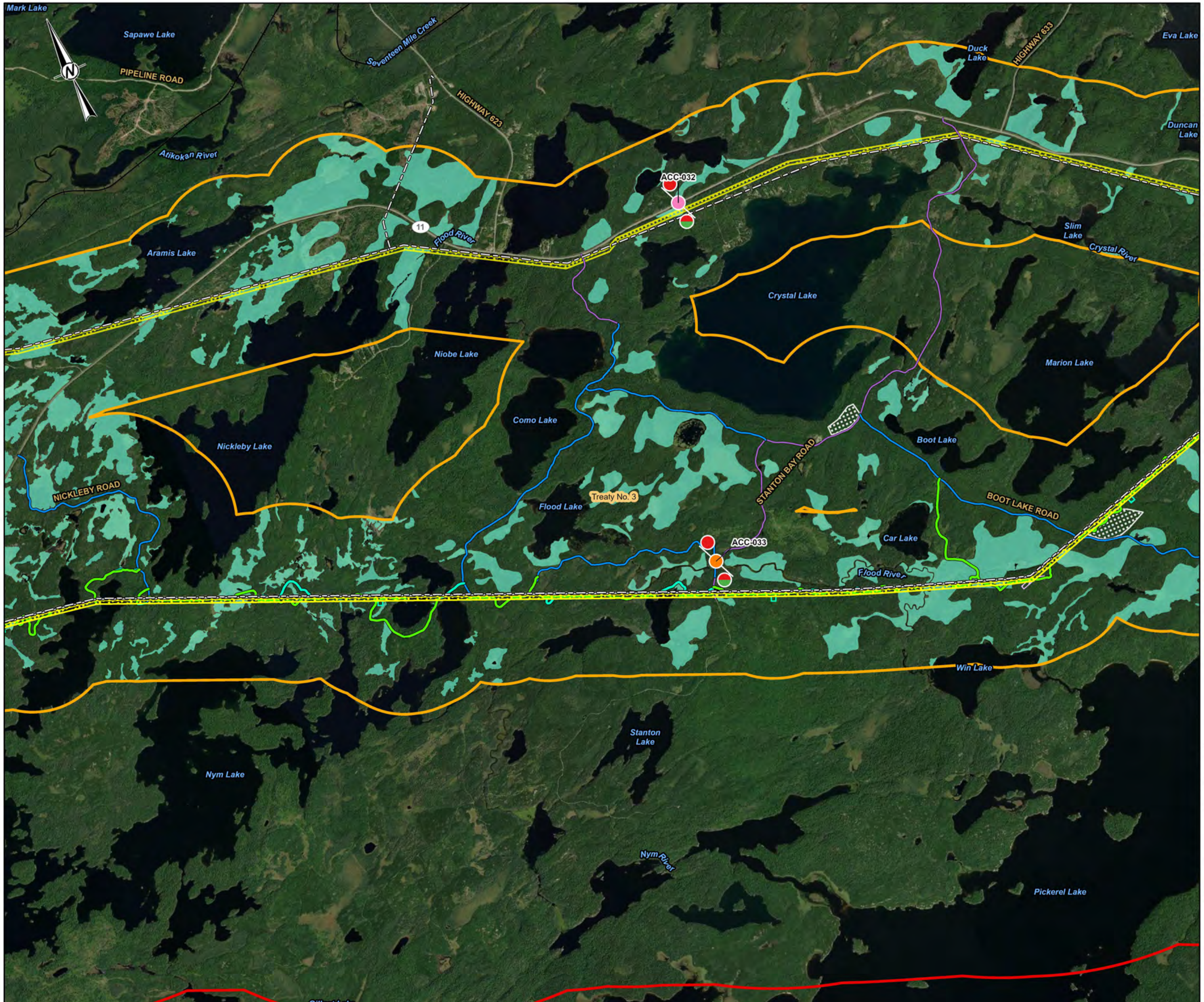
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-12



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

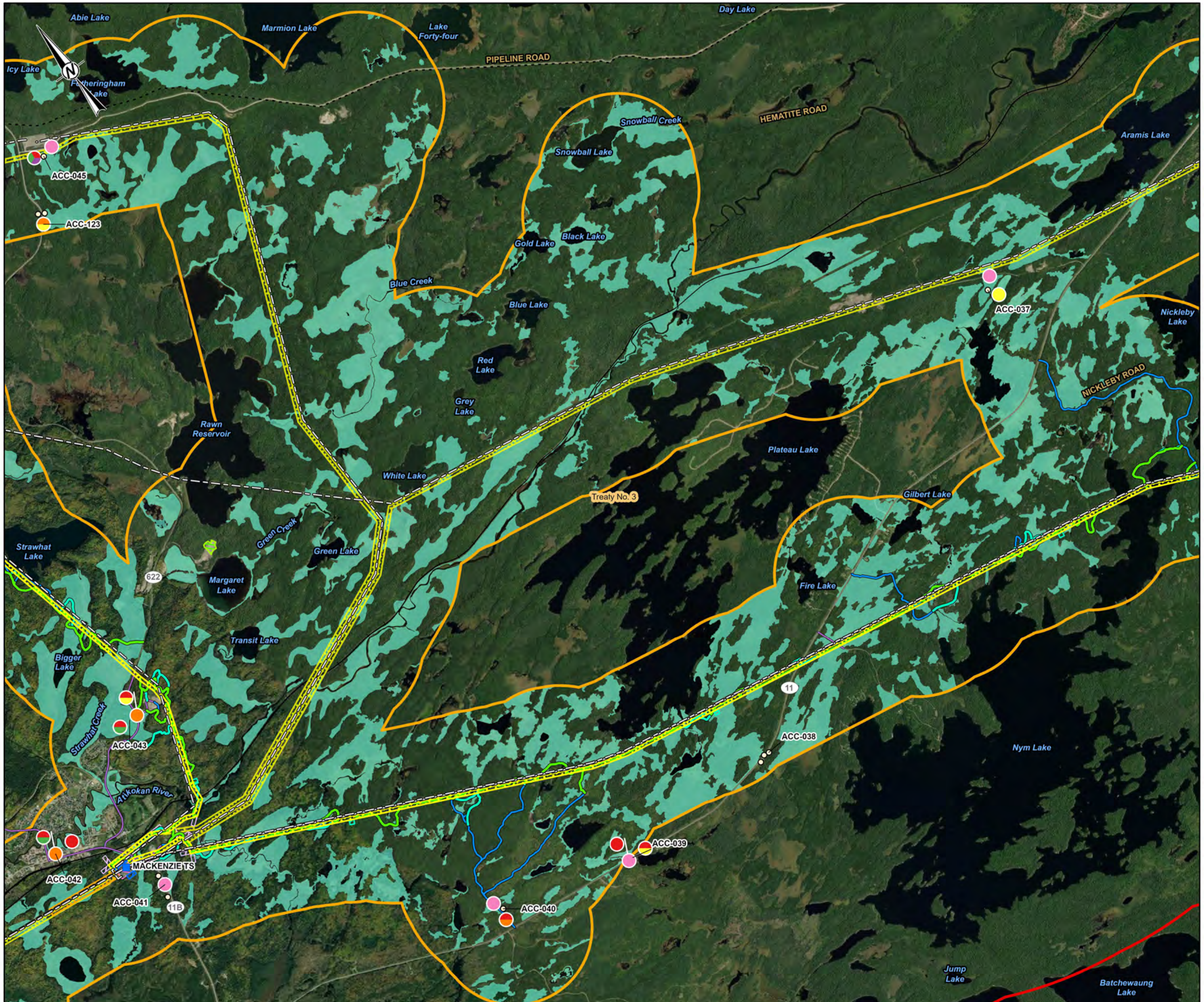
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-13



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- SPECIES HEARD
- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

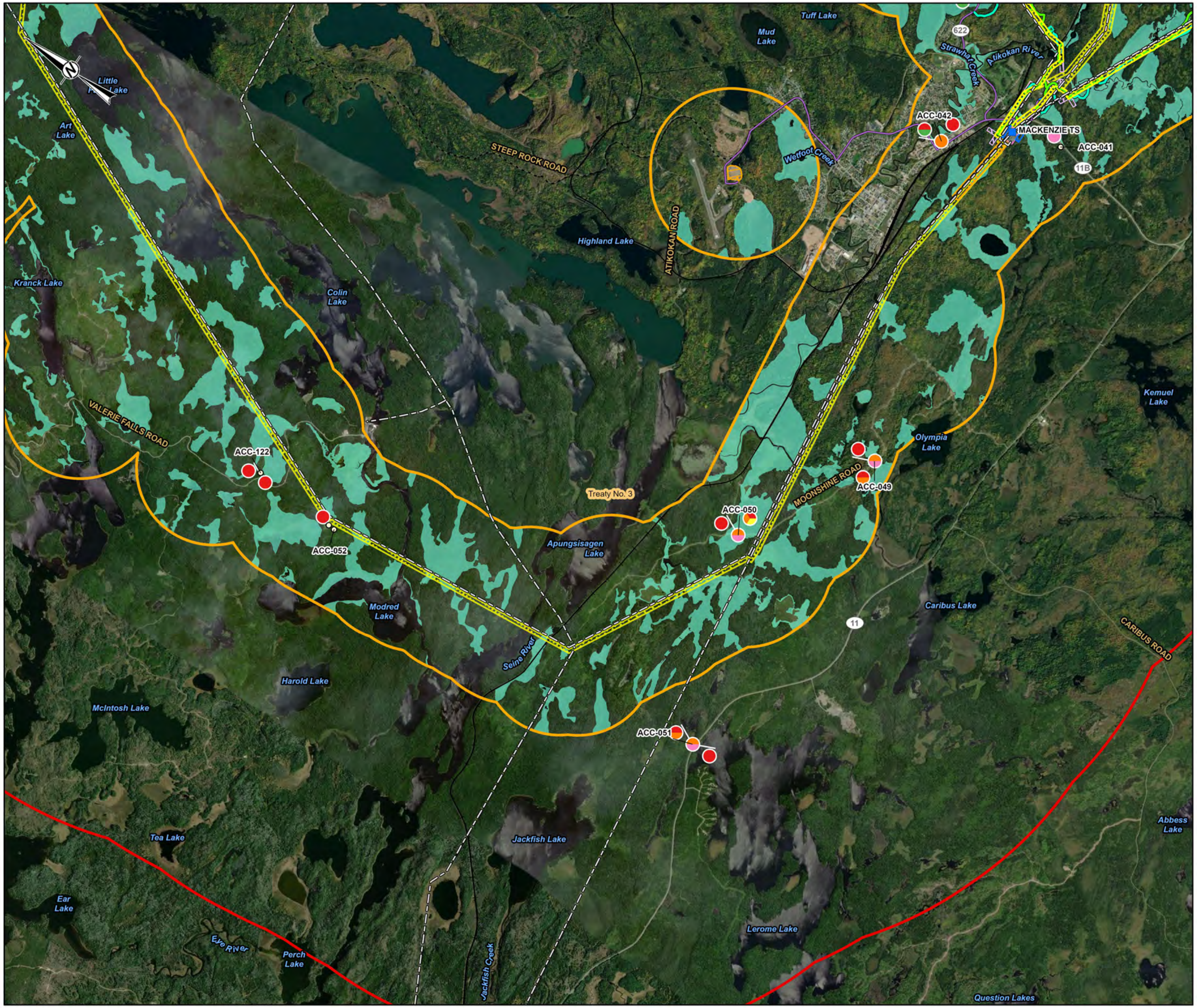
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT
wsp

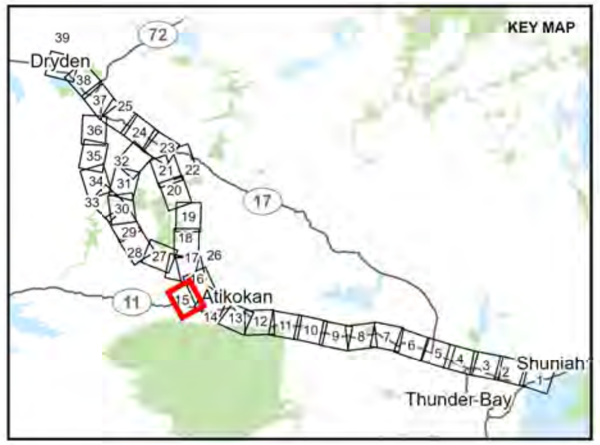
YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-14



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- SPECIES HEARD
- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

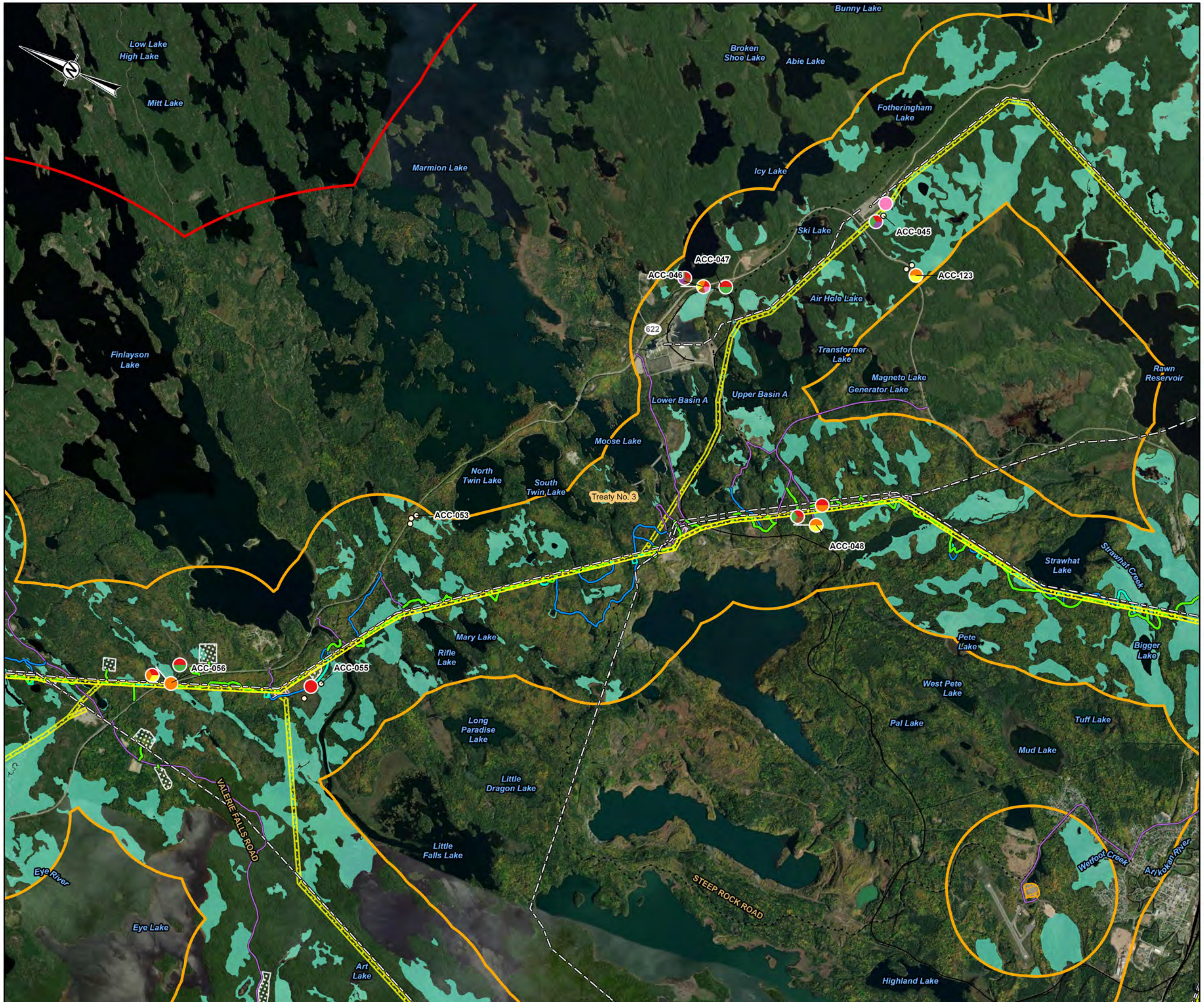
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT: wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV	FIGURE
20137728	0031	A	3.2-5-15



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

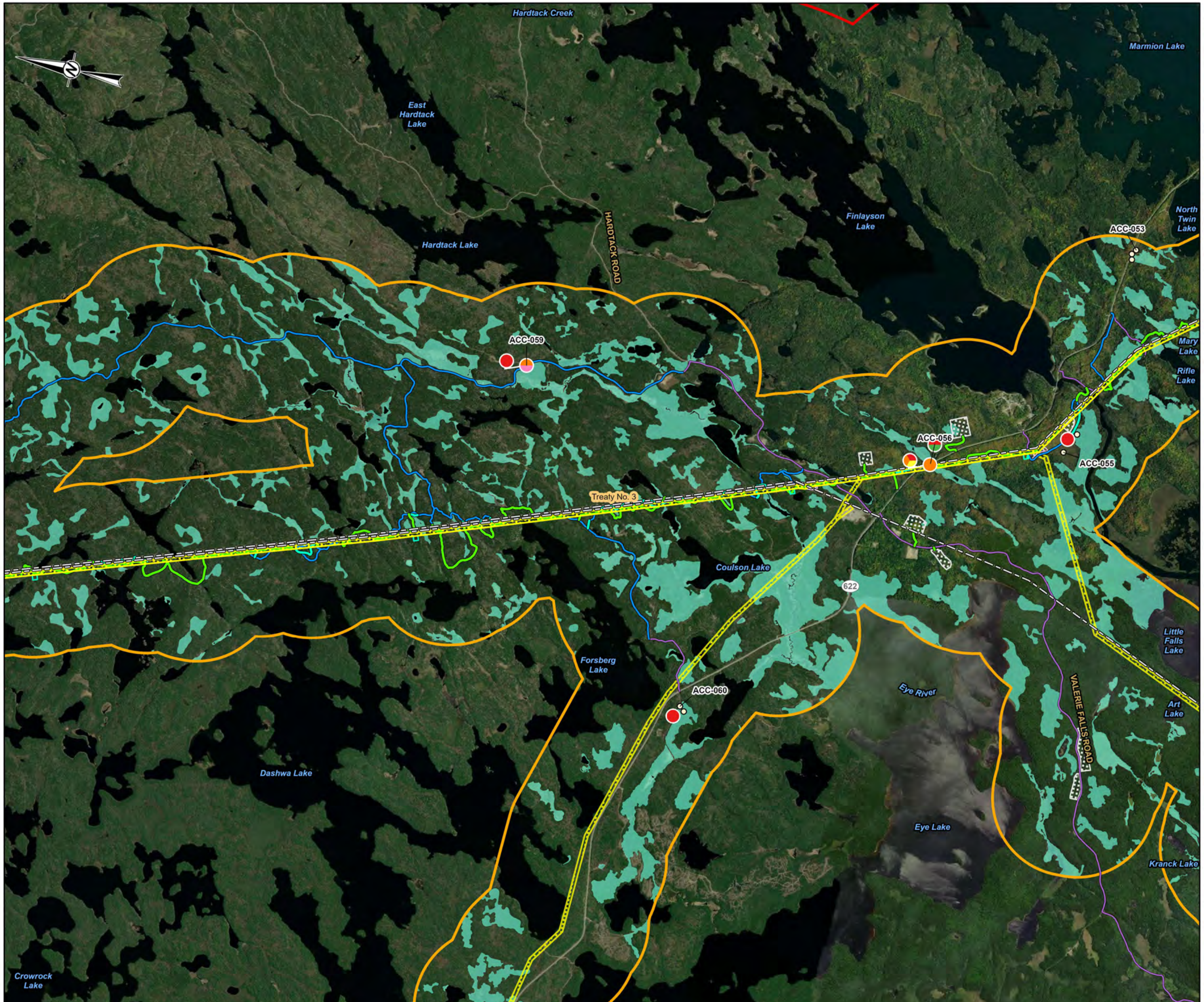
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

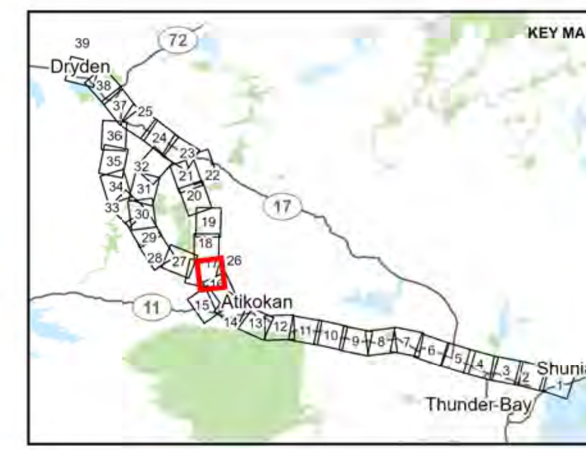
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-16



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

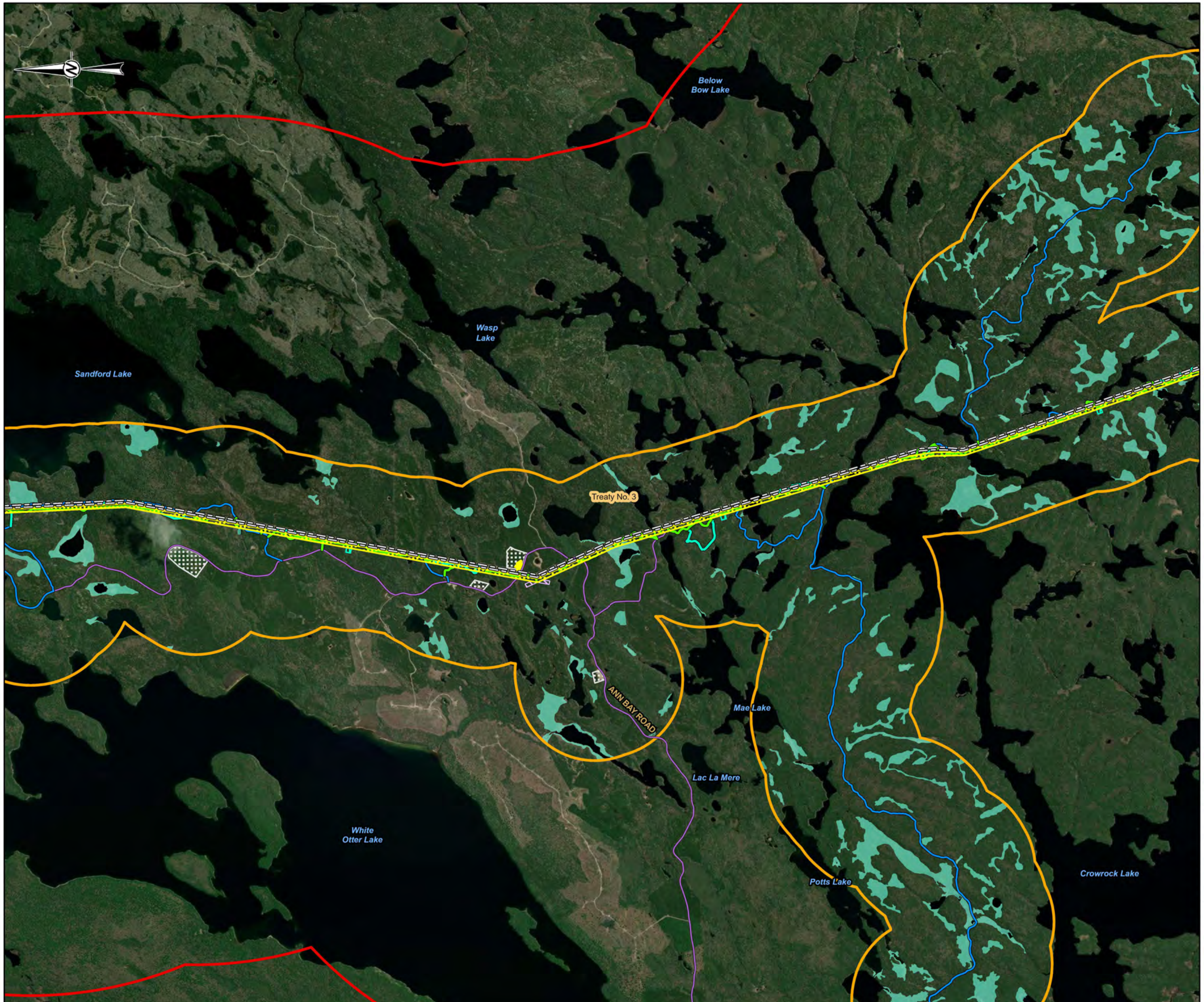
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-17



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

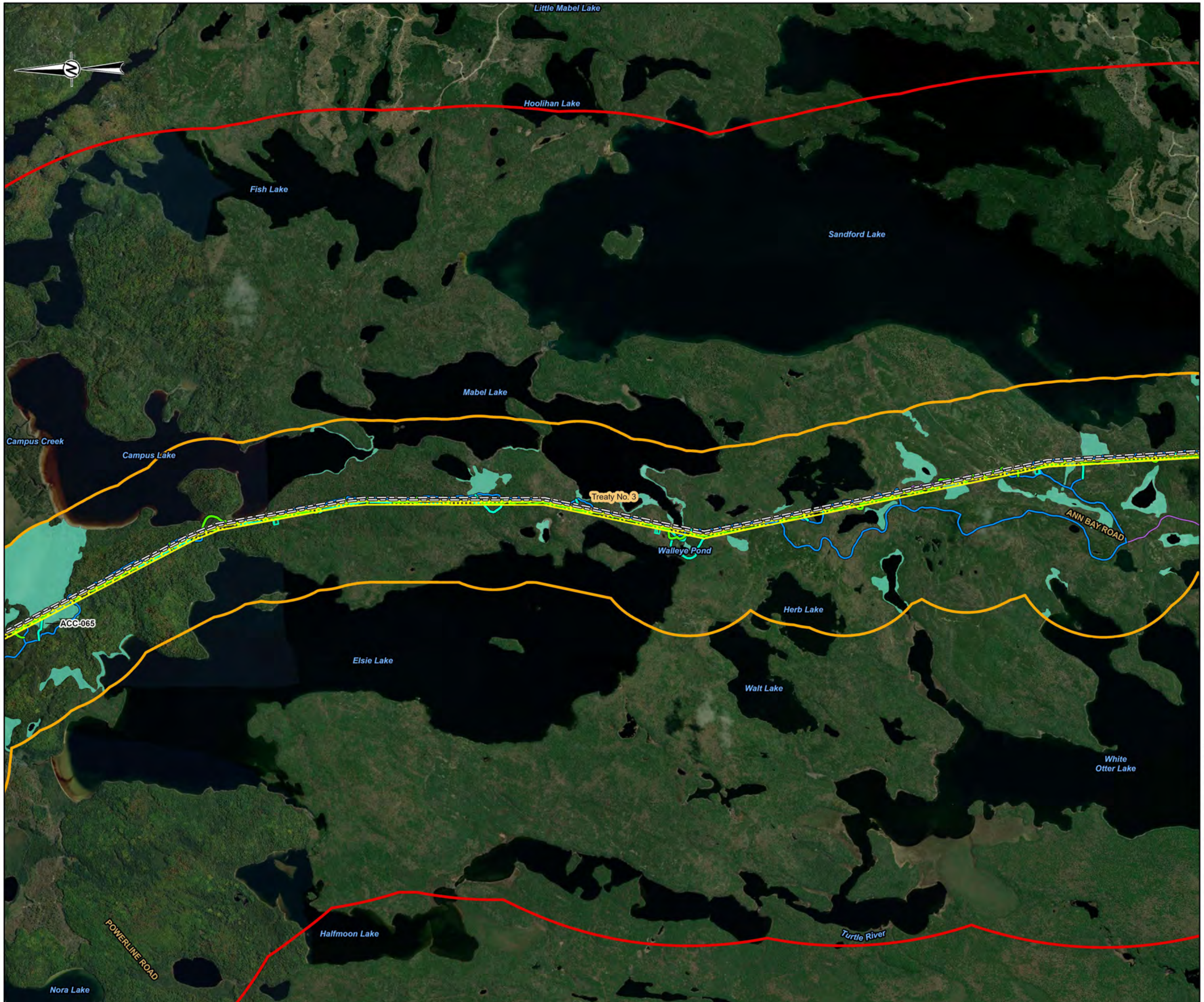
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-18



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

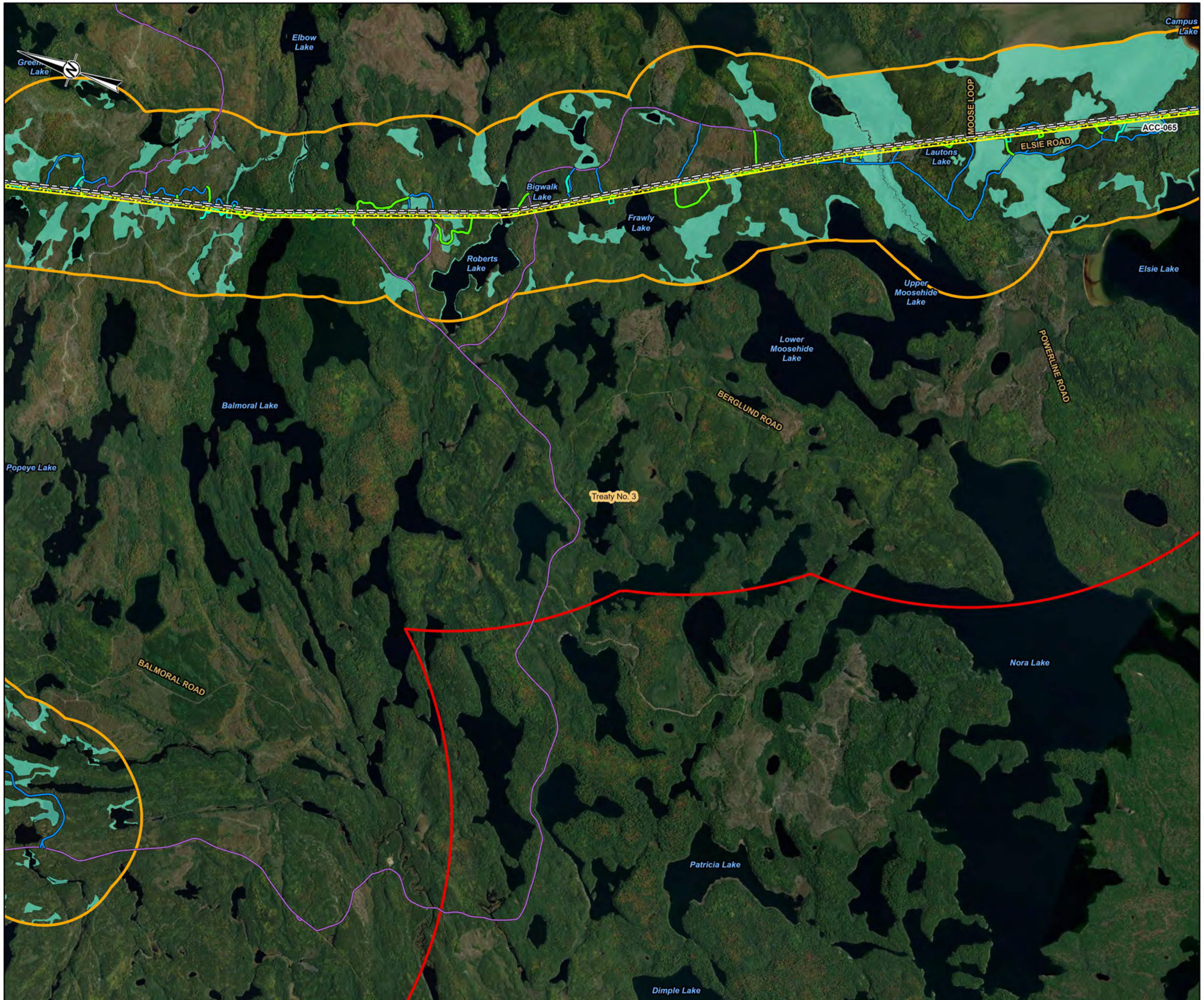
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-19



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

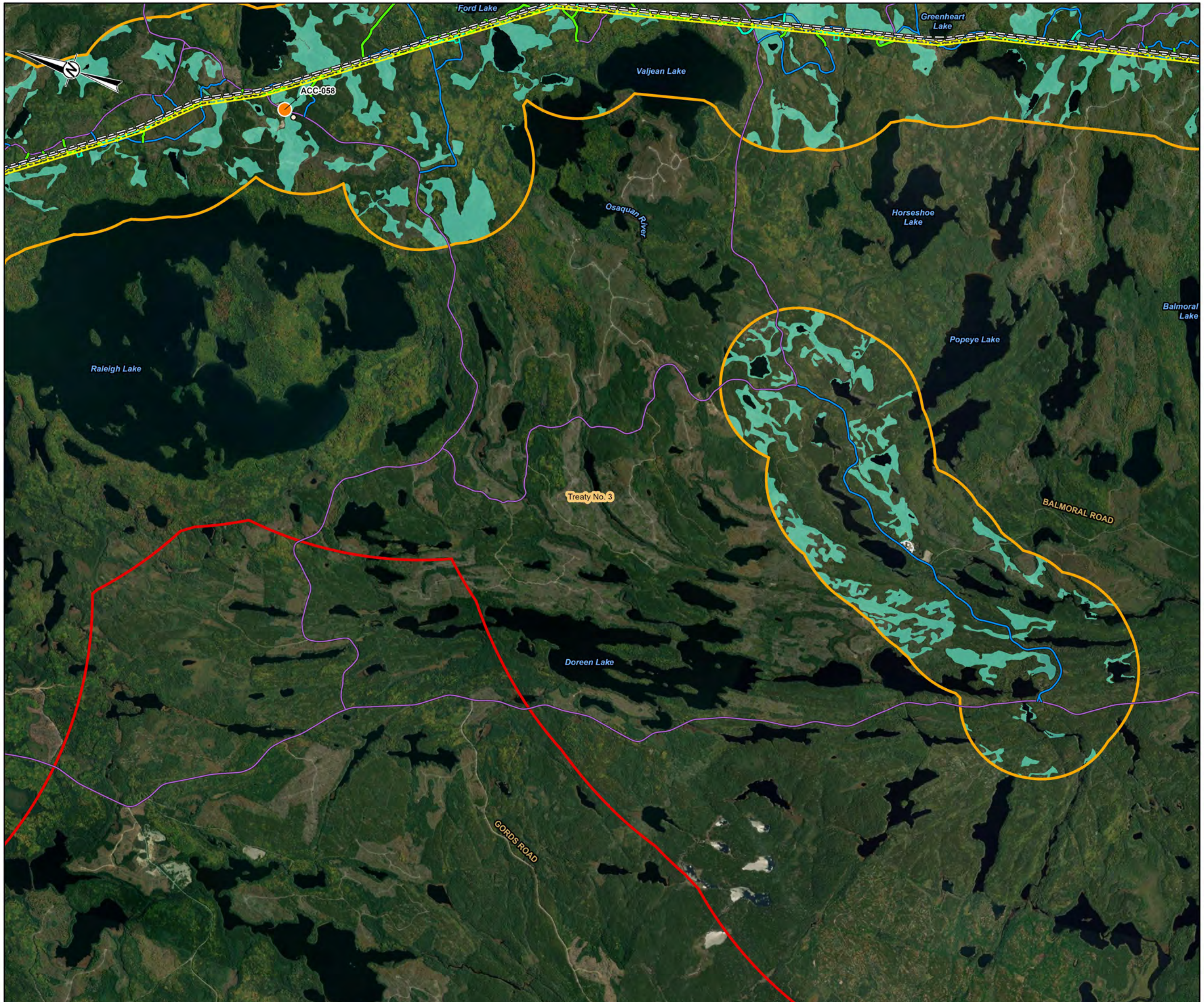
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

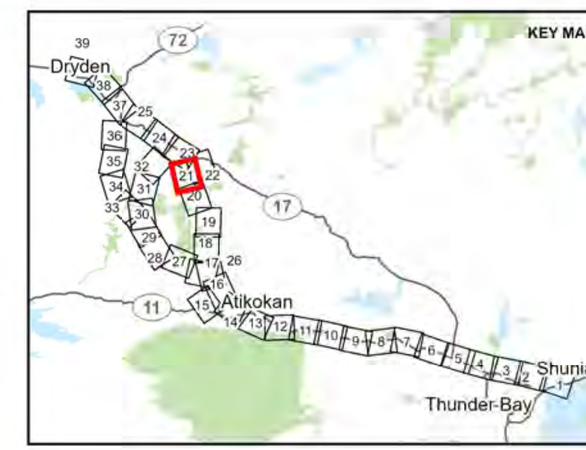
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-20



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

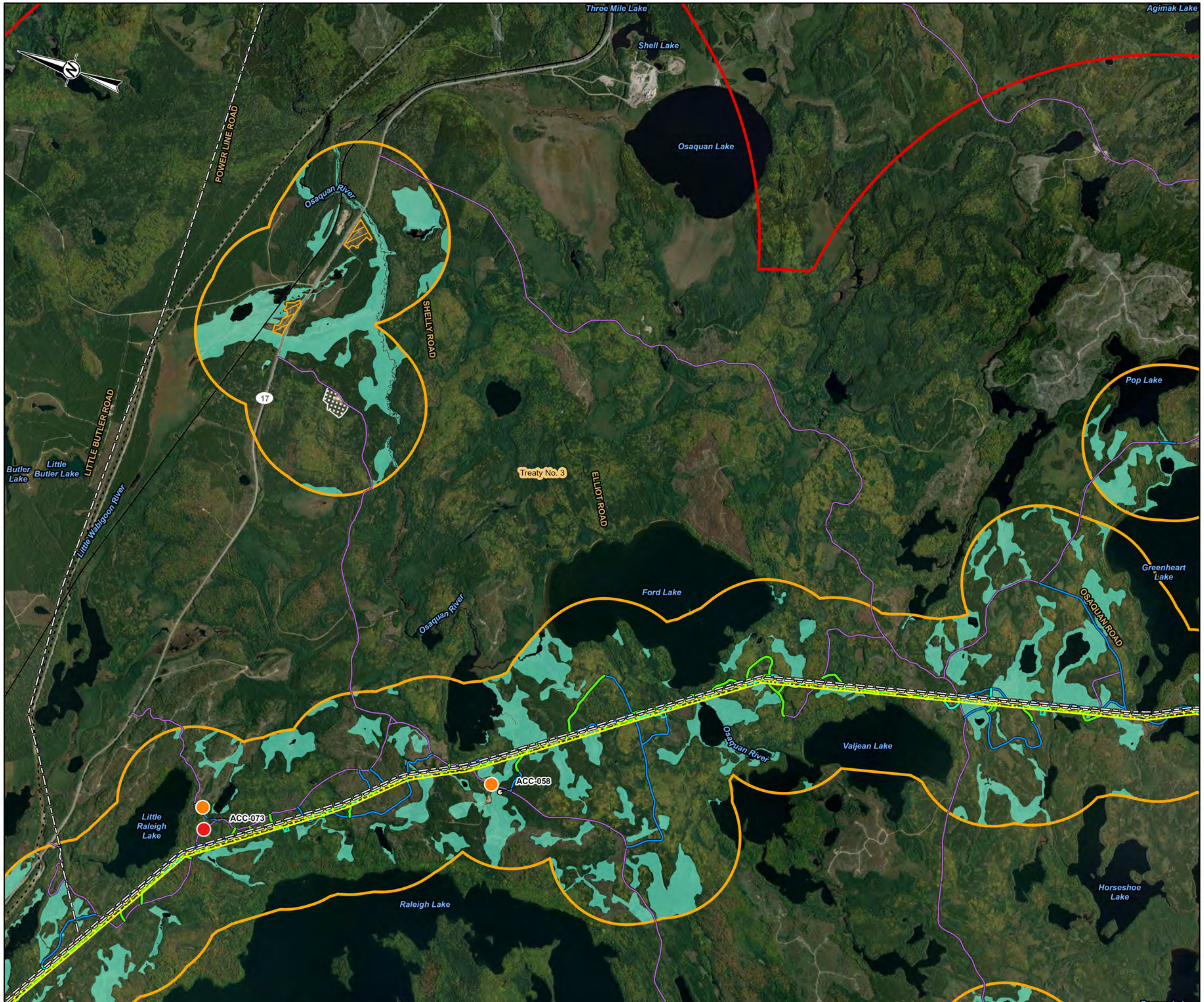
TITLE

AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-21



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

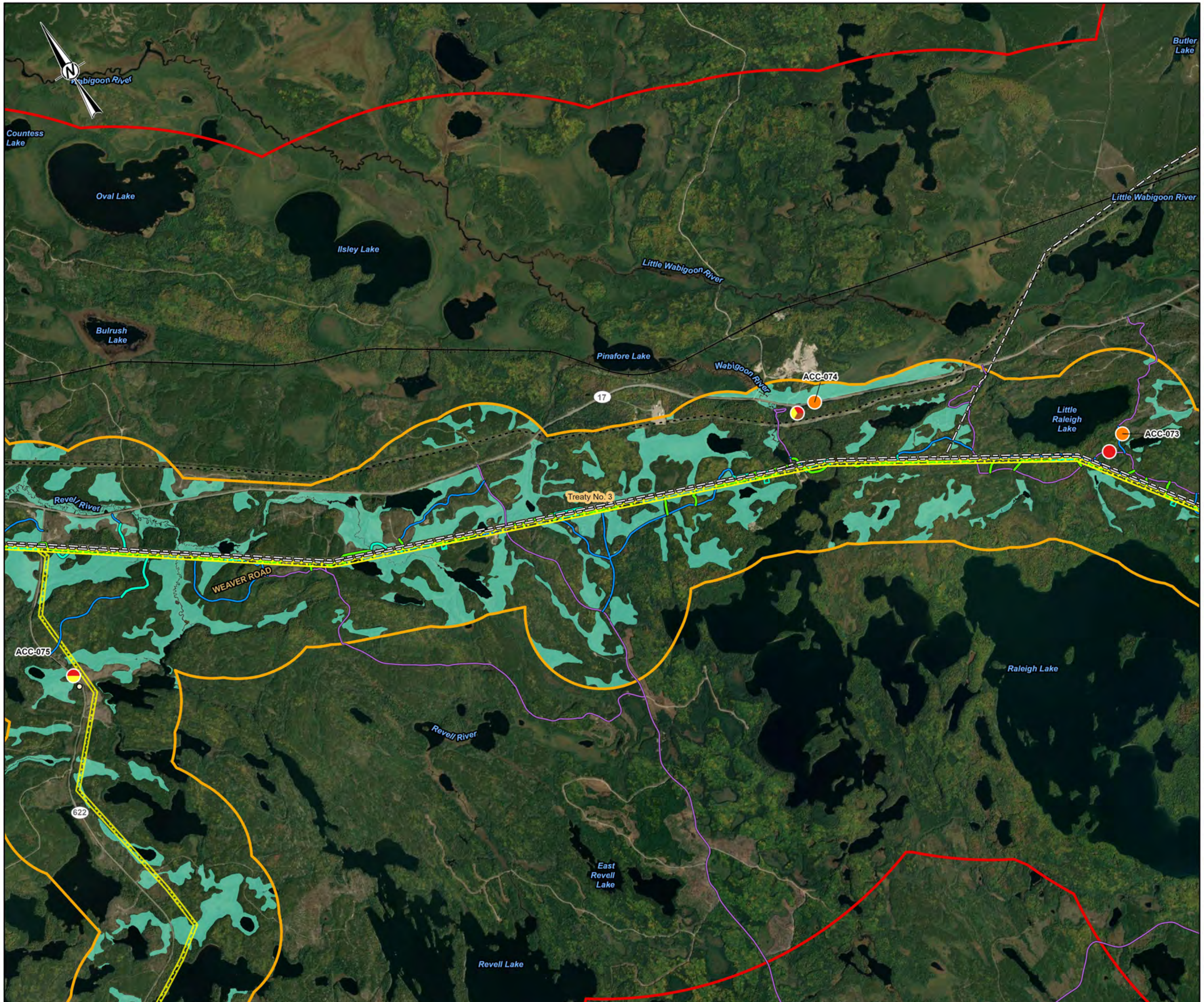
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

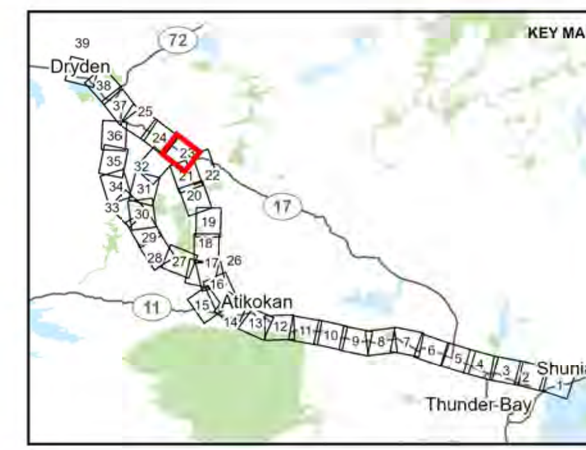
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-22



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

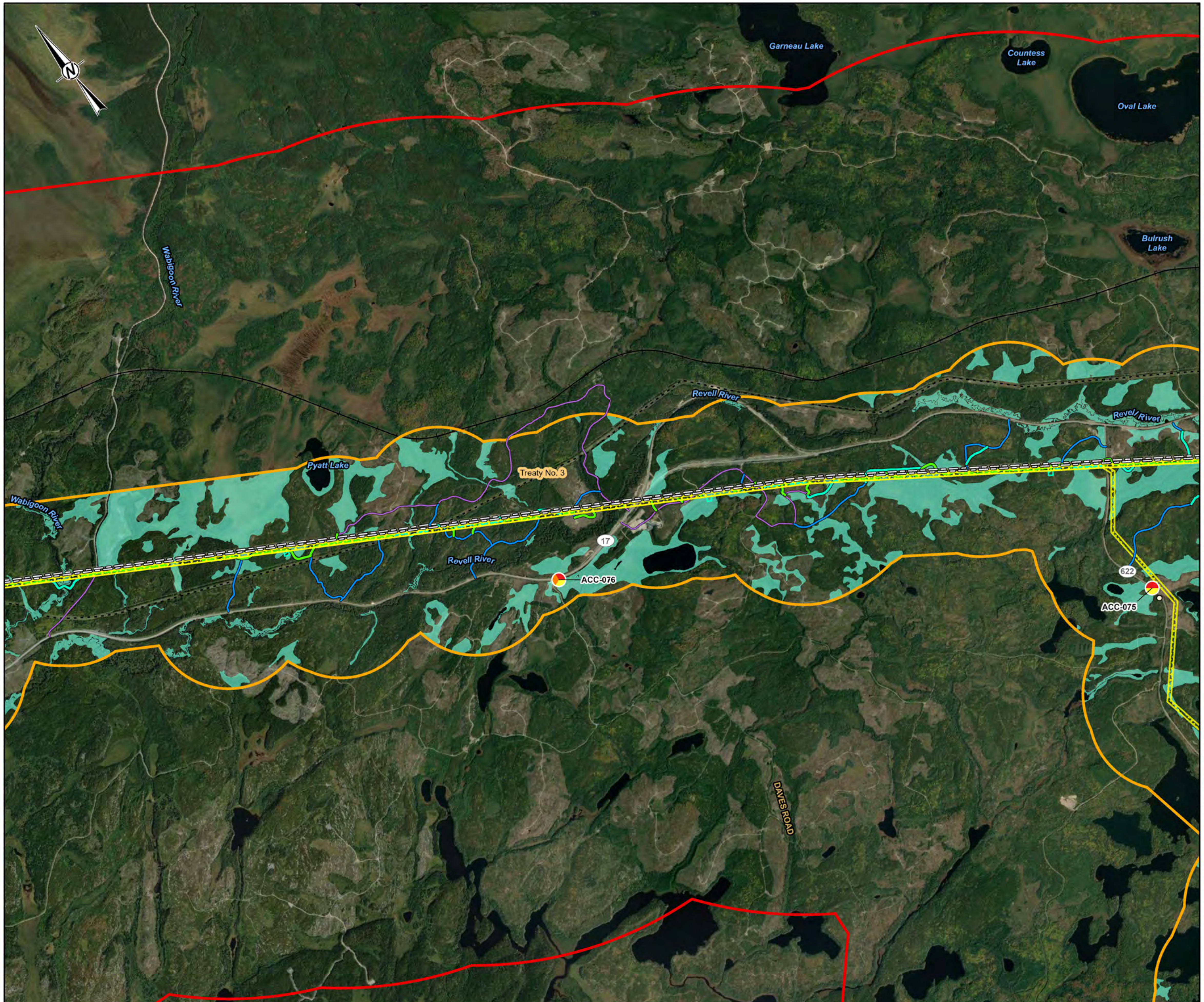
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-23



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

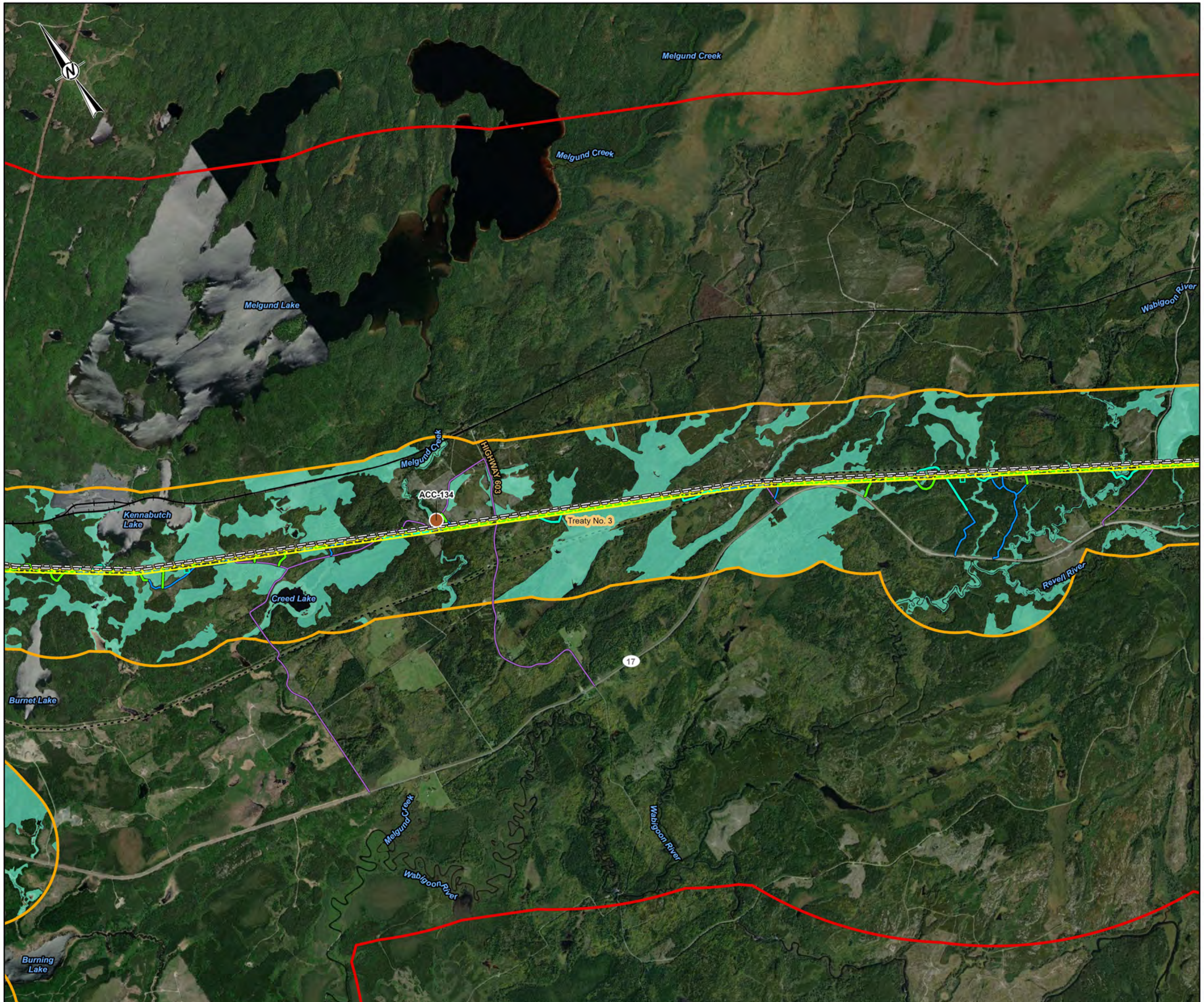
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

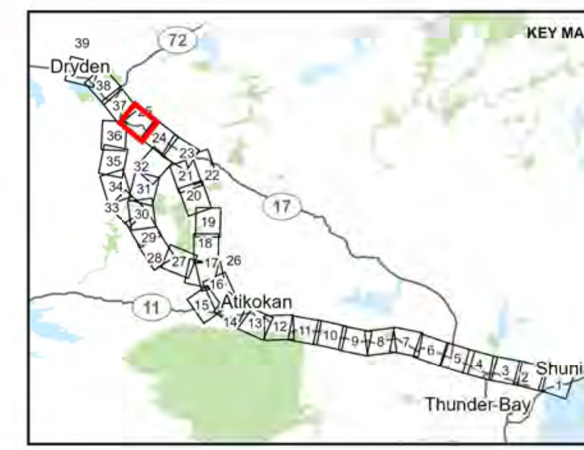
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-24



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

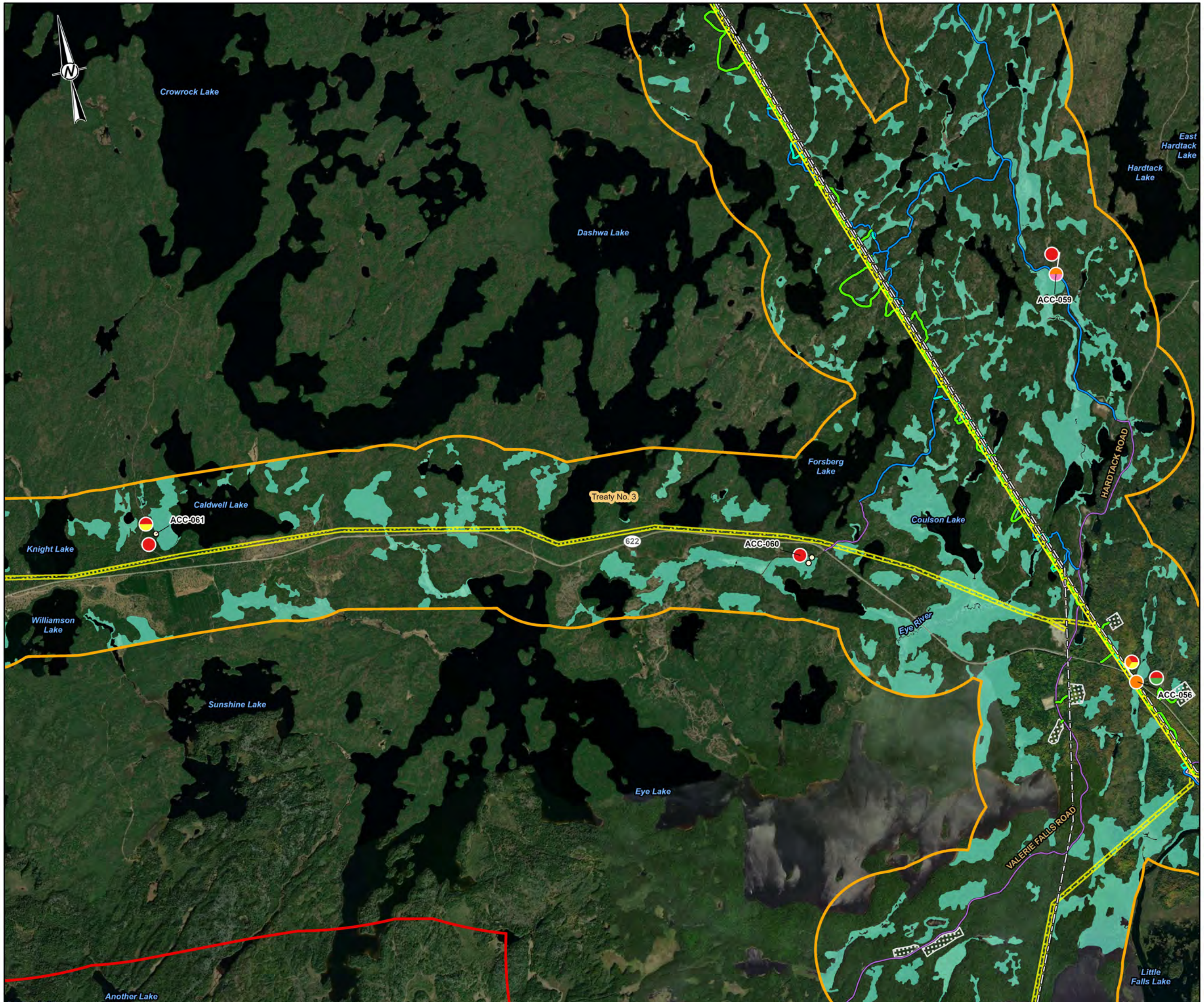
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-25



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

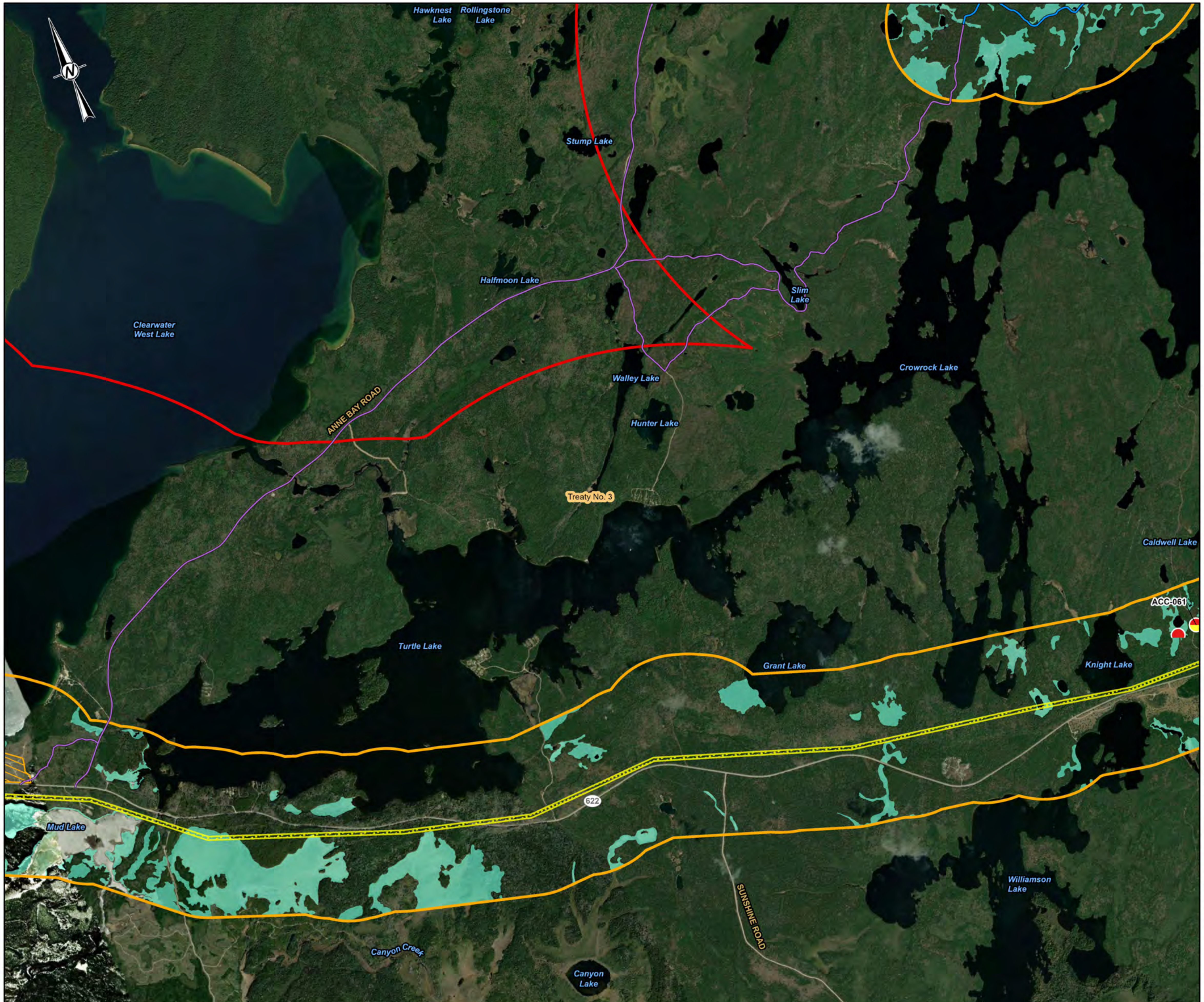
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

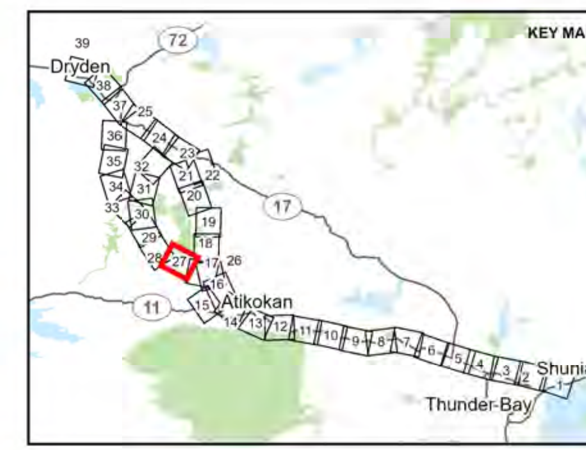
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-26



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

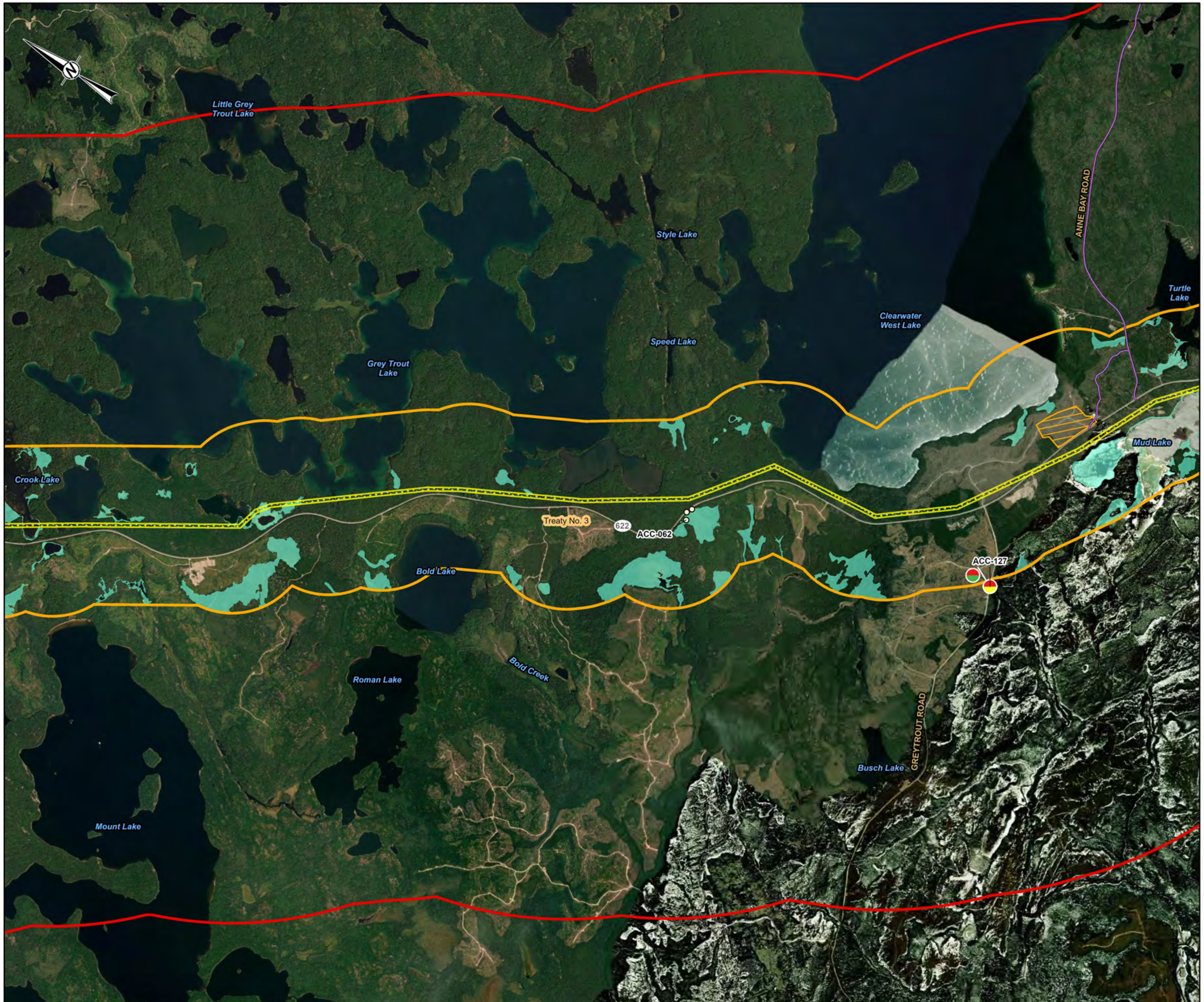
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT
wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-27



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

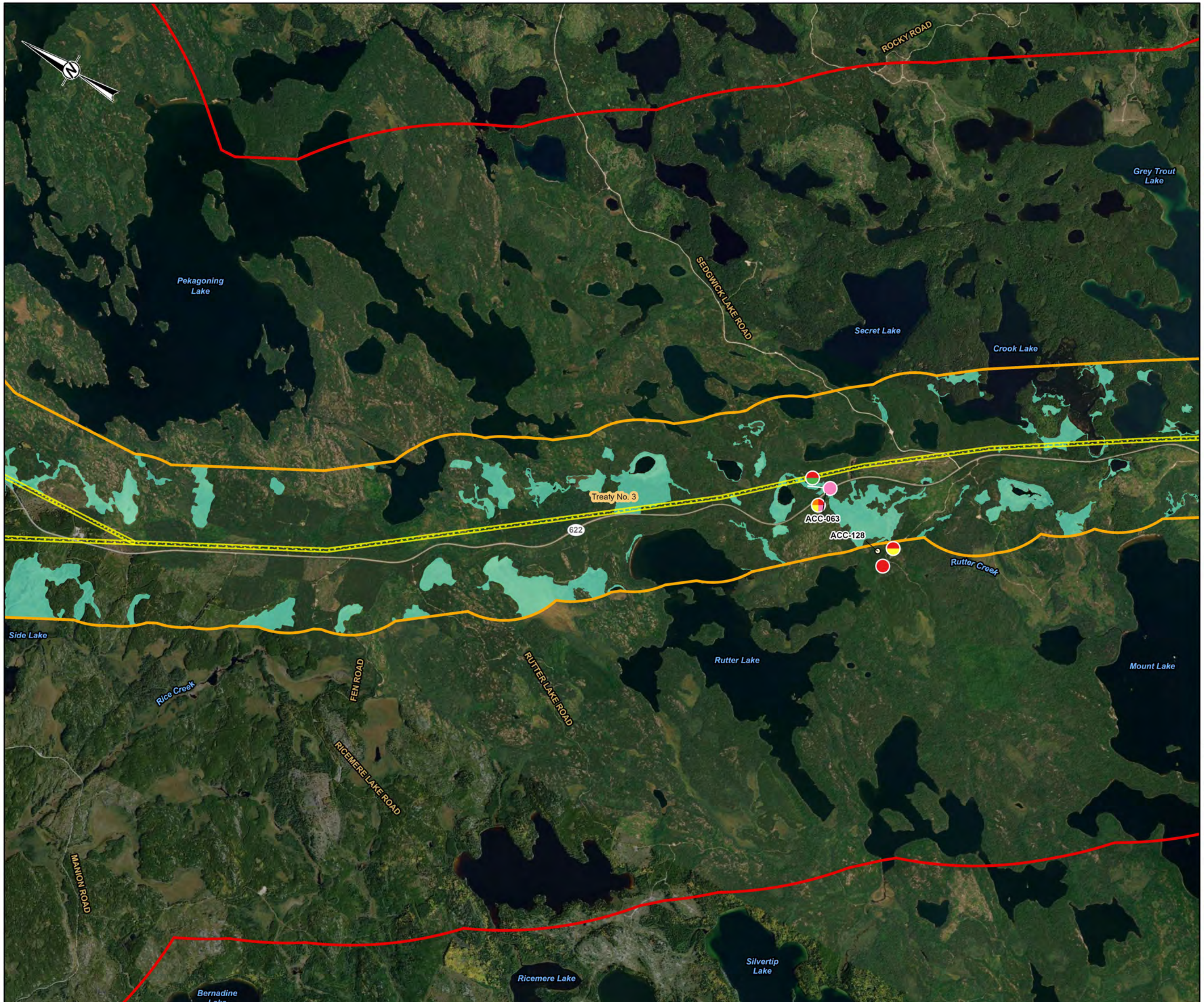
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT
wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-28



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

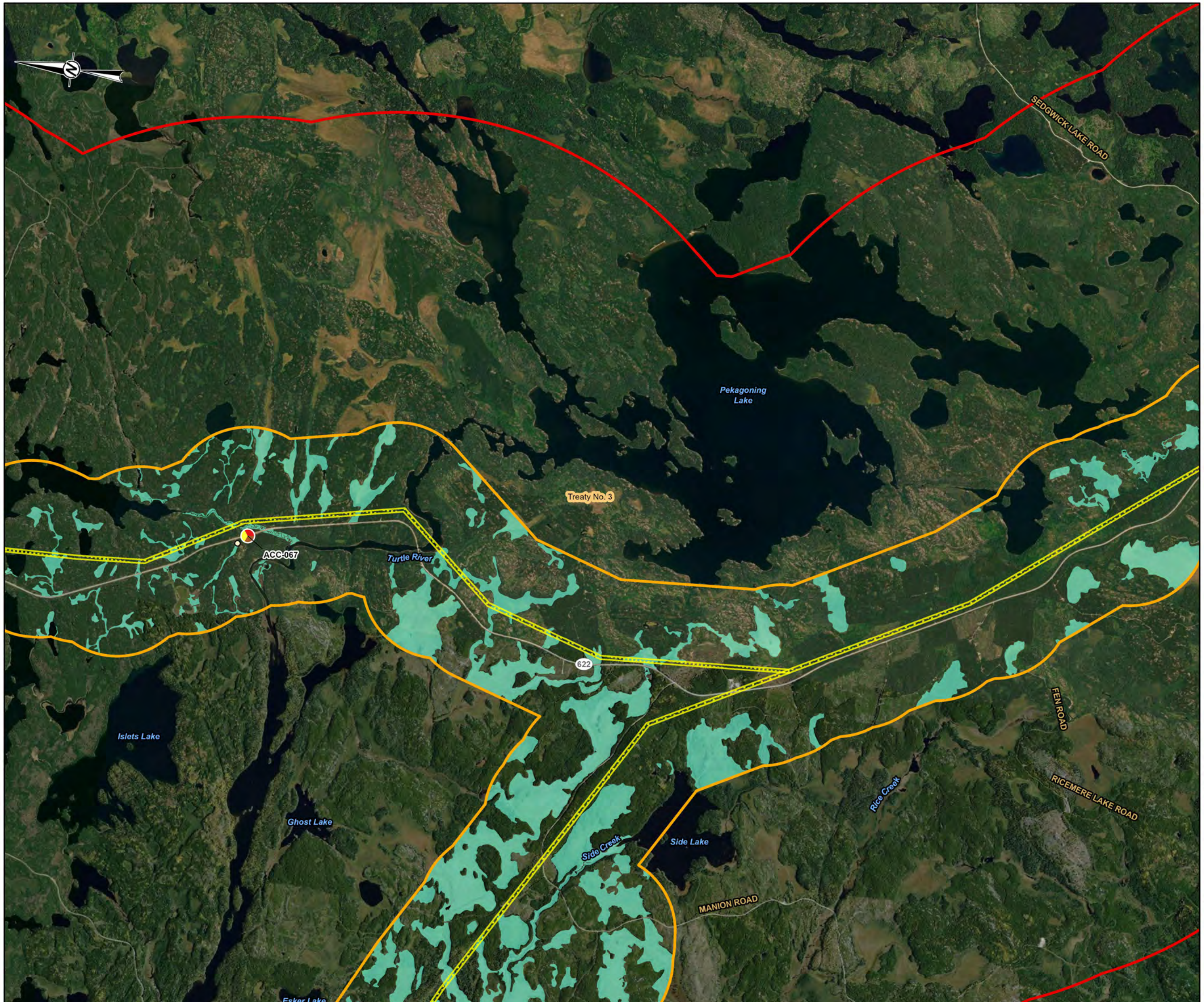
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-29



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

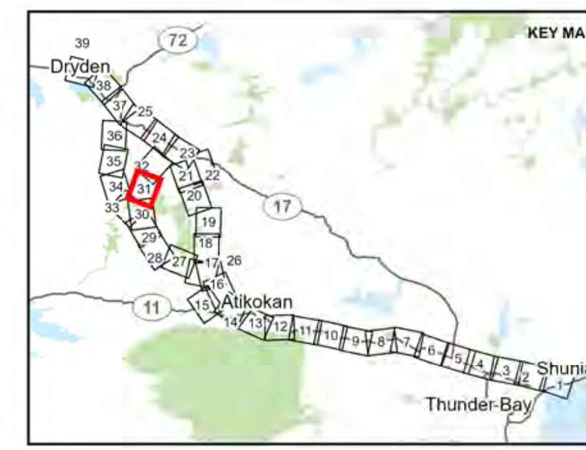
YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-30

LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

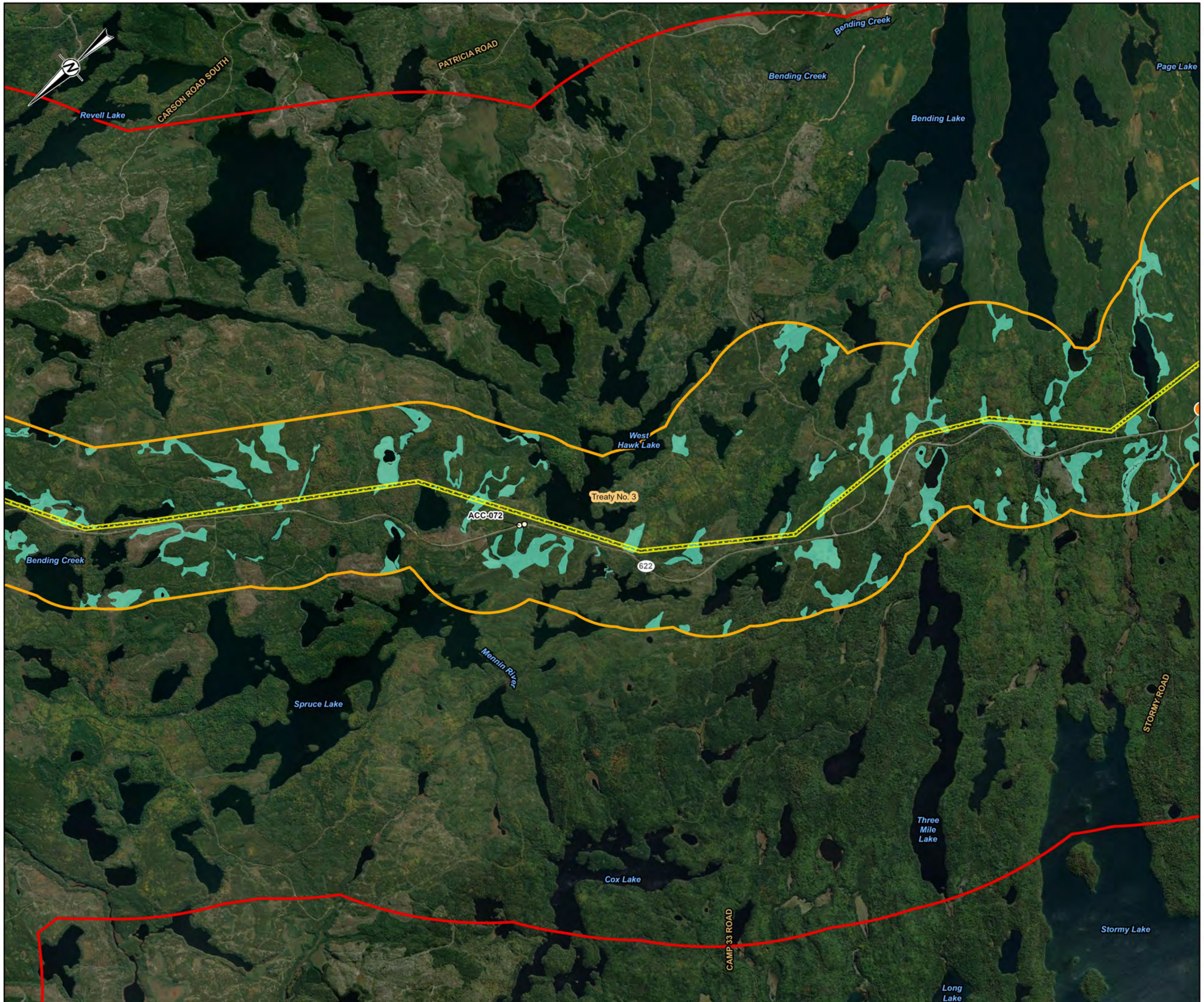
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

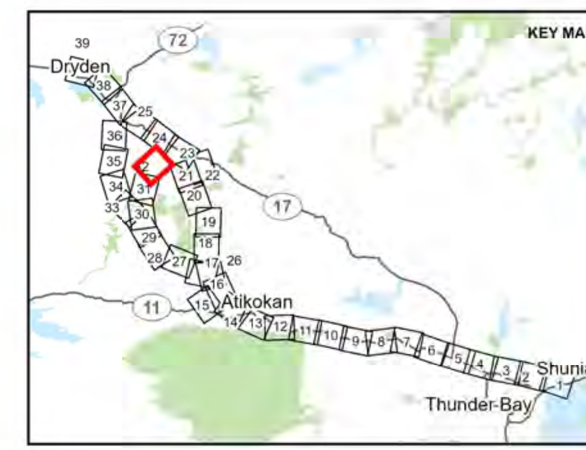
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-31



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

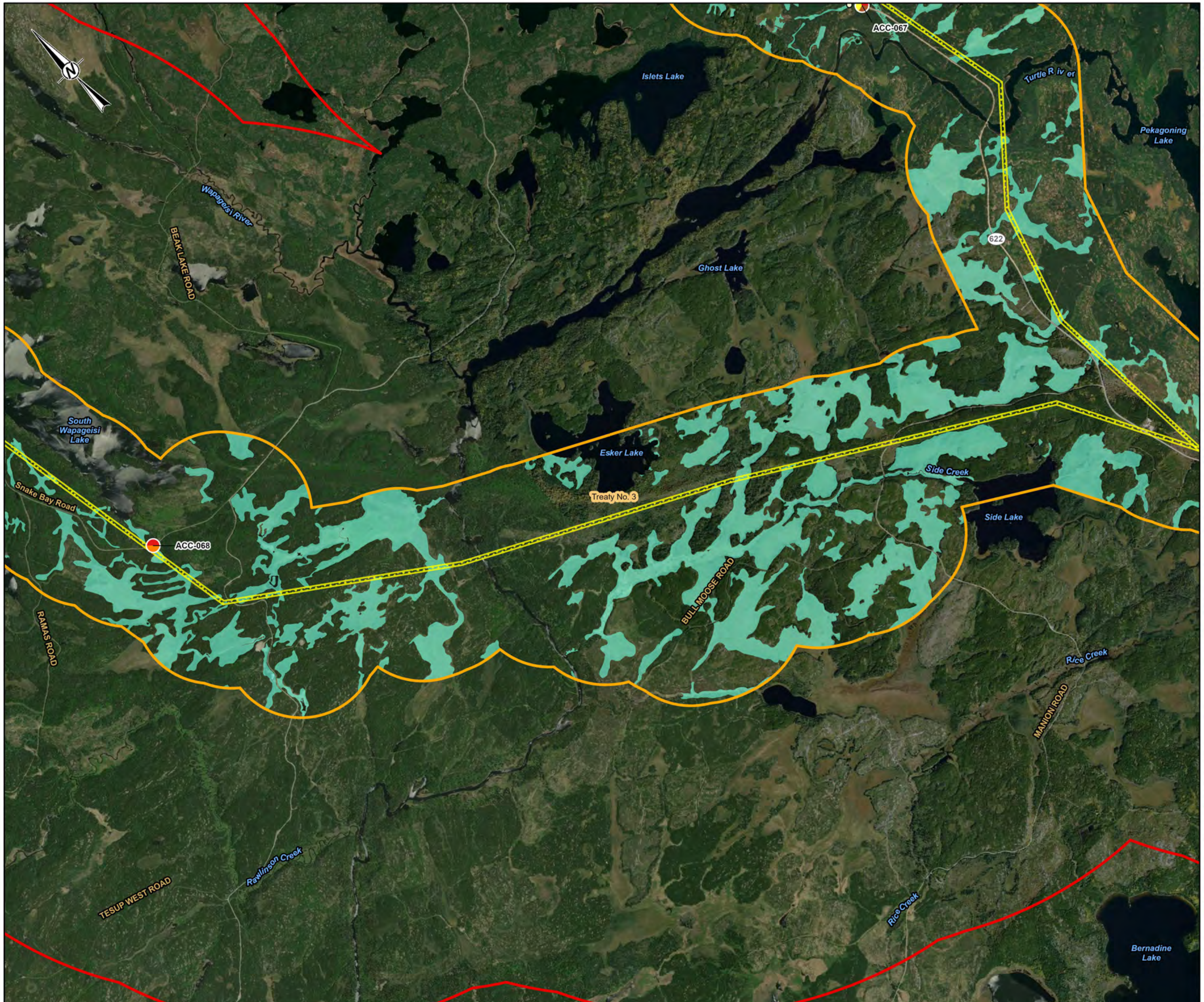
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-32



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

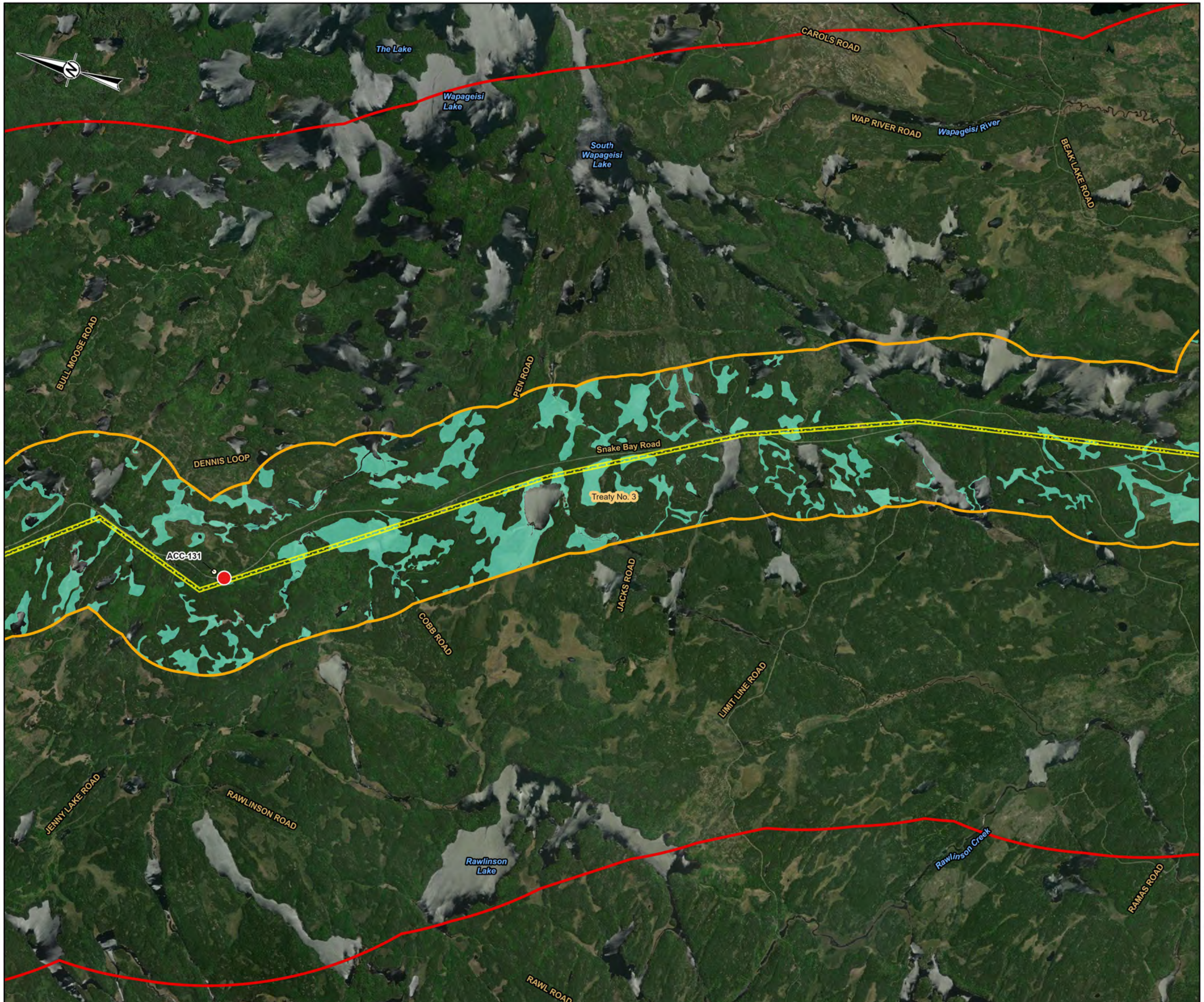
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

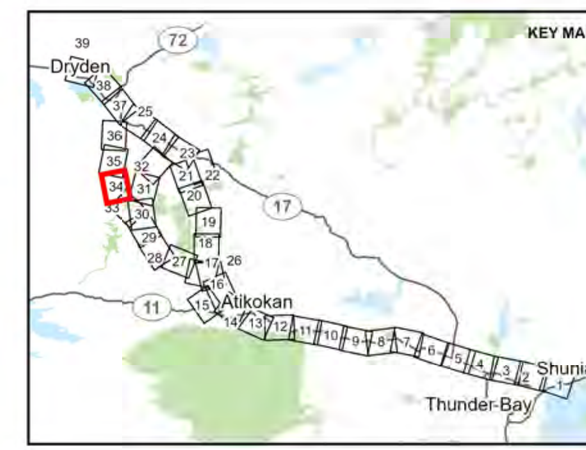
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-33



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

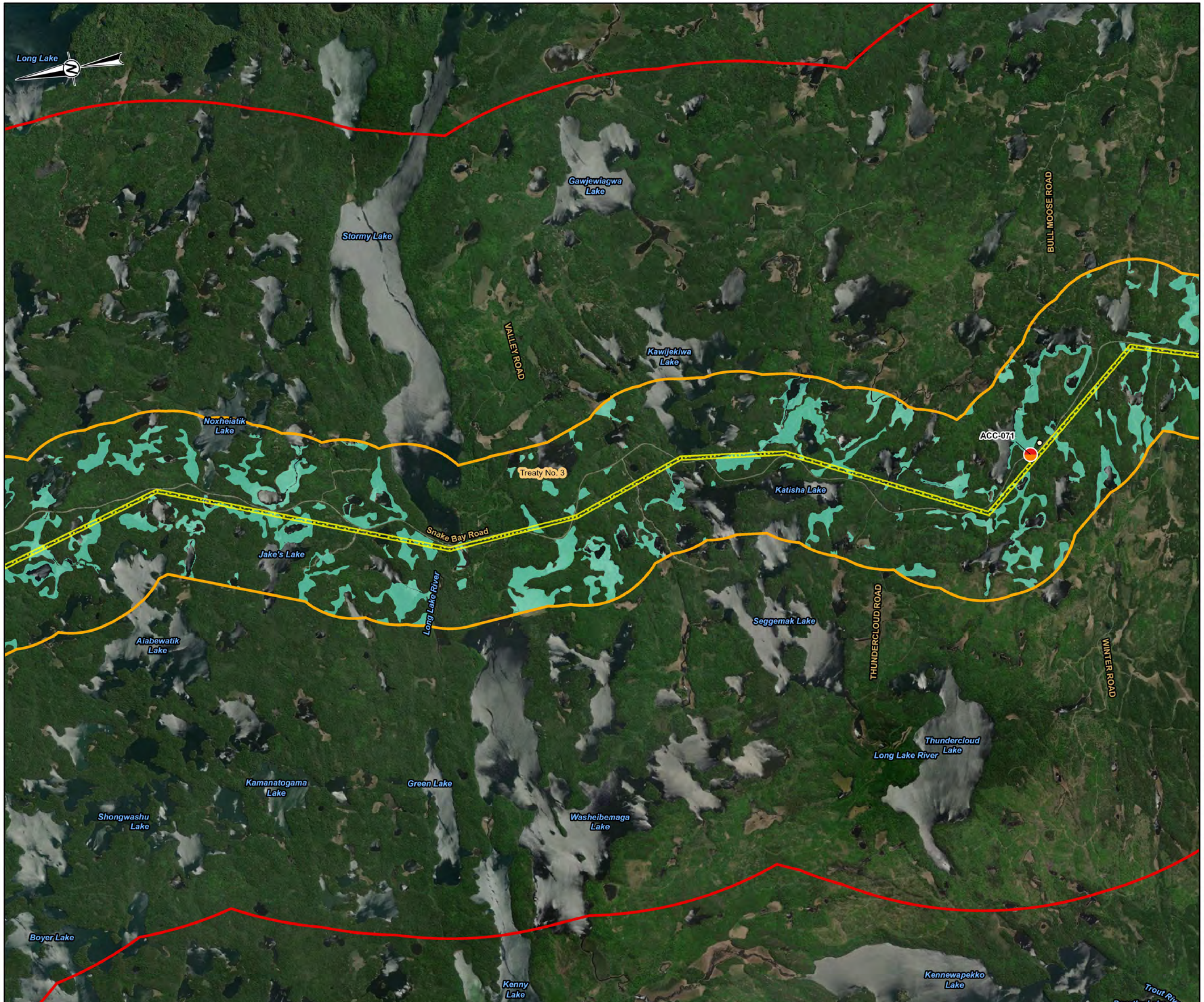
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-34



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

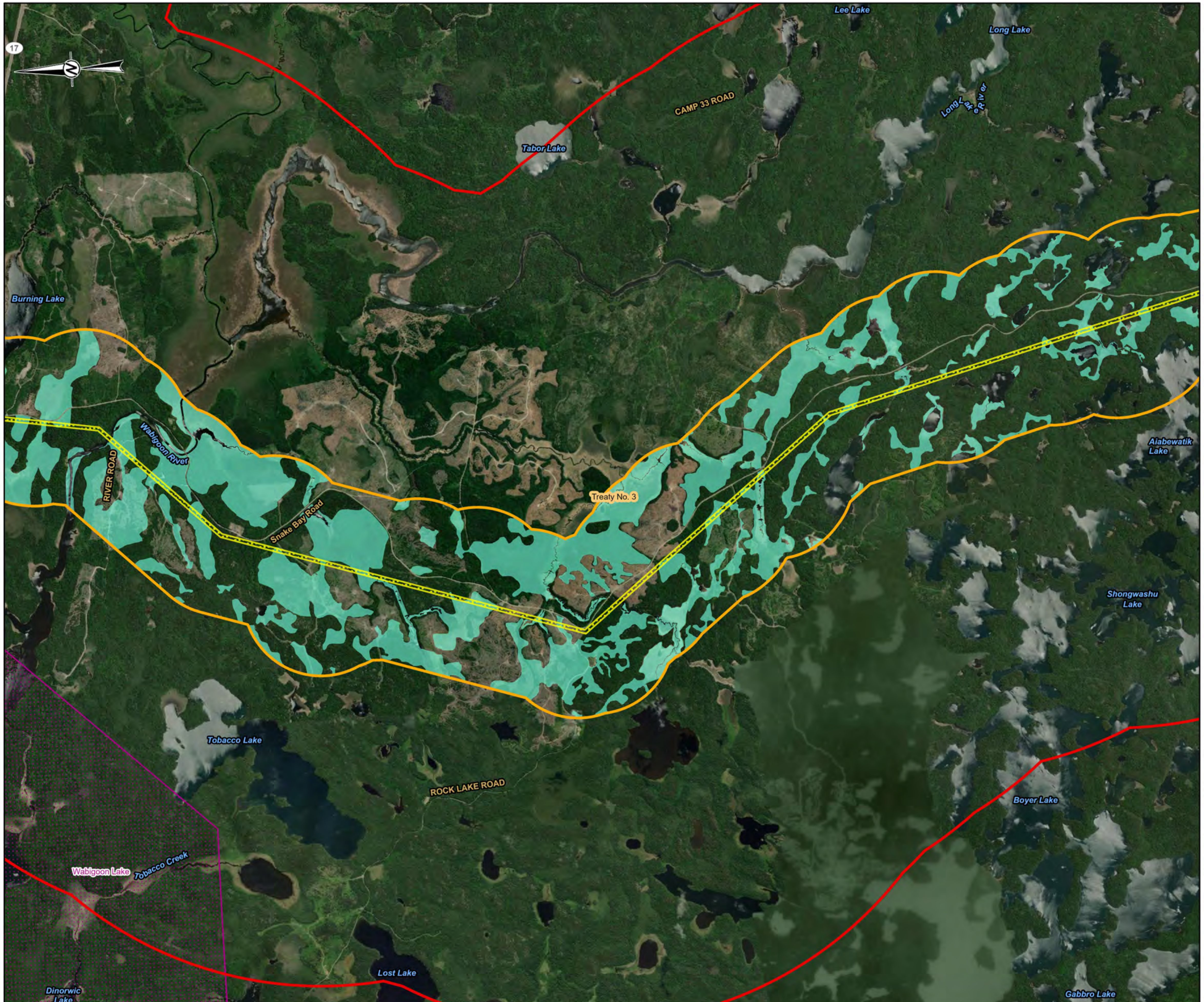
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-35



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

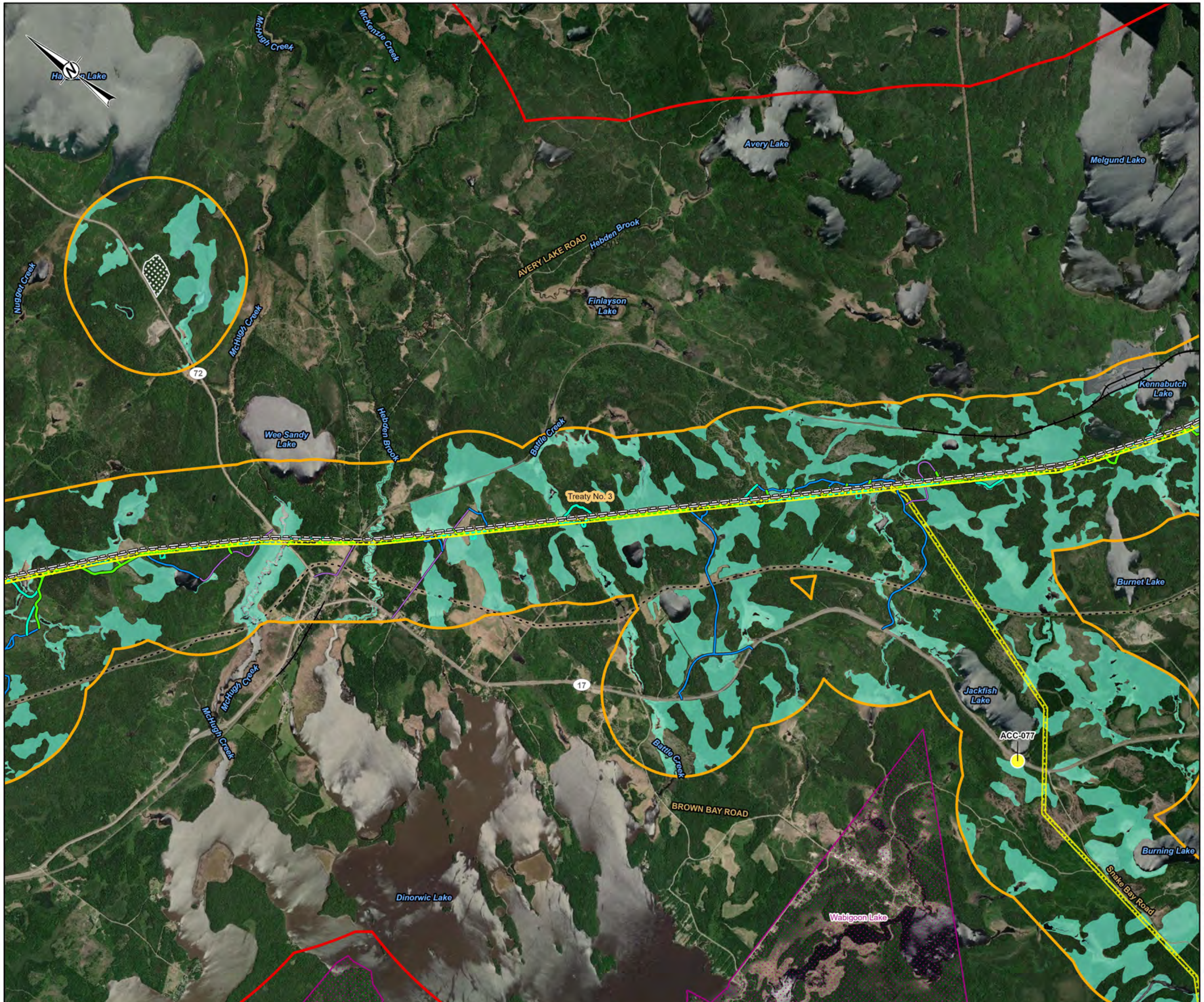
TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-36



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

TITLE

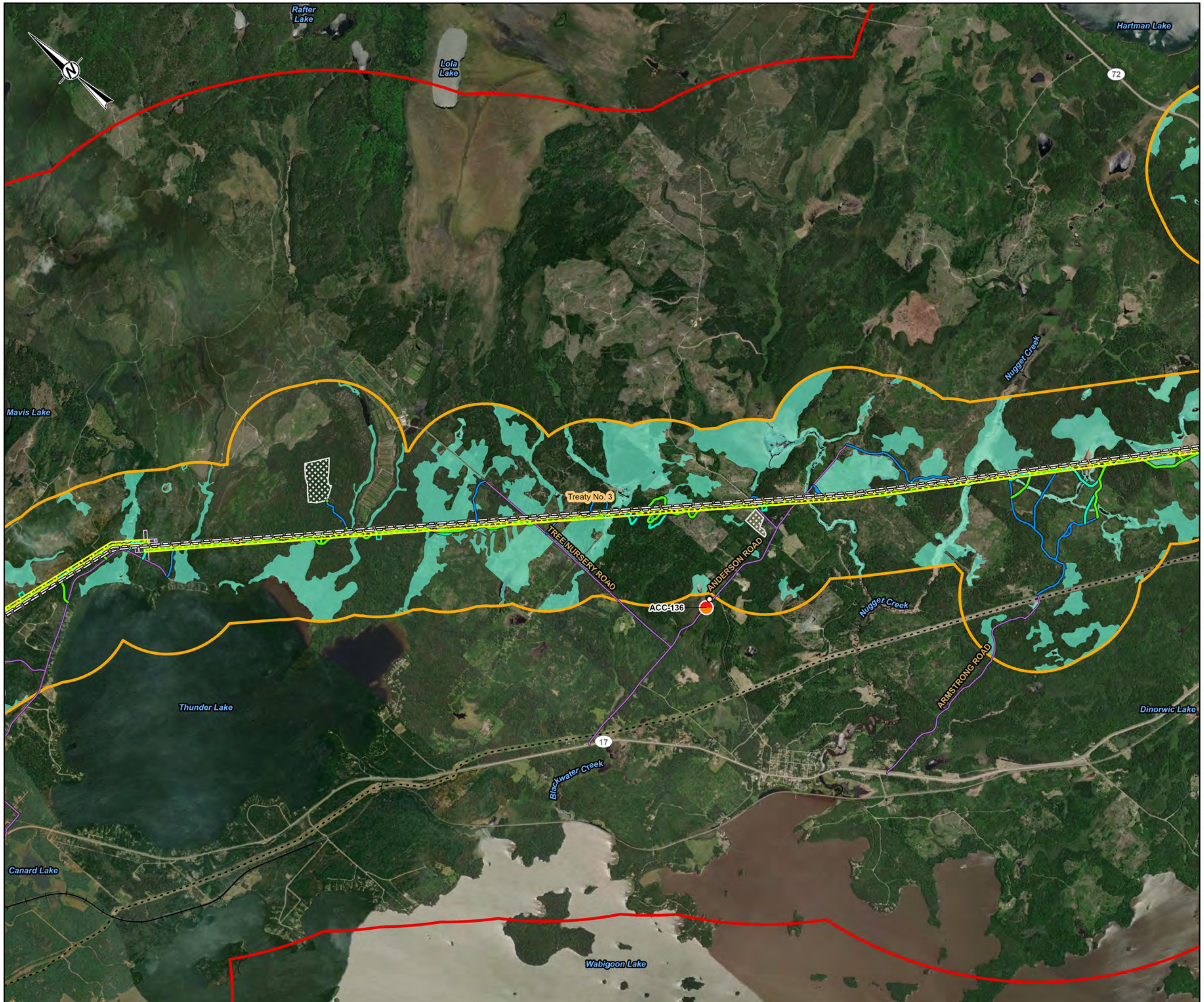
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

wsp

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-37



LEGEND

SPECIES HEARD

- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

KEY MAP

0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

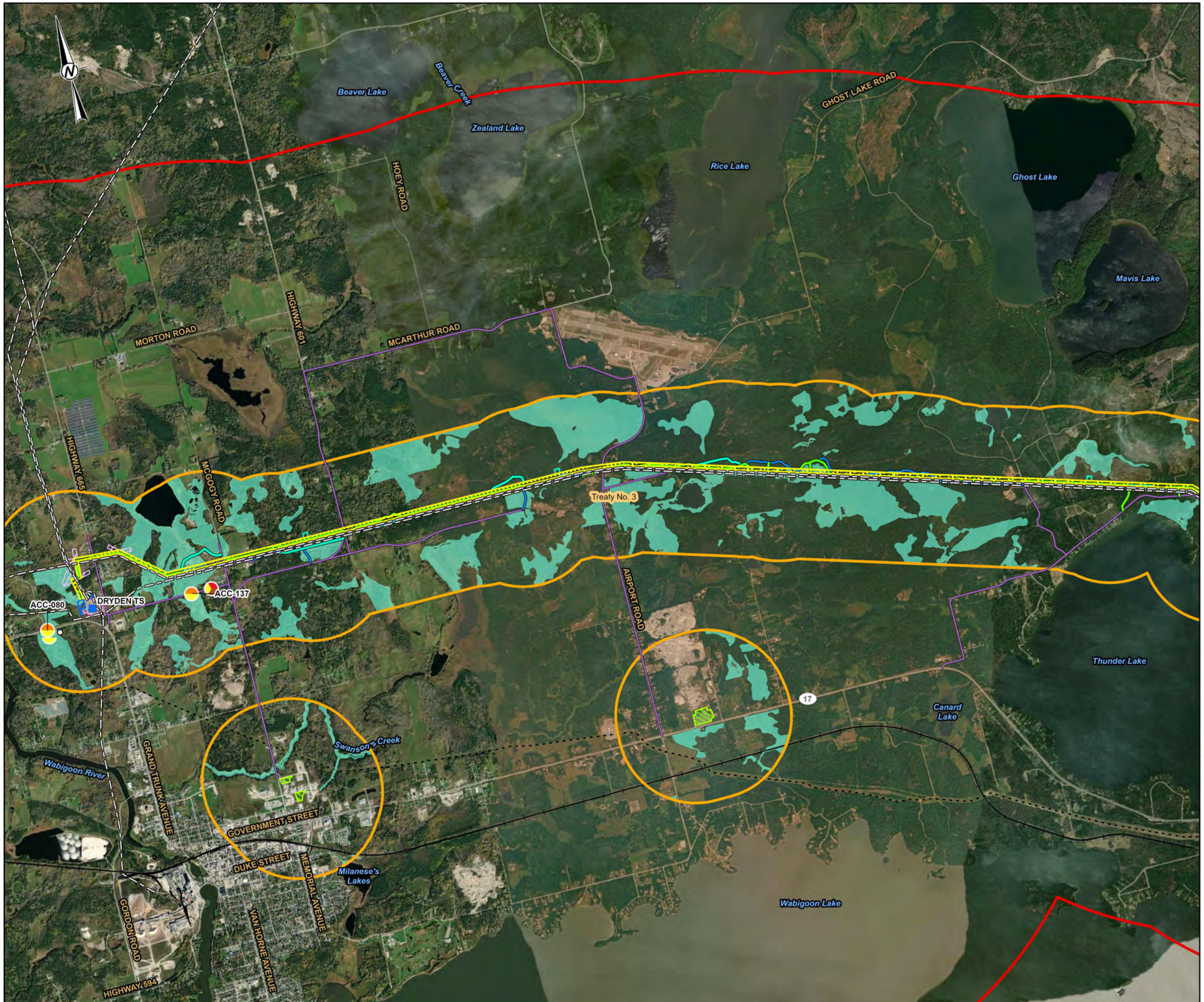
TITLE

AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

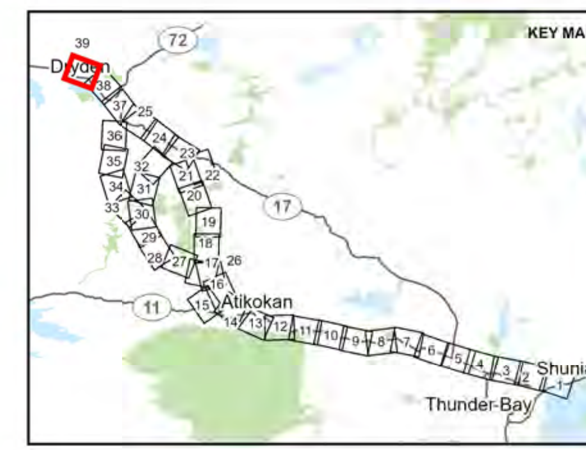
YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-38



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- SPECIES HEARD
- SPRING PEEPER
- MINK FROG
- WOOD FROG
- NORTHERN LEOPARD FROG
- GRAY TREEFROG
- AMERICAN TOAD
- BOREAL CHORUS FROG
- GREEN FROG
- NO SPECIES HEARD
- AMPHIBIAN BREEDING HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
AMPHIBIAN CANDIDATE BREEDING HABITAT AND CALL COUNT STATIONS

CONSULTANT

YYYY-MM-DD	2023-05-12
DESIGNED	AR
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0031	A	3.2-5-39

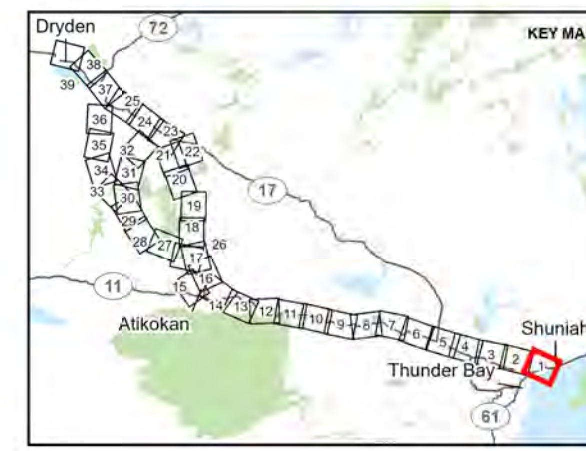
Figure 3.2-6: Turtle Candidate Habitat and Visual Encounter Survey Location

This figure includes confidential species at risk information that cannot be released publicly. The figure will be submitted to applicable regulatory agencies under separate cover.

Figure 3.2-7: Breeding Bird Survey Stations and Candidate Habitat

LEGEND

- 230 kV TRANSFORMER STATION (TS)
- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- GRASSLAND BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

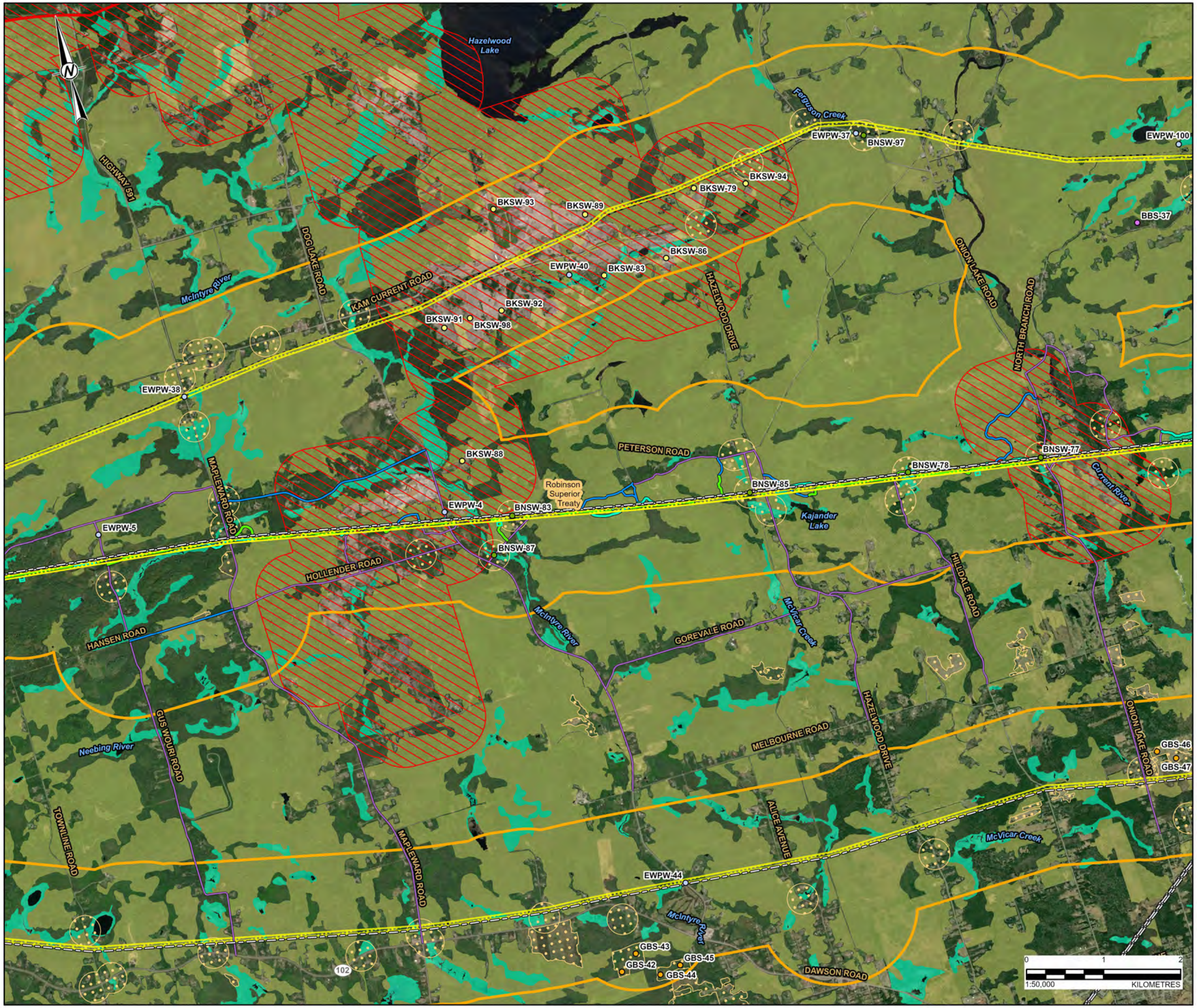
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT
wsp

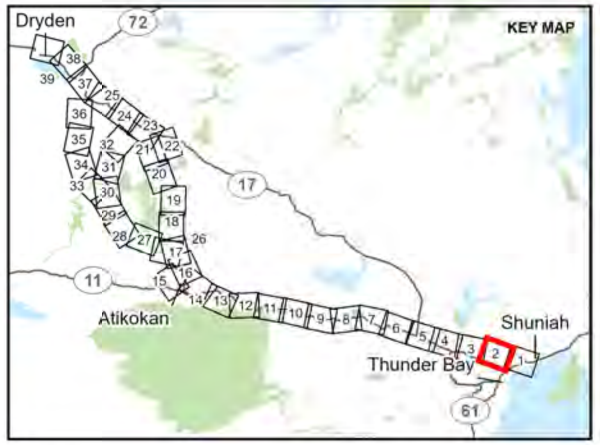
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-1



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- GRASSLAND BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

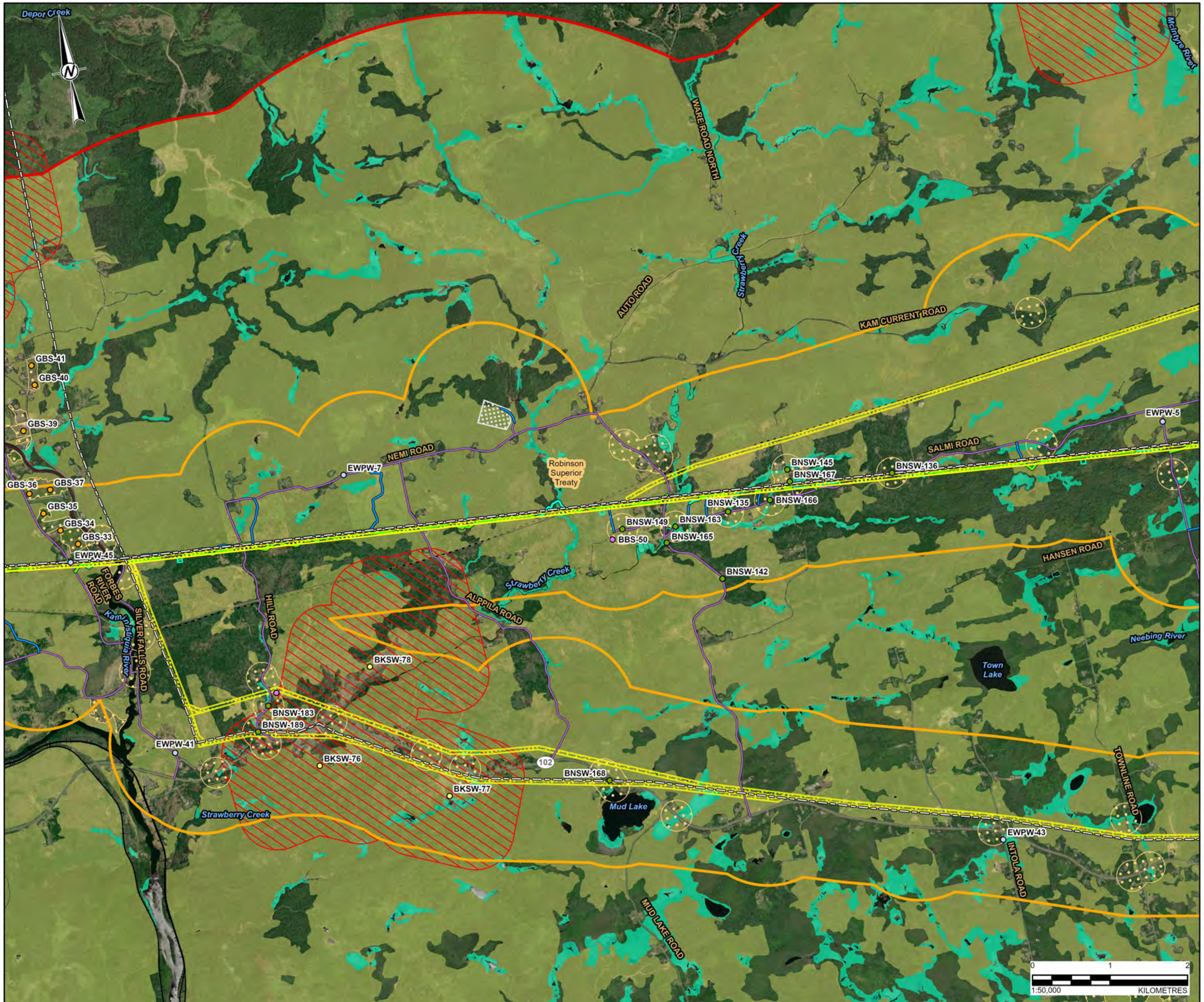
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT
wsp

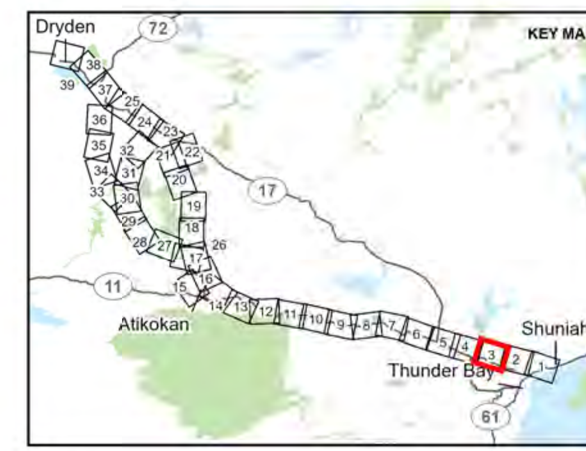
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-2



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- GRASSLAND BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

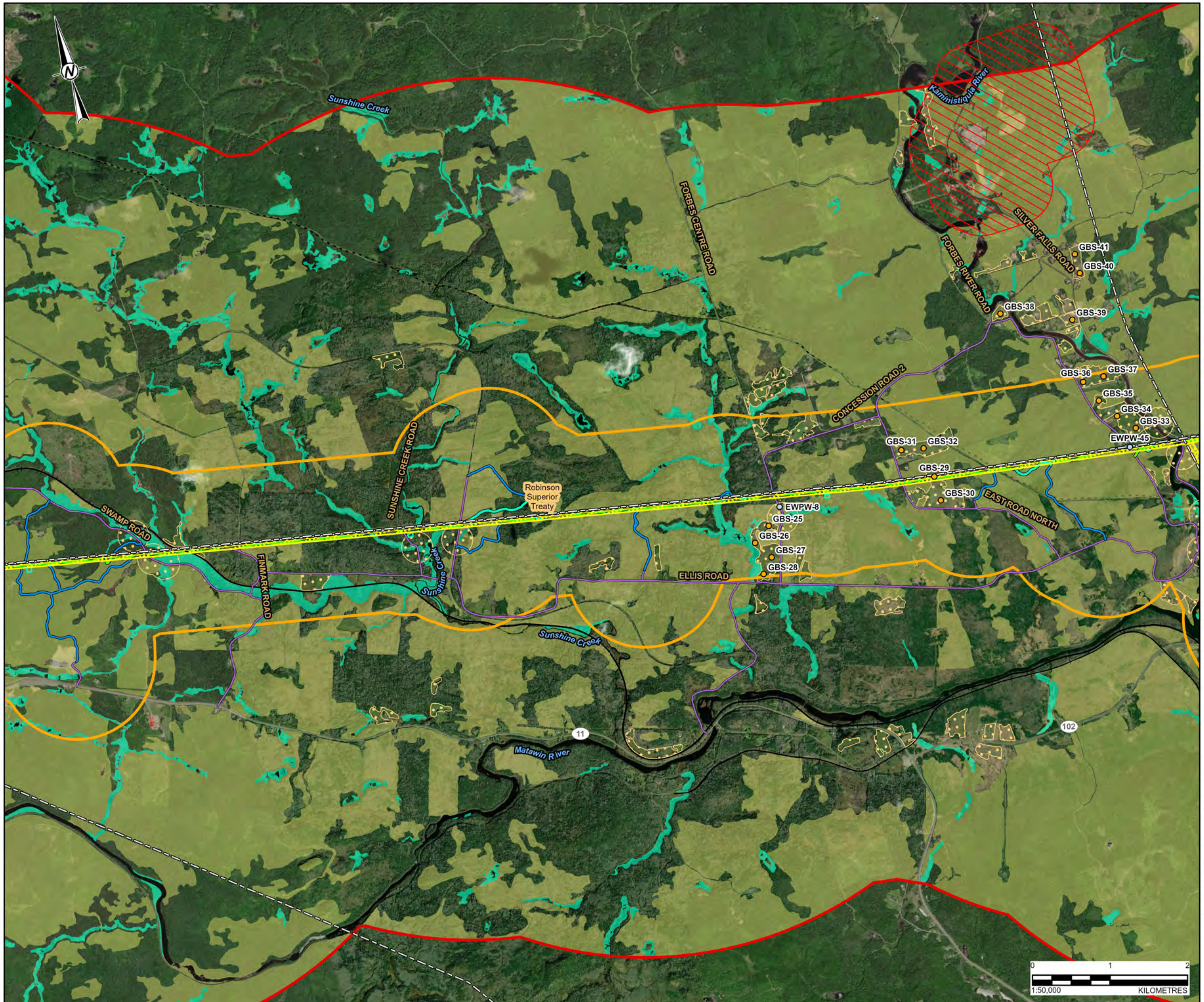
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

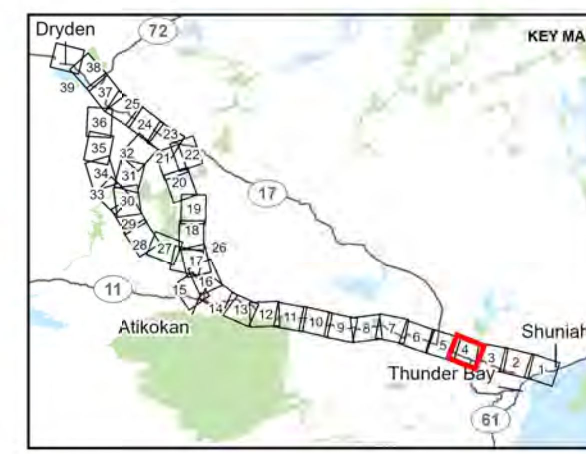
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-3



LEGEND

- EASTERN WHIP-POOR-WILL SURVEY STATION
- GRASSLAND BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

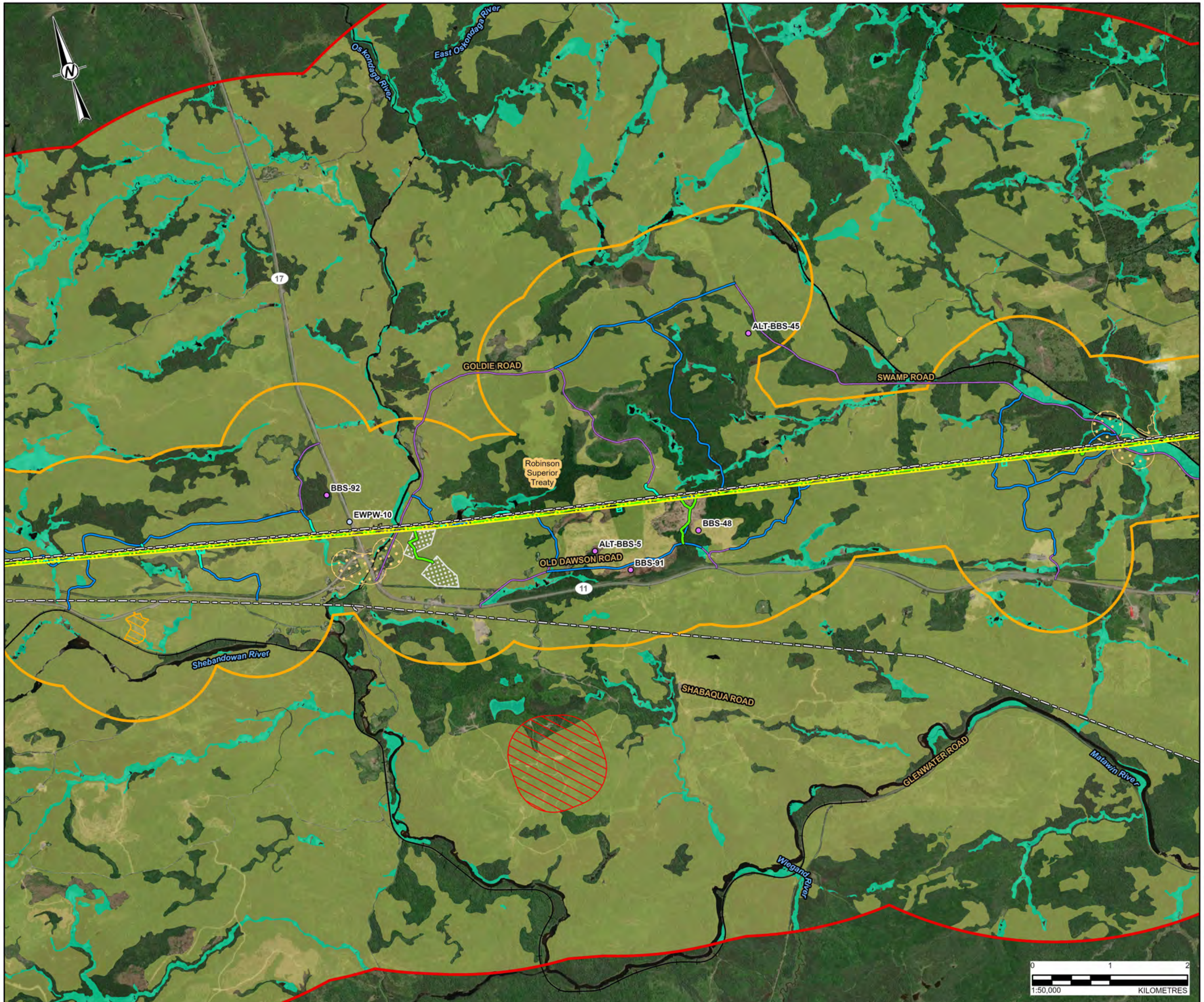
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT
wsp

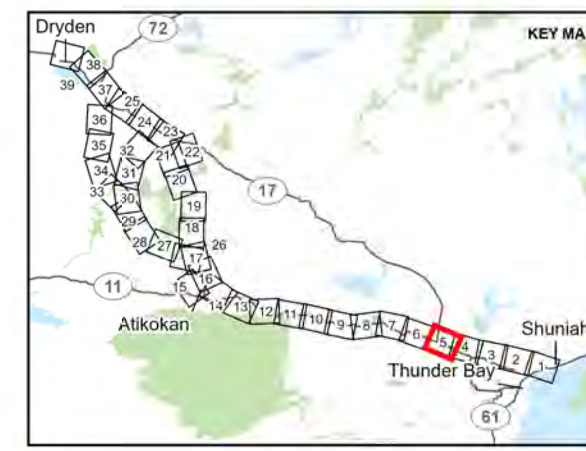
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-4



LEGEND

- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

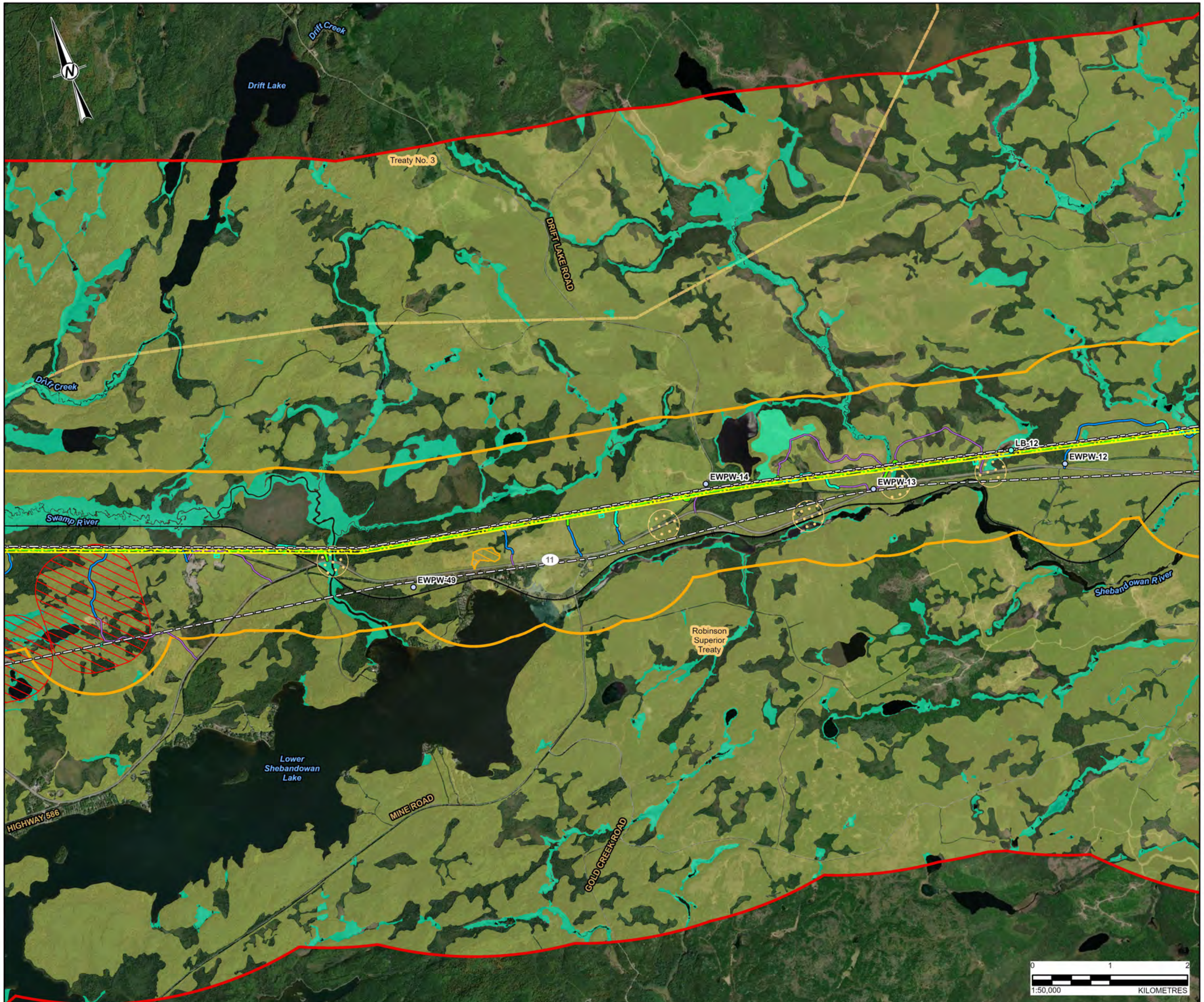
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

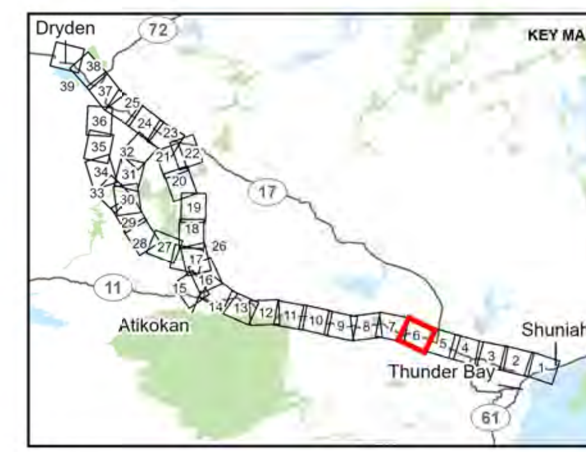
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-5



LEGEND

- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

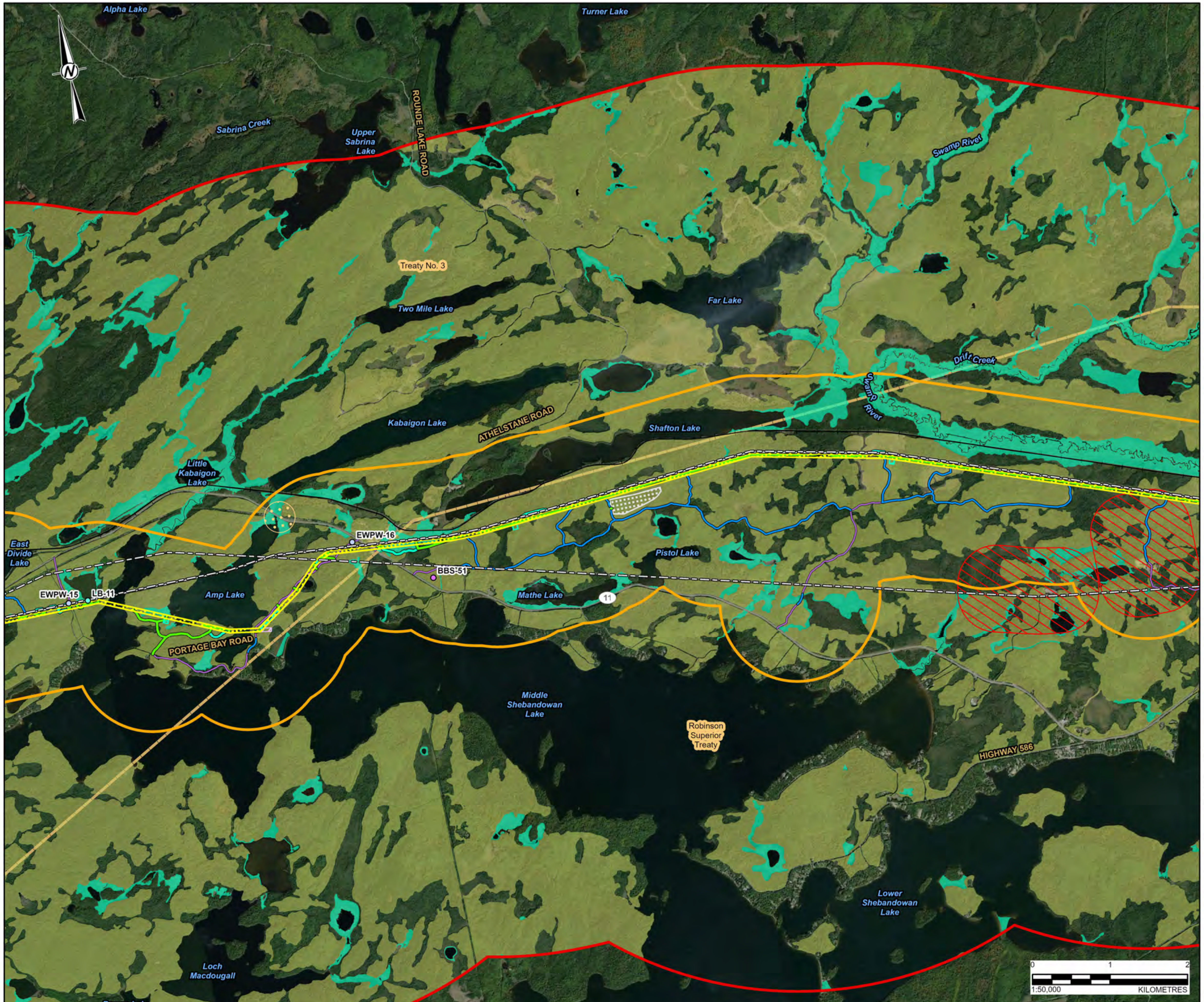
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

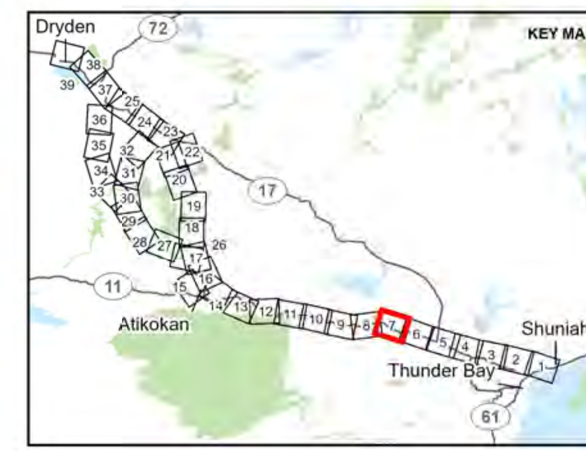
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-6



LEGEND

- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

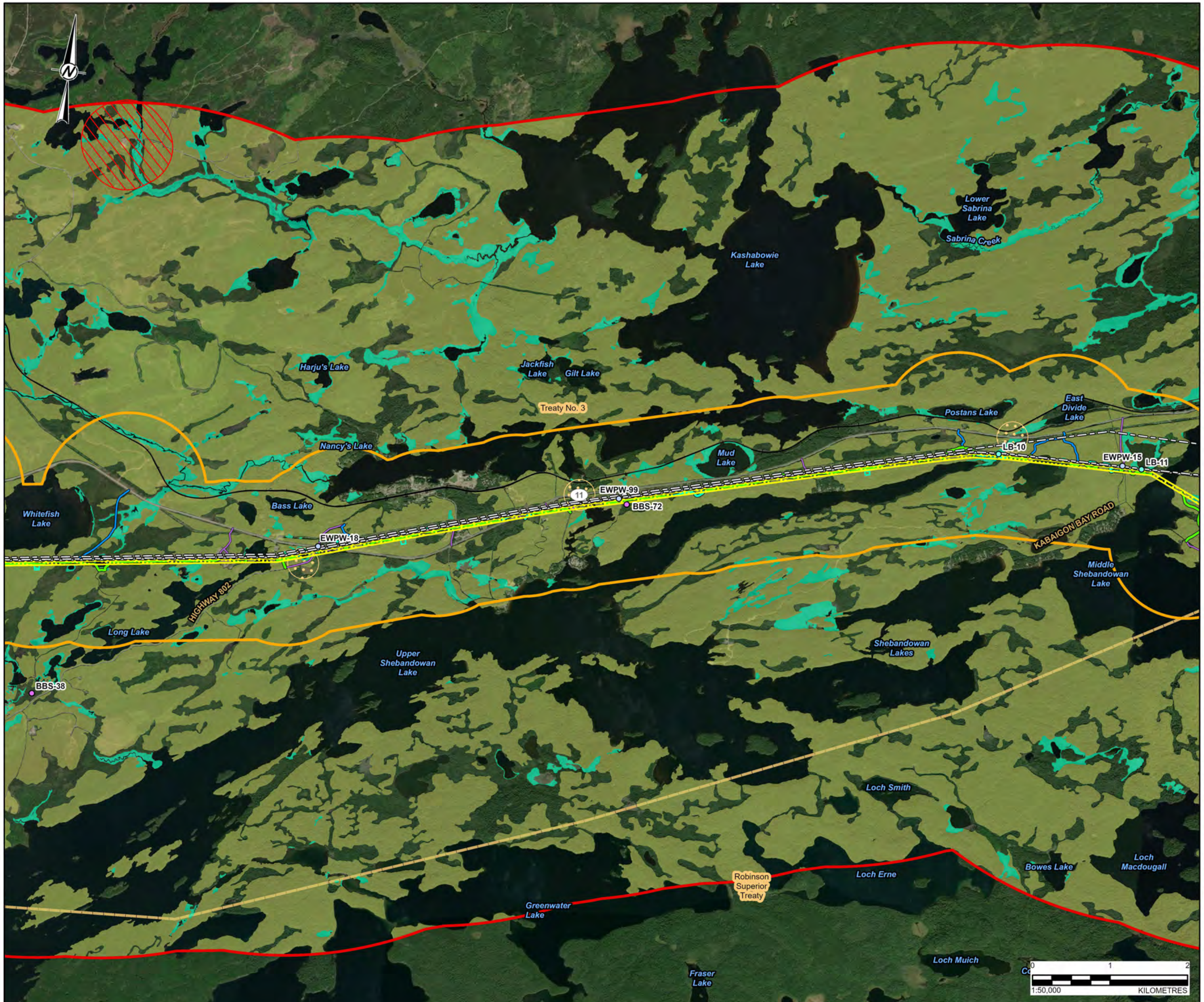
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

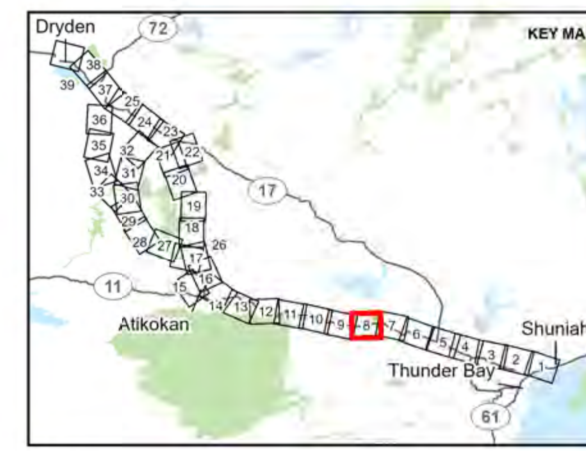
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-7



LEGEND

- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

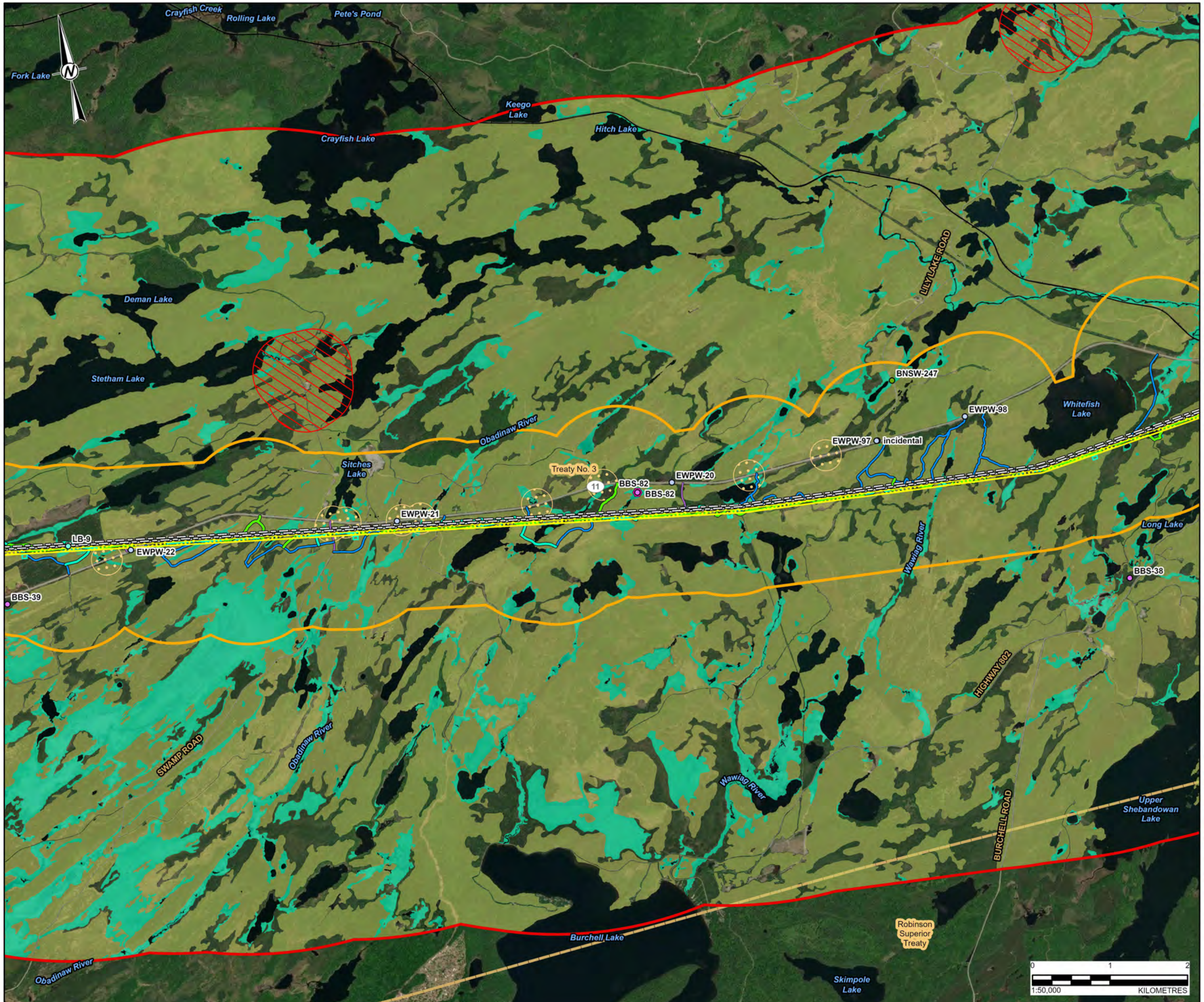
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

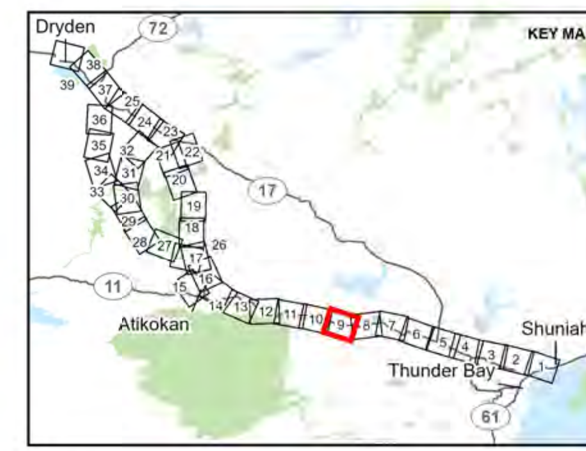
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-8



LEGEND

- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- MARSH BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

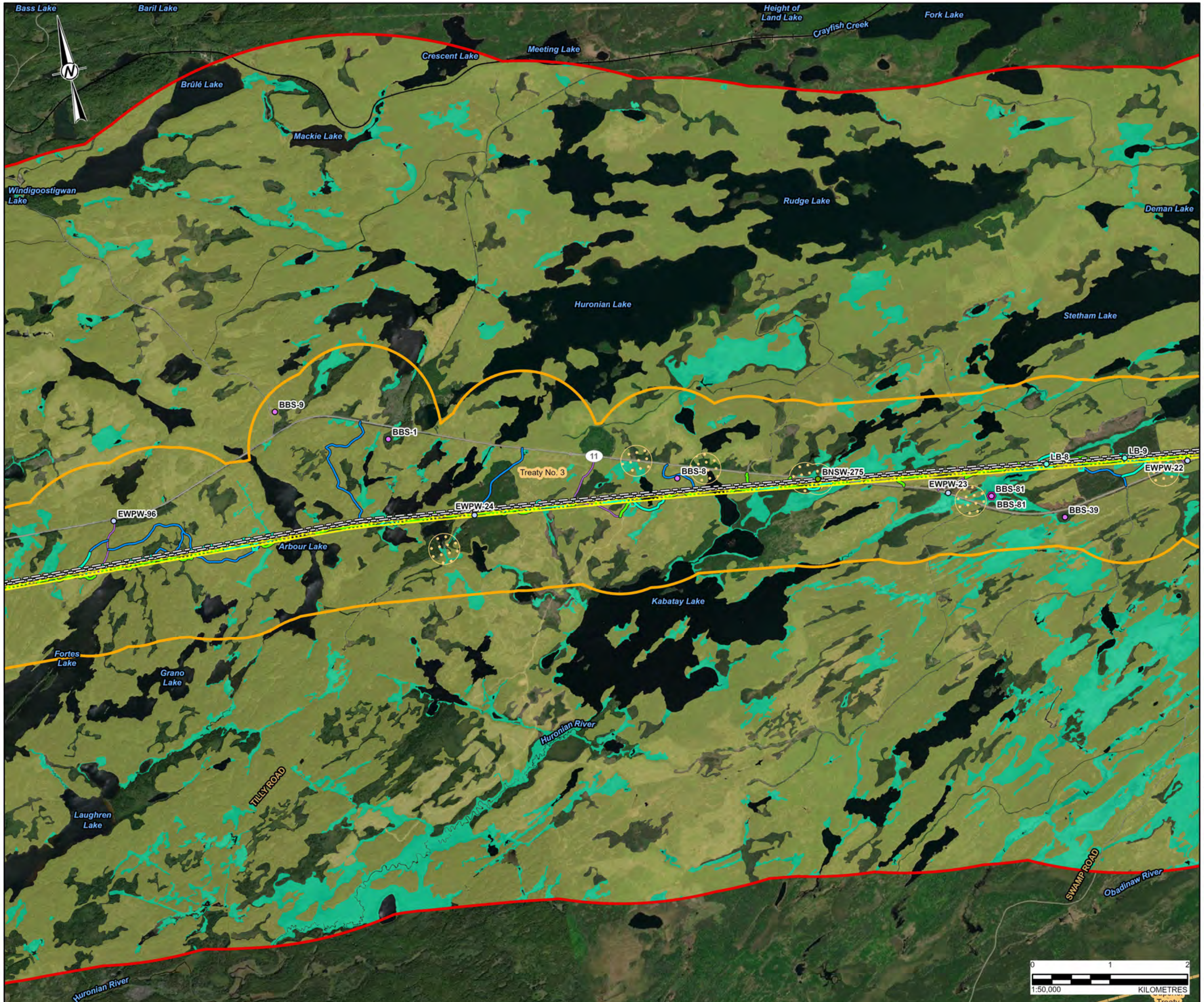
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

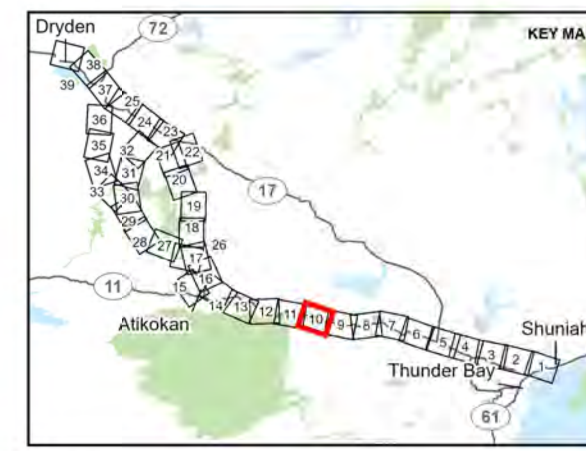
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-9



LEGEND

- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- MARSH BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

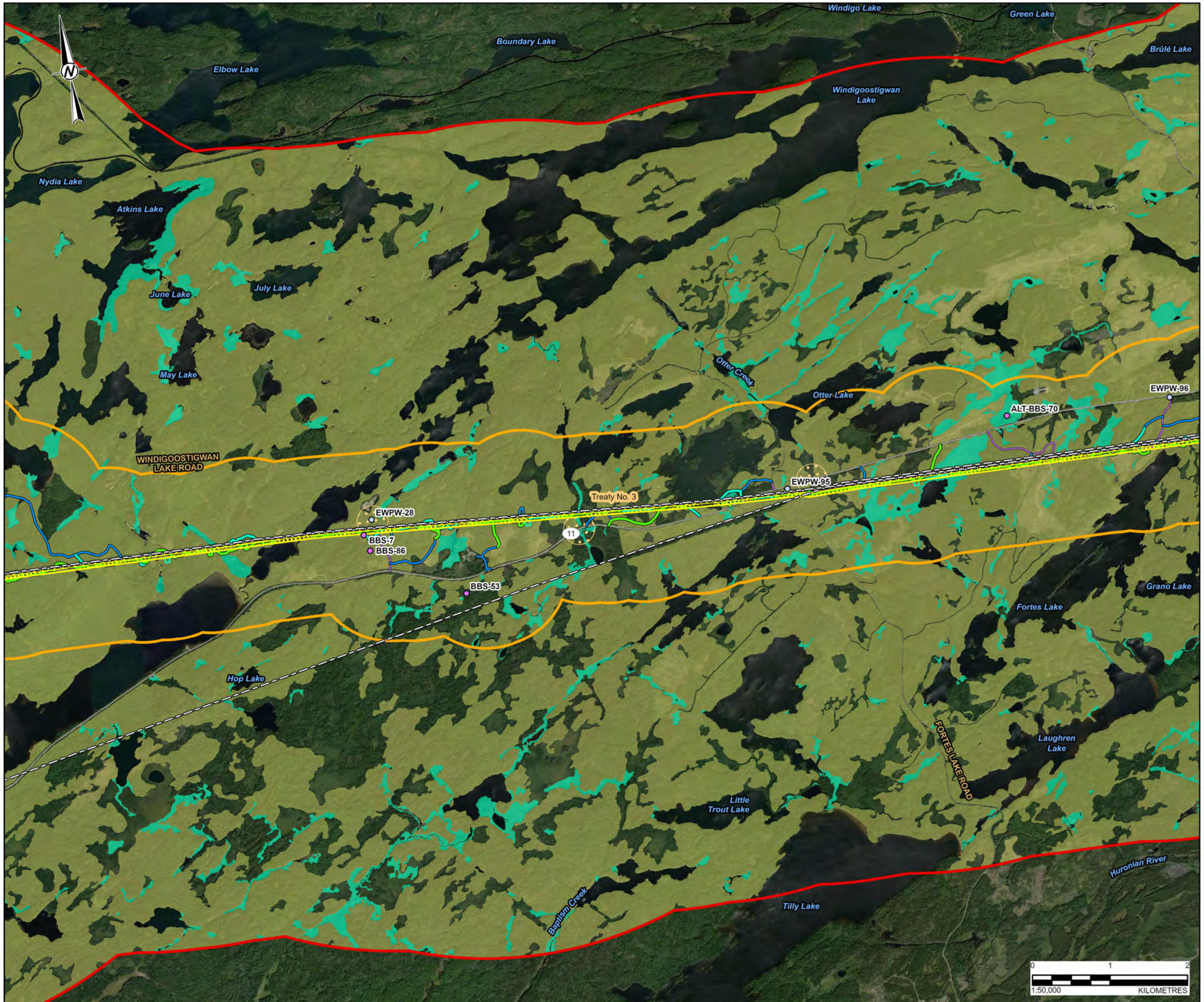
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

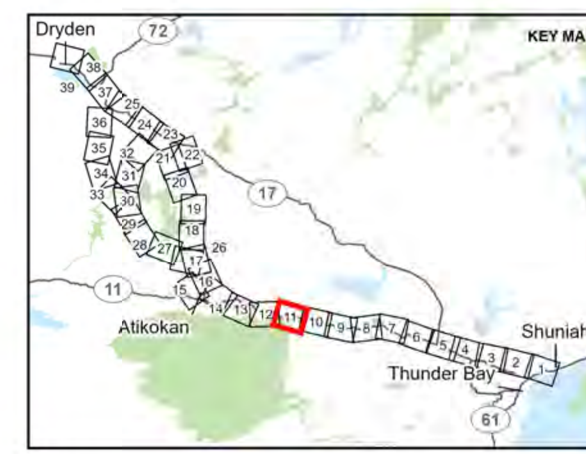
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-10



LEGEND

- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

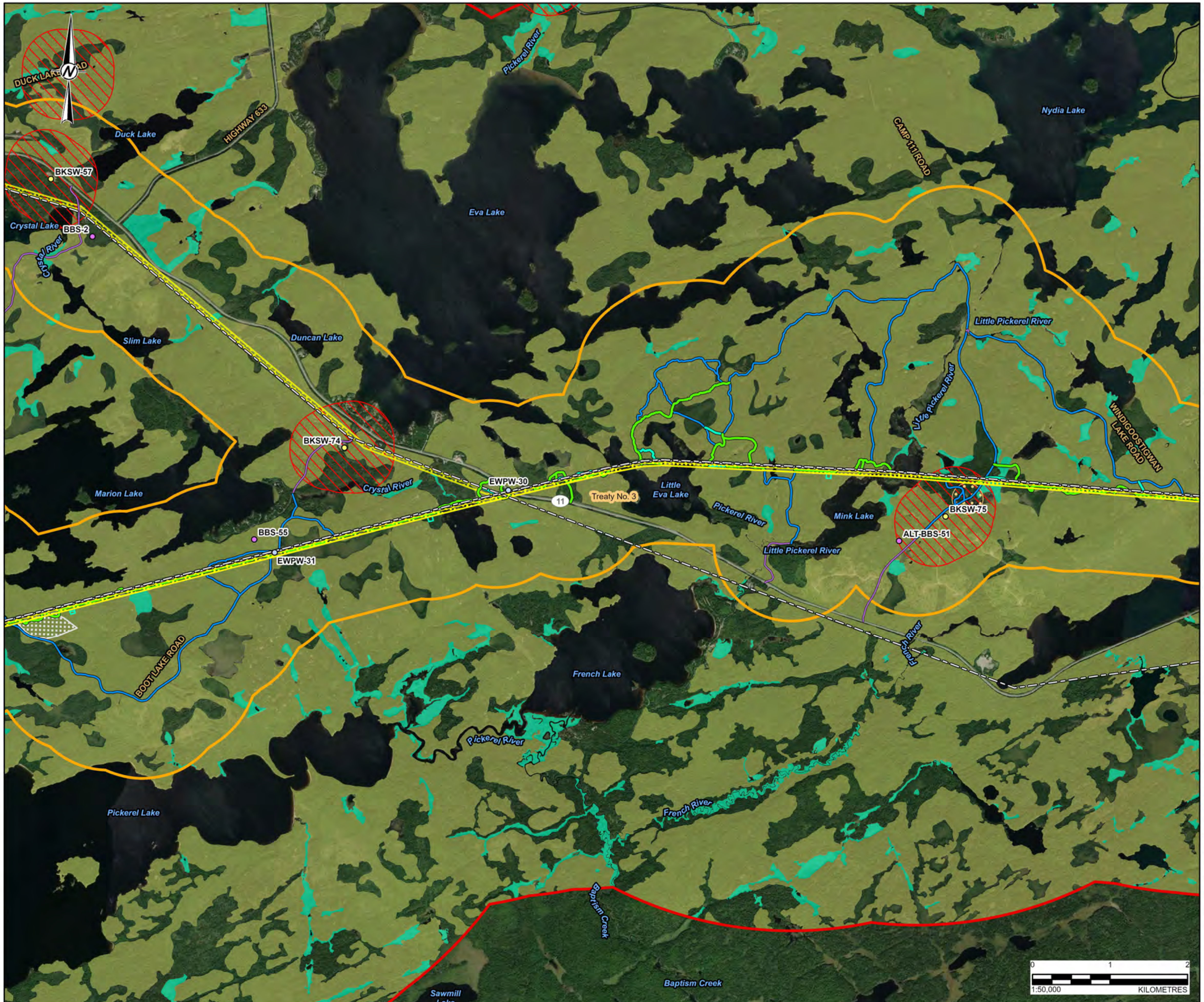
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

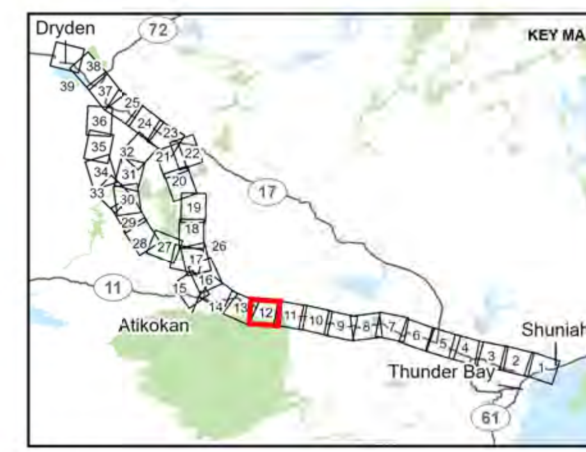
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-11



LEGEND

- BANK SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

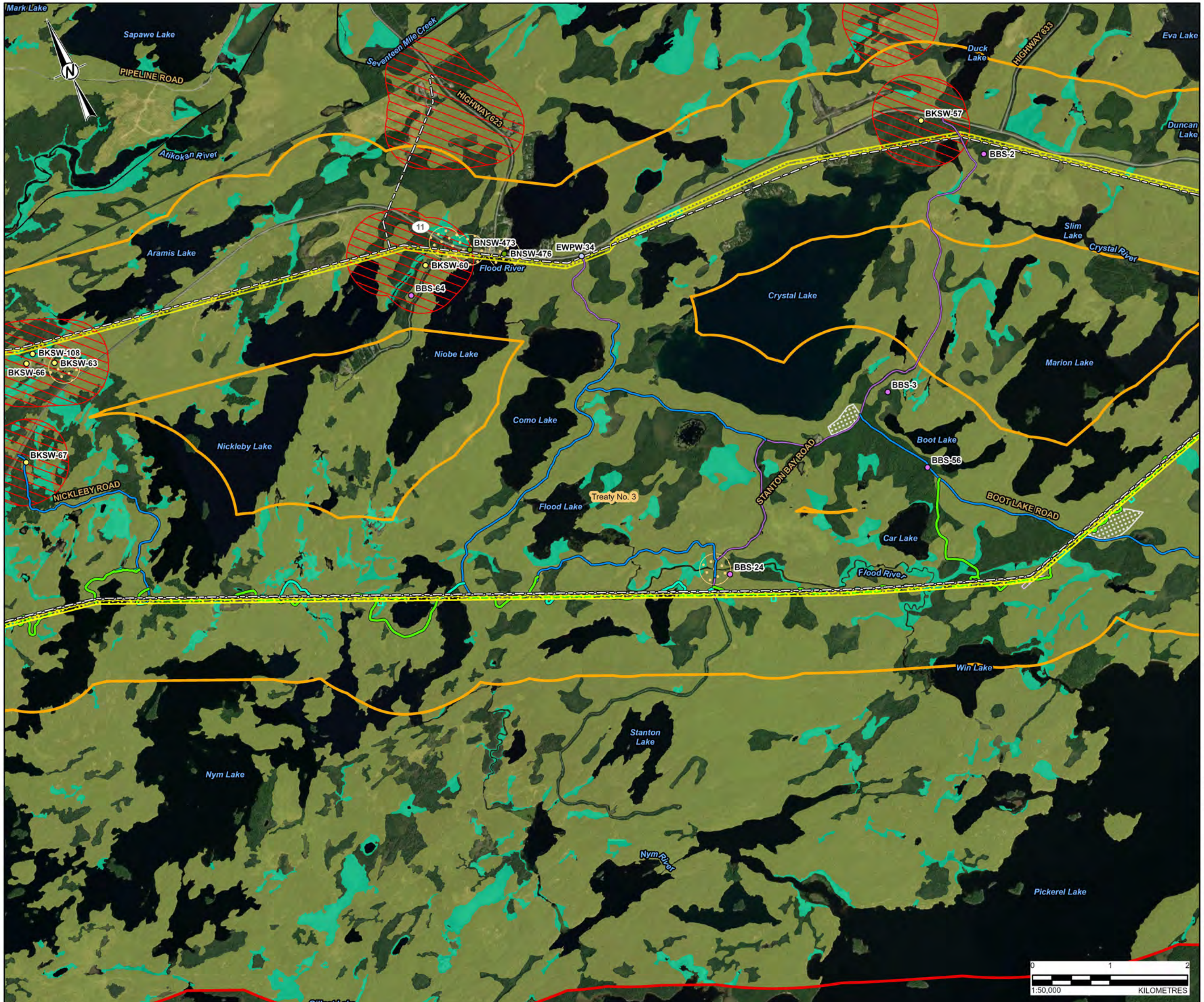
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

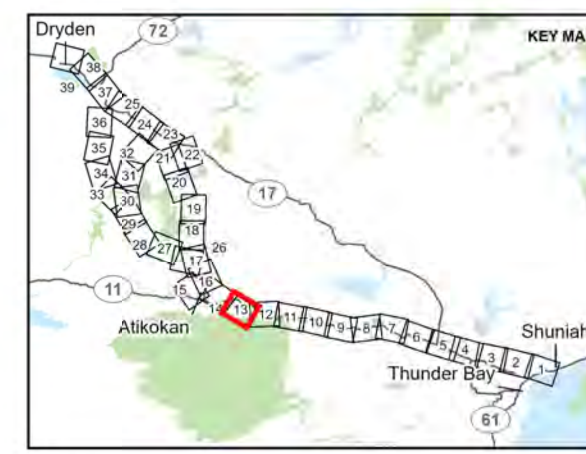
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-12



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

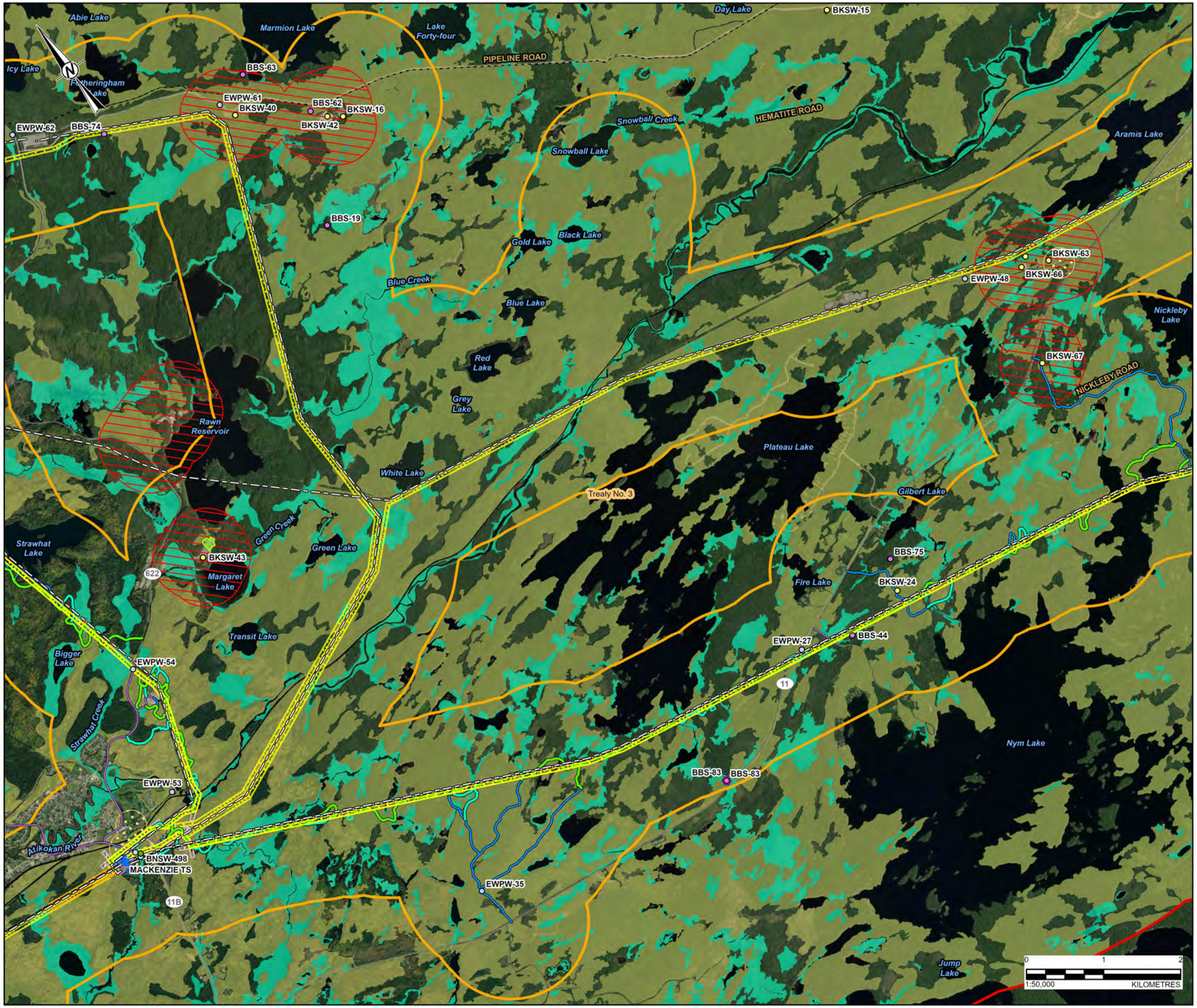
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

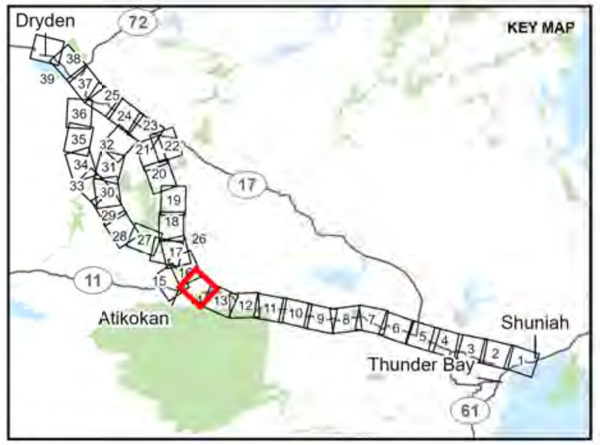
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-13



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- MARSH BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

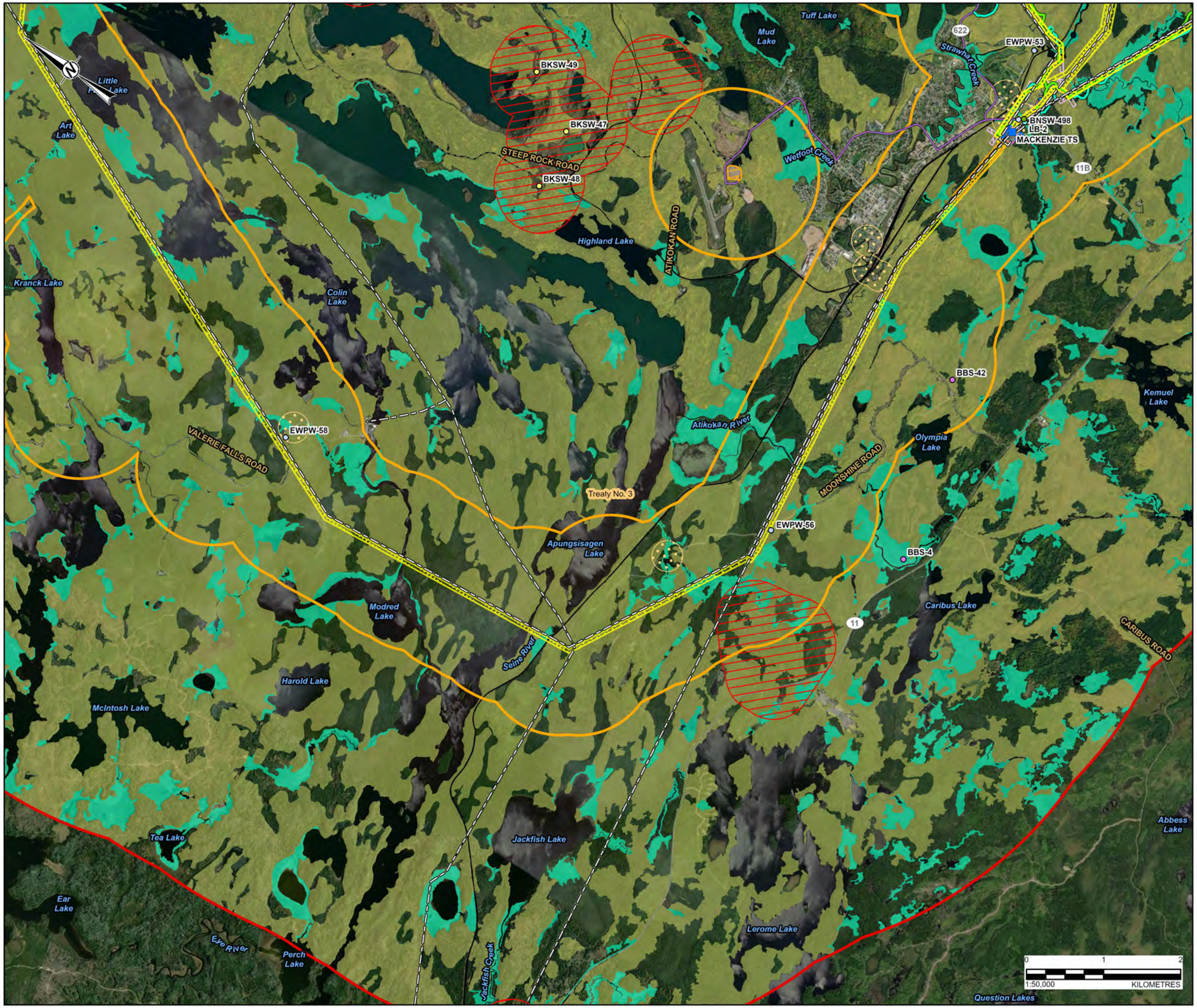
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT
wsp

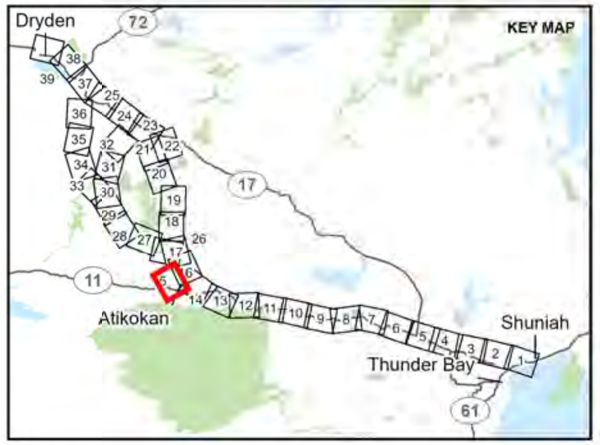
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-14



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

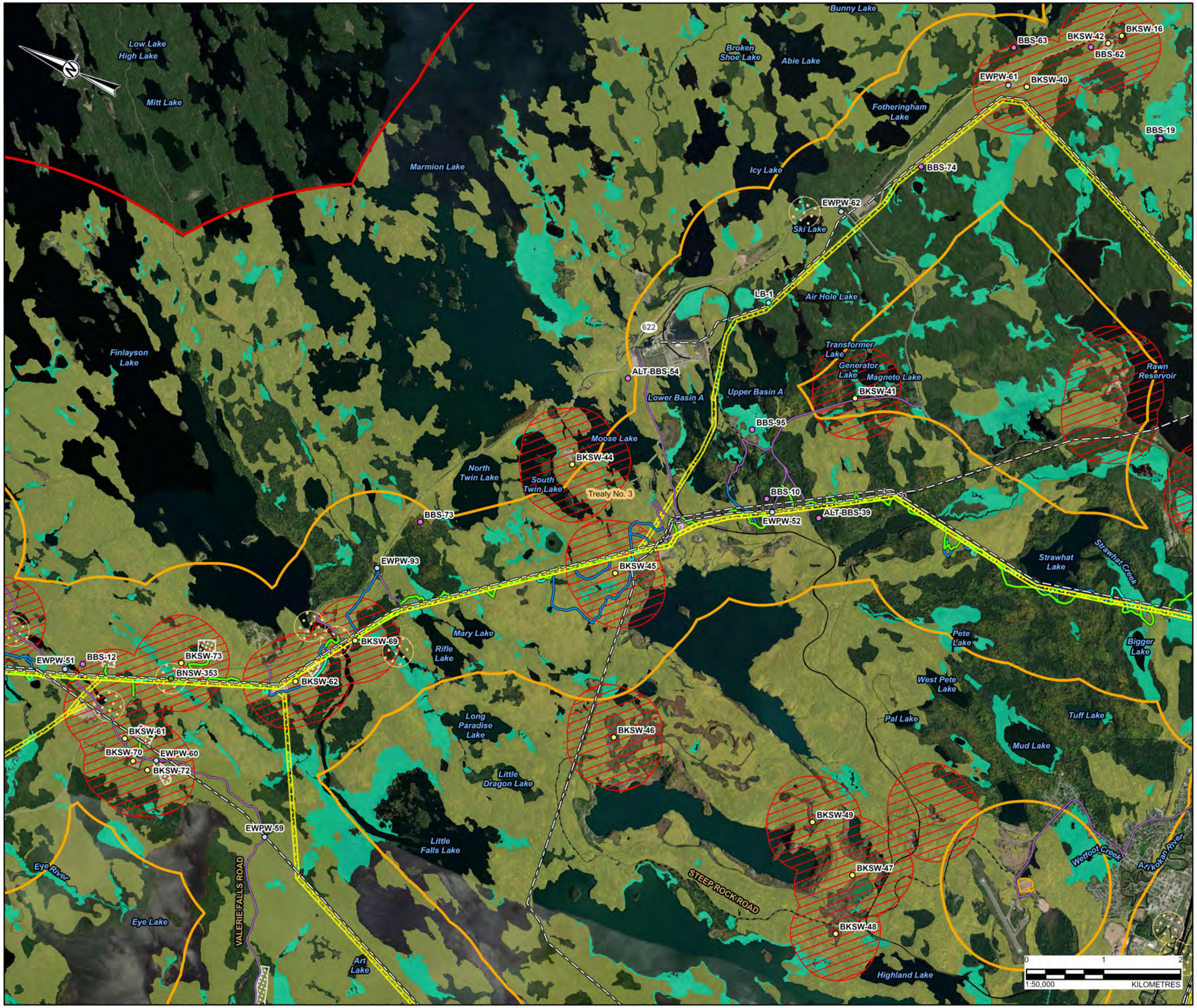
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

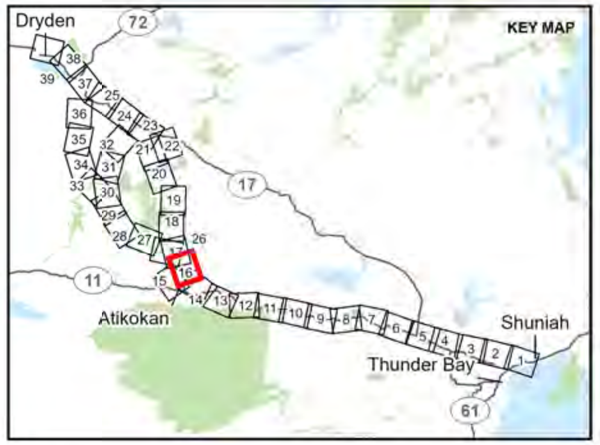
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-15



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

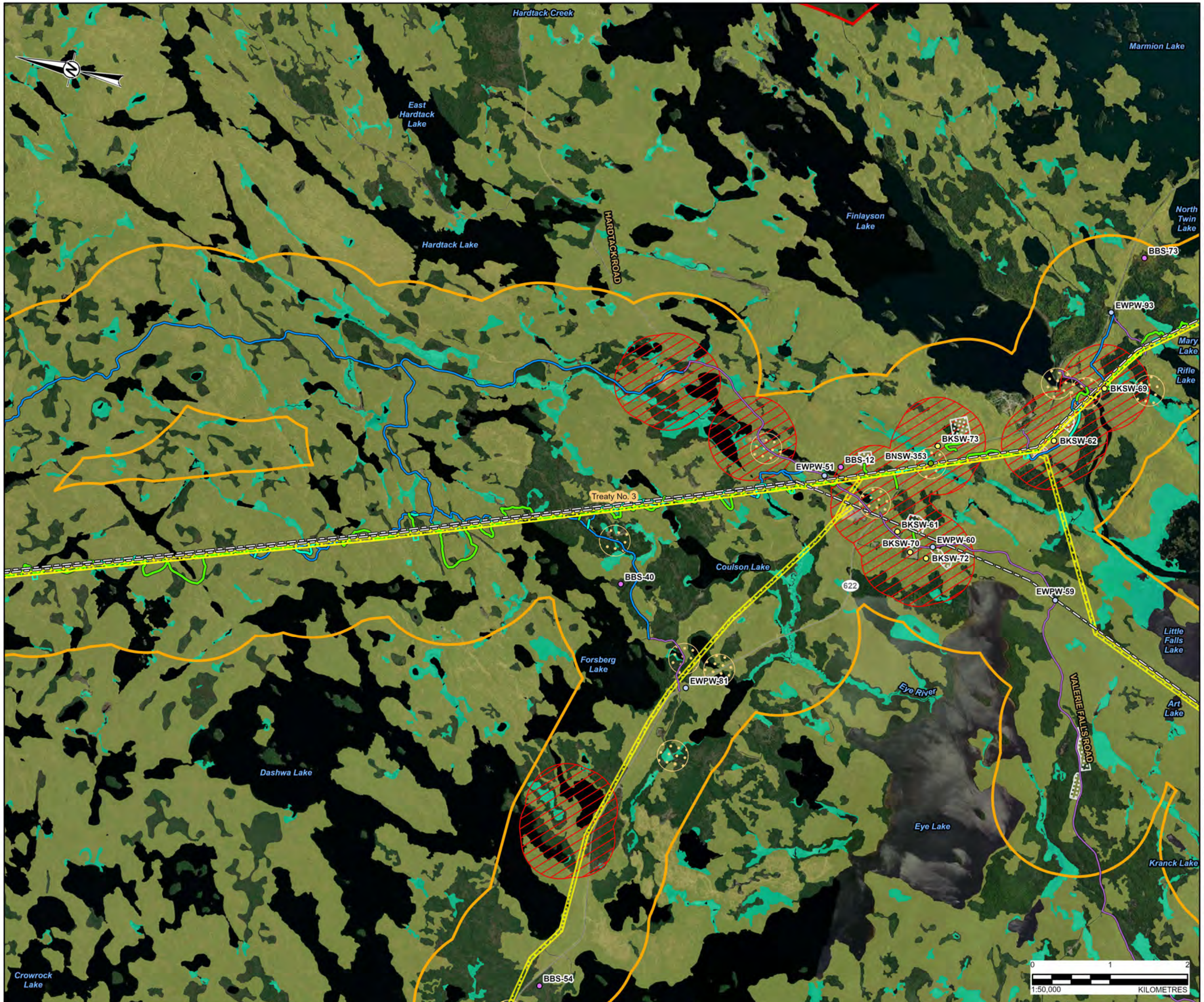
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

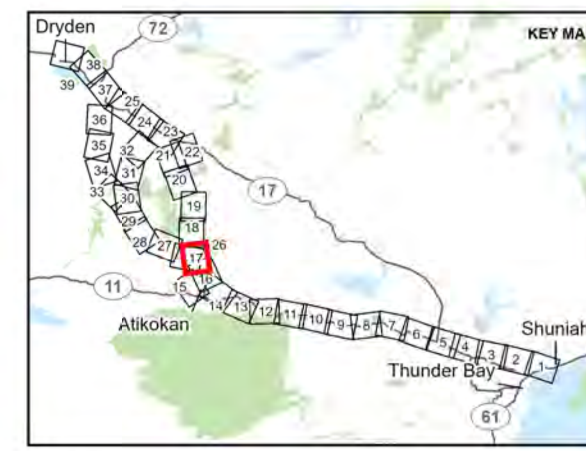
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-16



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

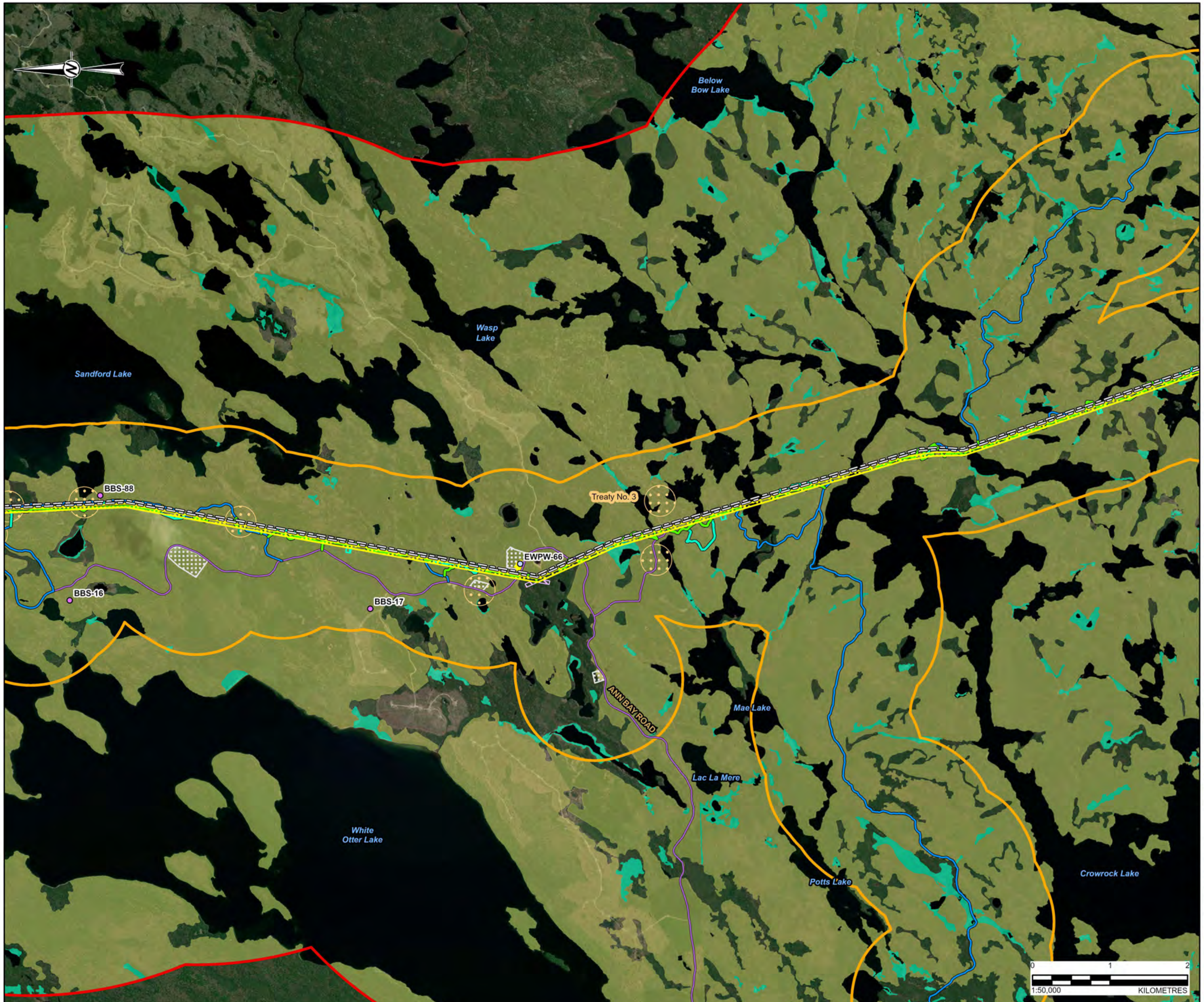
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

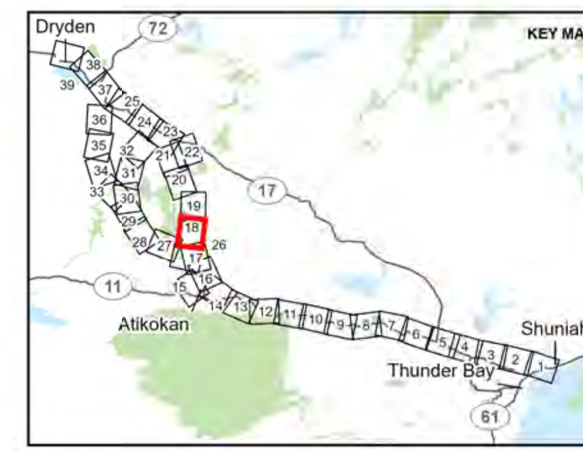
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-17



LEGEND

- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

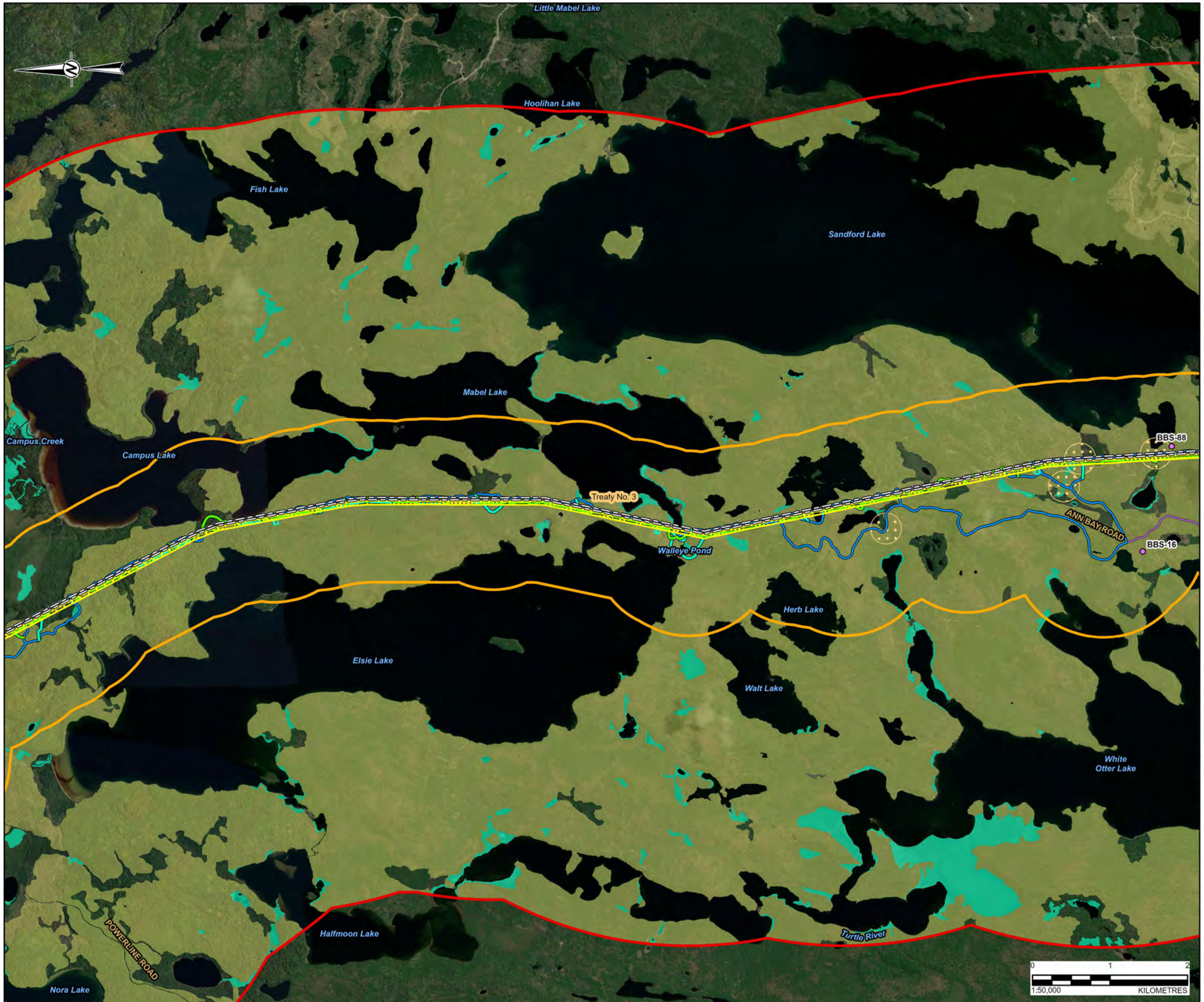
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-18



LEGEND

- BREEDING BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

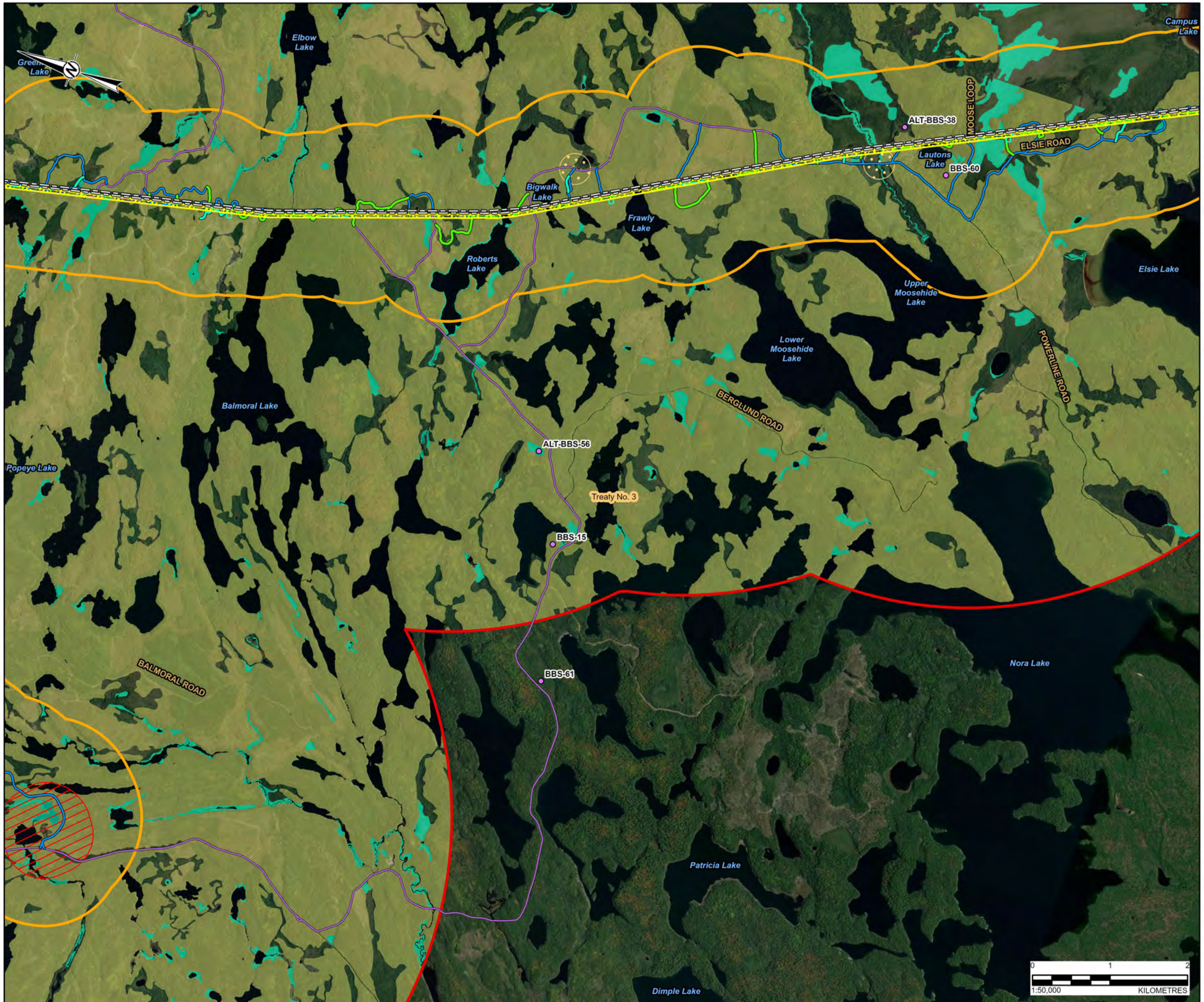
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

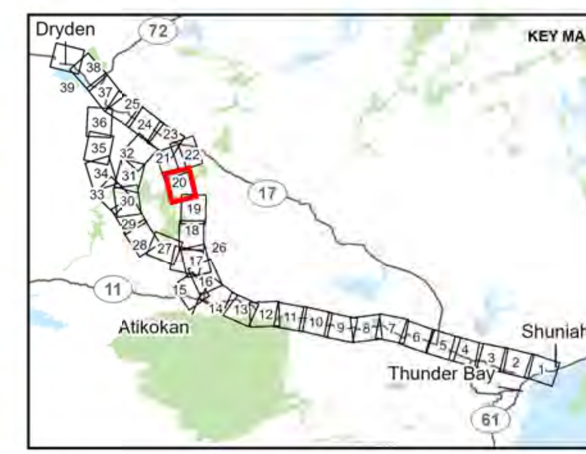
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-19



LEGEND

- BREEDING BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

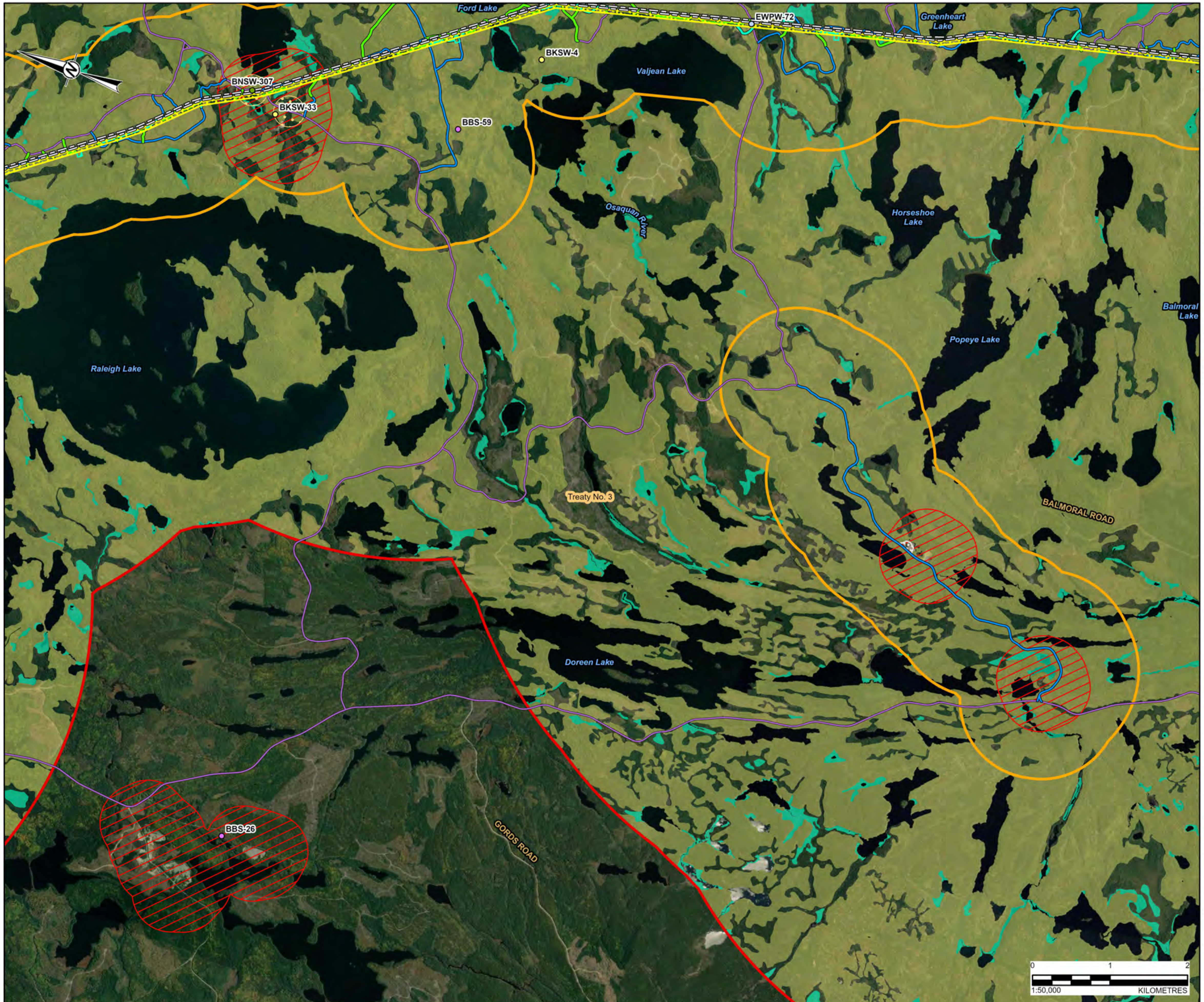
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

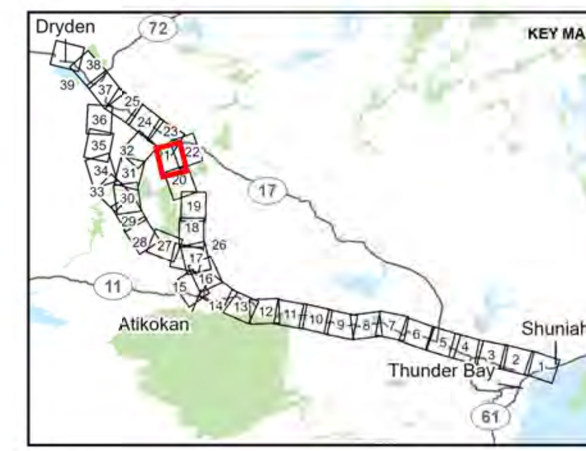
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-20



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

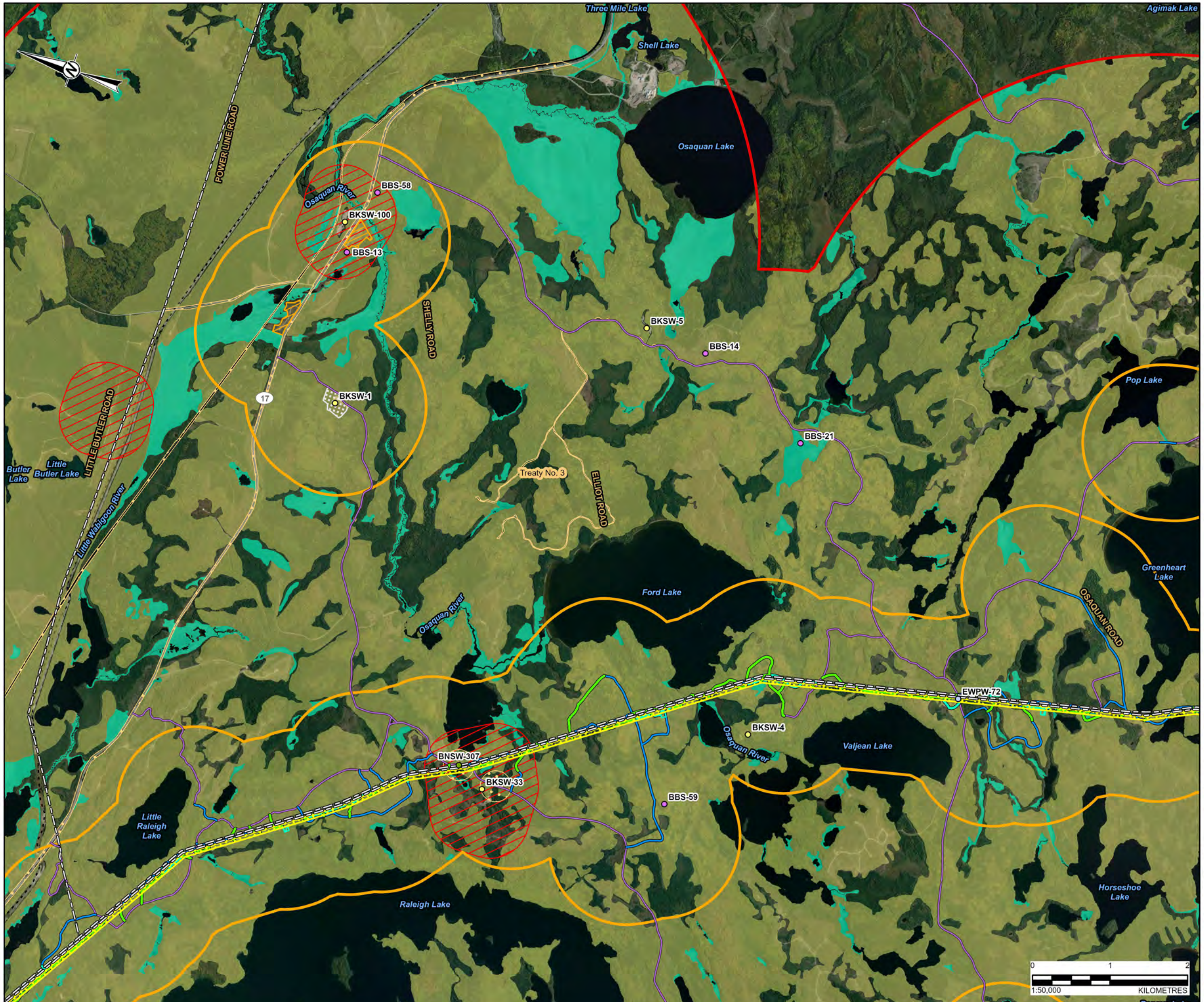
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

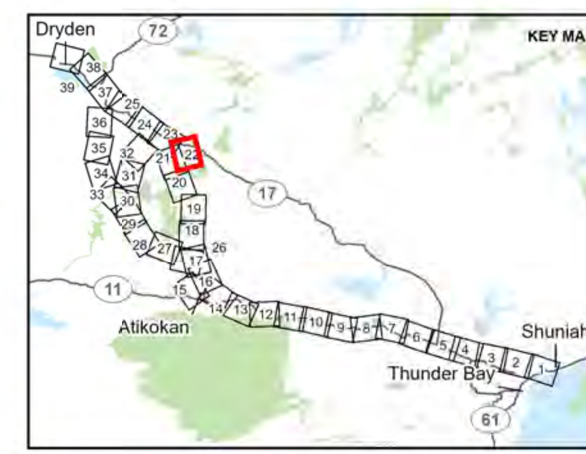
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-21



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

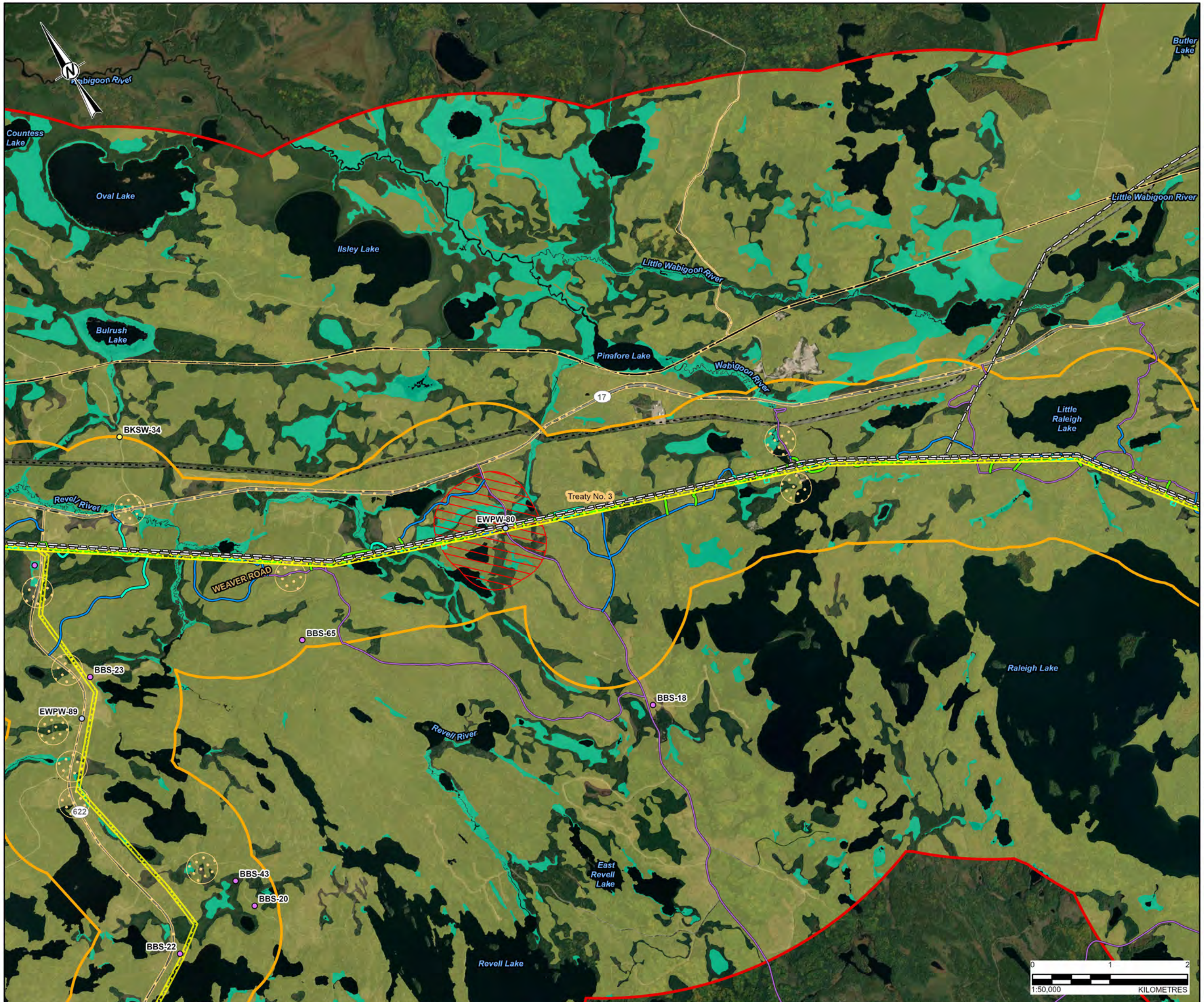
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

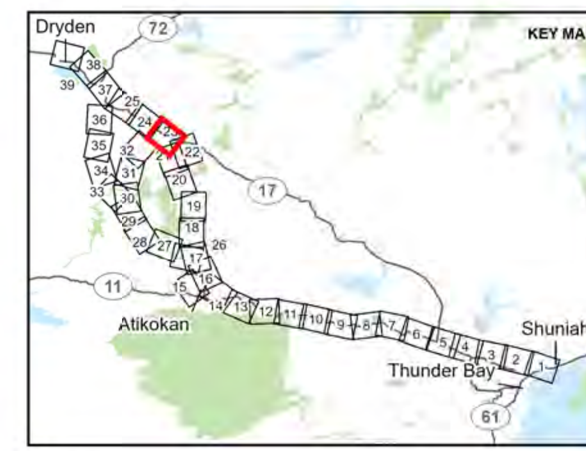
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-22



LEGEND

- BANK SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

KEY MAP



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

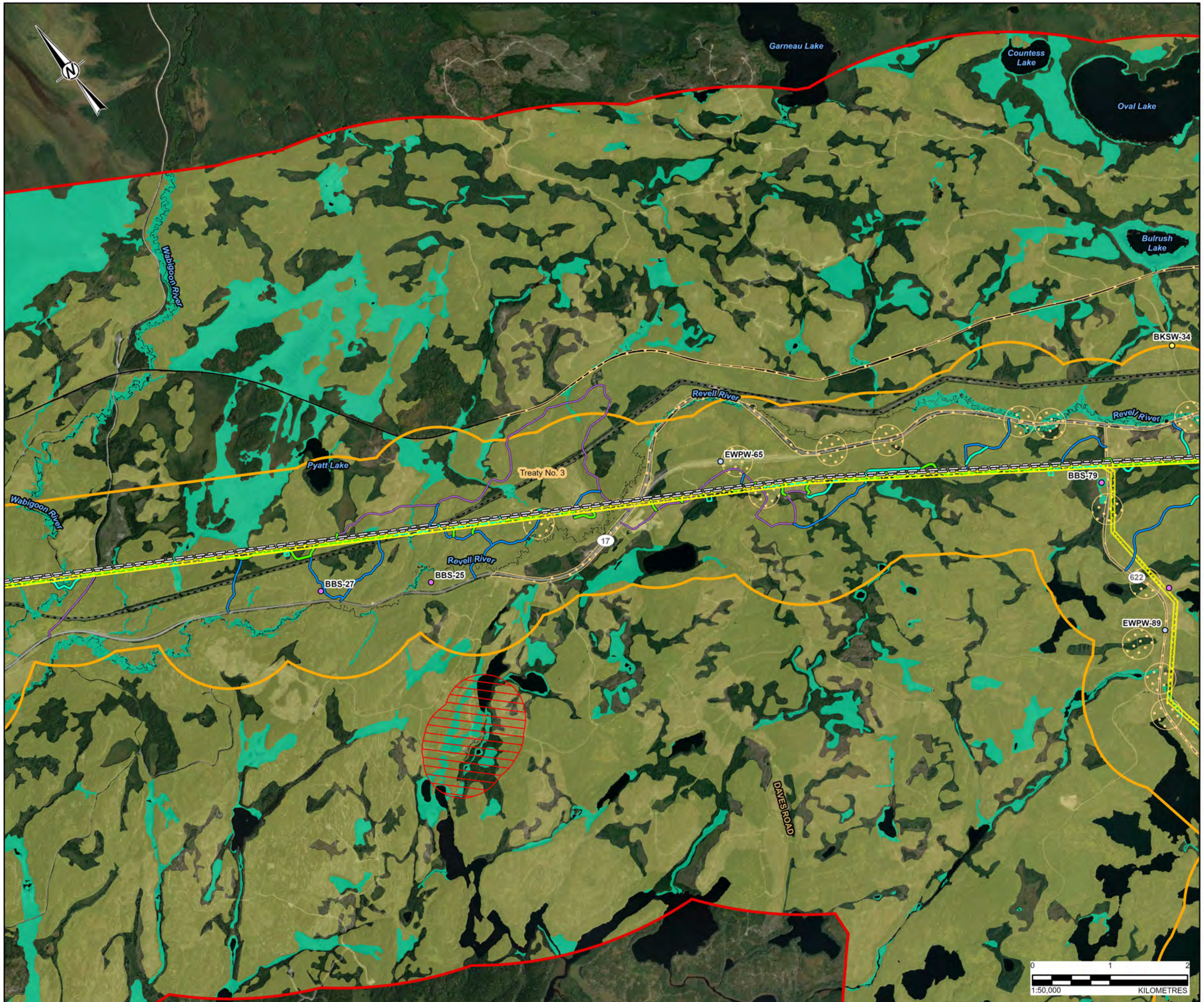
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

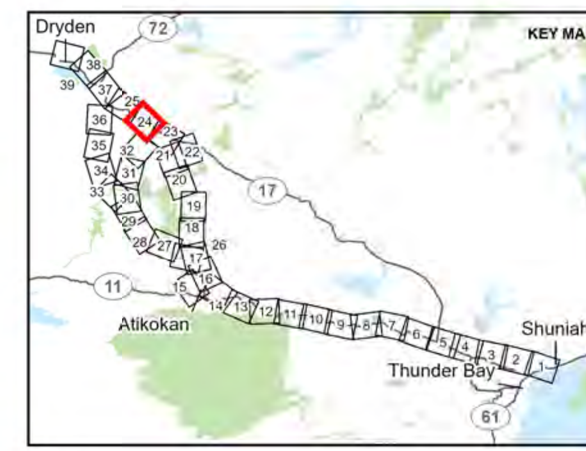
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-23



LEGEND

- BANK SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

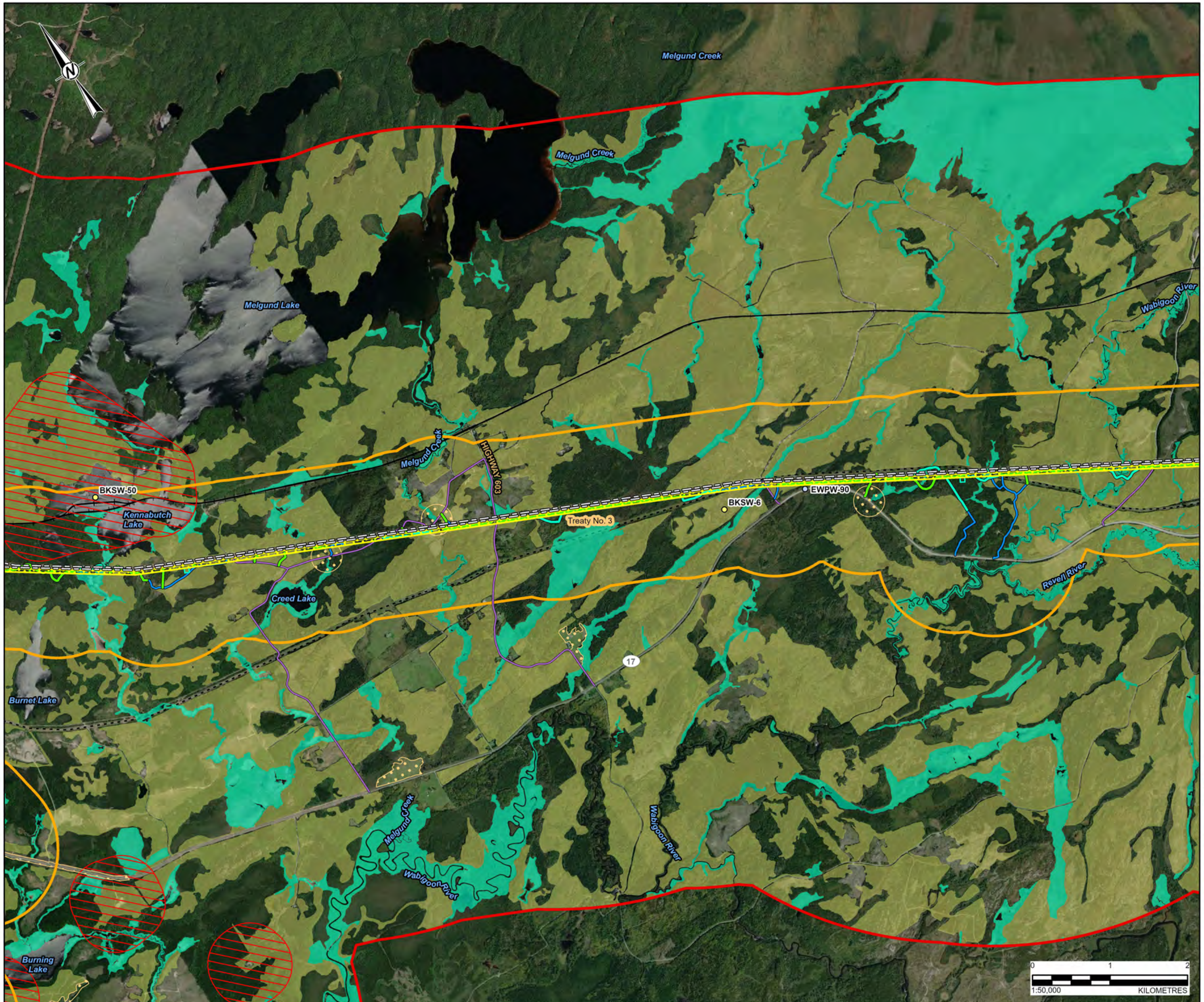
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

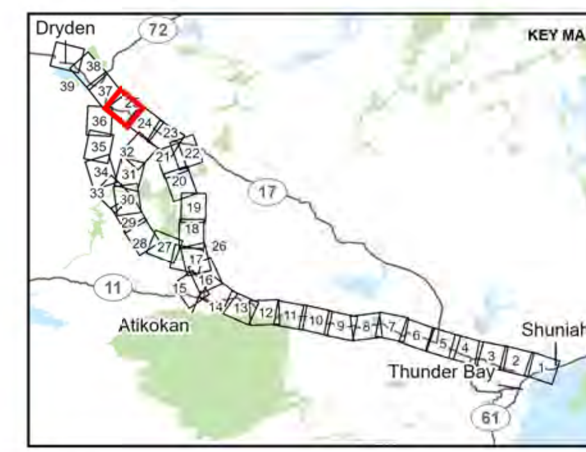
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-24



LEGEND

- BANK SWALLOW SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

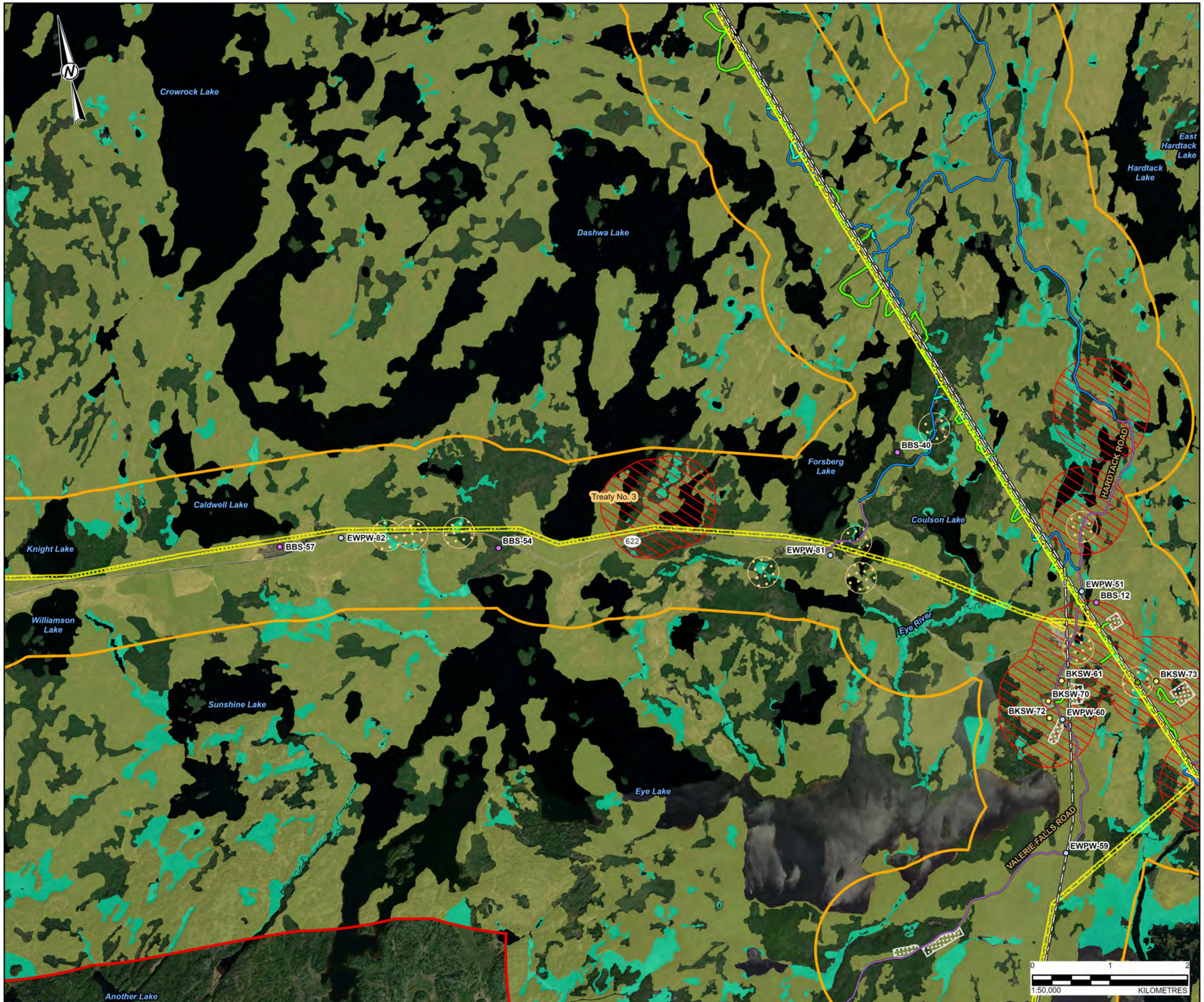
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

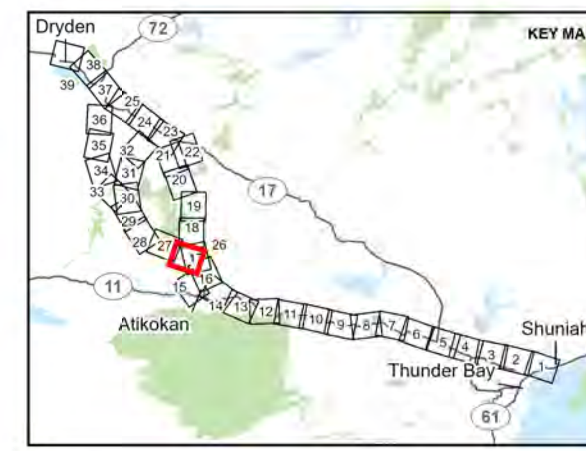
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-25

0 1 2
1:50,000 KILOMETRES



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

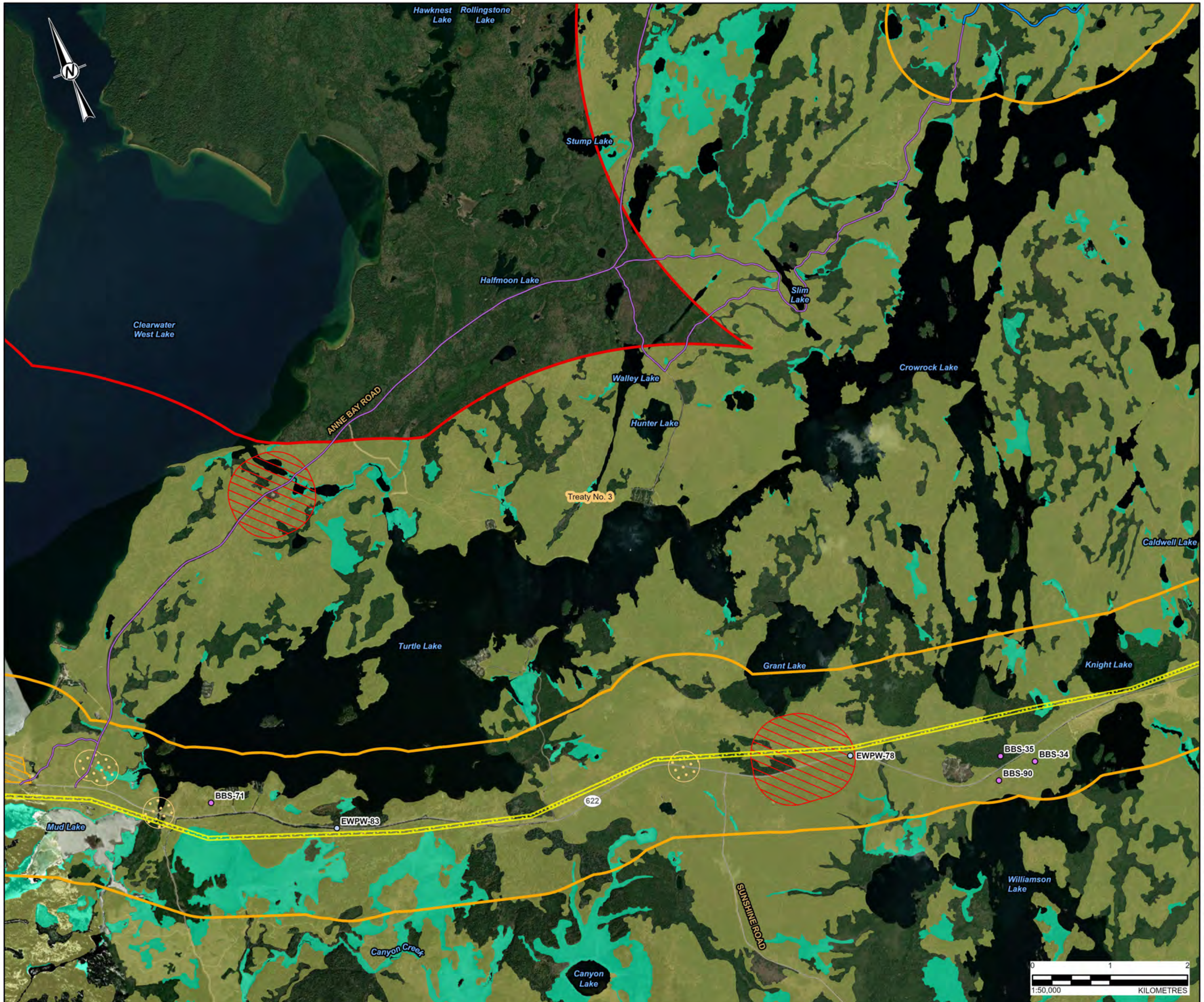
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

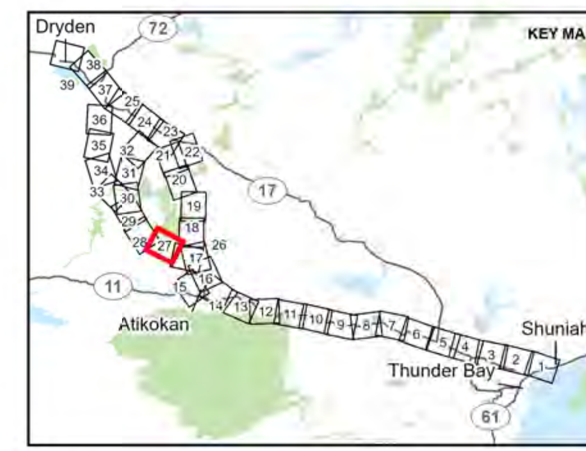
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-26



LEGEND

- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

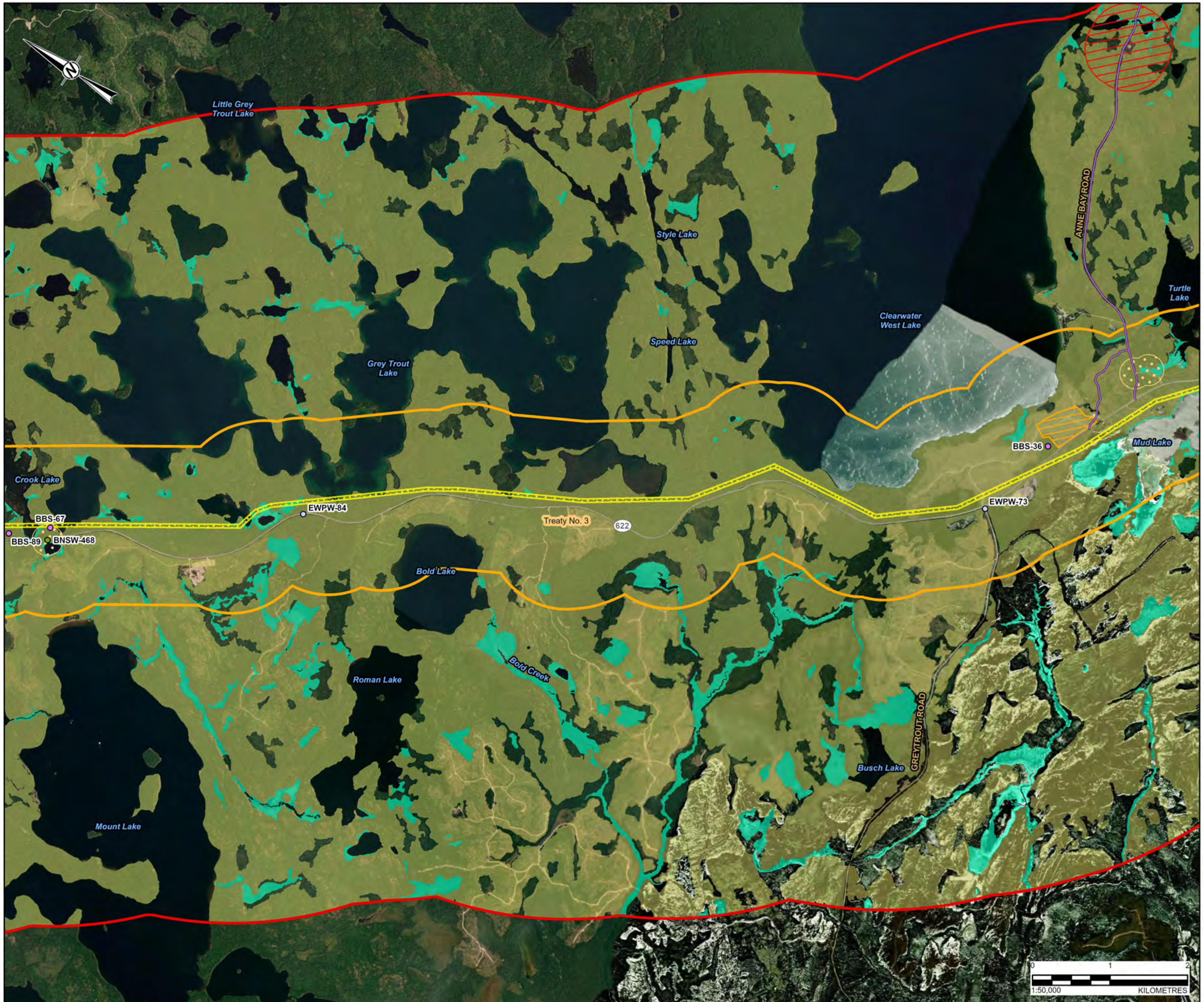
TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

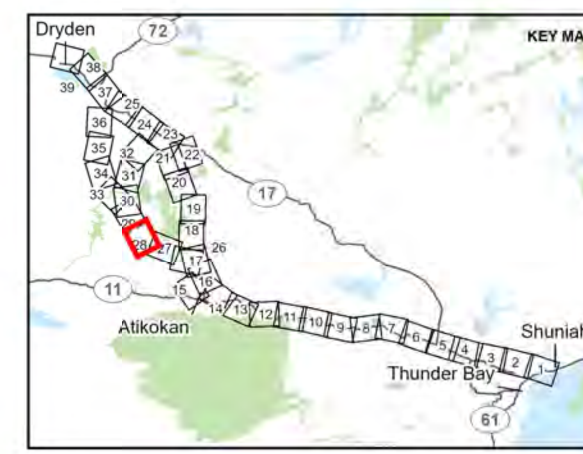
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-27



LEGEND

- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

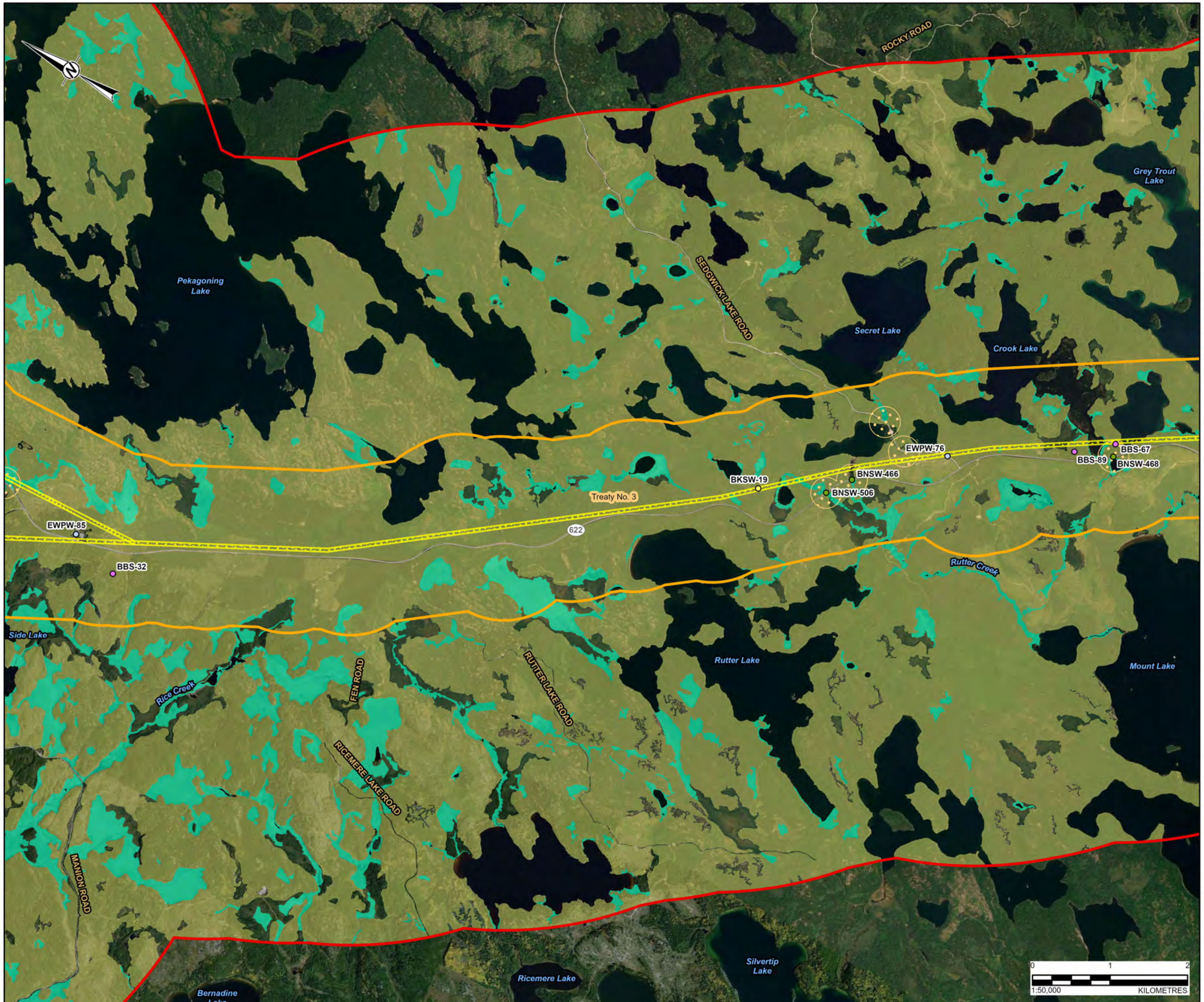
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

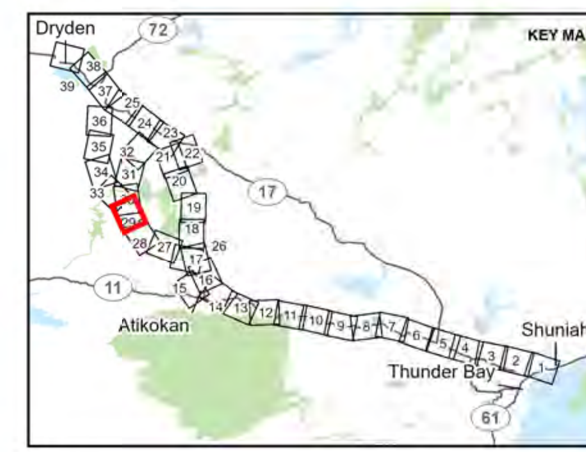
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-28



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

TITLE

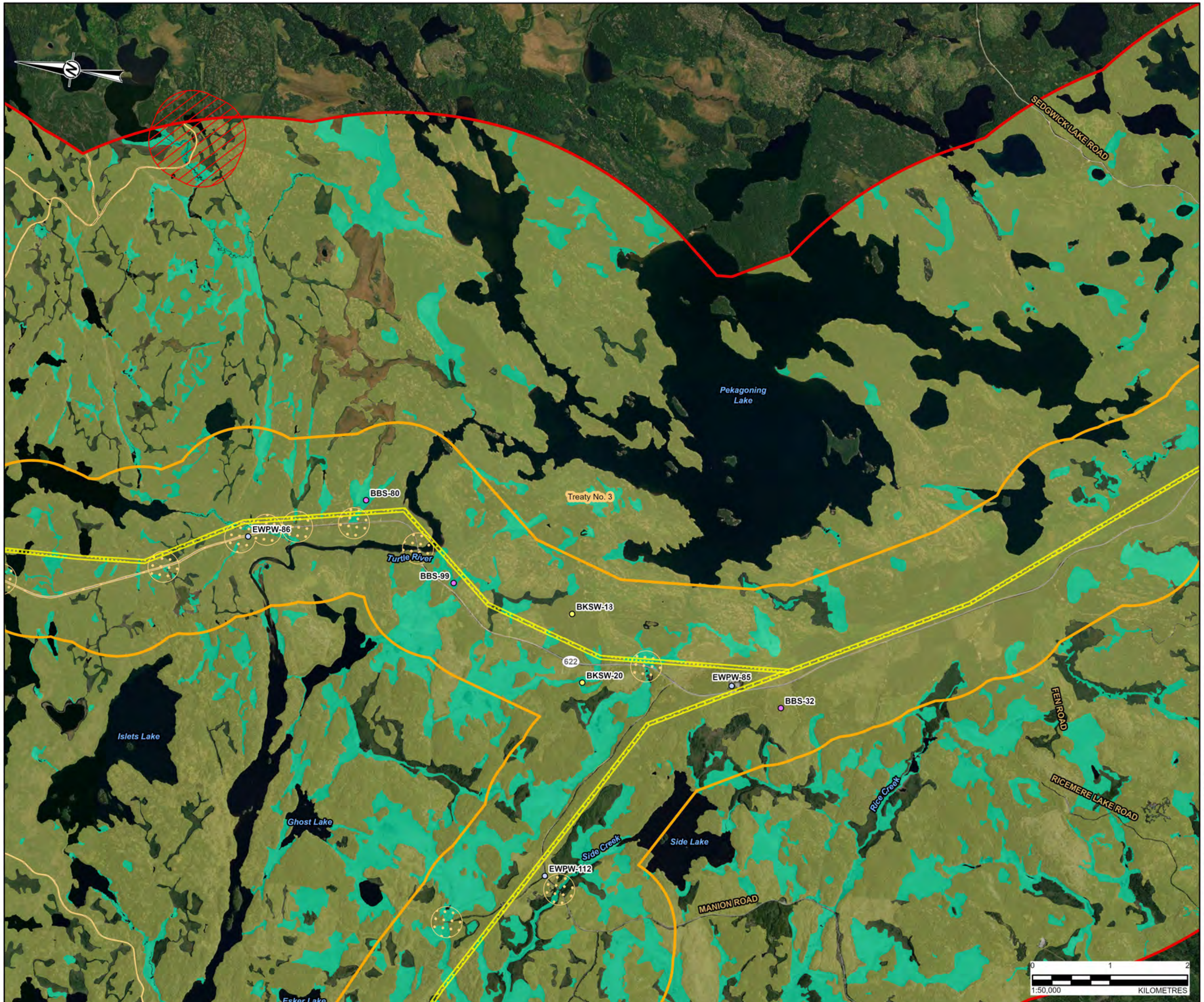
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

wsp

YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-29



LEGEND

- BANK SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

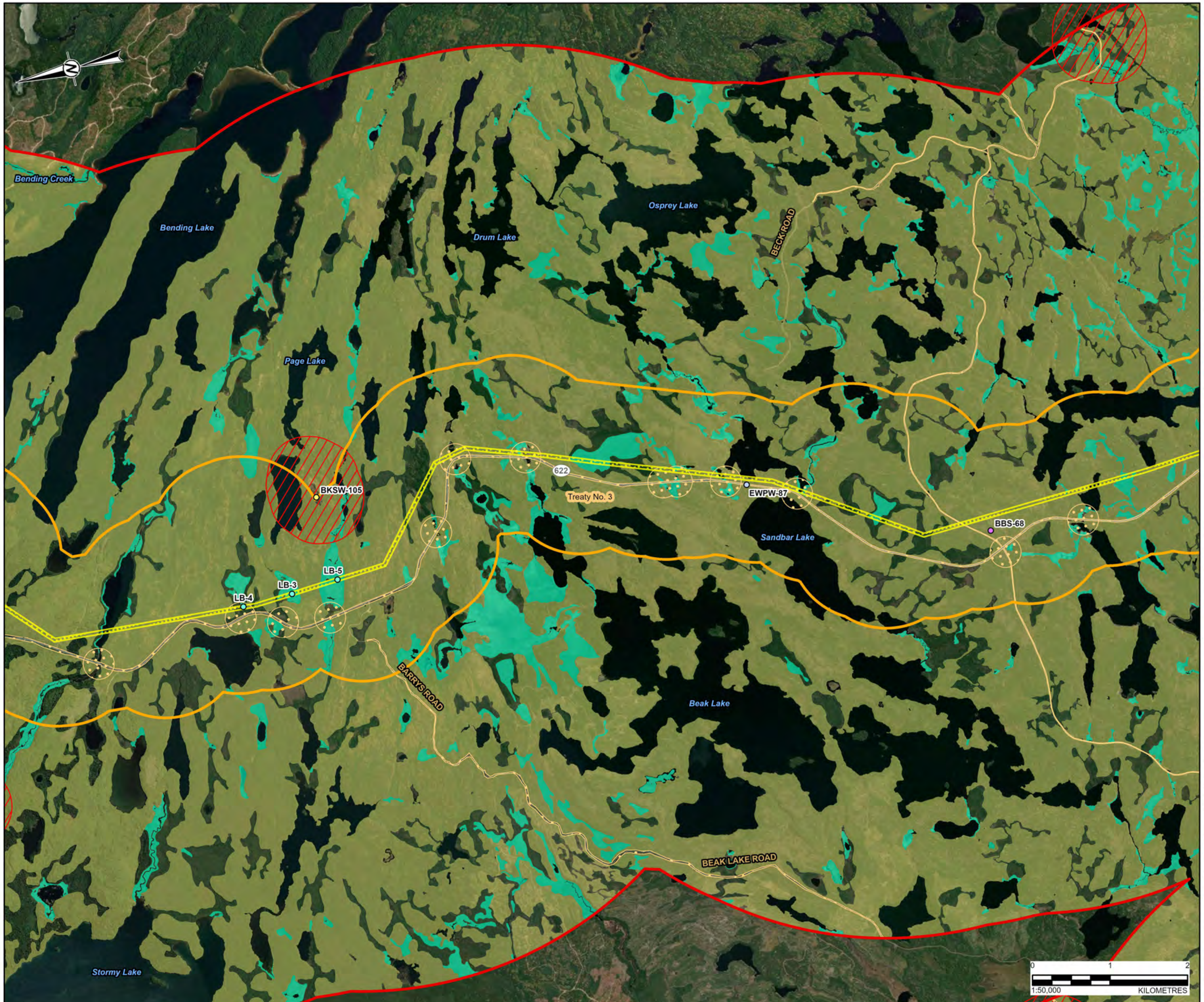
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-30



LEGEND

- BANK SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

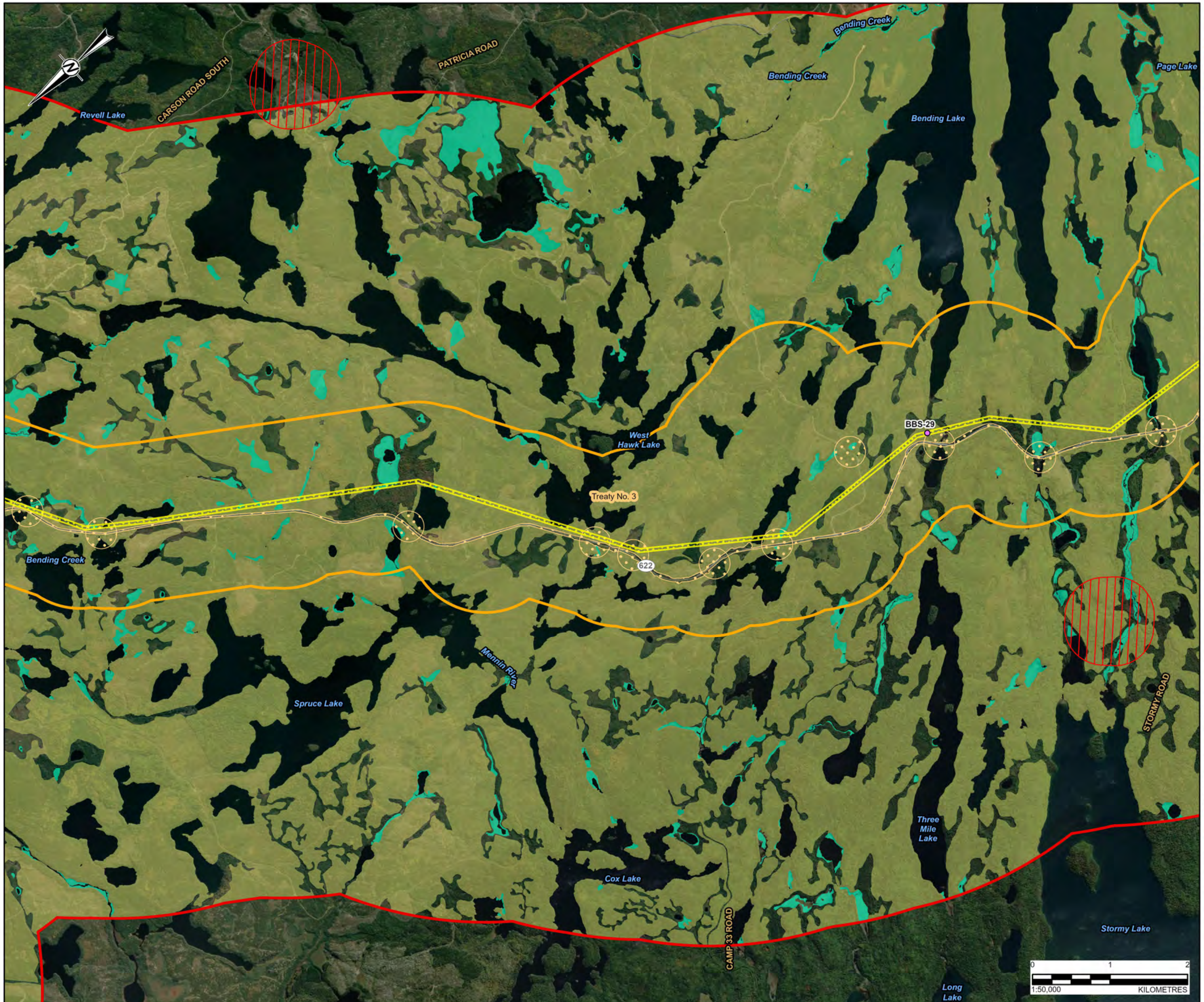
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT
wsp

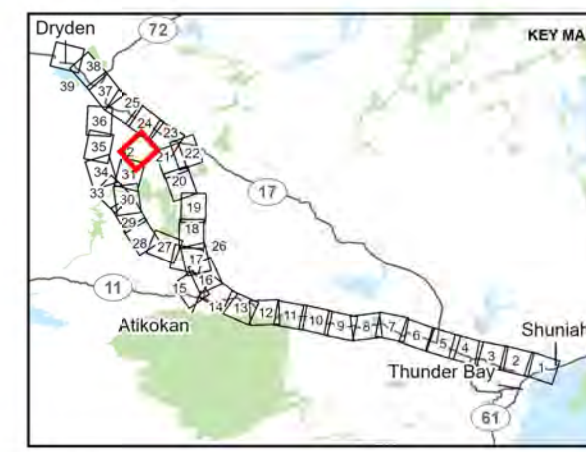
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-31



LEGEND

- BREEDING BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

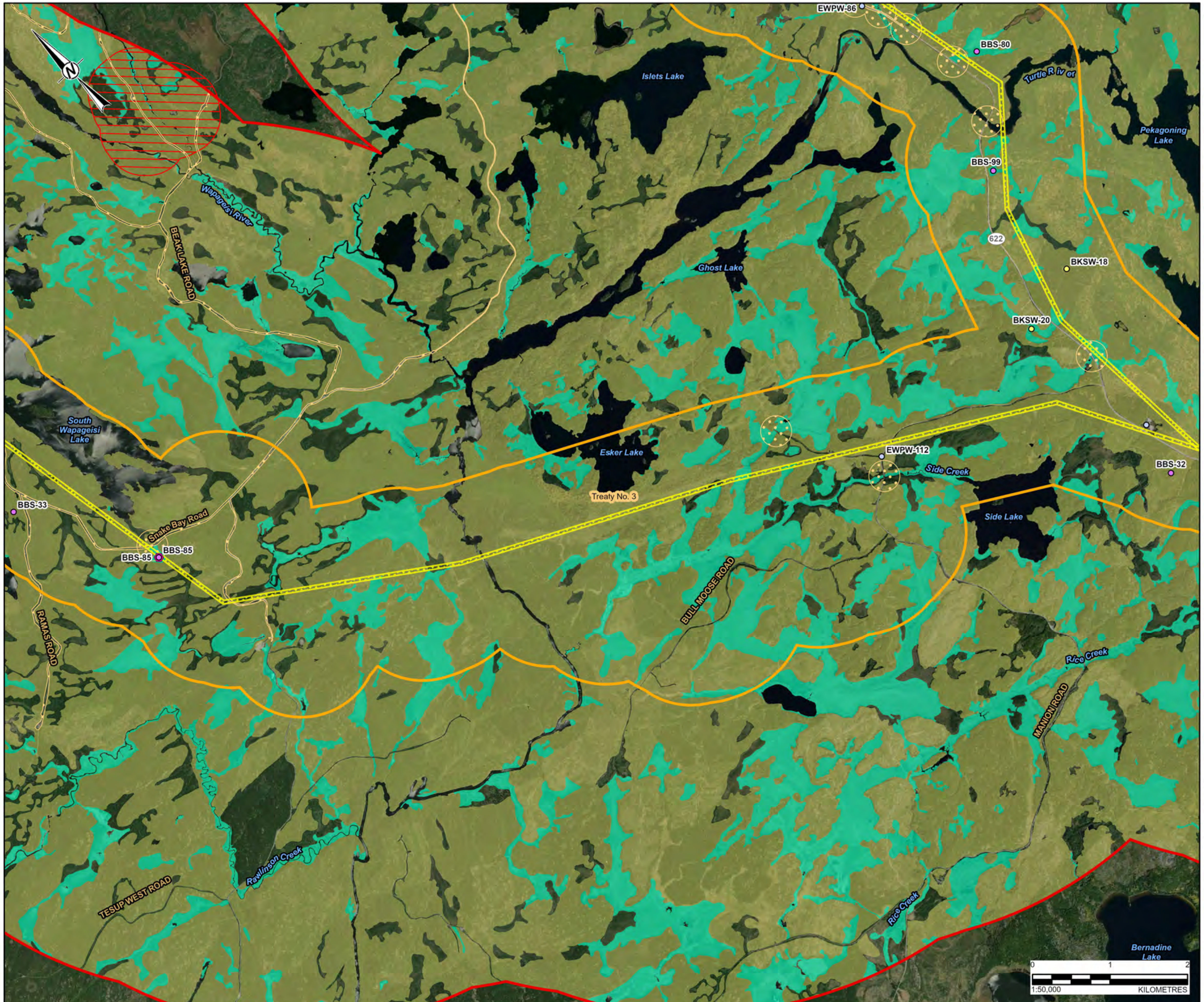
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

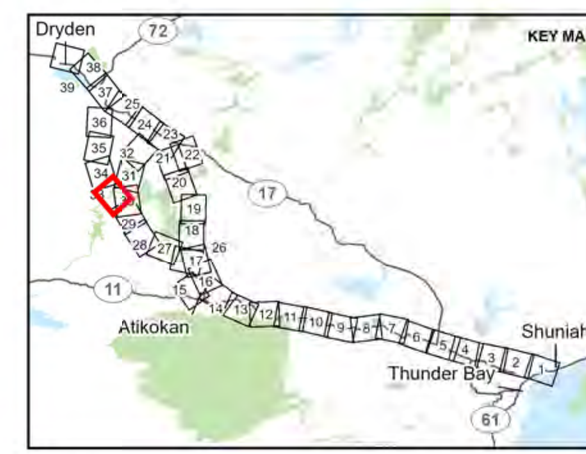
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-32



LEGEND

- BANK SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- MARSH BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

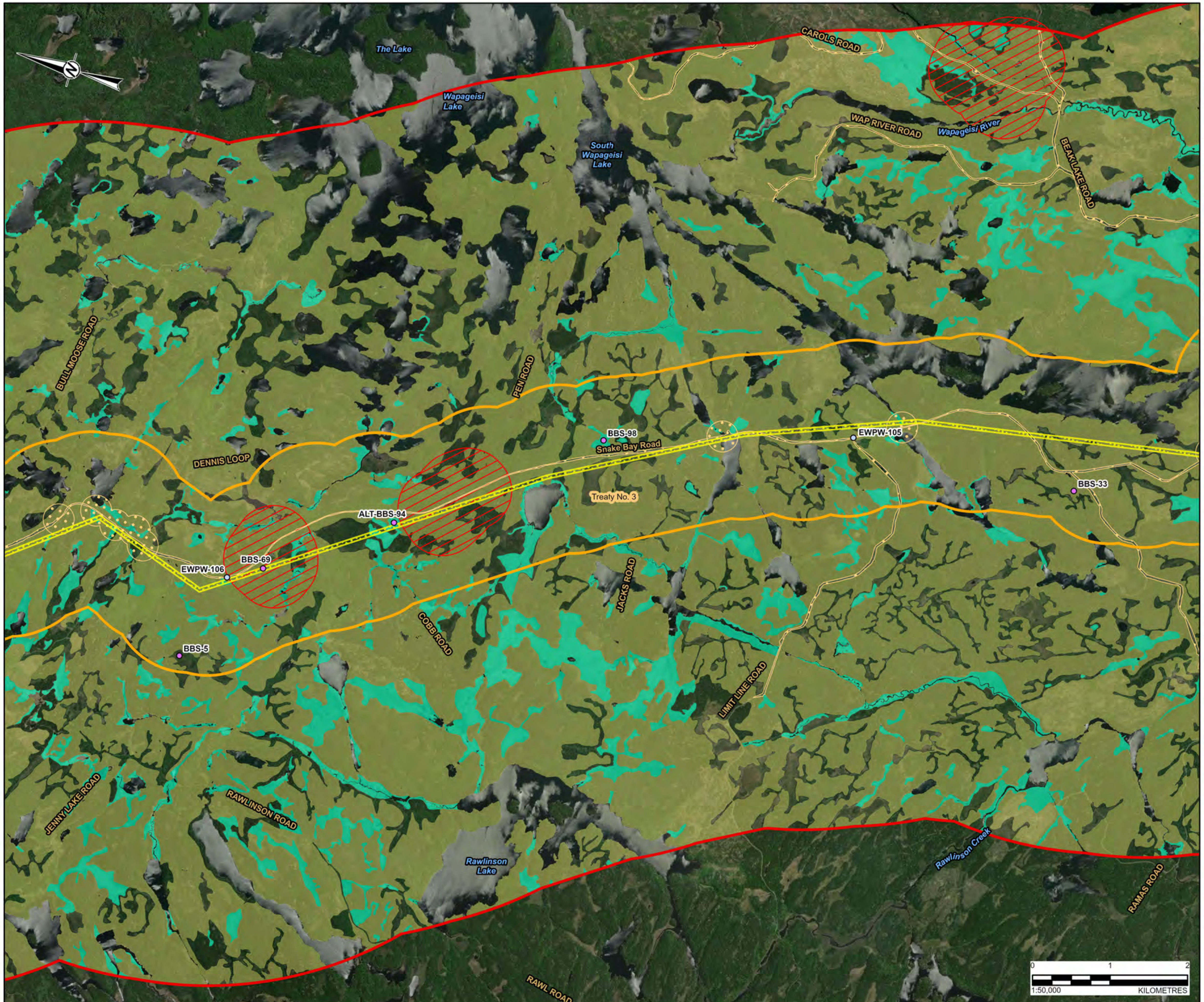
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

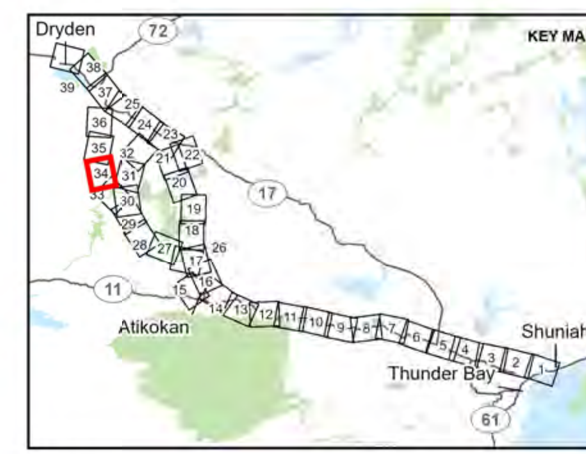
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-33



LEGEND

- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

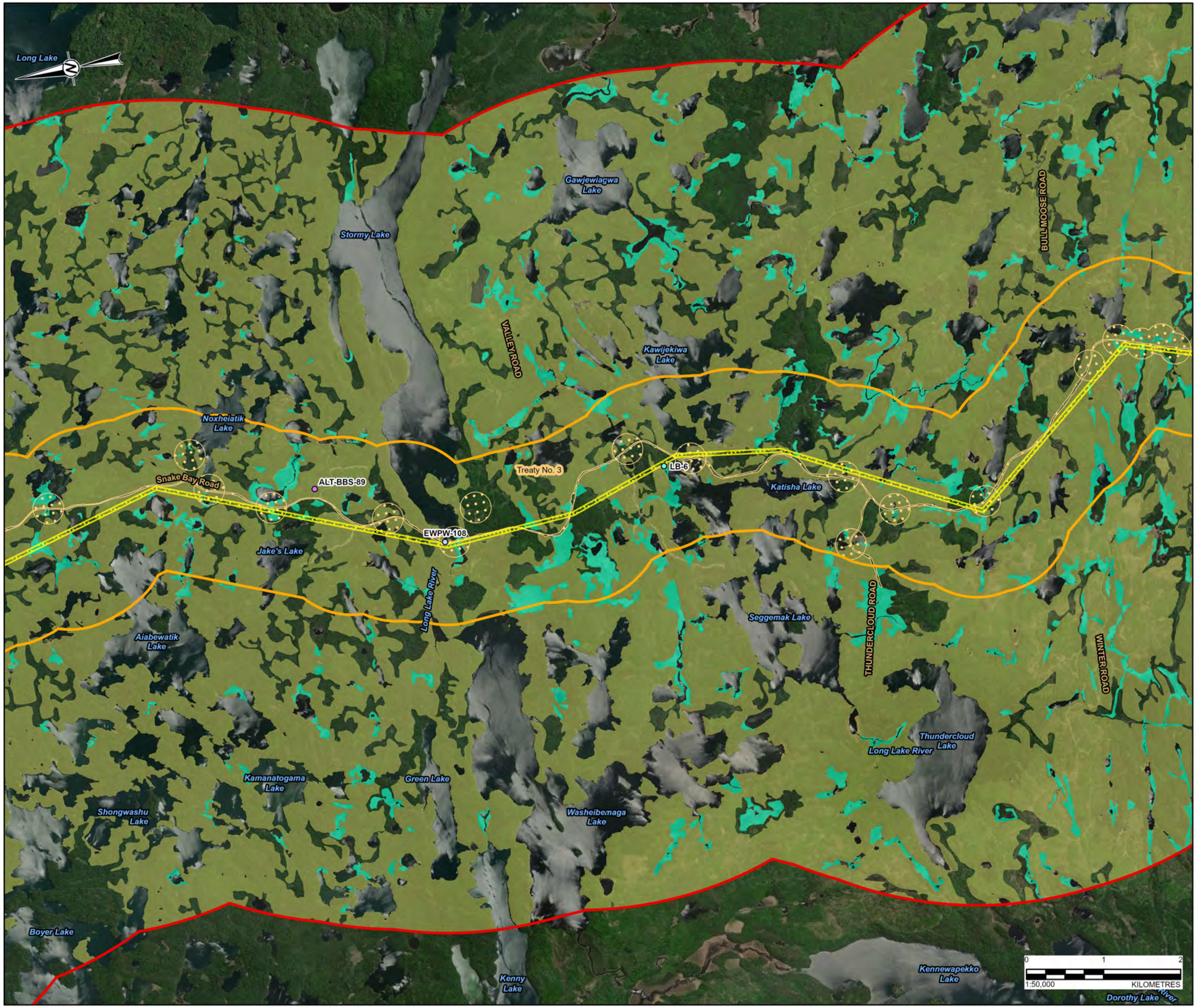
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT
wsp

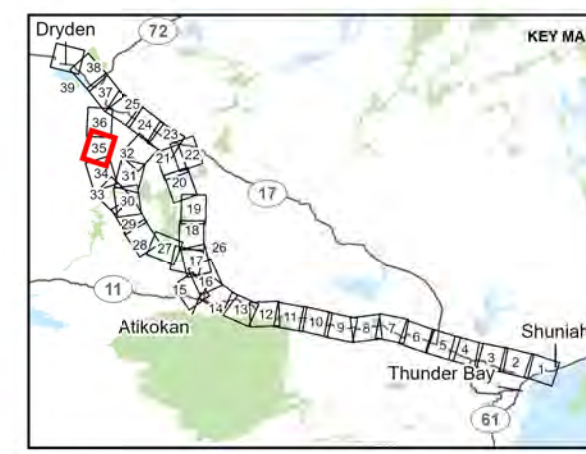
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-34



LEGEND

- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

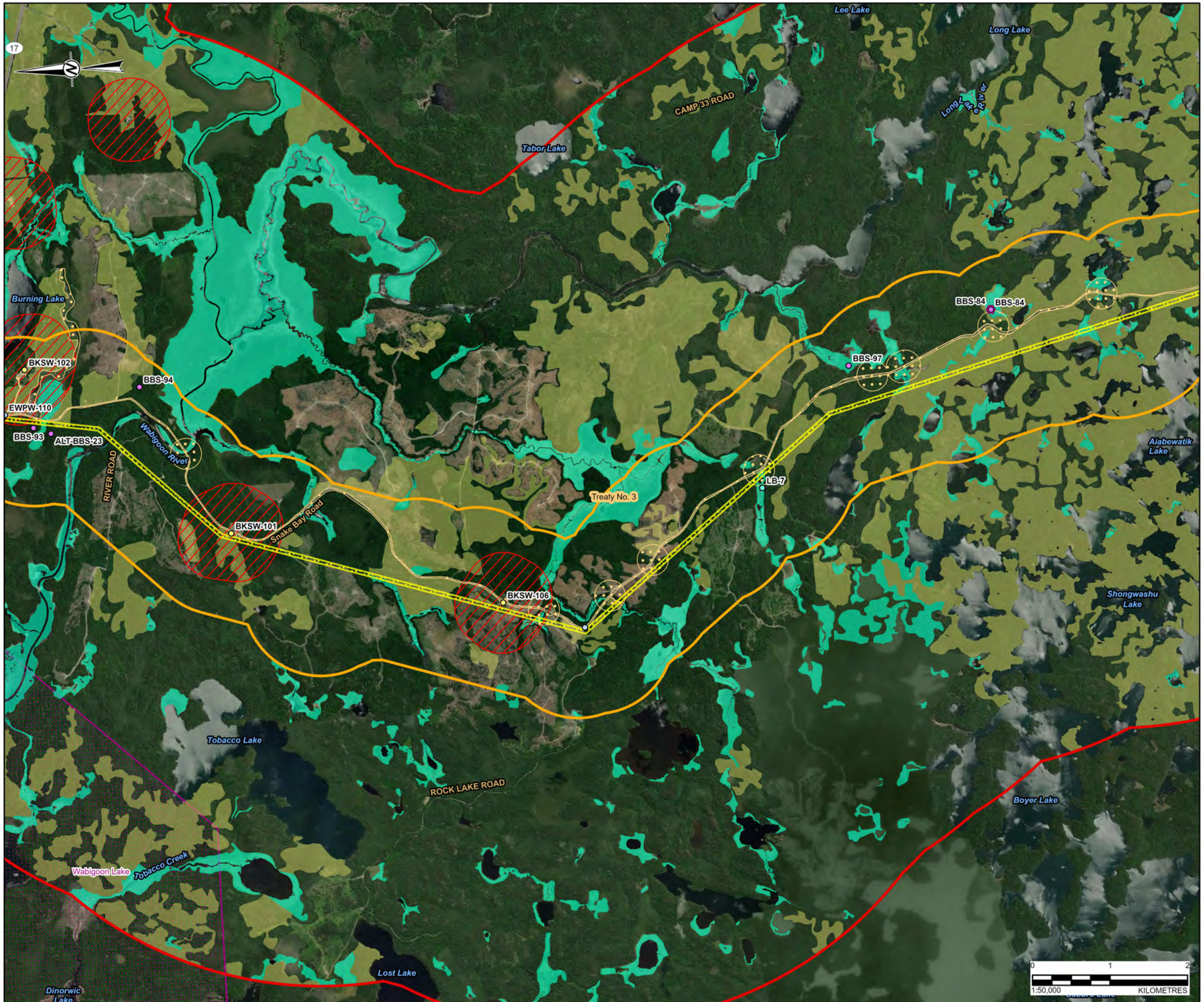
CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

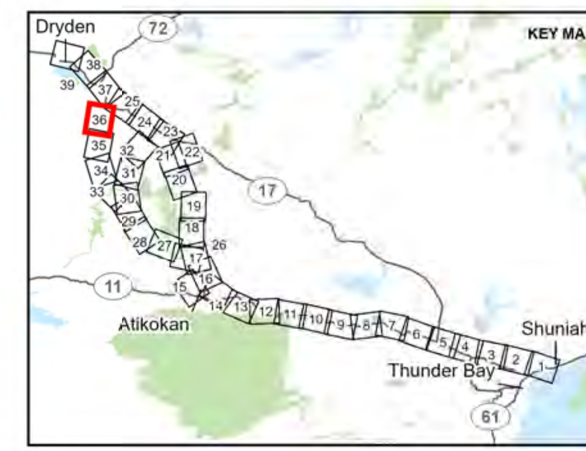
CONSULTANT		
wsp	YYYY-MM-DD	2023-05-18
	DESIGNED	KB
	PREPARED	DB
	REVIEWED	HK
	APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-35



LEGEND

- BANK SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- MARSH BIRD SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

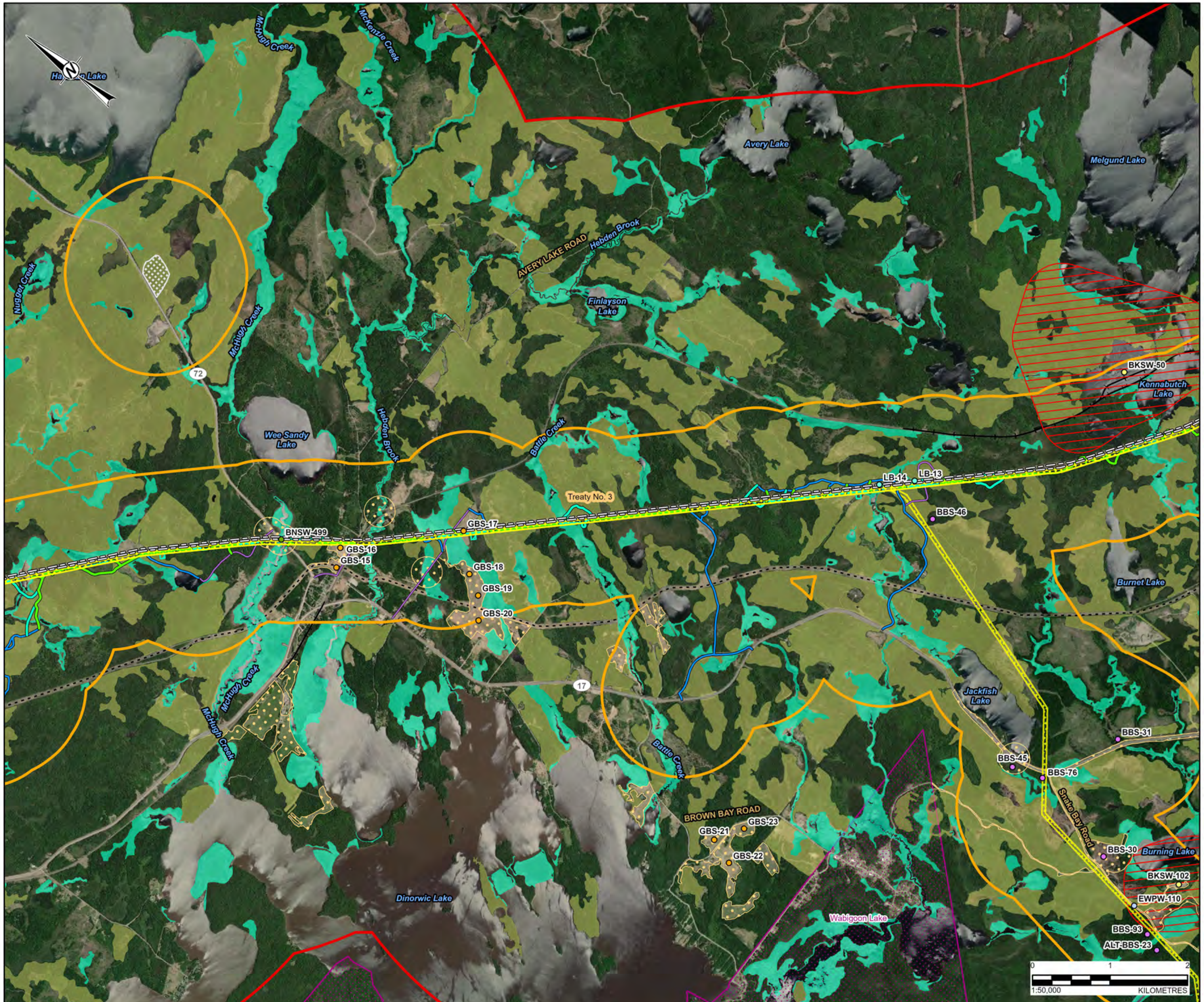
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

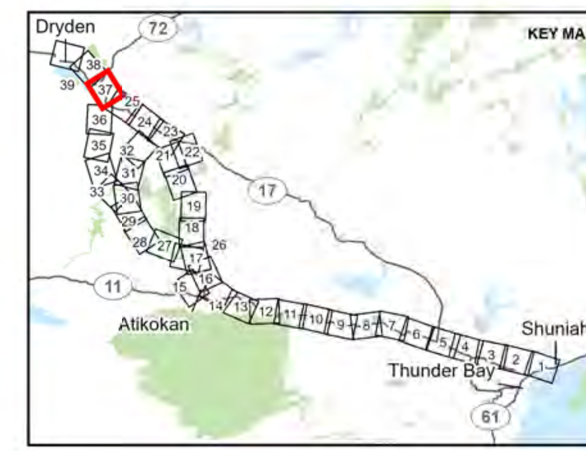
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-36



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- GRASSLAND BIRD SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

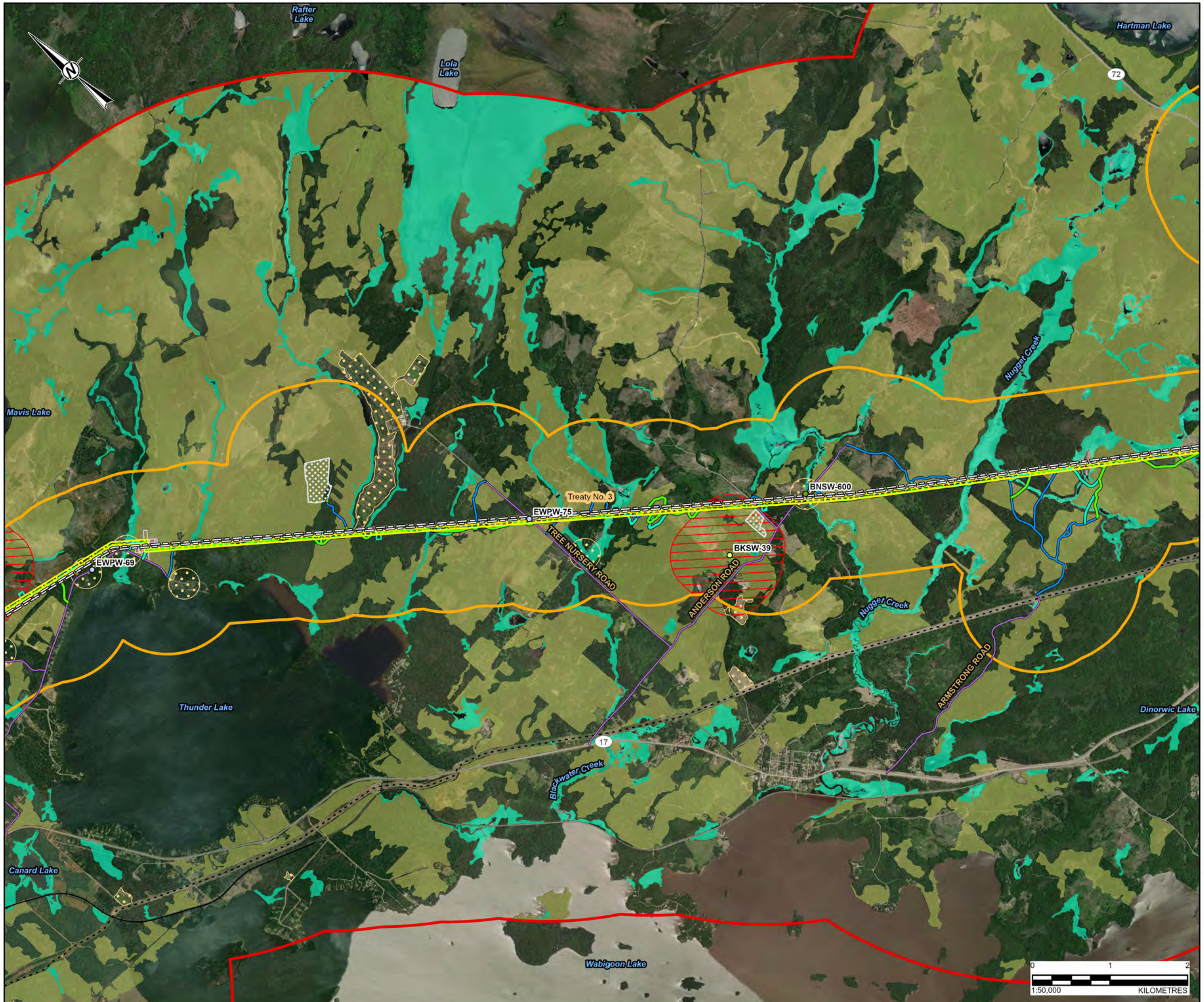
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT

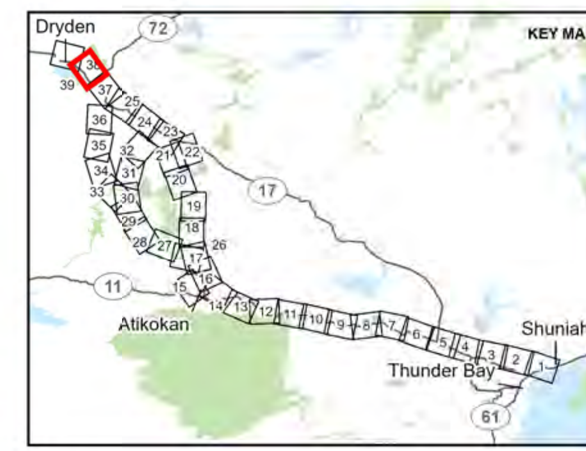
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-37



LEGEND

- BANK SWALLOW SURVEY STATION
- BARN SWALLOW SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

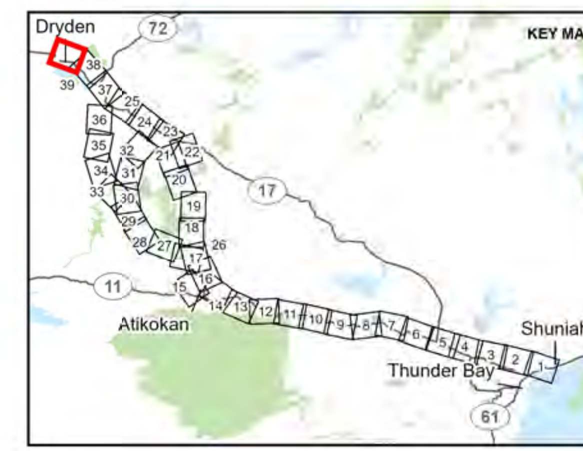
CONSULTANT
wsp

YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-38

LEGEND

- 230 kV TRANSFORMER STATION (TS)
- BANK SWALLOW SURVEY STATION
- BREEDING BIRD SURVEY STATION
- EASTERN WHIP-POOR-WILL SURVEY STATION
- LEAST BITTERN SURVEY STATION
- CANDIDATE BARN SWALLOW HABITAT
- CANDIDATE BANK SWALLOW HABITAT
- CANDIDATE LEAST BITTERN HABITAT
- CANDIDATE EASTERN WHIP-POOR-WILL HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BREEDING BIRD SURVEY STATIONS AND CANDIDATE HABITAT

CONSULTANT: wsp

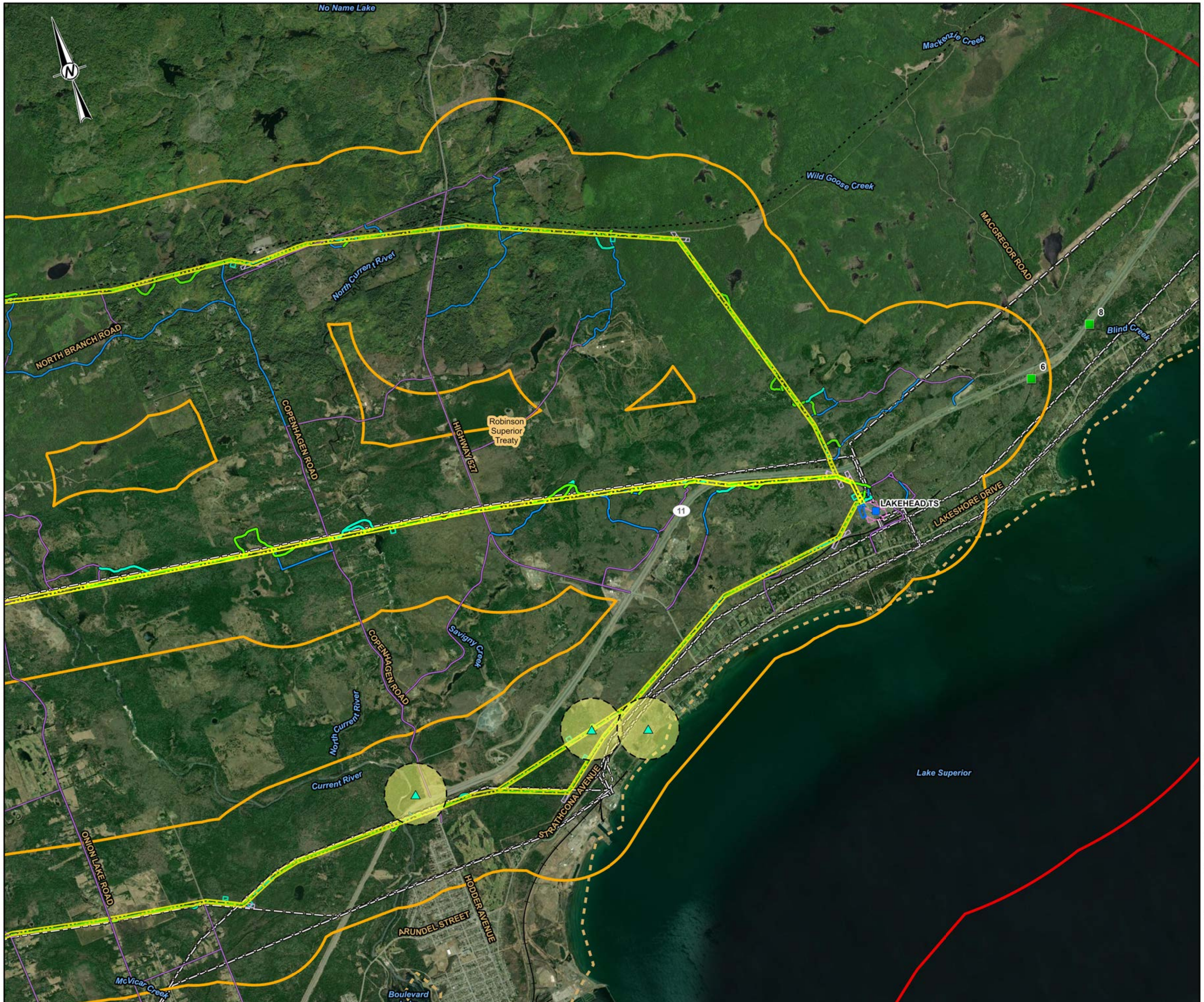
YYYY-MM-DD	2023-05-18
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	A	3.2-7-39

Figure 3.2-8: Bird Species At Risk Known From and Documented in the LSA

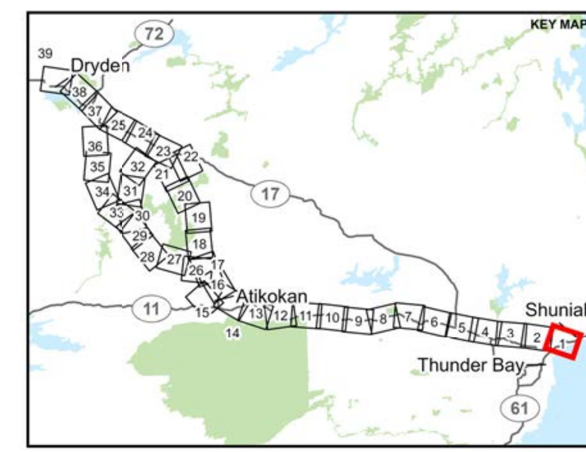
This figure includes confidential species at risk information that cannot be released publicly. The figure will be submitted to applicable regulatory agencies under separate cover.

Figure 3.2-9: Raptor and Swan Nesting Sites in the Regional and Local Study Areas



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

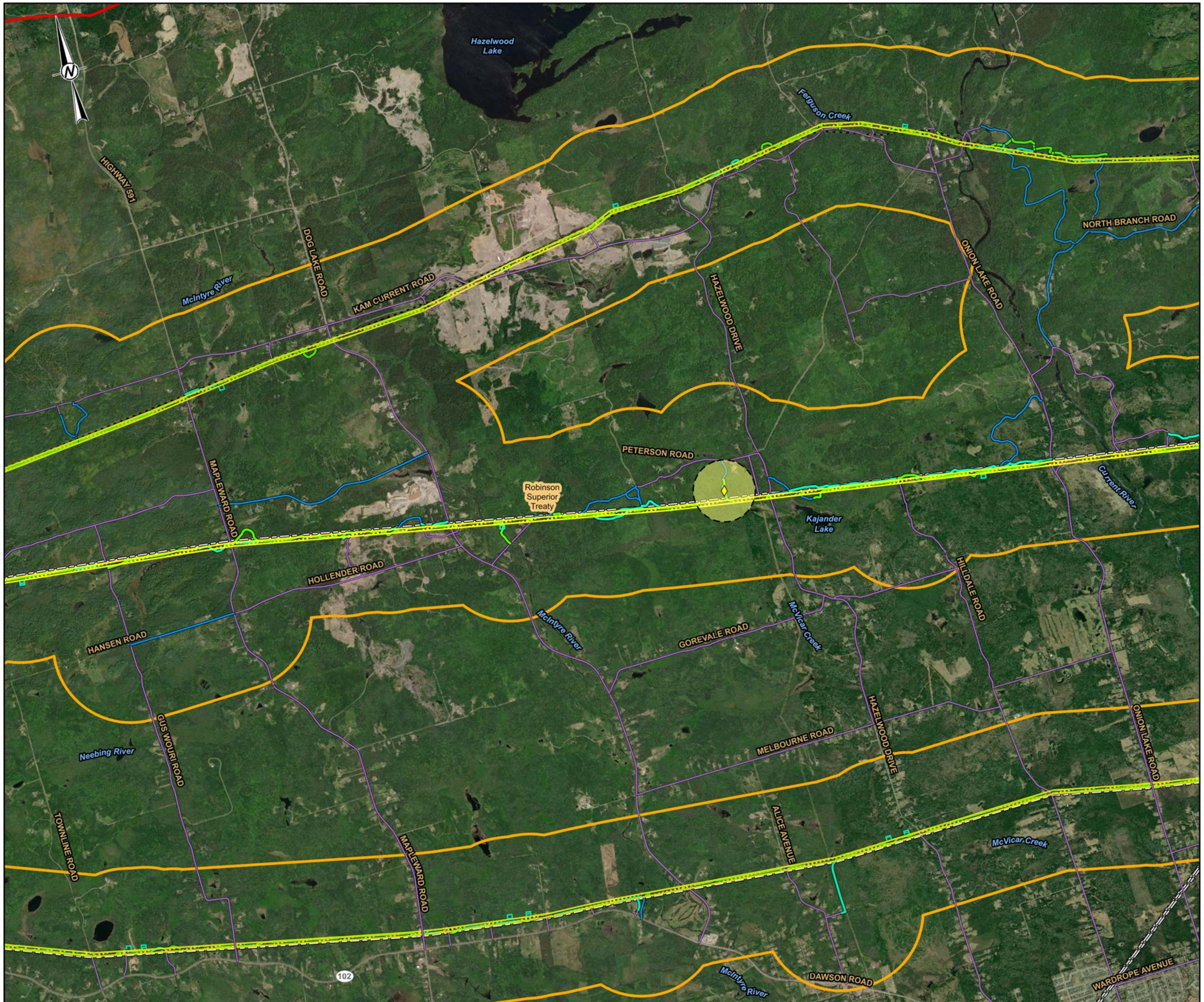
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

wsp

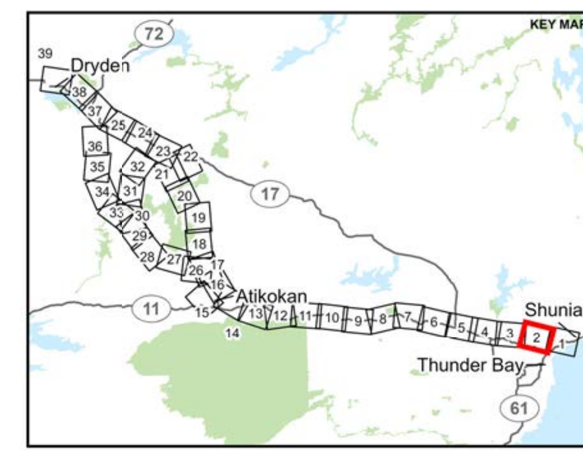
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-1



LEGEND

- RAPTOR NESTING SITE (WSP 2022)
- RAPTOR NESTING SITE BUFFER (400 m)
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

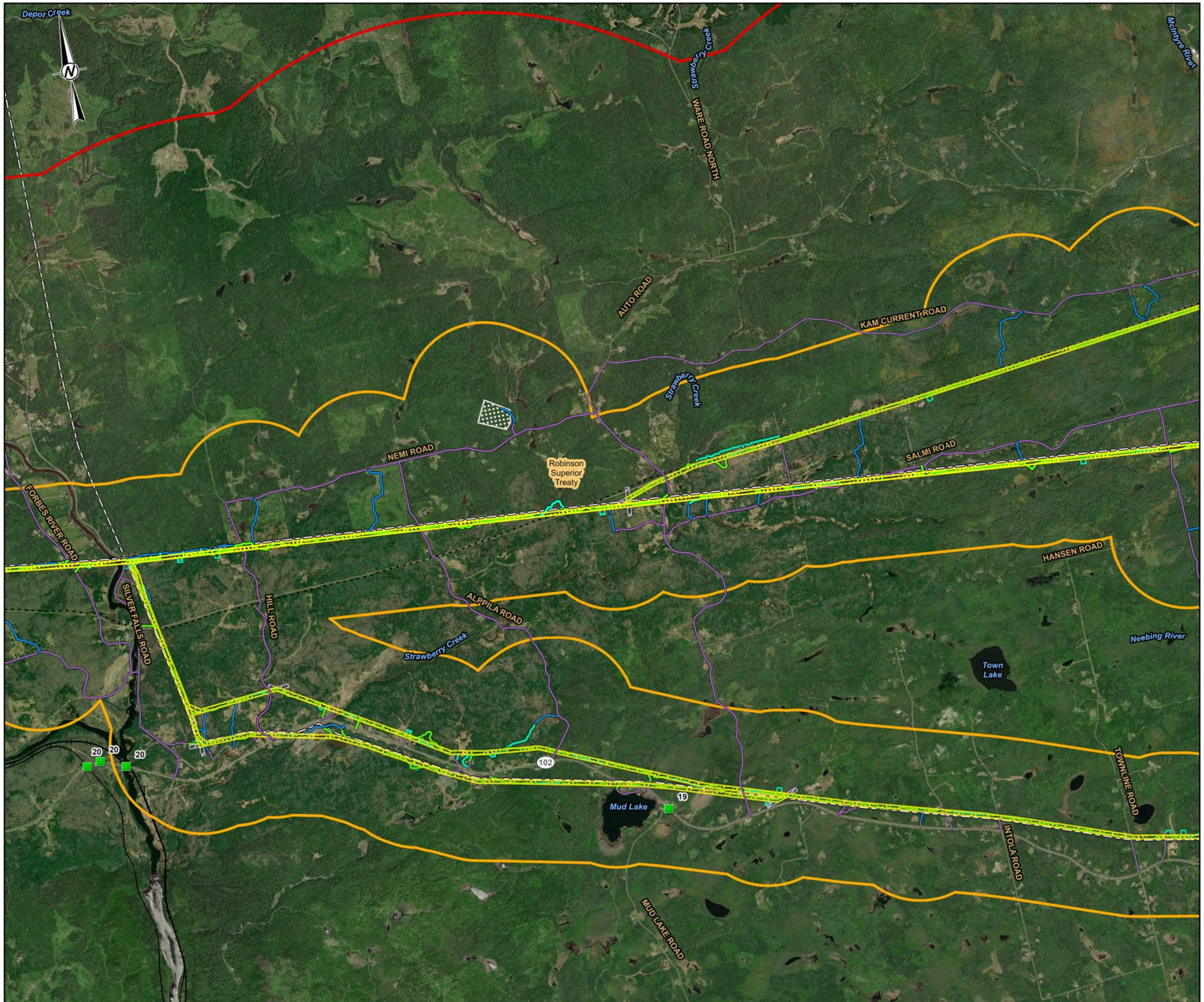
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

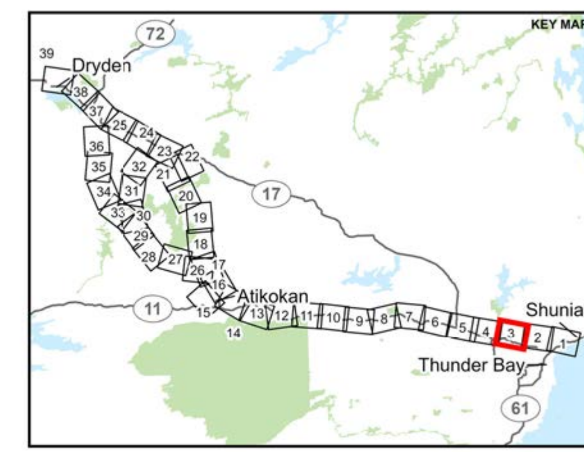
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-2



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

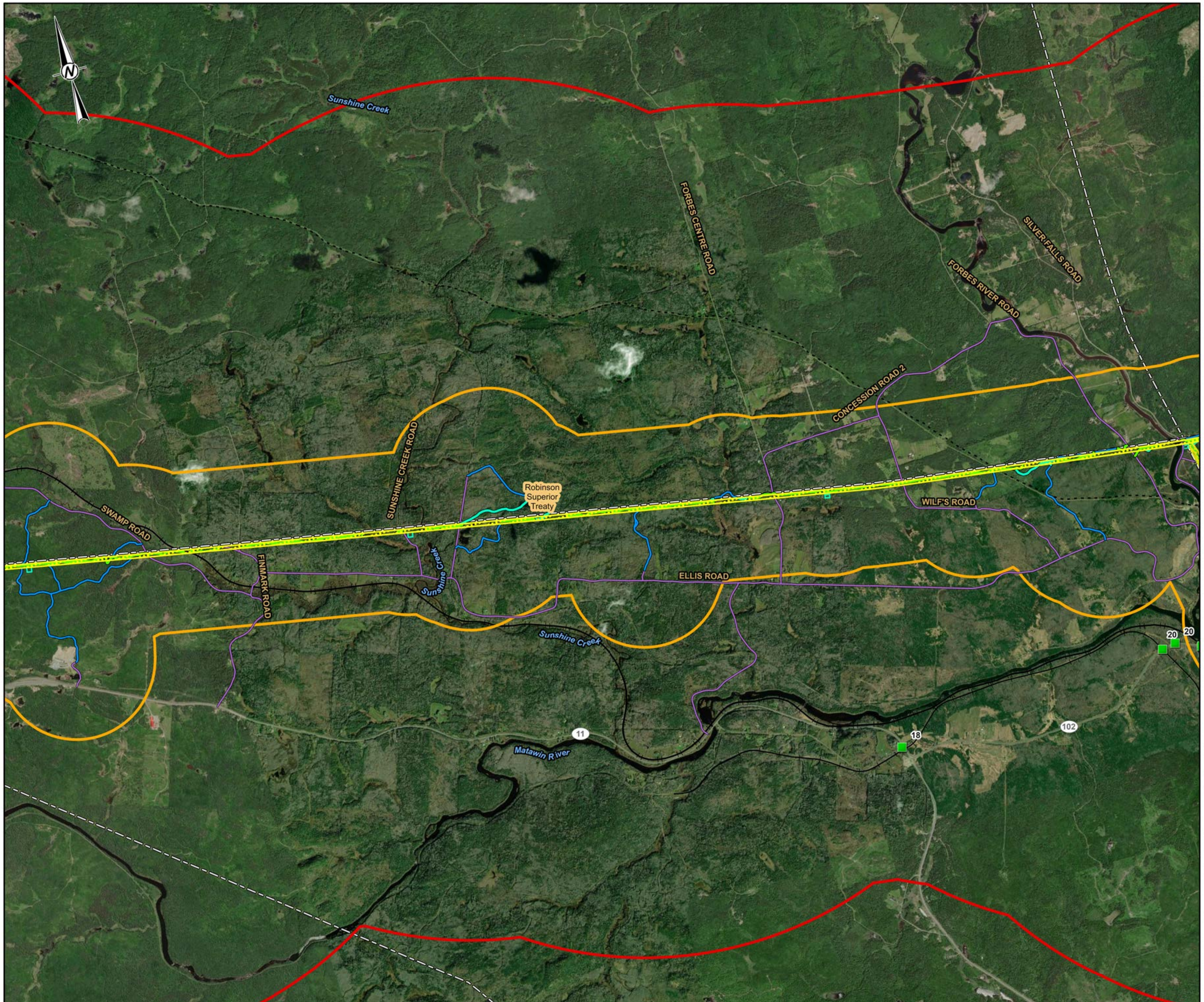
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

wsp

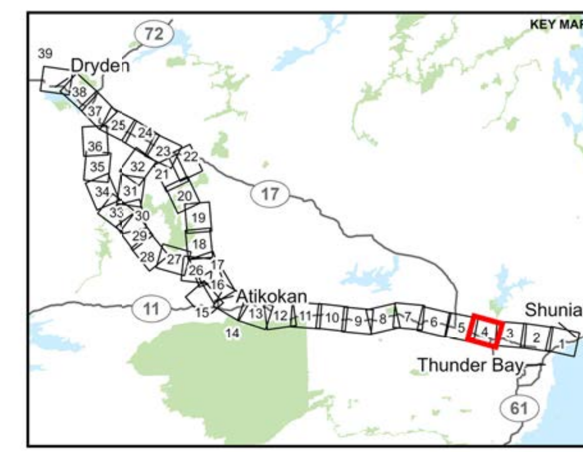
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-3



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

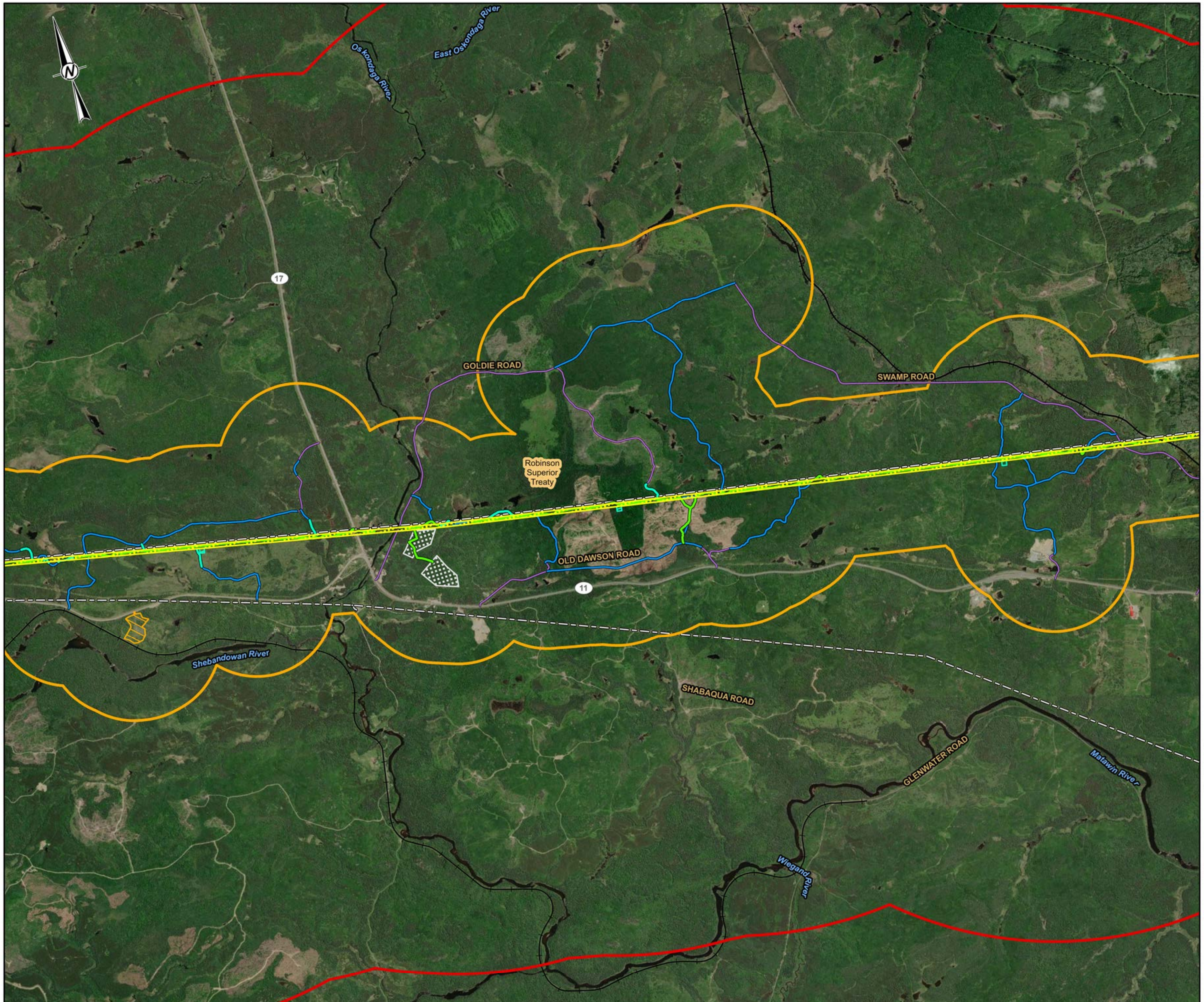
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

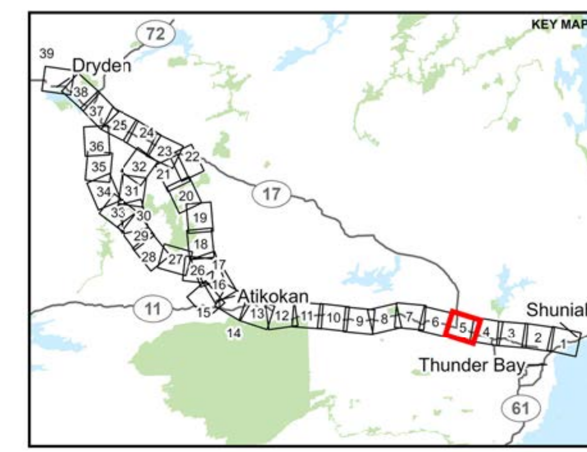
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

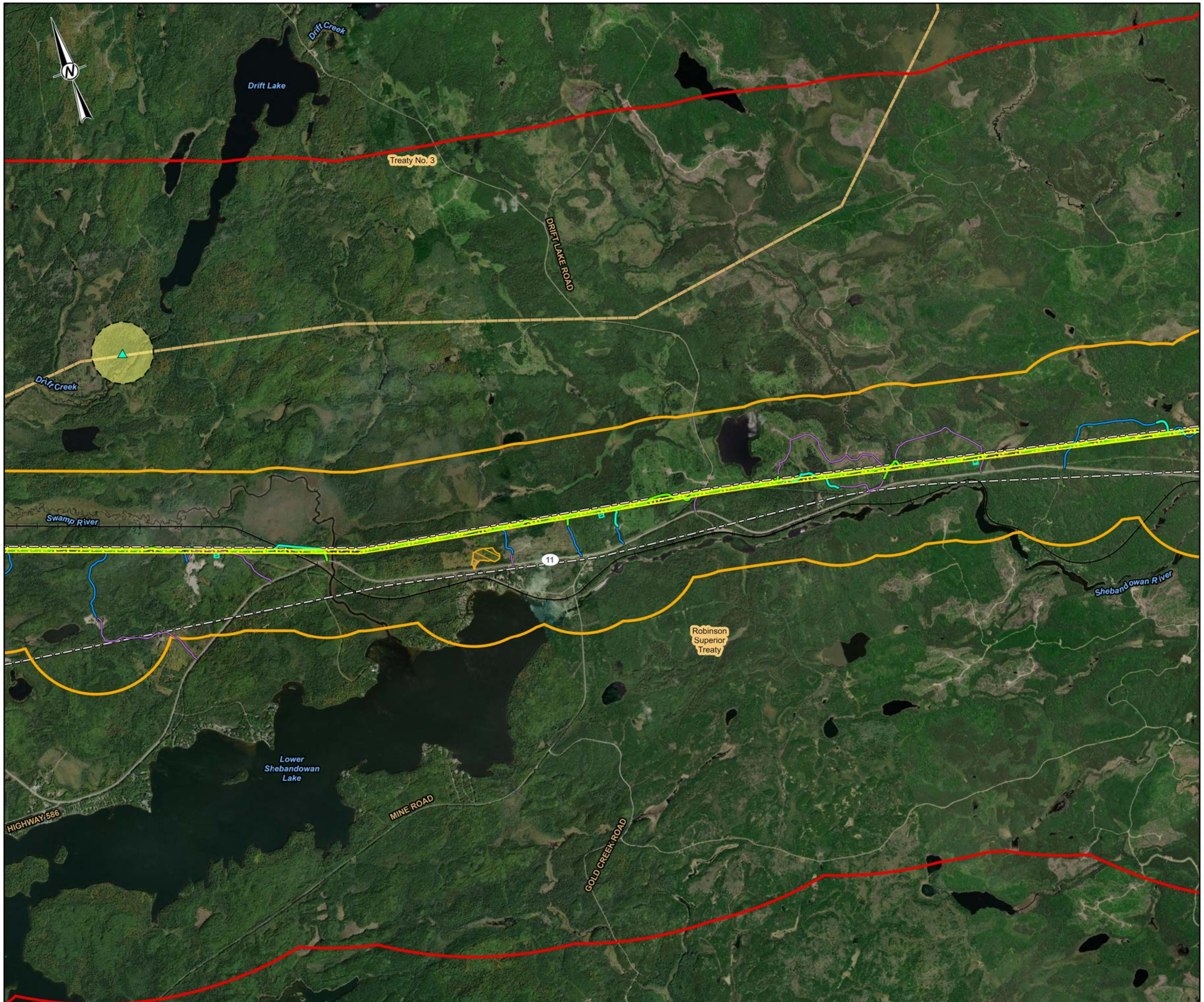
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

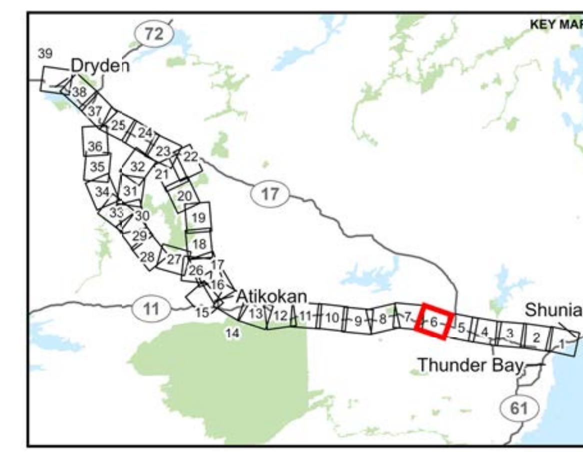
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

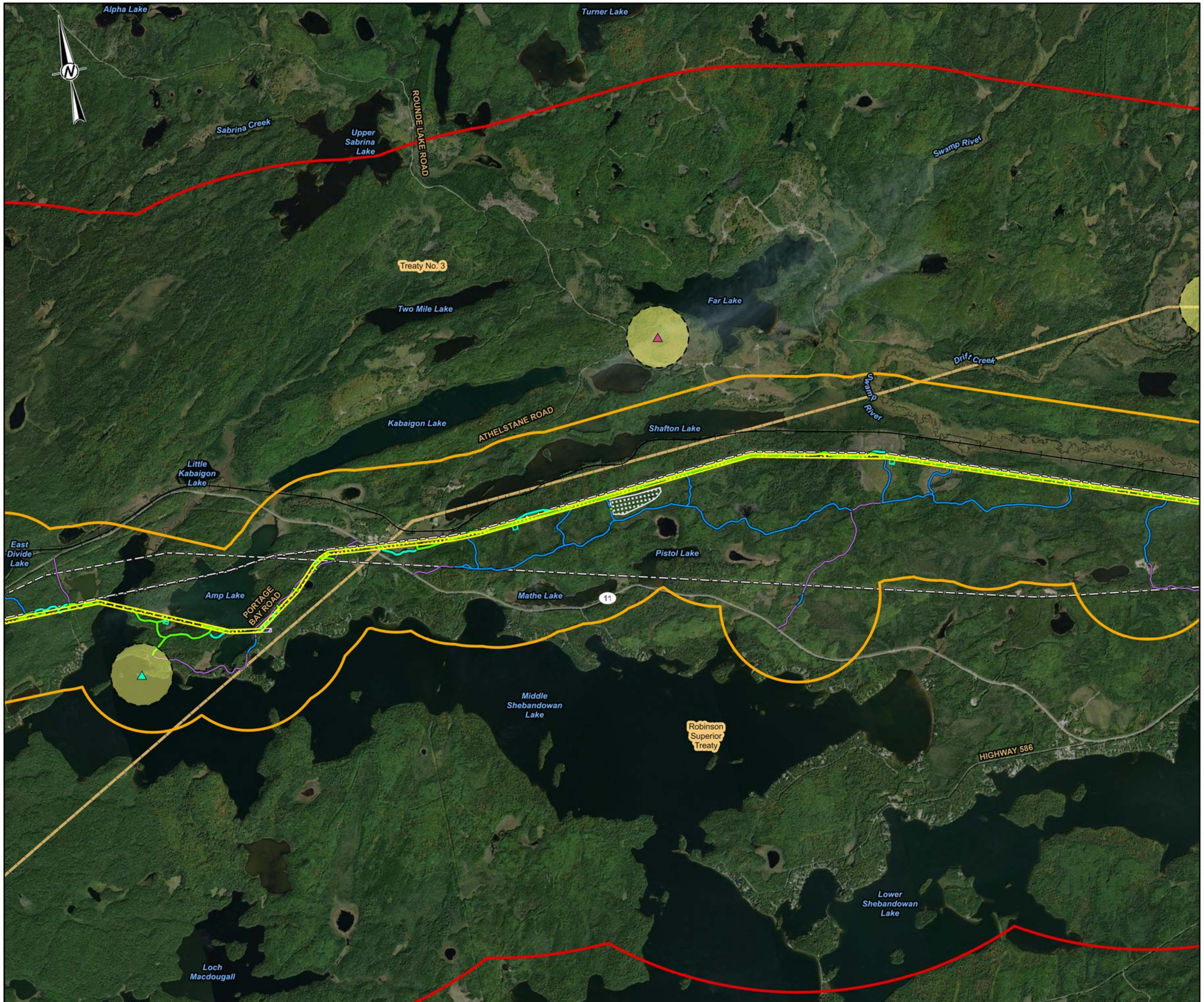
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

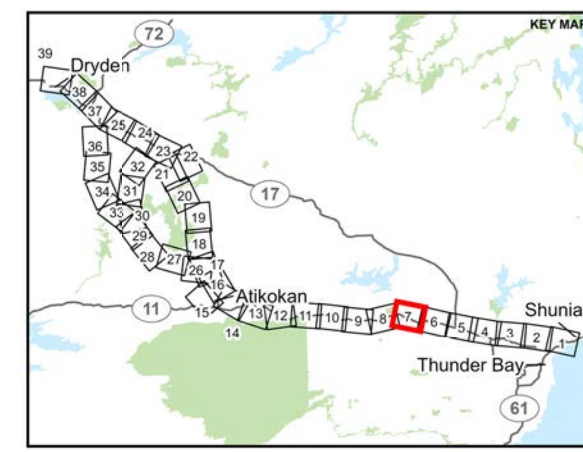
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-6



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

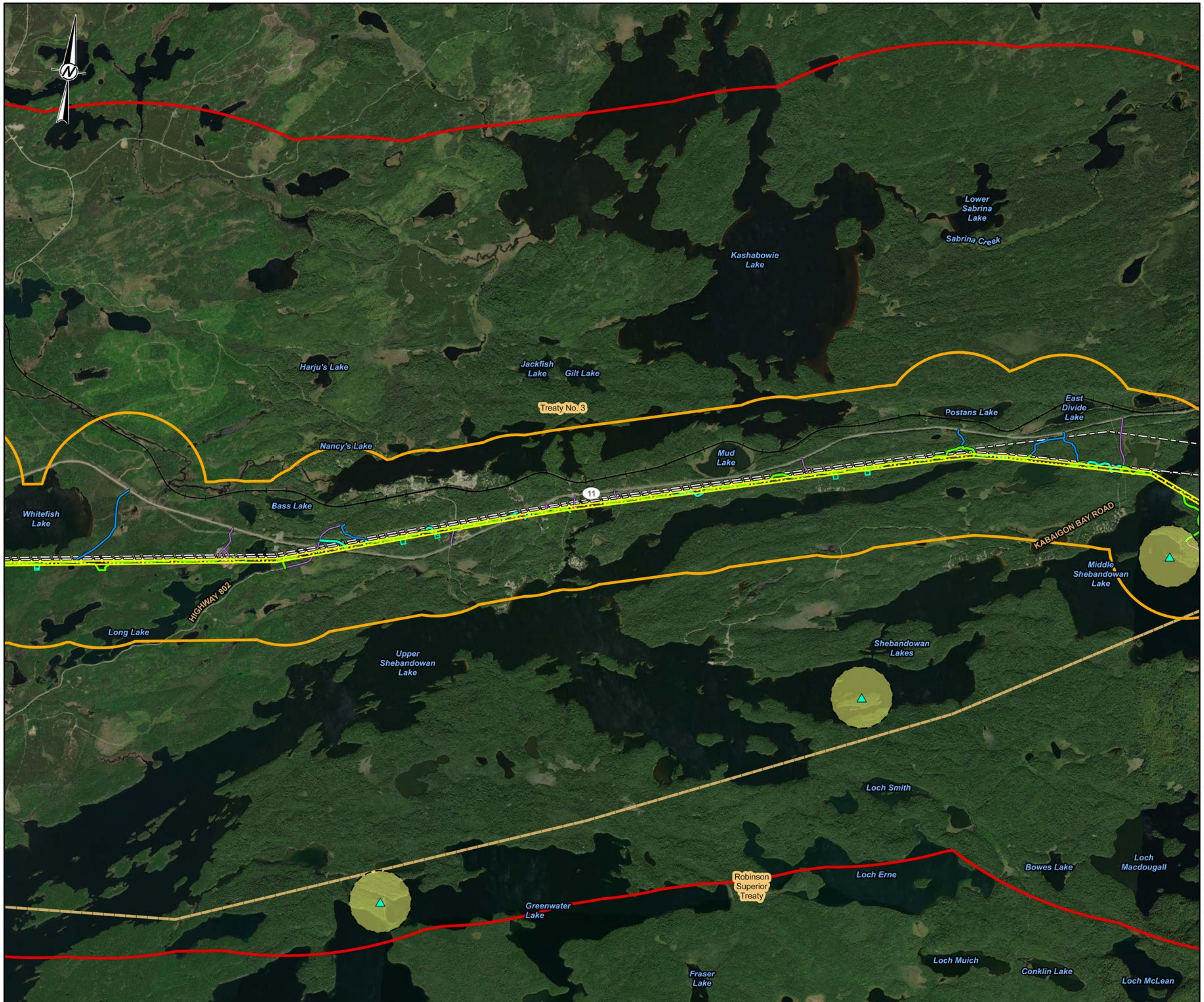
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

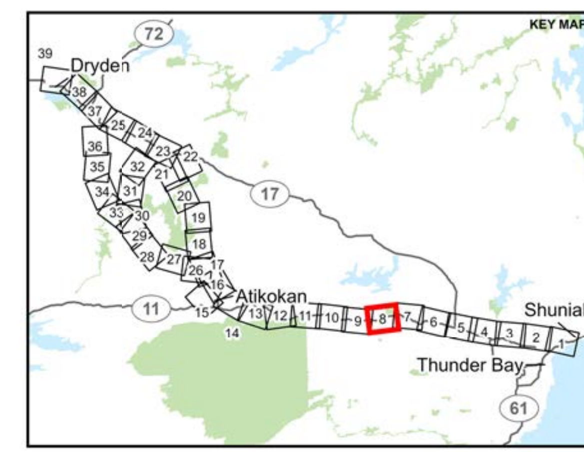
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-7



LEGEND

- BALD EAGLE NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

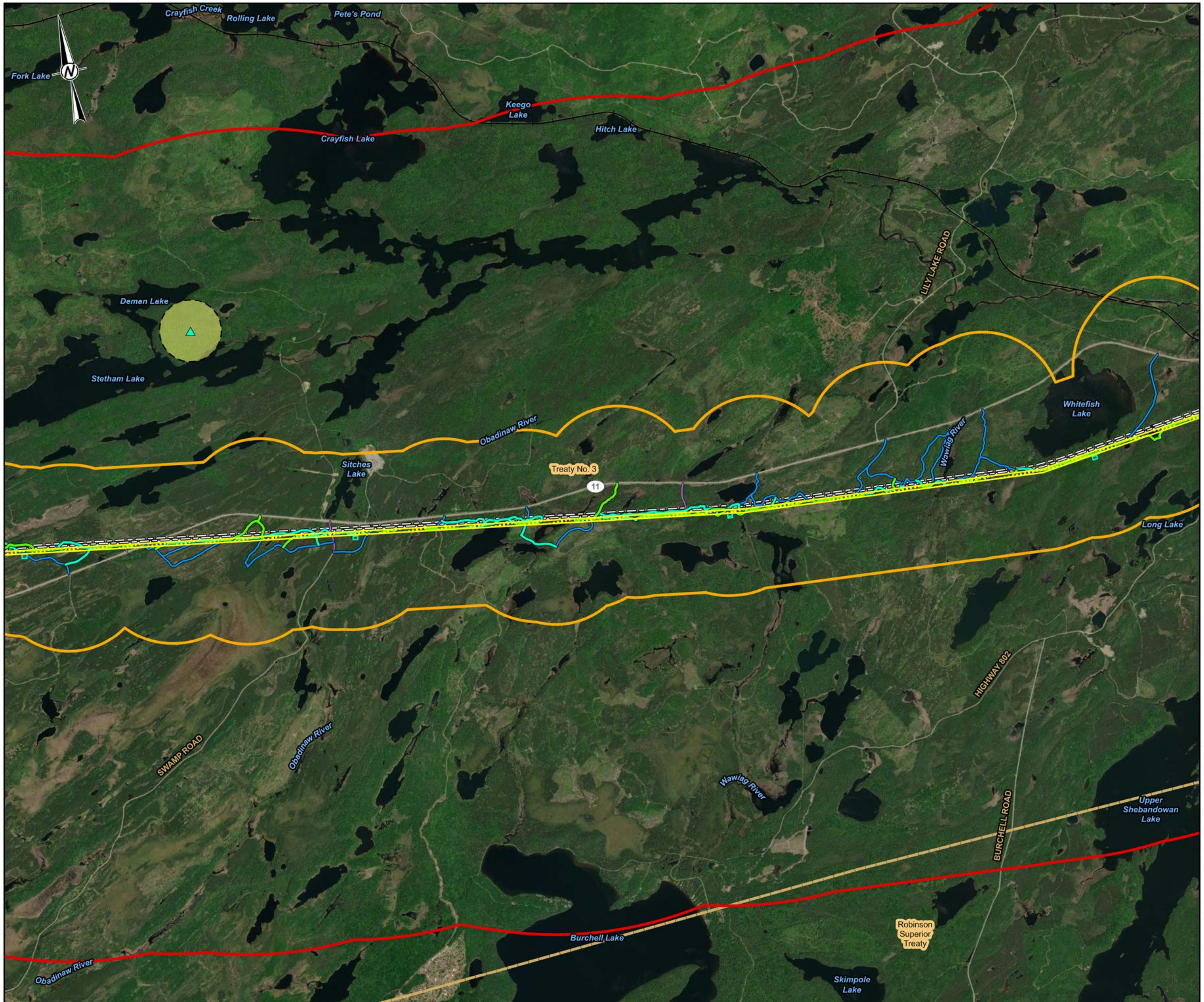
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

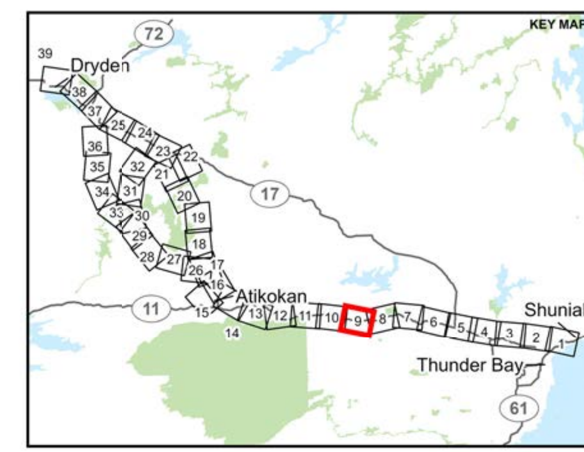
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-8

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

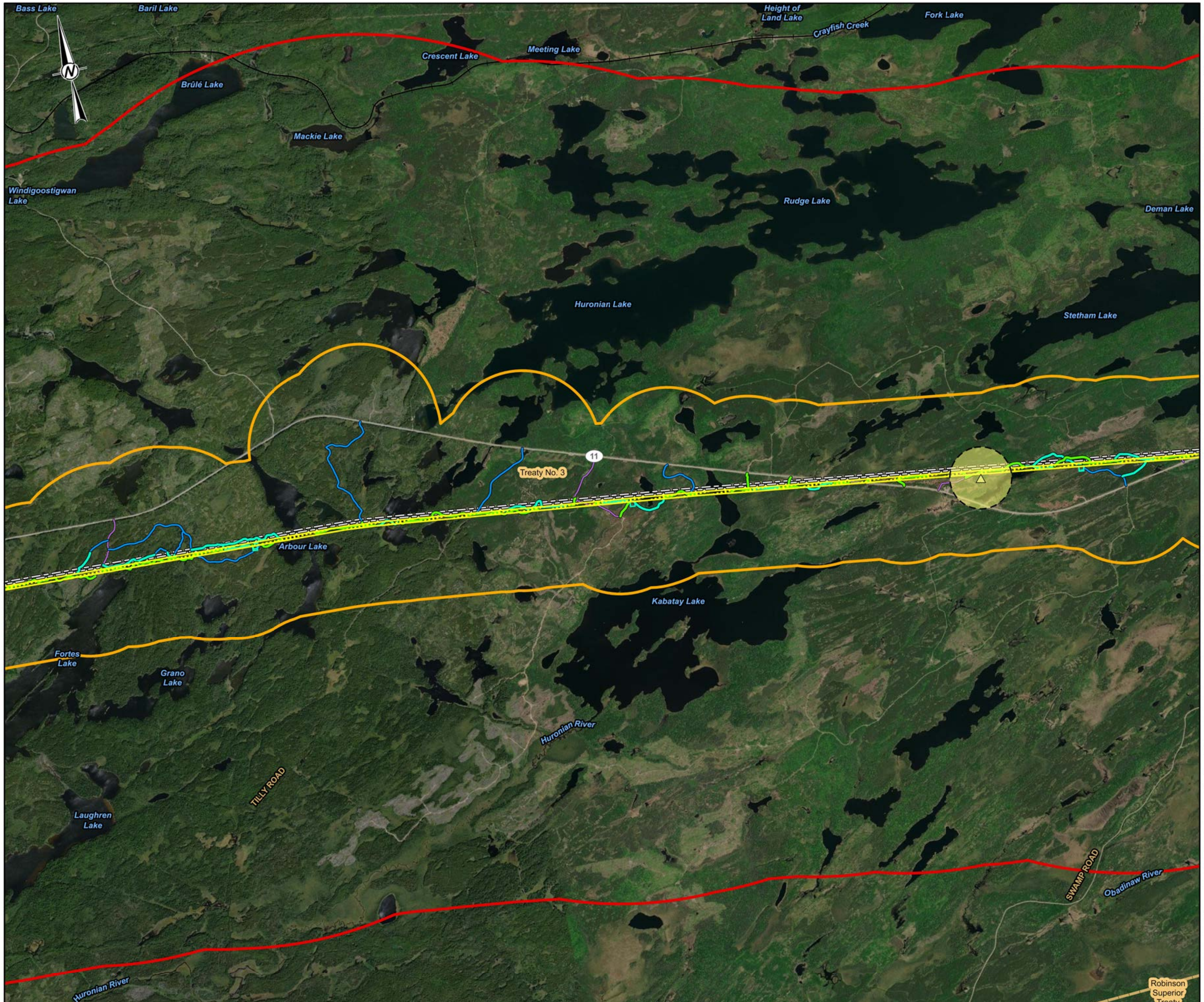
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

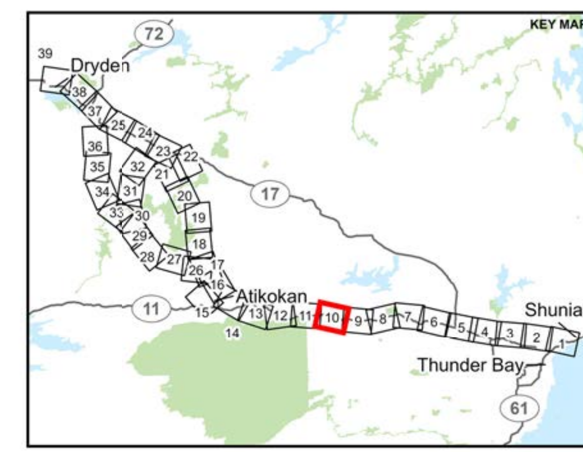
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-9



LEGEND

- RED-TAILED HAWK NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

TITLE

RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

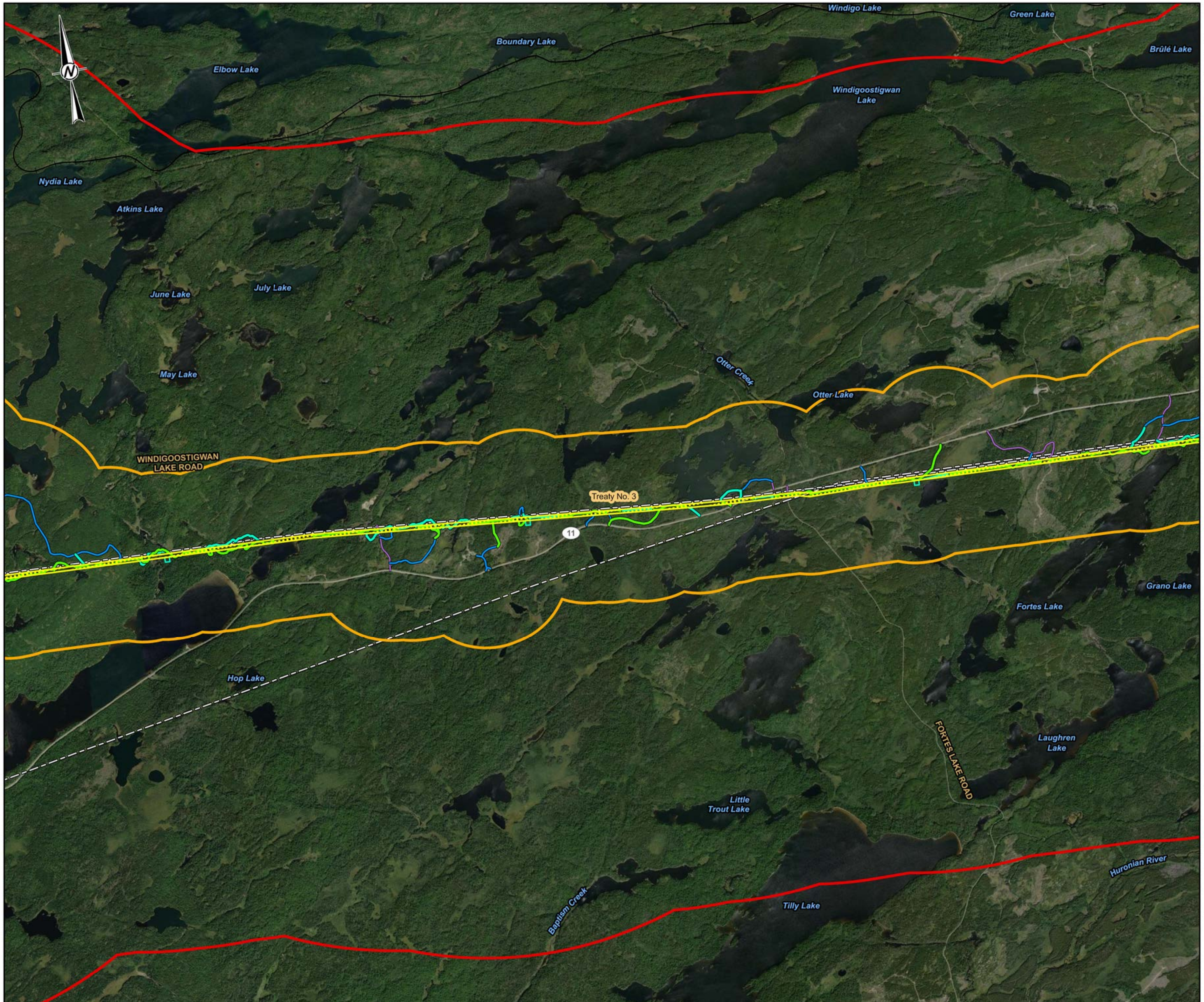
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

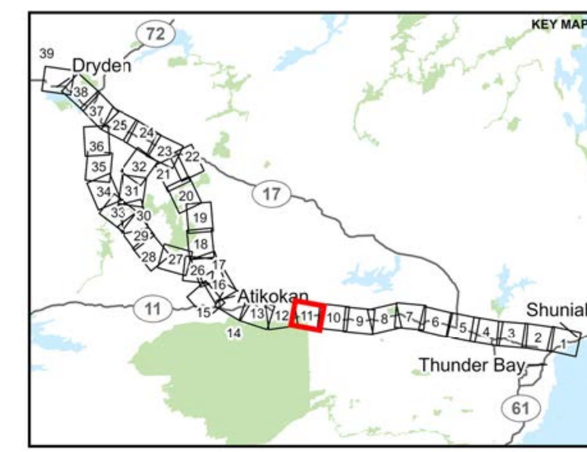
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

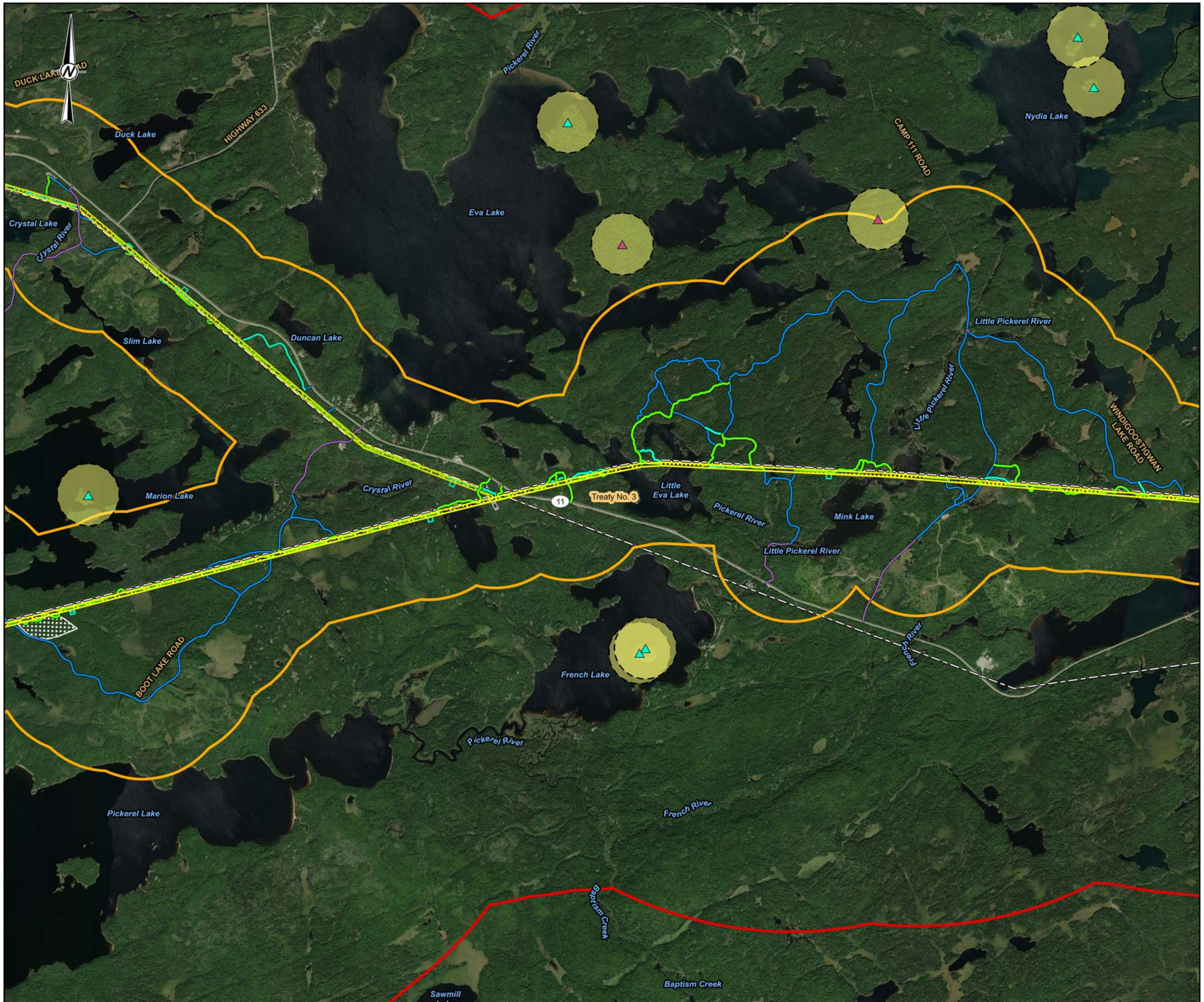
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

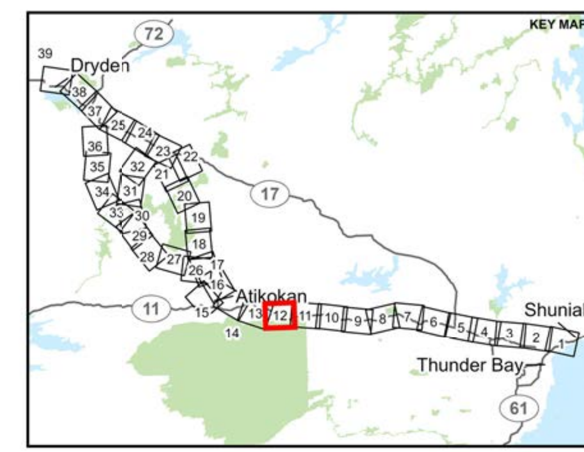
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-11

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

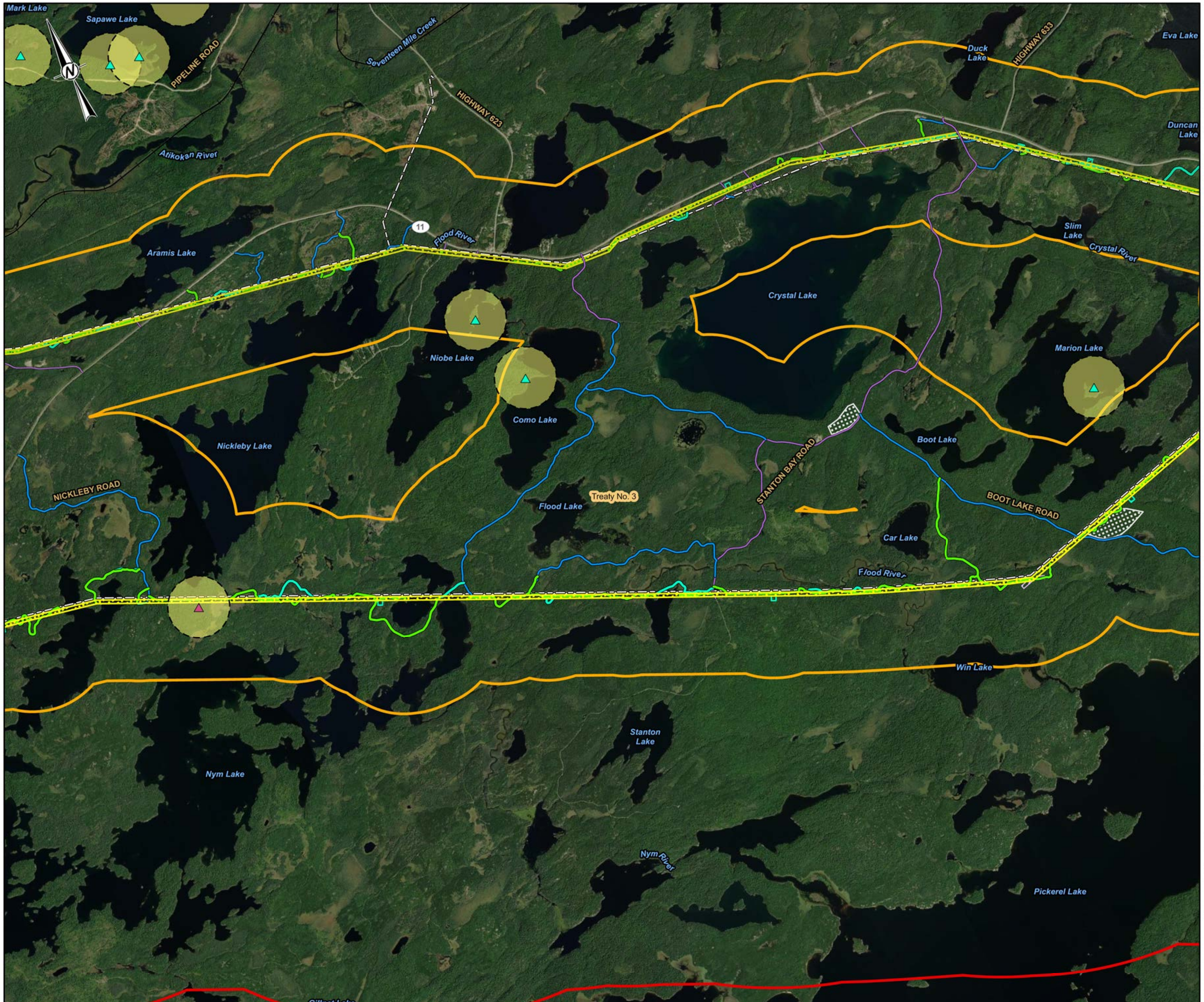
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

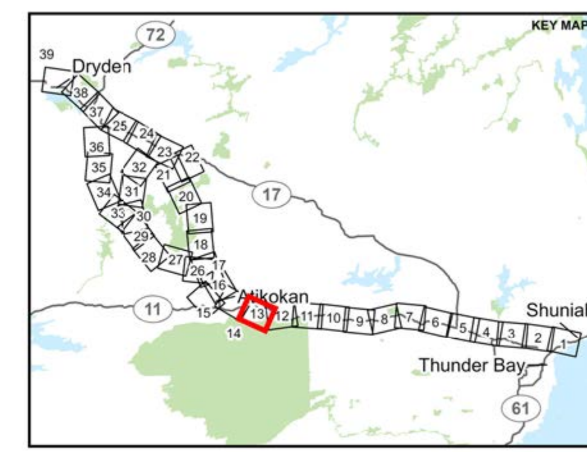
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-12



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

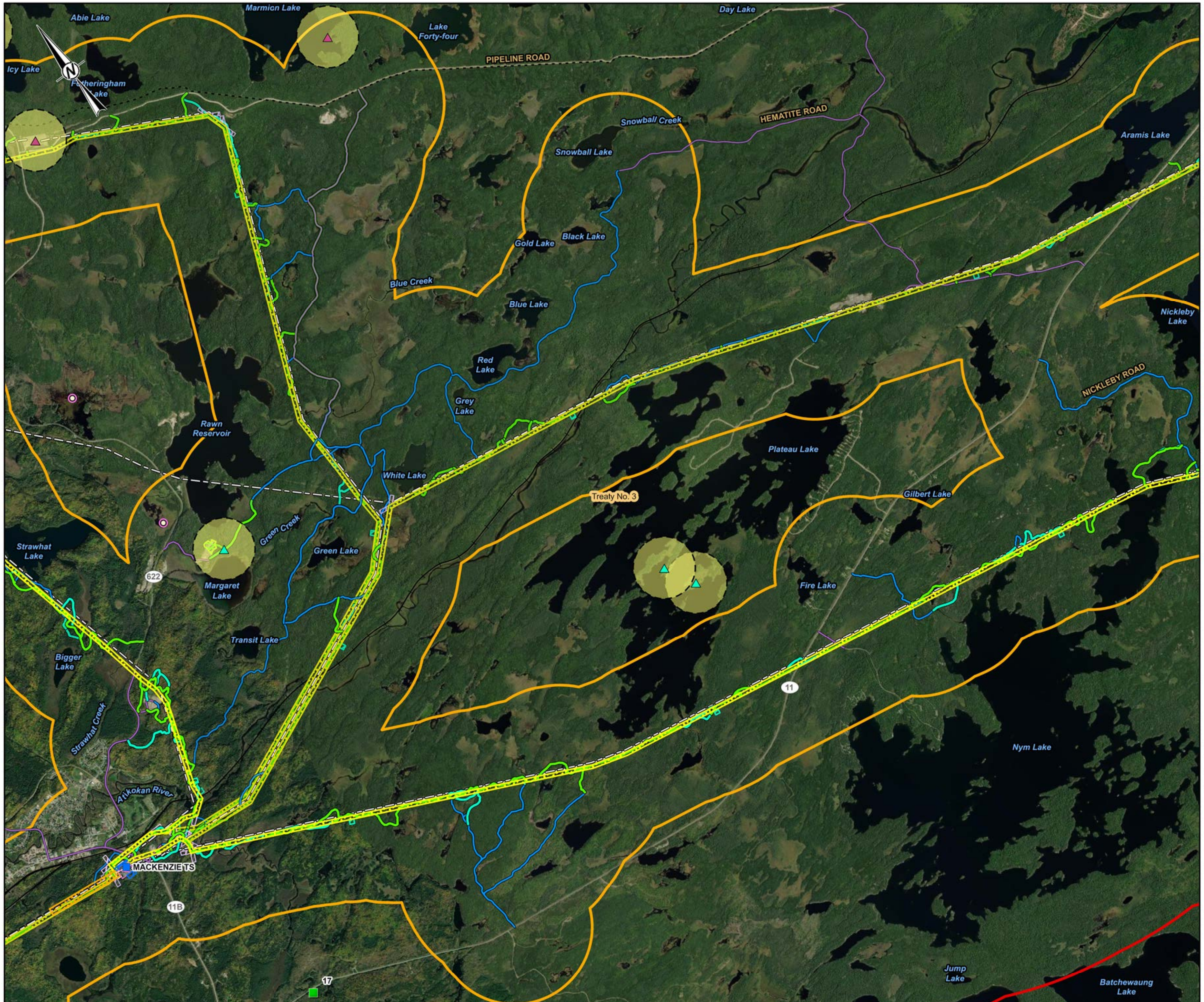
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

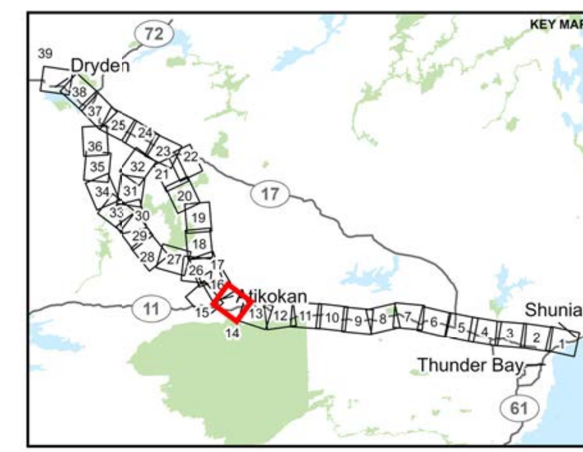
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-13



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- TRUMPETER SWAN NESTING SITE
- SWAN NESTING SITE BUFFER (50 m)
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

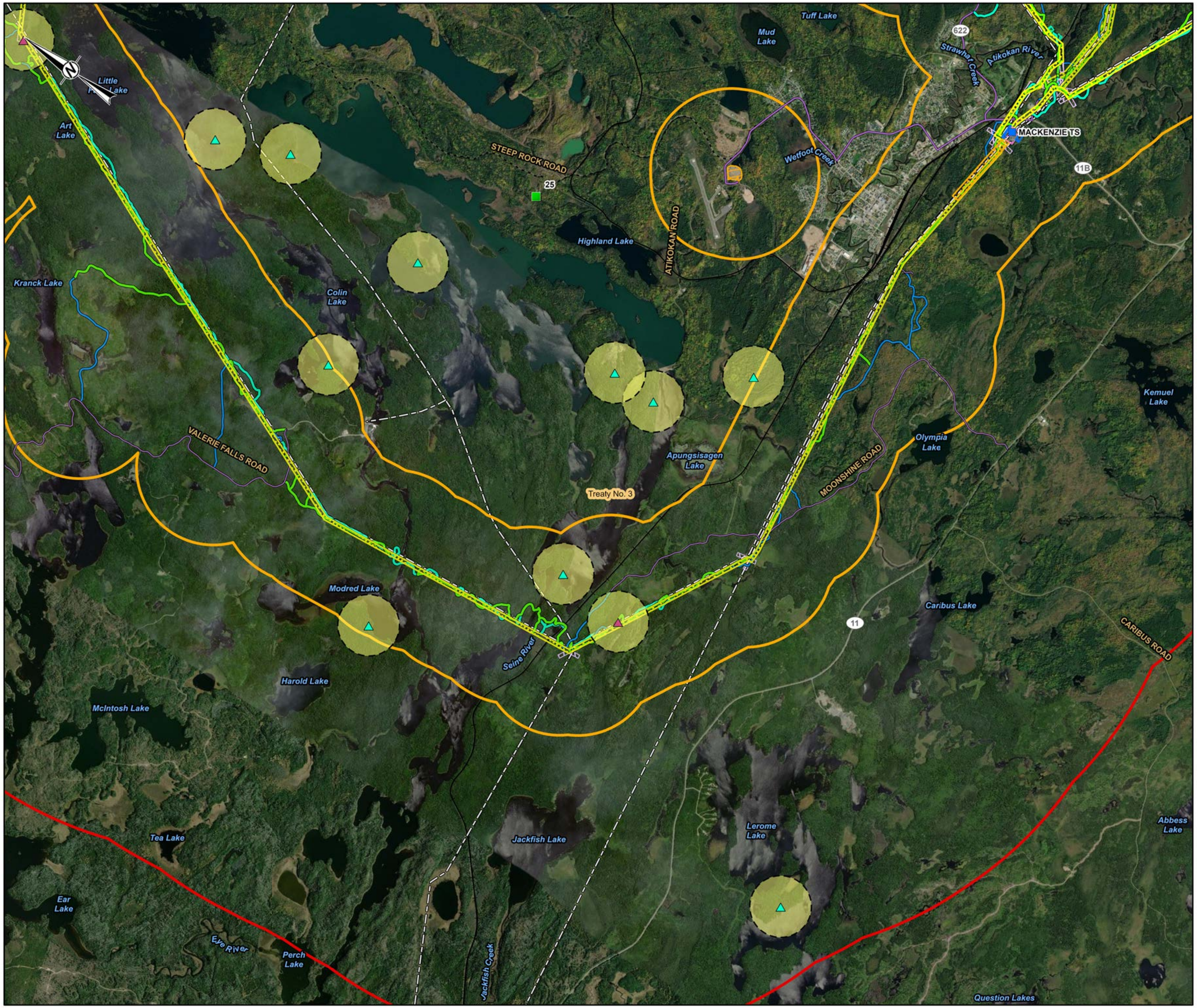
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

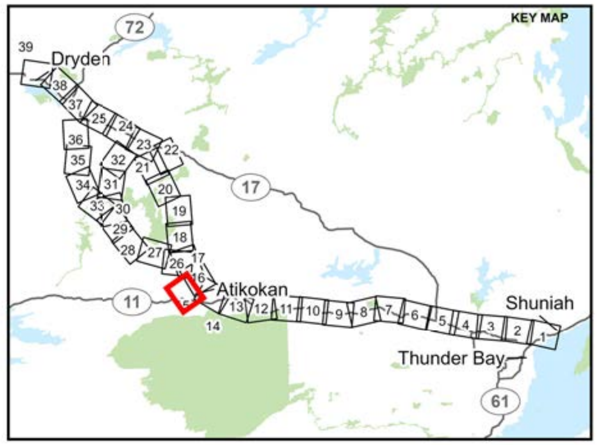
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-14

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

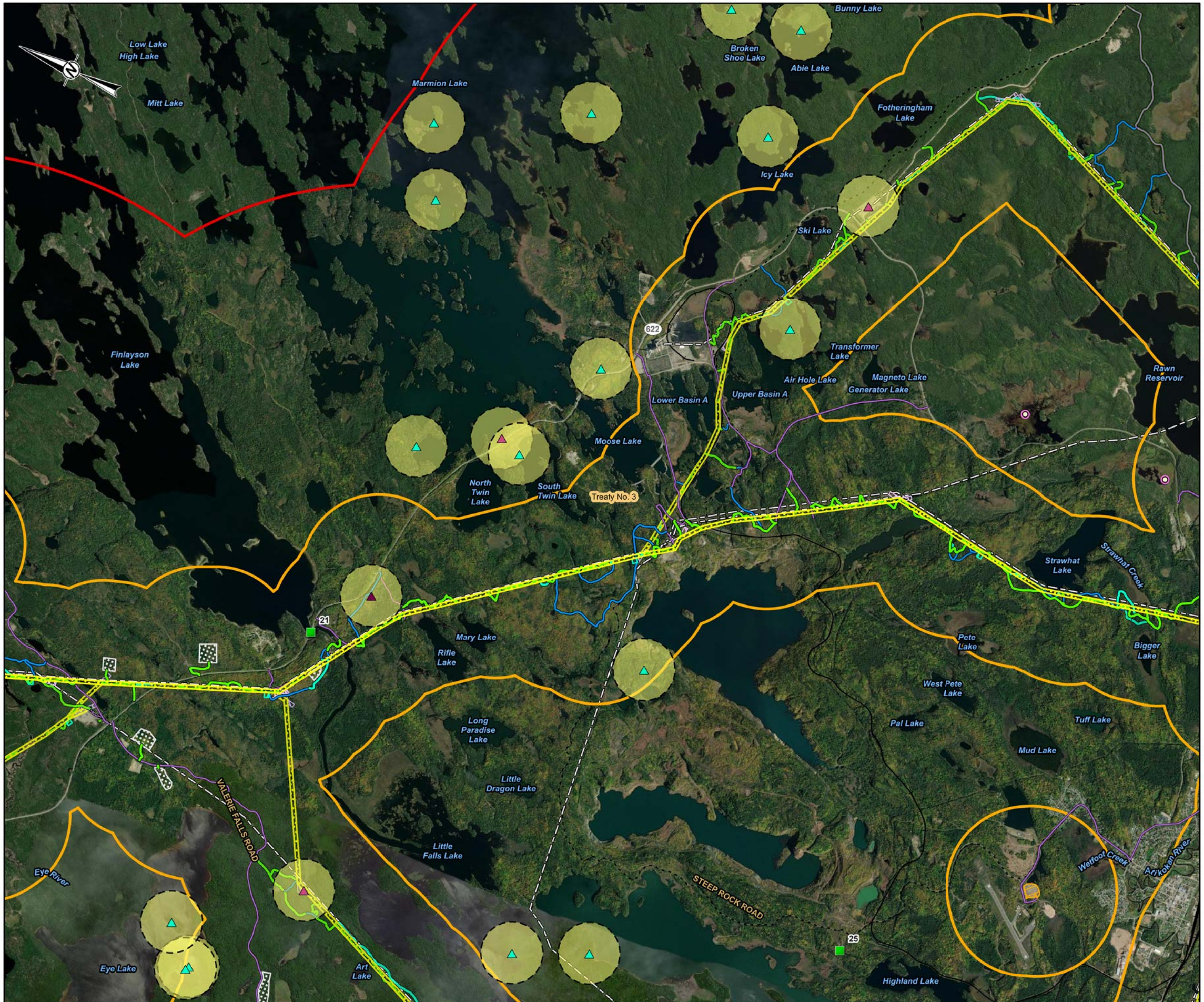
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

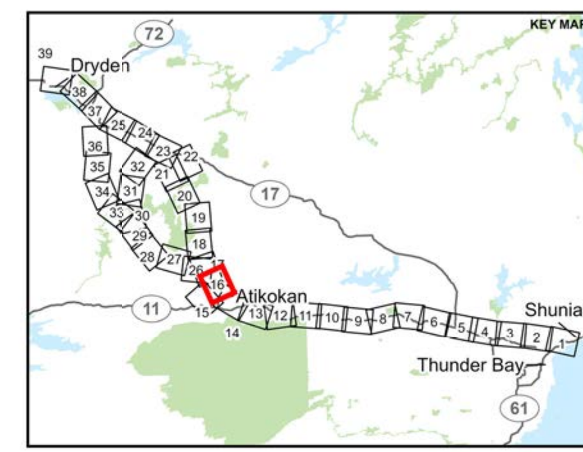
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-15

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- UNIDENTIFIED RAPTOR NESTING SITE
- TRUMPETER SWAN NESTING SITE
- SWAN NESTING SITE BUFFER (50 m)
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

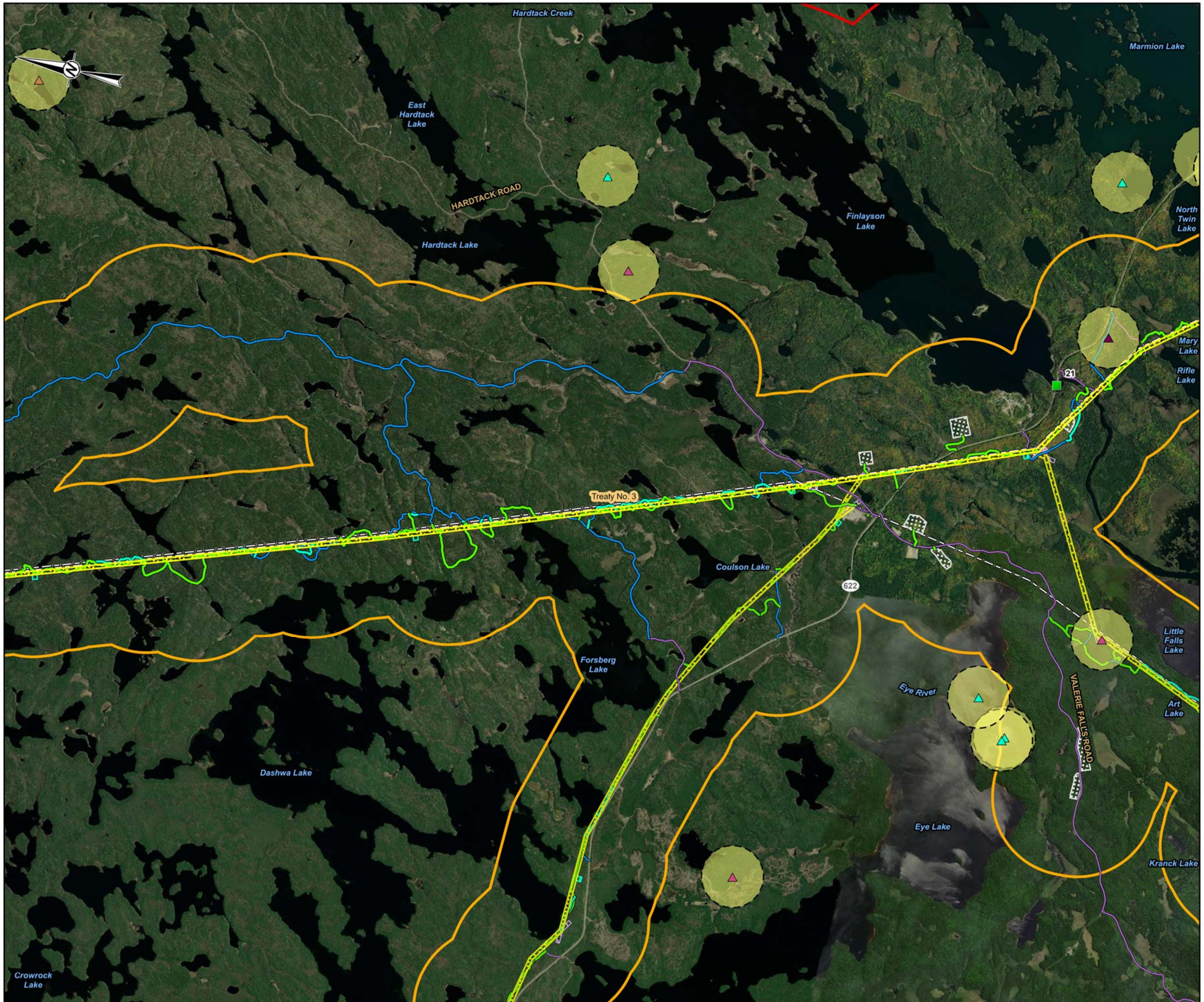
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

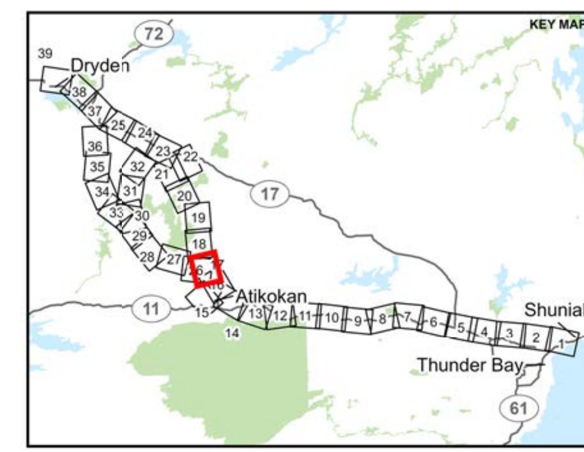
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-16

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- GREAT GRAY OWL NESTING SITE
- OSPREY NESTING SITE
- UNIDENTIFIED RAPTOR NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

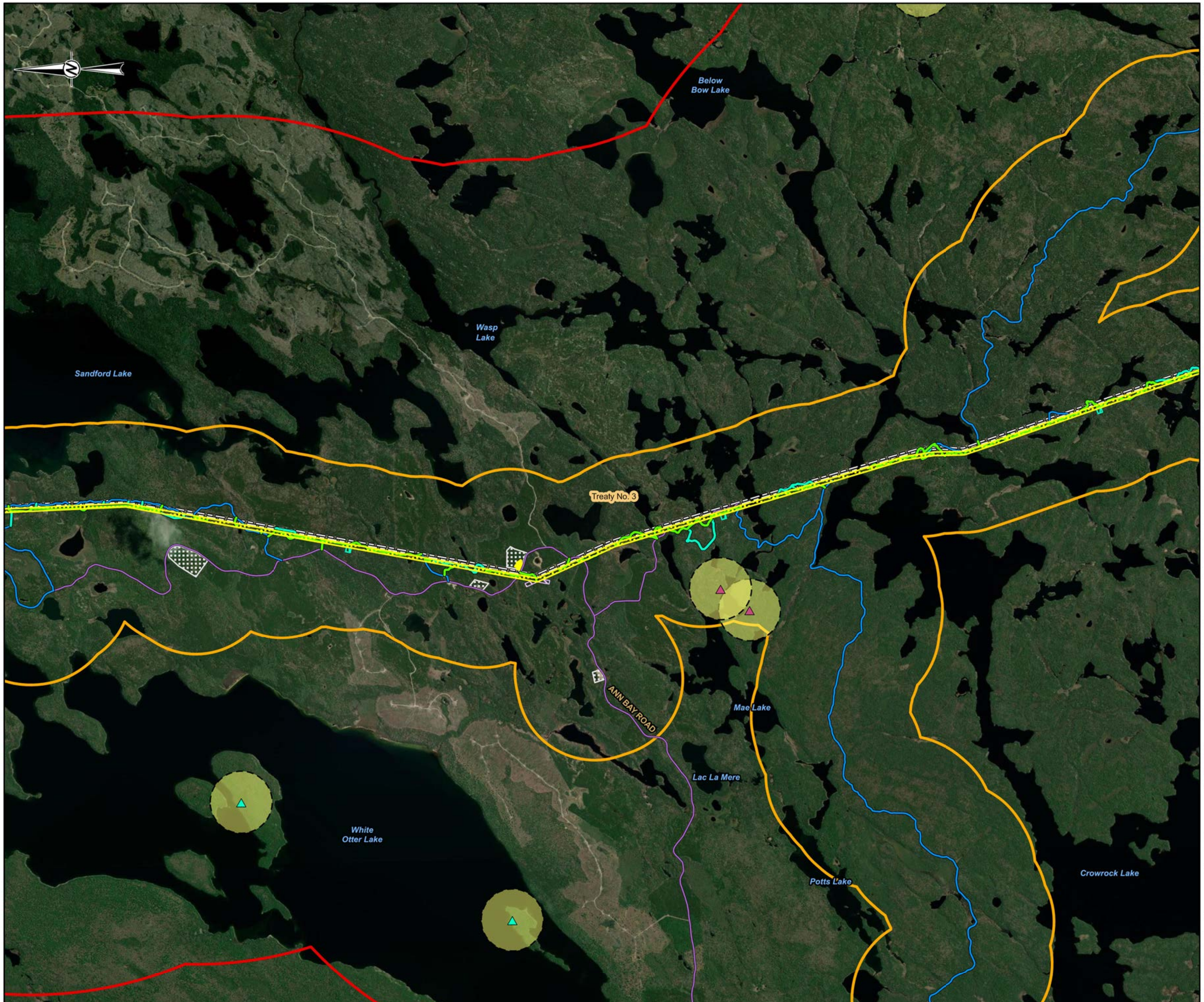
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

wsp

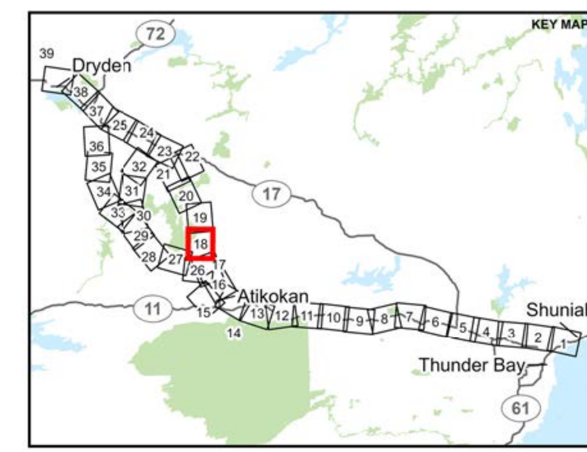
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-17



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

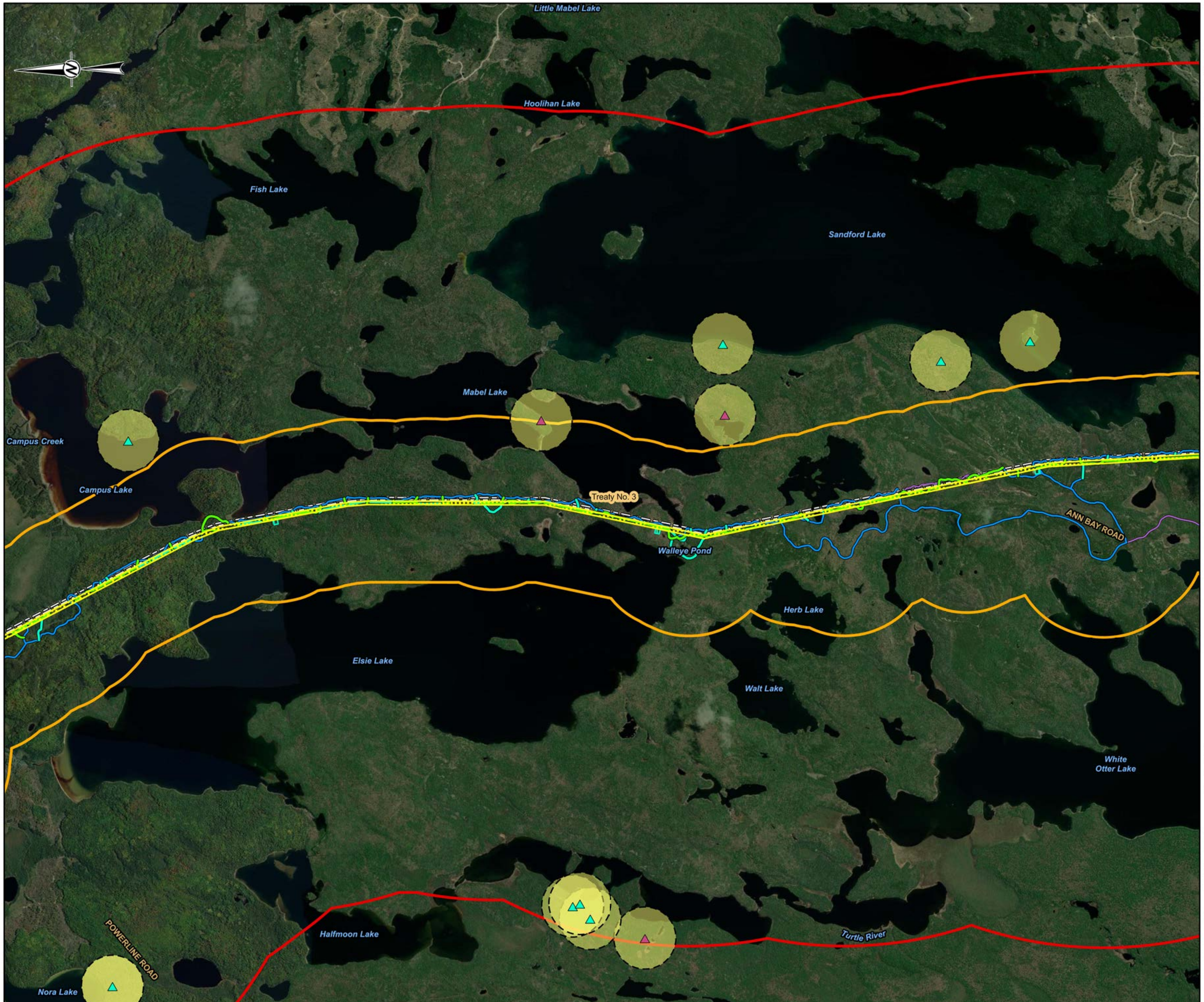
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

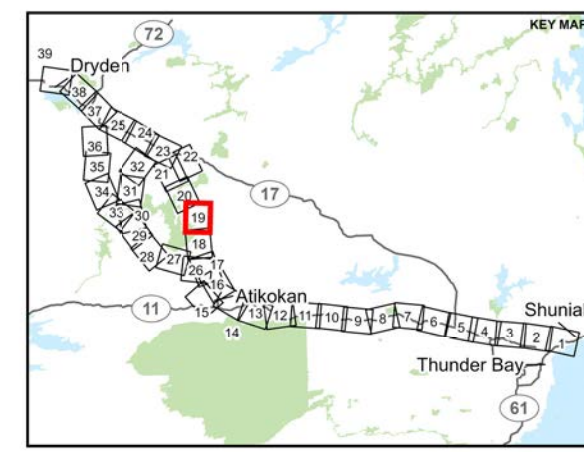
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-18

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

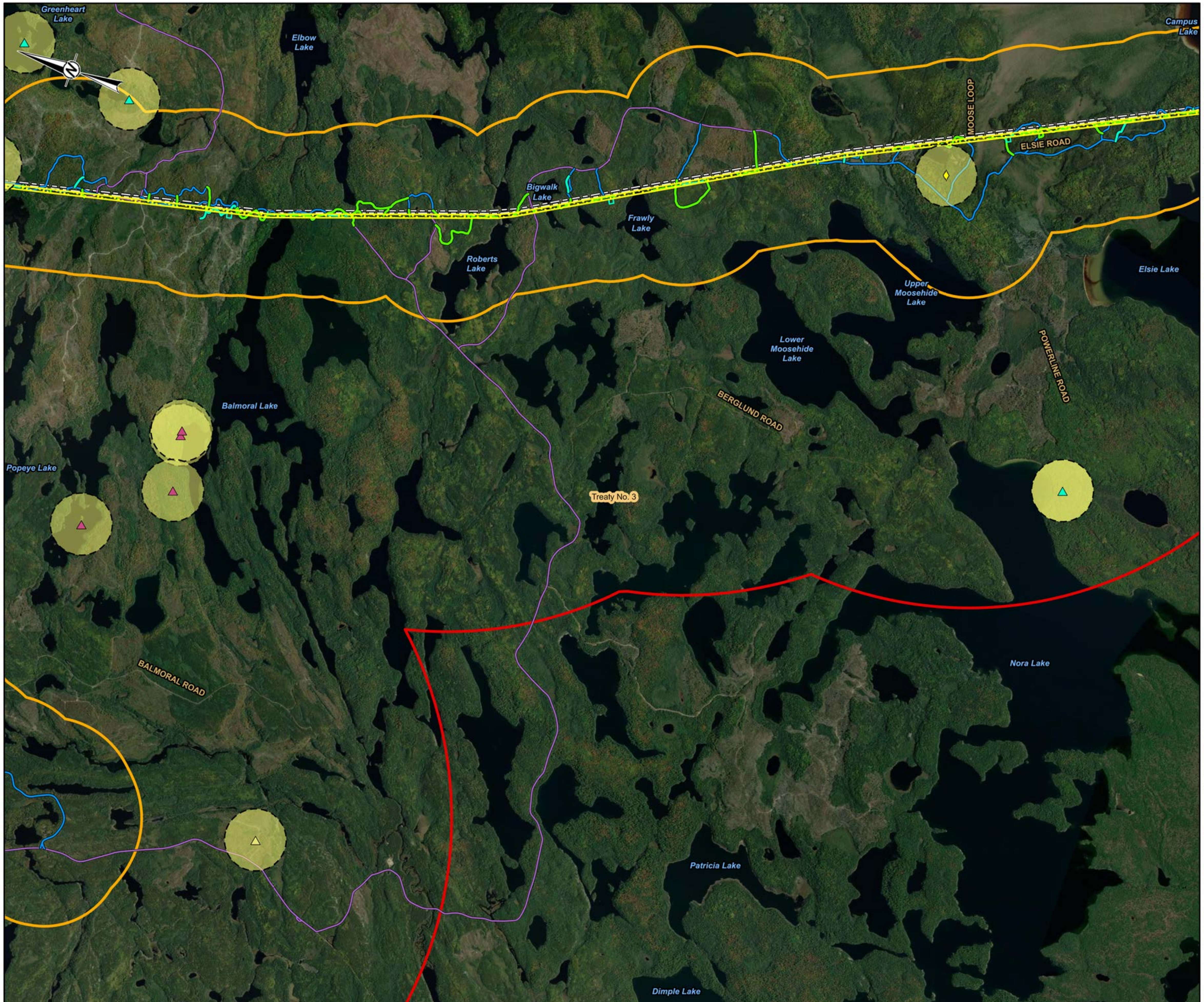
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

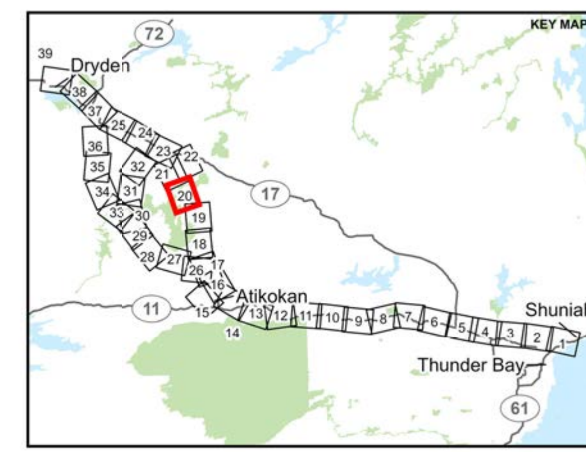
CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-19

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B





0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

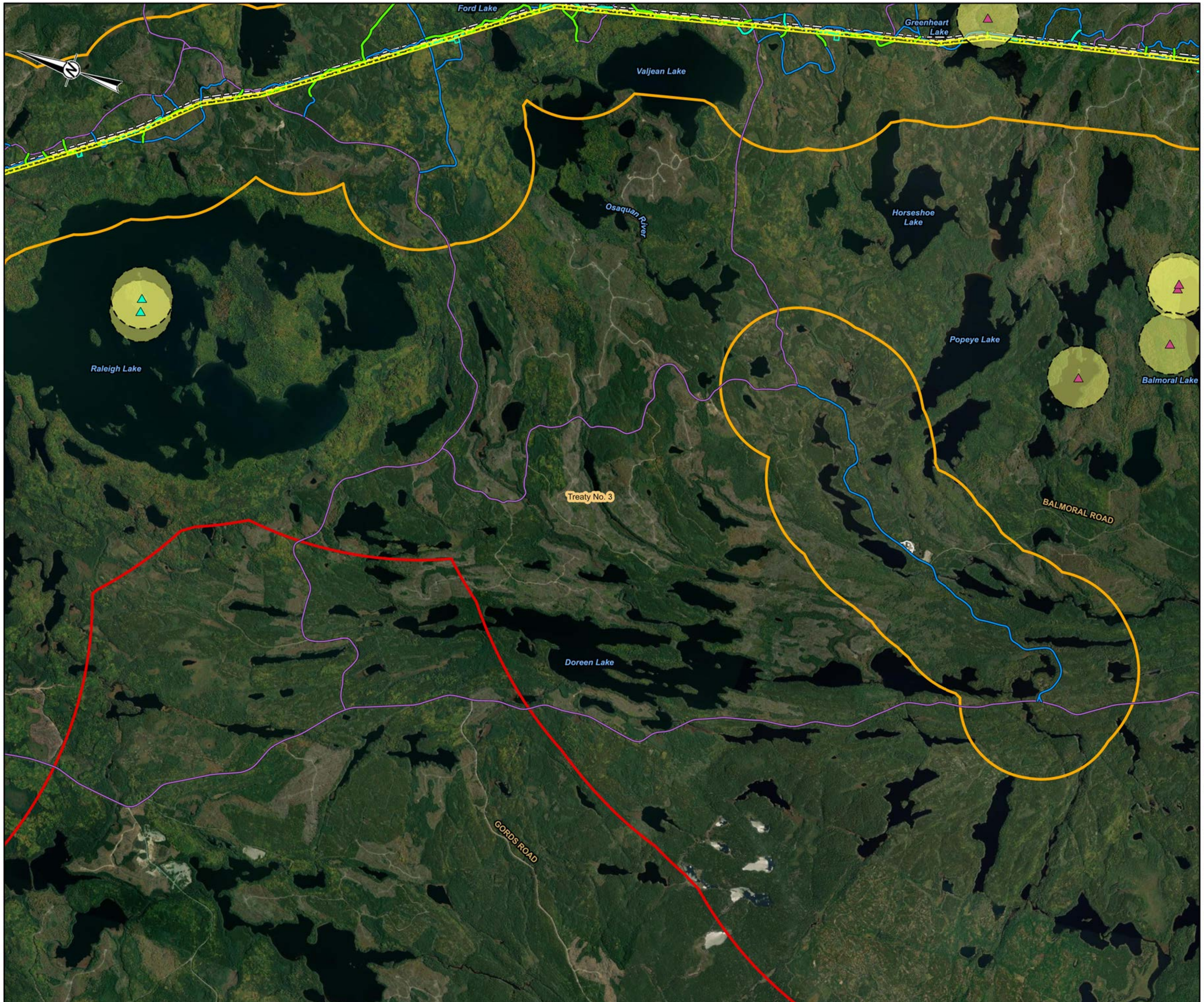
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

wsp

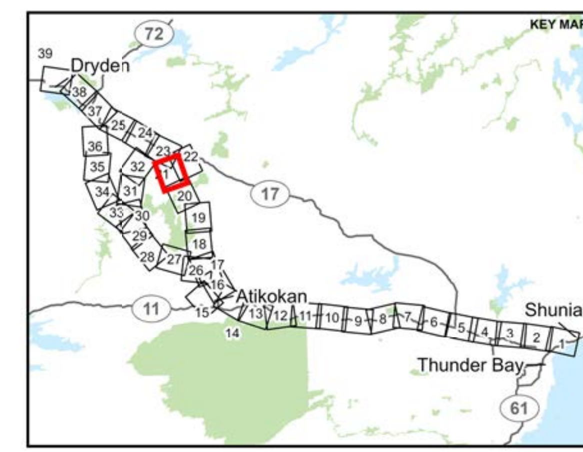
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-20



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

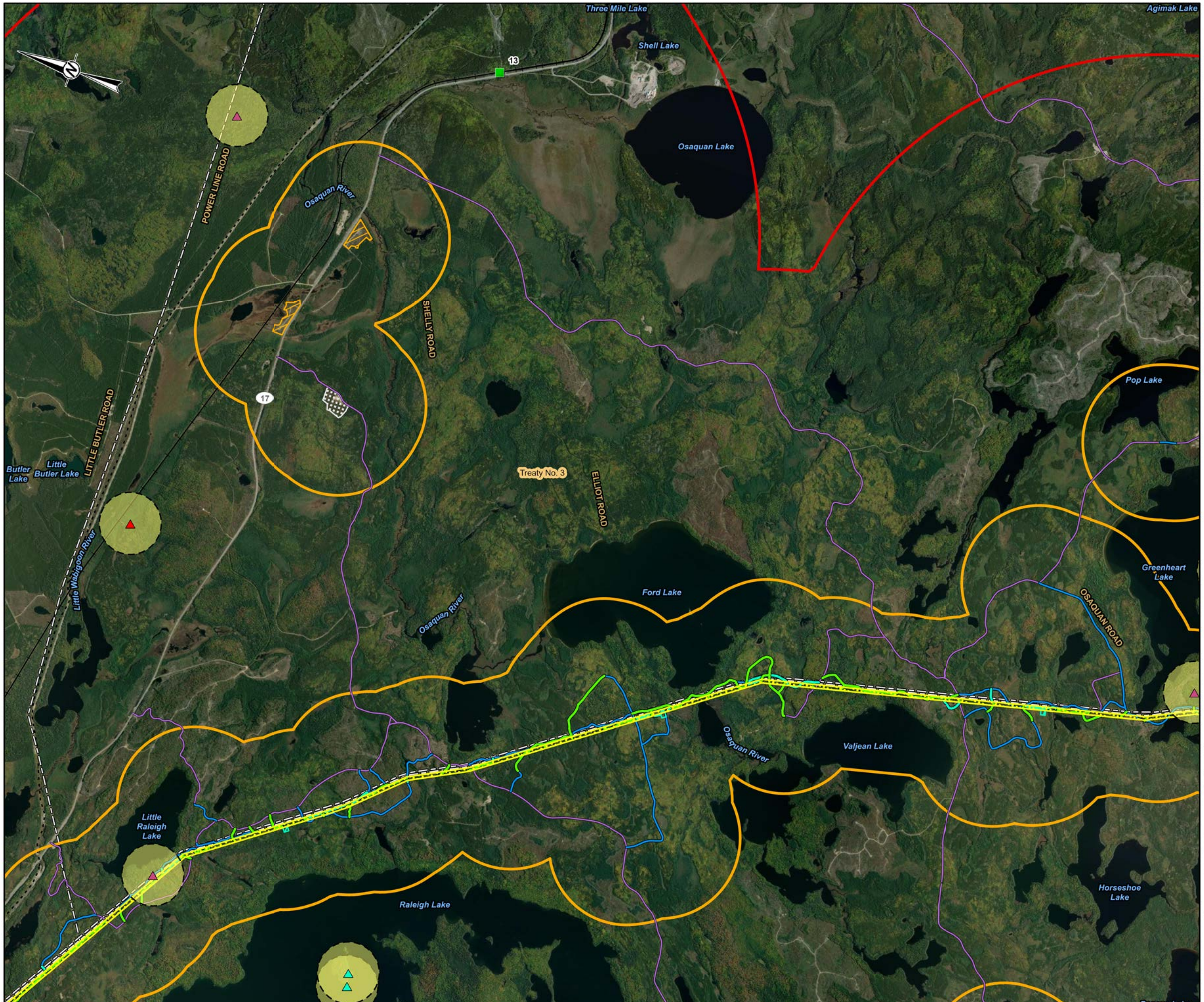
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

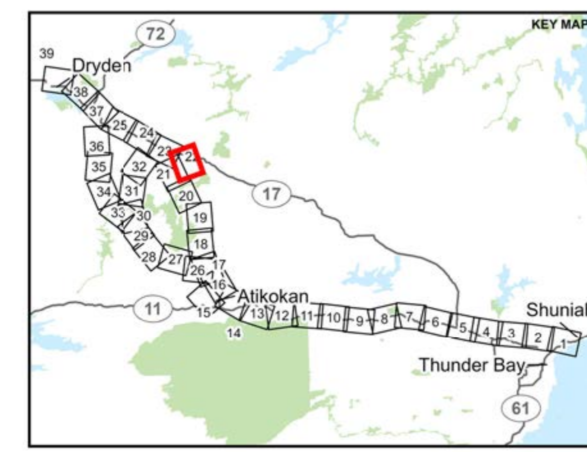
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-21



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- MERLIN NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

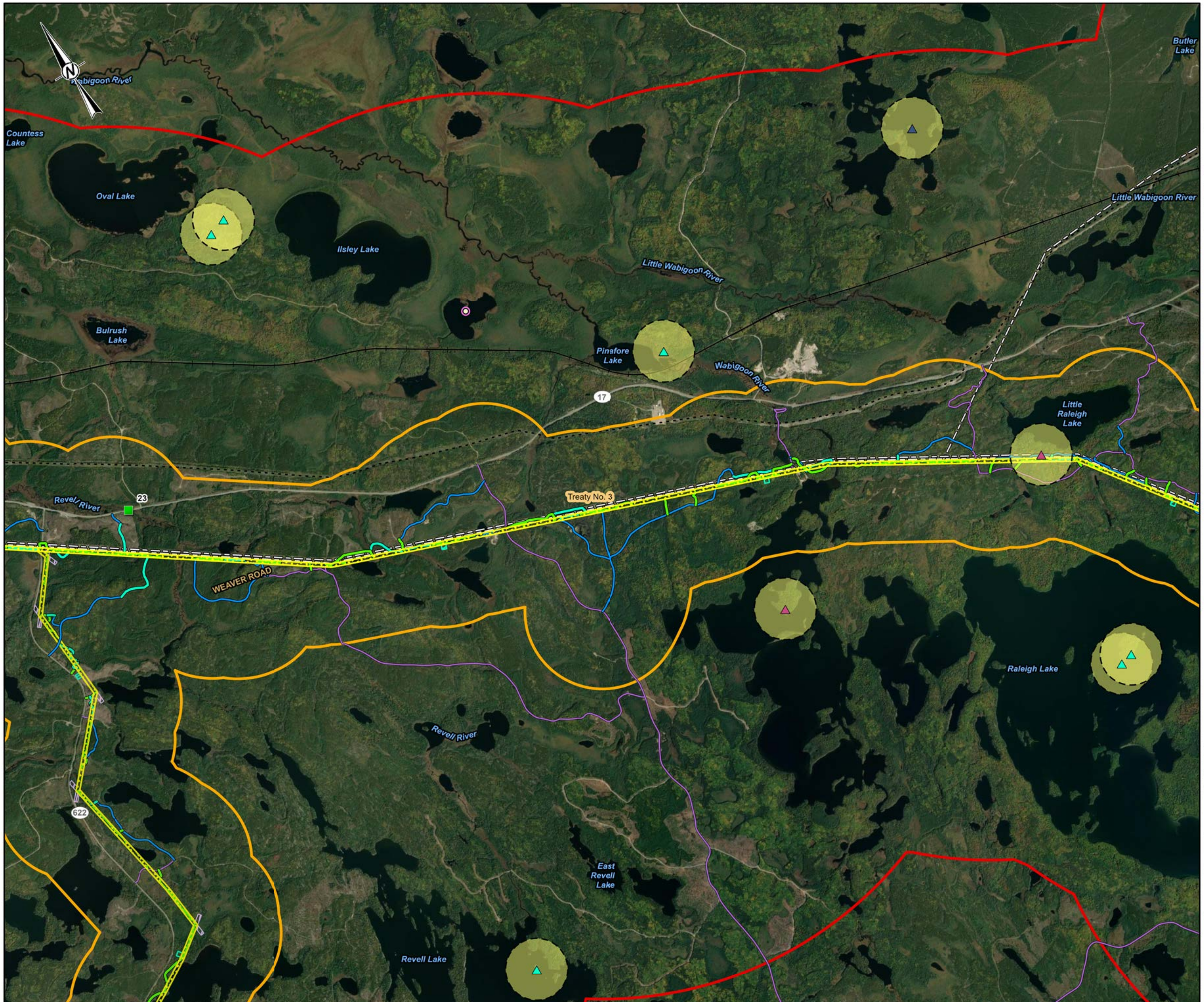
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

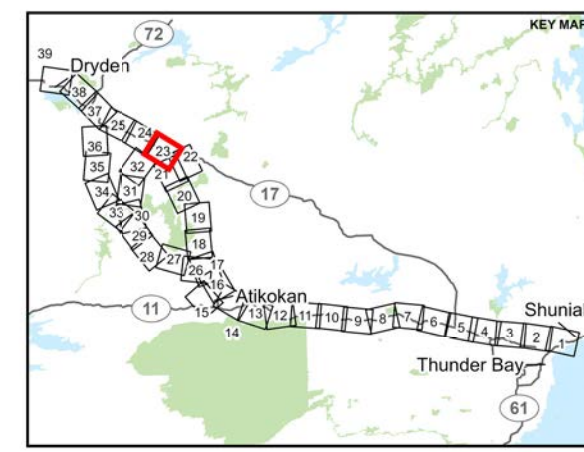
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-22

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- UNIDENTIFIED HAWK/OWL NESTING SITE
- TRUMPETER SWAN NESTING SITE
- SWAN NESTING SITE BUFFER (50 m)
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

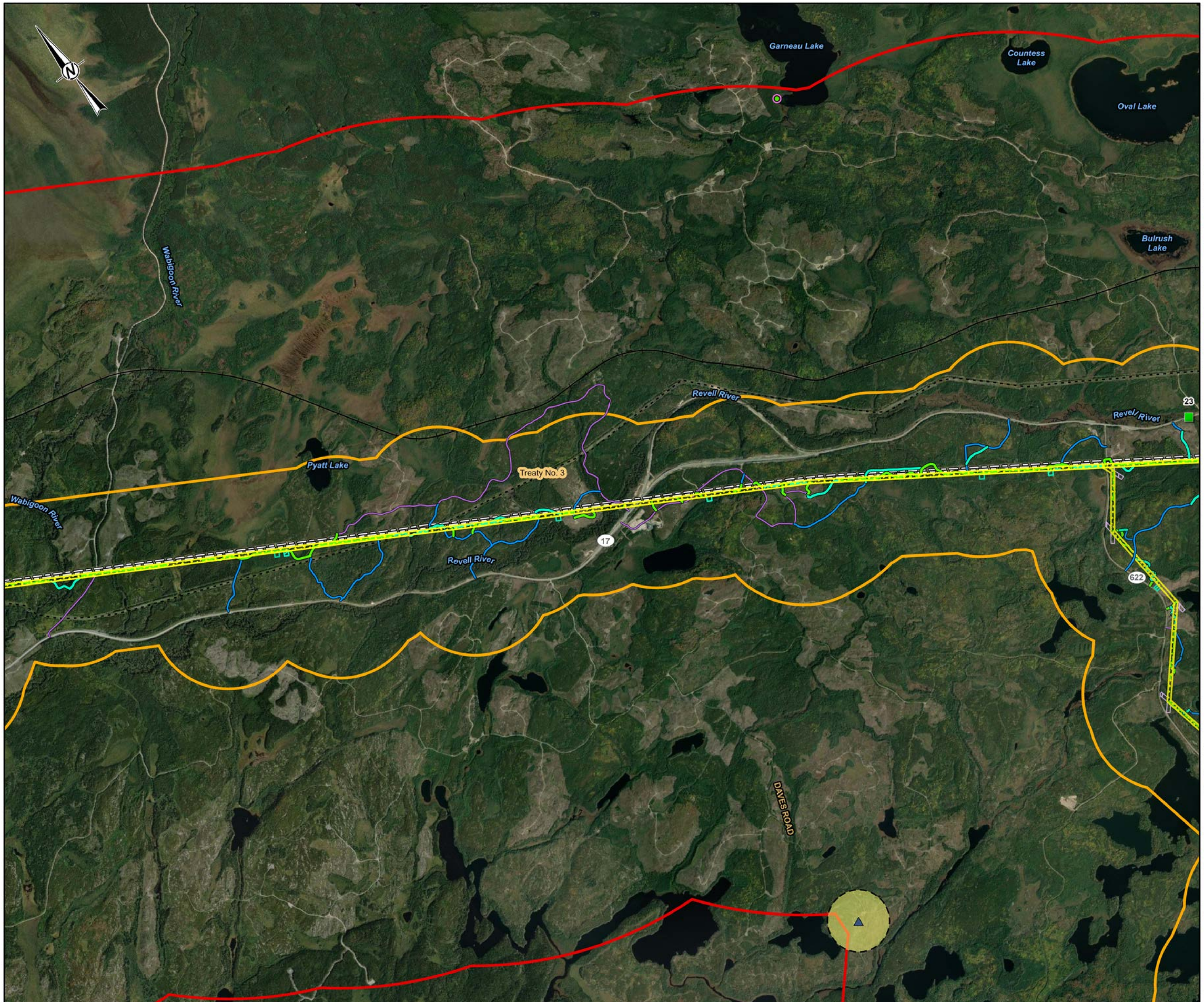
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

wsp

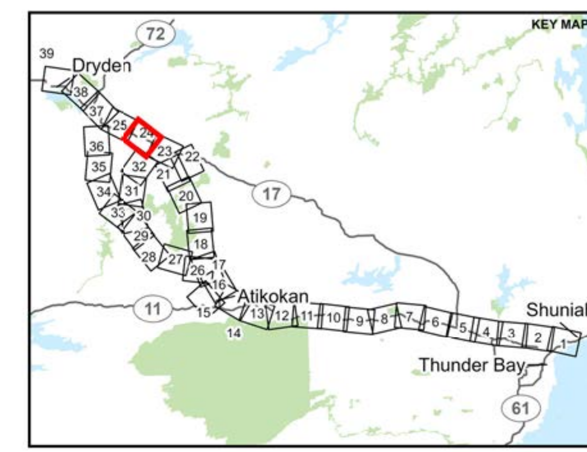
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-23



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- UNIDENTIFIED HAWK/OWL NESTING SITE
- TUNDRA SWAN NESTING SITE
- SWAN NESTING SITE BUFFER (50 m)
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

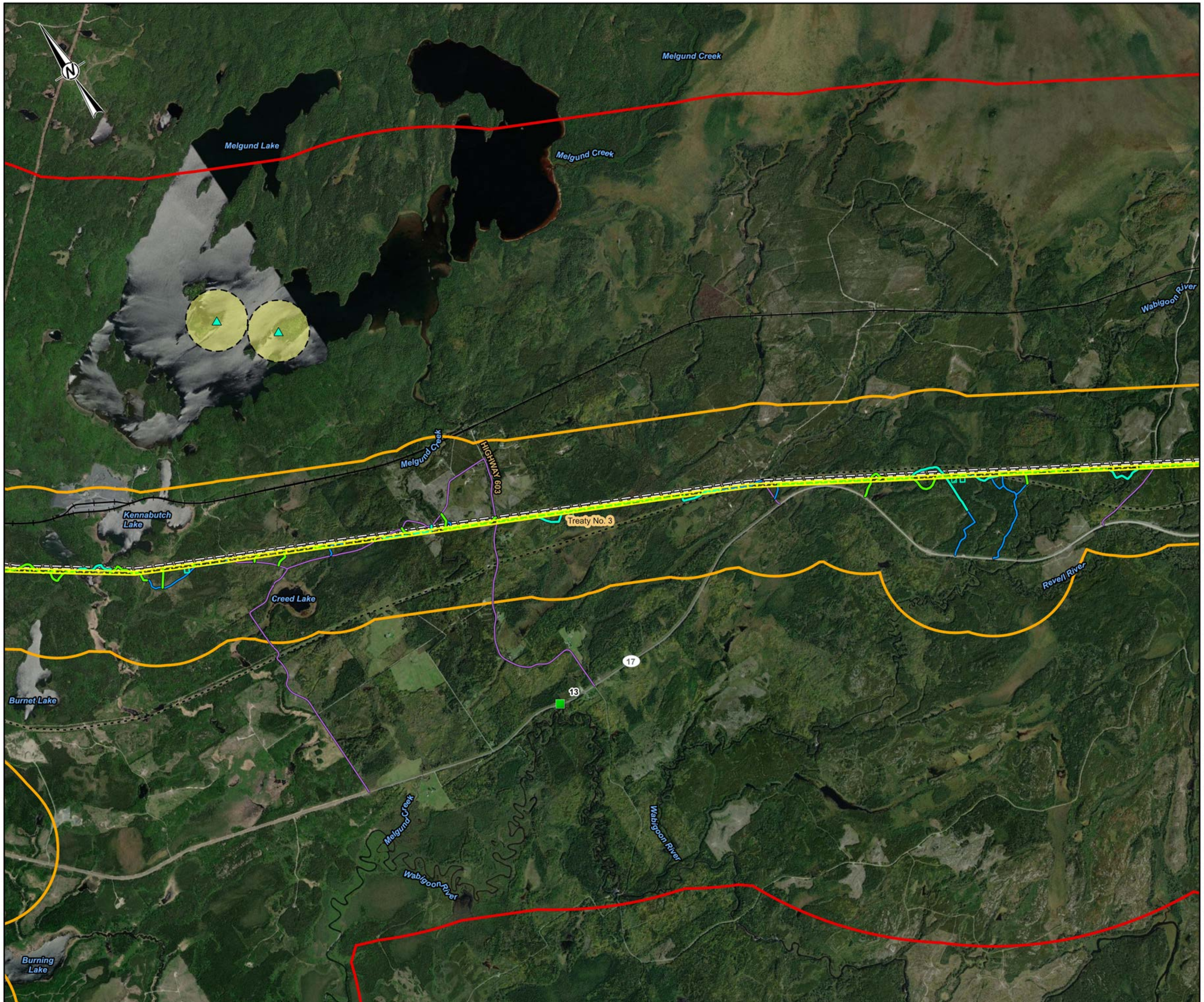
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

wsp

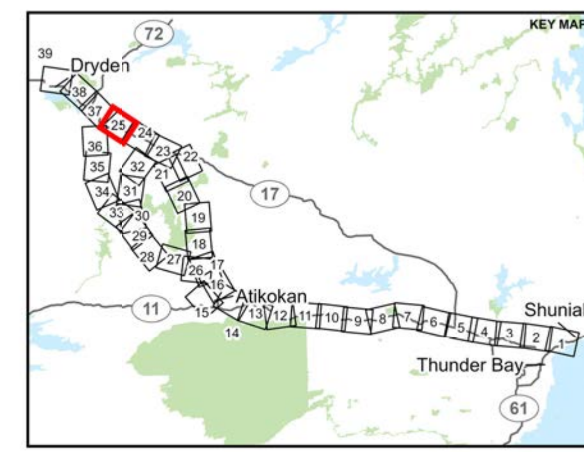
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-24



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

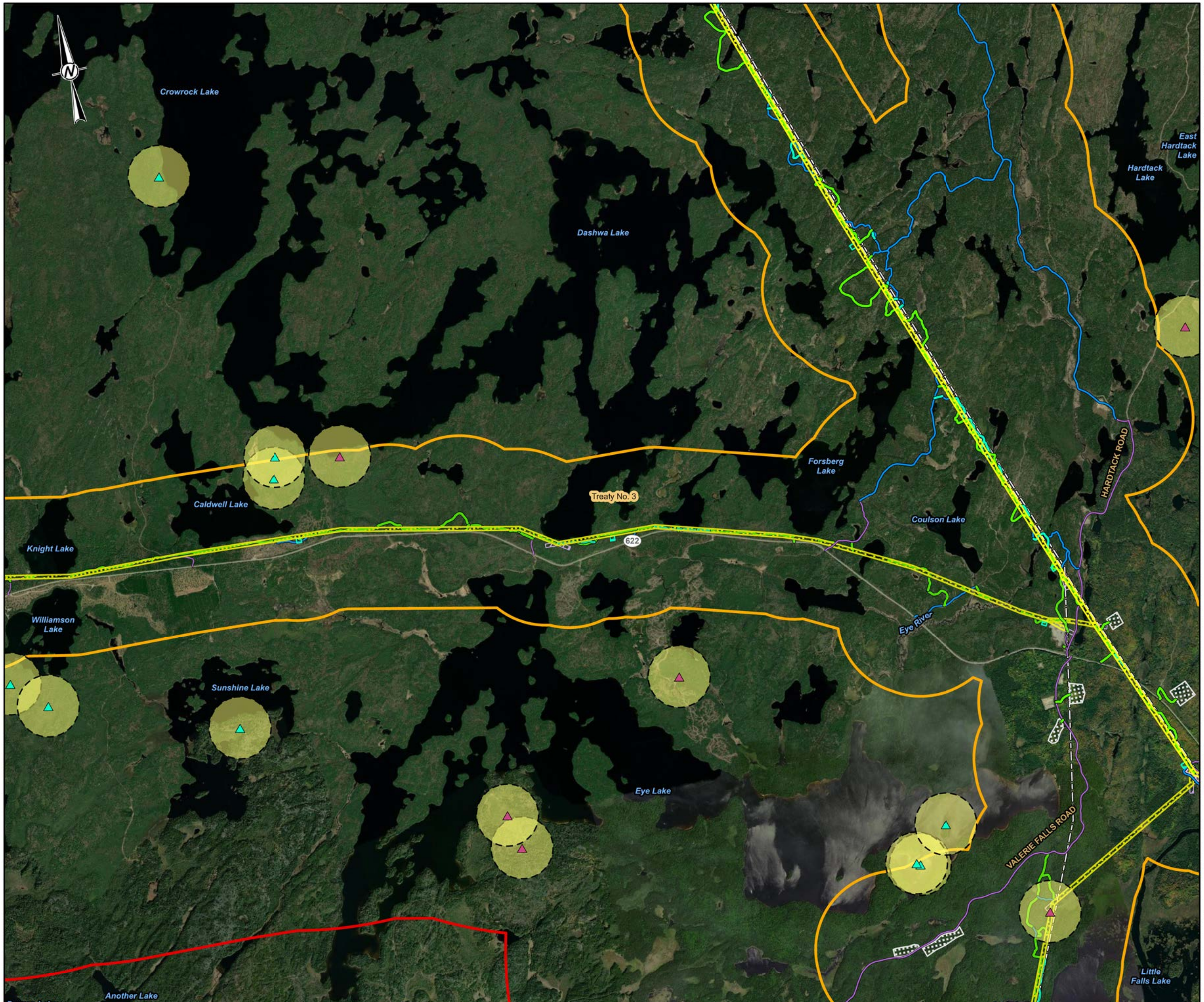
CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-25

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

REFERENCE(S)

PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

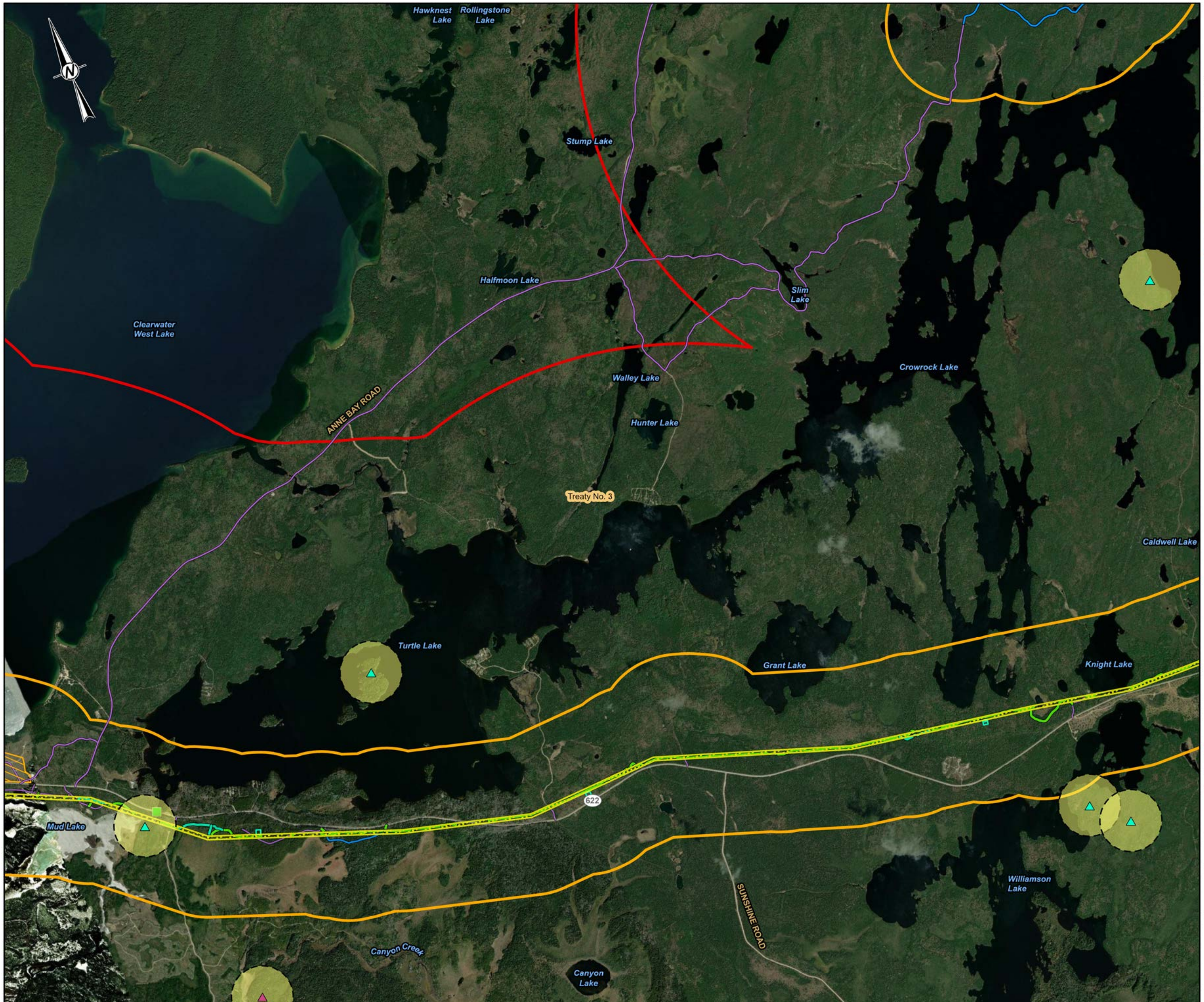
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

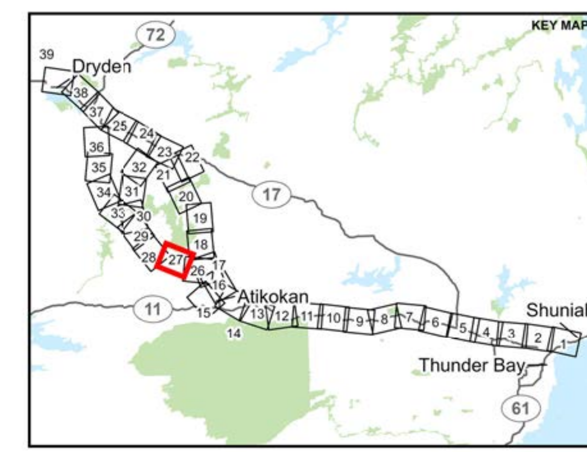
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-26

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

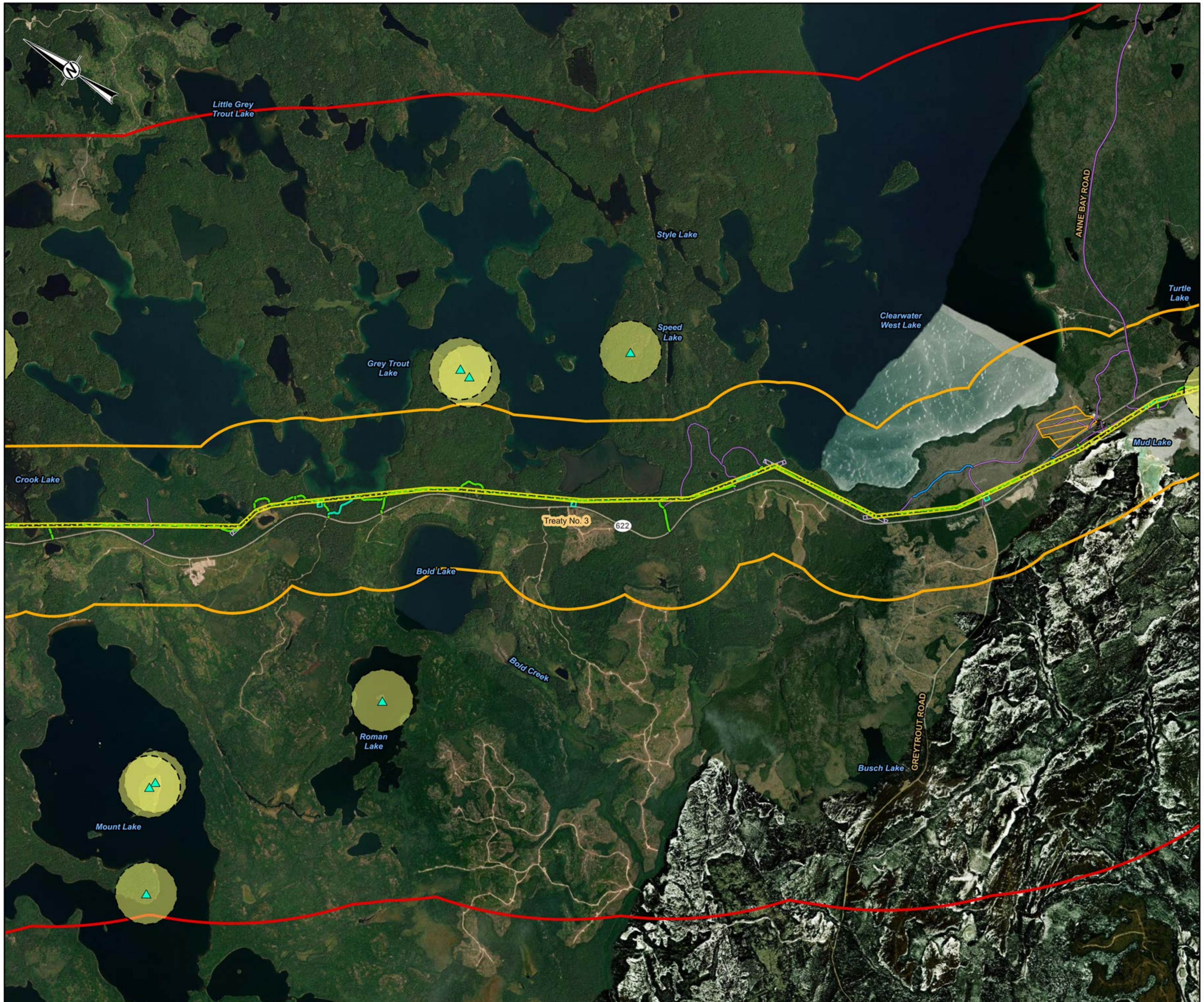
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

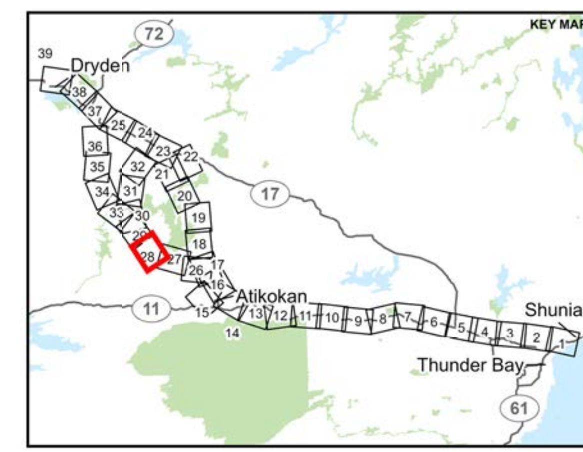
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-27

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

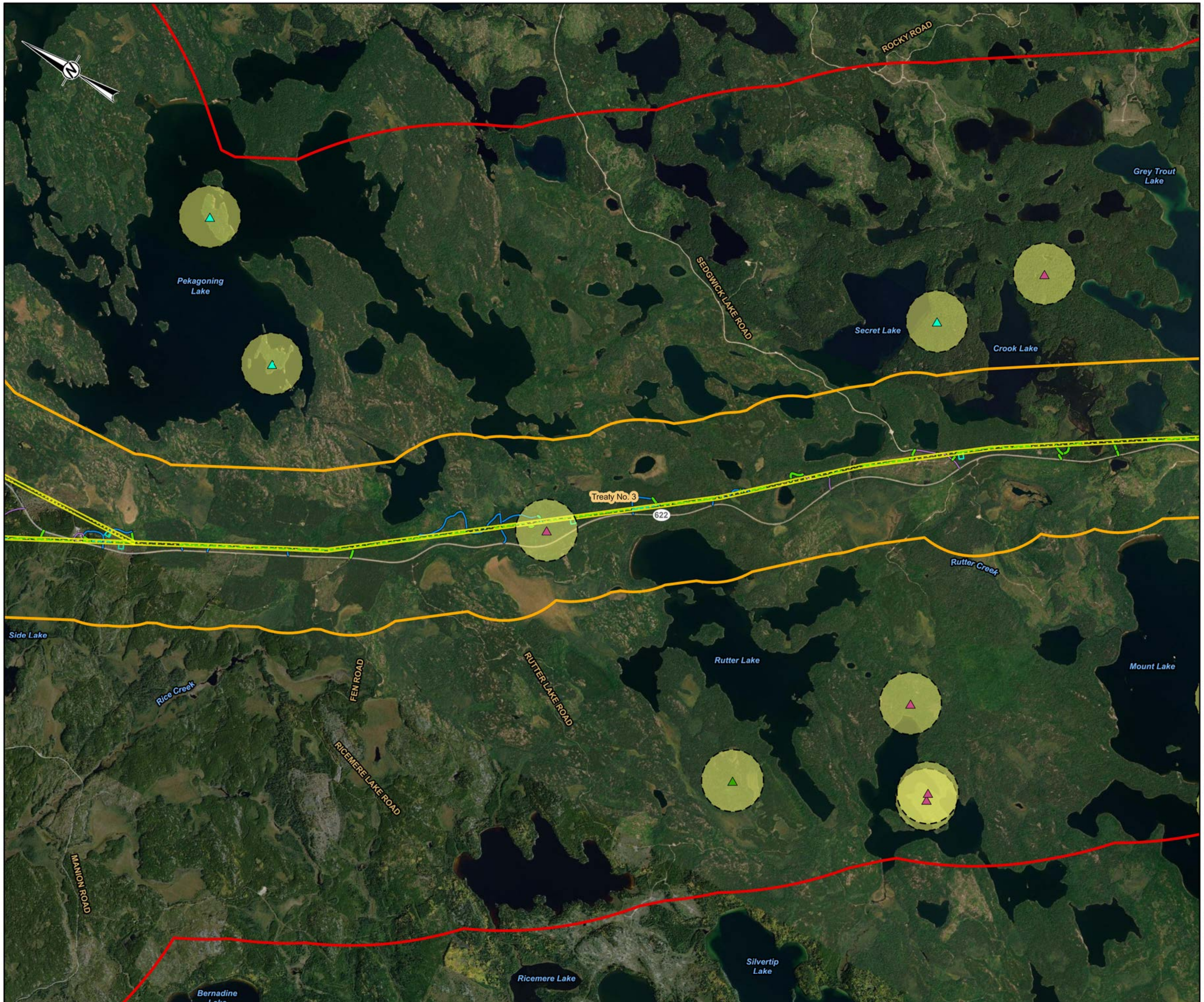
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

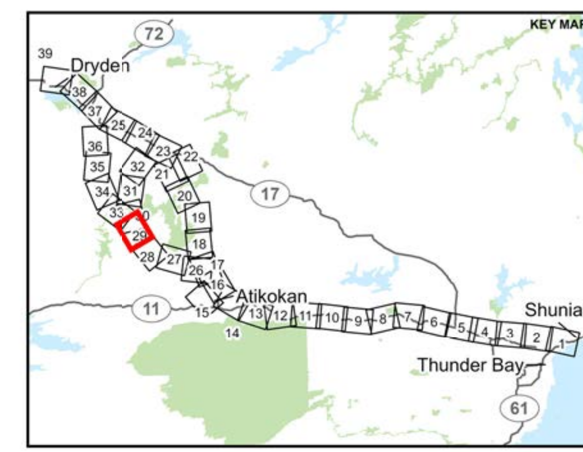
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-28

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- NORTHERN GOSHAWK NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

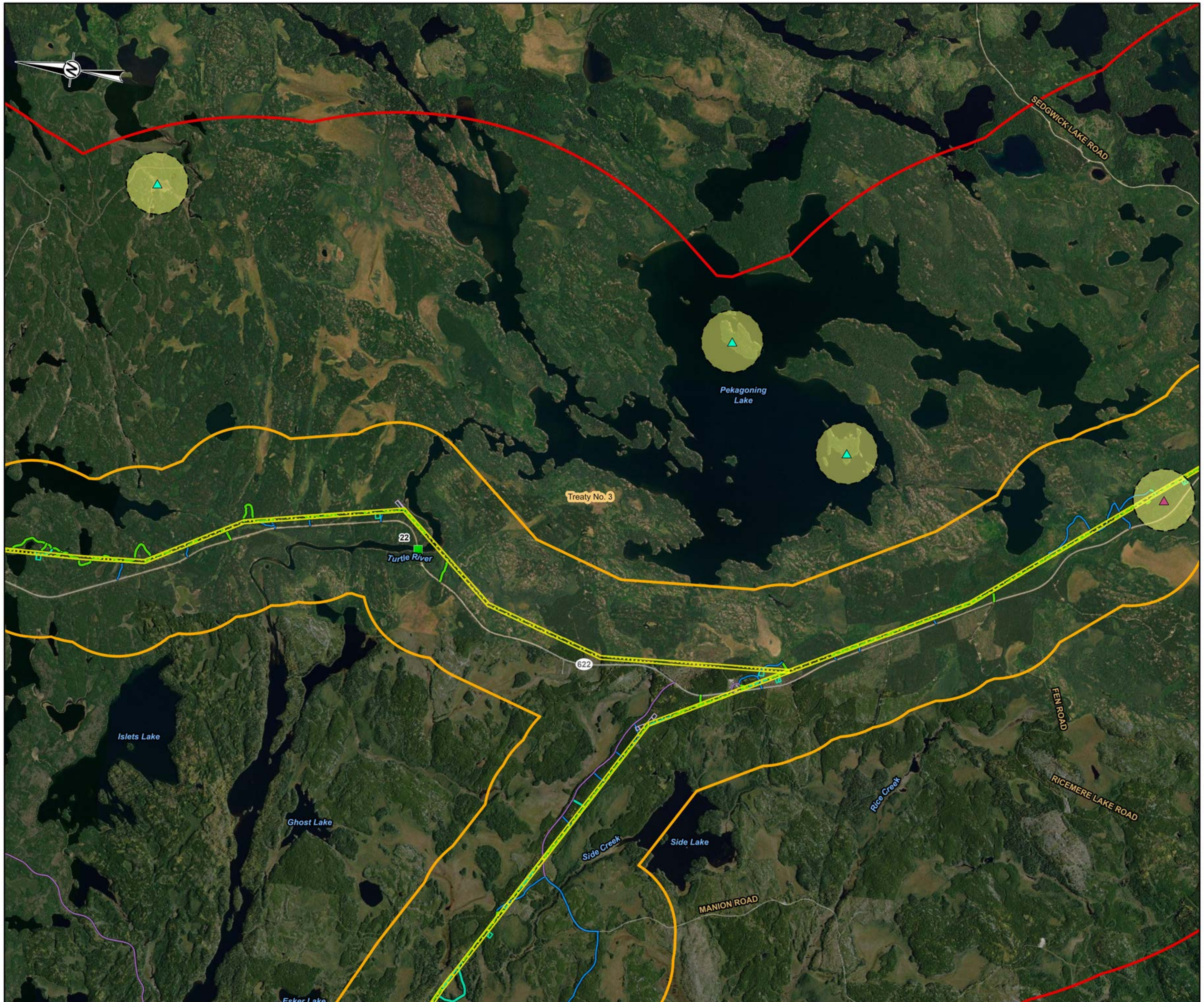
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

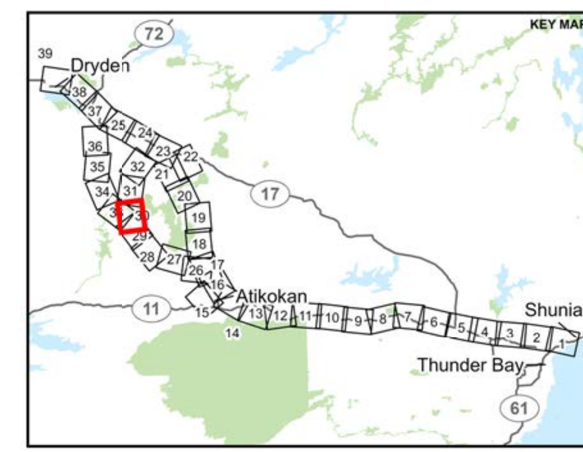
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-29

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

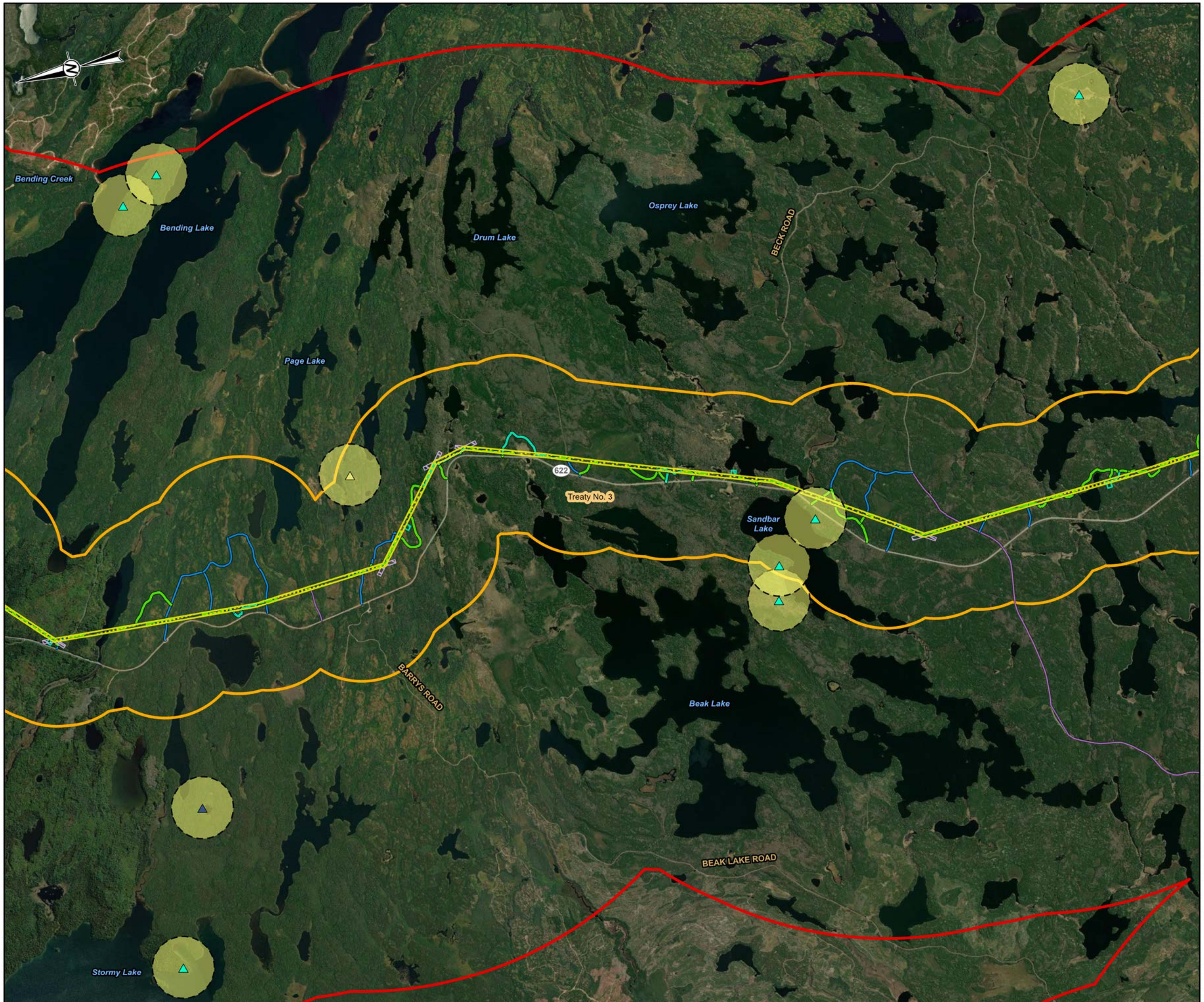
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

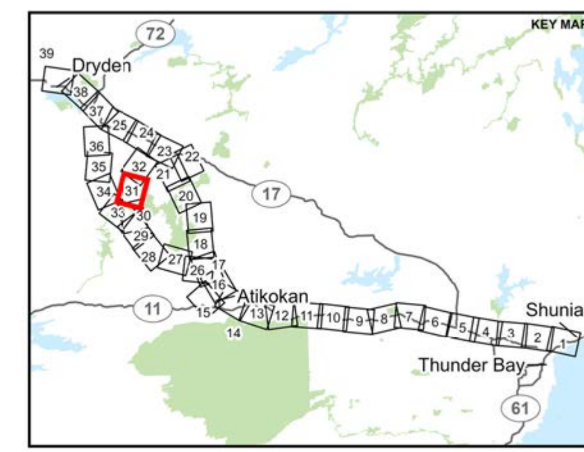
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-30

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- RED-TAILED HAWK NESTING SITE
- UNIDENTIFIED HAWK/OWL NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

TITLE

RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

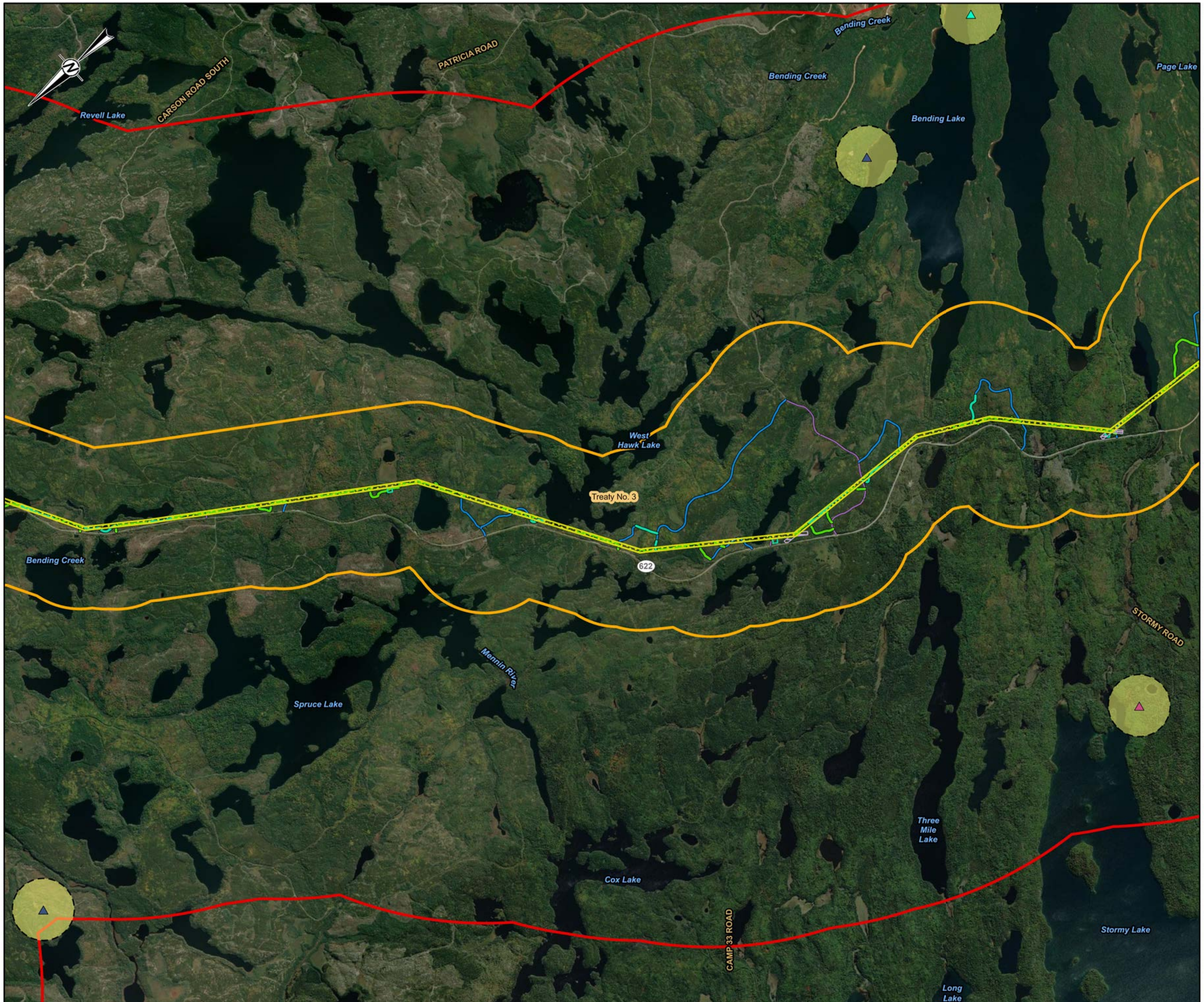
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

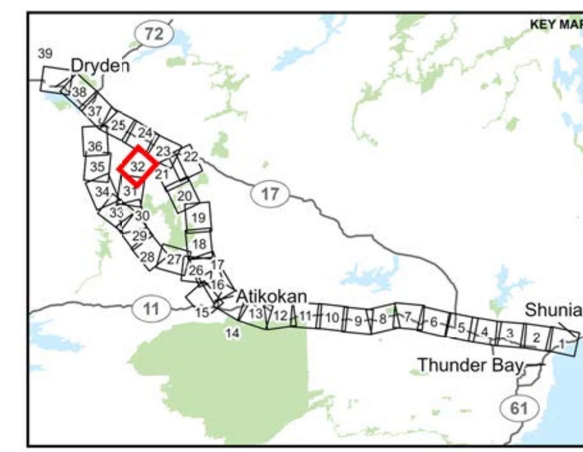
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- UNIDENTIFIED HAWK/OWL NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

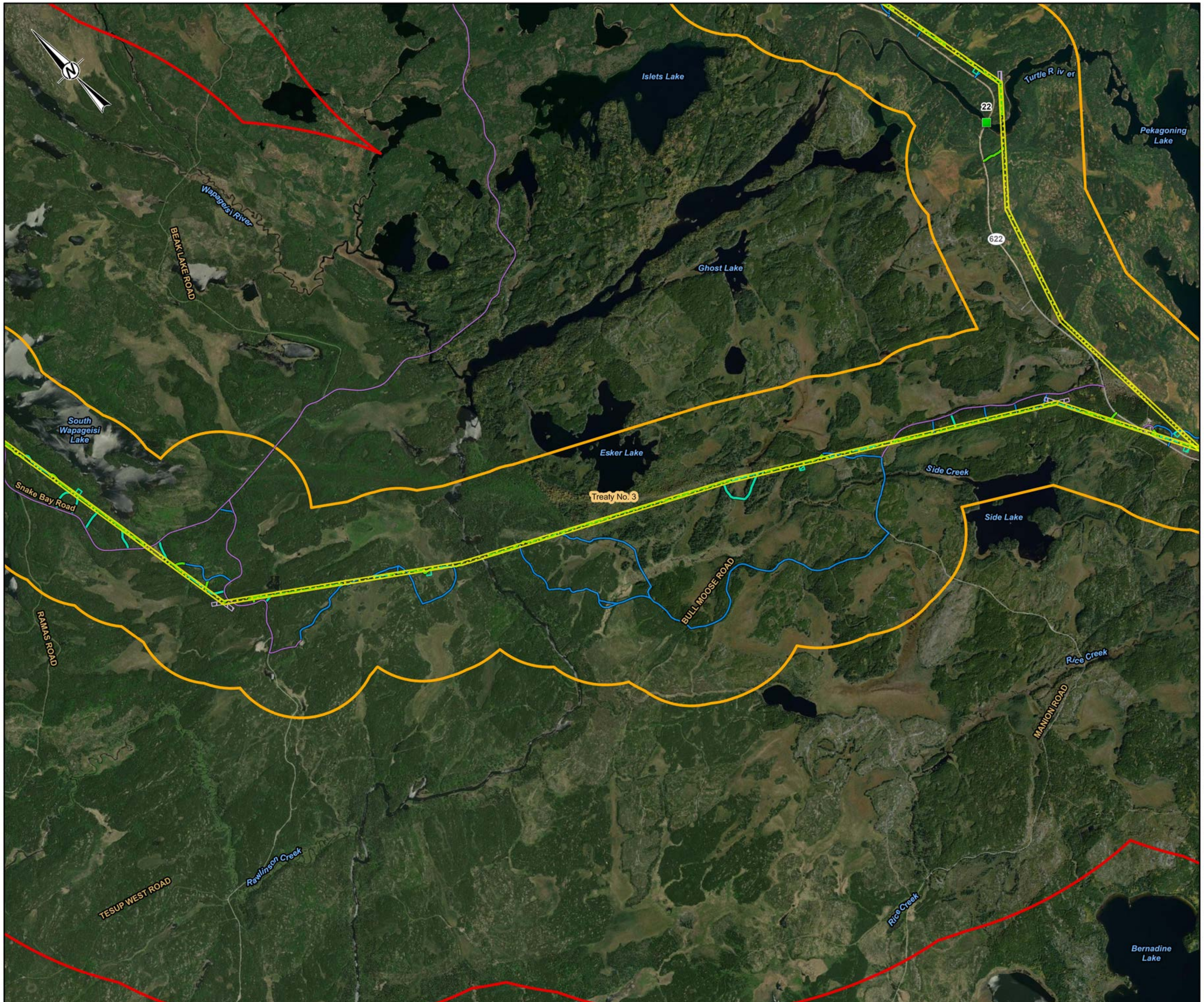
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

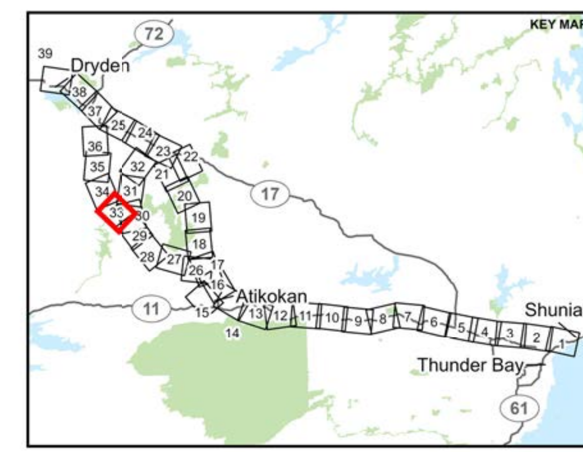
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-32

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

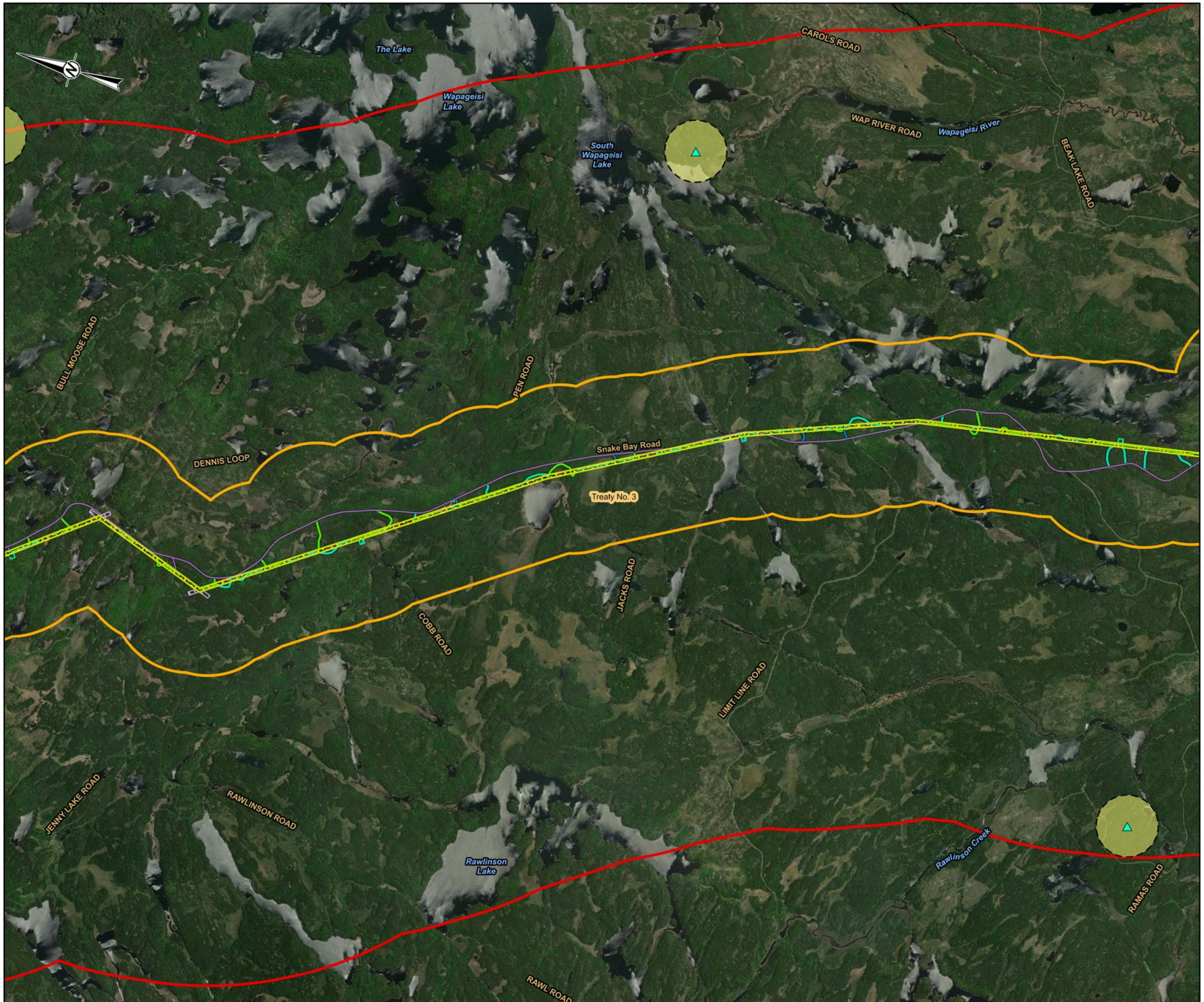
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

wsp

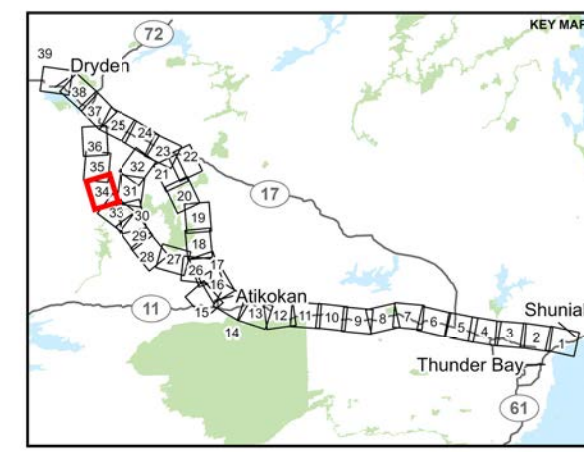
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-33



LEGEND

- BALD EAGLE NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

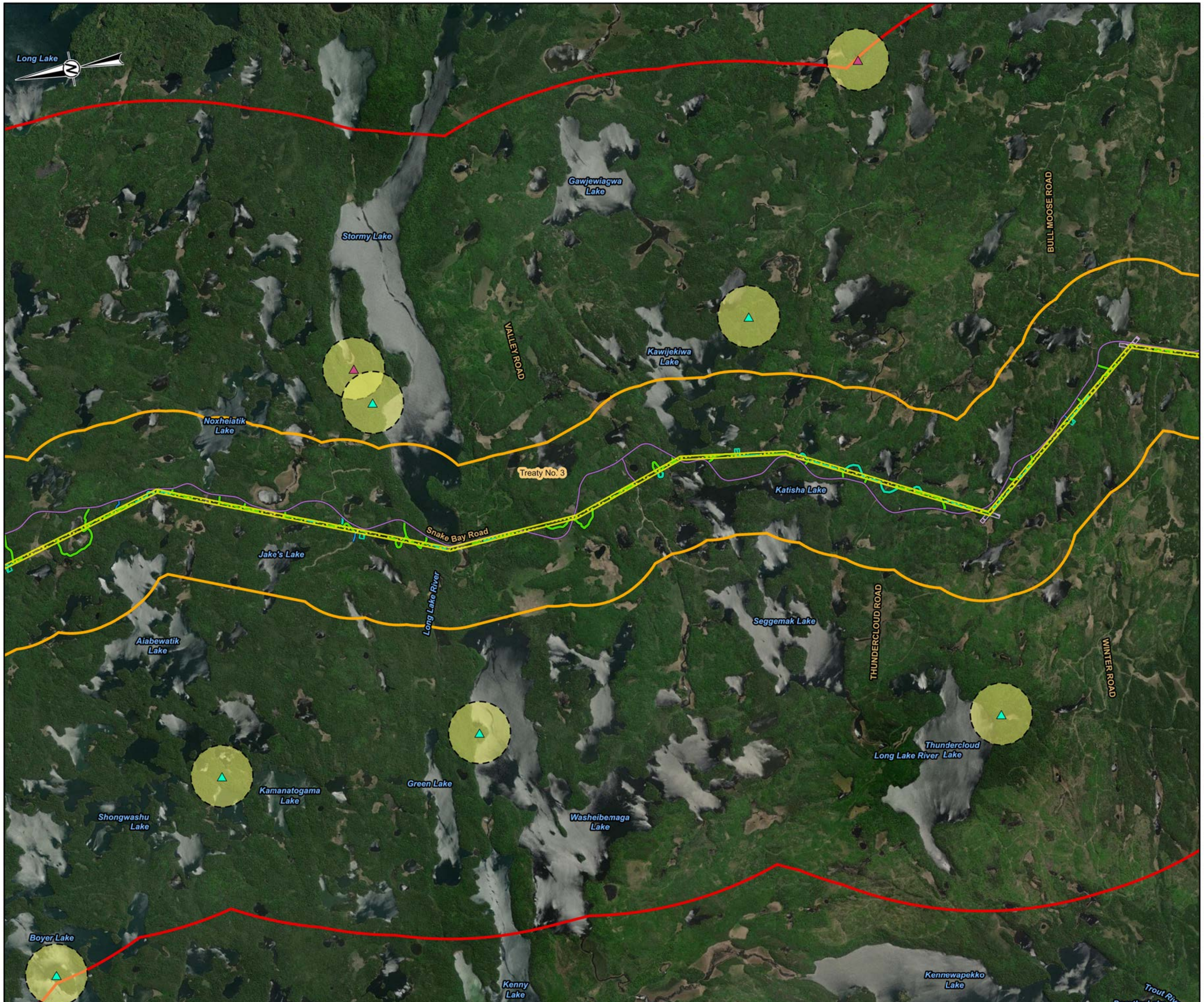
TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

wsp

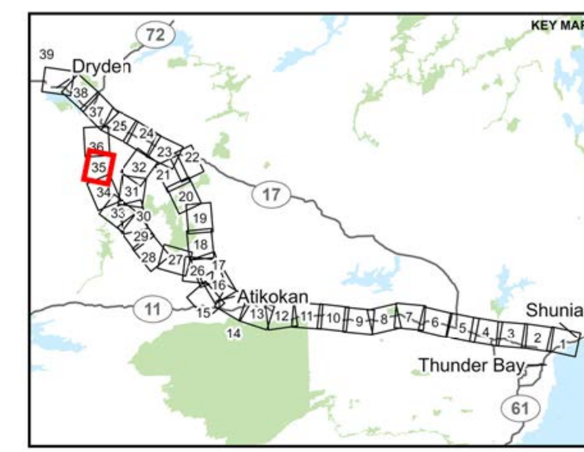
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-34



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

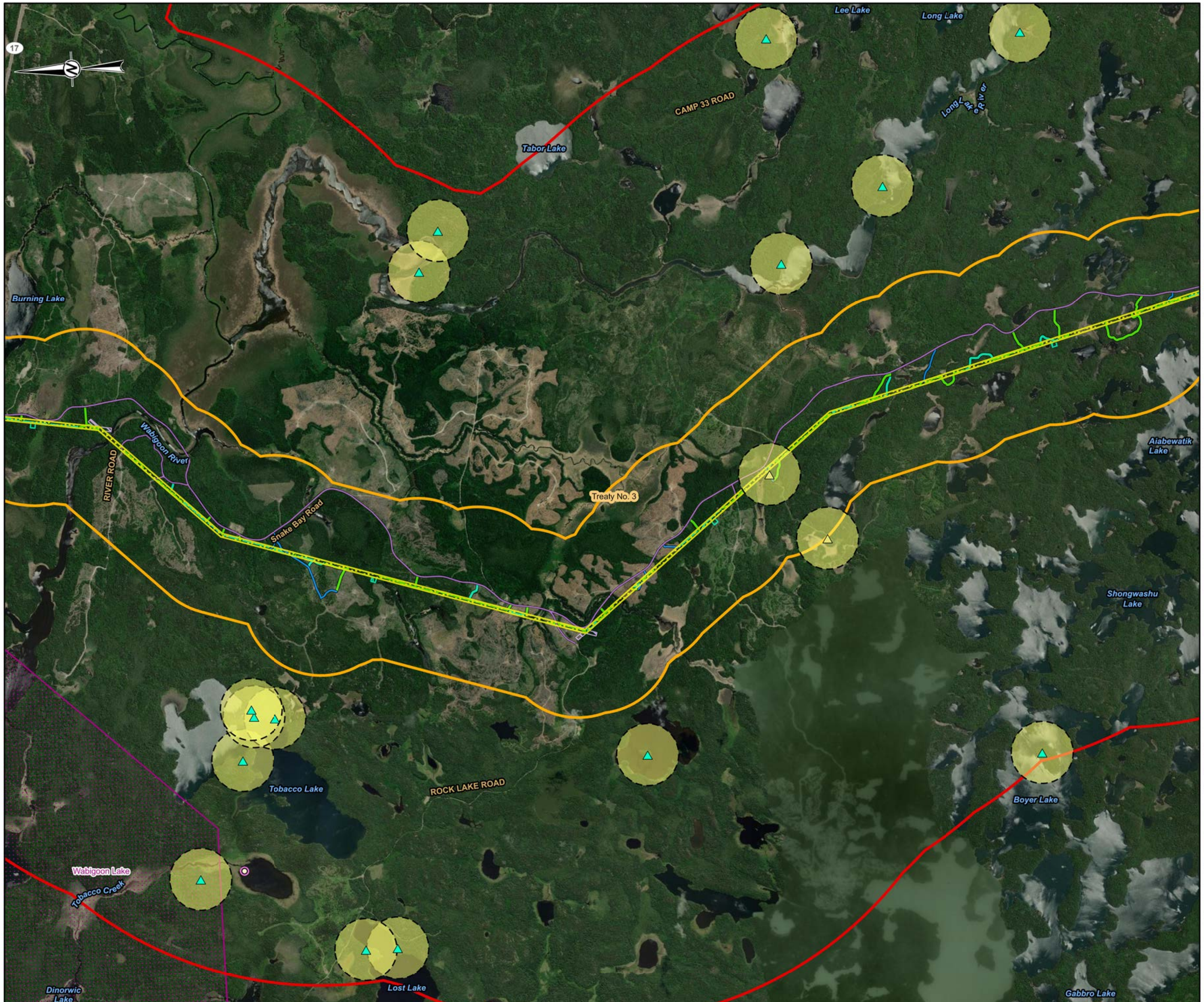
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

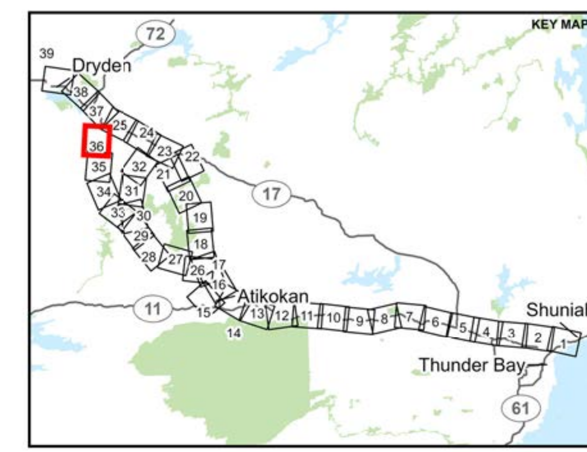
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-35

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE NESTING SITE
- RED-TAILED HAWK NESTING SITE
- TRUMPETER SWAN NESTING SITE
- SWAN NESTING SITE BUFFER (50 m)
- RAPTOR NESTING SITE BUFFER (400 m)
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY



0 1 2
1:50,000 KILOMETRES

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

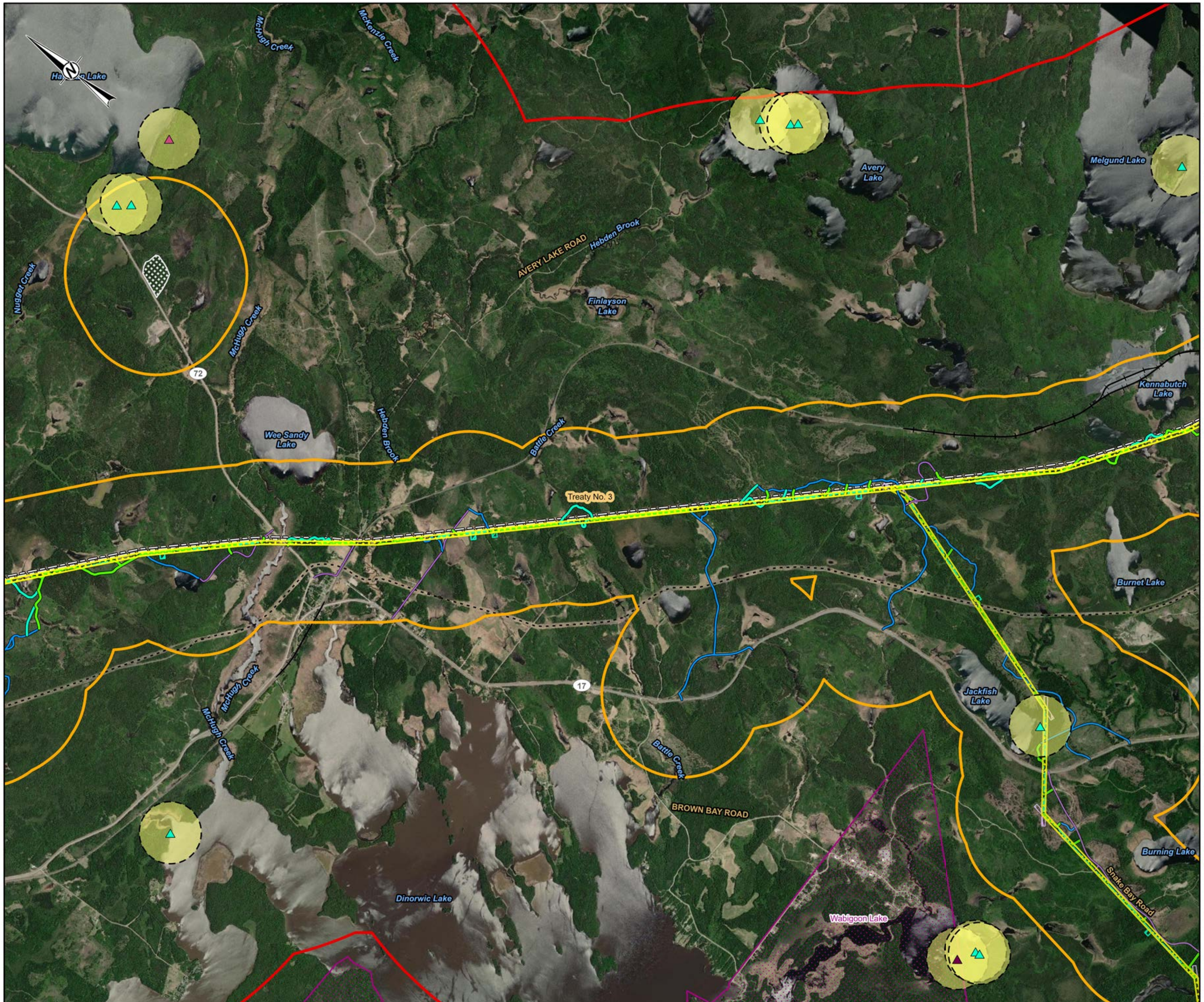
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

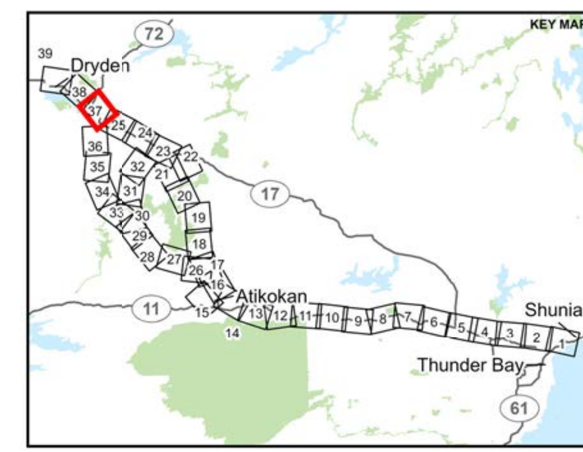
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-36



LEGEND

- BALD EAGLE NESTING SITE
- OSPREY NESTING SITE
- UNIDENTIFIED RAPTOR NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT

HYDRO ONE NETWORKS INC.

PROJECT

WAASIGAN TRANSMISSION LINE

TITLE

RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

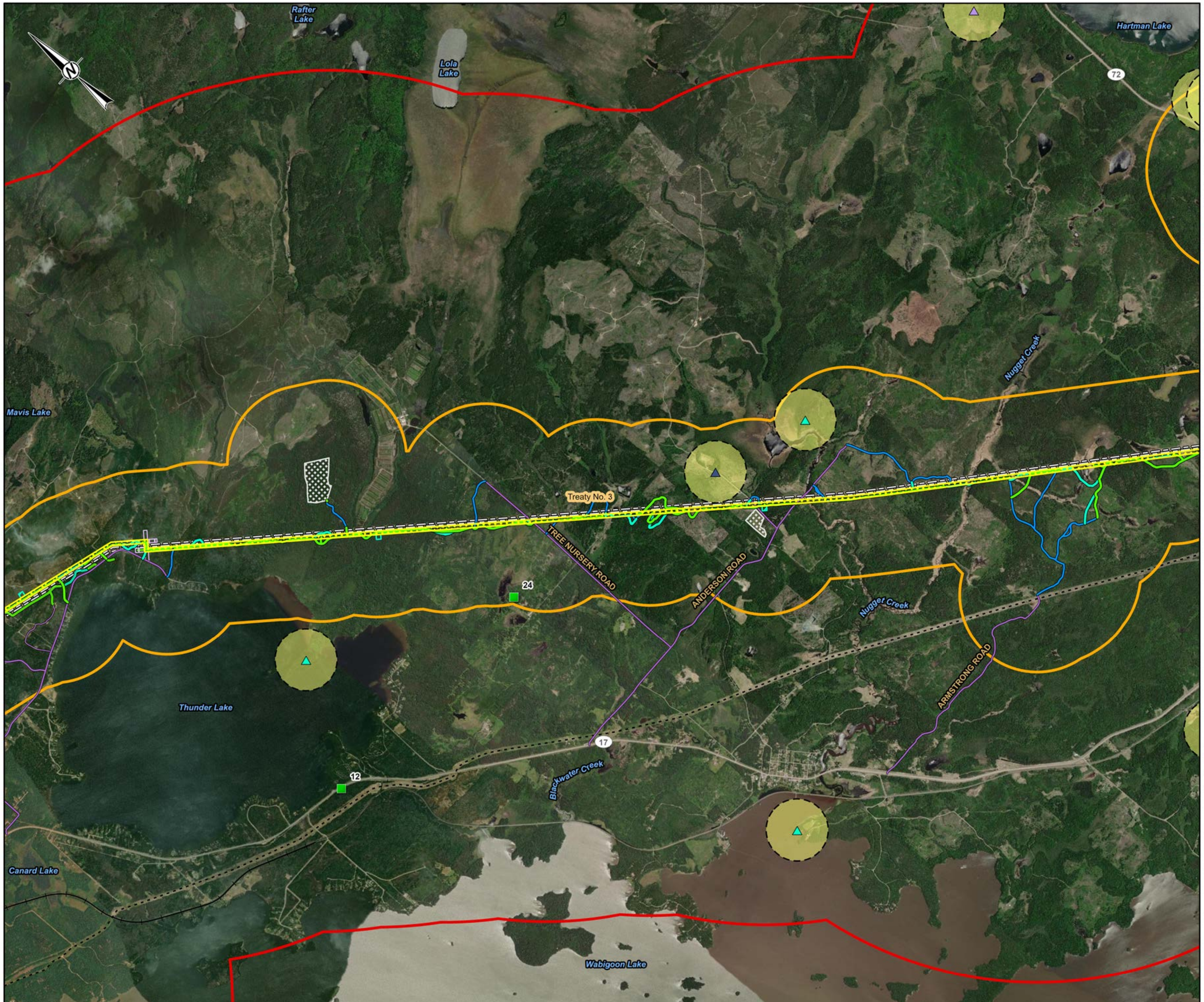
CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-37

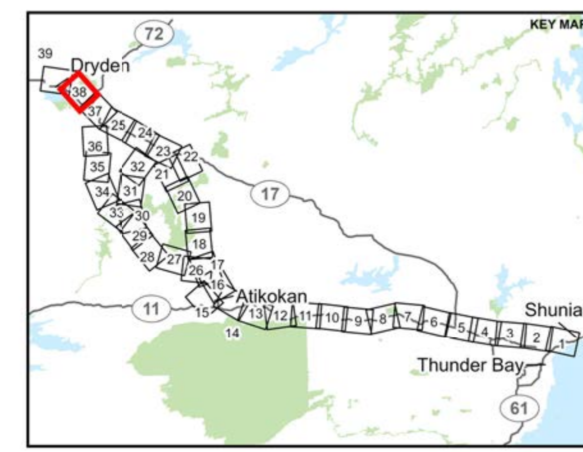
25mm

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- REASONABLY FORESEEABLE DEVELOPMENT LOCATIONS
- BALD EAGLE NESTING SITE
- BROAD-WINGED HAWK NESTING SITE
- UNIDENTIFIED HAWK/OWL NESTING SITE
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



0 1 2

1:50,000 KILOMETRES

REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

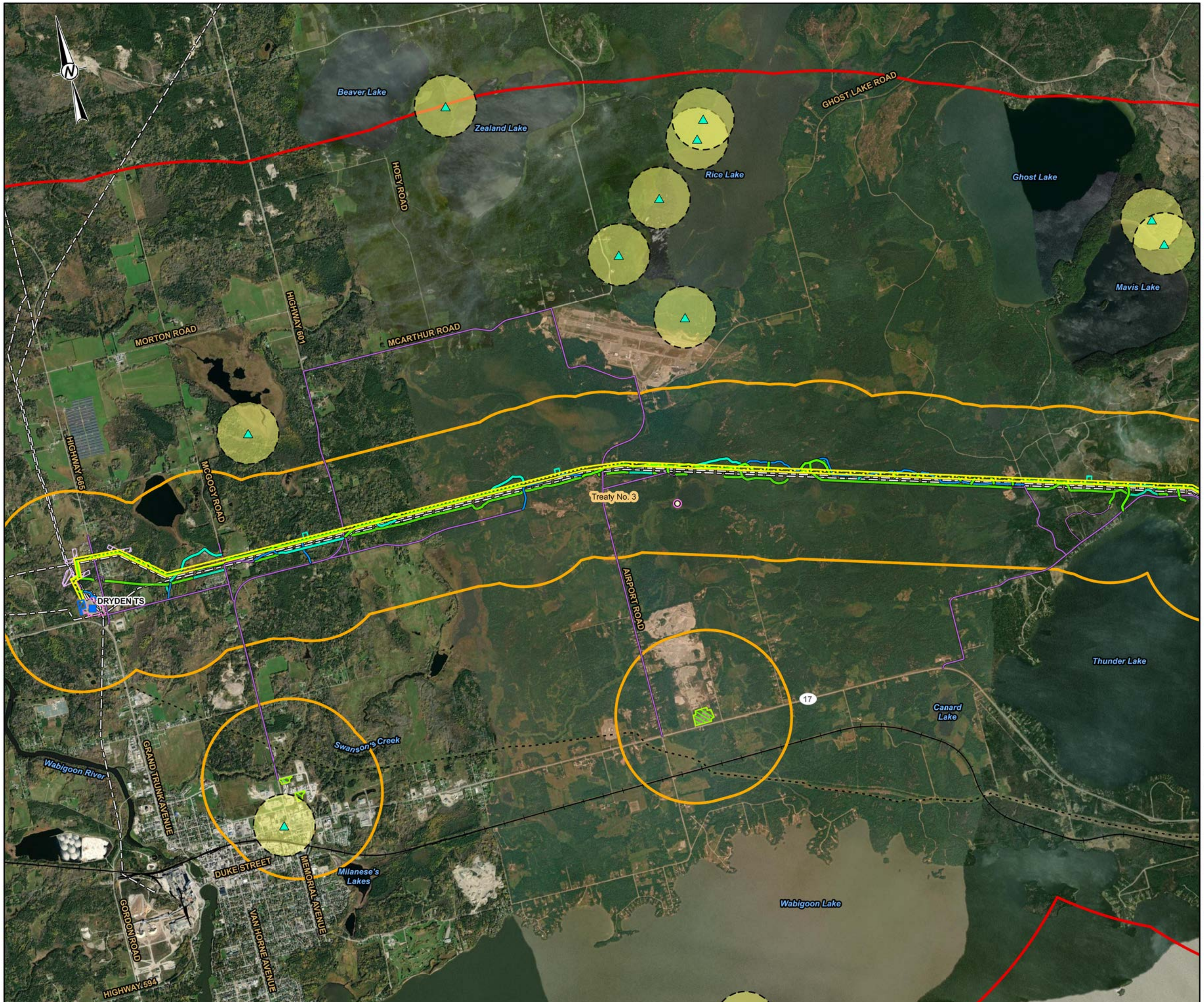
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

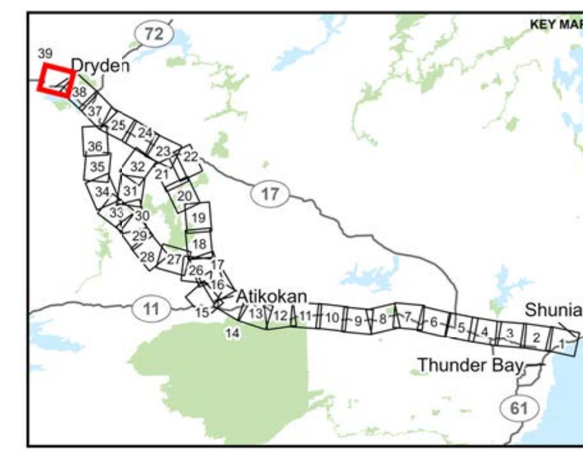
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-38

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- BALD EAGLE NESTING SITE
- TRUMPETER SWAN NESTING SITE
- SWAN NESTING SITE BUFFER (50 m)
- RAPTOR NESTING SITE BUFFER (400 m)
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
RAPTOR AND SWAN NESTING SITES IN THE LOCAL AND REGIONAL STUDY AREAS

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

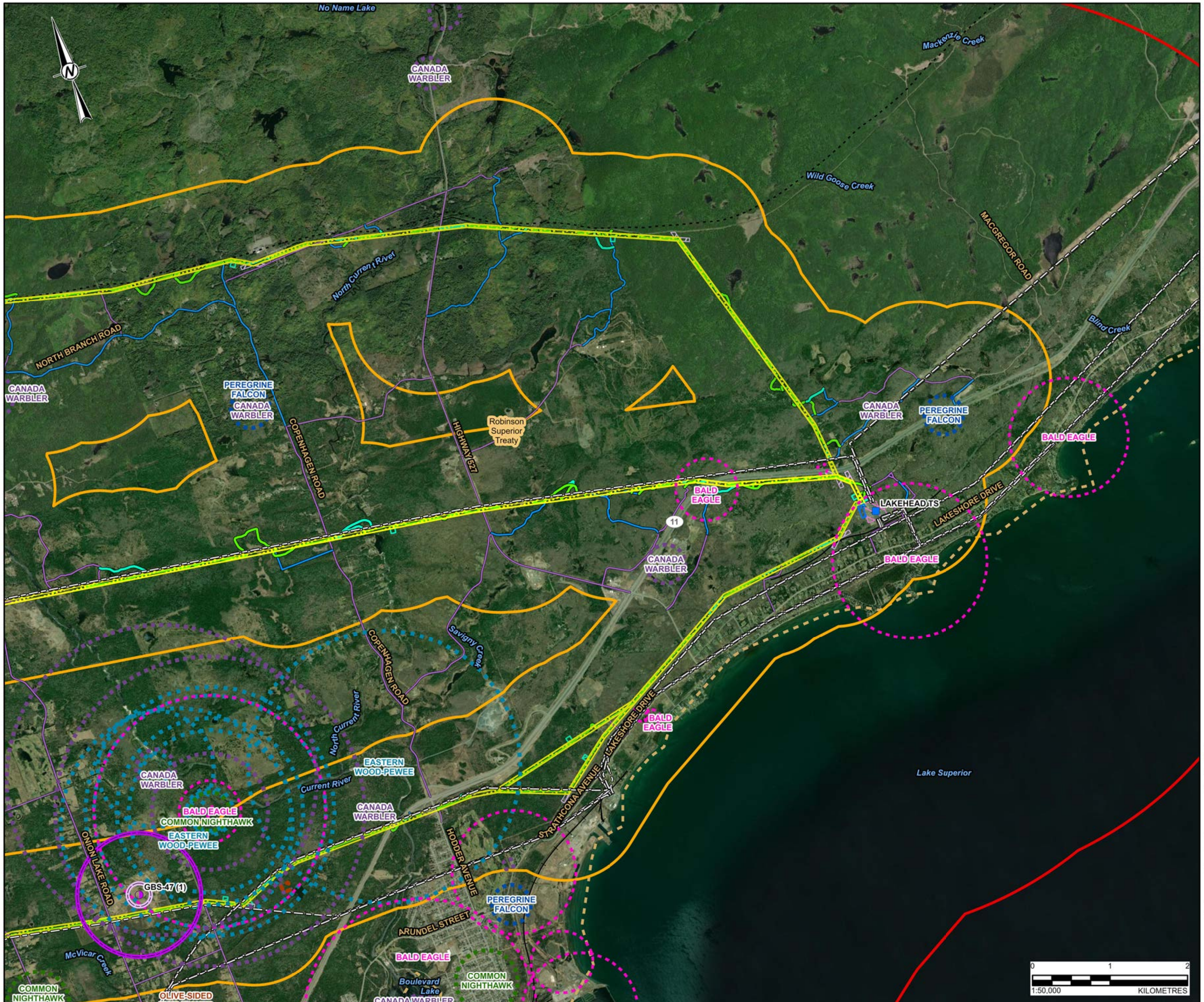
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	1	3.2-9-39

25mm
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

Figure 3.2-10: Eastern Whip-poor-will and Bank Swallow Habitat and Occurrence Records within the LSA

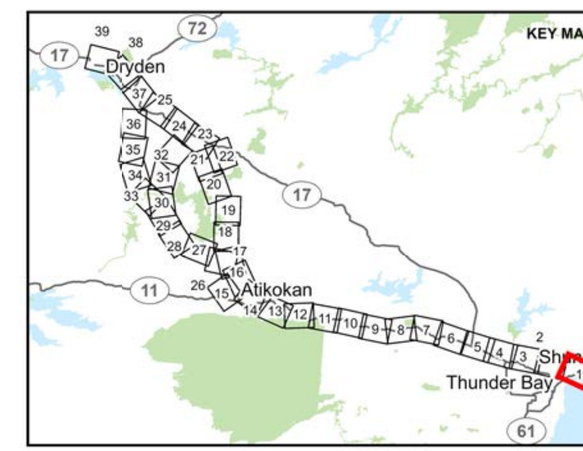
This figure includes confidential species at risk information that cannot be released publicly. The figure will be submitted to applicable regulatory agencies under separate cover.

Figure 3.2-11: Bird Species of Conservation Concern Known from and Documented in the LSA



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- COMMON NIGHTHAWK (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- PEREGRINE FALCON (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

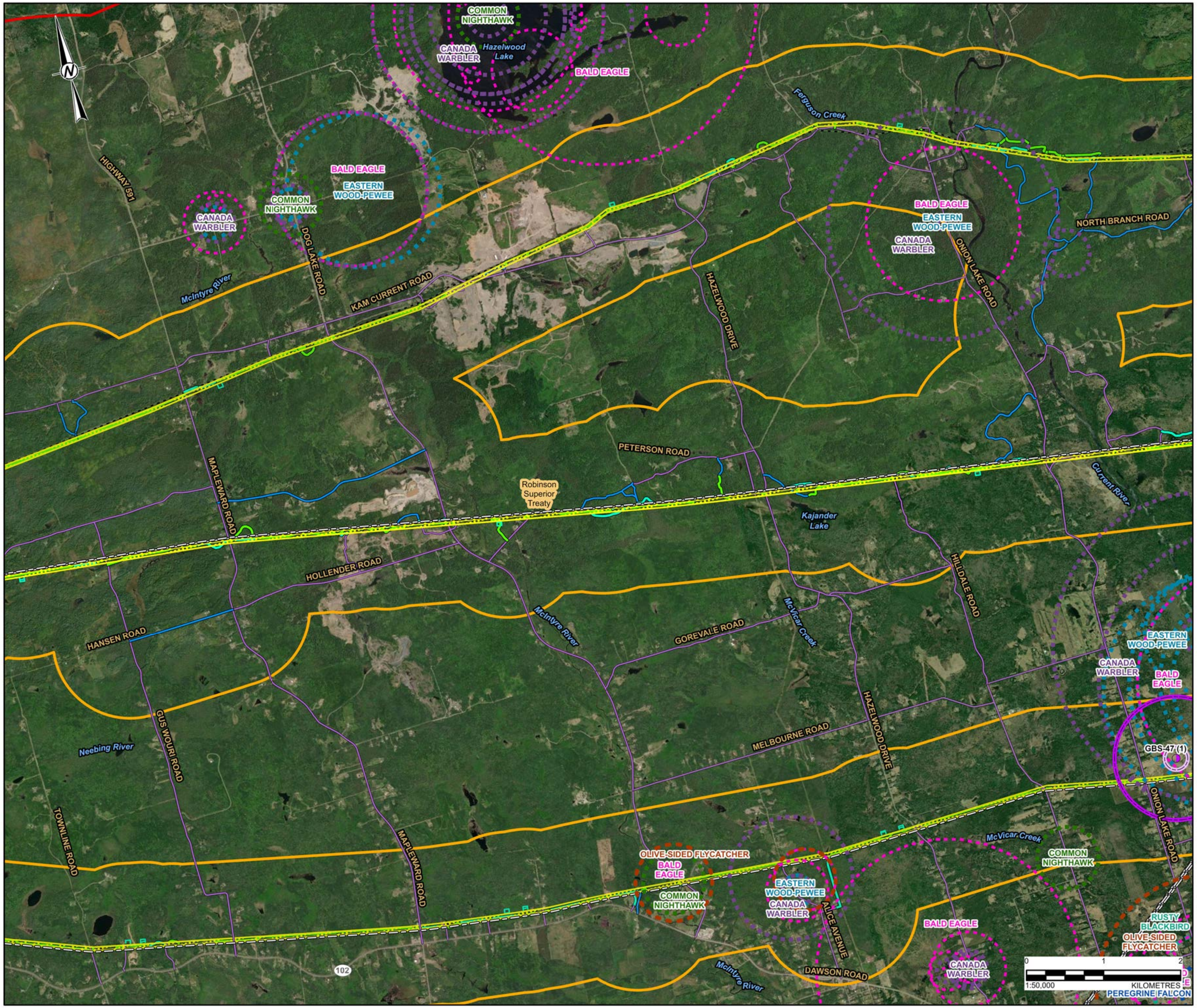
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

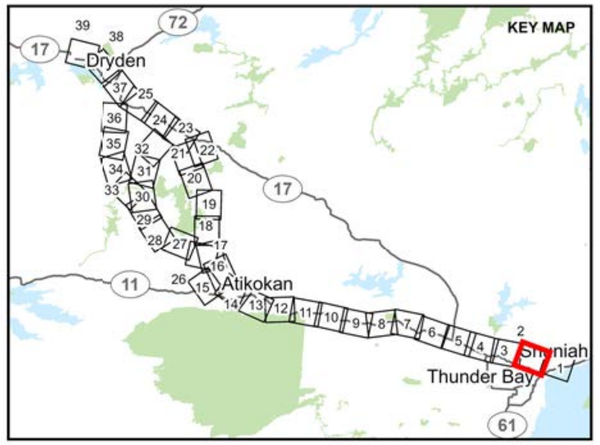
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-1



LEGEND

- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- COMMON NIGHTHAWK (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- RUSTY BLACKBIRD (NHIC 2022)
- PEREGRINE FALCON (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

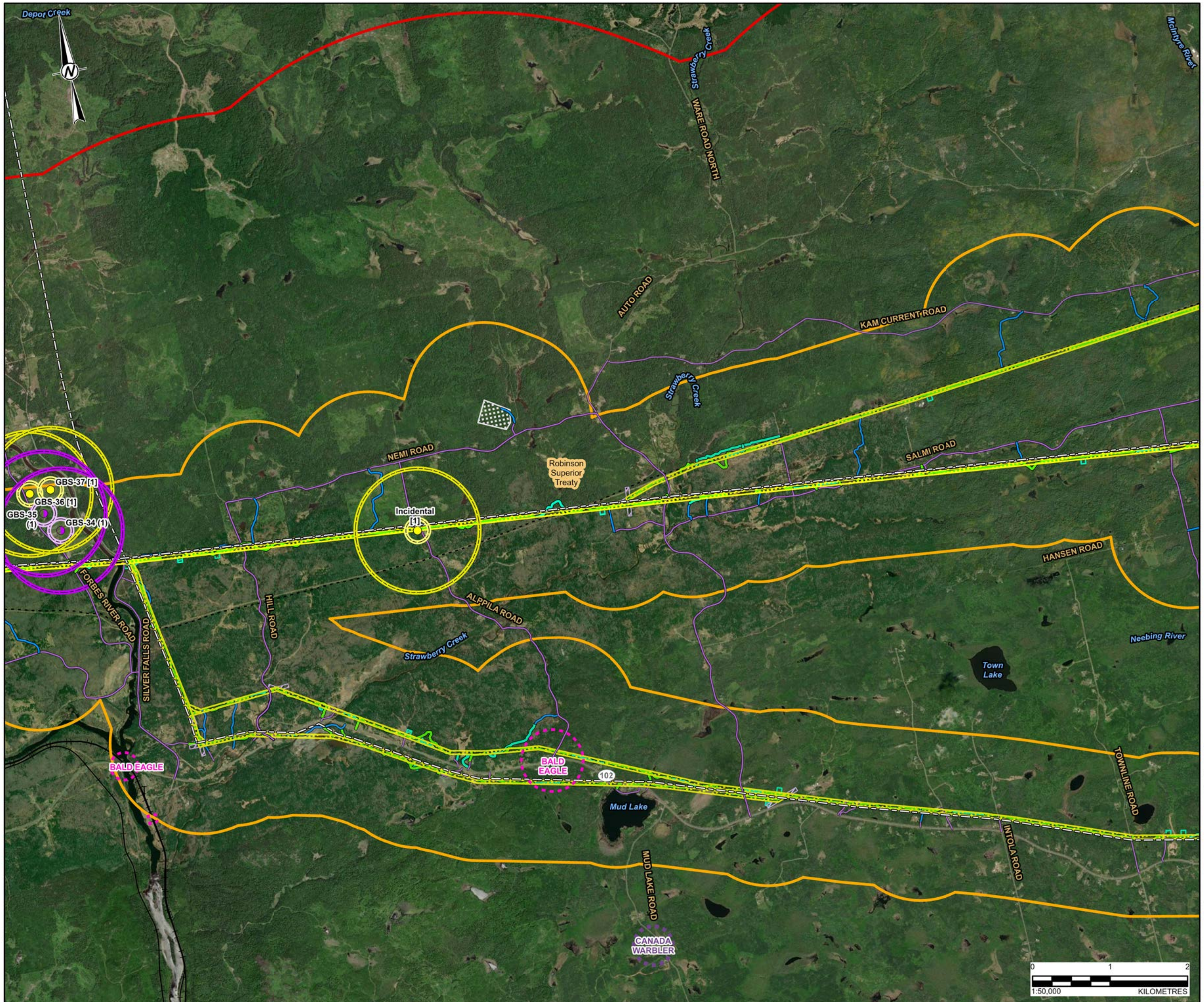
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

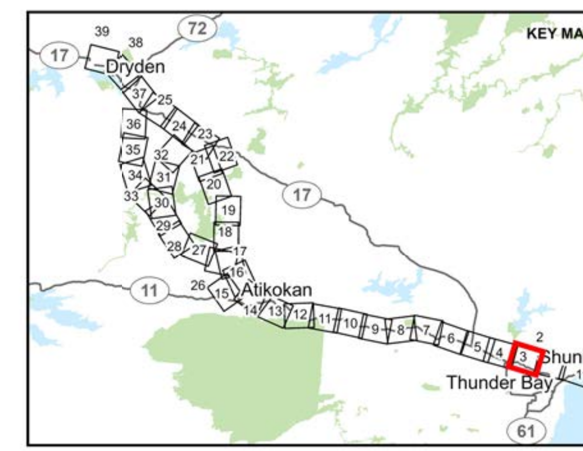
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- EASTERN WOOD-PEWEE OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- EASTERN WOOD PEWEE HABITAT
- EASTERN WOOD PEWEE HABITAT BUFFER
- CANADA WARBLER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

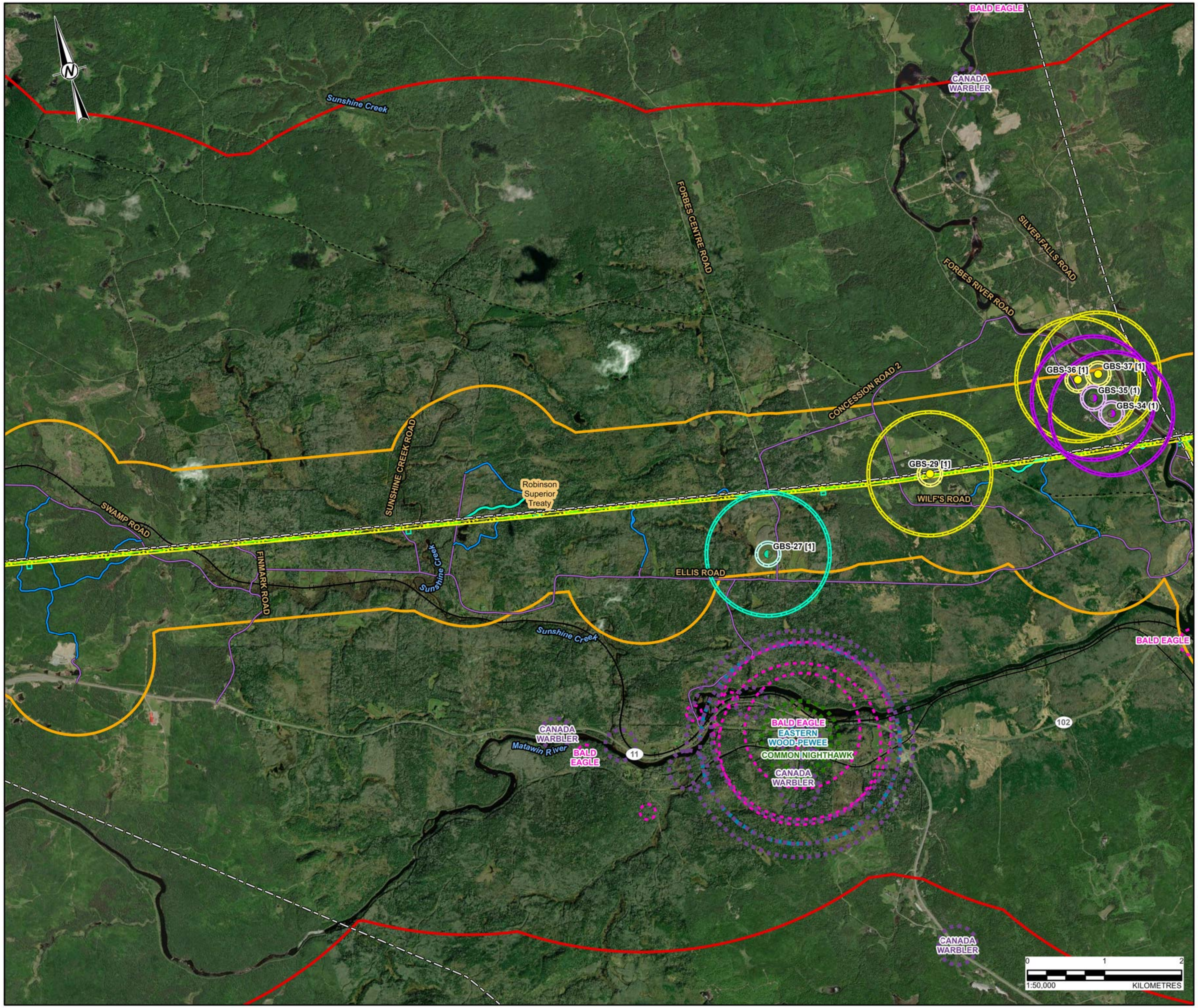
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

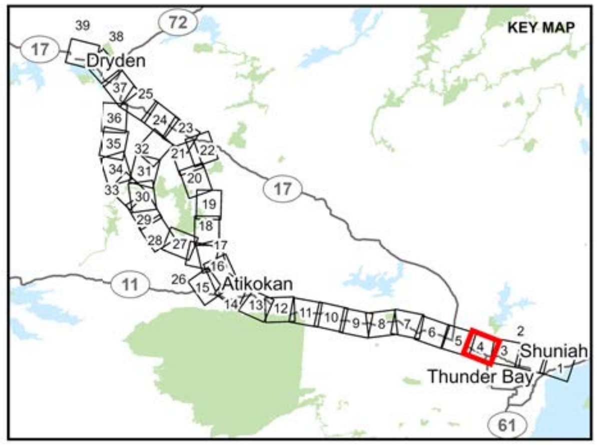
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- EASTERN WOOD-PEWEE OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- BALD EAGLE HABITAT
- BALD EAGLE HABITAT BUFFER
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- EASTERN WOOD PEWEE HABITAT
- EASTERN WOOD PEWEE HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- COMMON NIGHTHAWK (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

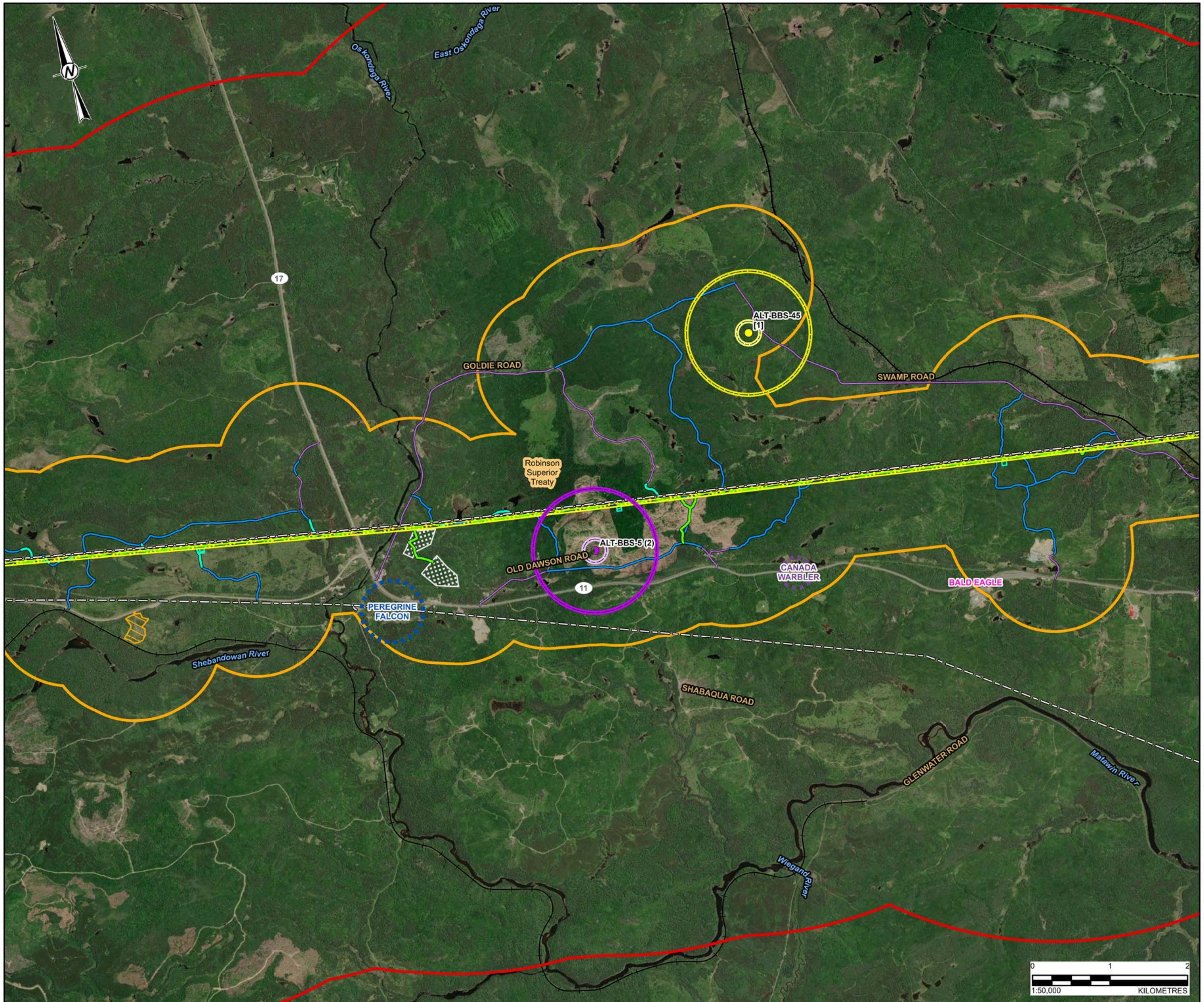
CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-4

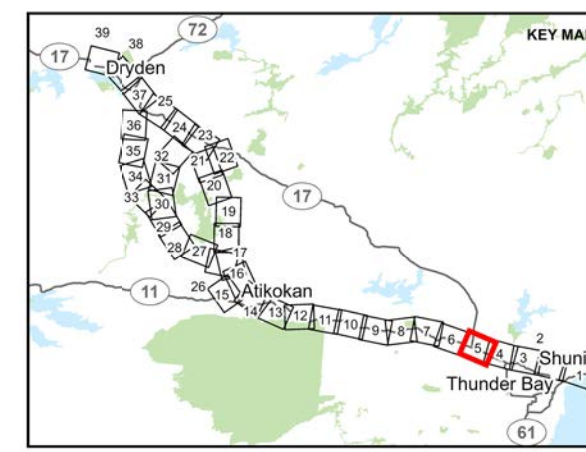
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm



LEGEND

- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- EASTERN WOOD-PEWEE OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- EASTERN WOOD PEWEE HABITAT
- EASTERN WOOD PEWEE HABITAT BUFFER
- CANADA WARBLER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- PEREGRINE FALCON (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

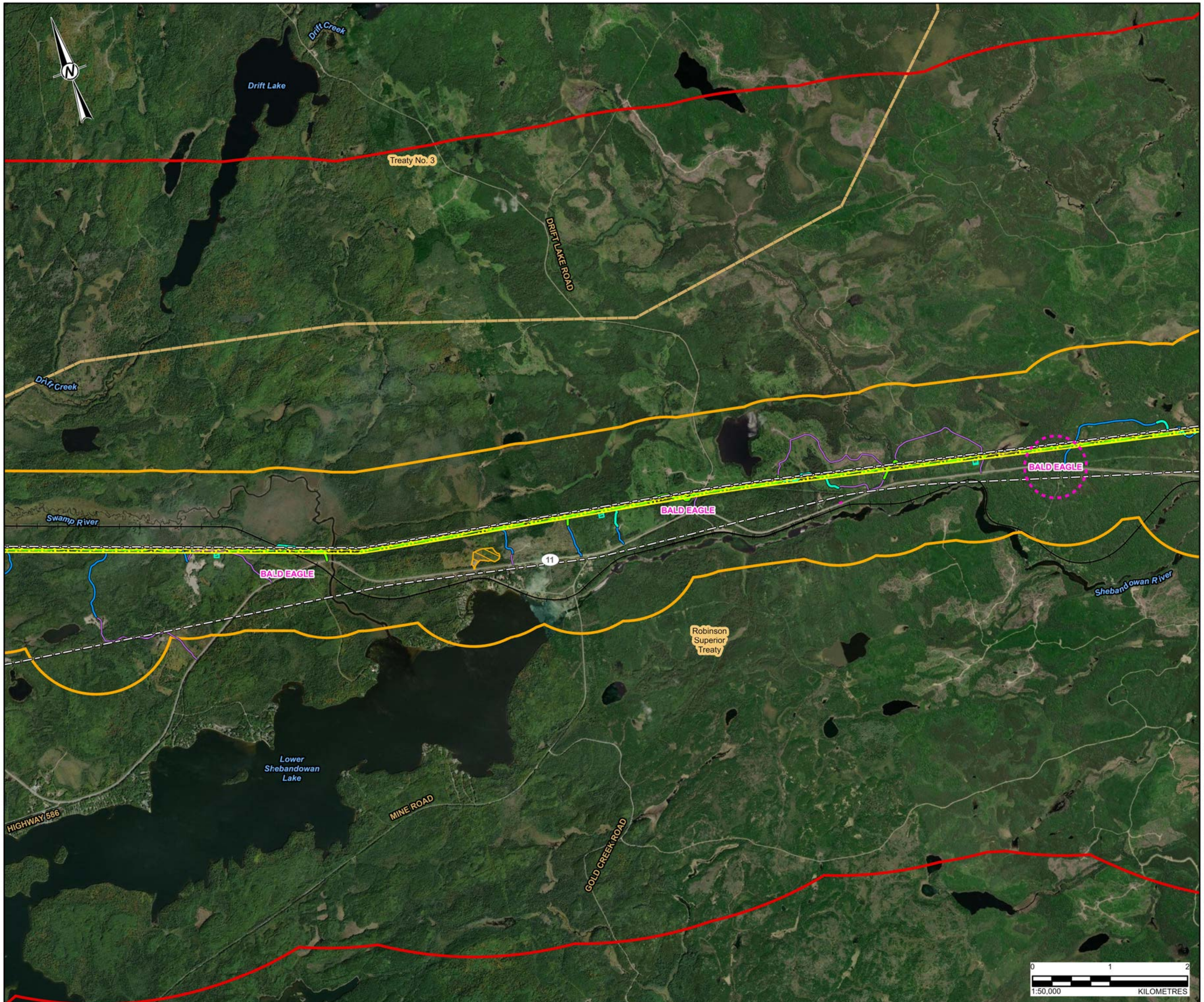
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-5

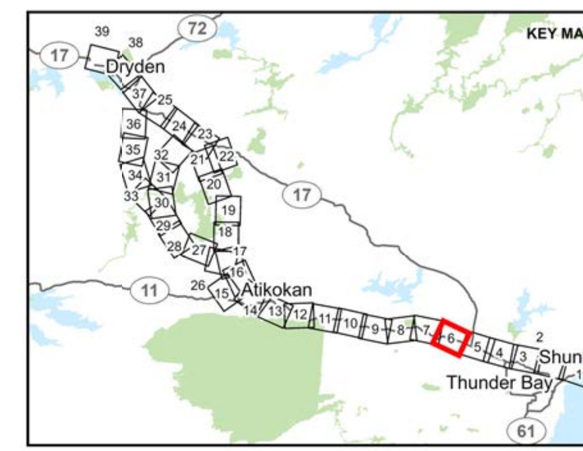
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm



LEGEND

- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

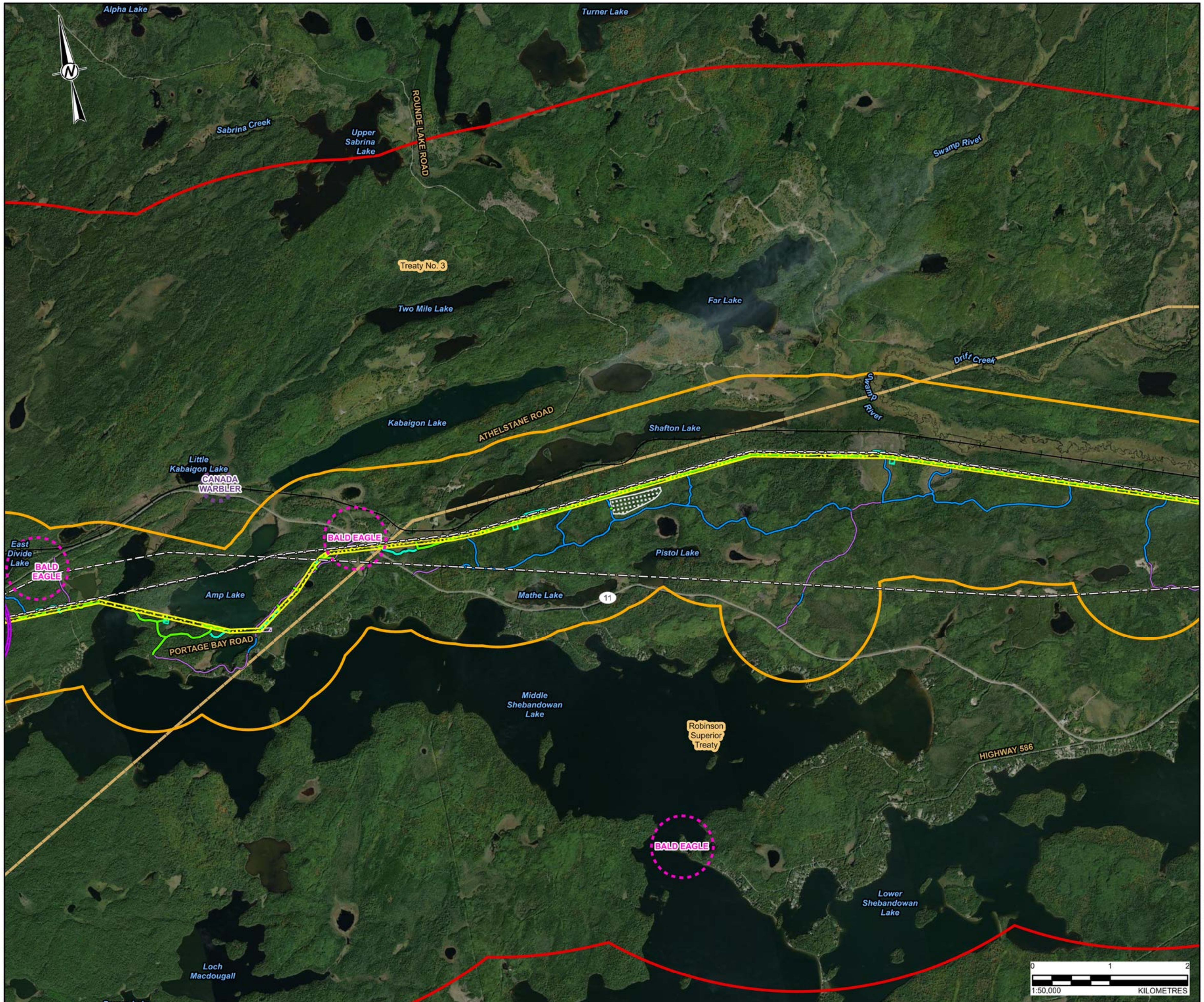
CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-6

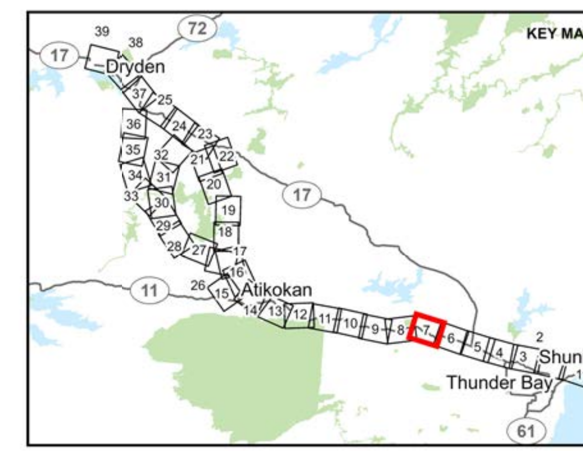
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm

PATH: S:\Clients\HydroOne\Waasigan\99_PROJ\20137728\40_PROD\0022_Birds\20137728-0022-G-0000_SCC.aprx PRINTED ON: AT: 11:36:50 AM



LEGEND

- CANADA WARBLER HABITAT BUFFER
- CANADA WARBLER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

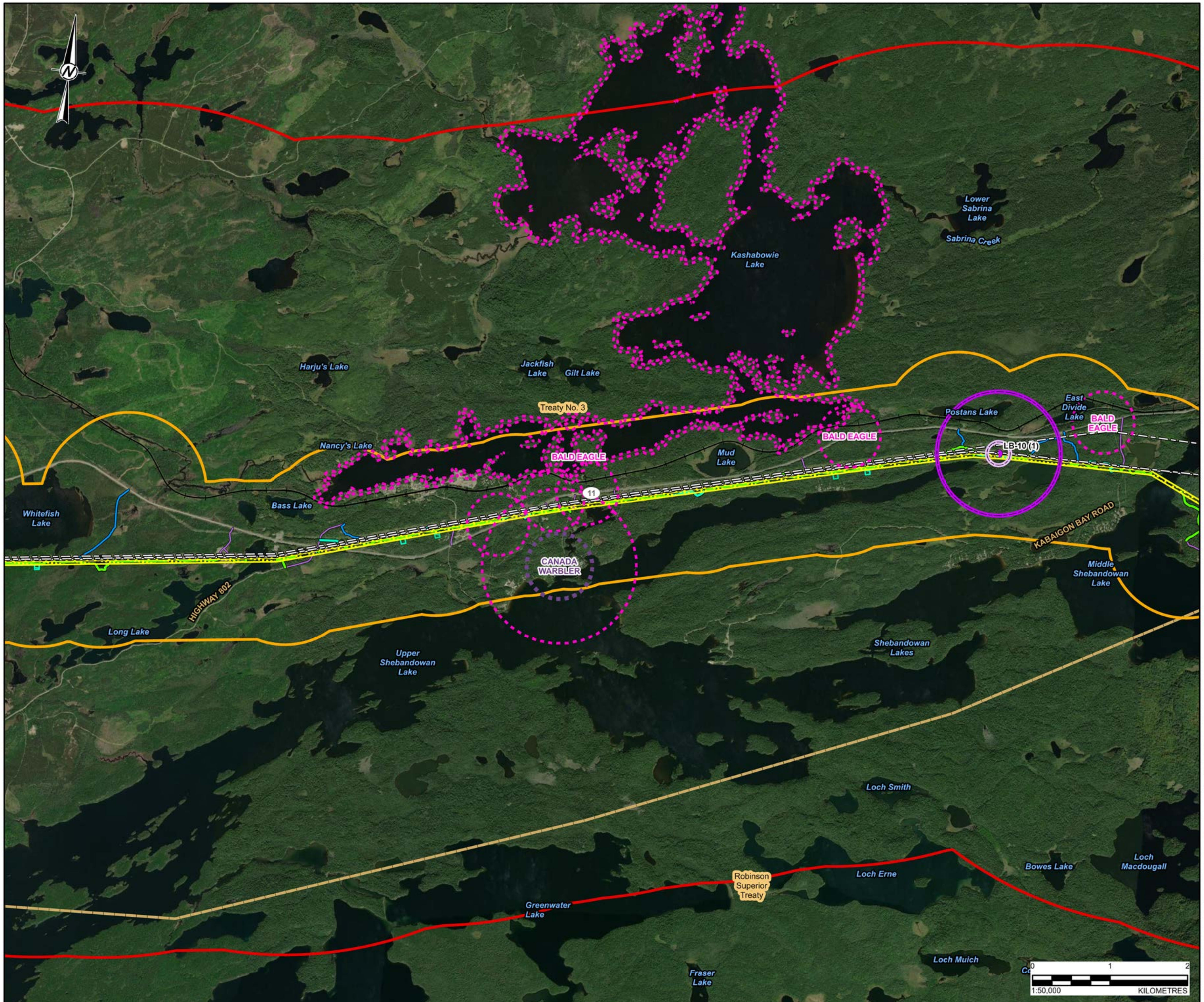
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

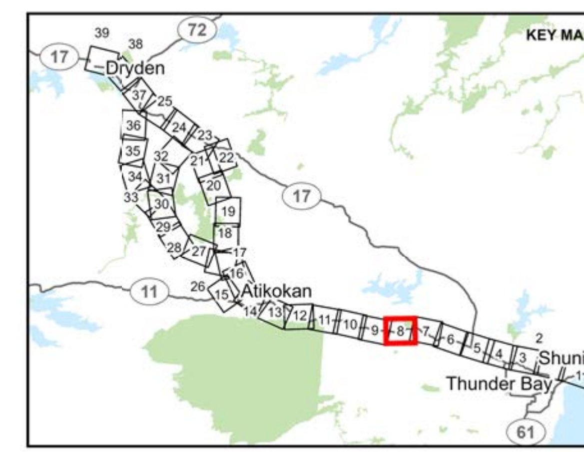
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-7



LEGEND

- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- CANADA WARBLER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

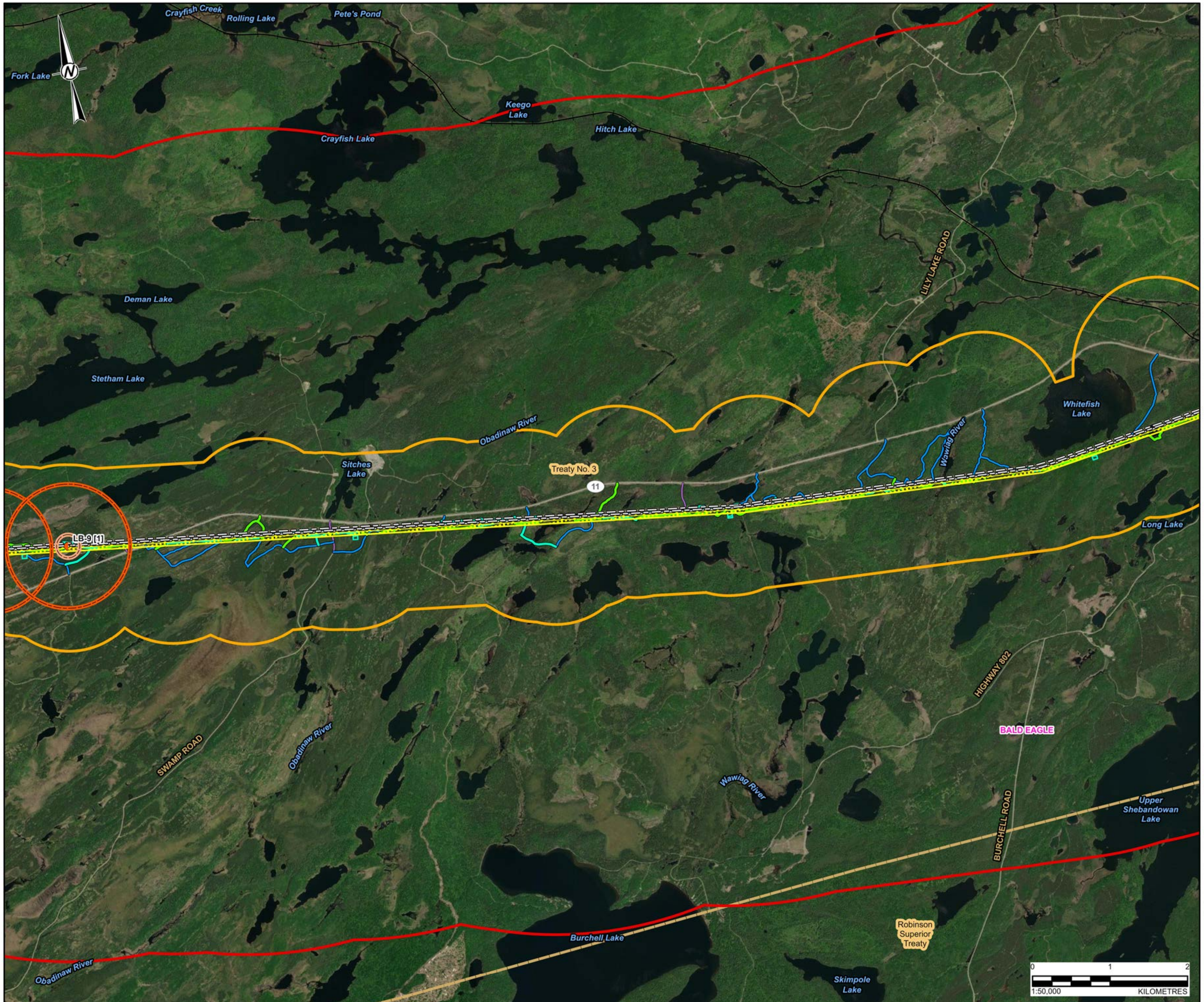
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-8

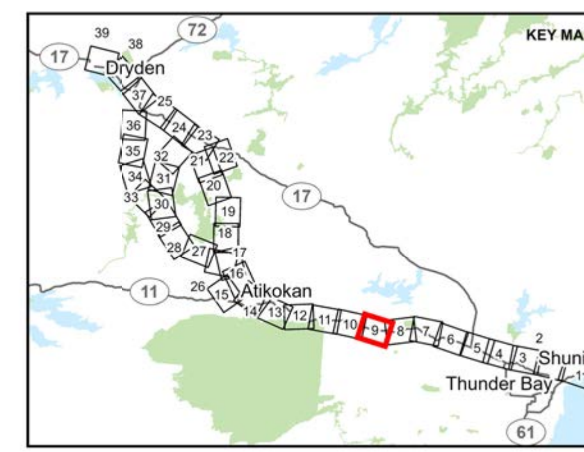
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm



LEGEND

- OLIVE-SIDED FLYCATCHER (GOLDER 2022)
- OLIVE-SIDED FLYCATCHER HABITAT
- OLIVE-SIDED FLYCATCHER HABITAT BUFFER
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

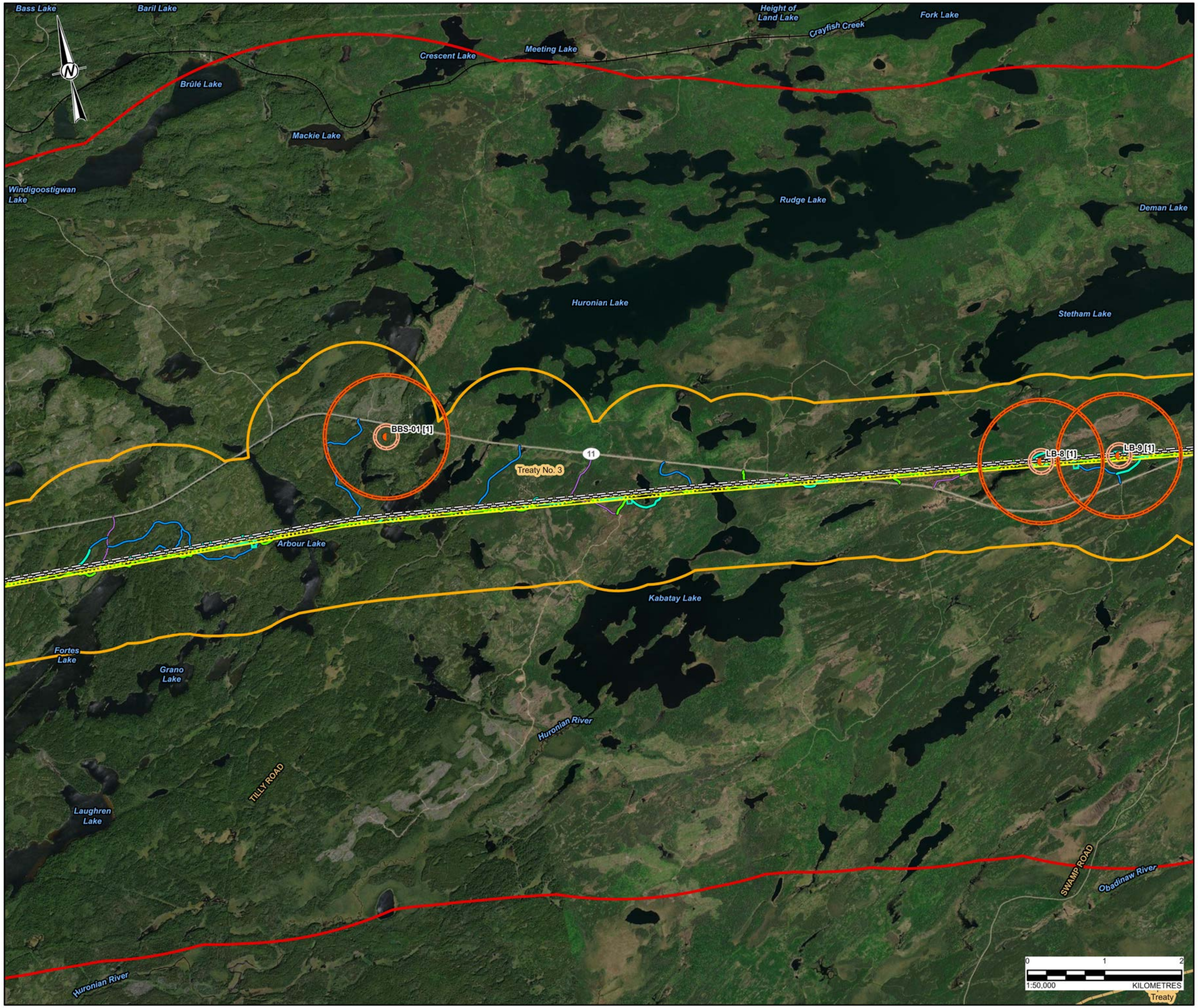
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

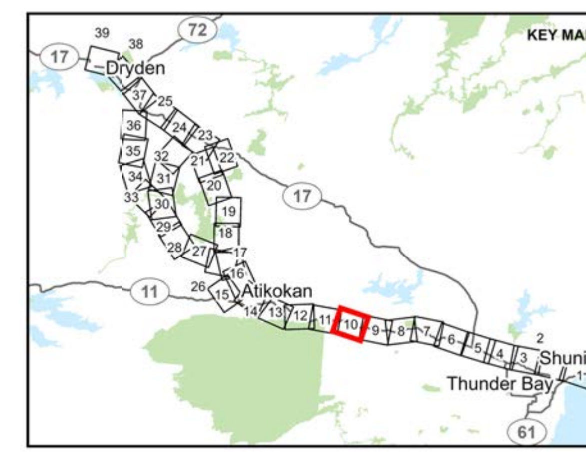
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-9

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- OLIVE-SIDED FLYCATCHER (GOLDER 2022)
- OLIVE-SIDED FLYCATCHER HABITAT
- OLIVE-SIDED FLYCATCHER HABITAT BUFFER
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

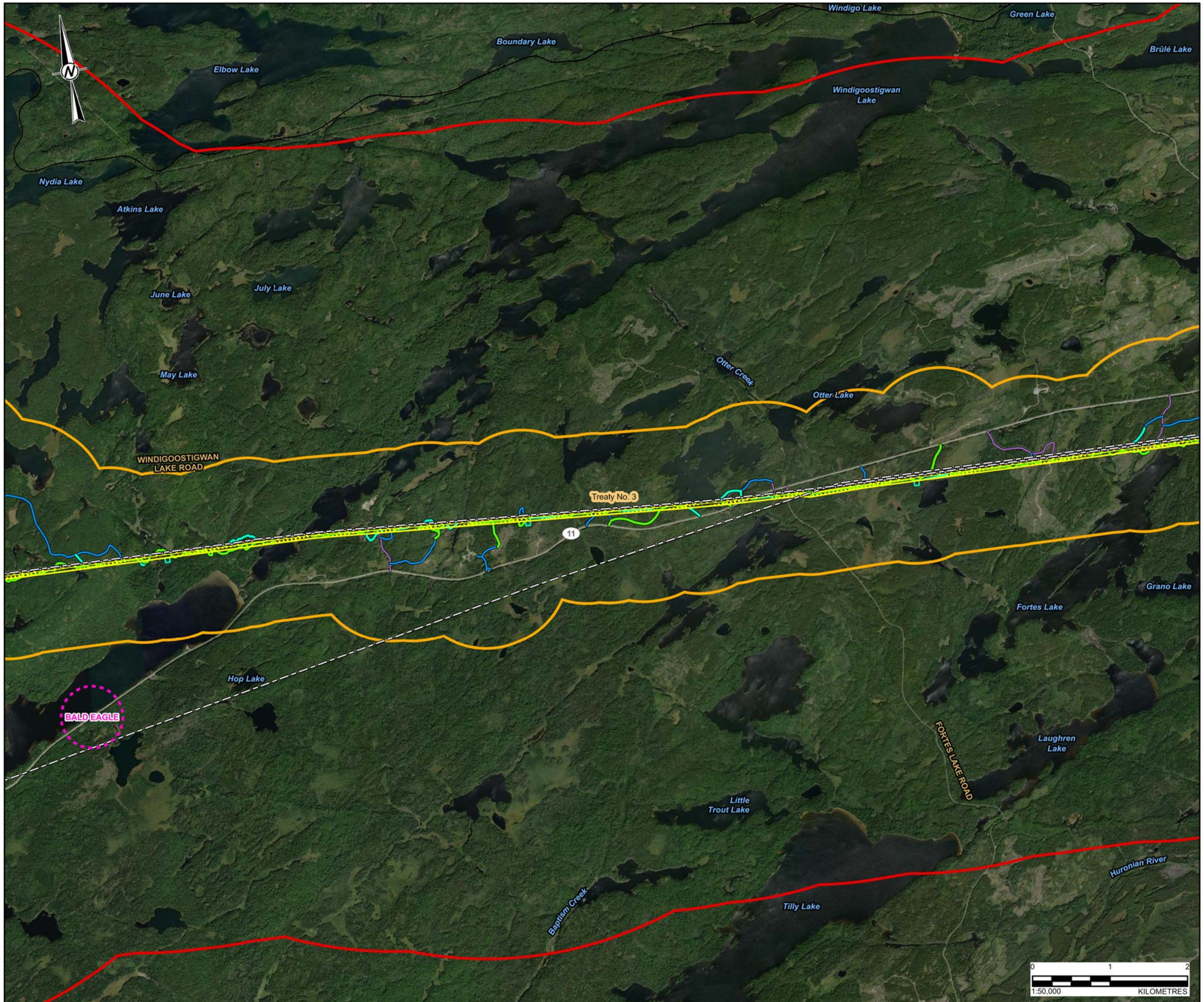
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

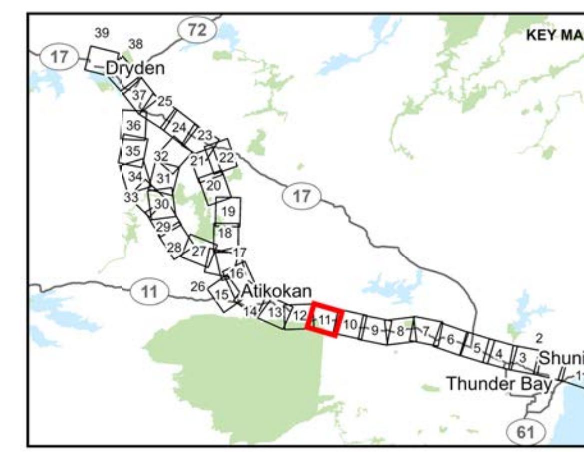
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

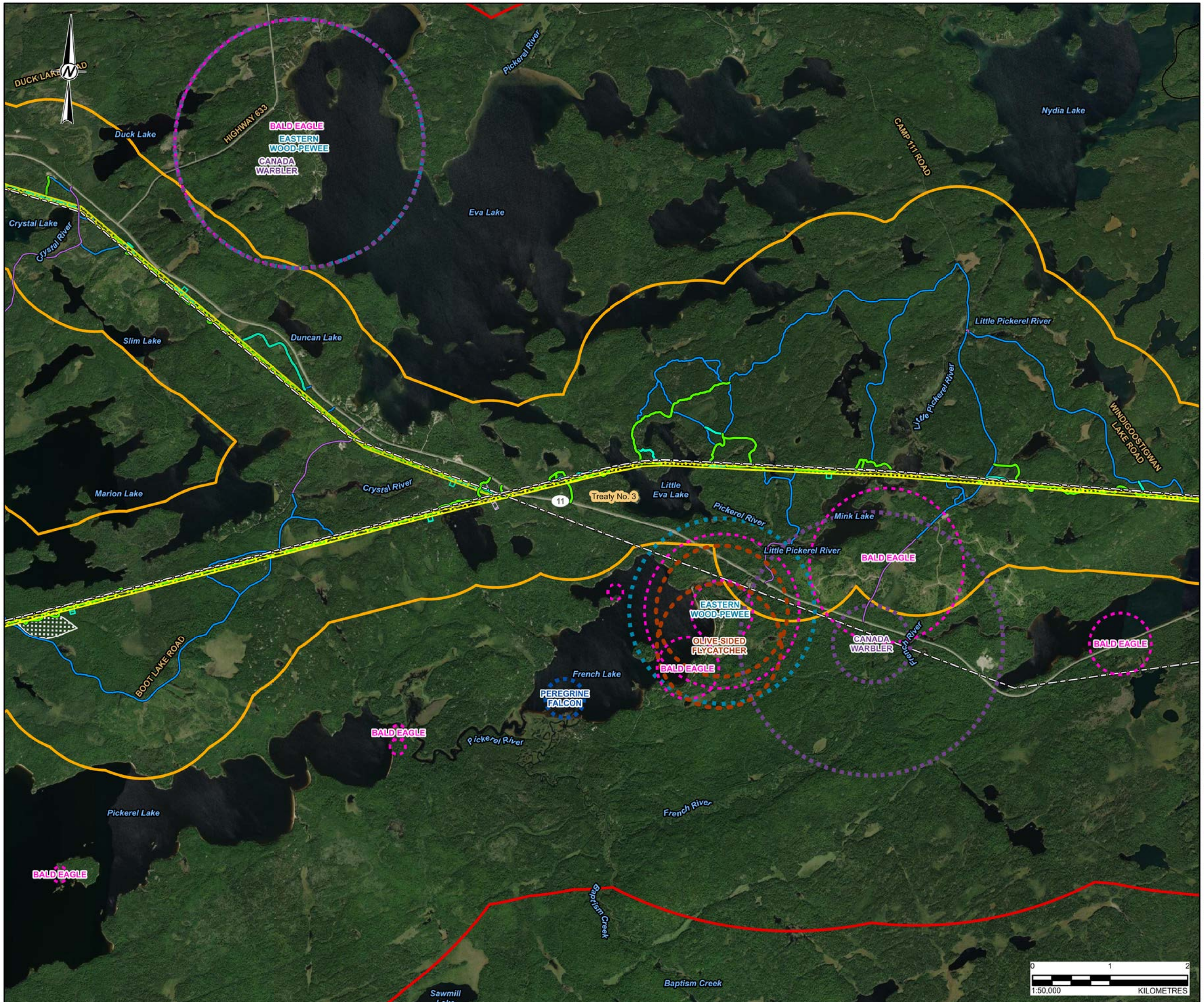
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

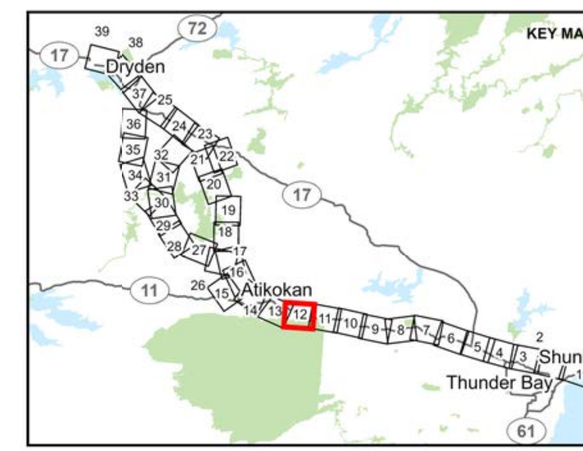
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-11

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm



LEGEND

- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- PEREGRINE FALCON (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

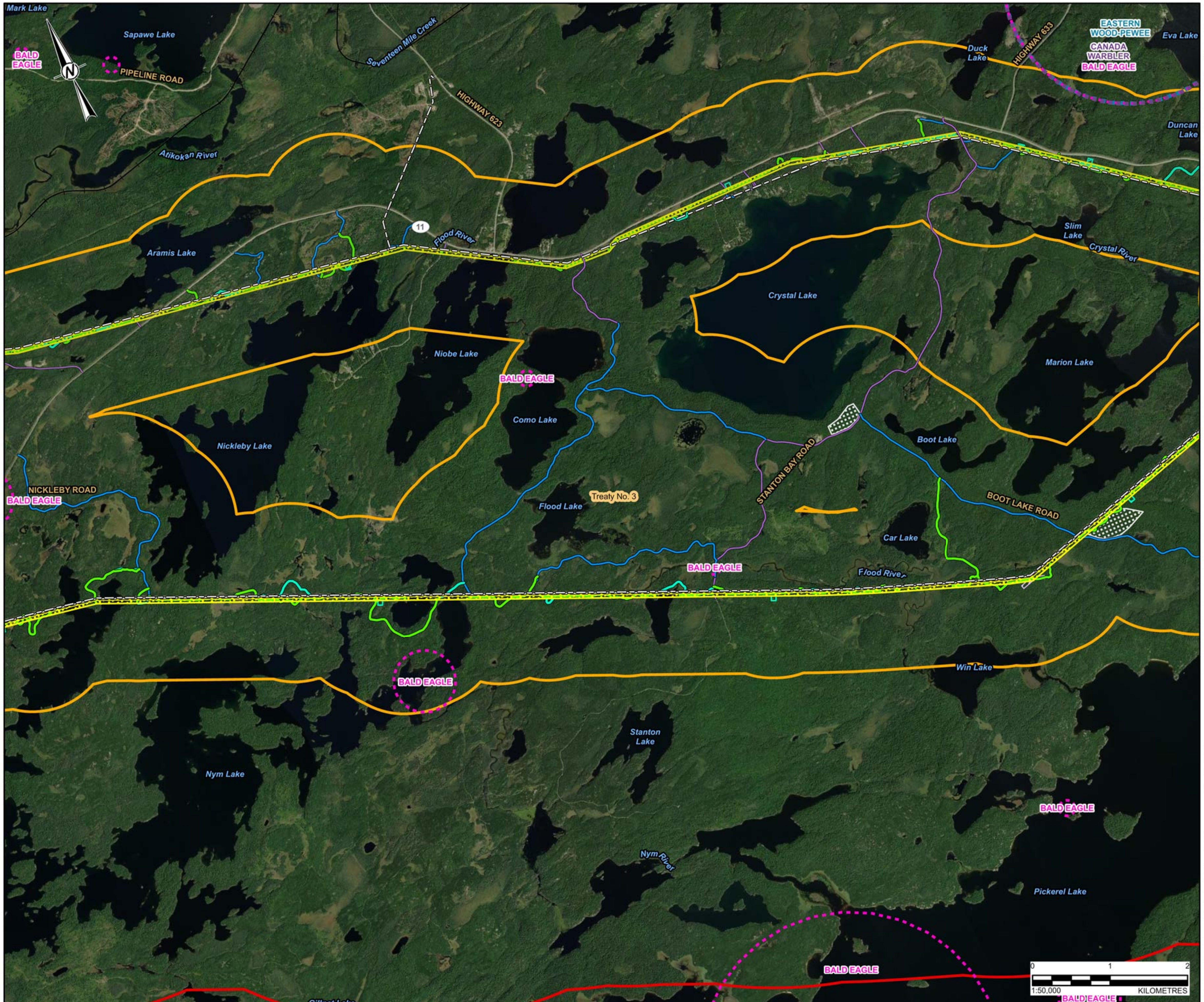
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

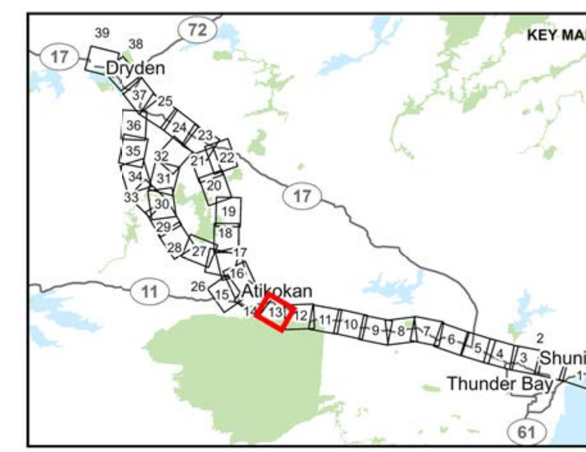
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-12



LEGEND

- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

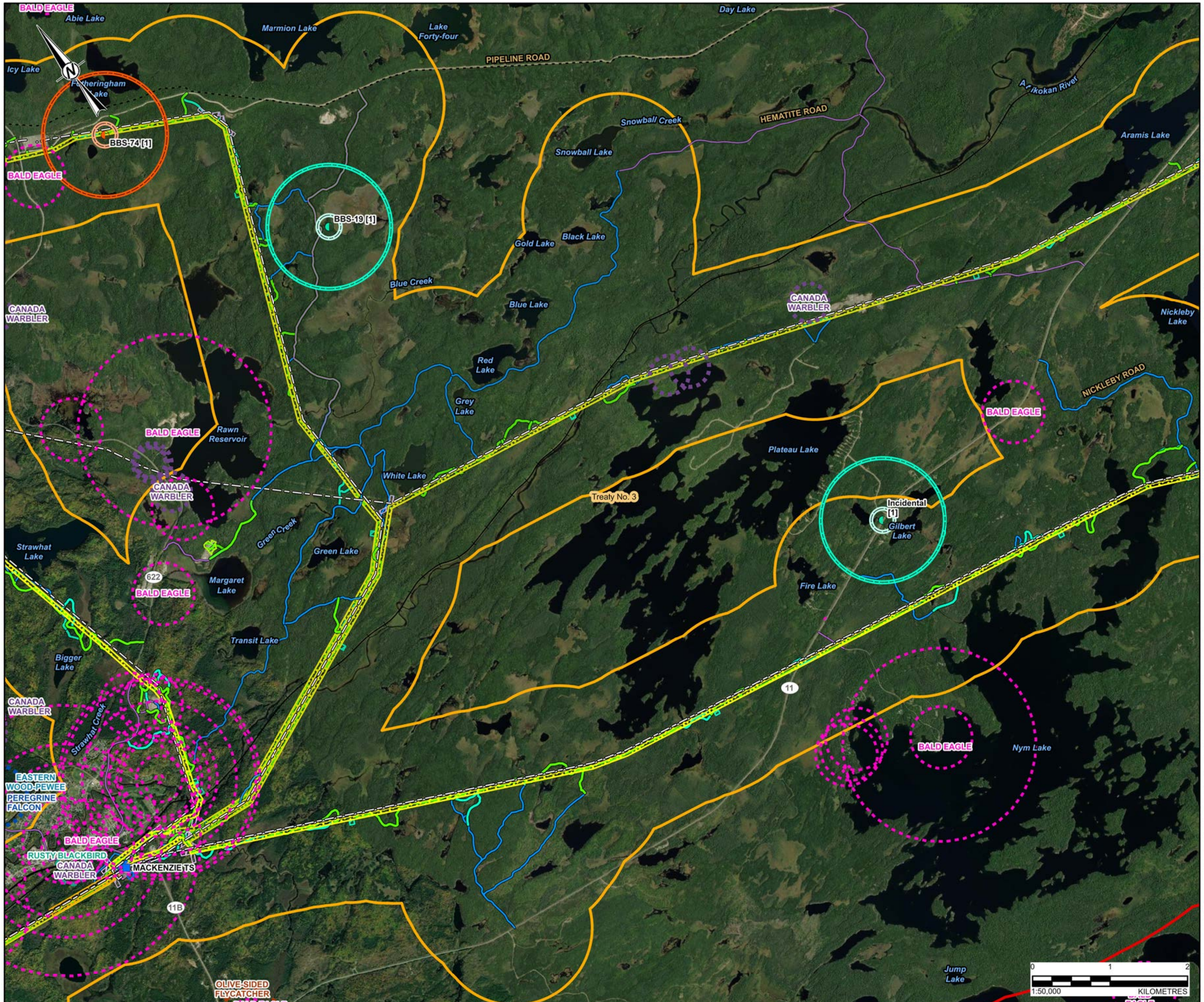
CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-13

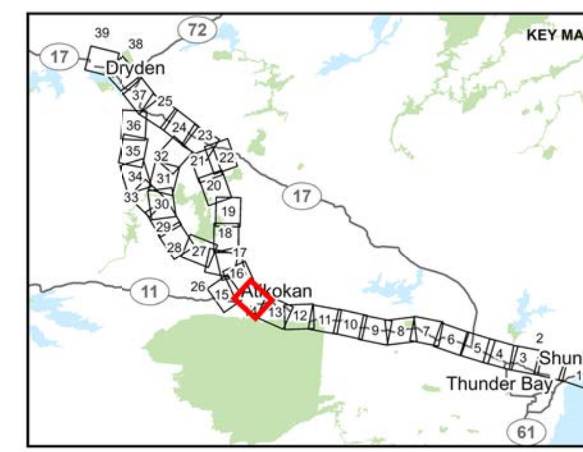
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm

PATH: S:\Clients\Hydro_One\Waasigan\99_PROJ\20137728\40_PROD\0022_Birds\20137728-0022-G-0000_SCC.aprx PRINTED ON: AT: 11:45:44 AM



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- BALD EAGLE OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- OLIVE-SIDED FLYCATCHER (GOLDER 2022)
- BALD EAGLE HABITAT
- BALD EAGLE HABITAT BUFFER
- OLIVE-SIDED FLYCATCHER HABITAT
- OLIVE-SIDED FLYCATCHER HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- RUSTY BLACKBIRD (NHIC 2022)
- PEREGRINE FALCON (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

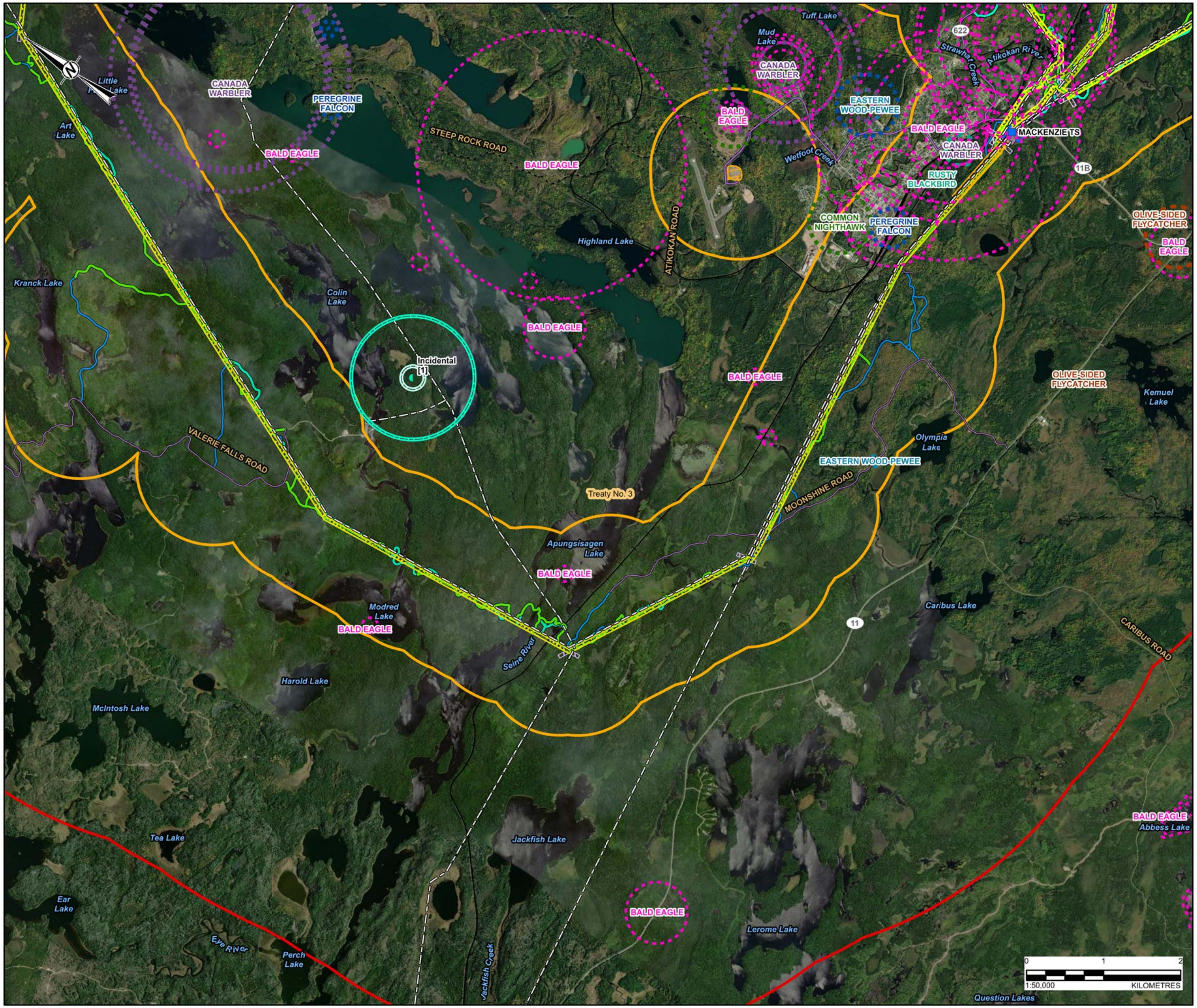
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

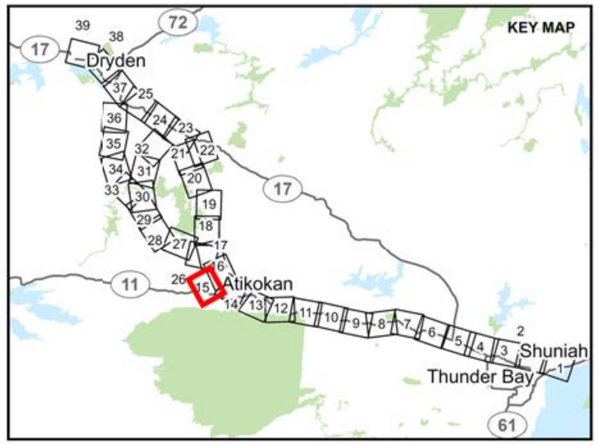
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-14



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- BALD EAGLE OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- BALD EAGLE HABITAT
- BALD EAGLE HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- COMMON NIGHTHAWK (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- RUSTY BLACKBIRD (NHIC 2022)
- PEREGRINE FALCON (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- D26A / F25A CIRCUIT SEPARATION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

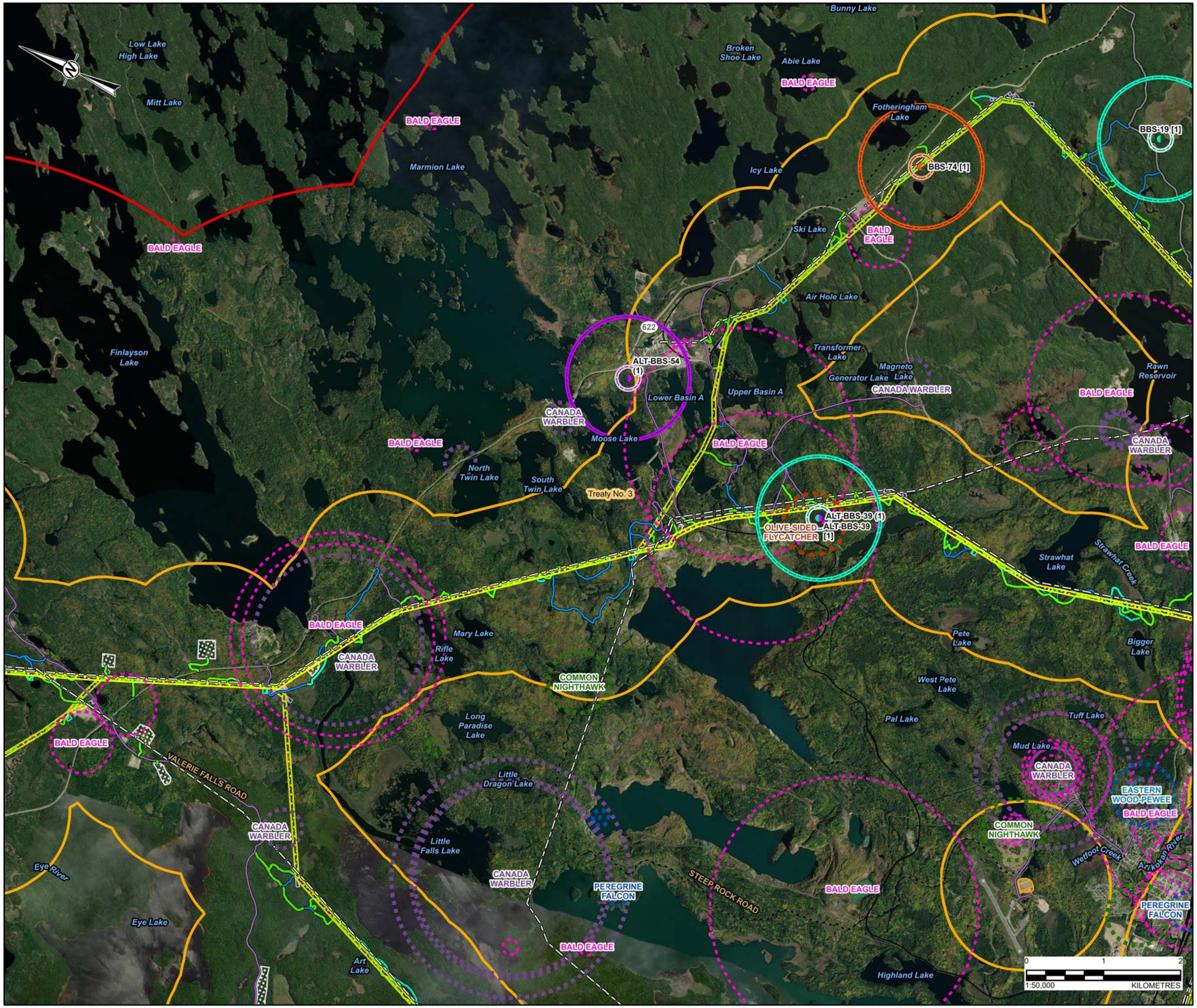
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

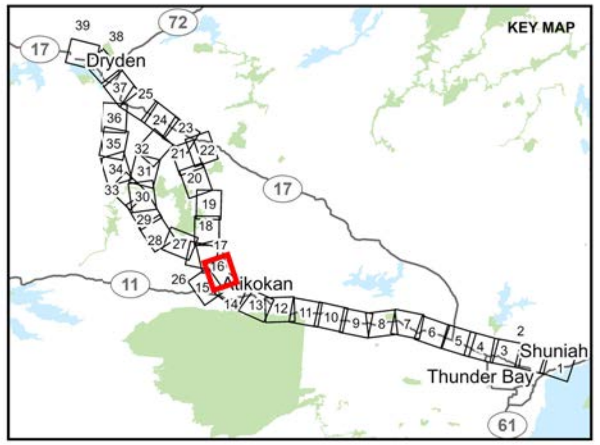
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-15

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- OLIVE-SIDED FLYCATCHER (GOLDER 2022)
- BALD EAGLE HABITAT
- BALD EAGLE HABITAT BUFFER
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- OLIVE-SIDED FLYCATCHER HABITAT
- OLIVE-SIDED FLYCATCHER HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- COMMON NIGHTHAWK (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- PEREGRINE FALCON (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

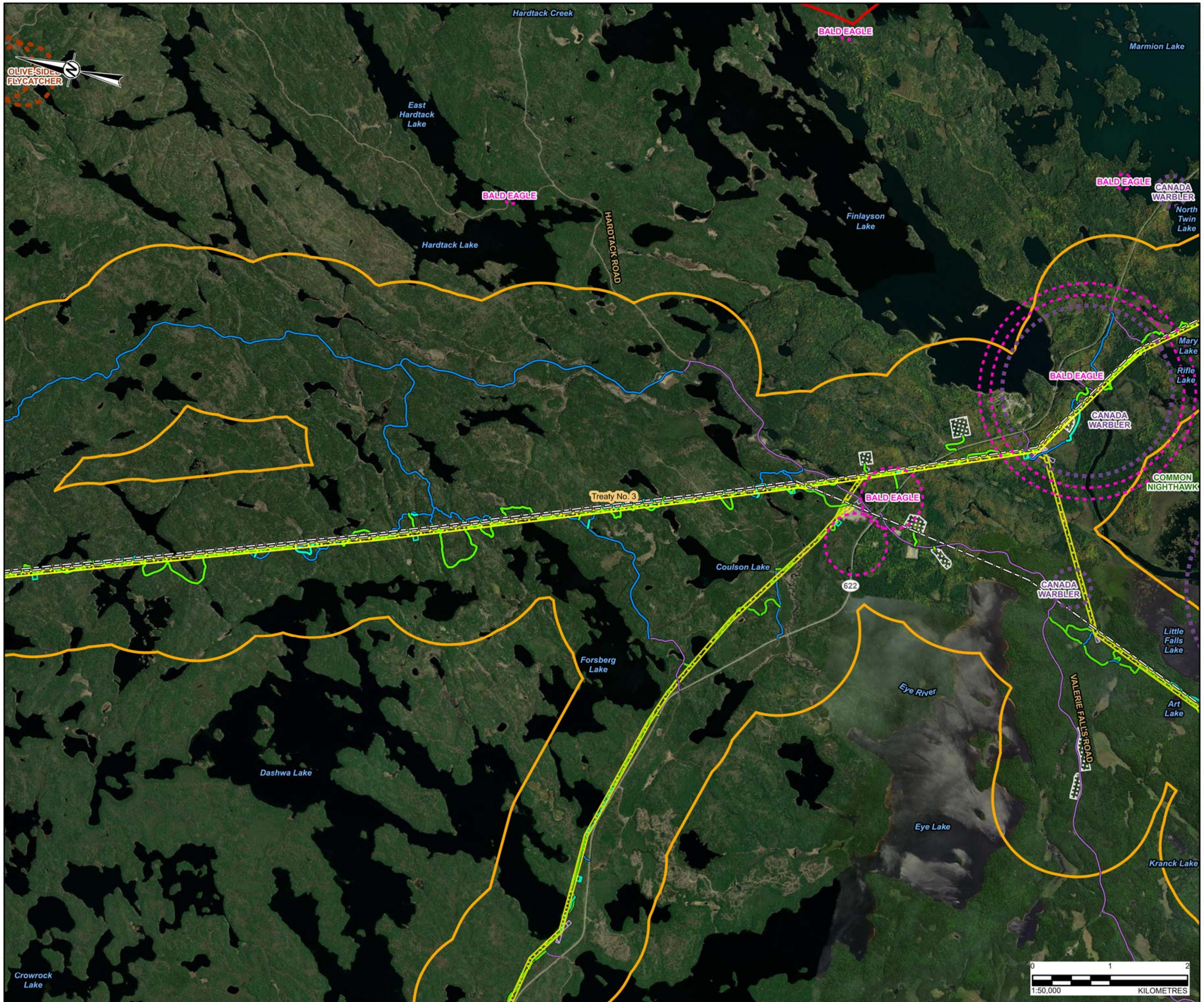
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-16

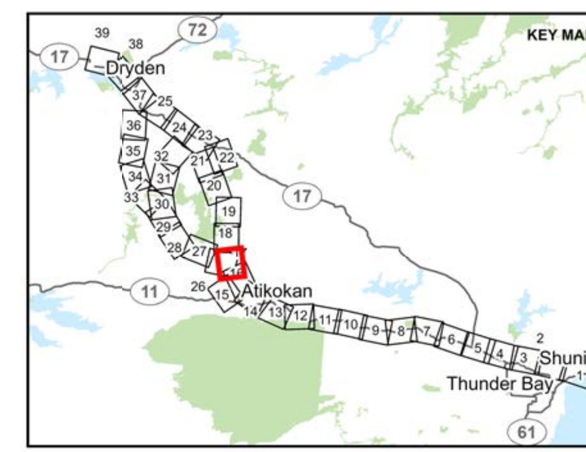
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm



LEGEND

- CANADA WARBLER OBSERVATION (NHIC 2022)
- COMMON NIGHTHAWK (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

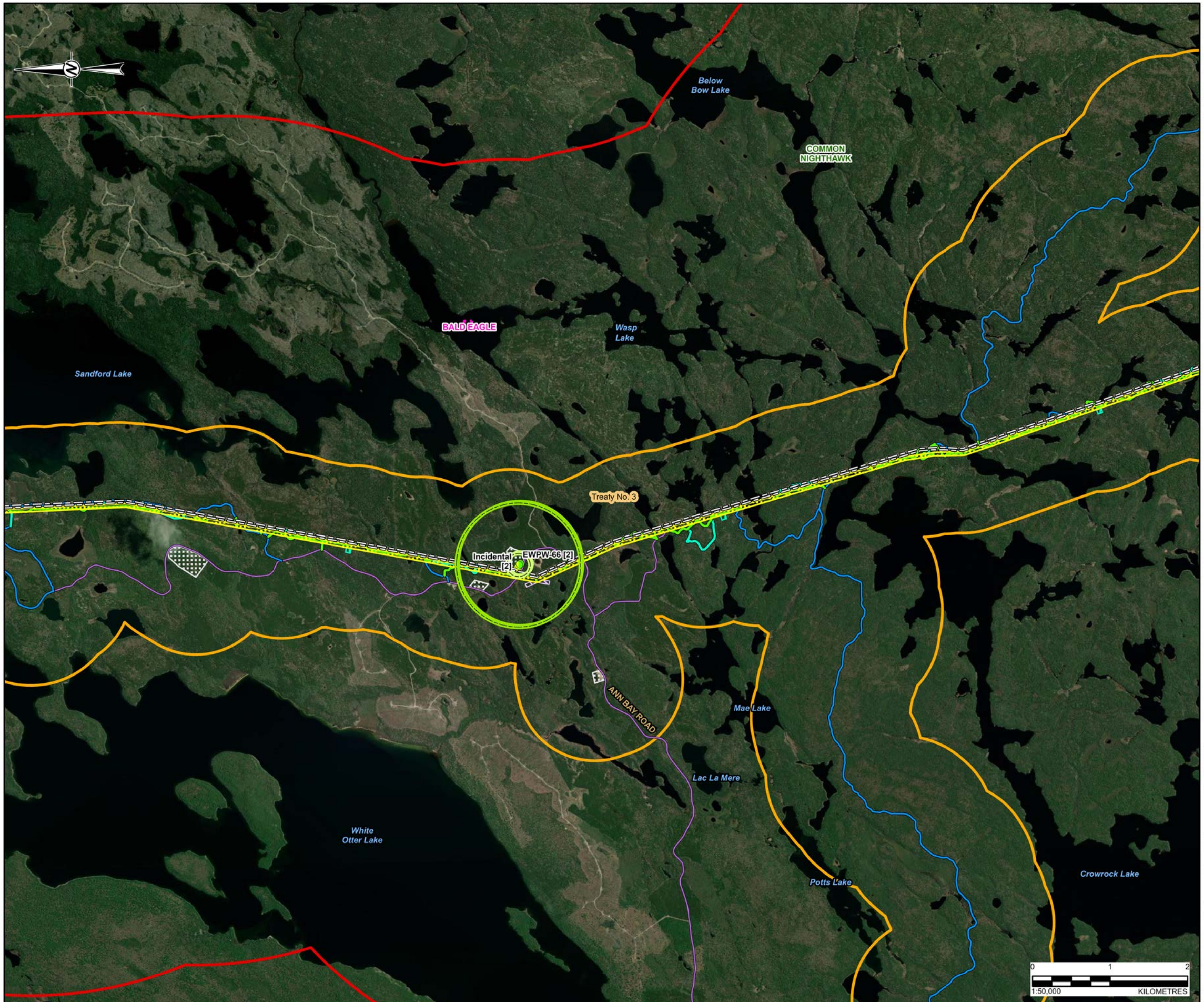
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

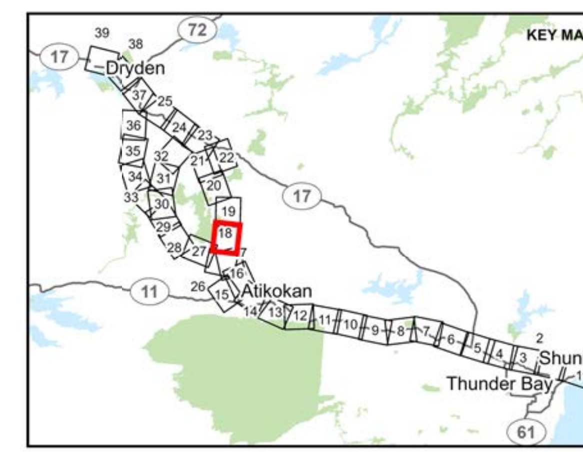
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-17

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- COMMON NIGHTHAWK OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- COMMON NIGHTHAWK HABITAT
- COMMON NIGHTHAWK HABITAT BUFFER
- COMMON NIGHTHAWK (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

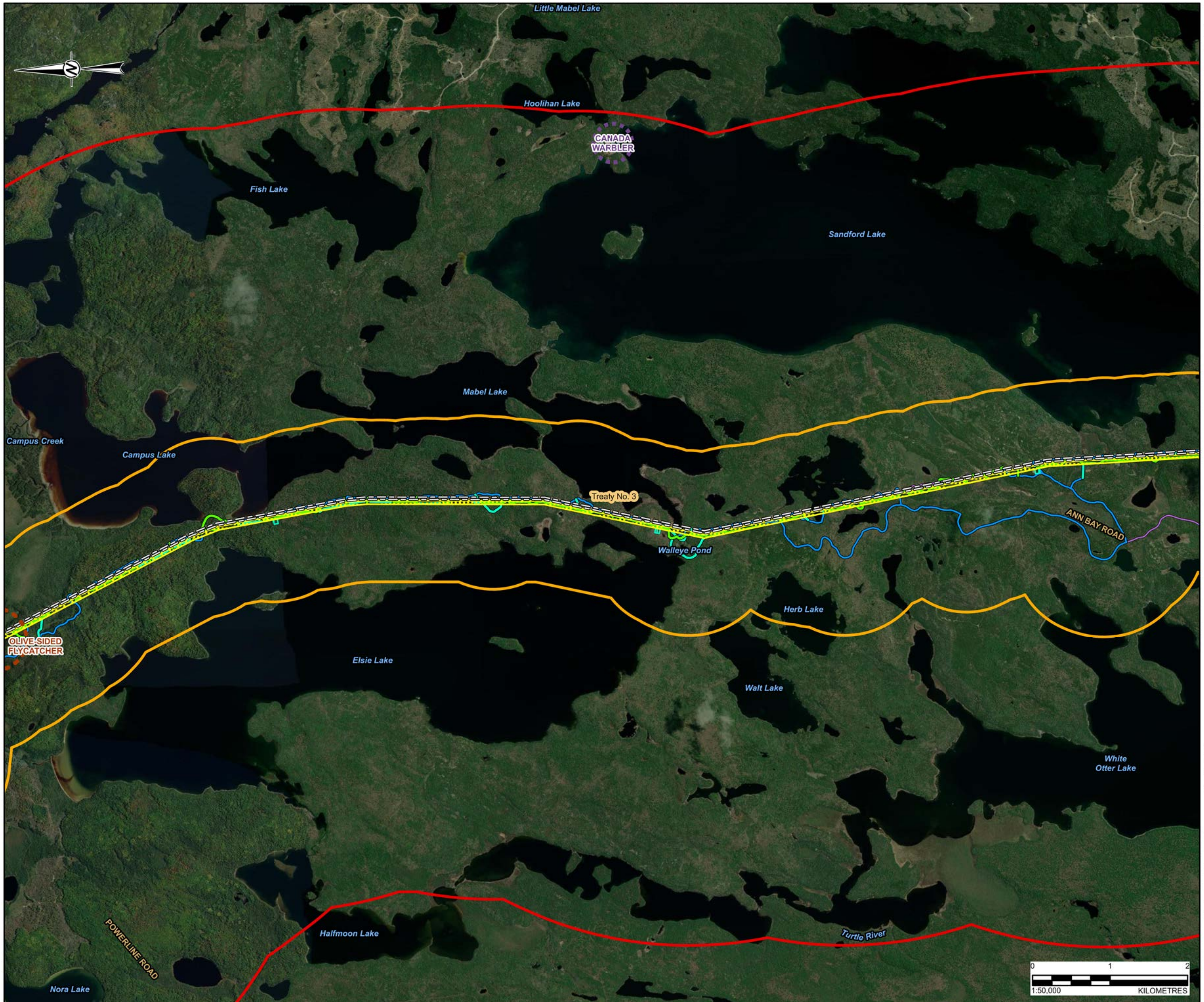
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

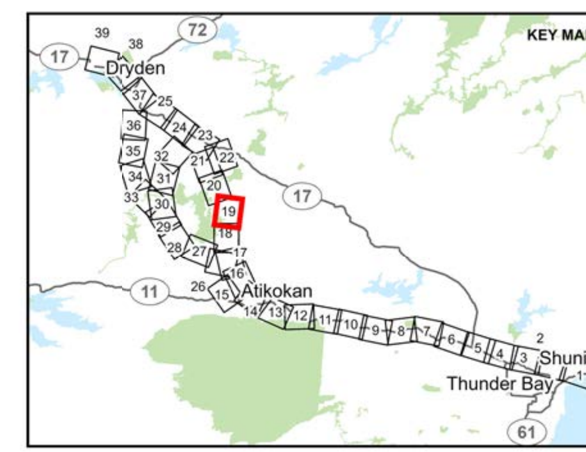
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-18

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- CANADA WARBLER OBSERVATION (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

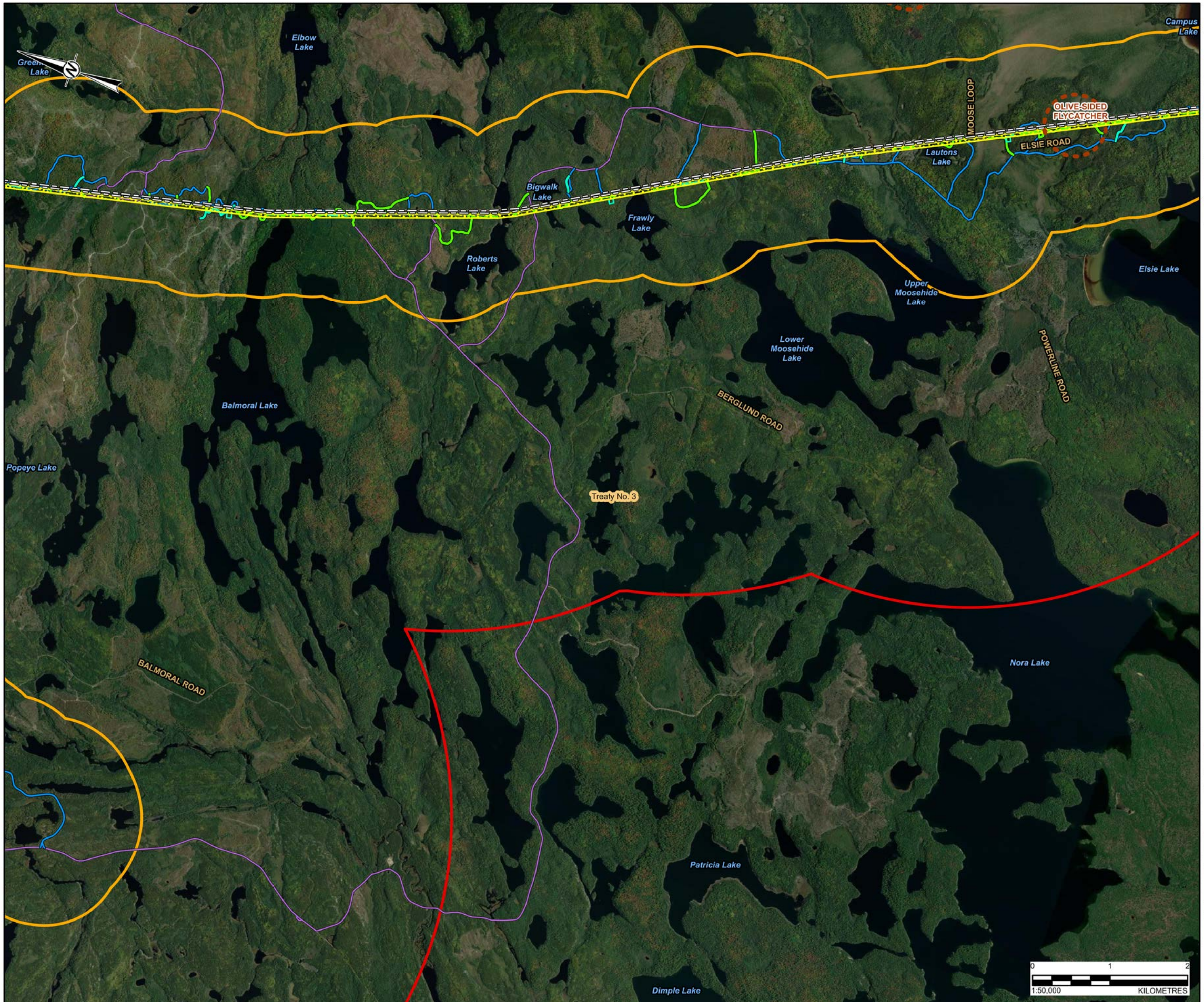
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

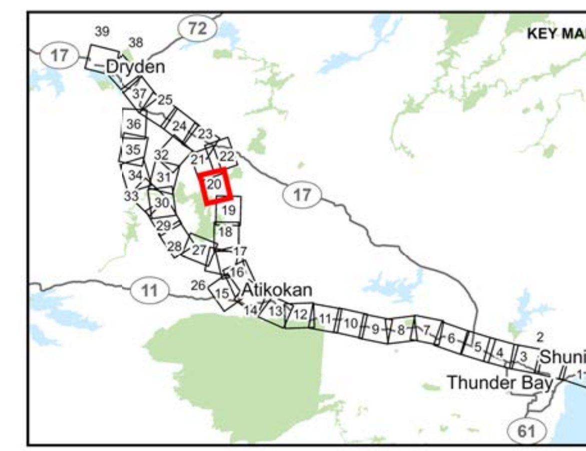
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-19



LEGEND

- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

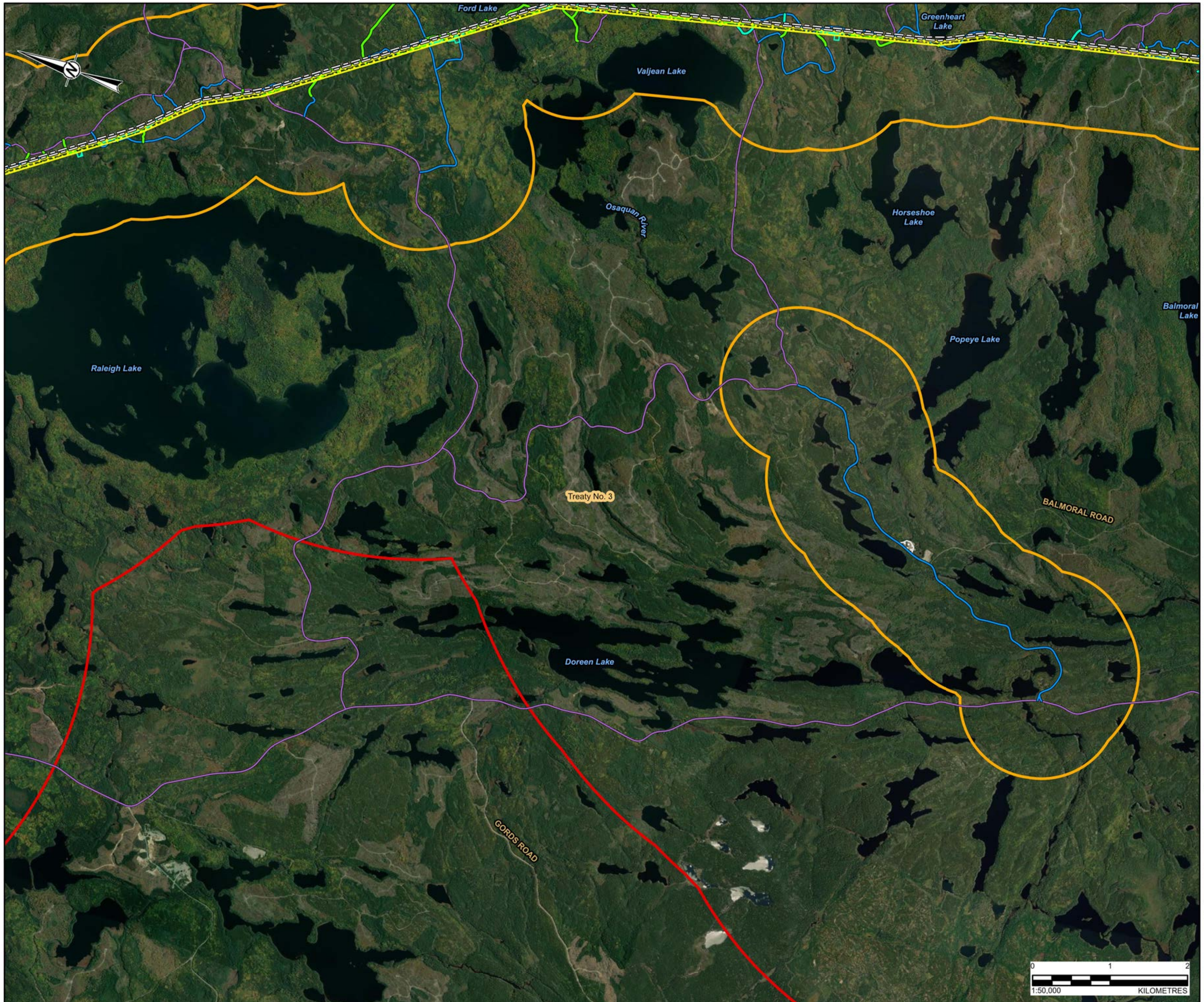
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

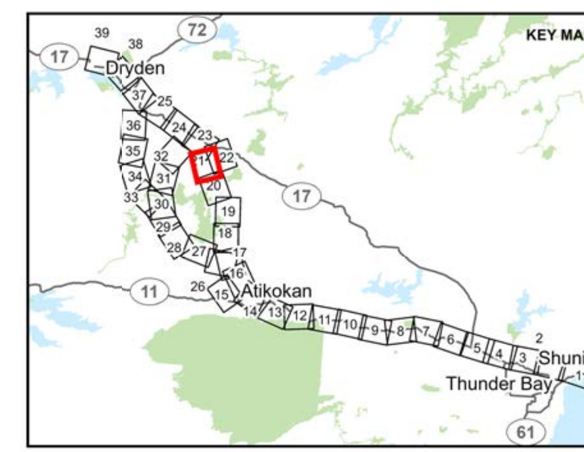
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-20

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

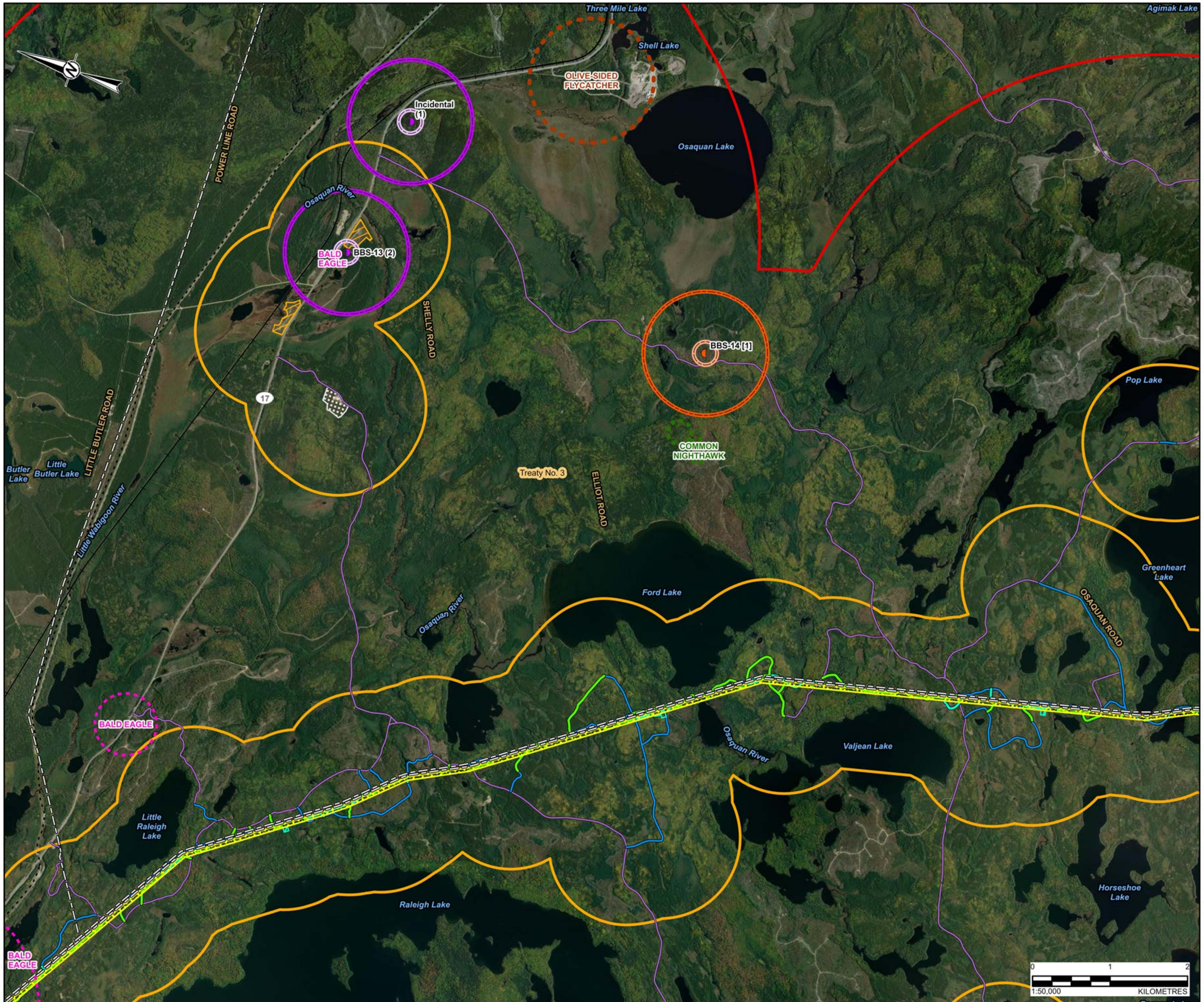
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-21

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- OLIVE-SIDED FLYCATCHER (GOLDER 2022)
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- OLIVE-SIDED FLYCATCHER HABITAT
- OLIVE-SIDED FLYCATCHER HABITAT BUFFER
- COMMON NIGHTHAWK (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

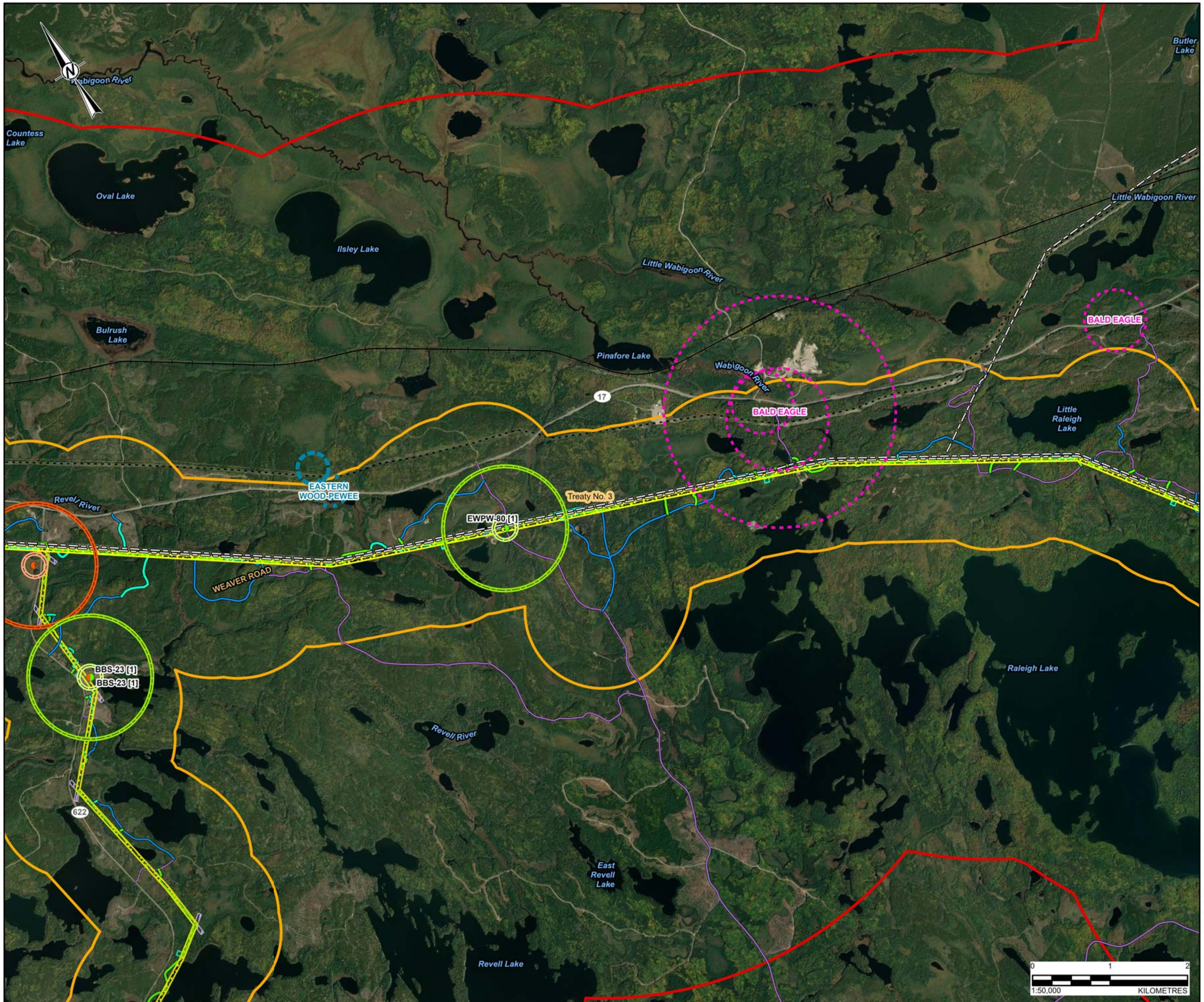
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

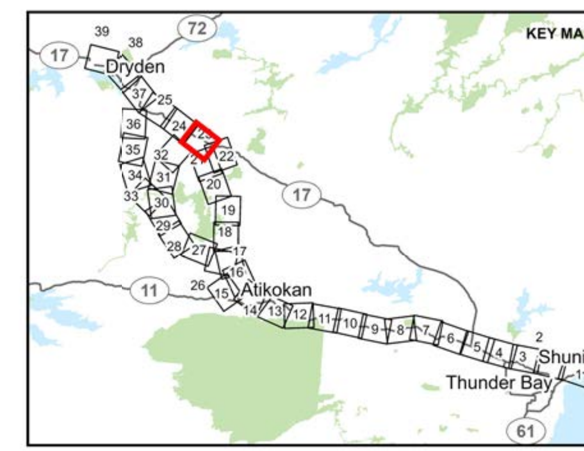
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-22

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- COMMON NIGHTHAWK OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- OLIVE-SIDED FLYCATCHER (GOLDER 2022)
- COMMON NIGHTHAWK HABITAT
- COMMON NIGHTHAWK HABITAT BUFFER
- OLIVE-SIDED FLYCATCHER HABITAT
- OLIVE-SIDED FLYCATCHER HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

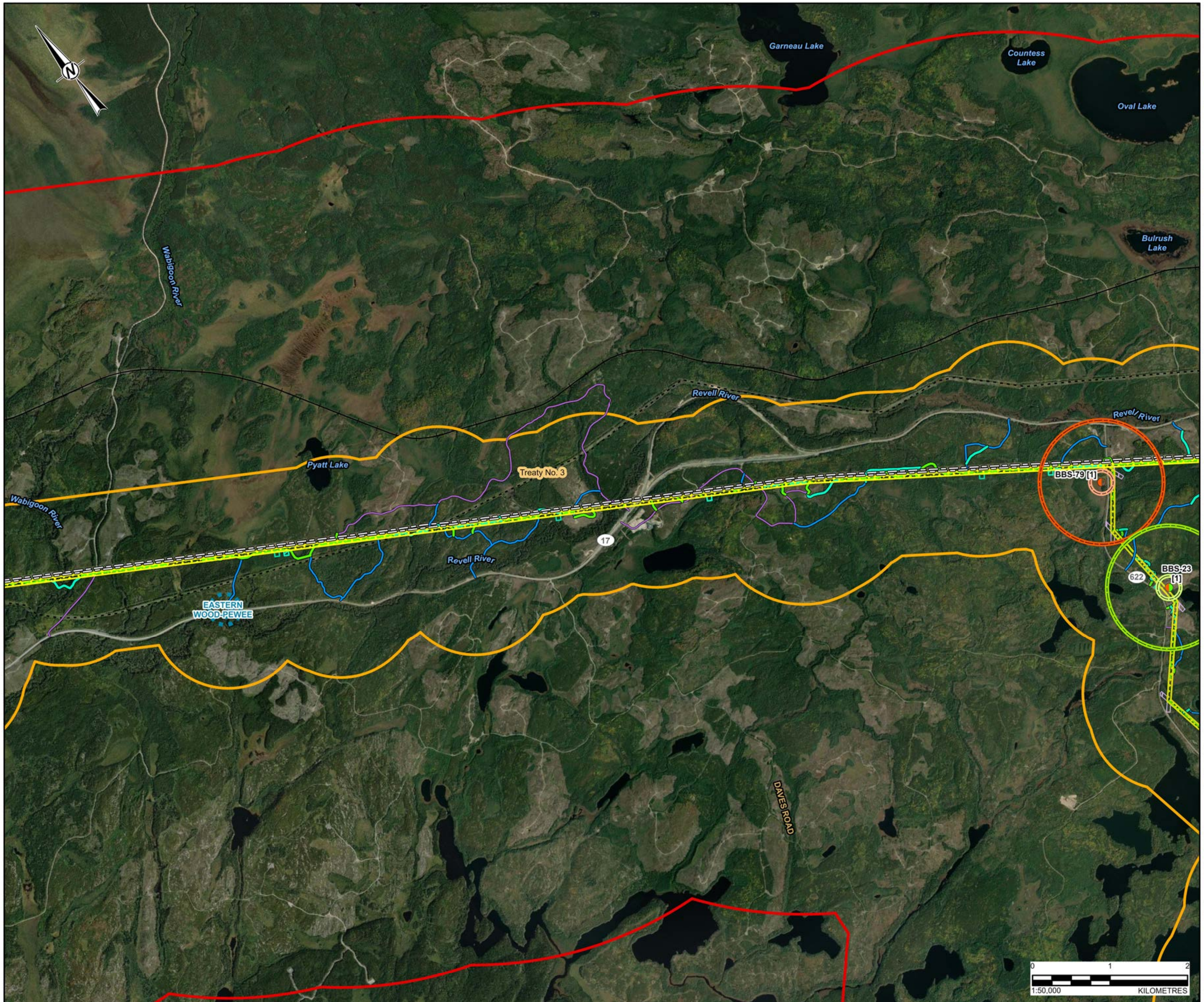
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

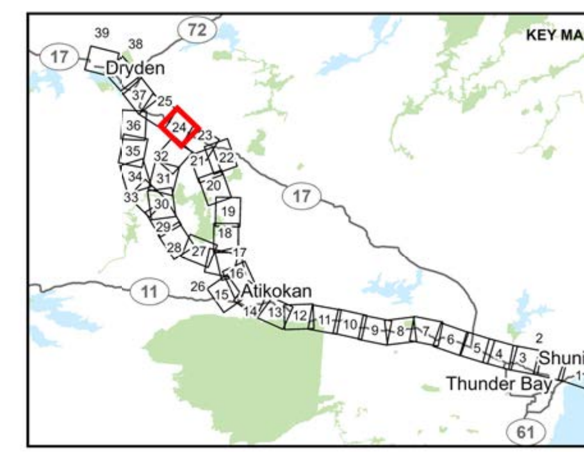
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-23

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- COMMON NIGHTHAWK OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- OLIVE-SIDED FLYCATCHER (GOLDER 2022)
- COMMON NIGHTHAWK HABITAT
- COMMON NIGHTHAWK HABITAT BUFFER
- OLIVE-SIDED FLYCATCHER HABITAT
- OLIVE-SIDED FLYCATCHER HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

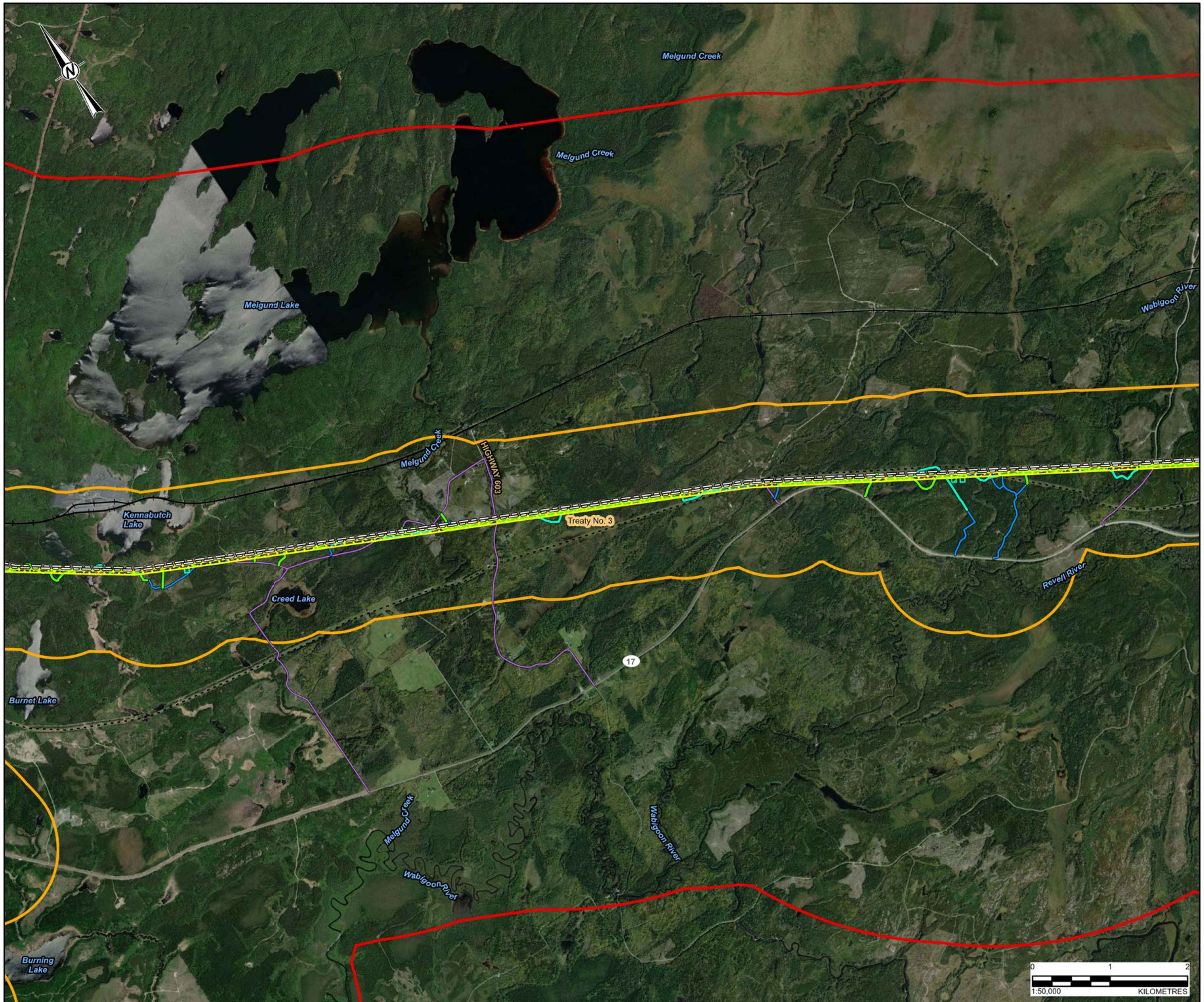
PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

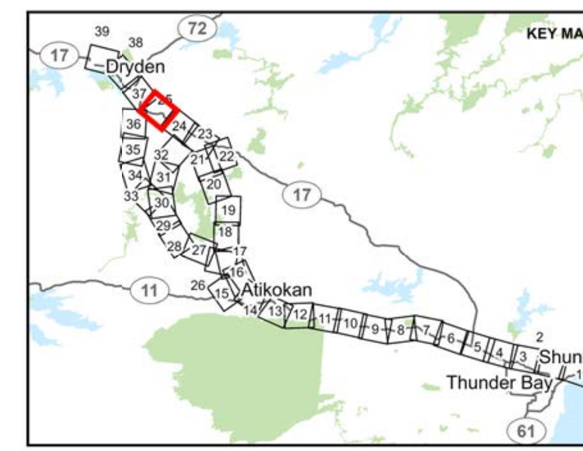
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-24



LEGEND

- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

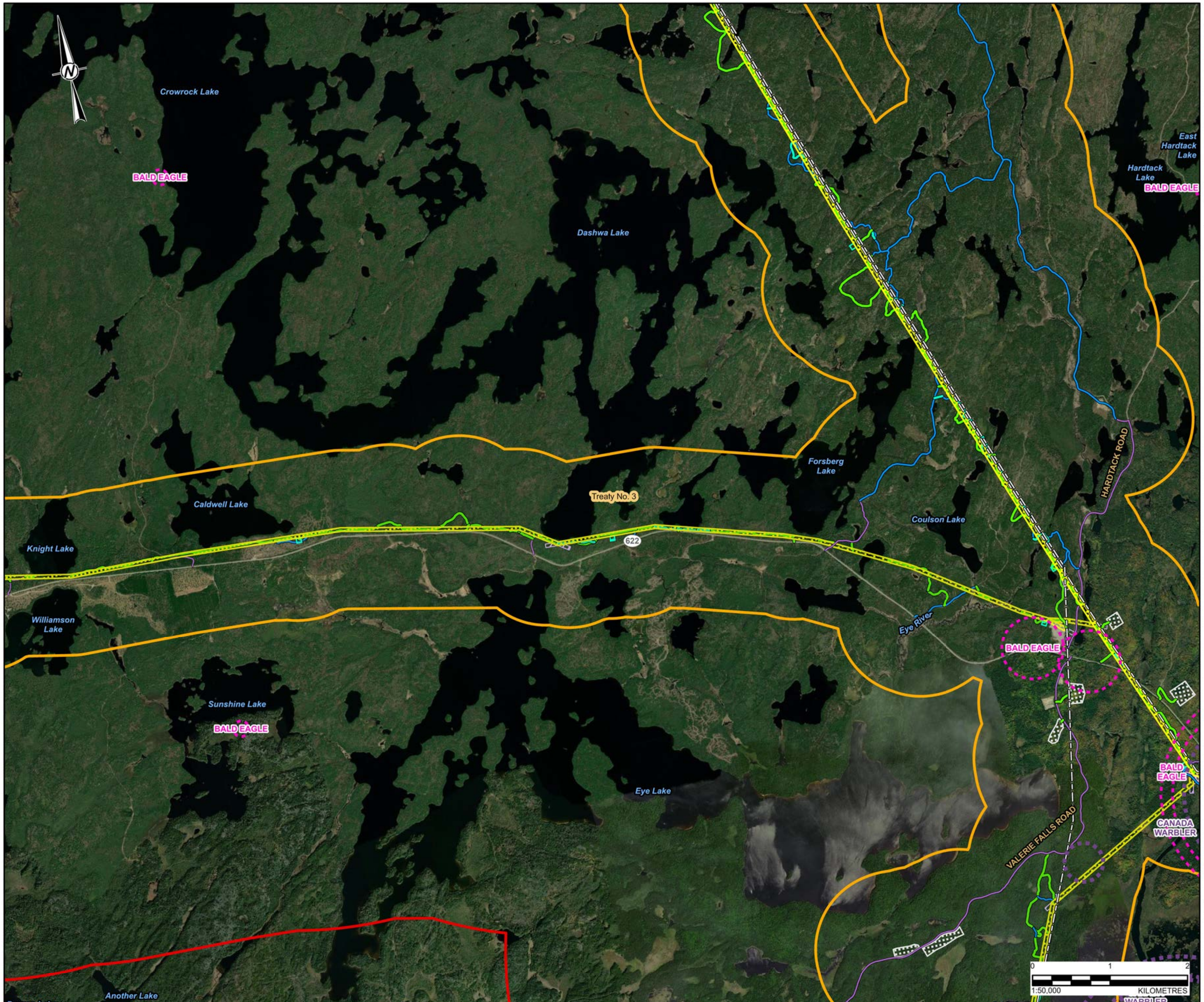
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-25

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

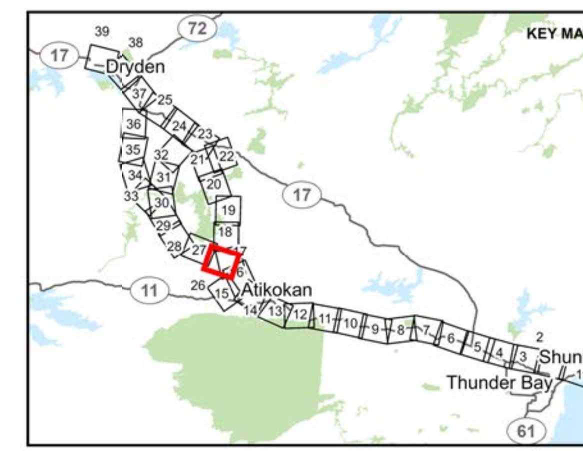
25mm



LEGEND

- CANADA WARBLER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY

KEY MAP



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

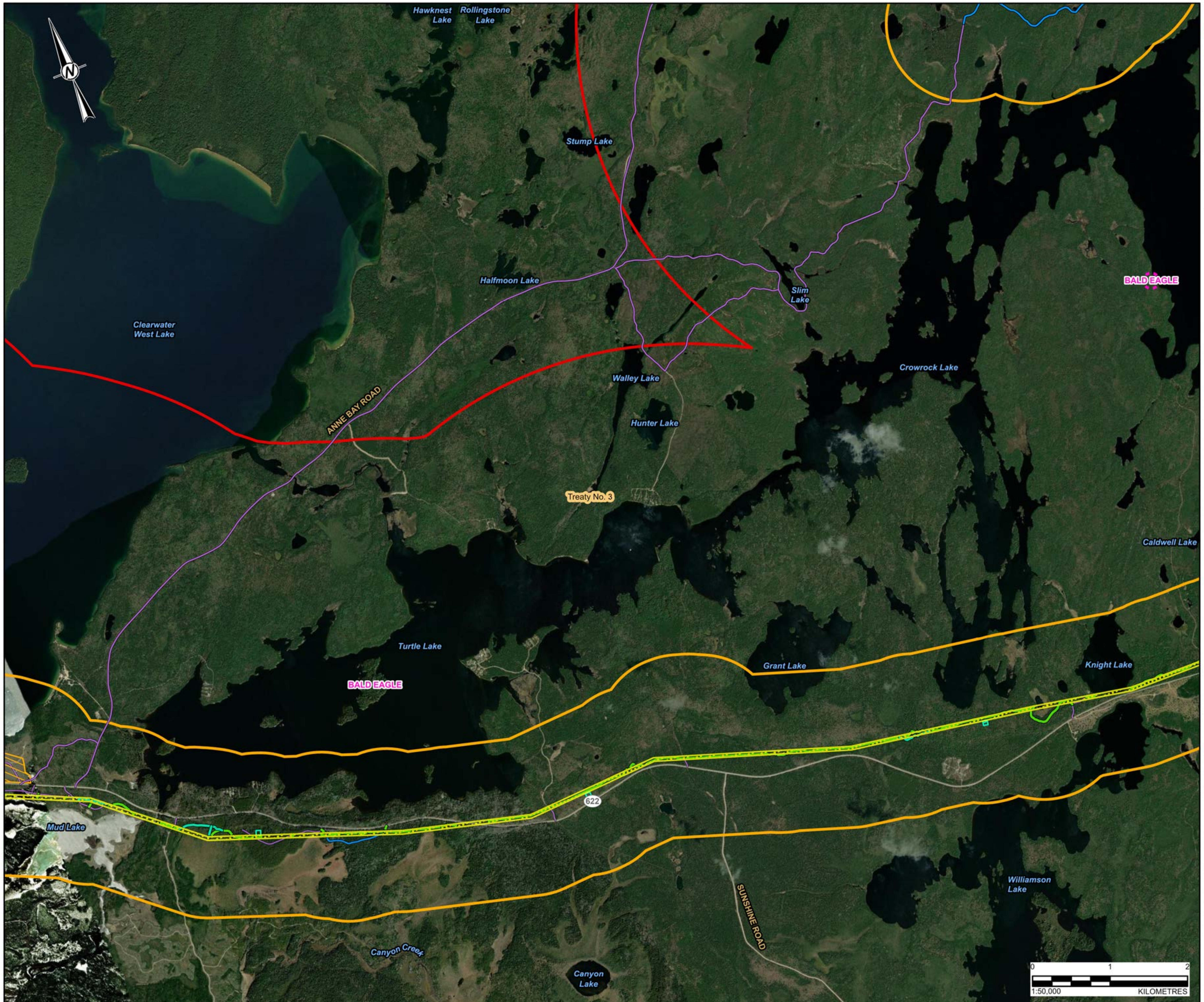
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-26

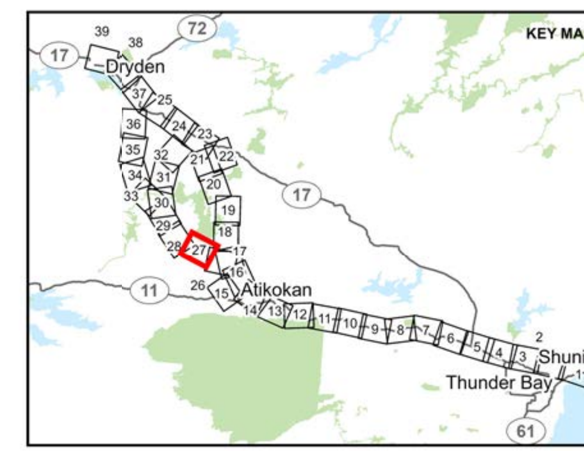
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

PATH: S:\Clients\HydroOne\Waasigan\99_PROJ\20137728\40_PROD\0022_Birds\20137728-0022-G-0000_SCC.aprx PRINTED ON: AT: 12:01:53 PM



LEGEND

- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

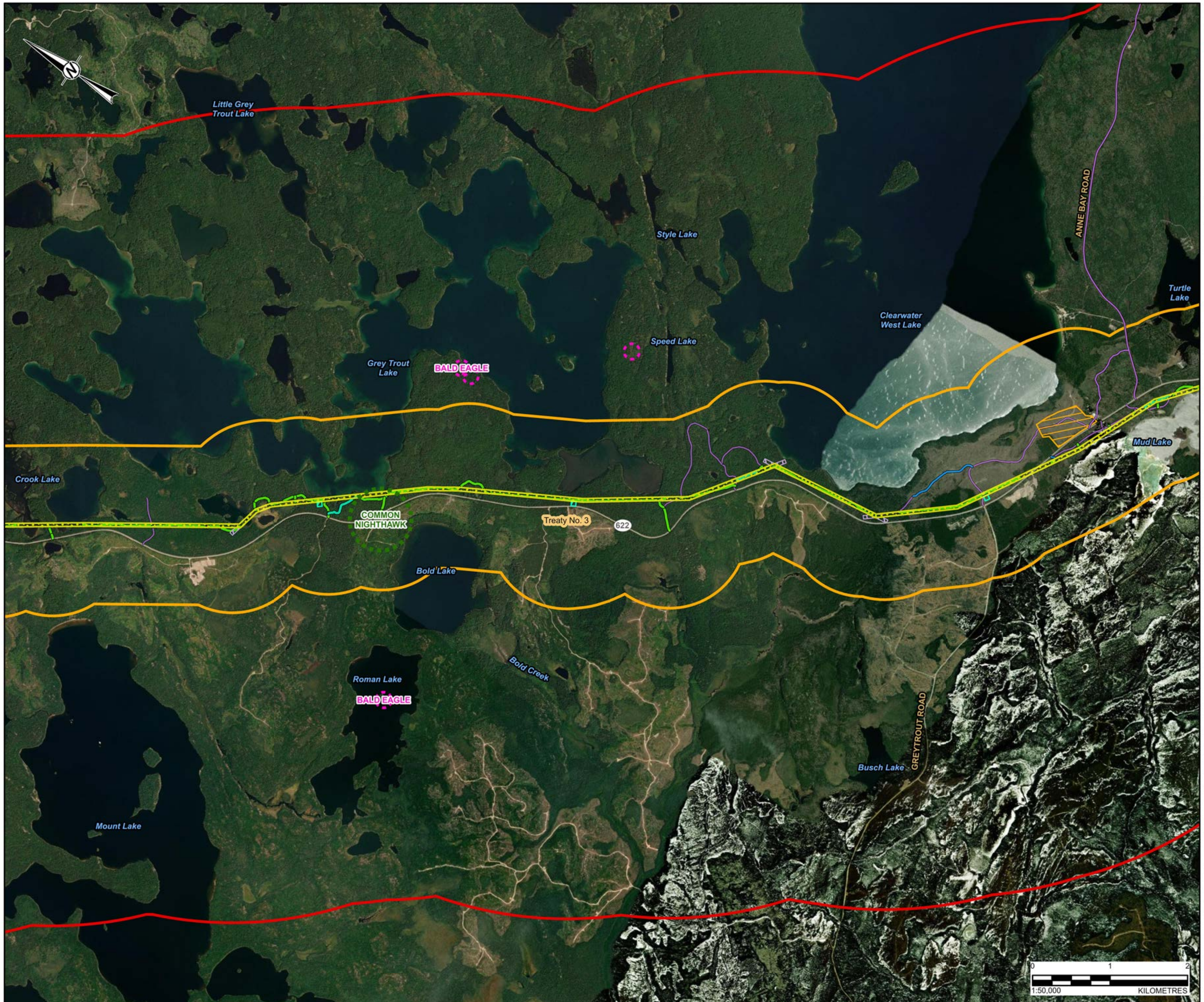
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

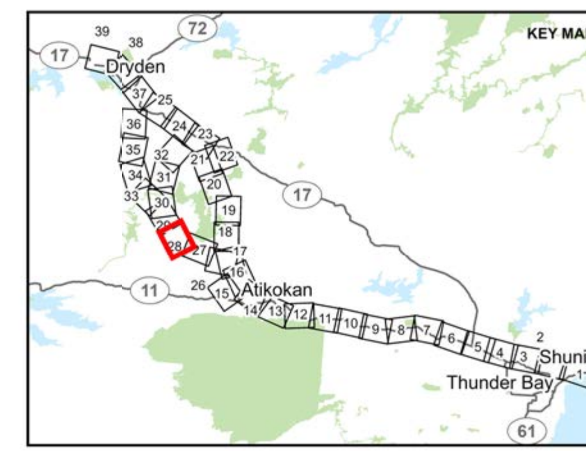
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-27

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm



LEGEND

- COMMON NIGHTHAWK (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

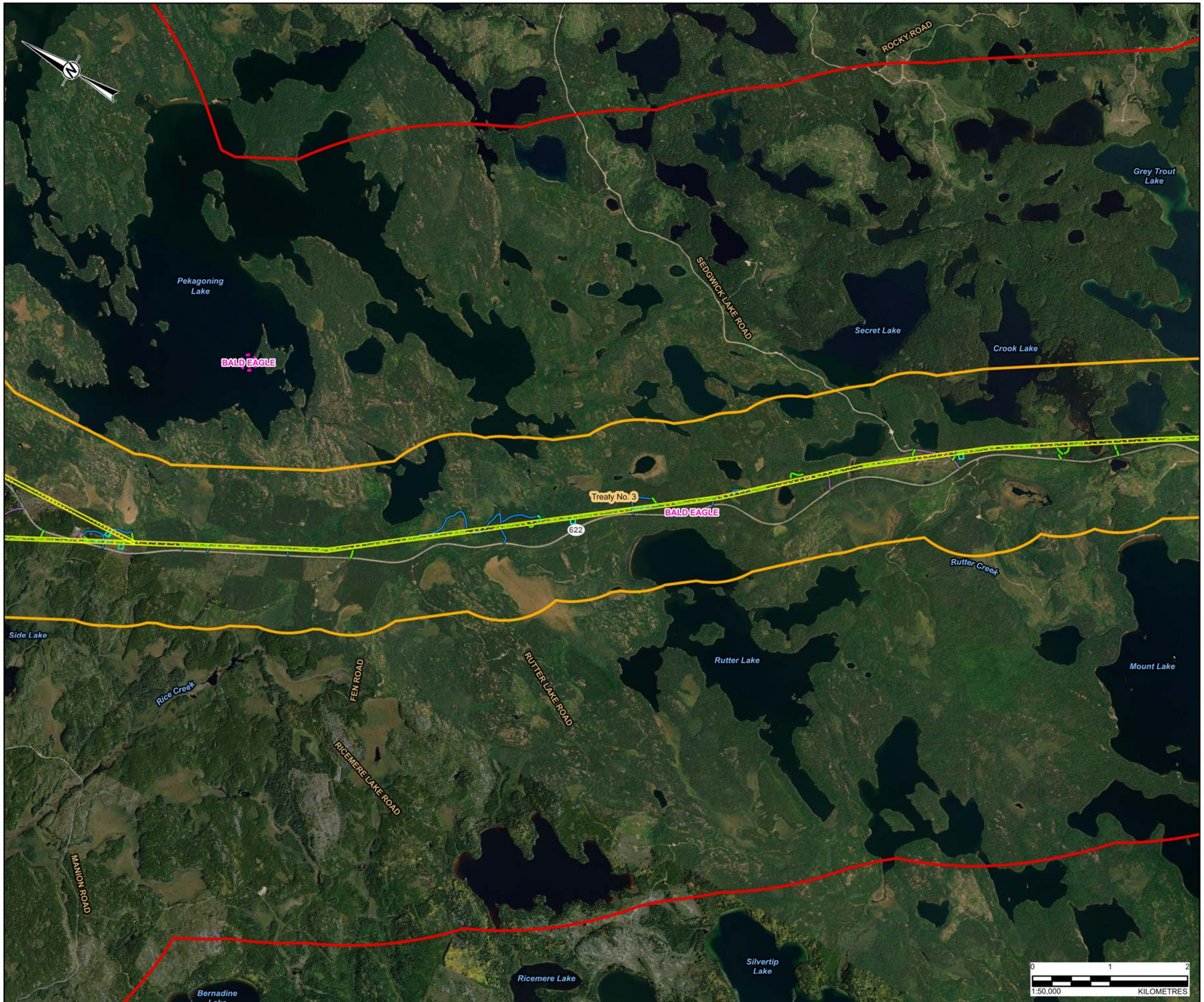
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

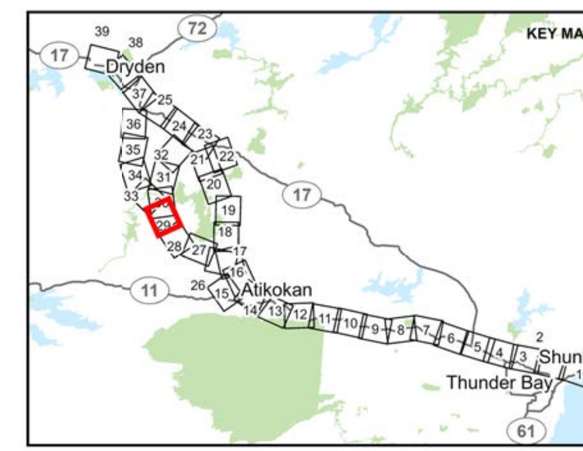
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-28

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

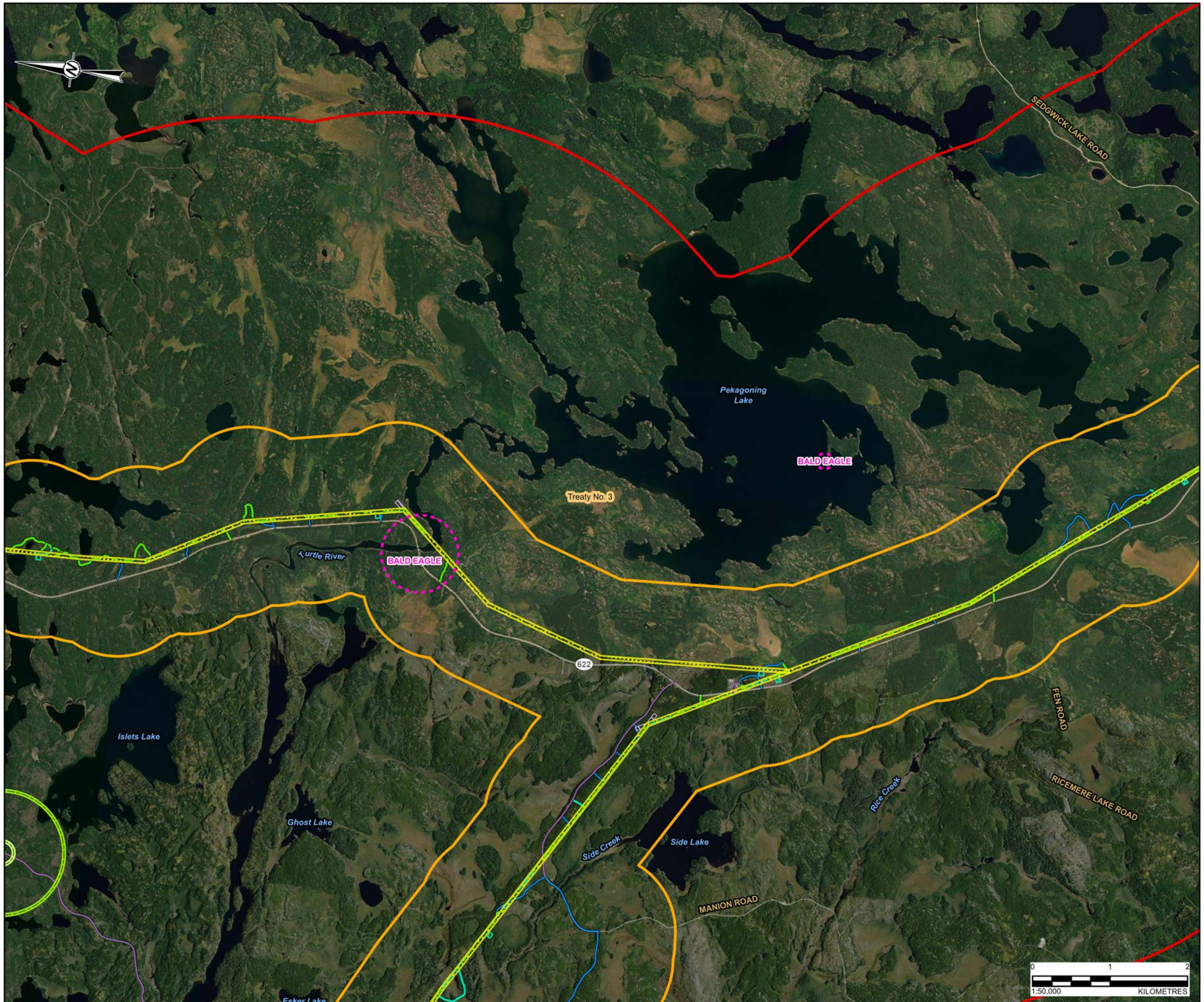
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

wsp

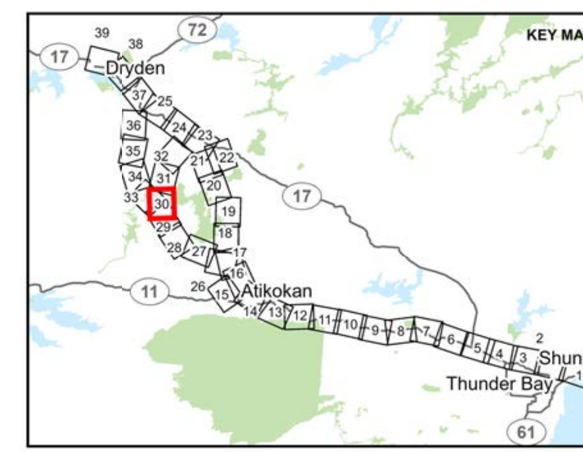
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-29



LEGEND

- COMMON NIGHTHAWK OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- COMMON NIGHTHAWK HABITAT
- COMMON NIGHTHAWK HABITAT BUFFER
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

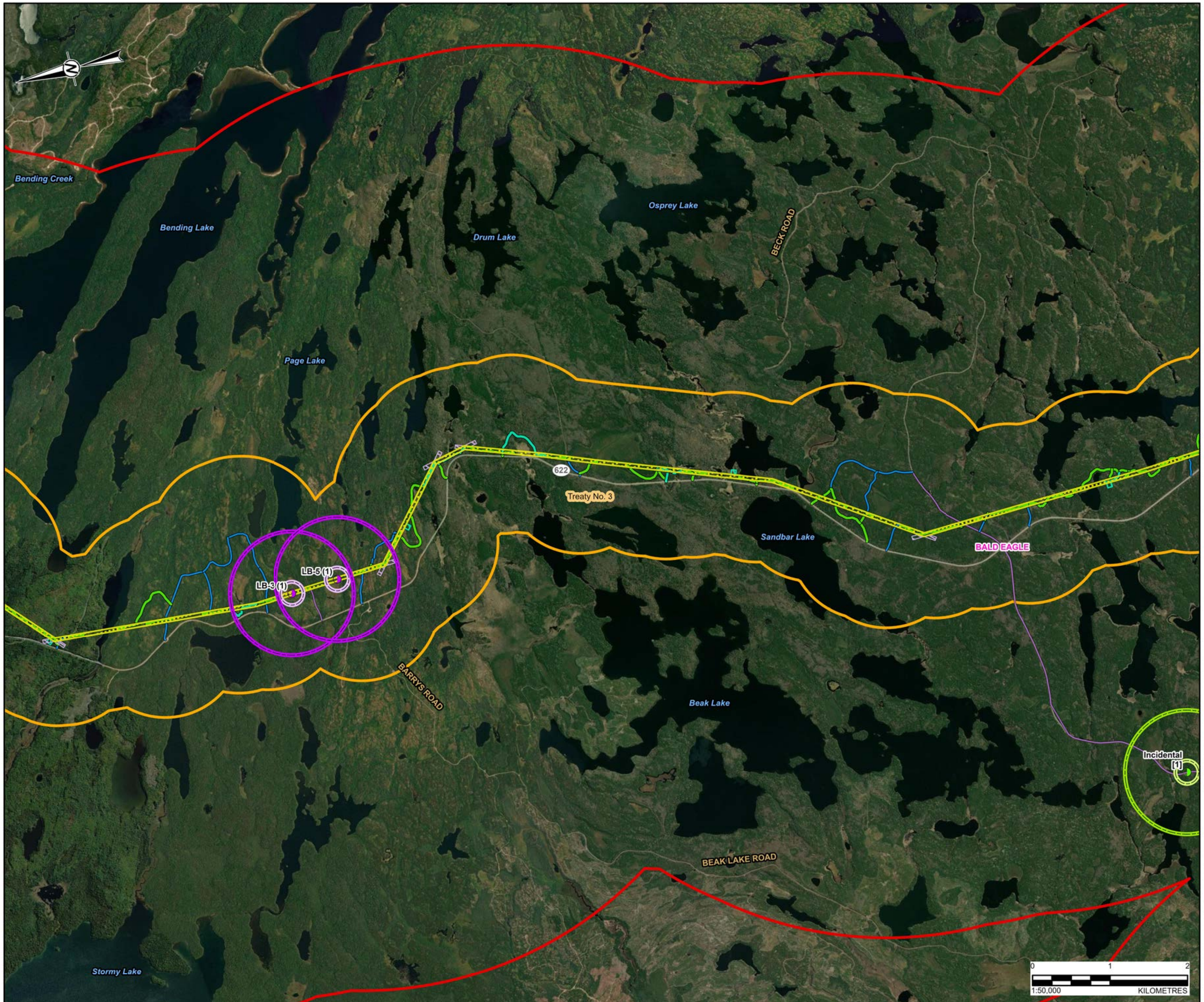
CONSULTANT

wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

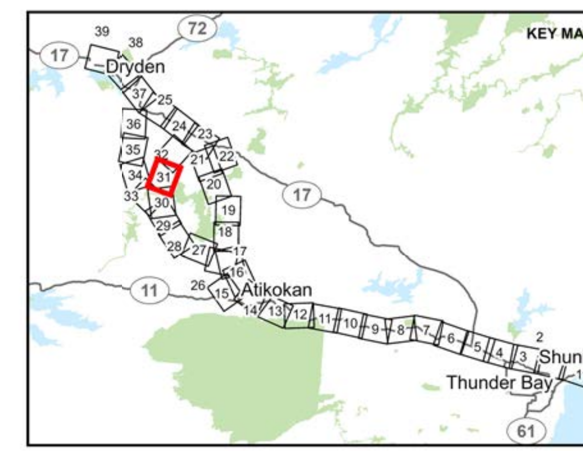
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-30

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm



LEGEND

- CANADA WARBLER & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- COMMON NIGHTHAWK OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- CANADA WARBLER HABITAT
- CANADA WARBLER HABITAT BUFFER
- COMMON NIGHTHAWK HABITAT
- COMMON NIGHTHAWK HABITAT BUFFER
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

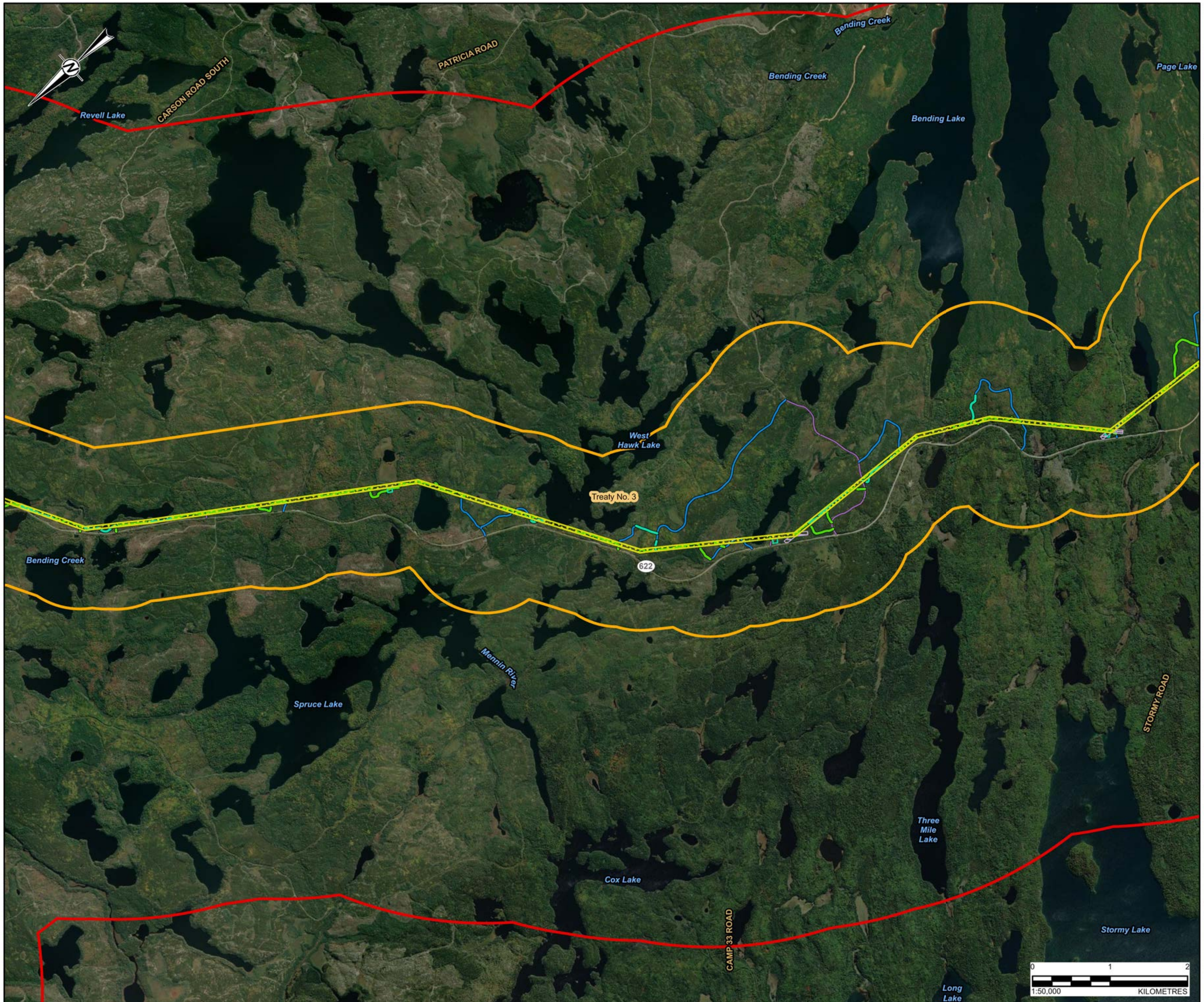
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

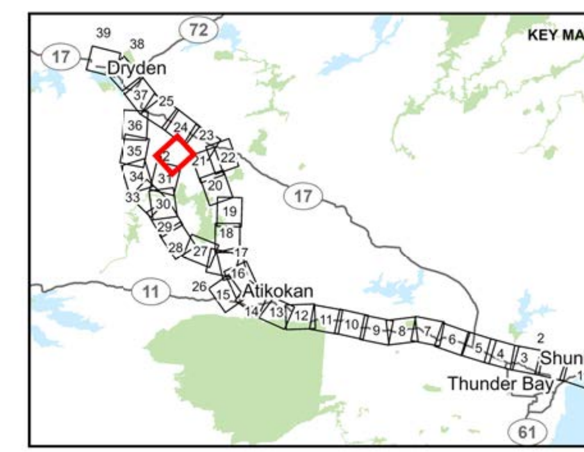
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

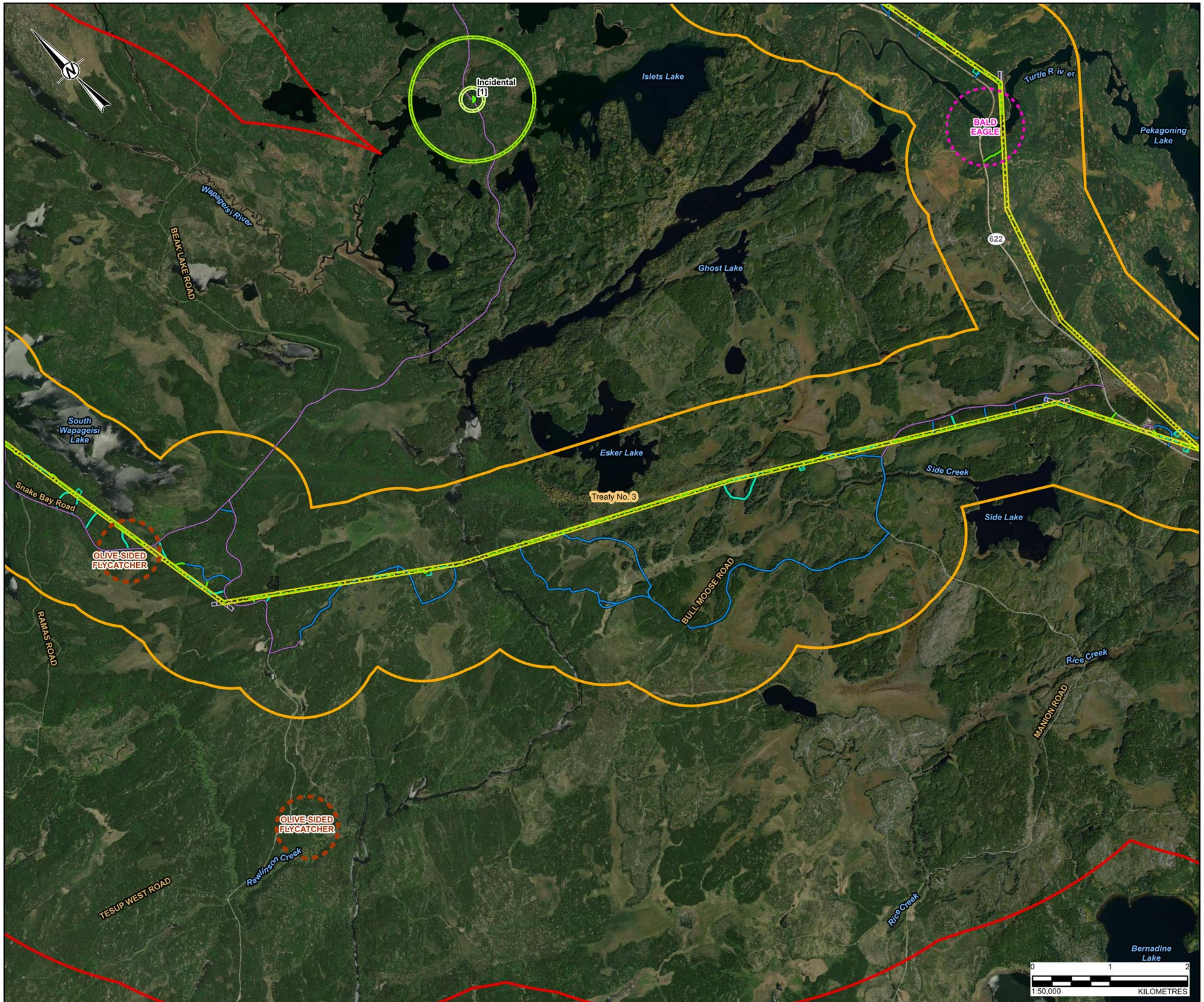
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

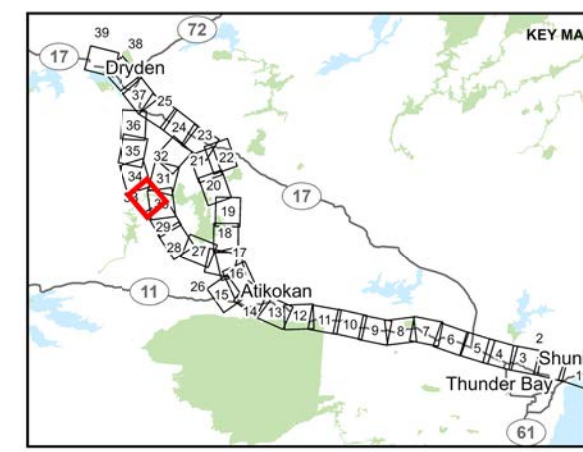
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-32

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- COMMON NIGHTHAWK OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- COMMON NIGHTHAWK HABITAT
- COMMON NIGHTHAWK HABITAT BUFFER
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

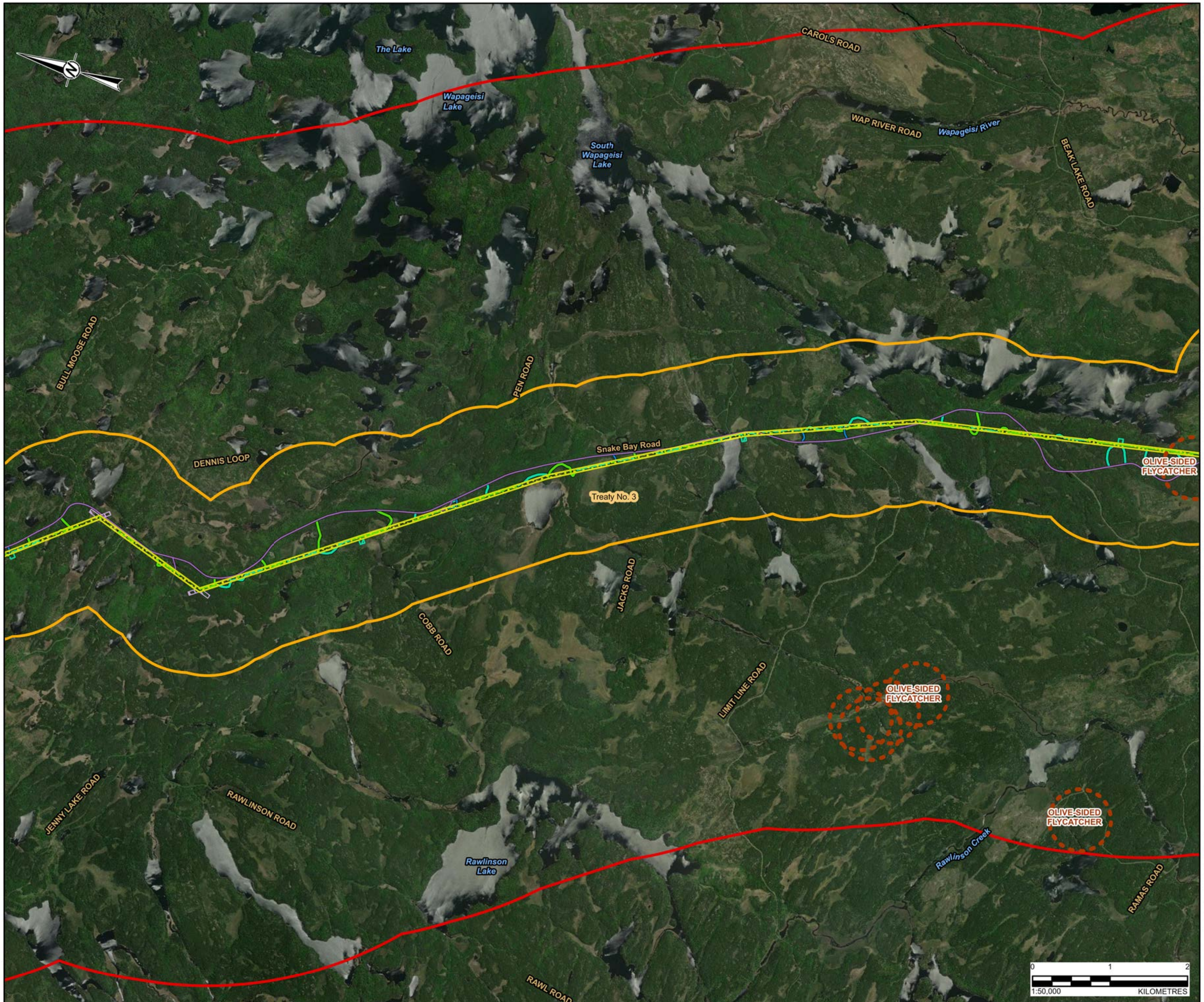
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

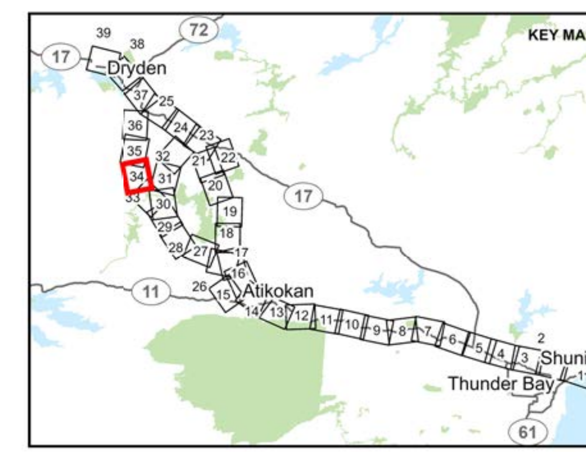
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-33

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm



LEGEND

- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

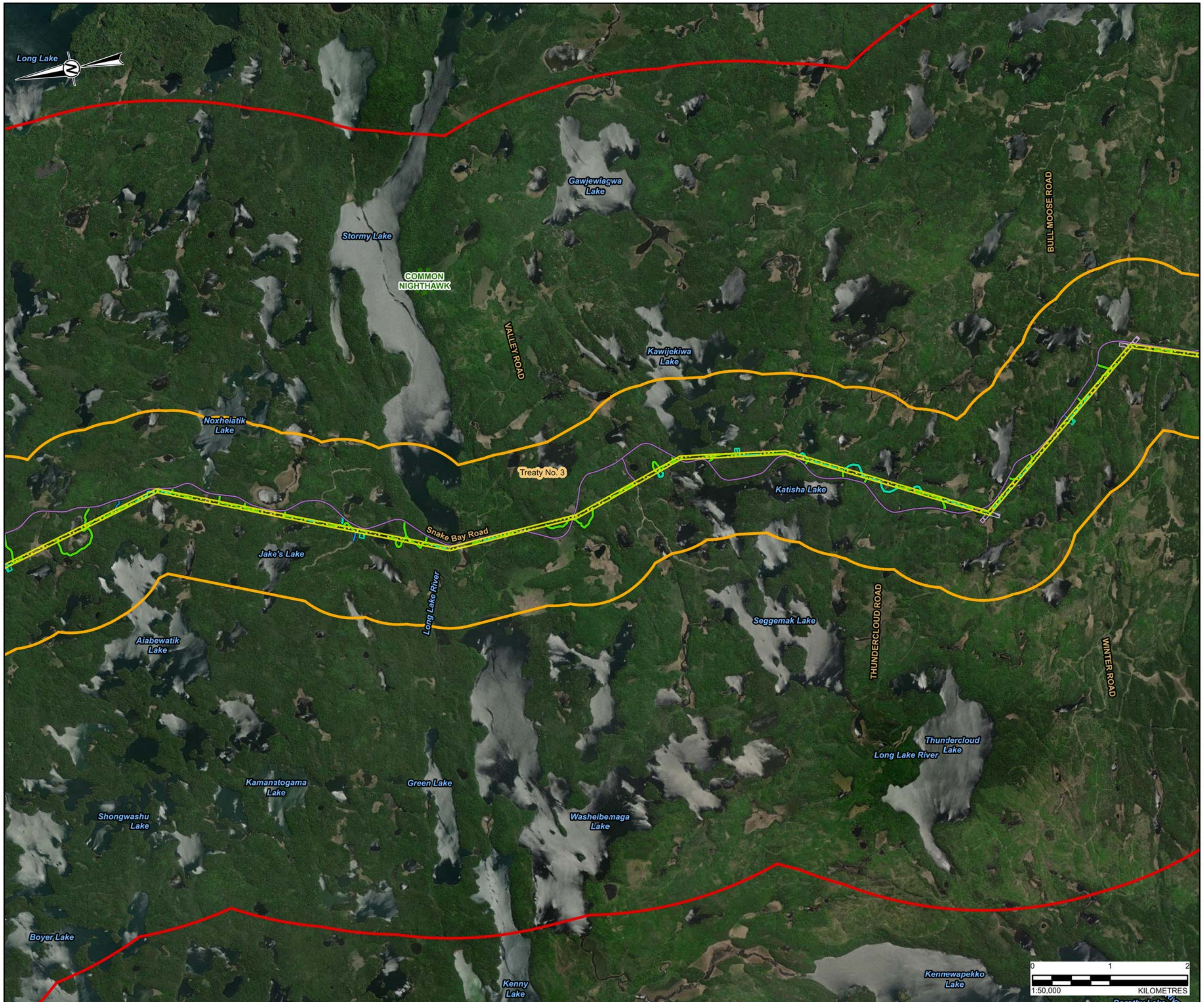
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

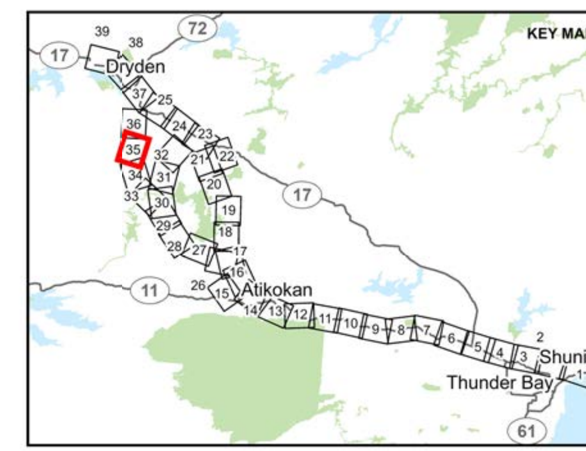
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-34

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- COMMON NIGHTHAWK (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

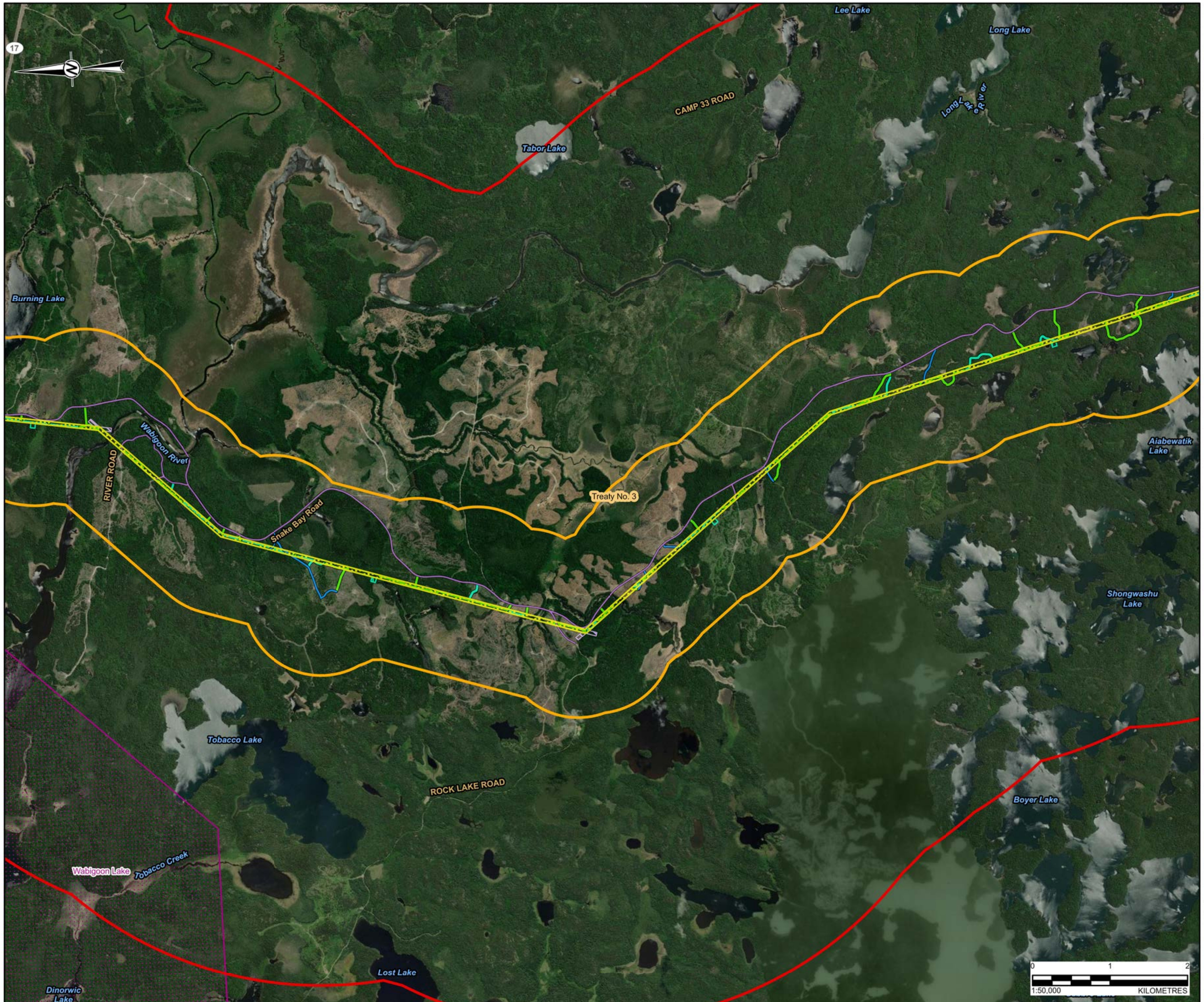
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

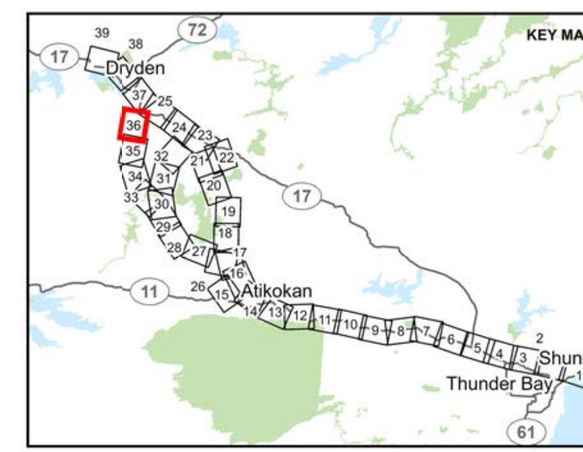
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-35

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

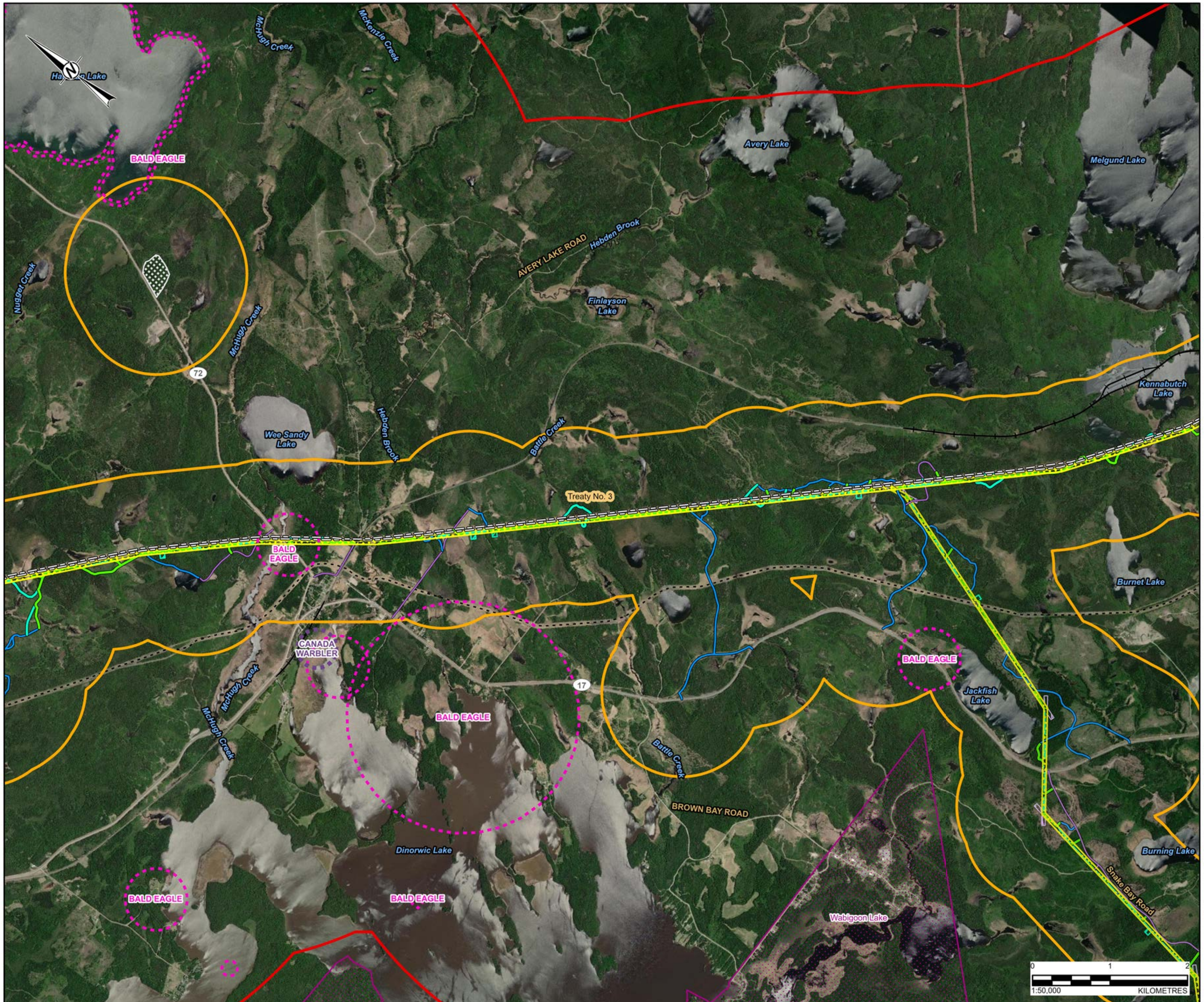
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT

wsp

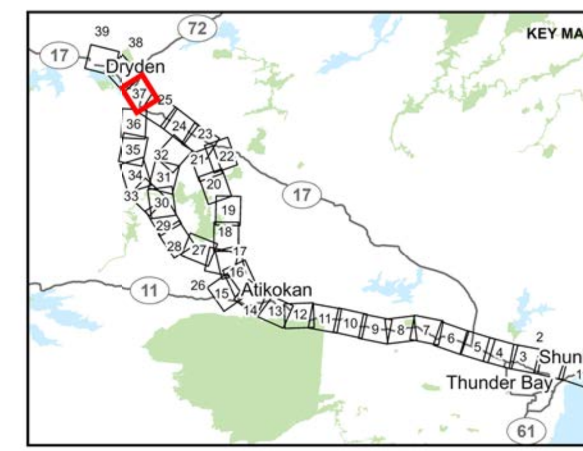
YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-36



LEGEND

- CANADA WARBLER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- FIRST NATIONS RESERVE
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

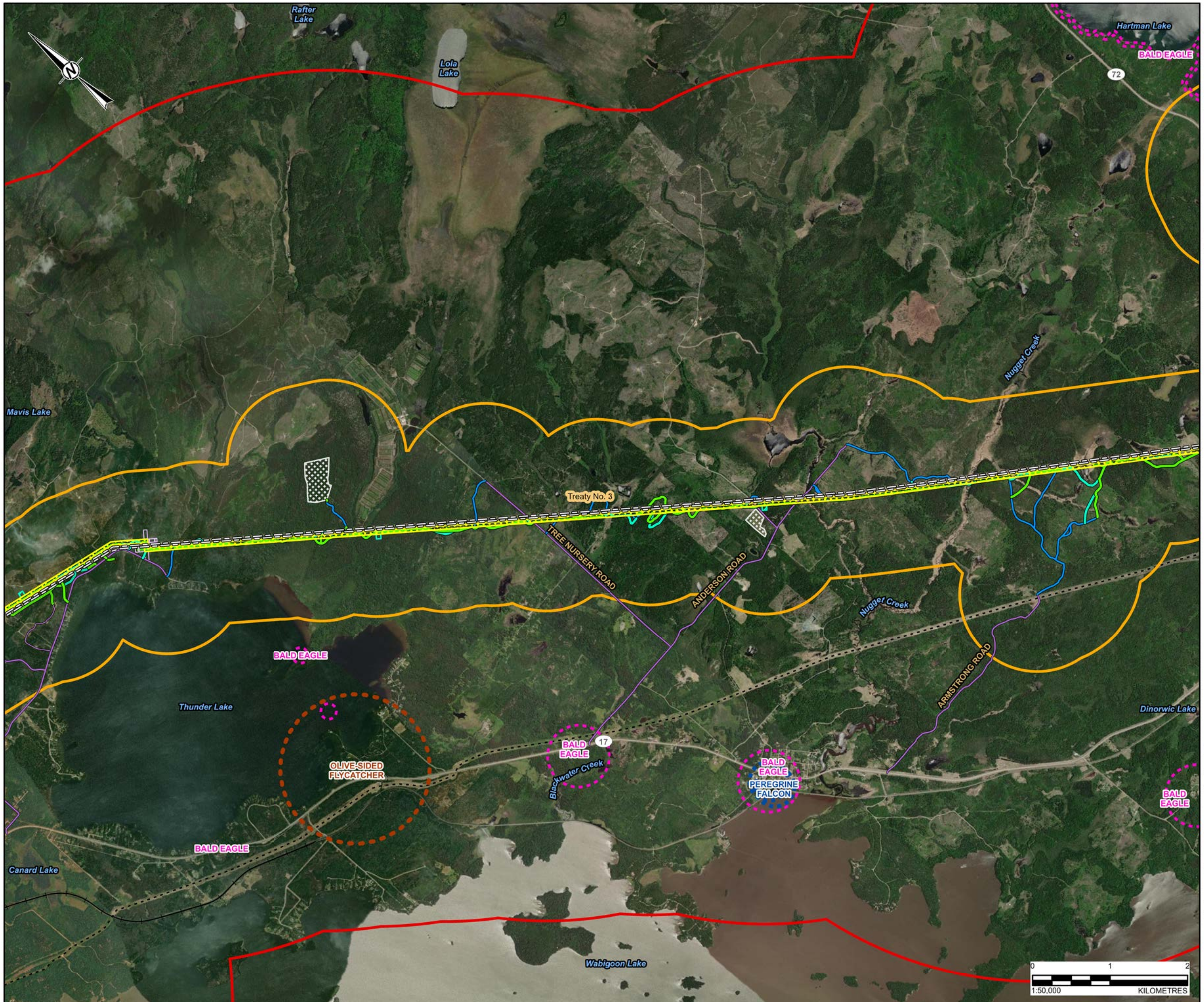
CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-37

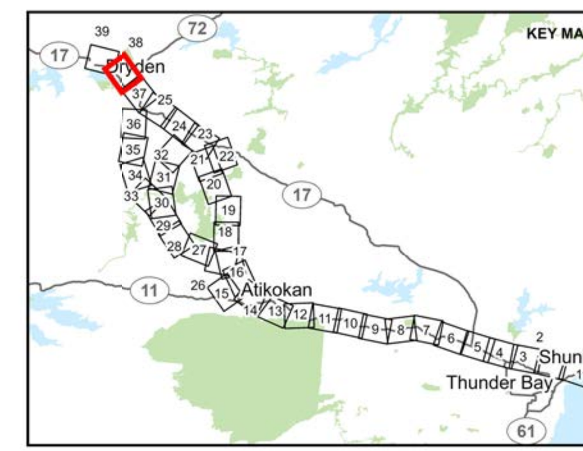
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

PATH: S:\Clients\HydroOne\Waasigan\99_PROJ\20137728\40_PROD\0022_Birds\20137728-0022-G-0000_SCC.aprx PRINTED ON: AT: 12:15:08 PM



LEGEND

- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- PEREGRINE FALCON (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)
BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

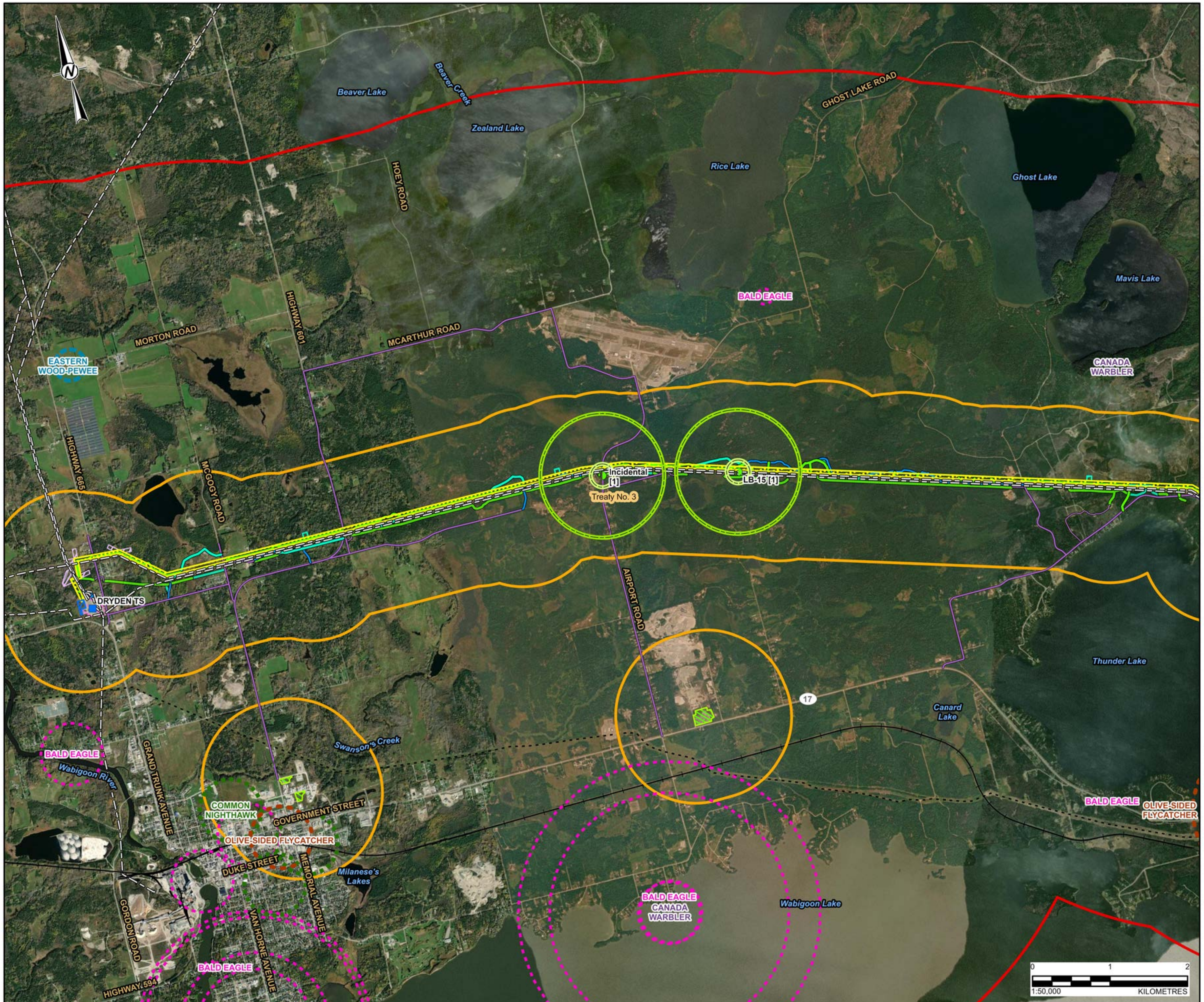
TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

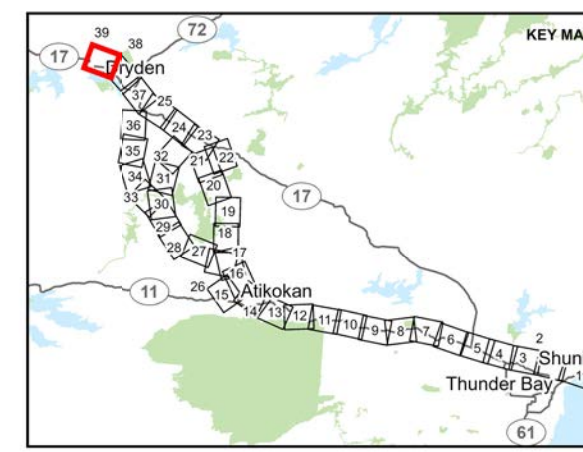
PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-38

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
25mm



LEGEND

- 230 kV TRANSFORMER STATION (TS)
- COMMON NIGHTHAWK OBSERVATION & [INDIVIDUAL BIRD COUNT] (GOLDER 2022)
- COMMON NIGHTHAWK HABITAT
- COMMON NIGHTHAWK HABITAT BUFFER
- EASTERN WOOD-PEWEE OBSERVATION (NHIC 2022)
- CANADA WARBLER OBSERVATION (NHIC 2022)
- COMMON NIGHTHAWK (NHIC 2022)
- OLIVE-SIDED FLYCATCHER OBSERVATION (NHIC 2022)
- BALD EAGLE OBSERVATION (NHIC 2022)
- CANDIDATE EASTERN WOOD PEWEE HABITAT
- CANDIDATE OLIVE-SIDED FLYCATCHER HABITAT
- CANDIDATE COMMON NIGHTHAWK HABITAT
- CANDIDATE BALD EAGLE HABITAT
- CANDIDATE CANADA WARBLER HABITAT
- RAILWAY
- NATURAL GAS PIPELINE
- EXISTING TRANSMISSION LINE
- EXISTING ACCESS ROAD - NO IMPROVEMENTS REQUIRED
- EXISTING ACCESS ROAD - POTENTIAL IMPROVEMENTS
- PRELIMINARY NEW ACCESS ROAD - PREFERRED
- PRELIMINARY NEW ACCESS ROAD - ALTERNATE
- ALTERNATIVE ROUTES - TRANSMISSION LINE RIGHT-OF-WAY
- PRELIMINARY HELICOPTER PAD
- PRELIMINARY CONSTRUCTION CAMP
- PRELIMINARY FLY YARD
- PRELIMINARY LAYDOWN AREA
- PRELIMINARY AGGREGATE SITE
- PRELIMINARY TEMPORARY LAYDOWN AREA (PULL SITE)
- TRANSFORMER STATION FENCELINE - EXISTING
- TRANSFORMER STATION FENCELINE - APPROXIMATE AREA OF EXPANSION
- LOCAL STUDY AREA
- REGIONAL STUDY AREA
- TREATY BOUNDARY



REFERENCE(S)

BASE DATA COURTESY OF LAND INFORMATION ONTARIO MNRF. IMAGERY COPYRIGHT © ESRI AND ITS LICENSORS. USED UNDER LICENSE, ALL RIGHTS RESERVED.
PROJECTION: CSRS UTM ZONE 15 DATUM: NAD 83

CLIENT
HYDRO ONE NETWORKS INC.

PROJECT
WAASIGAN TRANSMISSION LINE

TITLE
BIRD SPECIES OF CONSERVATION CONCERN KNOWN FROM AND DOCUMENTED WITHIN THE LSA

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KB
PREPARED	DB
REVIEWED	HK
APPROVED	CS

PROJECT NO.	CONTROL	REV.	FIGURE
20137728	0022	C	3.2-11-39

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

ATTACHMENT 6.4-A-2

Botanical Inventory

Attachment 6.4-A-2: Botanical Inventory

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
a peatmoss	*Sphagnum medium*	SNA	-	-	-	-	-	-	-	-	ELC-100
Agrimony sp.	*Agrimonia sp.*		-	-	-	-	-	-	-	-	ELC-146
Alder-leaved Buckthorn	*Endotropis alnifolia*	S5	-	-	-	-	-	-	7	-5	ELC-132, ELC-143, ELC-108
American Black Currant	*Ribes americanum*	S5	-	-	-	-	-	-	4	-3	ELC-142
American Cow Parsnip	*Heracleum maximum*	S5	-	-	-	-	-	-	3	-3	ELC-132, ELC-142, ELC-144
American Cow-wheat	*Melampyrum lineare*	S5	-	-	-	-	-	-	6	3	ELC-118
American Vetch	*Vicia americana*	S5	-	-	-	-	-	-	5	3	ELC-147
Arctic Sweet Coltsfoot	*Petasites frigidus*	S5	-	-	-	-	-	-	8	-3	ELC-143, ELC-151, ELC-151, ELC-153, ELC-108, ELC-77, ELC-144
Balsam Fir	*Abies balsamea*	S5	-	-	-	-	-	-	5	-3	ELC-137, ELC-136, ELC-132, ELC-145, ELC-142, ELC-143, ELC-151, ELC-151, ELC-152, ELC-81, ELC-82, ELC-62, ELC-59, ELC-4, ELC-55, ELC-128, ELC-36, ELC-71, ELC-39, ELC-47, ELC-147
Balsam Poplar	*Populus balsamifera*	S5	-	-	-	-	-	-	4	-3	ELC-137, ELC-143, ELC-58, ELC-146
Baneberry sp.	*Actaea sp.*		-	-	-	-	-	-	-	-	ELC-81
Beaked Hazelnut	*Corylus cornuta*	S5	-	-	-	-	-	-	5	3	ELC-137, ELC-132, ELC-145, ELC-142, ELC-151, ELC-151, ELC-81, ELC-82, ELC-58, ELC-14, ELC-36, ELC-64, ELC-69, ELC-146, ELC-144
Bebb's Willow	*Salix bebbiana*	S5	-	-	-	-	-	-	4	-3	ELC-153, ELC-131, ELC-129, ELC-59, ELC-117, ELC-10, ELC-24
Black Ash	*Fraxinus nigra*	S3	END	-	-	-	Y	-	7	-3	ELC-97, ELC-146, Incidental
Black Spruce	*Picea mariana*	S5	-	-	-	-	-	-	8	-3	ELC-138, ELC-132, ELC-132, ELC-151, ELC-151, ELC-153, ELC-154, ELC-156, ELC-159, ELC-129, ELC-72, ELC-41, ELC-8, ELC-62, ELC-59, ELC-75, ELC-117, ELC-10, ELC-24, ELC-115, ELC-36, ELC-71, ELC-104, ELC-39, ELC-64, ELC-123
Bluejoint Reedgrass	*Calamagrostis canadensis*	S5	-	-	-	-	-	-	4	-5	ELC-110, ELC-43
Bluejoint Reedgrass	*Calamagrostis canadensis var. canadensis*	S5	-	-	-	-	-	-	4	-5	ELC-128
Bog Birch	*Betula pumila*	S5	-	-	-	-	-	-	9	-5	ELC-154, ELC-159, ELC-24, ELC-43
Bog Buckbean	*Menyanthes trifoliata*	S5	-	-	-	-	-	-	9	-5	ELC-24, ELC-44
Bog Goldenrod	*Solidago uliginosa*	S5	-	-	-	-	-	-	9	-5	ELC-44
Bog Haircap Moss	*Polytrichum strictum*	S4	-	-	-	-	-	-	-	-	ELC-156, ELC-130, ELC-72, ELC-41, ELC-42, ELC-24
Bog Rosemary	*Andromeda polifolia*	S5	-	-	-	-	-	-	10	-5	ELC-24, ELC-40
Bog Willow	*Salix pedicellaris*	S5	-	-	-	-	-	-	9	-5	ELC-159, ELC-131, ELC-72, ELC-24
Boreal Bog Sedge	*Carex magellanica*	S5	-	-	-	-	-	-	10	-5	ELC-42, ELC-24

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Bracken Fern	*Pteridium aquilinum*	S5	-	-	-	-	-	-	2	3	ELC-136, ELC-130, ELC-82, ELC-58, ELC-59, ELC-14, ELC-117, ELC-115, ELC-55, ELC-128, ELC-36, ELC-66, ELC-15
British Soldiers Lichen	*Cladonia cristatella*	S5	-	-	-	-	-	-	-	-	ELC-130, ELC-115
Broad-leaved Cattail	*Typha latifolia*	S5	-	-	-	-	-	-	1	-5	ELC-156, ELC-42
Bronze Sedge	*Carex foenea*	S5	-	-	-	-	-	-	3	5	ELC-14
Brownish Sedge	*Carex brunnescens*	S5	-	-	-	-	-	-	6	-3	ELC-82, ELC-14, ELC-117
Bunchberry	*Cornus canadensis*	S5	-	-	-	-	-	-	7	0	ELC-137, ELC-138, ELC-136, ELC-132, ELC-145, ELC-151, ELC-151, ELC-152, ELC-153, ELC-130, ELC-129, ELC-82, ELC-8, ELC-62, ELC-59, ELC-14, ELC-4, ELC-117, ELC-115, ELC-128, ELC-36, ELC-71, ELC-21, ELC-37, ELC-100, ELC-15, ELC-112, ELC-13, ELC-116, ELC-65, ELC-127, ELC-140
Canada Anemone	*Anemonastrum canadense*	S5	-	-	-	-	-	-	3	-3	ELC-143, ELC-148, ELC-151, ELC-151, ELC-81
Canada Fly Honeysuckle	*Lonicera canadensis*	S5	-	-	-	-	-	-	6	3	ELC-137, ELC-136, ELC-132, ELC-145, ELC-151, ELC-151, ELC-128, ELC-36, ELC-37, ELC-25, ELC-65, ELC-47, ELC-127
Canada Goldenrod	*Solidago canadensis*	S5	-	-	-	-	-	-	1	3	ELC-85, ELC-17
Canada Lettuce	*Lactuca canadensis*	S5	-	-	-	-	-	-	3	3	ELC-85
Canada Mannagrass	*Glyceria canadensis*	S5	-	-	-	-	-	-	7	-5	ELC-111
Canada Thistle	*Cirsium arvense*	SNA	-	-	-	-	-	Y	-	3	ELC-85, ELC-17, ELC-112
Canada Violet	*Viola canadensis*	S5	-	-	-	-	-	-	6	3	ELC-143
Canada Wild-ginger	*Asarum canadense*	S5	-	-	-	-	-	-	6	5	ELC-143
Chestnut Sedge	*Carex castanea*	S5	-	-	-	-	-	-	7	-3	ELC-152
Chokecherry	*Prunus virginiana*	S5	-	-	-	-	-	-	2	3	ELC-143, ELC-71, ELC-146
Clubmoss sp.	*Lycopodium sp.*		-	-	-	-	-	-	-	-	ELC-47
Common Bearberry	*Arctostaphylos uva-ursi*	S5	-	-	-	-	-	-	8	5	ELC-4
Common Buttercup	*Ranunculus acris*	SNA	-	-	-	-	-	Y	-	0	ELC-132
Common Dandelion	*Taraxacum officinale*	SNA	-	-	-	-	-	Y	-	3	ELC-153
Common Elderberry	*Sambucus canadensis*	S5	-	-	-	-	-	-	5	-3	ELC-143
Common Haircap Moss	*Polytrichum commune*	S5	-	-	-	-	-	-	-	-	ELC-129, ELC-14
Common Labrador Tea	*Rhododendron groenlandicum*	S5	-	-	-	-	-	-	9	-5	ELC-138, ELC-136, ELC-154, ELC-156, ELC-130, ELC-129, ELC-72, ELC-41, ELC-8, ELC-62, ELC-59, ELC-75, ELC-4, ELC-117, ELC-10, ELC-24, ELC-36, ELC-97, ELC-100, ELC-66, ELC-61, ELC-120, ELC-43, ELC-65, ELC-140
Common Lady Fern	*Athyrium filix-femina*	S5	-	-	-	-	-	-	4	0	ELC-39, ELC-146
Common Oak Fern	*Gymnocarpium dryopteris*	S5	-	-	-	-	-	-	7	3	ELC-145, ELC-143, ELC-151, ELC-151, ELC-81, ELC-129, ELC-36, ELC-39
Common Pipsissewa	*Chimaphila umbellata*	S5	-	-	-	-	-	-	8	5	ELC-130, ELC-129, ELC-62

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Common Self-heal	*Prunella vulgaris*	S5	-	-	-	-	-	Y	0	0	ELC-128
Common Timothy	*Phleum pratense*	SNA	-	-	-	-	-	Y		3	ELC-147
Common Woolly Bulrush	*Scirpus cyperinus*	S5	-	-	-	-	-	-	4	-5	ELC-152, ELC-153, ELC-156
Common Yarrow	*Achillea millefolium*	SNA	-	-	-	-	-	Y	-	3	ELC-128
Coralberry	*Symphoricarpos orbiculatus*	SNA	-	-	-	-	-	Y	-	3	ELC-142, ELC-143
Coralroot sp.	*Corallorhiza sp.*		-	-	-	-	-	-	-		ELC-123
Cottongrass sp.	*Eriophorum sp.*		-	-	-	-	-	-	-	-	ELC-24, ELC-40
Cream-colored Vetchling	*Lathyrus ochroleucus*	S4S5	-	-	-	-	-	-	8	5	ELC-151, ELC-151
Creeping Buttercup	*Ranunculus repens*	SNA	-	-	-	-	-	Y	-	0	ELC-148
Creeping Snowberry	*Gaultheria hispidula*	S5	-	-	-	-	-	-	8	-3	ELC-138, ELC-153, ELC-130, ELC-129, ELC-72, ELC-41, ELC-62, ELC-59, ELC-75, ELC-10, ELC-24, ELC-115, ELC-25, ELC-66, ELC-118
Crested Wood Fern	*Dryopteris cristata*	S5	-	-	-	-	-	-	7	-5	ELC-128, ELC-98, ELC-100
Dock sp.	*Rumex sp.*		-	-	-	-	-	-	-	-	ELC-128
Dotted Leafy Moss	*Rhizomnium punctatum*	S5	-	-	-	-	-	-	-	-	ELC-148, ELC-153, ELC-81
Drooping Woodland Sedge	*Carex arctata*	S5	-	-	-	-	-	-	5	5	ELC-137, ELC-82, ELC-14
Dwarf Raspberry	*Rubus pubescens*	S5	-	-	-	-	-	-	4	-3	ELC-136, ELC-132, ELC-145, ELC-142, ELC-143, ELC-148, ELC-151, ELC-151, ELC-152, ELC-153, ELC-81, ELC-82, ELC-14, ELC-28, ELC-18, ELC-25, ELC-140, ELC-147, ELC-144
Early Lowbush Blueberry	*Vaccinium angustifolium*	S5	-	-	-	-	-	-	6	3	ELC-130, ELC-129, ELC-72, ELC-41, ELC-8, ELC-62, ELC-59, ELC-75, ELC-4, ELC-117, ELC-10, ELC-24, ELC-115, ELC-128, ELC-36, ELC-71, ELC-95, ELC-112, ELC-64, ELC-69, ELC-147
Early Meadow-rue	*Thalictrum dioicum*	S5	-	-	-	-	-	-	6	3	ELC-142, ELC-148
Eastern Ninebark	*Physocarpus opulifolius*	S5	-	-	-	-	-	-	5	-3	ELC-132
Eastern Teaberry	*Gaultheria procumbens*	S5	-	-	-	-	-	-	6	3	ELC-4
Eastern White Cedar	*Thuja occidentalis*	S5	-	-	-	-	-	-	4	-3	ELC-138, ELC-66, ELC-140
Eastern White Pine	*Pinus strobus*	S5	-	-	-	-	-	-	4	3	ELC-137, ELC-156, ELC-41, ELC-128, ELC-36, ELC-28, ELC-40, ELC-21, ELC-118
Eleocharis sp.	*Eleocharis sp.*		-	-	-	-	-	-	-	-	ELC-24
European Red Currant	*Ribes rubrum*	SNA	-	-	-	-	-	-	-	5	ELC-18
Evergreen Wood Fern	*Dryopteris intermedia*	S5	-	-	-	-	-	-	5	0	ELC-39, ELC-120, ELC-140
Fescue sp.	*Festuca sp.*		-	-	-	-	-	-	-	-	ELC-85
Field Horsetail	*Equisetum arvense*	S5	-	-	-	-	-	-	0	0	ELC-132, ELC-132, ELC-143, ELC-152, ELC-153, ELC-77
Fire Moss	*Ceratodon purpureus*	S5	-	-	-	-	-	-	-	-	ELC-128

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Fireweed	*Chamaenerion angustifolium*	S5	-	-	-	-	-	-	3	0	ELC-137, ELC-153, ELC-130, ELC-82, ELC-58, ELC-58, ELC-62, ELC-14, ELC-117, ELC-115, ELC-128
Fowl Bluegrass	*Poa palustris*	S5	-	-	-	-	-	-	5	-3	ELC-146
Fowl Mannagrass	*Glyceria striata*	S5	-	-	-	-	-	-	3	-5	ELC-100, ELC-25, ELC-108
Fringed Black Bindweed	*Fallopia cilinodis*	S5	-	-	-	-	-	-	2	5	ELC-82
Fringed Milkwort	*Polygaloides paucifolia*	S5	-	-	-	-	-	-	6	3	ELC-152
Garden Bird's-foot Trefoil	*Lotus corniculatus*	SNA	-	-	-	-	-	Y	-	3	ELC-112
Girgensohn's Peat Moss	*Sphagnum girgensohnii*	S5	-	-	-	-	-	-	-	-	ELC-131, ELC-129, ELC-72, ELC-42, ELC-117, ELC-24, ELC-138
Goldthread	*Coptis trifolia*	S5	-	-	-	-	-	-	7	-3	ELC-136, ELC-129, ELC-82, ELC-8, ELC-59, ELC-115, ELC-36, ELC-71, ELC-77
Gooseberry sp.	*Ribes sp.*		-	-	-	-	-	-	-	-	ELC-144
Grass	*Poa sp.*		-	-	-	-	-	-	-	-	ELC-128
Gray Reindeer Lichen	*Cladonia rangiferina*	S5	-	-	-	-	-	-	-	-	ELC-156, ELC-130, ELC-41, ELC-58, ELC-62, ELC-59, ELC-117, ELC-10, ELC-24, ELC-115
Green Alder	*Alnus alnobetula*	S5	-	-	-	-	-	-	8	0	ELC-130, ELC-82, ELC-58, ELC-14, ELC-117, ELC-10, ELC-55, ELC-36, ELC-61
Green Reindeer Lichen	*Cladonia arbuscula ssp. mitis*	S5	-	-	-	-	-	-	-	-	ELC-41, ELC-115
Green-flowered Pyrola	*Pyrola chlorantha*	S4S5	-	-	-	-	-	-	6	3	ELC-132
Grey Alder	*Alnus incana*	S5	-	-	-	-	-	-	6	-3	ELC-138, ELC-145, ELC-148, ELC-153, ELC-154, ELC-156, ELC-131, ELC-129, ELC-8, ELC-59, ELC-24, ELC-37
Grey Dogwood	*Cornus racemosa*	S5	-	-	-	-	-	-	2	0	ELC-137
Hairy Goldenrod	*Solidago hispida*	S5	-	-	-	-	-	-	7	5	ELC-104
Hairy Honeysuckle	*Lonicera hirsuta*	S5	-	-	-	-	-	-	7	0	ELC-132, ELC-146
Hairy Woodrush	*Luzula acuminata*	S5	-	-	-	-	-	-	6	3	ELC-132, ELC-145, ELC-142, ELC-143, ELC-151, ELC-151, ELC-153, ELC-81
Hairy-nerved Carionflower	*Smilax lasioneura*	S5	-	-	-	-	-	-	5	5	ELC-146
Harlequin Blue Flag	*Iris versicolor*	S5	-	-	-	-	-	-	5	-5	ELC-111
Hawkweed sp.	*Hieracium sp.*		-	-	-	-	-	-	-	-	ELC-115, ELC-128, ELC-13
Heart-leaved Twayblade	*Neottia cordata*	S5	-	-	-	-	-	-	8	-3	ELC-72, ELC-24
Highbush Cranberry	*Viburnum opulus ssp. trilobum*	S5	-	-	-	-	-	-			ELC-143, ELC-108, ELC-146
Hoary Sedge	*Carex canescens*	S5	-	-	-	-	-	-	7	-5	ELC-42
Horsetail sp.	*Equisetum sp.*		-	-	-	-	-	-	-	-	ELC-72
Houghton's Sedge	*Carex houghtoniana*	S5	-	-	-	-	-	-	6	5	ELC-14
Indian-pipe	*Monotropa uniflora*	S5	-	-	-	-	-	-	6	3	ELC-138

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Interrupted Fern	*Claytosmunda claytoniana*	S5	-	-	-	-	-	-	7	0	ELC-37, ELC-39, ELC-152, ELC-81, ELC-129, ELC-82, ELC-8, ELC-59, ELC-14, ELC-117, ELC-115, ELC-36, ELC-116
Iris sp.	*Iris sp.*		-	-	-	-	-	-	-	-	ELC-156
Jack Pine	*Pinus banksiana*	S5	-	-	-	-	-	-	5	3	ELC-136, ELC-152, ELC-153, ELC-81, ELC-130, ELC-129, ELC-58, ELC-8, ELC-62, ELC-117, ELC-10, ELC-115, ELC-55, ELC-95, ELC-85, ELC-61, ELC-127
Jewelweed sp.	*Impatiens sp.*		-	-	-	-	-	-	-	-	ELC-148
Kalm's Lobelia	*Lobelia kalmii*	S5	-	-	-	-	-	-	9	-5	ELC-44
Kidney-leaved Violet	*Viola renifolia*	S5	-	-	-	-	-	-	7	-3	ELC-137, ELC-136, ELC-132, ELC-148, ELC-151, ELC-151, ELC-153, ELC-115, ELC-108
Knight's Plume Moss	*Ptilium crista-castrensis*	S5	-	-	-	-	-	-	-	-	ELC-137, ELC-136, ELC-145, ELC-81, ELC-21, ELC-100
Labrador Violet	*Viola labradorica*	S5	-	-	-	-	-	-	3	0	ELC-136, ELC-142, ELC-143, ELC-153, ELC-62
Ladder Lichen	*Cladonia verticillata*	S4S5	-	-	-	-	-	-	-	-	ELC-128
Lady Fern sp.	*Athyrium sp.*		-	-	-	-	-	-	-	-	ELC-143, ELC-81, ELC-117
Lake Sedge	*Carex lacustris*	S5	-	-	-	-	-	-	5	-5	ELC-100, ELC-101
Large Bird's-foot Trefoil	*Lotus uliginosus*	SNA	-	-	-	-	-	-	-	-	ELC-147
Large-leaved Aster	*Eurybia macrophylla*	S5	-	-	-	-	-	-	5	5	ELC-137, ELC-136, ELC-132, ELC-145, ELC-142, ELC-151, ELC-151, ELC-153, ELC-130, ELC-129, ELC-82, ELC-115, ELC-85, ELC-64, ELC-147
Leatherleaf	*Chamaedaphne calyculata*	S5	-	-	-	-	-	-	9	-5	ELC-154, ELC-156, ELC-159, ELC-131, ELC-72, ELC-41, ELC-42, ELC-75, ELC-24
Lesser Pyrola	*Pyrola minor*	S4	-	-	-	-	-	-	-	0	ELC-138
Limber Honeysuckle	*Lonicera dioica*	S5	-	-	-	-	-	-	5	3	ELC-137, ELC-143
Lindley's Aster	*Symphyotrichum ciliolatum*	S5	-	-	-	-	-	-	6	5	ELC-85, ELC-17, ELC-64
Lipstick Powderhorn	*Cladonia macilenta*	S5	-	-	-	-	-	-			ELC-41, ELC-58
Long-stalked Sedge	*Carex pedunculata*	S5	-	-	-	-	-	-	5	3	ELC-137, ELC-145, ELC-142, ELC-81
Mannagrass sp.	*Glyceria sp.*		-	-	-	-	-	-	-	-	ELC-118
Marsh Cinquefoil	*Comarum palustre*	S5	-	-	-	-	-	-	7	-5	ELC-156, ELC-159, ELC-131, ELC-40, ELC-100
Marsh Fern	*Thelypteris palustris*	S5	-	-	-	-	-	-	5	-3	ELC-98
Meadow Horsetail	*Equisetum pratense*	S5	-	-	-	-	-	-	8	-3	ELC-18
Meadow Willow	*Salix petiolaris*	S5	-	-	-	-	-	-	3	-3	ELC-148
Meadow-rue sp.	*Thalictrum sp.*		-	-	-	-	-	-			ELC-110
Mountain Fly-honeysuckle	*Lonicera villosa*	S5	-	-	-	-	-	-	10	-3	ELC-148

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Mountain Maple	*Acer spicatum*	S5	-	-	-	-	-	-	6	3	ELC-136, ELC-136, ELC-132, ELC-145, ELC-143, ELC-151, ELC-151, ELC-153, ELC-81, ELC-129, ELC-82, ELC-14, ELC-36, ELC-28, ELC-71
Mountain-ash sp.	*Sorbus sp.*		-	-	-	-	-	-	-	-	ELC-138, ELC-136, ELC-132, ELC-128, ELC-37, ELC-123
Naked Mitrewort	*Mitella nuda*	S5	-	-	-	-	-	-	6	-3	ELC-138, ELC-145, ELC-143, ELC-148, ELC-153, ELC-37, ELC-100, ELC-108
Narrow-leaved Cattail	*Typha angustifolia*	SNA	-	-	-	-	-	Y	-	-5	ELC-153
North American Red Raspberry	*Rubus idaeus ssp. strigosus*	S5	-	-	-	-	-	-	2	3	ELC-148, ELC-152, ELC-153, ELC-130, ELC-62, ELC-14
Northern Beech Fern	*Phegopteris connectilis*	S5	-	-	-	-	-	-	8	3	ELC-140
Northern Bush-honeysuckle	*Diervilla lonicera*	S5	-	-	-	-	-	-	5	5	ELC-145, ELC-142, ELC-151, ELC-151, ELC-81, ELC-129, ELC-82, ELC-58, ELC-8, ELC-62, ELC-59, ELC-14, ELC-4, ELC-115, ELC-55, ELC-36, ELC-36, ELC-71, ELC-37, ELC-104, ELC-13, ELC-69
Northern Coral Lichen	*Sphaerophorus globosus*	S4	-	-	-	-	-	-			ELC-128
Northern Ground-cedar	*Diphasiastrum complanatum*	S5	-	-	-	-	-	-	5	3	ELC-136, ELC-58
Northern Peat Moss	*Sphagnum capillifolium*	S5	-	-	-	-	-	-			ELC-75
Northern Pitcher Plant	*Sarracenia purpurea*	S5	-	-	-	-	-	-	10	-5	ELC-75
Northern Starflower	*Lysimachia borealis*	S5	-	-	-	-	-	-	6	0	ELC-137, ELC-138, ELC-136, ELC-132, ELC-145, ELC-143, ELC-151, ELC-151, ELC-152, ELC-153, ELC-130, ELC-129, ELC-82, ELC-58, ELC-8, ELC-62, ELC-59, ELC-14, ELC-14, ELC-4, ELC-4, ELC-117, ELC-115, ELC-36, ELC-28, ELC-71, ELC-25, ELC-120, ELC-65, ELC-123, ELC-140, ELC-134
Northern Stiff Clubmoss	*Spinulum canadense*	S4?	-	-	-	-	-	-	6	0	ELC-24
Northern Water-horehound	*Lycopus uniflorus*	S5	-	-	-	-	-	-	5	-5	ELC-98
Northern Willowherb	*Epilobium ciliatum*	S5	-	-	-	-	-	-	3	-3	ELC-18, ELC-93
One-flowered Wintergreen	*Moneses uniflora*	S5	-	-	-	-	-	-	10	0	ELC-145
One-sided Wintergreen	*Orthilia secunda*	S5	-	-	-	-	-	-	5	0	ELC-132, ELC-47
Ostrich Fern	*Matteuccia struthiopteris*	S5	-	-	-	-	-	-	5	0	ELC-143
Oxeye Daisy	*Leucanthemum vulgare*	SNA	-	-	-	-	-	Y		5	ELC-128, ELC-85, ELC-17
Pale Bog Laurel	*Kalmia polifolia*	S5	-	-	-	-	-	-	10	-5	ELC-156, ELC-130, ELC-159, ELC-131, ELC-72, ELC-41, ELC-42, ELC-75, ELC-24
Pale Corydalis	*Capnoides sempervirens*	S5	-	-	-	-	-	-	7	5	ELC-14, ELC-128, ELC-66, ELC-13
Panicled Aster	*Symphyotrichum lanceolatum*	S5	-	-	-	-	-	-	3	-3	ELC-146

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Paper Birch	*Betula papyrifera*	S5	-	-	-	-	-	-	2	3	ELC-137, ELC-138, ELC-136, ELC-145, ELC-151, ELC-151, ELC-152, ELC-153, ELC-156, ELC-81, ELC-130, ELC-129, ELC-82, ELC-58, ELC-59, ELC-14, ELC-14, ELC-117, ELC-10, ELC-115, ELC-71, ELC-104, ELC-15, ELC-61
Pearly Everlasting	*Anaphalis margaritacea*	S5	-	-	-	-	-	-	3	3	ELC-58, ELC-62, ELC-128, ELC-112
Peck's Sedge	*Carex peckii*	S5	-	-	-	-	-	-	6	5	ELC-137, ELC-142, ELC-143, ELC-14, ELC-10
Pin Cherry	*Prunus pensylvanica*	S5	-	-	-	-	-	-	3	3	ELC-130, ELC-58, ELC-14, ELC-4, ELC-117, ELC-10, ELC-115, ELC-15
Pink Lady's-slipper	*Cypripedium acaule*	S5	-	-	-	-	-	-	7	-3	ELC-129, ELC-117, ELC-104, ELC-13
Pink Pyrola	*Pyrola asarifolia*	S5	-	-	-	-	-	-	7	-3	ELC-137, ELC-132, ELC-145, ELC-142
Poverty Oatgrass	*Danthonia spicata*	S5	-	-	-	-	-	-	5	5	ELC-136, ELC-142, ELC-130, ELC-129
Prairie Willow	*Salix humilis*	S5	-	-	-	-	-	-	7	3	ELC-4, ELC-117
Prickly Rose	*Rosa acicularis*	S5	-	-	-	-	-	-	5	3	ELC-136, ELC-145, ELC-142, ELC-142, ELC-151, ELC-151, ELC-152, ELC-153, ELC-8, ELC-4, ELC-18, ELC-39, ELC-15, ELC-120, ELC-147, ELC-144
Purple-flowering Raspberry	*Rubus odoratus*	S5	-	-	-	-	-	-	3	5	ELC-137
Purple-stemmed Aster	*Symphyotrichum puniceum*	S5	-	-	-	-	-	-	6	-5	ELC-98, ELC-100, ELC-93, ELC-110
Pussy Willow	*Salix discolor*	S5	-	-	-	-	-	-	3	-3	ELC-101, ELC-85
Pyrola sp.	*Pyrola sp.*		-	-	-	-	-	-	-	-	ELC-100, ELC-146, ELC-144
Rattlesnake-plantain sp.	*Goodyera sp.*		-	-	-	-	-	-	-	-	ELC-123
Red Clover	*Trifolium pratense*	SNA	-	-	-	-	-	Y	-	3	ELC-112
Red Columbine	*Aquilegia canadensis*	S5	-	-	-	-	-	-	5	3	ELC-143
Red Elderberry	*Sambucus racemosa*	S5	-	-	-	-	-	-	5	3	ELC-143, ELC-129
Red Maple	*Acer rubrum*	S5	-	-	-	-	-	-	4	0	ELC-58, ELC-117, ELC-115, ELC-128, ELC-65
Red Pine	*Pinus resinosa*	S5	-	-	-	-	-	-	8	3	ELC-81, ELC-130, ELC-41, ELC-14, ELC-55, ELC-128, ELC-36, ELC-85, ELC-47
Red Raspberry	*Rubus idaeus*	S5	-	-	-	-	-	-	2	3	ELC-136, ELC-82, ELC-128, ELC-64, ELC-69
Red-osier Dogwood	*Cornus sericea*	S5	-	-	-	-	-	-	2	-3	ELC-136, ELC-145, ELC-143, ELC-148, ELC-39, ELC-25, ELC-93, ELC-47
Red-stemmed Feather Moss	*Pleurozium schreberi*	S5	-	-	-	-	-	-	-	-	ELC-138, ELC-145, ELC-151, ELC-151, ELC-153, ELC-81, ELC-130, ELC-129, ELC-82, ELC-58, ELC-62, ELC-59, ELC-117, ELC-10, ELC-115, ELC-36, ELC-71, ELC-21, ELC-21, ELC-95, ELC-61, ELC-120, ELC-65, ELC-127
Reindeer Lichen	*Cladonia arbuscula*	S5	-	-	-	-	-	-	-	-	ELC-72, ELC-128
Rock Polypody	*Polypodium virginianum*	S5	-	-	-	-	-	-	7	5	ELC-47

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Rose Twisted-stalk	*Streptopus lanceolatus*	S5	-	-	-	-	-	-	7	3	ELC-137, ELC-136, ELC-145, ELC-151, ELC-151, ELC-153, ELC-81, ELC-82
Rough Avens	*Geum laciniatum*	S4	-	-	-	-	-	-	4	-3	ELC-85
Rough-leaved Mountain Rice	*Oryzopsis asperifolia*	S5	-	-	-	-	-	-	6	5	ELC-137, ELC-136, ELC-145, ELC-142, ELC-151, ELC-151, ELC-152, ELC-130, ELC-129, ELC-82, ELC-14, ELC-4
Round-branched Tree-clubmoss	*Dendrolycopodium dendroideum*	S5	-	-	-	-	-	-	7	3	ELC-137, ELC-136, ELC-132, ELC-151, ELC-151, ELC-152, ELC-81, ELC-130, ELC-82, ELC-58, ELC-59, ELC-59, ELC-14, ELC-117, ELC-115, ELC-37, ELC-66, ELC-116, ELC-65, ELC-69
Round-leaved Sundew	*Drosera rotundifolia*	S5	-	-	-	-	-	-	7	-5	ELC-156, ELC-41, ELC-44
Running Clubmoss	*Lycopodium clavatum*	S5	-	-	-	-	-	-	6	0	ELC-136, ELC-132, ELC-145, ELC-62, ELC-14, ELC-115, ELC-128, ELC-65
Saskatoon	*Amelanchier alnifolia*	S4?	-	-	-	-	-	-	8	3	ELC-25
Sedge sp.	*Carex sp.*	-	-	-	-	-	-	-	-	-	ELC-154, ELC-37, ELC-25, ELC-77
Sensitive Fern	*Onoclea sensibilis*	S5	-	-	-	-	-	-	4	-3	ELC-128
Serviceberry	*Amelanchier sp.*	S5	-	-	-	-	-	-	-	-	ELC-82, ELC-8, ELC-14, ELC-4
Serviceberry sp.	*Amelanchier sp.*	-	-	-	-	-	-	-	-	-	ELC-136, ELC-142, ELC-143, ELC-151, ELC-151, ELC-152, ELC-130, ELC-129, ELC-72, ELC-58, ELC-59, ELC-4, ELC-36, ELC-95, ELC-104, ELC-13, ELC-120, ELC-146, ELC-147
Shaggy Gooseneck Moss	*Rhytidiadelphus triquetrus*	S5	-	-	-	-	-	-	-	-	ELC-145, ELC-142, ELC-151, ELC-151, ELC-36, ELC-28, ELC-98, ELC-44
Shaggy Peat Moss	*Sphagnum squarrosum*	S5	-	-	-	-	-	-	-	-	ELC-159, ELC-129, ELC-42, ELC-8, ELC-75
Shining Firmoss	*Huperzia lucidula*	S5	-	-	-	-	-	-	5	0	ELC-151, ELC-151, ELC-152, ELC-153
Shinleaf	*Pyrola elliptica*	S5	-	-	-	-	-	-	5	5	ELC-129
Showy Lady's-slipper	*Cypripedium reginae*	S4	-	-	-	-	-	-	9	-3	ELC-100
Showy Mountain-ash	*Sorbus decora*	S5	-	-	-	-	-	-	8	3	ELC-132, ELC-145, ELC-143, ELC-129, ELC-82, ELC-58, ELC-59, ELC-117, ELC-10, ELC-18
Shrubby Cinquefoil	*Dasiphora fruticosa*	S5	-	-	-	-	-	-	8	-3	ELC-44
Skunk Currant	*Ribes glandulosum*	S5	-	-	-	-	-	-	6	-3	ELC-136, ELC-148, ELC-152, ELC-153, ELC-130, ELC-117, ELC-115
Small Bog Cranberry	*Vaccinium microcarpum*	S4?	-	-	-	-	-	-	8	-5	ELC-136, ELC-72, ELC-41, ELC-42, ELC-75, ELC-24
Small Cranberry	*Vaccinium oxycoccos*	S5	-	-	-	-	-	-	10	-5	ELC-138, ELC-156, ELC-40, ELC-44
Small Enchanter's Nightshade	*Circaea alpina*	S5	-	-	-	-	-	-	6	-3	ELC-28
Smooth Arrowwood	*Viburnum recognitum*	S4	-	-	-	-	-	-	-	-	ELC-127
Smooth Serviceberry	*Amelanchier laevis*	S5	-	-	-	-	-	-	5	5	ELC-132
Smooth Wild Strawberry	*Fragaria virginiana ssp. glauca*	S4S5	-	-	-	-	-	-	2	3	ELC-17
Sow-thistle sp.	*Sonchus sp.*		-	-	-	-	-	-	-	-	ELC-134

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Spinulose Wood Fern	*Dryopteris carthusiana*	S5	-	-	-	-	-	-	5	-3	ELC-81, ELC-117, ELC-128
Spotted Jewelweed	*Impatiens capensis*	S5	-	-	-	-	-	-	4	-3	ELC-101, ELC-85
Spotted Joe Pye Weed	*Eutrochium maculatum*	S5	-	-	-	-	-	-	3	-5	ELC-98
Spreading Dogbane	*Apocynum androsaemifolium*	S5	-	-	-	-	-	-	3	5	ELC-115, ELC-55, ELC-55, ELC-128
Squashberry	*Viburnum edule*	S5	-	-	-	-	-	-	8	-3	ELC-25
Stairstep Moss	*Hylocomium splendens*	S5	-	-	-	-	-	-	-	-	ELC-59, ELC-25
Stiff Clubmoss	*Spinulum annotinum*	S5	-	-	-	-	-	-	6	0	ELC-137, ELC-153, ELC-129, ELC-82, ELC-72, ELC-59, ELC-117, ELC-71
Stinging Nettle	*Urtica dioica*	S5	-	-	-	-	-	-	-	0	ELC-148
Sundew	*Drosera sp.*	S4	-	-	-	-	-	-	-	-	ELC-44
Swamp Dock	*Rumex verticillatus*	S4	-	-	-	-	-	-	7	-5	ELC-101
Swamp Fly-honeysuckle	*Lonicera oblongifolia*	S5	-	-	-	-	-	-	8	-5	ELC-25, ELC-110
Swamp Gooseberry	*Ribes hirtellum*	S5	-	-	-	-	-	-	6	-3	ELC-93
Swamp Red Currant	*Ribes triste*	S5	-	-	-	-	-	-	6	-5	ELC-132, ELC-145, ELC-142, ELC-143, ELC-148, ELC-152, ELC-81, ELC-8, ELC-14, ELC-98, ELC-108, ELC-93, ELC-146
Sweet Gale	*Myrica gale*	S5	-	-	-	-	-	-	6	-5	ELC-154, ELC-156, ELC-159, ELC-131, ELC-44
Sweet-scented Bedstraw	*Galium odoratum*	SNA	-	-	-	-	-	-	-	5	ELC-82
Tall Bluebells	*Mertensia paniculata*		-	-	-	-	-	-	-	0	ELC-143, ELC-145
Tall Bluebells	*Mertensia paniculata*	S5	-	-	-	-	-	-	-	0	ELC-145
Tamarack	*Larix laricina*	S5	-	-	-	-	-	-	7	-3	ELC-136, ELC-132, ELC-148, ELC-154, ELC-159, ELC-72, ELC-75, ELC-117, ELC-24, ELC-108, ELC-77, ELC-118
Thin-leaved Snowberry	*Symphoricarpos albus*	S5	-	-	-	-	-	-	7	3	ELC-144
Thorn Lichen	*Cladonia uncialis*	S5	-	-	-	-	-	-			ELC-130
Three-flowered Bedstraw	*Galium triflorum*	S5	-	-	-	-	-	-	4	3	ELC-132, ELC-142, ELC-148, ELC-81, ELC-25, ELC-108, ELC-110, ELC-144
Three-leaved False Solomon's Seal	*Maianthemum trifolium*	S5	-	-	-	-	-	-	10	-5	ELC-156, ELC-72, ELC-41, ELC-75, ELC-24, ELC-77
Three-petalled Bedstraw	*Galium trifidum*	S5	-	-	-	-	-	-	5	-3	ELC-151, ELC-151, ELC-28, ELC-98
Three-toothed Cinquefoil	*Sibbaldia tridentata*	S5	-	-	-	-	-	-	10	3	ELC-13
Three-way Sedge	*Dulichium arundinaceum*	S5	-	-	-	-	-	-	7	-5	ELC-44
Trailing Arbutus	*Epigaea repens*	S5	-	-	-	-	-	-	9	3	ELC-62, ELC-4, ELC-10, ELC-36, ELC-66

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Trembling Aspen	*Populus tremuloides*	S5	-	-	-	-	-	-	2	0	ELC-137, ELC-145, ELC-142, ELC-143, ELC-151, ELC-151, ELC-152, ELC-153, ELC-154, ELC-81, ELC-129, ELC-82, ELC-58, ELC-8, ELC-62, ELC-59, ELC-14, ELC-117, ELC-10, ELC-55, ELC-28, ELC-147
Tussock Cottongrass	*Eriophorum vaginatum*	S5	-	-	-	-	-	-	10	-5	ELC-156, ELC-41, ELC-42, ELC-75
Tussock Sedge	*Carex stricta*	S5	-	-	-	-	-	-	4	-5	ELC-148, ELC-156, ELC-159
Twinflower	*Linnaea borealis*	S5	-	-	-	-	-	-	7	0	ELC-138, ELC-136, ELC-132, ELC-151, ELC-151, ELC-152, ELC-129, ELC-62, ELC-59, ELC-14, ELC-10, ELC-36, ELC-100, ELC-61
Velvet-leaved Blueberry	*Vaccinium myrtilloides*	S5	-	-	-	-	-	-	7	-3	ELC-136, ELC-132, ELC-142, ELC-151, ELC-151, ELC-152, ELC-129, ELC-82, ELC-41, ELC-58, ELC-62, ELC-59, ELC-75, ELC-14, ELC-4, ELC-117, ELC-10, ELC-115, ELC-97, ELC-18, ELC-61, ELC-118, ELC-140
Virginia St. John's-wort	*Triadenum virginicum*	S4	-	-	-	-	-	-	10	-5	ELC-40
Water Horsetail	*Equisetum fluviatile*	S5	-	-	-	-	-	-	7	-5	ELC-159, ELC-42, ELC-100, ELC-43
Wavy-leaved Broom Moss	*Dicranum polysetum*	S5	-	-	-	-	-	-	-	-	ELC-137, ELC-142, ELC-62, ELC-59, ELC-4, ELC-10
Western Thimbleberry	*Rubus parviflorus*	S4	-	-	-	-	-	-	-	-	ELC-137
White Baneberry	*Actaea pachypoda*	S5	-	-	-	-	-	-	6	5	ELC-18, ELC-144
White Meadowsweet	*Spiraea alba*	S5	-	-	-	-	-	-	3	-3	ELC-132, ELC-148, ELC-154, ELC-159, ELC-131, ELC-110
White Spruce	*Picea glauca*	S5	-	-	-	-	-	-	6	3	ELC-137, ELC-145, ELC-142, ELC-143, ELC-151, ELC-151, ELC-152, ELC-153, ELC-81, ELC-14, ELC-128, ELC-36, ELC-71, ELC-123, ELC-47, ELC-127
White Trillium	*Trillium grandiflorum*	S5	-	-	-	-	-	-	5	3	ELC-145, ELC-142, ELC-143, ELC-81
Wild Calla	*Calla palustris*	S5	-	-	-	-	-	-	8	-5	ELC-42, ELC-40, ELC-101
Wild Lily-of-the-valley	*Maianthemum canadense*	S5	-	-	-	-	-	-	5	3	ELC-137, ELC-136, ELC-132, ELC-145, ELC-142, ELC-143, ELC-151, ELC-151, ELC-152, ELC-153, ELC-153, ELC-81, ELC-129, ELC-82, ELC-58, ELC-8, ELC-62, ELC-59, ELC-14, ELC-4, ELC-117, ELC-10, ELC-115, ELC-37, ELC-95, ELC-104, ELC-104, ELC-61, ELC-13, ELC-118, ELC-120, ELC-43, ELC-47, ELC-69, ELC-127, ELC-134
Wild Lily-of-the-valley	*Maianthemum canadense ssp. canadense*	S5	-	-	-	-	-	-	5	3	ELC-55, ELC-128, ELC-36, ELC-100, ELC-64, ELC-144

Common Name	Scientific Name	S_Rank[1]	SARO[2]	SARA[3]	Regionally Rare (R)[4]	Artic Alpine Plant (Δ)[4]	Provincially Rare (P)[4]	Introduced Species (I)[4]	Coefficient Conservation[5]	Coefficient Wetness[6]	ELC SITE No.
Wild Sarsaparilla	*Aralia nudicaulis*	S5	-	-	-	-	-	-	4	3	ELC-137, ELC-136, ELC-145, ELC-142, ELC-143, ELC-153, ELC-81, ELC-129, ELC-82, ELC-58, ELC-8, ELC-59, ELC-14, ELC-115, ELC-55, ELC-128, ELC-71, ELC-95, ELC-18, ELC-39, ELC-25, ELC-61, ELC-120, ELC-65, ELC-140, ELC-140
Wild Strawberry	*Fragaria virginiana*	S5	-	-	-	-	-	-	2	3	ELC-132, ELC-142, ELC-153, ELC-128, ELC-147
Willow	*Salix sp.*	-	-	-	-	-	-	-	-	-	ELC-148, ELC-152, ELC-153, ELC-154, ELC-131
Willow sp.	*Salix sp.*	-	-	-	-	-	-	-	-	-	ELC-101
Wood Anemone	*Anemone quinquefolia*	S5	-	-	-	-	-	-	7	0	ELC-132, ELC-145, ELC-142, ELC-143, ELC-151, ELC-151, ELC-152, ELC-153, ELC-37, ELC-147
Wood Fern sp.	*Dryopteris sp.*		-	-	-	-	-	-	-	-	ELC-47
Woodland Horsetail	*Equisetum sylvaticum*	S5	-	-	-	-	-	-	7	-3	ELC-145, ELC-152, ELC-153, ELC-81, ELC-129, ELC-82, ELC-117, ELC-115, ELC-18, ELC-111, ELC-77, ELC-147
Woodland Sedge	*Carex blanda*	S5	-	-	-	-	-	-	3	0	ELC-143
Woodland Strawberry	*Fragaria vesca*	S5	-	-	-	-	-	-	4	3	ELC-145, ELC-143, ELC-152, ELC-81, ELC-98, ELC-100
Woolly Blue Violet	*Viola sororia*	S5	-	-	-	-	-	-	4	0	ELC-142
Woolly-fruit Sedge	*Carex lasiocarpa*	S5	-	-	-	-	-	-	8	-5	ELC-44
Wulf's Peat Moss	*Sphagnum wulfianum*	S5	-	-	-	-	-	-	-	-	ELC-131, ELC-129, ELC-72, ELC-41, ELC-8, ELC-59, ELC-24, ELC-138
Yellow Clintonia	*Clintonia borealis*	S5	-	-	-	-	-	-	7	0	ELC-137, ELC-136, ELC-132, ELC-145, ELC-142, ELC-151, ELC-151, ELC-152, ELC-153, ELC-81, ELC-129, ELC-82, ELC-58, ELC-8, ELC-62, ELC-59, ELC-14, ELC-117, ELC-115, ELC-128, ELC-36, ELC-28, ELC-71, ELC-95, ELC-100, ELC-18, ELC-77, ELC-116, ELC-65, ELC-123, ELC-127
Yellow Marsh Marigold	*Caltha palustris*	S5	-	-	-	-	-	-	5	-5	ELC-148, ELC-98
Yellow Violet	*Viola pubescens*	S5	-	-	-	-	-	-	5	3	ELC-142, ELC-143

1. Subnational Conservation Rank: Presumed Extirpated (SX), Possibly Extirpated (SH), Critically Imperiled (S1), Imperiled (S2), Vulnerable (S3), Apparently Secure (S4), Secure (S5)
2. Species At Risk Ontario, as per O. Reg. 230/08 made under the Endangered Species Act. Special Concern (SC), Threatened (THR) and Endangered (END).
3. Species at Risk Act. Species protected under Schedule 3 of the Act.
4. Regionally Rare, Artic Alpine Plant, Provincially Rare and Introduced, as documented by the Checklist of Vascular Plants of Thunder Bay District (Thunder Bay Field Naturalists, 2021).
5. Coefficient of Conservation. Indication of sensitivity to anthropogenic disturbances, with the highest value, 10, representing species with a very narrow range of tolerance.
6. Coefficient of Wetness. A positive value indicates the species occurs in upland habitats, while a negative value indicates they occur in wetlands. The highest and lowest value of +5 and -5 indicates obligate species to upland and wetlands, respectively.

ATTACHMENT 6.4-A-3

Ecological Land Classification Data

Attachment 6.4-A-3: Ecological Land Classification Data

Table 1: Ecological Land Classification: Soil Analysis

Site ID No.	Ecosite[1]	Ecosite Description	Substrate Depth	Parent Material	Soil Moisture	Texture	Community Age	Standing Snags	Deadfall Logs	Slope	Topography
ELC-4	B049TlDn	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated		Mineral	Dry-mesic	Coarse Sand silt					
ELC-8	B046S	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	Shallow	Mineral	Dry-mesic	Sand loam	Pioneer	Occasional	Dominant	Gentle	Rolling Upland
ELC-10	B050TlMn	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	Shallow	Mineral	Dry-mesic	Fine sand					
ELC-13	B012Tt	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	10 cm	Mineral		Coarse loamy over rock	Mature	Occasional	Occasional	Steep	
ELC-14	B055TtDn	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	NA	Mineral	Dry-mesic	Fine sand loam	Young	Rare	Occasional	Gentle	Rolling Upland
ELC-15	B050TlMn	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	25cm	Mineral	Mesic	Silty sand over rock till	Young	Rare	Abundant	Gentle	
ELC-17	B110N	Fresh, Silty to Fine Loamy: Pine - Black Spruce Conifer	> 60	Mineral	Mesic	Silty clay	Mid-aged	Abundant	Abundant	None	
ELC-18	B114TtDn	Moist, Fine: Pine - Black Spruce Conifer					Mid-aged	Occasional	Occasional	Gentle	
ELC-21	B101Tt	Fresh, Silty to Fine Loamy: Red Pine - White Pine Conifer		Mineral		Si	Mature	Rare	Dominant	None	
ELC-24	B128TtDn	Intermediate Conifer Swamp	NA	Organic	Wet	Organic					
ELC-25	B133TL	Intermediate Conifer Swamp	70 cm	Organic	Wet	Organic	Mid-aged	Rare	Occasional	None	
ELC-28	B008N	Fresh, Silty to Fine Loamy: Maple Hardwood	Water table at 35 cm	Mineral	Mesic	mS	Pioneer	Dominant	Dominant	None	Lacustrine
ELC-36	B054Tt	Dry, Sandy. Aspen - Birch Hardwood	>120 cm, 60 cm water table	Mineral	Mesic	L, MR = 3	Mature	Abundant	Occasional	None	Lacustrine
ELC-37	B131TtMDn	Maple Hardwood Swamp		Mineral		Silty clay mottles at 30cm	Mid-aged	Occasional	Abundant	Gentle	
ELC-39	B104Tt	Intolerant Hardwood Swamp	60 cm	Mineral	Mesic	Silty clay	Young	Rare	Abundant	None	
ELC-40	B139S Dn	Poor Fen		Organic	Wet	Organic	Old Growth	Rare	Rare	None	
ELC-41	B136TlDn	Sparse Treed Fen	NA	Organic	Wet						
ELC-42	B136TlDn	Sparse Treed Fen	NA	Organic	Wet	Organic					
ELC-43	B135S	Sparse Treed Fen	>120 m		Wet	Organic	Mature	Occasional	Occasional	None	
ELC-44	B141	Mineral Meadow Marsh	>120	Organic	Wet	Organic	Old Growth		Rare	None	
ELC-47	B104Tt	Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood	Very shallow	Mineral	Dry-mesic	Silt with boulders	Mid-aged	Abundant	Abundant	Gentle	
ELC-55	B049Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	N/a	Mineral	Mesic	N/a	Mature	Occasional	Abundant	Gentle	Riverine
ELC-58	B059Tt/Tl	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	NA	Mineral	Dry-mesic	Sand silt clay	Young	Rare	Rare	Moderate	Rolling Upland
ELC-59	B049Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	NA	Mineral	Dry-mesic	Fine sand with clay; organics	Pioneer	Rare	Dominant	Gentle	Rolling Upland

Site ID No.	Ecosite[1]	Ecosite Description	Substrate Depth	Parent Material	Soil Moisture	Texture	Community Age	Standing Snags	Deadfall Logs	Slope	Topography
ELC-61	B050TlMn	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	>50 cm			Silty sand, rock, till	Mature	Occasional	Abundant	Gentle	
ELC-62	B049TlMn	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	NA	Mineral	Dry-mesic	Sand loam					
ELC-64	B034TlDn	Dry, Sandy: Jack Pine - Black Spruce Dominated	>50	Mineral	Mesic	Silty loam	Young	Rare	Occasional	Gentle	
ELC-65	B114Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	>100 cm			Silty loam	Mid-aged	Rare	Occasional	None	
ELC-66	B012Tl	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	<10 cm	Mineral	Dry	Bedrock	Mid-aged	Occasional	Occasional	Moderate	
ELC-69	B035TlDn	Dry, Sandy: Pine - Black Spruce Conifer	>30 cm	Mineral	Dry	Fine sand	Young	Rare	Occasional	Gentle	
ELC-71	B037Tt	Fresh, Silty to Fine Loamy: Spruce - Fir Conifer	>120 cm	Mineral	Dry	LmS	Mid-aged	Rare	Occasional	Gentle	Riverine
ELC-72	B128TtDn	Intermediate Conifer Swamp		Organic	Wet	Organic					
ELC-75	B128TtDn	Intermediate Conifer Swamp	NA	Organic	Wet	Organic					
ELC-77	B223Tt	Intermediate Conifer Swamp	>80 cm	Mineral	Wet-mesic	Silt	Mature	Occasional	Abundant	None	
ELC-81	B104TtMn	Fresh, Silty to Fine Loamy: Aspen - Birch Hardwood	NA	Mineral	Mesic	Silt loam					
ELC-82	B055TtDn	Dry to Fresh, Coarse: Aspen - Birch Hardwood		Mineral	Dry-mesic	Sandy loam					
ELC-84	B55Tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood									
ELC-85	B078N	Fresh, Clayey: Aspen - Birch Hardwood		Mineral		SiC	Pioneer	Abundant	Rare	None	
ELC-88	B052Tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood	>120 cm	Mineral	Dry-mesic	L	Mid-aged	Rare	Occasional	Gentle	Riverine
ELC-93	B149N	Mineral Meadow Marsh	100 cm	Organic	Wet	Organic	Mid-aged	Rare	Occasional	None	
ELC-95	B101Tt	Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood	30	Mineral	Dry-mesic	Silt, boulders	Mature	Occasional	Occasional	Moderate	
ELC-97	B135S Dn	Organic Thicket Swamp	70 cm	Organic		Organic	Mid-aged	Rare	Occasional	None	
ELC-98	B135S Dn	Organic Thicket Swamp	56	Organic		Organic	Mid-aged	Rare	Rare	None	Bottomland
ELC-100	B128Tt	Sparse Treed Fen		Organic	Wet		Mature	Rare	Occasional	None	
ELC-101	B149n	Mineral Meadow Marsh	>80 cm organics	Organic	Wet		Mature			Gentle	
ELC-104	B070Tt	Unknown	>100 cm	Mineral	Dry	Medium sand	Mid-aged	Occasional	Occasional	Moderate	
ELC-108	B114tt	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	Si	Mineral			Mature	Rare	Rare	None	
ELC-109	B112S Dn	Moist. Fine: Shrub					Mid-aged	Rare	Rare	Gentle	
ELC-110	B134S	Organic Thicket Swamp	>80 cm	Mineral	Wet	Sandy silt	Mid-aged			None	
ELC-111	B134S	Moist, Coarse: Shrub	>50	Mineral	Wet	Silty clay	Mid-aged	Rare	Occasional	None	
ELC-112	B30N	Pavement/Concrete	80 cm	Mineral	Dry	Sand	Young			Moderate	
ELC-115	B049TlMn	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	NA	Organic	Dry-mesic						
ELC-116	B55Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	60 cm	Mineral	Mesic	Silt over fine to moderate sand	Mature	Abundant	Abundant	Moderate	

Site ID No.	Ecosite[1]	Ecosite Description	Substrate Depth	Parent Material	Soil Moisture	Texture	Community Age	Standing Snags	Deadfall Logs	Slope	Topography
ELC-117	B049TIMn	Dry to Fresh, Coarse: Red Pine - White Pine Conifer	NA	Mineral	Mesic	Fine sand clay	Young	Rare	Occasional	Gentle	Rolling Upland
ELC-118	B049TtMn	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	>70	Mineral		Medium sand	Mid-aged	Occasional	Abundant	Gentle	
ELC-120	B050TtDn	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	>100 cm	Mineral	Dry-mesic	Medium sand	Mid-aged	Rare	Occasional	None	
ELC-123	B035Tt	Rock Barren	>50cm	Mineral	Dry-mesic	Medium sand (gravel)	Mid-aged	Rare	Occasional	Moderate	
ELC-127	B055TtDn	Dry to Fresh, Coarse: Aspen - Birch Hardwood	>80 cm	Mineral	Dry-mesic	Sand	Young	Rare	Rare	Steep	
ELC-128	B008N	Unknown	0, bedrock exposed	Mineral	Dry	Exposed bedrock	Mid-aged	Rare	Rare	Gentle	Rolling Upland
ELC-129	B049TtDn	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	NA	Mineral	Dry-mesic	Silt clay					
ELC-130	B049TlDn	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated	Shallow	Mineral	Dry	Organic leaf deposits on bedrock					
ELC-131	B134S	Mineral Meadow Marsh	NA	Mineral	Wet	Silt clay	Young	Rare	Rare	None	Bottomland
ELC-132	B050TtDn	Dry to Fresh, Coarse: Pine - Black Spruce Conifer		Mineral	Mesic	Sandy silty					
ELC-134	B104Tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood	18 cm	Mineral	Dry	Silt	Mid-aged	Rare	Occasional	Gentle	
ELC-136	B055Tt/Tl	Dry to Fresh, Coarse: Aspen - Birch Hardwood		Mineral	Dry		Pioneer	Rare	Occasional	Gentle	Rolling Upland
ELC-137	B070TtDn	Moist, Coarse: Aspen - Birch Hardwood	NA	Mineral	Mesic	Loamy	Mid-aged	Occasional	Occasional	Moderate	Rolling Upland
ELC-138	B129TtDn	Rich Conifer Swamp		Organic	Wet						
ELC-140	B133Tt	Dry to Fresh, Coarse: Pine - Black Spruce Conifer	63 cm	Organic	Wet-mesic	Organic	Mid-aged	Occasional	Occasional	None	
ELC-142	B055TlDn	Dry to Fresh, Coarse: Aspen - Birch Hardwood	NA	Mineral	Mesic	Clay					
ELC-143	B119Tt/Tl	Dry, Sandy. Aspen - Birch Hardwood	NA	Mineral	Mesic	Silt clay	Pioneer	Occasional	Occasional	None	Lacustrine
ELC-144	B088tt	Dry to Fresh, Coarse: Aspen - Birch Hardwood		Mineral	Wet-mesic	C	Mature	Abundant	Abundant	Moderate	
ELC-145	B055Tt/Tl	Dry to Fresh, Coarse: Spruce - Fir Conifer	NA	Mineral	Dry-mesic	Loam	Mature	Occasional	Abundant	Moderate	Rolling Upland
ELC-146	B134S	Pavement/Concrete	Water at 30 cm, mottles at 30 cm	Mineral	Wet-mesic	Silt	Mid-aged	Rare	Rare	Gentle	
ELC-147	B101Tl	Dry to Fresh, Coarse: Aspen - Birch Hardwood	>20 cm	Mineral	Dry	Si	Young	Rare	Rare	Gentle	
ELC-148	B135S Dn	Organic Thicket Swamp									
ELC-151	B055TtMn	Dry to Fresh, Coarse: Aspen - Birch Hardwood		Mineral	Mesic	Clay-silt					
ELC-152	B055Tt/Tl	Dry to Fresh, Coarse: Aspen - Birch Hardwood	NA	Mineral	Mesic	Clay-sand	Pioneer	Rare	Occasional	Gentle	Rolling Upland
ELC-153	B148N	Dry to Fresh, Coarse: Spruce - Fir Conifer	NA	Mineral	Wet	Clay sand	Pioneer	Rare	Occasional	Moderate	Rolling Upland
ELC-154	B142Nn	Mineral Meadow Marsh	NA	Organic	Wet	Organic					

Site ID No.	Ecosite[1]	Ecosite Description	Substrate Depth	Parent Material	Soil Moisture	Texture	Community Age	Standing Snags	Deadfall Logs	Slope	Topography
ELC-156	B136TI/Tt	Mineral Meadow Marsh	NA	Organic	Wet	Organic	Mature	Rare	Occasional	None	Lacustrine
ELC-159	B144N	Mineral Meadow Marsh	NA	Organic	Wet	Organic	Mature	Rare	Rare	None	Lacustrine

1: Highlighted rows indicate ELC polygon classification which differed from FRI data.

Table 2: Ecological Land Classification: Vegetation Analysis

Site ID No.	Ecosite[1]	Botanical Quality	Canopy Height	Cover	Species in Order of Decreasing Dominance	Sub-Canopy Height	Cover	Species in Order of Decreasing Dominance	Under-story Height	Cover	Species in Order of Decreasing Dominance	Ground Layer Height	Cover	Species in Order of Decreasing Dominance	Size Class Abundance[2] <10 cm DBH	Size Class Abundance[2] 10-24 cm CBH	Size Class Abundance[2] 25-50 cm DBH	Size Class Abundance[2] >50 cm DBH
ELC-4	B049TlD n																	
ELC-8	B046S	Low	>25 m	0-10%	PINUBAN> POPUTRE		None		1 m - 2 m	0-10%	AlNUINC	<0.5 m	0-10%	MAIACAN	R	R		
ELC-10	B050TlM n																	
ELC-13	B012Tt	Low	10 m - 25 m	25-60%	PICEMAR>>PINUBAN	10 m - 25 m	0-10%	PICEMAR	0.5 m - 1 m	0-10%	PICEMAR>> BETUPAP	<0.5 m	>60%	PLEUSCH>VACCANG	O	A	O	
ELC-14	B055TtD n	Medium		None		2 m - 10 m	10-25%	POPUTRE	1 m - 2 m	25-60%	POPUTRE> BETUPAP>PRUNPEN	<0.5 m	25-60%	VACCMYR> PTERAQU> DIERLON>MAIACAN				
ELC-15	B050TlM n		10 m - 25 m	25-60%	PINUBAN> POPUTRE				1 m - 2 m	10-25%	AMELSP	<0.5 m	>60%	DIERLON>EURYMAC	A	O	R	
ELC-17	B110N		1 m - 2 m	0-10%	SALISPP>PICEMAR				0.5 m - 1 m	10-25%	RUBUIDA>PINUBAN	<0.5 m	>60%	FESTSPP >GEUMSP	R	R		
ELC-18	B114TtD n		10 m - 25 m	25-60%	PICEBANK >> PICEGLAU						ALNUINC >ABIEBAL	0.2 m - 0.5 m	>60%	EURYMAC > DIERLON		D	O	R
ELC-21	B101Tt		10 m - 25 m	25-60%	BETUPAP > PINUSTR	2 m - 10 m	25-60%	ABIEBAL>>PICEMAR	0.5 m - 1 m			<0.5 m	>60%	MOSS>>MAIACAN>CLINBOR	D	A	R	R
ELC-24	B128TtD n																	
ELC-25	B133TL		10 m - 25 m	0-10%	PICEMARI> BETUPAP	2 m - 10 m	25-60%	BETUPAP>> SORBSP>PICEMAR	1 m - 2 m	10-25%	AMALSPP>ALNUINC	0.2 m - 0.5 m	>60%	RHODGRO> >CORNSTO	A	O		
ELC-28	B008N	Low	>25 m	0-10%	PINUSTR	1 m - 2 m	>60%	ACERSPIC >>> POPUTRE	0.5 m - 1 m	25-60%	ACERSPIC> >RUBUID	<0.5 m	10-25%	Rubupub> Galium triflorum> corncan	D	R	R	R
ELC-36	B054Tt	Medium	>25 m	>60%	POPUTRE> PICEGLA> PINUSTR = PINUSTR > ABIEBAL > BETUPAP	10 m - 25 m	10-25%	BETUPAP>ABIEBAL> POPUTRE >PINUSTR	2 m - 10 m	25-60%	ACERSPIC >CORYCOR	<0.5 m	>60%	Osmucla> dierlon> corncan	D	A	A	R
ELC-37	B131TtMDn		10 m - 25 m	25-60%	POPUTRE = ACERRUB = BETUPAP	10 m - 25 m	10-25%	POPUTRE = ACERRUB = BETUPAP	2 m - 10 m	25-60%	ACERSPI>ABIEBAL	0.5 m - 1 m	25-60%	Large leaved aster > yellow clintonia	A	A	R	
ELC-39	B104Tt		10 m - 25 m	25-60%	POPUBAL= POPUTRE> BETUPAP				2 m - 10 m	10-25%	ACERSPI>ABIEBAL	<0.5 m	25-60%	RUBUPUB >DIERLONIPICEA	A	A	R	
ELC-40	B139S D n		1 m - 2 m	0-10%	LARILAR > PICEMAR	1 m - 2 m	0-10%					<0.5 m	25-60%	Leather leaf> threeway sedge> sphagnum spp. > unknown grass	O	R	R	R
ELC-41	B136TlD n																	

Site ID No.	Ecosite[1]	Botanical Quality	Canopy Height	Cover	Species in Order of Decreasing Dominance	Sub-Canopy Height	Cover	Species in Order of Decreasing Dominance	Under-story Height	Cover	Species in Order of Decreasing Dominance	Ground Layer Height	Cover	Species in Order of Decreasing Dominance	Size Class Abundance[2] <10 cm DBH	Size Class Abundance[2] 10-24 cm CBH	Size Class Abundance[2] 25-50 cm DBH	Size Class Abundance[2] >50 cm DBH
ELC-42	B136TlD n																	
ELC-43	B135S		10 m - 25 m	25-60%	PICEMAR				2 m - 10 m	>60%	ALNUINC	<0.5 m	25-60%	SPHAGSPP	A	A		
ELC-44	B141		2 m - 10 m	0-10%	THUJOCC >> LARILAR							<0.5 m	>60%	CARESPP > MUHLGLOM >>CHAMCALLO	R	R		
ELC-47	B104Tt		10 m - 25 m	>60%	BETUPAP> POPUTRE= ACERRUB	10 m - 25 m	10-25%	BETUPAP=ACERRUB	2 m - 10 m	10-25%	CORYCOR> BETUPAP	<0.5 m	25-60%	ARALNUD> DIERLON	A	A	O	
ELC-55	B049Tt	Medium	10 m - 25 m	>60%	PINUBAN> POPUTRE> >PINURES> ACERRUB	2 m - 10 m	10-25%	ACERRUB> >>ABIEBALI >CORYCOR >AMELANCHIER	0.5 m - 1 m	25-60%	Pteraqu> dierlon> aralnud>apocand				A	D	A	R
ELC-58	B059Tt/Tl	Medium	10 m - 25 m	>60%	PINUBAN = POPUTRE> BETUPAP	2 m - 10 m	25-60%	PINUBAN = POPUTRE> BETUPAP	0.5 m - 1 m	10-25%	CORYCOR> ALNUPEN>ABIEBAL	<0.5 m	25-60%	MAIACAN>DIERLON>VACCANG				
ELC-59	B049Tt	Low	>25 m	0-10%	PICEMAR= POPUTRE> BETUPAP	10 m - 25 m	0-10%	PICEMAR	1 m - 2 m	0-10%	PICEMAR>BETUPAP>SOBDEC	<0.5 m		RHODGROE >MAIACAN> PLEUSCH	R	R		
ELC-61	B050TlM n		10 m - 25 m	25-60%	PICEMAR> POPUTRE				2 m - 10 m	25-60%	POPUTRE> SORBSP	<0.5 m	25-60%	CORNSTO	O	A	R	
ELC-62	B049TlM n																	
ELC-64	B034TlD n		2 m - 10 m	25-60%	PINUBAN				2 m - 10 m	0-10%	BETUPAP>SALISP	<0.5 m	>60%	PTERAQU>> DIERLON	A	R		
ELC-65	B114Tt		10 m - 25 m	25-60%	PINUBAN	10 m - 25 m	0-10%	BETUPAP	2 m - 10 m	25-60%	ALNUALN	<0.5 m	>60%	PTERAQU> DIERLON	O	A		
ELC-66	B012Tl		2 m - 10 m	10-25%	PINUBAN= PICEMAR				1 m - 2 m	0-10%	BETUPAP>PRUNPEN	0.2 m - 0.5 m	25-60%	CLADRAN> PLUSCH	A	A	O	
ELC-69	B035TlD n		2 m - 10 m	25-60%	PINUBAN>> ACERRUB	>25 m	None		2 m - 10 m	10-25%	CORYCOR> ACERSPI	<0.5 m	25-60%	CLINBOR>CORN	A	R		
ELC-71	B037Tt	Medium	10 m - 25 m	>60%	ABIEBAL>> BETUPAP> PICEGLA	2 m - 10 m	10-25%	PRUNVIR>ACERSPI>ABIEBAL				<0.5 m	10-25%	PLEUSCH>LYCOANN>CORNCAN>LYCODEN>CLINBOR	D	A	R	R
ELC-72	B128TtD n																	
ELC-75	B128TtD n																	
ELC-77	B223Tt		10 m - 25 m	25-60%	PICEMAR	10 m - 25 m	10-25%	PICEMAR	2 m - 10 m	0-10%	ALNUINC	<0.5 m	>60%	SPHAGSPP >PLEUCH>CORNSTO	O	A	R	
ELC-81	B104TtM n																	
ELC-82	B055TtD n																	
ELC-84	B55Tt																	
ELC-85	B078N		2 m - 10 m	0-10%	PICEMAR >POPUBAL							<0.5 m	>60%	FEST (sp) sp>geumlac> rhubida	R	R		
ELC-88	B052Tt	Medium													D	F	R	R

Site ID No.	Ecosite[1]	Botanical Quality	Canopy Height	Cover	Species in Order of Decreasing Dominance	Sub-Canopy Height	Cover	Species in Order of Decreasing Dominance	Under-story Height	Cover	Species in Order of Decreasing Dominance	Ground Layer Height	Cover	Species in Order of Decreasing Dominance	Size Class Abundance[2] <10 cm DBH	Size Class Abundance[2] 10-24 cm CBH	Size Class Abundance[2] 25-50 cm DBH	Size Class Abundance[2] >50 cm DBH
ELC-93	B149N		2 m - 10 m	10-25%	SALISPP>> POPUBAL				1 m - 2 m	25-60%	TYPHLAT>CALACAN	0.2 m - 0.5 m	25-60%	CALTPAL	O	R		
ELC-95	B101Tt		10 m - 25 m	10-25%	PICEGLA > BETUPAP	10 m - 25 m	10-25%	ABIEBAL	2 m - 10 m	10-25%	CORYCOR > ABIEBAL	0.2 m - 0.5 m	25-60%	EURYMAC>>LONICAN > CORNCAN	A	A	R	
ELC-97	B135S D n		10 m - 25 m	0-10%	THUJOCC > BETUALL				2 m - 10 m	>60%	ALNUINC >> SORBUSPS	0.2 m - 0.5 m	>60%	SPHASPP > TRIEBOR > RUBUPUB	A	O		
ELC-98	B135S D n		2 m - 10 m	25-60%	ALNUINC > SALISPPCO				1 m - 2 m	25-60%	CORNSTOL > RUBUIDA	0.2 m - 0.5 m	25-60%	GLYCSTR > > CARESPP	D	O		
ELC-100	B128Tt		10 m - 25 m	25-60%	LARILAR>PICEMAR	2 m - 10 m	25-60%	PICEMAR>> THUJAOCC	2 m - 10 m	10-25%	ALNUINC	0.2 m - 0.5 m	>60%	CAREX (sp)>RHUBPUB>CORNSTO	A	D	R	
ELC-101	B149n		0.5 m - 1 m	>60%	TYPHLAT> CALACAN													
ELC-104	B070Tt		10 m - 25 m	25-60%	POPUTREM > PINUBANK				1 m - 2 m	10-25%	ALNUALN > CORYCOR	<0.5 m	25-60%	ARCTUVU > VACCANG >> CORNCAN	A	A	O	
ELC-108	B114tt		10 m - 25 m	25-60%	PICEMAR> POPUTRE	2 m - 10 m	25-60%	BETUPAP>SALIX>ALNUIC				0.5 m - 1 m	>60%	RHUBPUB >AURANUD >EQUISY	D	A	R	
ELC-109	B112S D n		2 m - 10 m	25-60%	ALNUINC							0.2 m - 0.5 m	10-25%	CARESPP	A			
ELC-110	B134S		2 m - 10 m	25-60%	ALNUINC							1 m - 2 m	>60%	CARESPP>> RHAMALN	A	R		
ELC-111	B134S		2 m - 10 m	>60%	ALNUINC>> SALI				0.5 m - 1 m	25-60%	SPIRALB	0.2 m - 0.5 m	25-60%	CARESPP> SPAGANGG LYCER	A	R	R	
ELC-112	B30N								0.5 m - 1 m	0-10%	ALNUALN	<0.5 m	>60%	SYMPSPP> FRAGVIR				
ELC-115	B049TIM n																	
ELC-116	B55Tt		10 m - 25 m	25-60%	BETUPAP> PICEMAR	10 m - 25 m	10-25%	BETUPAP		25-60%	BETUPAP>ACERSPI	<0.5 m	>60%	DIERLON>ARAL	A	O	A	R
ELC-117	B049TIM n	Medium	>25 m	25-60%	PICEMAR	10 m - 25 m	25-60%	PICEMAR>BETUPAP	2 m - 10 m	10-25%	PRUNPEN= SALHUM	<0.5 m	>60%	RHODGRO> VACCANG				
ELC-118	B049TtM n		10 m - 25 m	25-60%	PICEMAR> PINUBAN	2 m - 10 m	10-25%	BETUPAP	0.2 m - 0.5 m	10-25%	PICEMARA>>SORBSP	<0.5 m	>60%	SPHASPP>PLEUSCH	O	A	O	
ELC-120	B050TtD n		10 m - 25 m	25-60%	PINUBAN				2 m - 10 m	0-10%	CORYCOR> ALNUALN	<0.5 m	25-60%	DIERLON>CORNCAN				
ELC-123	B035Tt		10 m - 25 m	25-60%	PINUBAN>> BETUPAP				2 m - 10 m	10-25%	BETUPAP>> ACERRUB	<0.5 m	10-25%	DIERLON>> EURYMAC> CLINBOR	A	A		
ELC-127	B055TtD n		10 m - 25 m	25-60%	BETUPAP> POPUTRE	10 m - 25 m	10-25%	BETUPAP	1 m - 2 m	10-25%	AMELSP>ACERSPI	<0.5 m	25-60%	DIERLON>ARALNUD	A	O		

Site ID No.	Ecosite[1]	Botanical Quality	Canopy Height	Cover	Species in Order of Decreasing Dominance	Sub-Canopy Height	Cover	Species in Order of Decreasing Dominance	Under-story Height	Cover	Species in Order of Decreasing Dominance	Ground Layer Height	Cover	Species in Order of Decreasing Dominance	Size Class Abundance[2] <10 cm DBH	Size Class Abundance[2] 10-24 cm CBH	Size Class Abundance[2] 25-50 cm DBH	Size Class Abundance[2] >50 cm DBH
ELC-128	B008N	Low	0.5 m - 1 m	0-10%	ACERRUB> SORBUS>PICEGLA>PINURES	<0.5 m	10-25%	PTERAQU> CORNCAN> PHLEPRA>CLADRAN>POA SECUNDA										
ELC-129	B049TtD n																	
ELC-130	B049TlD n																	
ELC-131	B134S	Medium		None		1 m - 2 m	0-10%	ALUINC	0.5 m - 1 m	>60%	CHAMCAL> MYRIGAL	<0.5 m	25-60%	Carex_sp (not mature enough for features to ID)				
ELC-132	B050TtD n																	
ELC-134	B104Tt		10 m - 25 m	0-10%	PICEGLA>BETUPAP	10 m - 25 m	25-60%	POPUTRE> BETUPAP	2 m - 10 m	25-60%	ACERSPI>> SORBSP	<0.5 m	25-60%	EURYMAC> DIERLON	A	O	R	
ELC-136	B055Tt/Tl	Medium	10 m - 25 m	0-10%	BETUPAP= POPUTRE	2 m - 10 m	25-60%	POPUTRE> BETUPAP	1 m - 2 m	>60%	POPUTRE> BETUPAP	<0.5 m	25-60%	Shining clubmoss prickly tree clubmoss velvetleaf blueberry	D	R	R	R
ELC-137	B070TtD n	Medium	>25 m	25-60%	POPUTRE= PINUSTR>BETUPAP	10 m - 25 m	>60%	ABIEBAL>POPUTRE	2 m - 10 m	10-25%	ABIEBAL>ACERSPI	0.2 m - 0.5 m	0-10%	SYMPMAC> MAIARAC > CLINBOR				
ELC-138	B129TtD n																	
ELC-140	B133Tt		10 m - 25 m	25-60%	BETUPAP> >PICEMAR	10 m - 25 m	0-10%	ACERSPI>ABIEBAL	1 m - 2 m	25-60%	ACERSPI>ABIEBAL	<0.5 m	25-60%	LYCOSPP	A	A	O	
ELC-142	B055TlD n																	
ELC-143	B119Tt/Tl	Medium	>25 m	25-60%		2 m - 10 m	10-25%		1 m - 2 m	25-60%		<0.5 m	25-60%					
ELC-144	B088tt		10 m - 25 m	>60%	POPUTRE> ABIEBAL	2 m - 10 m	25-60%	ABIEBAL	1 m - 2 m	10-25%	ALUINC>AMELACHIER	0.2 m - 0.5 m	>60%	EURMAC>AURANUD	D	A		
ELC-145	B055Tt/Tl	Medium	>25 m	25-60%	POPUTRE> ABIEBAL	10 m - 25 m	>60%	ABIEBAL>POPUTRE	2 m - 10 m	10-25%	ABIEBAL>POPUTRE> CORYCOR> LONICAN	<0.5 m	0-10%	ANEMQUI>CAREPED>MAIACAN	A	F	R	R
ELC-146	B134S		2 m - 10 m	>60%	SALISPP				<0.5 m			<0.5 m	25-60%	SPIRALB>ONACSEN				
ELC-147	B101Tl		2 m - 10 m	10-25%	PICEGLA>> SALIX (sp)							<0.5 m	>60%	EURYMAC> >AMELANCHIER >LOTUULI	F	R		
ELC-148	B135S D n																	

Site ID No.	Ecosite[1]	Botanical Quality	Canopy Height	Cover	Species in Order of Decreasing Dominance	Sub-Canopy Height	Cover	Species in Order of Decreasing Dominance	Under-story Height	Cover	Species in Order of Decreasing Dominance	Ground Layer Height	Cover	Species in Order of Decreasing Dominance	Size Class Abundance[2] <10 cm DBH	Size Class Abundance[2] 10-24 cm CBH	Size Class Abundance[2] 25-50 cm DBH	Size Class Abundance[2] >50 cm DBH
ELC-151	B055TtM n																	
ELC-152	B055Tt/Tl	Low	10 m - 25 m	0-10%	ABIEBAL	2 m - 10 m	10-25%	POPUTRE> ABIEBAL	1 m - 2 m	25-60%	POLUTRE>A BIEBAL	<0.5 m	>60%	MAIACAN>C ORNCAN>O RYZASP	D	R	R	R
ELC-153	B148N	Low	10 m - 25 m	0-10%	ABIEBAL>B ETUPAP	2 m - 10 m	0-10%	ABIEBA	1 m - 2 m	25-60%	TYPHANG> SALIPLA	<0.5 m	25-60%	TYPHANG> SALIPLA				
ELC-154	B142N n																	
ELC-156	B136Tl/Tt		2 m - 10 m	0-10%	PICEMAR> LARLAR	1 m - 2 m	0-10%	PICEMAR	0.5 m - 1 m	25-60%	CHAMCAL> KALMPOL	<0.5 m	25-60%	CHAMCAL> SPHAGNUM (sp)	O	R	R	R
ELC-159	B144N	High		None		1 m - 2 m	0-10%	PICEMAR>L ARILAR	0.2 m - 0.5 m	25-60%	CHAMCAL> BETUPUM> MYRIGAL	<0.5 m	>60%	CARESTRIC TA> CHAMCAL> SPHAGNUM (sp)	R			

1: Highlighted rows indicate ELC polygon classification which differed from FRI data.
2: Size Class Analysis of abundance – Rare (R), Occasional (O), Frequent (F), Abundant (A) or Dominant (D)

ATTACHMENT 6.4-A-4

Ecosite Based Significant Wildlife Habitat Occurrence by Route Alternative

Attachment 6.4-A-4: Ecosite Based SEH Occurrence by Route

Model	Route	MERGE_SRC	FREQUENCY	SUM_Area_ha
1	1	Amphibian_Breeding_Habitat	243	1138.258319
1	1A	Amphibian_Breeding_Habitat	334	1382.753267
1	1B-1	Amphibian_Breeding_Habitat	250	1416.927676
1	1B-2	Amphibian_Breeding_Habitat	259	1442.586044
2	1	Amphibian_Breeding_Habitat	1696	7113.425025
2	1C	Amphibian_Breeding_Habitat	1582	6950.646708
3	2A	Amphibian_Breeding_Habitat	252	949.015365
3	2B	Amphibian_Breeding_Habitat	329	1433.12037
3	2C	Amphibian_Breeding_Habitat	403	1470.725924
4	3A	Amphibian_Breeding_Habitat	1590	8034.659664
4	3B	Amphibian_Breeding_Habitat	1646	8628.262431
4	3C	Amphibian_Breeding_Habitat	1380	7396.56924
3	2A	Cliff_and_Cliff_Rim	3	32.060377
3	2C	Cliff_and_Cliff_Rim	3	28.52228
3	2A	Colonially_Nesting_Bird_Breeding_Habitat_Bank_a	3	32.060377
3	2C	Colonially_Nesting_Bird_Breeding_Habitat_Bank_a	3	28.52228
4	3B	Colonially_Nesting_Bird_Breeding_Habitat_Bank_a	1	3.145064
4	3C	Colonially_Nesting_Bird_Breeding_Habitat_Bank_a	1	3.145064
1	1	Colonially_Nesting_Bird_Breeding_Habitat_Ground	36	104.074871
1	1A	Colonially_Nesting_Bird_Breeding_Habitat_Ground	61	147.950014
1	1B-1	Colonially_Nesting_Bird_Breeding_Habitat_Ground	47	156.928734
1	1B-2	Colonially_Nesting_Bird_Breeding_Habitat_Ground	52	164.344215
2	1	Colonially_Nesting_Bird_Breeding_Habitat_Ground	428	1237.404659
2	1C	Colonially_Nesting_Bird_Breeding_Habitat_Ground	418	1360.201962
3	2A	Colonially_Nesting_Bird_Breeding_Habitat_Ground	72	211.737799
3	2B	Colonially_Nesting_Bird_Breeding_Habitat_Ground	101	291.365923
3	2C	Colonially_Nesting_Bird_Breeding_Habitat_Ground	134	379.547423
4	3A	Colonially_Nesting_Bird_Breeding_Habitat_Ground	244	1343.821304
4	3B	Colonially_Nesting_Bird_Breeding_Habitat_Ground	312	1425.73506
4	3C	Colonially_Nesting_Bird_Breeding_Habitat_Ground	273	1481.229073
1	1	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	841	8288.267839
1	1A	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	1154	10745.79473
1	1B-1	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	703	6806.616548
1	1B-2	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	750	7231.381208
2	1	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	4094	33568.82554
2	1C	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	3913	32535.83305
3	2A	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	627	4012.761931
3	2B	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	653	5507.46958
3	2C	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	934	5579.09462
4	3A	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	3722	37299.43516
4	3B	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	3563	34310.15311
4	3C	Colonially_Nesting_Bird_Breeding_Habitat_Trees_s	3300	34001.07901
1	1	Diverse_and_Sensitive_Orchid_Communities	162	798.873813
1	1A	Diverse_and_Sensitive_Orchid_Communities	224	963.34033
1	1B-1	Diverse_and_Sensitive_Orchid_Communities	168	1031.266952
1	1B-2	Diverse_and_Sensitive_Orchid_Communities	171	1041.411801
2	1	Diverse_and_Sensitive_Orchid_Communities	1171	5548.63346
2	1C	Diverse_and_Sensitive_Orchid_Communities	1072	5281.55569
3	2A	Diverse_and_Sensitive_Orchid_Communities	165	667.795241
3	2B	Diverse_and_Sensitive_Orchid_Communities	212	1058.784441
3	2C	Diverse_and_Sensitive_Orchid_Communities	245	1032.889823
4	3A	Diverse_and_Sensitive_Orchid_Communities	1205	6174.485755
4	3B	Diverse_and_Sensitive_Orchid_Communities	1089	6276.032162

Attachment 6.4-A-4: Ecosite Based SEH Occurrence by Route

Model	Route	MERGE_SRC	FREQUENCY	SUM_Area_ha
4	3C	Diverse_and_Sensitive_Orchid_Communities	979	5430.091315
1	1	Marsh_Bird_Breeding_Habitat	151	497.823914
1	1A	Marsh_Bird_Breeding_Habitat	193	625.342882
1	1B-1	Marsh_Bird_Breeding_Habitat	117	403.861376
1	1B-2	Marsh_Bird_Breeding_Habitat	126	426.598496
2	1	Marsh_Bird_Breeding_Habitat	919	2702.39938
2	1C	Marsh_Bird_Breeding_Habitat	835	2677.099121
3	2A	Marsh_Bird_Breeding_Habitat	137	413.721222
3	2B	Marsh_Bird_Breeding_Habitat	159	580.795919
3	2C	Marsh_Bird_Breeding_Habitat	235	802.517383
4	3A	Marsh_Bird_Breeding_Habitat	810	2523.343359
4	3B	Marsh_Bird_Breeding_Habitat	947	3668.855396
4	3C	Marsh_Bird_Breeding_Habitat	763	2838.584793
1	1	Milkweed_Patch	219	985.056712
1	1A	Milkweed_Patch	310	1217.770813
1	1B-1	Milkweed_Patch	225	1227.131628
1	1B-2	Milkweed_Patch	234	1252.769613
2	1	Milkweed_Patch	1627	6829.179266
2	1C	Milkweed_Patch	1510	6661.675919
3	2A	Milkweed_Patch	241	881.731384
3	2B	Milkweed_Patch	317	1389.563755
3	2C	Milkweed_Patch	386	1419.934571
4	3A	Milkweed_Patch	1506	7276.919132
4	3B	Milkweed_Patch	1520	7540.394256
4	3C	Milkweed_Patch	1292	6610.060987
1	1	Open_Country_Bird_Breeding_Habitat	33	115.039265
1	1A	Open_Country_Bird_Breeding_Habitat	43	192.232366
1	1B-1	Open_Country_Bird_Breeding_Habitat	50	206.523495
1	1B-2	Open_Country_Bird_Breeding_Habitat	50	208.160582
2	1	Open_Country_Bird_Breeding_Habitat	362	1240.442413
2	1C	Open_Country_Bird_Breeding_Habitat	294	1110.866186
3	2A	Open_Country_Bird_Breeding_Habitat	29	106.115795
3	2B	Open_Country_Bird_Breeding_Habitat	36	122.027683
3	2C	Open_Country_Bird_Breeding_Habitat	57	336.828889
4	3A	Open_Country_Bird_Breeding_Habitat	364	1530.204604
4	3B	Open_Country_Bird_Breeding_Habitat	438	2531.83789
4	3C	Open_Country_Bird_Breeding_Habitat	315	1829.63206
1	1B-1	Rare_Treed_Type_Elm	1	4.577948
1	1B-2	Rare_Treed_Type_Elm	1	4.577948
2	1	Rare_Treed_Type_Elm	7	15.93599
2	1C	Rare_Treed_Type_Elm	6	17.247661
3	2A	Rare_Treed_Type_Elm	3	3.375125
3	2B	Rare_Treed_Type_Elm	2	4.106654
3	2C	Rare_Treed_Type_Elm	2	3.373397
2	1	Rare_Treed_Type_Red_and_Sugar_Maple	4	13.147235
2	1C	Rare_Treed_Type_Red_and_Sugar_Maple	5	19.013607
3	2A	Rare_Treed_Type_Red_and_Sugar_Maple	4	48.555135
3	2B	Rare_Treed_Type_Red_and_Sugar_Maple	6	157.179119
3	2C	Rare_Treed_Type_Red_and_Sugar_Maple	13	152.311716
4	3A	Rare_Treed_Type_Red_and_Sugar_Maple	19	210.683474
4	3B	Rare_Treed_Type_Red_and_Sugar_Maple	13	173.605834
4	3C	Rare_Treed_Type_Red_and_Sugar_Maple	12	165.048113
1	1A	Rare_Treed_Type_Red_and_White_Pine_Stands	1	8.95447

Attachment 6.4-A-4: Ecosite Based SEH Occurrence by Route

Model	Route	MERGE_SRC	FREQUENCY	SUM_Area_ha
1	1B-1	Rare_Treed_Type_Red_and_White_Pine_Stands	1	8.06207
1	1B-2	Rare_Treed_Type_Red_and_White_Pine_Stands	1	8.06207
2	1	Rare_Treed_Type_Red_and_White_Pine_Stands	175	2023.365746
2	1C	Rare_Treed_Type_Red_and_White_Pine_Stands	173	1618.471062
3	2A	Rare_Treed_Type_Red_and_White_Pine_Stands	15	111.748947
3	2B	Rare_Treed_Type_Red_and_White_Pine_Stands	19	141.124636
3	2C	Rare_Treed_Type_Red_and_White_Pine_Stands	14	94.22734
4	3A	Rare_Treed_Type_Red_and_White_Pine_Stands	147	1722.83772
4	3B	Rare_Treed_Type_Red_and_White_Pine_Stands	109	1057.926221
4	3C	Rare_Treed_Type_Red_and_White_Pine_Stands	111	1115.845779
2	1	Rock_Barren	1	1.005384
2	1C	Rock_Barren	1	1.005384
3	2A	Rock_Barren	4	4.441515
3	2C	Rock_Barren	4	4.441515
4	3B	Rock_Barren	3	4.555287
4	3C	Rock_Barren	3	4.555205
1	1B-1	Sharp_tailed_Grouse_Leks	2	9.867531
1	1B-2	Sharp_tailed_Grouse_Leks	2	9.867531
2	1	Sharp_tailed_Grouse_Leks	7	164.514861
2	1C	Sharp_tailed_Grouse_Leks	7	208.781821
3	2A	Sharp_tailed_Grouse_Leks	1	24.748381
3	2B	Sharp_tailed_Grouse_Leks	1	1.011693
3	2C	Sharp_tailed_Grouse_Leks	3	138.781458
4	3A	Sharp_tailed_Grouse_Leks	19	520.386009
4	3B	Sharp_tailed_Grouse_Leks	37	1070.910381
4	3C	Sharp_tailed_Grouse_Leks	21	652.292534
1	1	Turtle_Nesting_Areas	11	152.522164
1	1A	Turtle_Nesting_Areas	22	372.040649
1	1B-1	Turtle_Nesting_Areas	13	86.226752
1	1B-2	Turtle_Nesting_Areas	13	86.284424
2	1	Turtle_Nesting_Areas	24	54.176758
2	1C	Turtle_Nesting_Areas	33	99.324554
3	2A	Turtle_Nesting_Areas	14	41.915802
3	2B	Turtle_Nesting_Areas	9	37.639007
3	2C	Turtle_Nesting_Areas	20	72.512063
4	3A	Turtle_Nesting_Areas	33	159.209948
4	3B	Turtle_Nesting_Areas	31	148.786441
4	3C	Turtle_Nesting_Areas	28	170.983883
1	1	Turtle_Wintering_Areas	217	978.438925
1	1A	Turtle_Wintering_Areas	301	1189.952577
1	1B-1	Turtle_Wintering_Areas	223	1165.285523
1	1B-2	Turtle_Wintering_Areas	232	1190.923507
2	1	Turtle_Wintering_Areas	1487	6085.715984
2	1C	Turtle_Wintering_Areas	1387	6053.570195
3	2A	Turtle_Wintering_Areas	236	871.316263
3	2B	Turtle_Wintering_Areas	312	1352.742463
3	2C	Turtle_Wintering_Areas	376	1395.708512
4	3A	Turtle_Wintering_Areas	1447	6815.919969
4	3B	Turtle_Wintering_Areas	1454	7095.576248
4	3C	Turtle_Wintering_Areas	1229	6114.263282
1	1	Waterfowl_Nesting_Area	159	622.389781
1	1A	Waterfowl_Nesting_Area	204	638.821452
1	1B-1	Waterfowl_Nesting_Area	150	736.21997

Attachment 6.4-A-4: Ecosite Based SEH Occurrence by Route

Model	Route	MERGE_SRC	FREQUENCY	SUM_Area_ha
1	1B-2	Waterfowl_Nesting_Area	160	759.369601
2	1	Waterfowl_Nesting_Area	705	2134.214735
2	1C	Waterfowl_Nesting_Area	707	2300.573384
3	2A	Waterfowl_Nesting_Area	148	521.164812
3	2B	Waterfowl_Nesting_Area	203	971.275194
3	2C	Waterfowl_Nesting_Area	233	674.988066
4	3A	Waterfowl_Nesting_Area	540	1945.129995
4	3B	Waterfowl_Nesting_Area	687	2588.326716
4	3C	Waterfowl_Nesting_Area	571	2175.337761
1	1	Waterfowl_Stopover_and_Staging_Areas_Aquatic	55	183.05235
1	1A	Waterfowl_Stopover_and_Staging_Areas_Aquatic	84	252.481665
1	1B-1	Waterfowl_Stopover_and_Staging_Areas_Aquatic	51	178.335421
1	1B-2	Waterfowl_Stopover_and_Staging_Areas_Aquatic	57	193.828683
2	1	Waterfowl_Stopover_and_Staging_Areas_Aquatic	412	1192.032378
2	1C	Waterfowl_Stopover_and_Staging_Areas_Aquatic	402	1313.420956
3	2A	Waterfowl_Stopover_and_Staging_Areas_Aquatic	76	213.936143
3	2B	Waterfowl_Stopover_and_Staging_Areas_Aquatic	105	330.779313
3	2C	Waterfowl_Stopover_and_Staging_Areas_Aquatic	140	382.635148
4	3A	Waterfowl_Stopover_and_Staging_Areas_Aquatic	298	1070.681931
4	3B	Waterfowl_Stopover_and_Staging_Areas_Aquatic	399	1176.825108
4	3C	Waterfowl_Stopover_and_Staging_Areas_Aquatic	296	1113.651938
1	1	Waterfowl_Stopover_and_Staging_Areas_Terrestri	4	13.862179
1	1A	Waterfowl_Stopover_and_Staging_Areas_Terrestri	2	10.701156
1	1B-1	Waterfowl_Stopover_and_Staging_Areas_Terrestri	7	25.819287
1	1B-2	Waterfowl_Stopover_and_Staging_Areas_Terrestri	7	25.819287
2	1	Waterfowl_Stopover_and_Staging_Areas_Terrestri	17	93.755826
2	1C	Waterfowl_Stopover_and_Staging_Areas_Terrestri	17	93.756211
4	3A	Waterfowl_Stopover_and_Staging_Areas_Terrestri	52	425.51685
4	3B	Waterfowl_Stopover_and_Staging_Areas_Terrestri	53	465.691354
4	3C	Waterfowl_Stopover_and_Staging_Areas_Terrestri	53	443.77231
1	1	Wild_Rice_Stand	32	90.117719
1	1A	Wild_Rice_Stand	56	124.350372
1	1B-1	Wild_Rice_Stand	34	107.452038
1	1B-2	Wild_Rice_Stand	39	114.867527
2	1	Wild_Rice_Stand	405	1171.05976
2	1C	Wild_Rice_Stand	395	1292.957862
3	2A	Wild_Rice_Stand	68	207.296284
3	2B	Wild_Rice_Stand	101	291.365923
3	2C	Wild_Rice_Stand	130	375.105908
4	3A	Wild_Rice_Stand	202	915.206245
4	3B	Wild_Rice_Stand	272	958.04535
4	3C	Wild_Rice_Stand	231	1010.517064
1	1B-1	Moose Aquatic Feeding Area	1	27.838825
1	1B-2	Moose Aquatic Feeding Area	1	27.838825
2	1	Moose Aquatic Feeding Area	57	118.271315
2	1C	Moose Aquatic Feeding Area	19	91.22197
3	2A	Moose Aquatic Feeding Area	8	18.162636
3	2B	Moose Aquatic Feeding Area	31	37.751641
3	2C	Moose Aquatic Feeding Area	13	74.825859
4	3A	Moose Aquatic Feeding Area	111	324.43409
4	3B	Moose Aquatic Feeding Area	254	505.505972
4	3C	Moose Aquatic Feeding Area	177	230.923725

ATTACHMENT 6.4-A-5

Gray Fox Presence Survey Remote Camera Results

Attachment 6.4-A-5: Gray Fox Presence Survey Remote Camera Results

Station	Survey Effort	Total Observations	Species Occurrence		
GF-1	July 8 - Sept 29, 2022 84 Days	13	Species	Occurrence	Percentage
			domestic dog	3	23%
			moose	3	23%
			white-tailed deer	1	8%
			gray wolf	1	8%
			skunk	1	8%
			fisher	1	8%
			lynx	1	8%
			raccoon	1	8%
			unknown mammal	1	8%
			total	13	100%
GF-2	June 24 - Sept 29, 2022 98 Days	30	Species	Occurrence	Percentage
			snowshoe hare	18	60%
			raccoon	4	13%
			porcupine	2	7%
			squirrel	2	7%
			white-tailed deer	1	3%
			skunk	1	3%
			black bear	1	3%
			unknown mammal	1	3%
			total	30	100%
GF-3	June 24 - Sept 29, 2022 98 Days	64	Species	Occurrence	Percentage
			white-tailed deer	20	31%
			snowshoe hare	18	28%
			red fox	9	14%
			porcupine	5	8%
			raccoon	3	5%
			skunk	3	5%
			black bear	2	3%
			crow	2	3%
			unknown mammal	1	2%
			raven	1	2%
			total	64	100%
GF-5	June 24 - Sept 29, 2022 98 Days	30	Species	Occurrence	Percentage
			white-tailed deer	23	77%
			black bear	5	17%
			snowshoe hare	2	7%
			total	30	100%
GF-7	June 24 - Sept 29, 2022 98 Days	88	Species	Occurrence	Percentage
			snowshoe hare	65	74%
			red squirrel	13	15%
			white-tailed deer	3	3%
			black bear	3	3%
			pine marten	2	2%
			mouse	1	1%
			fisher	1	1%
			total	88	100%

Attachment 6.4-A-5: Gray Fox Presence Survey Remote Camera Results

Station	Survey Effort	Total Observations	Species Occurrence		
GF-8	June 26 - Sept 29, 2022 96 Days	10	Species	Occurrence	Percentage
			white-tailed deer	3	30%
			unknown mammal	3	30%
			black bear	2	20%
			snowshoe hare	1	10%
			moose	1	10%
			total	10	100%
GF-10	June 26 - Sept 27, 2022 94 Days	16	Species	Occurrence	Percentage
			red fox	8	50%
			black bear	4	25%
			gray wolf	2	13%
			snowshoe hare	1	6%
			unknown mammal	1	6%
			total	16	100%
GF-11	June 27 - Sept 27, 2022 93 Days	5	Species	Occurrence	Percentage
			coyote	3	60%
			gray wolf	1	20%
			unknown	1	20%
			total	5	100%
GF-13	June 26 - Sept 29, 2022 96 Days	10	Species	Occurrence	Percentage
			snowshoe hare	3	30%
			grouse	2	20%
			gray wolf	1	10%
			black bear	1	10%
			white-tailed deer	1	10%
			unknown mammal	1	10%
			unknown	1	10%
			total	10	100%
GF-14	June 25 - Sept 27, 2022 95 Days	19	Species	Occurrence	Percentage
			black bear	7	37%
			spruce grouse	4	21%
			blue jay	3	16%
			gray wolf	2	11%
			snowshoe hare	1	5%
			moose	1	5%
			lynx	1	5%
			total	19	100%
GF-15	June 25 - Sept 27, 2022 95 Days	9	Species	Occurrence	Percentage
			snowshoe hare	3	33%
			gray wolf	2	22%
			black bear	1	11%
			fisher	1	11%
			lynx	1	11%
			unknown	1	11%
			total	9	100%

Attachment 6.4-A-5: Gray Fox Presence Survey Remote Camera Results

Station	Survey Effort	Total Observations	Species Occurrence		
GF-16	June 25 - Sept 27, 2022 95 Days	46	Species	Occurrence	Percentage
			black bear	21	46%
			snowshoe hare	19	41%
			lynx	2	4%
			gray wolf	1	2%
			spruce grouse	1	2%
			red squirrel	1	2%
			unknown	1	2%
			total	46	100%
GF-17	June 25 - Sept 27, 2022 95 Days	5	Species	Occurrence	Percentage
			moose	2	40%
			black bear	2	40%
			unknown mammal	1	20%
			total	5	100%
GF-18	June 25 - Sept 29, 2022 97 Days	4	Species	Occurrence	Percentage
			unknown rodent	1	25%
			lynx	1	25%
			fisher	1	25%
			red squirrel	1	25%
			total	4	100%
GF-19	June 25 - Sept 27, 2022 95 Days	25	Species	Occurrence	Percentage
			snowshoe hare	16	64%
			gray wolf	4	16%
			black bear	2	8%
			lynx	1	4%
			eastern chipmunk	1	4%
			unknown bird	1	4%
			total	25	100%
GF-20	June 25 - Sept 27, 2022 95 Days	7	Species	Occurrence	Percentage
			unknown mammal	3	43%
			red squirrel	2	29%
			northern flying squirrel	1	14%
			gray wolf	1	14%
			total	7	100%
GF-21	June 27 - Sept 26, 2022 92 Days	3	Species	Occurrence	Percentage
			pine marten	2	67%
			crow	1	33%
			total	3	100%
GF-22	June 27 - Sept 26, 2022 92 Days	5	Species	Occurrence	Percentage
			fisher	3	60%
			moose	2	40%
			total	5	100%
GF-23	June 29 - Sept 26, 2022 90 Days	6	Species	Occurrence	Percentage
			unknown mammal	2	33%
			fisher	2	33%
			unknown	1	17%
			hawk	1	17%
			total	6	100%

Attachment 6.4-A-5: Gray Fox Presence Survey Remote Camera Results

Station	Survey Effort	Total Observations	Species Occurrence		
GF-24	June 28 - Sept 28, 2022 93 Days	5	Species	Occurrence	Percentage
			fisher	2	40%
			gray wolf	2	40%
			black bear	1	20%
			total	5	100%
GF-25	June 28 - Sept 26, 2022 91 Days	14	Species	Occurrence	Percentage
			black bear	7	50%
			unknown	3	21%
			snowshoe hare	2	14%
			moose	2	14%
			total	14	100%
GF-26	June 28 - Sept 26, 2022 91 Days	98	Species	Occurrence	Percentage
			snowshoe hare	76	78%
			coyote	9	9%
			lynx	3	3%
			fisher	3	3%
			white-tailed deer	3	3%
			gray wolf	2	2%
			black bear	1	1%
			red squirrel	1	1%
			total	98	100%
GF-27	June 29 - Sept 28, 2022 92 Days	7	Species	Occurrence	Percentage
			unknown	3	43%
			gray wolf	1	14%
			fisher	1	14%
			black bear	1	14%
			unknown bird	1	14%
			total	7	100%
GF-28	June 29 - Sept 29, 2022 93 Days	9	Species	Occurrence	Percentage
			black bear	4	44%
			moose	3	33%
			snowshoe hare	2	22%
			total	9	100%
GF-29	June 27 - Sept 26, 2022 92 Days	22	Species	Occurrence	Percentage
			moose	20	91%
			coyote	1	5%
			white tailed deer	1	5%
			total	22	100%
GF-30	June 28 - Sept 26, 2022 91 Days	5	Species	Occurrence	Percentage
			gray wolf	3	60%
			black bear	1	20%
			unknown mammal	1	20%
			total	5	100%

Attachment 6.4-A-5: Gray Fox Presence Survey Remote Camera Results

Station	Survey Effort	Total Observations	Species Occurrence		
			Species	Occurrence	Percentage
GF-31	June 28 - Sept 28, 2022 93 Days	120	snowshoe hare	111	93%
			moose	3	3%
			coyote	2	2%
			black bear	2	2%
			lynx	1	1%
			unknown	1	1%
			total	120	100%
			Species	Occurrence	Percentage
GF-32	June 29 - Sept 28, 2022 92 Days	12	snowshoe hare	5	42%
			moose	5	42%
			racoon	1	8%
			black bear	1	8%
			total	12	100%
			Species	Occurrence	Percentage
GF-33	June 29 - Sept 28, 2022 92 Days	8	black bear	5	63%
			red fox	1	13%
			gray wolf	1	13%
			unknown mammal	1	13%
			total	8	100%
			Species	Occurrence	Percentage
GF-34	June 29 - Sept 28, 2022 92 Days	9	unknown	3	33%
			white-tailed deer	2	22%
			black bear	2	22%
			moose	1	11%
			unknown mammal	1	11%
			total	9	100%
			Species	Occurrence	Percentage
GF-35	June 28 - Sept 28, 2022 93 Days	4	dog	2	50%
			black bear	1	25%
			moose	1	25%
			total	4	100%
			Species	Occurrence	Percentage
GF-36	June 28 - Sept 28, 2022 93 Days	7	black bear	3	43%
			lynx	2	29%
			moose	2	29%
			total	7	100%
			Species	Occurrence	Percentage
GF-37	June 29 - Sept 28, 2022 92 Days	2	black bear	1	50%
			white-tailed deer	1	50%
			total	2	100%

ATTACHMENT 6.4-A-6

Acoustic Data for Potential Bat Hibernacula

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Andowan Control

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																
Date	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**Total**
14-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**1**
15-Aug-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
16-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
17-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Aug-22	-	-	1	2	-	1	-	-	-	-	-	-	-	-	-	-	**4**
19-Aug-22	-	-	-	-	1	-	-	-	1	1	-	-	-	-	-	-	**3**
20-Aug-22	-	-	-	1	-	-	-	-	-	-	-	1	-	2	-	-	**4**
21-Aug-22	-	1	-	-	1	-	-	-	-	-	-	-	-	-	1	-	**3**
22-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	1	**3**
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	**1**
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Aug-22	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	**2**
26-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
27-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
28-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
30-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
31-Aug-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
01-Sep-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**1**
03-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
07-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**1**
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	**1**
09-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**1**
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**1**
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**2**	**3**	**4**	**4**	**1**	0	**1**	**1**	**3**	**1**	**2**	**3**	**3**	**2**	**2**	**32**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Andowan

Date	Start time of 30 minute blocks, in relation to end of sunset (minutes)																	Total
	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	480	510	
14-Aug-22	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	2
15-Aug-22	-	-	-	-	1	-	1	-	-	-	-	-	-	-	1	-	-	3
16-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
17-Aug-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
18-Aug-22	-	1	-	3	1	-	-	-	-	1	-	-	-	-	-	-	-	6
19-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
20-Aug-22	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
21-Aug-22	1	-	-	1	-	-	-	-	2	-	1	-	-	-	-	-	-	5
22-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Aug-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
25-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
26-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03-Sep-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
06-Sep-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
07-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**3**	**4**	**4**	**5**	**3**	**0**	2	**2**	**2**	**1**	**2**	**1**	**0**	**0**	**1**	**1**	**1**	**32**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Big Six Control (activity control site for Big Six)

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																				
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**570**	**Total**
31-Jul-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
01-Aug-22	-	-	1	1	1	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	6
02-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03-Aug-22	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	4
04-Aug-22	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	3
05-Aug-22	-	1	-	-	-	-	-	1	1	-	1	-	-	-	-	-	2	-	-	-	6
06-Aug-22	-	-	-	-	2	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	4
07-Aug-22	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2
08-Aug-22	-	1	9	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	12
09-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
10-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Aug-22	-	-	1	-	1	-	-	1	-	-	3	-	-	-	-	-	-	-	-	-	6
12-Aug-22	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3
13-Aug-22	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2
14-Aug-22	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2
15-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
16-Aug-22	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	3
17-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	2
18-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
19-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
21-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	1	-	1	-	5
22-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
23-Aug-22	-	1	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	4
24-Aug-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
25-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
26-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
27-Aug-22	-	-	1	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	3
28-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-Aug-22	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2
31-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	2
01-Sep-22	-	1	-	1	-	-	-	-	-	-	-	-	1	-	1	-	-	-	1	-	5
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-Sep-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
09-Sep-22	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Sep-22	-	-	-	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	3
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Sep-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**5**	**15**	**10**	**11**	**6**	**-**	**5**	**5**	**5**	**7**	**6**	**4**	**3**	**2**	**2**	**3**	**1**	**3**	**3**	**96**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Big Six

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																					
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**570**	**600**	**Total**
31-Jul-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01-Aug-22	-	-	-	-	-	-	1	1	1	-	-	1	-	-	1	-	-	-	-	-	-	**5**
02-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
03-Aug-22	-	-	-	1	-	-	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-	**4**
04-Aug-22	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
05-Aug-22	-	-	-	-	-	-	-	-	2	-	-	2	1	-	-	-	-	-	-	-	-	**5**
06-Aug-22	-	-	-	-	-	-	-	-	2	1	1	-	-	-	-	-	-	-	-	-	-	**4**
07-Aug-22	-	-	-	-	1	-	-	2	-	-	1	1	-	-	1	-	-	-	-	-	-	**6**
08-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	**2**
09-Aug-22	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**2**
10-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
11-Aug-22	-	1	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	**4**
12-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**2**
13-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	**2**
14-Aug-22	-	-	-	-	1	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	**3**
15-Aug-22	-	1	-	-	-	-	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	**5**
16-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
17-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1	-	-	-	-	**3**
18-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
19-Aug-22	-	-	-	-	1	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	**3**
20-Aug-22	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
21-Aug-22	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	1	-	-	1	-	-	**4**
22-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
23-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**2**
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-22	-	1	-	1	1	-	-	-	1	-	-	1	-	-	1	-	1	1	2	-	-	**10**
26-Aug-22	-	-	-	-	-	-	-	1	-	1	-	-	-	1	2	-	-	-	-	-	-	**5**
27-Aug-22	-	1	-	-	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	**4**
28-Aug-22	-	1	-	1	-	-	-	-	-	1	-	-	-	1	-	-	-	-	1	1	-	**6**
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
30-Aug-22	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
31-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
01-Sep-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
02-Sep-22	-	-	-	-	1	-	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	**4**
03-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
07-Sep-22	-	1	-	-	-	-	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-	**4**
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**1**
09-Sep-22	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
10-Sep-22	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
11-Sep-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
12-Sep-22	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3	**5**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-Sep-22	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Sep-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**1**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**1**	**15**	**3**	**5**	**10**	**0**	5	**10**	**8**	**12**	**8**	**10**	**6**	**4**	**9**	**2**	**2**	**2**	**4**	**1**	**3**	**120**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Eye Lake Control (activity control site for Eye Lake)

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																						
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**570**	**600**	**630**	**Total**
31-Jul-22	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	**6**
01-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
02-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
03-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**1**
04-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
05-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
06-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**1**
07-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	-	-	-	-	-	**3**
08-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
09-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	**2**
10-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
11-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**1**
12-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
13-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
14-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
15-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**1**
16-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
21-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
26-Aug-22	-	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**3**
27-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	**2**
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
30-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
31-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
03-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	**2**
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
07-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
09-Sep-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**1**
11-Sep-22	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2**	**5**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**8**	**4**	**0**	**5**	**0**	**1**	**2**	**2**	**0**	**0**	**0**	**1**	**32**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Eye Lake 85973

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																									
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**570**	**600**	**630**	**660**	**690**	**720**	**Total**
31-Jul-22	-	-	-	-	-	-	2	1	-	-	2	-	-	4	4	-	-	-	-	-	-	-	-	-	-	**13**
01-Aug-22	-	-	-	-	-	-	1	4	4	3	-	-	-	-	4	8	-	-	-	-	-	-	-	-	-	**24**
02-Aug-22	-	3	-	2	1	-	-	1	1	-	-	1	5	1	2	-	-	-	-	-	-	-	-	-	-	**17**
03-Aug-22	-	-	12	-	-	-	1	1	1	-	3	1	3	1	-	-	-	-	-	-	-	-	-	-	-	**23**
04-Aug-22	-	1	2	-	-	-	-	-	19	1	-	1	1	-	-	1	-	1	-	-	-	-	-	-	-	**27**
05-Aug-22	-	1	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**3**
06-Aug-22	-	-	-	-	-	-	-	-	3	-	-	-	8	2	-	-	-	-	-	-	-	-	-	-	-	**13**
07-Aug-22	-	-	13	1	-	-	5	-	2	-	1	6	-	-	-	2	-	-	-	-	-	-	-	-	-	**30**
08-Aug-22	-	-	-	-	1	-	1	1	-	-	1	-	-	4	-	1	2	-	-	-	-	-	-	-	-	**11**
09-Aug-22	-	1	-	-	1	-	-	2	-	-	-	5	1	16	-	3	-	-	-	-	-	-	-	-	-	**29**
10-Aug-22	-	34	7	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**46**
11-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	3	3	-	2	-	-	-	-	-	-	-	**9**
12-Aug-22	-	-	-	-	-	-	-	-	1	-	2	2	-	1	-	-	-	-	-	-	-	-	-	-	-	**6**
13-Aug-22	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	**5**
14-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	2	7	2	-	-	-	-	-	-	-	-	-	-	**12**
15-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	**4**
16-Aug-22	-	-	-	-	-	1	-	2	-	-	5	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**9**
17-Aug-22	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**3**
18-Aug-22	-	-	-	-	-	-	-	1	2	-	-	-	12	9	5	-	-	-	-	4	-	-	-	-	-	**33**
19-Aug-22	-	7	5	2	-	-	-	-	-	2	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	**23**
20-Aug-22	3	4	-	-	-	-	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**11**
21-Aug-22	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
22-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Aug-22	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	12	-	-	-	-	-	-	**14**
26-Aug-22	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
27-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
30-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
31-Aug-22	-	2	7	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	**2**
02-Sep-22	-	4	-	-	-	11	10	-	1	8	2	2	-	-	18	-	-	-	-	-	-	-	-	-	-	**56**
03-Sep-22	-	1	4	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**6**
04-Sep-22	1	-	7	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**11**
05-Sep-22	-	2	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
06-Sep-22	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
07-Sep-22	1	15	-	6	-	-	-	-	4	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	**29**
08-Sep-22	-	-	1	1	1	2	14	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**22**
09-Sep-22	6	1	2	3	1	2	-	-	-	-	-	-	-	-	3	-	-	8	-	-	-	1	-	-	-	**27**
10-Sep-22	-	4	-	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
11-Sep-22	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
12-Sep-22	1	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
13-Sep-22	2	3	9	3	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**19**
14-Sep-22	-	2	-	14	1	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	3	-	-	-	-	**25**
15-Sep-22	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
17-Sep-22	6	3	-	1	2	1	-	-	2	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	**18**
18-Sep-22	1	-	1	10	-	-	-	-	-	1	-	2	8	-	2	-	-	-	-	-	-	-	-	-	-	**25**
19-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**2**
20-Sep-22	-	-	16	9	-	-	-	-	-	4	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**30**
21-Sep-22	17	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	**20**
22-Sep-22	-	-	-	-	18	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	**24**
23-Sep-22	-	-	-	3	2	3	-	1	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17**
24-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2	**5**
25-Sep-22	-	9	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**41**	**108**	**90**	**71**	**40**	**24**	41	**20**	**44**	**22**	**26**	**27**	**48**	**55**	**48**	**20**	**6**	**13**	**15**	**11**	**3**	**1**	**0**	**0**	**2**	776

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Eye Lake 85974

Date	Start time of 30 minute blocks, in relation to end of sunset (minutes)																									Total
	0	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600	630	660	690	720	
31-Jul-22	-	-	-	-	-	-	2	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5
01-Aug-22	-	-	-	-	-	-	1	1	3	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	11
02-Aug-22	-	1	1	2	-	-	-	-	-	1	-	-	1	3	2	-	-	-	-	-	-	-	-	-	-	11
03-Aug-22	-	2	7	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
04-Aug-22	-	-	-	-	-	-	-	1	4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	6
05-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
06-Aug-22	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
07-Aug-22	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
08-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2
09-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	1	-	-	-	-	-	-	9
10-Aug-22	-	8	1	1	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
11-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	1	-	-	-	-	-	-	-	4
12-Aug-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
13-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
14-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2
15-Aug-22	-	-	-	-	1	2	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
16-Aug-22	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
17-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	3
18-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	12	-	-	-	3	-	-	-	-	-	22
19-Aug-22	-	10	1	2	-	-	-	-	-	1	-	3	-	2	1	1	-	-	-	-	-	-	-	-	-	21
20-Aug-22	-	-	-	-	-	-	10	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	11
21-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
22-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
26-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
27-Aug-22	-	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	3
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31-Aug-22	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Sep-22	-	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
05-Sep-22	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Sep-22	-	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	1	-	-	-	-	-	-	-	4
09-Sep-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
10-Sep-22	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
11-Sep-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
12-Sep-22	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
14-Sep-22	-	1	-	1	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	5
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	1	2	-	1	-	-	-	-	-	-	-	-	-	-	4
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Sep-22	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-22	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Sep-22	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Total	**7**	**35**	**12**	**10**	**2**	**3**	**18**	**9**	**10**	**7**	**1**	**10**	**8**	**14**	**8**	**22**	**9**	**5**	**1**	**3**	**0**	**0**	**0**	**0**	**2**	**196**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Gorham Control (activity control site for Gorham)

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																			
Date	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**570**	**Total**
31-Jul-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
03-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Aug-22	-	1	1	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	4
05-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
08-Aug-22	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	2
09-Aug-22	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	1	-	-	-	3
10-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
11-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
12-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	2
13-Aug-22	-	-	-	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	3
14-Aug-22	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	3
15-Aug-22	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
16-Aug-22	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	1	-	-	-	3
17-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	2
19-Aug-22	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2
20-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	2
21-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
22-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Aug-22	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	3
27-Aug-22	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
30-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Sep-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
08-Sep-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
09-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	3
13-Sep-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**1**	**63**	**92**	**0**	**155**	**189**	**214**	**245**	**0**	**302**	**331**	**362**	**392**	**423**	**1**	**485**	**0**	**1**	**1**	**47**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Gorham

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																	
Date	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**Total**
31-Jul-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
01-Aug-22	-	-	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	**3**
02-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
03-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
04-Aug-22	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	**2**
05-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
06-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
07-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
08-Aug-22	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	**2**
09-Aug-22	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	**3**
10-Aug-22	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	**2**
11-Aug-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
12-Aug-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
13-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
14-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
15-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
16-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**1**
17-Aug-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
18-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
21-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
25-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
26-Aug-22	-	-	1	-	-	-	-	-	-	1	-	-	-	-	1	-	-	**3**
27-Aug-22	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	**2**
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
30-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
31-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**1**
03-Sep-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
07-Sep-22	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	**2**
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
09-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	**1**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**2**	**0**	**1**	**3**	**4**	**7**	7	**2**	**0**	**2**	**2**	**0**	**1**	**2**	**1**	**0**	**2**	**36**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Lakeshore Control (activity control site for Lakeshore)

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																				
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**570**	**Total**
31-Jul-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
02-Aug-22	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2
03-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
05-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	2
06-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Aug-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
08-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
09-Aug-22	-	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3
10-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
11-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2
15-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
16-Aug-22	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
17-Aug-22	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
18-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
19-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
20-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	7	-	-	18
21-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	5
22-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
23-Aug-22	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
24-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	-	7
25-Aug-22	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	8
26-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	1	-	-	-	4
28-Aug-22	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
29-Aug-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
30-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
31-Aug-22	-	6	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	1	-	9
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
03-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09-Sep-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Sep-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Sep-22	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**6**	**49**	**61**	**91**	**0**	**153**	0	**1**	**243**	**273**	**0**	**0**	**0**	**392**	**423**	**0**	**495**	**527**	**12**	**6**	**92**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Lakeshore 1A

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																			
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**Total**
31-Jul-22	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	**5**
01-Aug-22	-	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	-	**4**
02-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
03-Aug-22	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	**2**
04-Aug-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
05-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
06-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	**2**
07-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
08-Aug-22	-	1	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	**4**
09-Aug-22	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
10-Aug-22	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
11-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
12-Aug-22	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	**2**
13-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
14-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
15-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
16-Aug-22	-	-	10	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	**13**
17-Aug-22	-	-	-	-	-	-	-	4	4	-	-	-	-	-	5	-	-	-	-	**13**
18-Aug-22	-	-	-	-	-	-	-	-	-	7	1	4	1	-	1	-	-	-	-	**14**
19-Aug-22	-	1	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	**4**
20-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**1**
21-Aug-22	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
22-Aug-22	-	-	-	-	-	6	-	-	-	-	-	1	1	-	-	-	-	-	-	**8**
23-Aug-22	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	5	1	-	**14**
24-Aug-22	1	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	3	-	**7**
25-Aug-22	-	1	-	-	1	6	7	1	3	4	-	-	-	-	-	-	-	-	-	**23**
26-Aug-22	4	15	3	-	-	-	3	-	-	-	2	-	-	-	2	-	-	-	-	**29**
27-Aug-22	-	2	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	**5**
28-Aug-22	4	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	**6**
29-Aug-22	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	**4**
30-Aug-22	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**4**
31-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	4	**18**
01-Sep-22	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	**4**
02-Sep-22	-	-	3	-	8	-	-	-	-	7	-	-	-	-	-	-	-	-	-	**18**
03-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
04-Sep-22	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
05-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
06-Sep-22	-	-	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	**4**
07-Sep-22	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
09-Sep-22	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	**3**
10-Sep-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
27-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**12**	**42**	**16**	**2**	**12**	**18**	**27**	**6**	**8**	**25**	**7**	**9**	**3**	**7**	**11**	**14**	**7**	**4**	**5**	**235**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Lakeshore 1B

	Start time of 30 minute blocks, in relation to end of sunset (minutes)											
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**Total**
31-Jul-22	-	-	-	-	-	-	-	-	-	2	-	**2**
01-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
02-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
03-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
04-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
05-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
06-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
07-Aug-22	-	-	-	-	-	-	-	-	-	-	1	**1**
08-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
09-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
10-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
11-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
12-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
13-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
14-Aug-22	-	-	-	-	1	-	-	-	-	-	-	**1**
15-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Aug-22	-	-	-	-	-	-	1	-	-	-	-	**1**
17-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
21-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
26-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
27-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
30-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
31-Aug-22	-	-	-	-	-	-	-	-	-	-	-	**-**
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
03-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
07-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
09-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
27-Sep-22	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	**1**	**5**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Shuniah Control (activity control site for Shuniah)

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																						
Date	**-30**	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**570**	**600**	**Total**
04-Aug-22	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
05-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
06-Aug-22	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**2**
07-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
08-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
09-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	**2**
10-Aug-22	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**3**
11-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
12-Aug-22	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**3**
13-Aug-22	-	-	-	-	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**3**
14-Aug-22	1	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
15-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	**5**
16-Aug-22	-	-	2	-	-	-	-	-	-	5	-	-	-	-	-	-	6	-	-	-	-	-	**13**
17-Aug-22	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
18-Aug-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
19-Aug-22	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**3**
20-Aug-22	-	-	-	-	1	2	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	**23**
21-Aug-22	-	-	-	-	-	-	-	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	**4**
22-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
23-Aug-22	-	4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	**7**
24-Aug-22	-	-	-	-	-	8	-	-	-	-	-	-	1	-	-	-	-	-	1	69	-	-	**79**
25-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	-	-	**3**
26-Aug-22	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	7	-	-	**9**
27-Aug-22	-	16	-	-	-	1	3	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-	**24**
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	**2**
29-Aug-22	-	-	-	-	-	-	4	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	**6**
30-Aug-22	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	5	-	-	**7**
31-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	3	-	-	-	2	**6**
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
03-Sep-22	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	1	-	-	-	**3**
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
05-Sep-22	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
06-Sep-22	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
07-Sep-22	-	-	5	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	**7**
08-Sep-22	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
09-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**1**
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	**2**
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	2	-	-	-	-	**13**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
21-Sep-22	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	**2**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Sep-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
27-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
28-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
29-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
30-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
01-Oct-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
02-Oct-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**2**	**26**	**17**	**5**	**6**	**17**	7	**8**	**5**	**10**	**5**	**5**	**3**	**23**	**8**	**13**	**9**	**5**	**2**	**82**	**2**	**2**	**262**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Shuniah

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																						
Date	**-30**	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**570**	**600**	**Total**
04-Aug-22	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
05-Aug-22	-	-	-	-	-	1	-	-	2	-	-	-	1	5	6	-	-	-	-	-	-	-	**15**
06-Aug-22	-	-	-	-	-	1	-	1	-	-	-	1	1	-	1	2	1	-	-	-	-	-	**8**
07-Aug-22	-	-	6	-	-	-	-	-	1	1	3	-	-	2	2	-	-	1	-	-	-	-	**16**
08-Aug-22	-	-	-	-	-	-	-	2	3	-	-	-	1	-	1	-	-	-	-	-	-	-	**7**
09-Aug-22	-	-	-	2	-	-	1	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	**6**
10-Aug-22	-	-	6	-	1	-	2	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	**12**
11-Aug-22	-	-	4	-	-	2	2	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	**11**
12-Aug-22	-	-	-	2	-	-	1	1	1	-	-	-	-	1	-	-	-	1	1	-	-	-	**8**
13-Aug-22	-	-	-	-	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**3**
14-Aug-22	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	2	2	-	-	-	-	**7**
15-Aug-22	-	-	-	-	1	4	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	**9**
16-Aug-22	-	-	-	-	-	-	2	2	-	2	-	11	2	-	-	-	-	1	-	-	-	-	**20**
17-Aug-22	-	-	1	-	-	1	-	3	1	-	1	-	3	-	-	-	-	-	-	-	-	-	**10**
18-Aug-22	-	-	-	-	-	1	2	2	1	-	-	1	1	-	-	-	-	-	-	-	-	-	**8**
19-Aug-22	-	-	2	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	**5**
20-Aug-22	-	-	-	1	-	-	-	-	1	-	-	-	1	-	-	1	1	-	-	-	-	-	**5**
21-Aug-22	-	-	1	-	1	-	1	-	-	-	-	-	1	1	-	-	-	1	-	-	-	-	**6**
22-Aug-22	-	-	-	-	-	-	2	-	1	3	9	3	-	1	-	-	3	1	1	-	-	-	**24**
23-Aug-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	1	-	-	**6**
24-Aug-22	-	-	2	-	1	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	**5**
25-Aug-22	-	-	1	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
26-Aug-22	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	**5**
27-Aug-22	-	-	2	-	-	1	-	-	-	-	1	1	2	5	2	2	-	3	-	-	-	-	**19**
28-Aug-22	-	-	-	-	-	-	-	-	-	-	1	1	-	1	-	1	-	-	-	3	-	-	**7**
29-Aug-22	-	-	-	1	1	7	6	-	2	-	-	4	-	-	-	-	1	-	-	-	1	-	**23**
30-Aug-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	**2**
31-Aug-22	-	-	-	2	1	1	1	1	-	-	-	-	-	-	-	1	1	-	-	-	-	-	**8**
01-Sep-22	-	-	2	3	3	2	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-	**13**
02-Sep-22	-	-	-	-	-	1	-	-	1	-	-	-	-	2	-	-	-	1	-	-	-	-	**5**
03-Sep-22	-	-	1	-	-	-	1	2	-	1	1	13	-	1	-	-	-	-	1	-	-	-	**21**
04-Sep-22	-	-	2	-	1	2	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	**7**
05-Sep-22	-	-	-	1	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	**4**
06-Sep-22	-	-	-	-	-	-	-	-	-	-	1	-	2	1	-	-	4	-	2	1	-	42	**53**
07-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**2**
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1	-	-	-	2	-	**5**
09-Sep-22	-	-	1	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**3**
10-Sep-22	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-	**4**
11-Sep-22	-	-	-	-	-	-	-	-	1	-	5	1	-	-	-	-	-	-	-	-	-	-	**7**
12-Sep-22	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
13-Sep-22	-	-	-	1	-	-	2	-	7	1	-	-	-	-	1	-	-	-	-	-	-	-	**12**
14-Sep-22	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
15-Sep-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**1**
19-Sep-22	-	-	1	-	1	-	-	-	1	-	-	-	-	1	1	-	-	-	4	-	-	-	**9**
20-Sep-22	-	-	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**3**
21-Sep-22	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**1**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
27-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
28-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
29-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
30-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
01-Oct-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
02-Oct-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**0**	**0**	**45**	**16**	**13**	**29**	**32**	**18**	**28**	**12**	**25**	**39**	**20**	**25**	**20**	**11**	**18**	**14**	**11**	**7**	**3**	**42**	**428**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species
- the cells highlighted in grey were not surveyed due to a detector programming issue.

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Spillway Inlet Control (activity control site for Spillway Inlet)

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																					
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**##**	**##**	**##**	**##**	**##**	**Total**
05-Aug-22	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	**3**
06-Aug-22	-	-	-	-	-	-	1	1	1	-	1	-	-	-	-	1	-	-	-	-	-	**5**
07-Aug-22	-	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
08-Aug-22	-	-	-	-	-	-	-	1	-	1	-	1	-	-	2	-	-	-	-	-	-	**5**
09-Aug-22	-	-	-	2	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**4**
10-Aug-22	-	-	-	-	1	1	-	-	1	-	-	-	-	-	1	-	1	-	-	-	-	**5**
11-Aug-22	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1	-	-	-	-	-	-	**3**
12-Aug-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
13-Aug-22	-	1	-	-	-	1	-	-	-	-	1	-	1	-	1	-	-	-	-	-	-	**5**
14-Aug-22	-	-	1	-	1	1	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	**5**
15-Aug-22	-	-	-	-	1	1	-	-	1	1	-	-	-	-	-	-	1	-	-	-	-	**5**
16-Aug-22	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	1	1	-	-	-	-	**5**
17-Aug-22	-	1	-	1	-	1	-	-	-	1	-	-	-	1	1	-	-	-	-	-	-	**6**
18-Aug-22	-	-	-	-	-	1	1	1	1	-	-	-	-	-	1	-	-	1	-	-	-	**6**
19-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Aug-22	-	-	-	1	-	1	-	1	-	-	1	-	-	-	1	-	-	-	-	-	-	**5**
21-Aug-22	-	-	-	-	-	2	-	-	1	-	-	-	-	-	-	1	-	1	-	-	-	**5**
22-Aug-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**2**
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Aug-22	-	-	-	-	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	**3**
26-Aug-22	-	-	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	**3**
27-Aug-22	-	-	2	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	**4**
28-Aug-22	-	-	1	2	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	1	-	**7**
29-Aug-22	3	1	-	-	1	1	-	-	-	-	1	-	-	-	-	-	1	-	-	4	-	**12**
30-Aug-22	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	-	-	1	-	**4**
31-Aug-22	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	2	2	**7**
01-Sep-22	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	1	**3**
02-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**2**
03-Sep-22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
04-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**2**
05-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	**2**
07-Sep-22	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**2**
08-Sep-22	-	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	**4**
09-Sep-22	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	**3**
10-Sep-22	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
11-Sep-22	-	-	1	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	**3**
12-Sep-22	-	-	-	-	-	4	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	**6**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
14-Sep-22	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Sep-22	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**2**
17-Sep-22	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
18-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	**3**
20-Sep-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
22-Sep-22	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**2**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Sep-22	-	-	-	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	**3**
25-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**3**	**10**	**11**	**13**	**8**	**21**	**5**	**10**	**8**	**7**	**9**	**7**	**4**	**5**	**8**	**7**	**8**	**5**	**0**	**9**	**4**	**162**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Spillway Inlet

Date	Start time of 30 minute blocks, in relation to end of sunset (minutes)																					Total
	0	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	##	##	##	##	##	
05-Aug-22	-	-	-	-	-	1	-	-	-	2	-	3	1	3	1	-	-	-	-	-	-	11
06-Aug-22	-	-	-	1	2	2	-	2	1	-	-	2	2	-	1	4	-	-	-	-	-	17
07-Aug-22	-	1	-	3	4	-	4	-	3	3	4	-	1	-	1	1	-	1	-	-	-	26
08-Aug-22	-	-	2	2	1	-	-	-	-	1	-	-	1	-	1	1	1	-	-	-	-	10
09-Aug-22	-	3	-	4	-	-	-	1	2	-	2	1	3	1	1	-	1	-	-	-	-	19
10-Aug-22	-	19	12	2	3	2	2	-	4	-	-	1	1	2	2	3	-	-	-	-	-	53
11-Aug-22	-	3	3	-	-	1	2	-	-	1	1	-	-	1	-	-	-	1	-	-	-	13
12-Aug-22	-	-	-	2	-	-	-	-	-	-	2	1	3	-	1	-	-	-	-	-	-	9
13-Aug-22	-	1	1	1	1	1	4	-	-	-	-	2	-	-	1	-	-	-	-	-	-	12
14-Aug-22	-	1	3	1	1	-	1	-	-	-	-	-	-	-	3	-	-	-	-	-	-	10
15-Aug-22	-	-	1	-	-	-	-	1	-	-	1	-	-	2	1	2	-	3	-	-	-	11
16-Aug-22	-	3	-	-	-	-	-	3	1	1	1	-	1	1	-	-	4	9	-	-	-	24
17-Aug-22	-	2	-	5	1	4	1	1	-	-	-	-	2	-	-	-	1	-	-	-	-	17
18-Aug-22	-	-	-	1	1	1	2	3	2	1	-	3	-	-	2	-	-	3	-	-	-	19
19-Aug-22	-	-	1	1	1	1	-	-	2	1	-	-	-	-	1	-	-	-	-	-	-	8
20-Aug-22	-	-	-	1	1	2	2	2	-	-	-	-	-	-	1	-	-	-	-	-	-	9
21-Aug-22	-	1	2	3	1	3	-	1	1	-	2	3	-	-	2	1	-	-	-	-	-	20
22-Aug-22	-	-	8	2	4	1	-	-	-	1	-	-	1	2	3	1	-	-	-	-	-	23
23-Aug-22	-	2	1	-	1	-	-	3	1	-	-	-	2	1	-	-	1	-	-	-	-	12
24-Aug-22	-	1	-	-	3	-	-	-	-	-	-	-	-	1	-	2	-	-	1	-	-	8
25-Aug-22	-	-	-	-	2	3	3	-	-	-	-	1	-	-	-	-	3	-	-	-	-	12
26-Aug-22	-	-	1	-	2	1	1	1	-	-	2	-	-	1	1	-	5	1	-	-	-	16
27-Aug-22	-	10	1	1	-	1	-	1	-	-	-	1	-	-	1	-	1	9	1	-	-	27
28-Aug-22	-	16	6	-	-	-	1	4	1	-	-	7	1	-	-	-	1	-	1	-	-	38
29-Aug-22	1	99	69	14	6	1	1	1	-	1	1	1	-	1	1	1	5	2	2	1	-	208
30-Aug-22	-	49	1	3	-	-	1	2	3	-	-	-	-	-	2	1	1	-	6	-	-	69
31-Aug-22	-	35	2	2	-	1	-	-	-	-	6	1	-	-	-	-	2	-	-	3	-	52
01-Sep-22	-	-	1	-	-	1	-	-	-	1	-	-	-	-	1	-	-	-	6	5	4	19
02-Sep-22	-	55	28	4	1	1	-	1	1	1	-	-	-	-	-	-	1	-	1	-	-	94
03-Sep-22	-	76	16	2	-	1	2	1	1	1	2	-	-	1	-	-	1	3	-	-	-	107
04-Sep-22	-	69	31	5	-	-	1	-	-	-	-	-	-	2	2	1	-	-	-	-	-	111
05-Sep-22	-	59	19	8	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	-	89
06-Sep-22	-	-	2	1	-	-	-	-	3	-	2	1	2	2	-	1	1	-	-	1	-	16
07-Sep-22	-	38	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	41
08-Sep-22	-	-	-	1	-	-	4	-	-	-	-	1	-	-	1	-	1	2	1	1	1	13
09-Sep-22	-	1	1	-	1	-	1	1	-	-	3	-	-	-	-	-	-	-	-	1	1	10
10-Sep-22	-	7	-	-	-	-	1	2	-	-	-	1	-	4	1	1	-	-	-	1	-	18
11-Sep-22	-	-	-	1	5	1	1	-	2	-	1	1	1	-	2	2	1	-	1	1	-	20
12-Sep-22	-	6	-	-	-	11	4	-	-	2	2	1	-	1	1	-	-	-	-	-	-	28
13-Sep-22	-	19	-	-	1	1	2	-	1	-	-	-	2	-	2	3	1	-	-	-	-	32
14-Sep-22	-	1	-	1	2	5	1	1	-	-	-	-	-	2	-	-	-	-	-	-	-	13
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Sep-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2
17-Sep-22	-	-	-	-	1	1	5	1	-	-	-	-	1	-	-	2	-	-	-	-	-	11
18-Sep-22	-	2	-	1	-	-	-	5	-	1	-	-	-	1	-	-	-	1	-	-	-	11
19-Sep-22	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	2
20-Sep-22	-	2	-	2	-	-	1	-	1	-	-	-	2	-	-	-	-	-	-	1	-	9
21-Sep-22	-	-	3	-	1	-	-	3	1	-	-	-	-	-	1	1	-	2	1	-	-	13
22-Sep-22	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2
25-Sep-22	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**1**	**##**	**##**	**76**	**48**	**49**	**50**	**41**	**32**	**18**	**34**	**32**	**27**	**29**	**38**	**28**	**32**	**37**	**22**	**19**	**6**	**1418**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Spillway Outlet Control (activity control site for Spillway Outlet)

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																				
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**##**	**##**	**##**	**##**	**##**	**Total**
05-Aug-22	2	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**4**
06-Aug-22	-	2	1	1	-	-	-	2	-	2	-	-	-	-	1	2	-	-	-	-	-	**11**
07-Aug-22	-	4	-	-	1	-	2	-	-	3	-	1	1	-	2	-	-	-	-	-	-	**14**
08-Aug-22	-	1	-	1	1	1	1	-	-	-	-	1	2	-	1	-	-	-	-	-	-	**9**
09-Aug-22	-	2	-	1	1	-	1	1	-	1	1	-	-	1	-	2	-	-	-	-	-	**11**
10-Aug-22	-	3	-	-	-	-	1	-	2	1	1	-	1	-	-	2	-	-	-	-	-	**11**
11-Aug-22	-	1	-	-	1	-	1	-	-	-	-	-	-	-	-	2	1	-	-	-	-	**6**
12-Aug-22	-	1	-	-	2	1	1	1	-	-	-	-	2	1	1	1	1	-	-	-	-	**12**
13-Aug-22	-	-	-	-	1	1	1	1	-	-	-	-	2	1	1	-	1	-	-	-	-	**9**
14-Aug-22	-	2	-	-	-	-	-	1	2	2	-	-	-	-	-	1	1	-	-	-	-	**9**
15-Aug-22	-	3	-	-	1	-	-	-	1	1	1	-	-	1	2	1	-	-	-	-	-	**11**
16-Aug-22	-	-	-	-	1	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	**4**
17-Aug-22	-	-	-	-	1	2	-	-	1	1	-	3	-	-	-	1	1	1	1	-	-	**12**
18-Aug-22	-	1	1	-	1	-	2	1	1	-	-	-	1	1	-	-	1	-	-	-	-	**10**
19-Aug-22	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-	2	-	1	-	-	-	**6**
20-Aug-22	-	1	1	1	-	-	-	1	2	-	1	-	1	-	1	1	1	-	-	-	-	**11**
21-Aug-22	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
22-Aug-22	-	-	1	-	-	-	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-	**4**
23-Aug-22	-	1	-	-	-	1	1	-	1	-	-	-	-	1	-	-	2	-	-	-	-	**7**
24-Aug-22	1	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	**4**
25-Aug-22	-	-	-	-	1	-	2	-	1	-	1	2	1	-	-	-	2	1	2	-	-	**13**
26-Aug-22	-	-	-	1	1	1	-	1	-	-	-	2	-	-	-	1	1	2	1	-	-	**11**
27-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	**3**
28-Aug-22	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	2	-	-	-	**5**
29-Aug-22	-	1	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	2	-	-	-	**6**
30-Aug-22	-	-	-	-	1	-	-	1	-	1	-	1	-	-	-	2	1	2	-	-	-	**9**
31-Aug-22	1	2	-	-	1	-	-	1	-	-	1	1	4	1	-	2	-	-	-	2	-	**16**
01-Sep-22	-	-	-	-	-	-	1	-	-	-	-	-	1	-	3	1	-	-	-	1	-	**7**
02-Sep-22	-	1	-	1	-	1	1	-	2	-	-	-	1	-	1	-	-	-	-	-	-	**8**
03-Sep-22	-	1	-	1	1	-	1	-	-	1	-	-	-	1	1	-	-	-	-	-	-	**7**
04-Sep-22	-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	-	**6**
05-Sep-22	-	-	-	1	-	-	-	-	1	-	1	-	-	-	-	1	-	-	-	-	-	**4**
06-Sep-22	-	-	1	-	-	1	2	-	-	-	-	1	1	-	1	1	1	-	-	-	1	**10**
07-Sep-22	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**2**
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	**1**
09-Sep-22	-	-	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**3**
10-Sep-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
11-Sep-22	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**1**
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	**2**
14-Sep-22	-	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	**4**
15-Sep-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
16-Sep-22	-	-	-	-	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	**3**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
18-Sep-22	-	1	-	1	-	1	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	**5**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	**3**
20-Sep-22	-	-	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	**3**
21-Sep-22	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**2**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**5**	**31**	**7**	**16**	**22**	**12**	**22**	**14**	**17**	**20**	**10**	**15**	**22**	**10**	**19**	**24**	**14**	**13**	**5**	**7**	**3**	**308**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Spillway Outlet

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																					
Date	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**##**	**##**	**##**	**##**	**##**	**Total**
05-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
06-Aug-22	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	**3**
07-Aug-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
08-Aug-22	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	**4**
09-Aug-22	-	-	-	-	-	-	-	-	-	-	2	-	1	1	1	1	-	-	-	-	-	**6**
10-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
11-Aug-22	-	-	-	-	-	1	1	1	-	-	-	-	1	1	-	-	-	1	-	-	-	**6**
12-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**1**
13-Aug-22	-	-	-	-	1	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**4**
14-Aug-22	-	1	-	-	1	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	**4**
15-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	**2**
17-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**1**
18-Aug-22	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	5	2	-	-	**9**
19-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**
20-Aug-22	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
21-Aug-22	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
22-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**2**
23-Aug-22	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	**2**
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**1**
25-Aug-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
26-Aug-22	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	**2**
27-Aug-22	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	1	12	-	**17**
28-Aug-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**2**
29-Aug-22	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	-	**4**
30-Aug-22	-	-	2	-	-	-	-	1	1	-	-	-	-	-	1	-	1	-	1	-	-	**7**
31-Aug-22	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	10	-	**14**
01-Sep-22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	**2**
02-Sep-22	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	**3**
03-Sep-22	-	-	2	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	**5**
04-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	1	1	1	-	-	-	**5**
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**1**
06-Sep-22	-	1	-	-	-	-	-	-	1	-	2	1	2	-	-	-	-	-	-	-	-	**7**
07-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
08-Sep-22	-	1	-	-	-	-	-	-	-	1	-	-	-	-	2	-	1	-	1	1	3	**10**
09-Sep-22	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1	**5**
10-Sep-22	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	**3**
11-Sep-22	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	**5**
12-Sep-22	-	-	-	-	-	3	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	**6**
13-Sep-22	-	-	-	-	1	-	-	-	1	1	-	-	-	1	1	2	-	-	-	-	-	**7**
14-Sep-22	-	-	-	-	1	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**4**
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**1**
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**1**
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
26-Sep-22	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Total	**2**	**6**	**5**	**6**	**9**	**5**	**8**	**7**	**7**	**8**	**9**	**7**	**6**	**7**	**7**	**8**	**5**	**14**	**6**	**29**	**4**	**165**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Steeprock - reference site

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																							
Date	**-30**	**0**	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**##**	**##**	**##**	**##**	**##**	**##**	**##**	**##**	**Total**
31-Jul-22	-	-	-	-	-	-	-	1	1	3	6	4	1	7	6	1	-	5	1	-	-	-	-	-	**36**
01-Aug-22	-	-	29	-	-	13	12	29	2	-	-	4	6	15	14	2	-	4	-	-	-	-	-	-	**130**
02-Aug-22	-	-	10	4	3	35	8	21	-	-	12	-	14	13	14	2	-	1	-	-	-	-	-	-	**137**
03-Aug-22	-	-	-	-	-	3	8	11	16	9	3	9	1	3	4	3	3	5	14	-	-	-	-	-	**92**
04-Aug-22	-	5	-	-	14	5	9	25	46	42	30	26	15	12	11	5	2	15	-	-	-	-	-	-	**262**
05-Aug-22	-	1	12	8	10	10	3	1	11	-	3	4	3	1	3	2	-	9	1	-	-	-	-	-	**82**
06-Aug-22	-	-	1	3	7	5	26	10	19	5	16	-	-	1	3	9	13	1	-	-	-	-	-	-	**119**
07-Aug-22	-	8	9	18	7	-	2	9	4	15	4	5	3	7	16	12	22	17	1	-	-	-	-	-	**159**
08-Aug-22	-	-	77	25	9	12	7	25	16	15	8	11	1	2	6	15	13	17	3	-	-	-	-	-	**262**
09-Aug-22	-	-	8	9	-	5	15	5	19	31	16	11	-	11	14	6	11	1	-	-	-	-	-	-	**162**
10-Aug-22	-	-	5	18	28	23	19	20	26	4	9	11	7	31	-	1	8	-	3	-	-	-	-	-	**213**
11-Aug-22	-	-	7	1	2	10	31	21	4	26	34	1	-	2	2	3	3	3	6	-	-	-	-	-	**156**
12-Aug-22	-	-	9	2	-	4	47	28	11	17	8	20	9	2	5	1	-	1	9	3	-	-	-	-	**176**
13-Aug-22	-	-	12	-	1	2	7	19	3	1	6	2	8	34	8	8	1	1	9	1	-	-	-	-	**123**
14-Aug-22	-	3	4	-	1	7	1	3	3	4	5	8	7	1	5	2	8	3	1	4	-	-	-	-	**70**
15-Aug-22	-	-	9	-	7	4	11	29	26	1	2	18	8	12	-	-	-	3	1	-	-	-	-	-	**131**
16-Aug-22	-	-	2	5	-	11	1	4	3	-	3	4	2	4	3	5	1	2	-	5	-	-	-	-	**55**
17-Aug-22	-	-	5	-	1	2	-	-	16	8	6	5	6	10	2	3	1	1	-	-	-	-	-	-	**66**
18-Aug-22	-	-	1	-	-	-	15	5	-	2	-	4	2	5	-	3	13	4	4	-	-	-	-	-	**58**
19-Aug-22	-	-	-	3	6	16	23	1	7	15	7	4	-	2	1	-	5	3	5	3	-	-	-	-	**101**
20-Aug-22	-	-	50	-	-	2	1	-	-	2	7	4	1	-	4	6	9	-	2	3	-	-	-	-	**91**
21-Aug-22	-	-	6	-	-	-	-	4	7	12	18	16	2	9	15	7	7	-	-	3	-	-	-	-	**106**
22-Aug-22	-	1	11	6	7	4	1	-	4	1	4	15	-	4	-	15	-	-	-	2	-	-	-	-	**75**
23-Aug-22	-	-	1	11	-	-	3	1	2	3	2	2	-	11	12	16	7	2	1	-	-	-	-	-	**74**
24-Aug-22	3	5	2	-	-	-	1	3	2	-	-	2	2	1	2	-	-	-	1	-	-	-	-	-	**24**
25-Aug-22	-	4	3	-	1	-	5	-	1	2	-	1	9	4	-	1	3	-	-	-	-	-	-	-	**34**
26-Aug-22	-	-	-	-	-	1	8	-	-	2	1	2	1	1	-	-	2	-	-	-	1	-	-	-	**19**
27-Aug-22	-	-	-	-	4	2	2	-	-	1	14	-	-	7	1	2	4	4	1	-	2	-	-	-	**44**
28-Aug-22	-	4	-	-	4	-	-	-	-	10	10	-	1	4	1	2	5	-	-	6	-	-	-	-	**47**
29-Aug-22	-	2	-	-	5	1	2	3	5	4	-	1	3	2	1	4	-	2	4	-	-	-	-	-	**39**
30-Aug-22	-	-	7	-	-	-	2	3	6	1	2	3	3	5	1	-	1	5	4	1	4	-	-	-	**48**
31-Aug-22	-	-	13	3	10	5	7	4	1	4	4	10	6	1	4	13	-	3	-	-	-	-	-	-	**88**
01-Sep-22	-	-	-	-	2	1	5	4	-	2	2	2	4	1	1	1	-	-	-	-	5	-	-	-	**30**
02-Sep-22	-	-	10	1	8	12	12	5	8	10	2	5	4	5	4	10	9	6	2	-	-	-	-	-	**113**
03-Sep-22	-	-	3	1	5	3	1	2	6	3	-	-	-	-	-	2	4	2	-	1	-	-	-	-	**33**
04-Sep-22	-	-	1	-	5	7	9	3	20	9	13	-	1	-	-	-	3	2	4	1	2	-	-	-	**80**
05-Sep-22	-	-	3	3	1	8	5	8	3	7	4	-	-	-	7	7	2	-	2	4	5	-	-	-	**69**
06-Sep-22	-	-	1	-	3	3	1	2	3	-	-	3	7	5	4	-	-	-	1	2	-	-	-	-	**35**
07-Sep-22	-	-	2	-	-	-	1	-	-	4	4	3	1	-	1	-	-	-	-	-	-	-	-	-	**16**
08-Sep-22	-	-	2	1	4	3	-	10	6	2	1	1	14	7	1	4	1	-	-	-	-	1	-	-	**58**
09-Sep-22	-	-	-	-	9	2	10	7	13	2	-	3	1	3	1	-	-	3	2	-	1	-	-	-	**57**
10-Sep-22	-	-	2	-	2	3	1	2	1	2	6	4	2	1	1	1	3	1	-	1	-	-	-	-	**33**
11-Sep-22	-	1	10	2	5	-	4	3	3	6	-	-	1	3	20	-	1	-	-	1	-	-	-	-	**60**
12-Sep-22	-	-	-	3	-	-	2	-	8	2	4	6	2	-	1	4	3	-	-	-	-	-	-	-	**35**
13-Sep-22	-	-	5	-	1	4	7	9	5	11	1	1	3	3	3	-	1	-	3	-	-	-	-	-	**57**
14-Sep-22	-	-	3	8	-	1	-	1	3	-	1	-	-	-	4	5	8	1	4	-	-	-	-	-	**39**
15-Sep-22	-	-	4	7	2	-	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	**16**
16-Sep-22	-	-	-	1	1	-	1	1	-	2	-	-	-	-	-	1	-	6	6	-	1	-	-	-	**20**
17-Sep-22	-	-	4	1	-	-	-	3	5	1	-	-	-	-	-	1	-	1	1	1	-	-	2	-	**20**
18-Sep-22	-	-	3	-	-	1	1	-	8	1	2	1	-	-	-	2	-	12	19	12	-	-	2	1	**65**
19-Sep-22	-	-	11	-	-	1	3	13	1	-	-	2	1	2	-	1	4	-	1	1	-	1	-	-	**42**
20-Sep-22	-	-	3	5	2	7	17	9	15	16	15	3	-	-	3	2	1	2	3	1	-	-	1	-	**105**
21-Sep-22	-	1	5	6	5	-	2	14	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	**37**
22-Sep-22	-	-	8	12	7	1	-	2	1	1	-	-	-	-	-	-	-	-	-	-	2	-	1	-	**35**
23-Sep-22	-	4	4	3	-	2	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
24-Sep-22	-	-	-	-	-	-	-	-	-	1	-	-	4	-	2	1	2	-	-	-	-	-	-	-	**10**
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
26-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**-**	**39**	**##**	**170**	**189**	**241**	360	**384**	**372**	**323**	**297**	**243**	**167**	**254**	**211**	**191**	**##**	**##**	**##**	**56**	**24**	**2**	**6**	**1**	**4361**

Notes:
- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value equaling solid red
- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value equaling solid green
- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

Attachment E: Acoustic Data for Potential Bat Hibernacula

Site: Thunderhead - reference site

	Start time of 30 minute blocks, in relation to end of sunset (minutes)																		-
Date	**30**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**	**330**	**360**	**390**	**420**	**450**	**480**	**510**	**540**	**Total**
31-Jul-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09-Aug-22	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	3
10-Aug-22	-	-	-	-	-	-	-	4	5	1	7	4	-	-	-	2	-	-	23
11-Aug-22	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
12-Aug-22	-	-	5	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6
13-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Aug-22	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
16-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	1	4
17-Aug-22	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
18-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-Aug-22	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
31-Aug-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
01-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
03-Sep-22	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
04-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
05-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
07-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
09-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Sep-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**7**	**1**	**8**	**0**	**1**	**0**	0	**4**	**7**	**1**	**7**	**4**	**1**	**0**	**0**	**3**	**1**	**1**	**46**

Notes:

- 30-minute block colour scale varies from red to white, based on a linear scale with the maximum activity value

- nightly-total colour scale varies from green to white, based on a linear scale with the maximum activity value ec

- values in tables represent totals of call passes identified as High Frequency bats or as Myotis species

ATTACHMENT 6.4-A-7

Bat Hibernacula Photolog

Attachment 6.4-A-7: Bat Hibernacula Photolog

Steep Rock Hibernacula Reference

Photo 1: Facing North

Photo 2: Facing East

Photo 3: Facing South

Photo 4: Facing West

Photo 5: Bat Gate at Entrance to Hibernacula

Photo 6: Inside Hibernacula (Taken Through Bat Gate)

Attachment 6.4-A-7: Bat Hibernacula Photolog

Thunderhead Hibernacula Reference

Photo 7: Looking at Hibernacula

Photo 8: Close Up of Hibernacula

Attachment 6.4-A-7: Bat Hibernacula Photolog

Photo 9: Eye Lake 85973 Activity Station Looking at Feature

Photo 10: Eye Lake 85973 Activity Station Close Up of Feature

Photo 11: Eye Lake 85974 Activity Station Looking at Feature

Attachment 6.4-A-7: Bat Hibernacula Photolog

Photo 12: Eye Lake 85974 Activity Station Close Up of Feature

Photo 13: Big Six Activity Station Looking at Feature

Photo 14: Spillway Inlet Activity Station Looking at Feature

Attachment 6.4-A-7: Bat Hibernacula Photolog

Photo 15: Spillway Inlet Activity Station Close Up of Feature

Photo 16: Spillway Outlet Activity Station Looking at Feature

Photo 17: Andowan Activity Station Looking at Feature

Attachment 6.4-A-7: Bat Hibernacula Photolog

Photo 18: Andowan Activity Station Close Up of Feature

Photo 19: Gorham Activity Station Looking at Feature

Photo 20: Gorham Activity Station Close Up of Feature Filled with Waste Rock

Attachment 6.4-A-7: Bat Hibernacula Photolog

Photo 21: Lakeshore 1A Activity Station Looking at Feature

Photo 22: Lakeshore 1A Activity Station Looking at Potential Secondary Access to Feature

Photo 23: Lakeshore 1B Activity Station Looking at Feature

Attachment 6.4-A-7: Bat Hibernacula Photolog

Photo 24: Lakeshore 1B Activity Station Looking at Potential Secondary Access to Feature

Photo 25: Shuniah Activity Station Looking at Feature

ATTACHMENT 6.4-A-8

Potential Gray Fox Denning Habitat Survey – Effort Tracking

Attachment G: Potential Gray Fox Denning Habitat Surveys - Effort Tracking

Site ID	Survey Type	Potential Gray Fox Denning Habitat
BKSW-100	Bank Swallow Survey	yes
BKSW-101	Bank Swallow Survey	yes
BKSW-102	Bank Swallow Survey	yes
BKSW-33	Bank Swallow Survey	yes
BKSW-39	Bank Swallow Survey	yes
BKSW-42	Bank Swallow Survey	yes
BKSW-43	Bank Swallow Survey	yes
BKSW-44	Bank Swallow Survey	yes
BKSW-46	Bank Swallow Survey	yes
BKSW-47	Bank Swallow Survey	yes
BKSW-48	Bank Swallow Survey	yes
BKSW-49	Bank Swallow Survey	yes
BKSW-5	Bank Swallow Survey	yes
BKSW-51	Bank Swallow Survey	yes
BKSW-52	Bank Swallow Survey	yes
BKSW-53	Bank Swallow Survey	yes
BKSW-54	Bank Swallow Survey	yes
BKSW-57	Bank Swallow Survey	yes
BKSW-60	Bank Swallow Survey	yes
BKSW-61	Bank Swallow Survey	yes
BKSW-66	Bank Swallow Survey	yes
BKSW-67	Bank Swallow Survey	yes
BKSW-75	Bank Swallow Survey	yes
BNSW-14	Barn Swallow Survey	yes
Steep Rock Zone C	Bat Hibernacula Visual Assessment	yes
Elizabeth	Bat Hibernacula Visual Assessment	yes
Thunder Bay Silver	Bat Hibernacula Visual Assessment	yes
Lakeshore 1A	Bat Hibernacula Visual Assessment	yes
Lakeshore 1B	Bat Hibernacula Visual Assessment	yes
Lakeshore Control	Bat Hibernacula Visual Assessment	yes
Hydroline Ridge	Bat Hibernacula Visual Assessment	yes
Thunder Bay Silver 85827	Bat Hibernacula Visual Assessment	yes
Agnico Eagle	Bat Hibernacula Visual Assessment	yes
Hydroline Ridge	Bat Hibernacula Visual Assessment	yes
BMR-15	Bat Maternity Roost Survey	yes
BMR-21	Bat Maternity Roost Survey	yes
SWH196	Significant Wildlife Habitat Survey	yes
SWH202	Significant Wildlife Habitat Survey	yes
SWH153	Significant Wildlife Habitat Survey	yes
SWH173	Significant Wildlife Habitat Survey	yes
SWH96	Significant Wildlife Habitat Survey	yes
SWH101	Significant Wildlife Habitat Survey	yes
SWH17	Significant Wildlife Habitat Survey	yes
SWH195	Significant Wildlife Habitat Survey	yes
SWH111	Significant Wildlife Habitat Survey	yes
SWH179	Significant Wildlife Habitat Survey	yes
SWH119	Significant Wildlife Habitat Survey	yes
SWH190	Significant Wildlife Habitat Survey	yes
SWH198	Significant Wildlife Habitat Survey	yes
SWH194	Significant Wildlife Habitat Survey	yes
SWH999	Significant Wildlife Habitat Survey	yes
SWH199	Significant Wildlife Habitat Survey	yes
SWH176	Significant Wildlife Habitat Survey	yes
SWH177	Significant Wildlife Habitat Survey	yes

Attachment G: Potential Gray Fox Denning Habitat Surveys - Effort Tracking

Site ID	Survey Type	Potential Gray Fox Denning Habitat
SWH122	Significant Wildlife Habitat Survey	yes
SWH192	Significant Wildlife Habitat Survey	yes
SWH191	Significant Wildlife Habitat Survey	yes
SWH178	Significant Wildlife Habitat Survey	yes
SWH200	Significant Wildlife Habitat Survey	yes
SWH183	Significant Wildlife Habitat Survey	yes
SWH189	Significant Wildlife Habitat Survey	yes
SWH203	Significant Wildlife Habitat Survey	yes
SWH204	Significant Wildlife Habitat Survey	yes
SWH91	Significant Wildlife Habitat Survey	yes
SWH188	Significant Wildlife Habitat Survey	yes
SWH187	Significant Wildlife Habitat Survey	yes
SWH182	Significant Wildlife Habitat Survey	yes
SWH175	Significant Wildlife Habitat Survey	yes
SWH181	Significant Wildlife Habitat Survey	yes
SWH184	Significant Wildlife Habitat Survey	yes
SWH129	Significant Wildlife Habitat Survey	yes
SWH185	Significant Wildlife Habitat Survey	yes
SWH23	Significant Wildlife Habitat Survey	yes
SWH47	Significant Wildlife Habitat Survey	yes
BKSW-6	Bank Swallow Survey	no
BKSW-11	Bank Swallow Survey	no
BKSW-15	Bank Swallow Survey	no
BKSW-16	Bank Swallow Survey	no
BKSW-18	Bank Swallow Survey	no
BKSW-19	Bank Swallow Survey	no
BKSW-20	Bank Swallow Survey	no
BKSW-24	Bank Swallow Survey	no
BKSW-31	Bank Swallow Survey	no
BKSW-34	Bank Swallow Survey	no
BKSW-40	Bank Swallow Survey	no
BKSW-41	Bank Swallow Survey	no
BKSW-45	Bank Swallow Survey	no
BKSW-50	Bank Swallow Survey	no
BKSW-55	Bank Swallow Survey	no
BKSW-56	Bank Swallow Survey	no
BKSW-56	Bank Swallow Survey	no
BKSW-62	Bank Swallow Survey	no
BKSW-63	Bank Swallow Survey	no
BKSW-69	Bank Swallow Survey	no
BKSW-70	Bank Swallow Survey	no
BKSW-72	Bank Swallow Survey	no
BKSW-73	Bank Swallow Survey	no
BKSW-74	Bank Swallow Survey	no
BKSW-105	Bank Swallow Survey	no
BKSW-108	Bank Swallow Survey	no
BKSW-94	Bank Swallow Survey	no
BKSW-79	Bank Swallow Survey	no
BKSW-86	Bank Swallow Survey	no
BKSW-83	Bank Swallow Survey	no
BKSW-89	Bank Swallow Survey	no
BKSW-93	Bank Swallow Survey	no
BKSW-92	Bank Swallow Survey	no
BKSW-98	Bank Swallow Survey	no

Attachment G: Potential Gray Fox Denning Habitat Surveys - Effort Tracking

Site ID	Survey Type	Potential Gray Fox Denning Habitat
BKSW-91	Bank Swallow Survey	no
BKSW-88	Bank Swallow Survey	no
BKSW-1	Bank Swallow Survey	no
BKSW-4	Bank Swallow Survey	no
BKSW-106	Bank Swallow Survey	no
BNSW-3	Barn Swallow Survey	no
BNSW-17	Barn Swallow Survey	no
BNSW-18	Barn Swallow Survey	no
BNSW-21	Barn Swallow Survey	no
BNSW-22	Barn Swallow Survey	no
BNSW-38	Barn Swallow Survey	no
BNSW-49	Barn Swallow Survey	no
BNSW-59	Barn Swallow Survey	no
BNSW-61	Barn Swallow Survey	no
BNSW-62	Barn Swallow Survey	no
BNSW-72	Barn Swallow Survey	no
BNSW-77	Barn Swallow Survey	no
BNSW-78	Barn Swallow Survey	no
BNSW-85	Barn Swallow Survey	no
BNSW-473	Barn Swallow Survey	no
BNSW-476	Barn Swallow Survey	no
BNSW-275	Barn Swallow Survey	no
BNSW-498	Barn Swallow Survey	no
BNSW-353	Barn Swallow Survey	no
BNSW-600	Barn Swallow Survey	no
BNSW-499	Barn Swallow Survey	no
BNSW-506	Barn Swallow Survey	no
BNSW-466	Barn Swallow Survey	no
BNSW-468	Barn Swallow Survey	no
BNSW-183	Barn Swallow Survey	no
BNSW-189	Barn Swallow Survey	no
BNSW-168	Barn Swallow Survey	no
BARS-1000	Barn Swallow Survey	no
BNSW-97	Barn Swallow Survey	no
BNSW-83	Barn Swallow Survey	no
BNSW-87	Barn Swallow Survey	no
BNSW-136	Barn Swallow Survey	no
BNSW-167	Barn Swallow Survey	no
BNSW-145	Barn Swallow Survey	no
BNSW-166	Barn Swallow Survey	no
BNSW-135	Barn Swallow Survey	no
BNSW-163	Barn Swallow Survey	no
BNSW-165	Barn Swallow Survey	no
BNSW-307	Barn Swallow Survey	no
Thunder Head	Bat Hibernacula Visual Assessment	no
Big Six A	Bat Hibernacula Visual Assessment	no
Big Six Control A	Bat Hibernacula Visual Assessment	no
Errington 83740 A	Bat Hibernacula Visual Assessment	no
Eye Lake 85973 A	Bat Hibernacula Visual Assessment	no
Eye Lake 85974 A	Bat Hibernacula Visual Assessment	no
Eye Lake Control A	Bat Hibernacula Visual Assessment	no
Gorham A	Bat Hibernacula Visual Assessment	no
Gorham Control	Bat Hibernacula Visual Assessment	no
Steeprock A	Bat Hibernacula Visual Assessment	no

Attachment G: Potential Gray Fox Denning Habitat Surveys - Effort Tracking

Site ID	Survey Type	Potential Gray Fox Denning Habitat
Thunderhead A	Bat Hibernacula Visual Assessment	no
Spillway Inlet	Bat Hibernacula Visual Assessment	no
Spillway Inlet Control	Bat Hibernacula Visual Assessment	no
Spillway Outlet	Bat Hibernacula Visual Assessment	no
Spillway Outlet Control	Bat Hibernacula Visual Assessment	no
Shuniah	Bat Hibernacula Visual Assessment	no
Shuniah Control	Bat Hibernacula Visual Assessment	no
Andowan	Bat Hibernacula Visual Assessment	no
Andowan Control	Bat Hibernacula Visual Assessment	no
Elizabeth 8533	Bat Hibernacula Visual Assessment	no
Errington 79959	Bat Hibernacula Visual Assessment	no
Quinn	Bat Hibernacula Visual Assessment	no
BMR-1	Bat Maternity Roost Survey	no
BMR-10	Bat Maternity Roost Survey	no
BMR-13	Bat Maternity Roost Survey	no
BMR-16	Bat Maternity Roost Survey	no
BMR-11	Bat Maternity Roost Survey	no
BMR-23	Bat Maternity Roost Survey	no
BMR-25	Bat Maternity Roost Survey	no
BMR-10 Alt	Bat Maternity Roost Survey	no
BMR-15	Bat Maternity Roost Survey	no
BMR-17	Bat Maternity Roost Survey	no
BMR-19	Bat Maternity Roost Survey	no
SWH77	Significant Wildlife Habitat Survey	no
SWH206	Significant Wildlife Habitat Survey	no
SWH109	Significant Wildlife Habitat Survey	no
SWH135	Significant Wildlife Habitat Survey	no
SWH21	Significant Wildlife Habitat Survey	no
SWH136	Significant Wildlife Habitat Survey	no
SWH138	Significant Wildlife Habitat Survey	no
SWH137	Significant Wildlife Habitat Survey	no
SWH142	Significant Wildlife Habitat Survey	no
SWH157	Significant Wildlife Habitat Survey	no
SWH207	Significant Wildlife Habitat Survey	no
SWH201	Significant Wildlife Habitat Survey	no
SWH197	Significant Wildlife Habitat Survey	no
SWH174	Significant Wildlife Habitat Survey	no
SWH172	Significant Wildlife Habitat Survey	no
SWH149	Significant Wildlife Habitat Survey	no
SWH38	Significant Wildlife Habitat Survey	no
SWH163	Significant Wildlife Habitat Survey	no
SWH166	Significant Wildlife Habitat Survey	no
SWH170	Significant Wildlife Habitat Survey	no
SWH156	Significant Wildlife Habitat Survey	no
SWH20	Significant Wildlife Habitat Survey	no
SWH78	Significant Wildlife Habitat Survey	no
SWH81	Significant Wildlife Habitat Survey	no
SWH145	Significant Wildlife Habitat Survey	no
SWH134	Significant Wildlife Habitat Survey	no
SWH133	Significant Wildlife Habitat Survey	no
SWH154	Significant Wildlife Habitat Survey	no
SWH8	Significant Wildlife Habitat Survey	no
SWH150	Significant Wildlife Habitat Survey	no
SWH9	Significant Wildlife Habitat Survey	no

Attachment G: Potential Gray Fox Denning Habitat Surveys - Effort Tracking

Site ID	Survey Type	Potential Gray Fox Denning Habitat
SWH80	Significant Wildlife Habitat Survey	no
SWH144	Significant Wildlife Habitat Survey	no
SWH132	Significant Wildlife Habitat Survey	no
SWH143	Significant Wildlife Habitat Survey	no
SWH42	Significant Wildlife Habitat Survey	no
SWH148	Significant Wildlife Habitat Survey	no
SWH79	Significant Wildlife Habitat Survey	no
SWH76	Significant Wildlife Habitat Survey	no
SWH147	Significant Wildlife Habitat Survey	no
SWH159	Significant Wildlife Habitat Survey	no
SWH11	Significant Wildlife Habitat Survey	no
SWH16	Significant Wildlife Habitat Survey	no
SWH140	Significant Wildlife Habitat Survey	no
SWH152	Significant Wildlife Habitat Survey	no
SWH139	Significant Wildlife Habitat Survey	no
SWH64	Significant Wildlife Habitat Survey	no
SWH141	Significant Wildlife Habitat Survey	no
SWH151	Significant Wildlife Habitat Survey	no
SWH73	Significant Wildlife Habitat Survey	no
SWH160	Significant Wildlife Habitat Survey	no
Incidental	Significant Wildlife Habitat Survey	no
Incidental	Significant Wildlife Habitat Survey	no
SWH167	Significant Wildlife Habitat Survey	no
SWH168	Significant Wildlife Habitat Survey	no
SWH31	Significant Wildlife Habitat Survey	no
SWH169	Significant Wildlife Habitat Survey	no
SWH165	Significant Wildlife Habitat Survey	no
SWH162	Significant Wildlife Habitat Survey	no
SWH24	Significant Wildlife Habitat Survey	no
SWH161	Significant Wildlife Habitat Survey	no
SWH25	Significant Wildlife Habitat Survey	no
SWH252	Significant Wildlife Habitat Survey	no
SWH35	Significant Wildlife Habitat Survey	no
SWH209	Significant Wildlife Habitat Survey	no
SWH27	Significant Wildlife Habitat Survey	no
SWH12	Significant Wildlife Habitat Survey	no
SWH18	Significant Wildlife Habitat Survey	no
SWH22	Significant Wildlife Habitat Survey	no
SWH2	Significant Wildlife Habitat Survey	no
SWH1	Significant Wildlife Habitat Survey	no
SWH208	Significant Wildlife Habitat Survey	no
SWH210	Significant Wildlife Habitat Survey	no
SWH82	Significant Wildlife Habitat Survey	no
SWH158	Significant Wildlife Habitat Survey	no
SWH241	Significant Wildlife Habitat Survey	no
SWH14	Significant Wildlife Habitat Survey	no
SWH205	Significant Wildlife Habitat Survey	no

ATTACHMENT 6.4-A-9

Anuran Call Count Survey Results

Attachment H: Anuran Call Count Data

Station ID	Date	Start Time	End Time	ACC Round #	Air Temp (°C)	Wind Speed (km/h)	Precipitation	Species	Direction	Scale	Abundance	Anurans outside of feature
ACC-001	20-May-22	00:24	00:27	1	5	8	light rain	none	n/a	n/a	n/a	SPPE outside of feature
ACC-001	03-Jun-22	00:18	00:22	2	13	11	none	SPPE	A1	1	3	-
ACC-001	07-Jul-22	01:38	01:42	3	11	6	none	GRFR	A1	1	6	-
ACC-002	20-May-22	00:13	00:17	1	5	8	light rain	SPPE	B3	3	n/a	-
ACC-002	20-May-22	00:13	00:17	1	5	8	light rain	SPPE	A2	2	10	-
ACC-002	02-Jun-22	00:09	00:12	2	12	9	none	SPPE	A1	1	2	-
ACC-002	07-Jul-22	01:46	01:50	3	10	6	none	none	n/a	n/a	n/a	-
ACC-003	21-May-22	01:09	01:12	1	2	25	none	SPPE	B3	3	n/a	-
ACC-003	21-May-22	01:09	01:12	1	2	25	none	CHFR	B1	1	2	-
ACC-003	03-Jun-22	00:09	00:12	2	9	6	none	SPPE	A1	1	1	Chorus of SPPE approx 175 m SE
ACC-003	03-Jun-22	00:09	00:12	2	9	6	none	SPPE	B3	1	1	Chorus of SPPE approx 175 m SE
ACC-003	06-Jul-22	01:09	01:13	3	11	5	none	none	n/a	n/a	n/a	-
ACC-005	20-May-22	23:59	00:02	1	3	20	none	none	n/a	n/a	n/a	-
ACC-005	03-Jun-22	23:48	23:51	2	8	9	none	SPPE	C1	1	4	-
ACC-005	06-Jul-22	00:37	00:41	3	12	6	none	none	n/a	n/a	n/a	-
ACC-006	21-May-22	00:25	00:28	1	3	15	none	SPPE	B3	3	n/a	WOFO outside of feature
ACC-006	21-May-22	00:25	00:28	1	3	15	none	CHFR	A1	1	2	-
ACC-006	03-Jun-22	23:28	23:32	2	8	9	none	SPPE	nd	3	n/a	-
ACC-006	03-Jun-22	23:28	23:32	2	8	9	none	SPPE	C3	1	4	-
ACC-006	06-Jul-22	00:16	00:20	3	12	6	none	MIFR	B1	1	1	-
ACC-007	20-May-22	22:47	22:50	1	6	20	none	CHFR	B1	1	1	-
ACC-007	20-May-22	22:47	22:50	1	6	20	none	WOFO	A1	1	2	-
ACC-007	20-May-22	22:47	22:50	1	6	20	none	SPPE	B3	3	n/a	-
ACC-007	03-Jun-22	22:42	22:46	2	8	8	none	SPPE	C3	1	2	SPPE calling in swamp beyond 100 m, SPPE calling SW of road
ACC-007	05-Jul-22	23:50	23:54	3	13	5	none	none	n/a	n/a	n/a	-
ACC-008	20-May-22	22:15	22:18	1	5	10	none	SPPE	B3	3	n/a	-
ACC-008	20-May-22	22:15	22:18	1	5	10	none	WOFO	B1	1	5	-
ACC-008	03-Jun-22	22:09	22:15	2	10	12	none	SPPE	B2	2	6	-
ACC-008	05-Jul-22	23:40	23:44	3	14	5	none	GRTF	C1	1	3	GRTF-1 to E of feature
ACC-009	20-May-22	22:30	22:33	1	5	10	none	none	n/a	n/a	n/a	SPPE-3 and WOFO-3 heard behind survey station, nothing in direction of feature
ACC-009	03-Jun-22	22:23	22:27	2	9	8	none	SPPE	A2	2	10	SPPE3 calling from large open wetland west of road
ACC-009	05-Jul-22	23:15	23:19	3	16	10	none	none	n/a	n/a	n/a	-
ACC-012	20-May-22	23:09	23:12	1	5	25	none	none	n/a	n/a	n/a	-
ACC-012	03-Jun-22	23:09	23:13	2	9	7	none	SPPE	C2	2	6	-
ACC-012	06-Jul-22	00:13	00:17	3	13	5	none	none	n/a	n/a	n/a	-
ACC-013	19-May-22	22:42	22:45	1	9	8	none	SPPE	A1	2	3	-
ACC-013	19-May-22	22:42	22:45	1	9	8	none	SPPE	B1	2	4	-
ACC-013	02-Jun-22	22:39	22:43	2	10	10	none	SPPE	A3	1	2	-
ACC-013	02-Jun-22	22:39	22:43	2	10	10	none	AMTO	B1	1	2	-
ACC-013	05-Jul-22	22:17	22:21	3	16	10	none	none	n/a	n/a	n/a	-
ACC-014	19-May-22	22:53	23:56	1	7	8	light rain	SPPE	B3	3	n/a	-
ACC-014	02-Jun-22	23:46	23:49	2	12	9	none	SPPE	B1	1	5	-
ACC-014	06-Jul-22	23:06	23:10	3	13	5	none	GRTF	B1	1	1	-
ACC-015	19-May-22	23:32	23:36	1	7	8	none	SPPE	B3	3	n/a	1 WOFO 10 m south of station

Attachment H: Anuran Call Count Data

Station ID	Date	Start Time	End Time	ACC Round #	Air Temp (°C)	Wind Speed (km/h)	Precipitation	Species	Direction	Scale	Abundance	Anurans outside of feature
ACC-015	02-Jun-22	23:31	23:35	2	12	9	none	SPPE	C3	3	n/a	-
ACC-015	02-Jun-22	23:31	23:35	2	12	9	none	GRTF	B1	1	2	-
ACC-015	02-Jun-22	23:31	23:35	2	12	9	none	AMTO	B2	2	5	-
ACC-015	02-Jun-22	23:31	23:35	2	12	9	none	CHFR	A1	1	1	-
ACC-015	06-Jul-22	22:44	22:48	3	14	11	none	none	n/a	n/a	n/a	-
ACC-016	19-May-22	23:18	23:21	1	9	8	none	WOFO	B1	1	1	-
ACC-016	19-May-22	23:18	23:21	1	9	8	none	SPPE	C3	3	n/a	-
ACC-016	02-Jun-22	23:14	23:17	2	13	15	none	SPPE	C3	3	n/a	SPPE3 calling W of road
ACC-016	02-Jun-22	23:14	23:17	2	13	15	none	AMTO	B1	1	2	SPPE3 calling W of road
ACC-016	05-Jul-22	22:58	23:02	3	16	10	none	GRTF	A1	1	1	-
ACC-017	19-May-22	23:03	23:06	1	9	8	none	SPPE	B3	3	n/a	-
ACC-017	19-May-22	23:03	23:06	1	9	8	none	CHFR	B1	1	1	-
ACC-017	19-May-22	23:03	23:06	1	9	8	none	WOFO	B1	1	1	-
ACC-017	02-Jun-22	23:02	23:05	2	13	15	none	SPPE	B3	3	n/a	SPPE3 calling east of road > 150 m
ACC-017	05-Jul-22	22:47	22:51	3	16	10	none	none	n/a	n/a	n/a	-
ACC-018	19-May-22	21:53	21:56	1	9	8	none	SPPE	A1	1	2	-
ACC-018	19-May-22	21:53	21:56	1	9	8	none	SPPE	B3	3	n/a	-
ACC-018	02-Jun-22	22:10	22:13	2	12	15	none	SPPE	A2	2	8	-
ACC-018	05-Jul-22	21:59	22:02	3	16	10	none	none	n/a	n/a	n/a	GRTF-1 approx. 200 m to N of feature
ACC-019	19-May-22	22:08	22:11	1	9	8	none	none	n/a	n/a	n/a	SPPE north of station
ACC-019	02-Jun-22	22:00	22:03	2	12	15	none	SPPE	B1	1	3	CHFR1-1 and SPPE1-4 calling NE of road
ACC-019	02-Jun-22	22:00	22:03	2	12	15	none	CHFR	B1	1	1	CHFR1-1 and SPPE1-4 calling NE of road
ACC-019	05-Jul-22	21:47	21:51	3	17	10	none	none	n/a	n/a	n/a	-
ACC-022	18-May-22	23:06	23:09	1	7	5	light rain	SPPE	C3	3	n/a	1 WOFO 100 m south of station
ACC-022	02-Jun-22	23:36	23:39	2	10	7	none	SPPE	C3	3	n/a	SPPE and AMTO calling to SE of road also
ACC-022	02-Jun-22	23:36	23:39	2	10	7	none	AMTO	A1	1	3	SPPE and AMTO calling to SE of road also
ACC-022	04-Jul-22	23:16	23:20	3	13	10	none	GRFR	C1	1	2	GRFR to NE of feature
ACC-023	04-Jul-22	22:53	22:57	3	13	10	none	none	n/a	n/a	n/a	-
ACC-024	18-May-22	22:36	22:39	1	7	5	light rain	SPPE	C3	3	n/a	-
ACC-024	18-May-22	22:36	22:39	1	7	5	light rain	WOFO	A1	1	2	-
ACC-024	02-Jun-22	23:07	23:10	2	12	11	none	SPPE	C3	3	n/a	-
ACC-024	02-Jun-22	23:07	23:10	2	12	11	none	CHFR	A1	1	1	-
ACC-024	04-Jul-22	22:39	22:43	3	13	10	none	none	n/a	n/a	n/a	-
ACC-025	18-May-22	22:07	22:10	1	8	5	light rain	SPPE	C3	3	n/a	SPPE outside of plot
ACC-025	18-May-22	22:07	22:10	1	8	5	light rain	AMTO	B1	1	1	SPPE outside of plot
ACC-025	02-Jun-22	22:26	22:29	2	14	9	none	SPPE	C3	3	nd	SPPE calling from marsh S of laneway also, and AMTO-2 heard on walk back to truck
ACC-025	04-Jul-22	22:06	22:09	3	13	8	none	GRFR	A1	1	3	GRFR
ACC-026	18-May-22	21:56	21:59	1	8	5	none	SPPE	B3	3	n/a	CHFR
ACC-026	02-Jun-22	22:05	22:08	2	16	11	none	SPPE	B3	3	n/a	-
ACC-026	02-Jun-22	22:05	22:08	2	16	11	none	CHFR	B1	1	1	-
ACC-026	04-Jul-22	21:59	22:03	3	13	8	none	none	n/a	n/a	n/a	-
ACC-027	21-May-22	00:58	01:01	1	0	5	light snow	SPPE	A3	3	n/a	-
ACC-027	21-May-22	00:58	01:01	1	0	5	light snow	WOFO	A1	1	1	-
ACC-027	04-Jun-22	22:51	22:54	2	13	5	none	SPPE	A3	3	n/a	GRTR 1-3 & CHFR 1-1 S of feature

Attachment H: Anuran Call Count Data

Station ID	Date	Start Time	End Time	ACC Round #	Air Temp (°C)	Wind Speed (km/h)	Precipitation	Species	Direction	Scale	Abundance	Anurans outside of feature
ACC-027	07-Jul-22	21:52	21:56	3	19	5	none	none	n/a	n/a	n/a	GRTR 1-5 SW of feature
ACC-028	21-May-22	00:40	00:44	1	2	15	light rain	SPPE	A2	1	15	SPPE S of feature
ACC-028	21-May-22	00:40	00:44	1	2	15	light rain	WOFO	A1	1	2	SPPE S of feature
ACC-028	21-May-22	00:40	00:44	1	2	15	light rain	CHFR	A1	1	1	SPPE S of feature
ACC-028	04-Jun-22	23:06	23:09	2	11	0	none	SPPE	A1	1	3	SPPE A1 1-2 in pond by roadside; SPPE B2 1-12 SE of feature; GRTR B1 1-1 NE of feature; AMTO B1 1-2 E of feature
ACC-028	07-Jul-22	22:05	22:09	3	19	10	none	none	n/a	n/a	n/a	GRTR 1-8 and GRFR 1-3 SE of highway
ACC-029	22-May-22	00:26	00:29	1	3	5	sleet	SPPE	A1	1	6	-
ACC-029	04-Jun-22	23:27	23:30	2	11	5	none	SPPE	A1	1	2	-
ACC-029	07-Jul-22	22:18	22:22	3	18	10	none	GRTF	A1	1	4	-
ACC-029	07-Jul-22	22:18	22:22	3	18	10	none	GRFR	B1	1	1	-
ACC-032	20-May-22	22:39	22:43	1	3	5	none	SPPE	A1	1	8	SPPE B3 and WOFO B2 W of feature
ACC-032	20-May-22	22:39	22:43	1	3	5	none	WOFO	A1	1	1	SPPE B3 and WOFO B2 W of feature
ACC-032	05-Jun-22	00:43	00:46	2	8	5	none	SPPE	A1	1	8	SPPE-2 and AMTO-1 N of feature
ACC-032	07-Jul-22	23:43	23:47	3	17	10	none	GRFR	A1	1	2	GRFR-1
ACC-033	20-May-22	23:04	23:08	1	3	5	none	SPPE	A3	3	n/a	-
ACC-033	20-May-22	23:04	23:08	1	3	5	none	WOFO	A1	1	6	-
ACC-033	06-Jun-22	00:16	00:20	2	10	5	none	SPPE	A1	1	6	SPPE B3 over 100 m W of feature
ACC-033	07-Jul-22	23:19	23:23	3	17	6	none	GRTF	A1	1	1	-
ACC-037	20-May-22	22:11	22:14	1	3	12	light rain	none	n/a	n/a	n/a	SPPE B3 N of feature
ACC-037	06-Jun-22	00:56	00:59	2	7	5	none	AMTO	A1	1	2	SPPE B3 and GRFR-1 E of feature
ACC-037	08-Jul-22	00:04	00:08	3	13	5	none	GRFR	B3	3	n/a	-
ACC-038	20-May-22	01:24	01:29	1	7	10	none	none	n/a	n/a	n/a	AMTO A3, WOFO A1, and SPPE A3 on opposite side of highway from feature
ACC-038	06-Jun-22	00:29	00:32	2	8	nd	none	none	n/a	n/a	n/a	SPPE A3, AMTO A3, GRTF-4 S of feature
ACC-038	08-Jul-22	23:53	23:57	3	13	5	none	none	n/a	n/a	n/a	-
ACC-039	20-May-22	01:19	01:22	1	7	10	none	SPPE	A3	3	n/a	SPPE A3 on opposite side of highway
ACC-039	06-Jun-22	00:21	00:25	2	10	5	none	SPPE	A3	3	n/a	SPPE & AMTO S of feature
ACC-039	06-Jun-22	00:21	00:25	2	10	5	none	AMTO	A1	1	6	SPPE & AMTO S of feature
ACC-039	08-Jul-22	23:46	23:50	3	13	5	none	GRFR	A1	1	2	GRFR and MIFR-2 across highway to S of feature
ACC-040	20-May-22	01:11	01:14	1	7	10	none	none	n/a	n/a	n/a	SPPE A3 on opposite side of road from feature
ACC-040	06-Jun-22	00:13	00:16	2	8	5	none	SPPE	A1	1	6	SPPE-6 E of feature
ACC-040	06-Jun-22	00:13	00:16	2	8	5	none	GRTF	A1	1	4	SPPE-6 E of feature
ACC-040	08-Jul-22	23:37	23:41	3	13	5	none	GRFR	A1	1	1	-
ACC-041	21-May-22	00:57	01:01	1	7	10	none	none	n/a	n/a	n/a	SPPE B3 and WOFO-5 W of feature
ACC-041	06-Jun-22	00:03	00:06	2	8	5	light rain	none	n/a	n/a	n/a	SPPE B3, AMTO-3, GRTF-2 W of feature
ACC-041	08-Jul-22	23:26	23:30	3	13	5	none	GRFR	A1	1	1	GRTF to S of feature
ACC-042	20-May-22	00:48	00:51	1	7	5	none	SPPE	B3	3	n/a	-
ACC-042	20-May-22	00:48	00:51	1	7	5	none	WOFO	B1	1	1	-
ACC-042	06-Jun-22	23:56	23:59	2	10	nd	light rain	SPPE	B1	1	5	-
ACC-042	08-Jul-22	23:19	23:23	3	14	5	none	GRTF	B1	1	1	-

Attachment H: Anuran Call Count Data

Station ID	Date	Start Time	End Time	ACC Round #	Air Temp (°C)	Wind Speed (km/h)	Precipitation	Species	Direction	Scale	Abundance	Anurans outside of feature
ACC-043	20-May-22	01:18	01:20	1	7	10	none	SPPE	A2	2	10	-
ACC-043	20-May-22	01:18	01:20	1	7	10	none	WOFO	A2	2	15	-
ACC-043	05-Jun-22	23:47	23:50	2	10	5	none	SPPE	A1	1	3	SPPE-4 to E of feature
ACC-043	05-Jun-22	23:47	23:50	2	10	5	none	AMTO	A1	1	2	SPPE-4 to E of feature
ACC-043	08-Jul-22	23:11	23:15	3	14	5	none	GRTF	B1	1	1	-
ACC-045	19-May-22	23:46	23:51	1	8	5	none	SPPE	A1	1	1	SPPE B3 northeast of feature
ACC-045	19-May-22	23:46	23:51	1	8	5	none	WOFO	A1	1	2	SPPE B3 northeast of feature
ACC-045	19-May-22	23:46	23:51	1	8	5	none	NLFR	A1	1	1	SPPE B3 northeast of feature
ACC-045	11-Jun-22	23:14	23:17	2	14	15	none	none	n/a	n/a	n/a	SPPE and AMTO far out from feature
ACC-045	08-Jul-22	22:42	22:46	3	14	0	none	GRFR	B1	1	2	-
ACC-046	19-May-22	23:35	23:41	1	9	5	none	SPPE	A3	3	n/a	-
ACC-046	19-May-22	23:35	23:41	1	9	5	none	WOFO	A1	1	8	-
ACC-046	19-May-22	23:35	23:41	1	9	5	none	NLFR	A1	1	1	-
ACC-046	19-May-22	23:35	23:41	1	9	5	none	CHFR	A1	1	1	-
ACC-046	11-Jun-22	22:26	22:29	2	15	15	none	SPPE	B1	1	5	-
ACC-046	11-Jun-22	22:26	22:29	2	15	15	none	AMTO	B1	1	1	-
ACC-046	11-Jun-22	22:26	22:29	2	15	15	none	GRFR	A1	1	1	-
ACC-046	11-Jun-22	22:26	22:29	2	15	15	none	GRTF	C2	2	9	-
ACC-046	11-Jun-22	22:26	22:29	2	15	15	none	CHFR	A1	1	1	-
ACC-047	20-May-22	00:13	00:18	1	7	5	none	SPPE	A3	3	n/a	-
ACC-047	20-May-22	00:13	00:18	1	7	5	none	WOFO	A2	2	10	-
ACC-048	21-May-22	00:24	00:27	1	7	5	none	SPPE	B3	3	n/a	-
ACC-048	21-May-22	00:24	00:27	1	7	5	none	WOFO	B1	1	2	-
ACC-048	21-May-22	00:24	00:27	1	7	5	none	CHFR	B3	2	15	-
ACC-048	11-Jun-22	21:40	21:43	2	17	10	none	GRTF	B3	3	n/a	SPPE-B3
ACC-048	11-Jun-22	21:40	21:43	2	17	10	none	SPPE	B1	1	5	SPPE-B3
ACC-048	20-Jul-22	22:35	22:38	3	17	0	none	GRTF	A1	1	2	-
ACC-048	20-Jul-22	22:35	22:38	3	17	0	none	AMTO	A1	1	1	-
ACC-049	20-May-22	21:46	21:49	1	3	12	light rain	SPPE	A3	3	n/a	-
ACC-049	05-Jun-22	23:26	23:31	2	10	5	none	SPPE	A1	1	6	SPPE-A3, GRTF-4 E of feature
ACC-049	05-Jun-22	23:26	23:31	2	10	5	none	GRTF	A1	1	8	-
ACC-049	08-Jul-22	21:49	21:53	3	17	0	none	GRTF	A3	3	n/a	GRFR-5 across road to W of feature
ACC-049	08-Jul-22	21:49	21:53	3	17	0	none	GRFR	C2	2	5	GRFR-5 across road to W of feature
ACC-050	20-May-22	21:34	21:37	1	4	10	light rain	SPPE	A3	3	n/a	SPPE-B3 to W and N of feature
ACC-050	05-Jun-22	23:13	23:17	2	10	5	none	SPPE	A3	3	n/a	-
ACC-050	05-Jun-22	23:13	23:17	2	10	5	none	GRTF	B1	1	2	-
ACC-050	05-Jun-22	23:13	23:17	2	10	5	none	AMTO	B1	1	1	-
ACC-050	08-Jul-22	22:02	22:06	3	17	0	none	GRTF	C1	1	3	-
ACC-050	08-Jul-22	22:02	22:06	3	17	0	none	GRFR	A1	1	5	-
ACC-051	21-May-22	21:15	21:18	1	4	20	light rain	SPPE	C3	3	n/a	-
ACC-051	05-Jun-22	22:47	22:52	2	10	5	none	SPPE	C3	3	n/a	SPPE-3 in lake S of feature and GRTF-1
ACC-051	05-Jun-22	22:47	22:52	2	10	5	none	GRTF	B2	1	5	SPPE-3 in lake S of feature and GRTF-1
ACC-051	08-Jul-22	21:30	21:34	3	17	0	none	GRFR	B1	1	1	-
ACC-051	08-Jul-22	21:30	21:34	3	17	0	none	GRTF	A2	2	10	-
ACC-052	19-May-22	21:43	21:49	1	10	5	none	SPPE	A2	2	12	-
ACC-052	16-Jun-22	22:33	22:36	2	15	6	none	none	n/a	n/a	n/a	GRTR (WNW, B3) and SPPE (WNW, B1)

Attachment H: Anuran Call Count Data

Station ID	Date	Start Time	End Time	ACC Round #	Air Temp (°C)	Wind Speed (km/h)	Precipitation	Species	Direction	Scale	Abundance	Anurans outside of feature
ACC-052	09-Jul-22	22:15	22:18	3	15	nd	none	none	n/a	n/a	n/a	GRTR to S of feature
ACC-053	20-May-22	00:48	00:51	1	7	15	none	none	n/a	n/a	n/a	SPPE and WOFO C3 in waterbody to the east
ACC-053	17-Jun-22	00:42	00:45	2	15	12	none	none	n/a	n/a	n/a	GRTF (SW, L3, >300m)
ACC-053	10-Jul-22	01:11	01:15	3	13	5	none	none	n/a	n/a	n/a	GRTF to S of feature
ACC-055	20-May-22	00:36	00:39	1	7	15	none	SPPE	B3	3	n/a	SPPE > 300 m to W
ACC-055	17-Jun-22	00:15	00:18	2	15	6	none	none	n/a	n/a	n/a	AMTO (SW, B1, 1)
ACC-055	10-Jul-22	01:04	01:08	3	13	5	none	none	n/a	n/a	n/a	-
ACC-056	20-May-22	00:21	00:23	1	7	15	none	SPPE	C3	1	3	-
ACC-056	20-May-22	00:21	00:23	1	7	15	none	WOFO	A1	1	10	-
ACC-056	17-Jun-22	23:53	23:56	2	15	6	none	GRTF	C1	1	4	GRTF (WNW, B3), SPPE (WNW, B1)
ACC-056	17-Jun-22	23:53	23:56	2	15	6	none	SPPE	A1	1	3	-
ACC-056	17-Jun-22	23:53	23:56	2	15	6	none	AMTO	A1	1	4	-
ACC-056	10-Jul-22	00:47	00:51	3	13	5	light rain	GRTF	A1	1	3	-
ACC-058	18-Jun-22	22:54	22:57	2	15	9	none	none	n/a	n/a	n/a	GRTF (W, B3, > 300 m)
ACC-058	10-Jul-22	00:29	00:32	3	17	5	none	GRTF	B3	3	n/a	-
ACC-059	19-May-22	23:03	23:10	1	7	5	none	SPPE	A1	1	1	-
ACC-059	19-May-22	23:03	23:10	1	7	5	none	SPPE	B3	3	n/a	-
ACC-059	09-Jul-22	23:14	23:18	3	13	5	none	GRFR	B1	1	5	-
ACC-059	09-Jul-22	23:14	23:18	3	13	5	none	GRTF	B1	1	2	-
ACC-060	20-May-22	00:07	00:10	1	7	5	none	none	n/a	n/a	n/a	SPPE > 300 m to SW of survey position
ACC-060	17-Jun-22	00:41	00:44	2	10	3	none	SPPE	B1	1	3	-
ACC-060	09-Jul-22	23:34	23:37	3	13	5	none	none	n/a	n/a	n/a	-
ACC-061	19-May-22	23:46	23:49	1	8	5	none	SPPE	C3	1	3	-
ACC-061	17-Jun-22	00:08	00:11	2	11	3	none	SPPE	A1	1	10	-
ACC-061	17-Jun-22	00:08	00:11	2	11	3	none	AMTO	A1	1	1	-
ACC-061	09-Jul-22	23:54	23:58	3	13	5	none	none	n/a	n/a	n/a	-
ACC-062	19-May-22	23:10	23:13	1	10	5	none	none	n/a	n/a	n/a	SPPE L3 > 300 m east
ACC-062	16-Jun-22	22:32	22:35	2	13	5	none	none	n/a	n/a	n/a	-
ACC-062	11-Jul-22	22:48	22:51	3	15	10	none	none	n/a	n/a	n/a	-
ACC-063	19-May-22	22:24	22:27	1	10	5	none	SPPE	C3	3	n/a	-
ACC-063	19-May-22	22:24	22:27	1	10	5	none	WOFO	C3	3	n/a	-
ACC-063	15-Jun-22	22:32	22:35	2	14	5	light rain	GRTF	C1	1	6	-
ACC-063	15-Jun-22	22:32	22:35	2	14	5	light rain	GRFR	A1	1	2	-
ACC-063	15-Jun-22	22:32	22:35	2	14	5	light rain	SPPE	C3	3	n/a	-
ACC-063	15-Jun-22	22:32	22:35	2	14	5	light rain	AMTO	B1	1	2	-
ACC-063	11-Jul-22	23:22	23:25	3	15	15	none	GRFR	C1	1	7	-
ACC-067	15-Jun-22	23:30	23:33	2	14	5	none	SPPE	Ba	1	4	-
ACC-067	15-Jun-22	23:30	23:33	2	14	5	none	AMTO	B1	1	4	-
ACC-067	15-Jun-22	23:30	23:33	2	14	5	none	CHFR	B1	1	3	-
ACC-067	11-Jul-22	23:41	23:44	3	14	15	none	none	n/a	n/a	n/a	GRTF to S of feature
ACC-068	14-Jun-22	21:51	21:53	2	17	5	none	GRTF	A1	1	7	-
ACC-068	14-Jun-22	21:51	21:53	2	17	5	none	SPPE	A3	3	n/a	-
ACC-069	15-Jun-22	23:57	00:00	2	13	5	none	AMTO	B1	1	2	-
ACC-069	15-Jun-22	23:57	00:00	2	13	5	none	CHFR	B1	1	8	-
ACC-069	15-Jun-22	23:57	00:00	2	13	5	none	SPPE	B2	1	3	-
ACC-069	11-Jul-22	23:52	23:55	3	15	15	none	GRTF	B3	3	n/a	-

Attachment H: Anuran Call Count Data

Station ID	Date	Start Time	End Time	ACC Round #	Air Temp (°C)	Wind Speed (km/h)	Precipitation	Species	Direction	Scale	Abundance	Anurans outside of feature
ACC-070	16-Jun-22	00:12	00:15	2	12	5	none	AMTO	B1	1	2	-
ACC-070	16-Jun-22	00:12	00:15	2	12	5	none	SPPE	B1	1	2	-
ACC-070	16-Jun-22	00:12	00:15	2	12	5	none	GRTF	B1	1	1	-
ACC-070	12-Jul-22	00:03	00:06	3	15	15	none	none	n/a	n/a	n/a	-
ACC-071	04-Jun-22	21:44	21:47	2	10	8	none	GRTF	B1	1	1	GRTR calling to E approx. 150 m; SPPE calling NE and SE approx. 250 m
ACC-071	04-Jun-22	21:44	21:47	2	10	8	none	SPPE	B3	3	n/a	GRTR calling to E approx. 150 m; SPPE calling NE and SE approx. 250 m
ACC-071	11-Jul-22	22:10	22:13	3	13	10	none	none	n/a	n/a	n/a	-
ACC-072	16-Jun-22	00:28	00:31	2	12	5	none	none	n/a	n/a	n/a	AMTO
ACC-072	12-Jul-22	00:17	00:20	3	15	15	none	none	n/a	n/a	n/a	-
ACC-073	18-Jun-22	23:14	23:17	2	15	11	none	SPPE	B1	1	1	-
ACC-073	10-Jul-22	21:40	21:44	3	18	5	none	GRTF	C2	1	5	-
ACC-074	07-Jun-22	00:21	00:24	2	12	11	none	SPPE	B1	1	3	SPPE 1-3 calling 175 m NW
ACC-074	07-Jun-22	00:21	00:24	2	12	11	none	CHFR	A1	1	1	SPPE 1-3 calling 175 m NW
ACC-074	07-Jun-22	00:21	00:24	2	12	11	none	AMTO	A1	1	1	SPPE 1-3 calling 175 m NW
ACC-074	11-Jul-22	00:56	01:00	3	17	8	none	GRTF	B3	3	n/a	-
ACC-075	07-Jun-22	00:00	00:03	2	15	7	none	AMTO	A1	1	3	SPPE3 calling approx 200 m to the west
ACC-075	07-Jun-22	00:00	00:03	2	15	7	none	SPPE	B3	3	n/a	SPPE3 calling approx 200 m to the west
ACC-075	11-Jul-22	01:08	01:11	3	17	8	none	none	n/a	n/a	n/a	-
ACC-076	07-Jun-22	23:42	23:46	2	13	7	none	SPPE	B3	3	n/a	SPPE3 calling 150-200 m to NE and NW
ACC-076	07-Jun-22	23:42	23:46	2	13	7	none	GRTF	A2	2	6	SPPE3 calling 150-200 m to NE and NW
ACC-076	07-Jun-22	23:42	23:46	2	13	7	none	AMTO	B1	1	2	SPPE3 calling 150-200 m to NE and NW
ACC-076	07-Jun-22	23:42	23:46	2	13	7	none	SPPE	A1	1	4	SPPE3 calling 150-200 m to NE and NW
ACC-077	06-Jun-22	23:52	23:56	2	15	6	none	AMTO	B1	1	3	SPPE3 and CHFR1-2 calling from SE of road; AMTO calling approx. 175 m S of station
ACC-080	06-Jun-22	21:47	21:50	2	16	6	none	GRTF	B3	3	n/a	CHFR calling N of the road; SPPE1-3 > 100 m to the SE outside of survey timing
ACC-080	06-Jun-22	21:47	21:50	2	16	6	none	AMTO	B1	1	1	CHFR calling N of the road; SPPE1-3 > 100 m to the SE outside of survey timing
ACC-080	13-Jul-22	00:28	00:32	3	15	8	none	none	n/a	n/a	n/a	-
ACC-101	21-May-22	01:24	01:27	1	2	25	none	SPPE	B3	3	n/a	-
ACC-101	04-Jun-22	00:20	00:23	2	9	6	none	SPPE	C3	3	n/a	Chorus of SPPE approx. 200 m N of station
ACC-101	07-Jul-22	01:20	01:24	3	11	5	none	GRFR	A1	1	3	-
ACC-102	20-May-22	00:35	00:38	1	5	15	light rain	SPPE	B3	3	n/a	-
ACC-102	20-May-22	00:35	00:38	1	5	15	light rain	SPPE	A2	2	2	-
ACC-102	03-Jun-22	00:27	00:30	2	12	11	none	GRTF	B1	1	1	-
ACC-102	03-Jun-22	00:27	00:30	2	12	11	none	AMTO	A3	3	n/a	-
ACC-102	03-Jun-22	00:27	00:30	2	12	11	none	SPPE	B2	2	7	-

Attachment H: Anuran Call Count Data

Station ID	Date	Start Time	End Time	ACC Round #	Air Temp (°C)	Wind Speed (km/h)	Precipitation	Species	Direction	Scale	Abundance	Anurans outside of feature
ACC-102	07-Jul-22	01:30	01:34	3	11	6	none	GRFR	C1	1	5	-
ACC-103	20-May-22	00:43	00:46	1	4	15	light rain	SPPE	A1	1	1	-
ACC-103	20-May-22	00:43	00:46	1	4	15	light rain	SPPE	B3	3	n/a	-
ACC-103	03-Jun-22	00:35	00:38	2	12	11	none	SPPE	B3	3	n/a	-
ACC-103	03-Jun-22	00:35	00:38	2	12	11	none	CHFR	A1	1	2	-
ACC-103	07-Jul-22	01:52	01:56	3	10	6	none	none	n/a	n/a	n/a	-
ACC-105	21-May-22	00:10	00:13	1	3	15	none	SPPE	C3	-	-	-
ACC-105	21-May-22	00:10	00:13	1	3	15	none	WOFO	C1	1	5	-
ACC-105	21-May-22	00:10	00:13	1	3	15	none	CHFR	A1	1	5	-
ACC-105	03-Jun-22	23:38	23:41	2	8	9	none	SPPE	A3	3	n/a	-
ACC-105	03-Jun-22	23:38	23:41	2	8	9	none	CHFR	A3	3	n/a	-
ACC-105	06-Jul-22	00:27	00:31	3	12	6	none	GRFR	A1	1	5	-
ACC-105	06-Jul-22	00:27	00:31	3	12	6	none	GRFTF	A1	1	1	-
ACC-106	20-May-22	23:01	23:04	1	5	15	none	SPPE	B3	3	n/a	-
ACC-106	03-Jun-22	22:55	22:59	2	8	8	none	SPPE	C2	2	7	Full chorus of SPPE potentially calling to the north > 200 m
ACC-106	05-Jul-22	00:01	00:05	3	13	5	none	GRFR	C1	1	6	GRFR-2 and GRTF across road to N of feature
ACC-107	19-May-22	23:40	23:43	1	7	8	light rain	SPPE	B3	3	n/a	-
ACC-107	19-May-22	23:40	23:43	1	7	8	light rain	CHFR	B1	1	1	-
ACC-107	02-Jun-22	23:23	23:26	2	12	9	none	AMTO	B2	2	7	-
ACC-107	02-Jun-22	23:23	23:26	2	12	9	none	SPPE	B3	3	n/a	-
ACC-107	02-Jun-22	23:23	23:26	2	12	9	none	SPPE	A1	1	2	-
ACC-107	06-Jul-22	22:52	22:56	3	14	7	none	GRTF	B1	1	4	-
ACC-108	20-May-22	21:56	21:59	1	6	15	none	SPPE	B3	3	n/a	-
ACC-108	20-May-22	21:56	21:59	1	6	15	none	WOFO	B1	1	3	-
ACC-108	03-Jun-22	22:00	22:03	2	10	12	none	SPPE	A1	1	1	SPPE3 calling approx. 250 m SE of road
ACC-108	05-Jul-22	23:31	22:35	3	14	5	none	none	n/a	n/a	n/a	SPPE
ACC-109	19-May-22	22:30	22:33	1	9	8	none	none	n/a	n/a	n/a	-
ACC-109	02-Jun-22	22:29	22:33	2	12	15	none	none	n/a	n/a	n/a	-
ACC-109	05-Jul-22	22:29	22:33	3	16	10	none	none	n/a	n/a	n/a	-
ACC-110	18-May-22	23:52	23:55	1	7	5	light rain	SPPE	C3	3	n/a	-
ACC-110	18-May-22	23:52	23:55	1	7	5	light rain	WOFO	A1	2	4	-
ACC-110	02-Jun-22	00:26	00:29	2	10	9	none	AMTO	B1	1	1	-
ACC-110	02-Jun-22	00:26	00:29	2	10	9	none	SPPE	A2	2	8	-
ACC-110	02-Jun-22	00:26	00:29	2	10	9	none	CHFR	A1	1	1	-
ACC-110	04-Jul-22	00:58	01:02	3	14	11	none	none	n/a	n/a	n/a	-
ACC-111	18-May-22	23:29	23:31	1	7	5	light rain	SPPE	C3	3	n/a	-
ACC-111	18-May-22	23:29	23:31	1	7	5	light rain	WOFO	B1	1	2	-
ACC-111	02-Jun-22	23:56	00:00	2	10	8	none	SPPE	B3	3	n/a	-
ACC-111	04-Jul-22	23:32	23:36	3	14	11	none	none	n/a	n/a	n/a	-
ACC-112	18-May-22	22:20	22:23	1	7	5	light rain	SPPE	C3	3	n/a	-
ACC-112	02-Jun-22	22:43	22:46	2	14	11	none	AMTO	A1	1	1	-
ACC-112	02-Jun-22	22:43	22:46	2	14	11	none	CHFR	A1	1	1	-
ACC-112	04-Jul-22	22:20	22:24	3	13	8	none	none	n/a	n/a	n/a	GRFR approx. 200 m to N of feature
ACC-114	21-May-22	00:12	00:15	1	3	5	sleet	SPPE	A1	1	2	SPPE-B3 to N of feature

Attachment H: Anuran Call Count Data

Station ID	Date	Start Time	End Time	ACC Round #	Air Temp (°C)	Wind Speed (km/h)	Precipitation	Species	Direction	Scale	Abundance	Anurans outside of feature
ACC-114	21-May-22	00:12	00:15	1	3	5	sleet	WOFO	A1	1	2	SPPE-B3 to N of feature
ACC-114	04-Jun-22	23:38	23:43	2	11	5	none	SPPE	A1	1	2	GRTR-4, SPPE-3 N of feature
ACC-114	07-Jul-22	22:31	22:35	3	18	10	none	none	n/a	n/a	n/a	GRTF1-4 and GRFR1-3 to E of feature
ACC-122	19-May-22	22:05	22:08	1	11	5	none	SPPE	B3	3	n/a	-
ACC-122	16-Jun-22	23:47	23:50	2	15	6	none	SPPE	A1	1	1	GRTF (W,B3), SPPE (W, B1, 2), AMTO (W, B1, 1)
ACC-122	09-Jul-22	22:34	22:37	3	15	5	none	none	n/a	n/a	n/a	-
ACC-123	20-May-22	01:03	01:06	1	7	15	none	none	n/a	n/a	n/a	SPPE B3 in waterbody west of station
ACC-123	11-Jun-22	23:25	23:28	2	13	15	none	AMTO	B1	1	2	-
ACC-123	11-Jun-22	23:25	23:28	2	13	15	none	GRTF	B1	1	1	-
ACC-123	08-Jul-22	22:59	23:03	3	14	0	none	none	n/a	n/a	n/a	-
ACC-127	19-May-22	23:22	23:25	1	10	5	none	SPPE	C3	-	3	-
ACC-127	19-May-22	23:22	23:25	1	10	5	none	WOFO	C3	-	3	-
ACC-127	16-Jun-22	22:45	22:48	2	12	5	none	SPPE	A1	1	2	-
ACC-127	16-Jun-22	22:45	22:48	2	12	5	none	AMTO	B1	1	1	-
ACC-128	19-May-22	22:45	22:48	1	10	5	none	SPPE	C3	-	3	-
ACC-128	15-Jun-22	22:02	22:05	2	14	5	none	AMTO	B1	1	2	-
ACC-128	15-Jun-22	22:02	22:05	2	14	5	none	SPPE	B1	1	1	-
ACC-128	11-Jul-22	23:08	23:11	3	15	10	none	none	n/a	n/a	n/a	-
ACC-131	04-Jun-22	23:01	23:05	2	10	8	none	SPPE	A1	1	6	-
ACC-131	12-Jul-22	21:58	22:01	3	16	10	none	none	n/a	n/a	n/a	-
ACC-134	06-Jun-22	23:12	23:16	2	15	7	none	CHFR	A2	2	8	-
ACC-136	06-Jun-22	22:28	22:32	2	14	6	none	SPPE	A2	2	7	GRTF calling from SE of road approx. 200 m E of survey station
ACC-136	06-Jun-22	22:28	22:32	2	14	6	none	GRTF	A1	1	1	GRTF calling from SE of road approx. 200 m E of survey station
ACC-136	06-Jun-22	22:28	22:32	2	14	6	none	SPPE	B3	3	n/a	GRTF calling from SE of road approx. 200 m E of survey station
ACC-136	12-Jul-22	23:54	23:58	3	14	8	none	none	n/a	n/a	n/a	-
ACC-137	06-Jun-22	21:59	22:02	2	16	6	none	AMTO	A3	3	n/a	-
ACC-137	06-Jun-22	21:59	22:02	2	16	6	none	SPPE	A2	2	6	-
ACC-137	06-Jun-22	21:59	22:02	2	16	6	none	CHFR	A1	1	3	-
ACC-137	13-Jul-22	00:31	00:35	3	15	8	none	AMTO	B1	1	1	-
ACC-137	13-Jul-22	00:31	00:35	3	15	8	none	GRTF	C3	3	n/a	-

Legend:

AMTO	American Toad
CHFR	Chorus Frog
GRFR	Green Frog
GRTR	Gray Tree Frog
SPPE	Spring Peeper
WOFO	Wood Frog

ATTACHMENT 6.4-A-10

Breeding Bird Observations

Attachment Ia: BBS Table

Common Name	Scientific Name	Srank1	SARO (ESA) Status2	COSEWIC Status 3	SARA Status 4	SARA Schedule 4	Thunder Bay 5	MNR Area Sensitive 6	Protected Under MBCA	BCR-ON12 Priority Species	Alignments											Total Abundance	Highest Breeding Code 7	Highest Breeding Evidence 7
											1	1A	1B-1	1B-2	1C	2A	2B	2C	3A	3B	3C			
Alder Flycatcher	*Empidonax alnorum*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	X	-	X	X	X	X	-	**34**	**S**	**Possible**
American Bittern	*Botaurus lentiginosus*	S4B	-	-	-	-	S	X	ü	-	-	X	-	-	-	-	-	-	-	-	X	**3**	**H/S**	**Possible**
American Black Duck	*Anas rubripes*	S5B	-	-	-	-	S	-	ü	ü	-	-	-	-	X	-	-	-	X	-	-	**6**	**H**	**Possible**
American Crow	*Corvus brachyrhynchos*	S5B	-	-	-	-	P	-	-	-	X	X	X	X	X	-	X	X	X	X	-	**170**	**H/S**	**Possible**
American Goldfinch	*Spinus tristis*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	-	-	X	-	X	X	-	**19**	**H/S**	**Possible**
American Kestrel	*Falco sparverius*	S4	-	-	-	-	S	-	-	ü	X	-	-	-	-	-	-	-	X	-	-	**11**	**H**	**Possible**
American Redstart	*Setophaga ruticilla*	S5B	-	-	-	-	S	X	ü	-	X	-	-	X	X	X	-	-	X	X	-	**36**	**P**	**Probable**
American Robin	*Turdus migratorius*	S5B	-	-	-	-	S	-	ü	-	X	X	X	X	X	X	X	X	X	X	X	**65**	**S**	**Possible**
American Three-toed Woodpecker	*Picoides dorsalis*	S4	-	-	-	-	P	X	ü	-	X	-	-	-	X	-	-	-	X	-	-	**4**	**S**	**Possible**
American White Pelican	*Pelecanus erythrorhynchos*	S2B	THR	NAR	-	-	S	-	-	ü	-	-	-	X	-	-	-	-	-	-	-	**6**	**X**	**Observed**
American Woodcock	*Scolopax minor*	S4B	-	-	-	-	S	-	ü	ü	-	-	-	-	-	-	-	-	X	-	-	**1**	**H/S**	**Possible**
Bald Eagle	*Haliaeetus leucocephalus*	S4B,SZN	SC	NAR	-	-	P	X	-	ü	X	-	-	-	-	X	X	X	-	-	-	**5**	**H**	**Possible**
Bank Swallow	*Riparia riparia*	S4B	THR	THR	THR	1	S	-	ü	ü	-	-	-	-	-	-	-	-	X	-	-	**15**	**AE**	**Confirmed**
Barred Owl	*Strix varia*	S5	-	-	-	-	P	X	-	-	X	X	-	-	X	-	X	-	-	X	-	**7**	**S**	**Possible**
Bay-breasted Warbler	*Setophaga castanea*	S5B	-	-	-	-	S	-	ü	ü	X	-	-	-	X	-	-	-	-	-	-	**3**	**S**	**Possible**
Belted Kingfisher	*Megaceryle alcyon*	S4B	-	-	-	-	S	-	-	ü	X	-	-	-	-	-	X	-	X	X	-	**3**	**X**	**Observed**
Black-and-white Warbler	*Mniotilta varia*	S5B	-	-	-	-	S	X	ü	-	X	-	-	-	X	-	X	X	X	X	X	**26**	**S**	**Possible**
Black-backed Woodpecker	*Picoides arcticus*	S4	-	-	-	-	P	X	ü	-	-	-	-	-	X	-	-	X	-	-	X	**4**	**S**	**Possible**
Black-billed Cuckoo	*Coccyzus erythropthalmus*	S4B,SZN	-	-	-	-	S	-	ü	ü	X	-	-	X	-	-	-	-	X	X	X	**25**	**S**	**Possible**
Blackburnian Warbler	*Setophaga fusca*	S5B	-	-	-	-	S	X	ü	ü	-	-	-	-	X	X	-	X	X	X	X	**30**	**S**	**Possible**
Black-capped Chickadee	*Poecile atricapillus*	S5	-	-	-	-	P	-	ü	-	X	-	X	X	X	X	-	-	-	X	-	**30**	**H/S**	**Possible**
Black-throated Green Warbler	*Setophaga virens*	S5B	-	-	-	-	S	X	ü	ü	X	-	-	X	X	X	-	-	-	X	-	**12**	**S**	**Possible**
Blue Jay	*Cyanocitta cristata*	S5	-	-	-	-	P	-	-	-	X	-	-	X	X	-	X	X	X	X	X	**50**	**CF**	**Confirmed**
Blue-headed Vireo	*Vireo solitarius*	S5B	-	-	-	-	S	X	ü	-	X	X	-	-	X	-	-	X	X	X	X	**24**	**S**	**Possible**
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	SC	THR	1	S	-	ü	ü	-	-	-	-	-	-	-	-	X	-	-	**1**	**H**	**Possible**
Bonaparte's Gull	*Chroicocephalus philadelphia*	S4B,S4N	-	-	-	-	S	-	ü	-	-	-	-	-	X	-	-	-	-	-	-	**4**	**T**	**Probable**
Broad-winged Hawk	*Buteo platypterus*	S5B,SZN	-	-	-	-	S	X	-	ü	X	-	-	-	-	-	-	-	X	X	X	**12**	**NU**	**Confirmed**
Brown Creeper	*Certhia americana*	S5B	-	-	-	-	S	X	ü	-	X	-	-	-	-	X	-	X	X	X	X	**17**	**S**	**Possible**
Brown-headed Cowbird	*Molothrus ater*	S4B	-	-	-	-	S	-	-	-	-	-	-	-	-	-	-	-	-	X	-	**1**	**S**	**Possible**
Canada Goose	*Branta canadensis*	S5	-	-	-	-	S	-	ü	ü	X	-	-	X	X	-	-	-	X	-	-	**113**	**FY**	**Confirmed**
Canada Jay	*Perisoreus canadensis*	S5	-	-	-	-	P	-	-	-	X	-	-	-	-	-	-	-	X	X	X	**10**	**FY**	**Confirmed**
Canada Warbler	*Cardellina canadensis*	S4B	SC	SC	THR	1	S	X	ü	ü	X	-	-	X	X	X	-	X	X	-	X	**12**	**P**	**Probable**
Cape May Warbler	*Setophaga tigrina*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	-	-	-	X	-	X	-	**7**	**S**	**Possible**

Attachment Ia: BBS Table

Common Name	Scientific Name	Srank1	SARO (ESA) Status2	COSEWIC Status 3	SARA Status 4	SARA Schedule 4	Thunder Bay 5	MNR Area Sensitive 6	Protected Under MBCA	BCR-ON12 Priority Species	Alignments											Total Abundance	Highest Breeding Code 7	Highest Breeding Evidence 7
											1	1A	1B-1	1B-2	1C	2A	2B	2C	3A	3B	3C			
Cedar Waxwing	*Bombycilla cedrorum*	S5B	-	-	-	-	S	-	ü	-	X	-	-	X	X	X	X	X	X	X	X	**60**	**FY**	**Confirmed**
Chestnut-sided Warbler	*Setophaga pensylvanica*	S5B	-	-	-	-	S	-	ü	ü	X	-	-	-	X	X	-	X	X	X	X	**46**	**P**	**Probable**
Chipping Sparrow	*Spizella passerina*	S5B	-	-	-	-	S	-	ü	-	X	-	-	X	X	-	X	-	X	X	X	**45**	**S**	**Possible**
Clay-colored Sparrow	*Spizella pallida*	S4B	-	-	-	-	S	-	ü	-	X	-	-	X	-	-	-	-	X	-	-	**10**	**S**	**Possible**
Common Goldeneye	*Bucephala clangula*	S5	-	-	-	-	P	X	ü	ü	X	-	-	-	-	-	-	-	X	-	-	**5**	**S**	**Possible**
Common Grackle	*Quiscalus quiscula*	S5B	-	-	-	-	S	-	-	-	X	-	-	-	X	-	-	X	X	-	-	**22**	**P**	**Probable**
Common Loon	*Gavia immer*	S5B,S5N	NAR	NAR	-	-	X	-	ü	-	-	-	-	-	X	-	X	X	X	X	X	**16**	**P**	**Probable**
Common Merganser	*Mergus merganser*	S5B,S5N	-	-	-	-	S	X	ü	ü	X	-	-	-	-	-	-	-	X	-	-	**2**	**H**	**Possible**
Common Nighthawk	*Chordeiles minor*	S4B	SC	SC	THR	1	S	-	ü	ü	-	-	-	-	-	-	-	-	X	-	X	**9**	**H/S**	**Possible**
Common Raven	*Corvus corax*	S5	-	-	-	-	P	-	-	-	X	-	-	X	X	-	-	X	X	X	-	**41**	**NY**	**Confirmed**
Common Yellowthroat	*Geothlypis trichas*	S5B	-	-	-	-	S	-	ü	ü	X	-	X	X	X	-	X	X	X	X	X	**60**	**D/P**	**Probable**
Dark-eyed Junco	*Junco hyemalis*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	X	-	-	-	X	X	X	**18**	**S**	**Possible**
Downy Woodpecker	*Picoides pubescens*	S5	-	-	-	-	P	-	ü	-	X	-	-	X	-	-	-	X	X	X	X	**12**	**H/S**	**Possible**
Eastern Phoebe	*Sayornis phoebe*	S5B	-	-	-	-	S	-	ü	-	-	-	-	-	-	-	-	-	X	X	-	**4**	**H/S**	**Possible**
Eastern Whip-poor-will	*Anthrostomus vociferus*	S4B	THR	THR	THR	1	S	X	ü	ü	-	-	-	-	X	-	-	-	X	X	X	**15**	**T**	**Probable**
Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	SC	1	S	-	ü	ü	X	X	-	-	-	-	-	-	-	-	-	**5**	**S**	**Possible**
European Starling	*Sturnus vulgaris*	SNA	-	-	-	-	P	-	-	-	X	-	-	X	-	-	-	-	X	-	-	**5**	**CF**	**Confirmed**
Golden-crowned Kinglet	*Regulus satrapa*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	X	-	X	-	X	X	X	**19**	**S**	**Possible**
Gray Catbird	*Dumetella carolinensis*	S4B	-	-	-	-	S	-	ü	ü	X	-	-	-	-	-	-	-	-	-	-	**1**	**S**	**Possible**
Great Blue Heron	*Ardea herodias*	S4	-	-	-	-	S	-	ü	-	-	-	-	-	-	-	-	-	X	-	-	**3**	**X**	**Observed**
Great Horned Owl	*Bubo virginianus*	S4	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	X	-	-	**1**	**H/S**	**Possible**
Greater Yellowlegs	*Tringa melanoleuca*	S4B,S4N	-	-	-	-	S	-	ü	-	X	-	-	-	-	-	-	-	X	-	-	**3**	**A**	**Probable**
Hairy Woodpecker	*Picoides villosus*	S5	-	-	-	-	P	X	ü	-	X	-	-	X	X	-	-	-	-	X	-	**9**	**H/S**	**Possible**
Hermit Thrush	*Catharus guttatus*	S5B	-	-	-	-	S	X	ü	-	X	X	-	-	X	-	-	X	X	X	X	**62**	**A**	**Probable**
Herring Gull	*Larus argentatus*	S5B,S5N	-	-	-	-	S	-	ü	ü	X	-	-	X	-	-	-	-	-	-	-	**25**	**H**	**Possible**
House Wren	*Troglodytes aedon*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	-	-	-	-	X	X	-	**5**	**S**	**Possible**
Indigo Bunting	*Passerina cyanea*	S4B	-	-	-	-	S	-	ü	-	-	-	-	-	-	-	-	-	X	X	-	**1**	**S**	**Possible**
Killdeer	*Charadrius vociferus*	S5B,S5N	-	-	-	-	S	-	ü	ü	-	-	-	-	-	-	-	-	-	-	X	**1**	**DD**	**Probable**
Least Flycatcher	*Empidonax minimus*	S4B	-	-	-	-	S	X	ü	ü	X	-	-	-	X	-	-	X	X	X	-	**20**	**S**	**Possible**
Lincoln's Sparrow	*Melospiza lincolnii*	S5B	-	-	-	-	S	-	ü	-	X	-	-	X	X	-	-	X	X	X	X	**29**	**FY**	**Confirmed**
Magnolia Warbler	*Setophaga magnolia*	S5B	-	-	-	-	S	X	ü	-	X	X	X	X	X	X	-	X	X	X	X	**68**	**H/S**	**Possible**
Mallard	*Anas platyrhynchos*	S5	-	-	-	-	S	-	ü	ü	X	-	-	X	-	-	-	X	-	-	-	**6**	**H**	**Possible**
Merlin	*Falco columbarius*	S5B	NAR	NAR	-	-	S	-	-	-	-	-	-	-	-	-	X	-	X	-	-	**2**	**H**	**Possible**

Attachment Ia: BBS Table

Common Name	Scientific Name	Srank1	SARO (ESA) Status2	COSEWIC Status 3	SARA Status 4	SARA Schedule 4	Thunder Bay 5	MNR Area Sensitive 6	Protected Under MBCA	BCR-ON12 Priority Species	Alignments											Total Abundance	Highest Breeding Code 7	Highest Breeding Evidence 7
											1	1A	1B-1	1B-2	1C	2A	2B	2C	3A	3B	3C			
Mourning Warbler	*Geothlypis philadelphia*	S4B	-	-	-	-	S	-	ü	ü	X	X	-	X	X	X	-	X	X	X	X	**59**	**A**	**Probable**
Nashville Warbler	*Oreothlypis ruficapilla*	S5B	-	-	-	-	S	-	ü	ü	X	-	-	X	X	X	X	X	X	X	X	**196**	**S**	**Possible**
Northern Flicker	*Colaptes auratus*	S4B	-	-	-	-	S	-	ü	ü	X	-	-	X	-	-	-	X	X	X	X	**25**	**V**	**Probable**
Northern Harrier	*Circus cyaneus*	S4B	NAR	NAR	-	-	S	X	-	-	X	-	-	-	-	-	-	-	-	-	-	**2**	**X**	**Observed**
Northern Parula	*Setophaga americana*	S4B	-	-	-	-	S	X	ü	-	X	X	-	-	X	-	X	X	X	X	X	**28**	**S**	**Possible**
Northern Waterthrush	*Parkesia noveboracensis*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	-	-	-	-	X	X	-	**5**	**S**	**Possible**
Olive-sided Flycatcher	*Contopus cooperi*	S4B	SC	SC	THR	1	S	-	ü	ü	X	-	-	-	X	-	-	X	X	-	X	**7**	**S**	**Possible**
Ovenbird	*Seiurus aurocapilla*	S4B	-	-	-	-	S	X	ü	-	X	X	X	X	X	X	-	X	X	X	X	**102**	**S**	**Possible**
Palm Warbler	*Setophaga palmarum hypochrysea*	S5B	-	-	-	-	-	-	ü	-	-	-	-	-	X	-	X	-	X	X	X	**12**	**S**	**Possible**
Philadelphia Vireo	*Vireo philadelphicus*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	-	-	-	-	X	-	X	**3**	**S**	**Possible**
Pied-billed Grebe	*Podilymbus podiceps*	S4B,S4N	-	-	-	-	S	-	ü	-	-	-	-	-	-	-	-	-	X	-	-	**1**	**S**	**Possible**
Pileated Woodpecker	*Dryocopus pileatus*	S5	-	-	-	-	P	X	ü	-	X	-	-	-	-	-	-	X	X	X	X	**16**	**H/S**	**Possible**
Pine Siskin	*Spinus pinus*	S4B	-	-	-	-	P	-	ü	-	-	-	-	-	X	-	-	-	X	X	X	**3**	**S**	**Possible**
Purple Finch	*Carpodacus purpureus*	S4B	-	-	-	-	S	-	ü	ü	X	-	-	X	X	-	-	-	X	X	X	**7**	**S**	**Possible**
Red Crossbill	*Loxia curvirostra*	S4B	-	-	-	-	P	-	ü	ü	-	-	-	-	-	-	-	-	-	X	-	**1**	**H**	**Possible**
Red-breasted Nuthatch	*Sitta canadensis*	S5	-	-	-	-	P	X	ü	-	X	-	-	X	X	X	-	X	X	X	X	**29**	**H/S**	**Possible**
Red-eyed Vireo	*Vireo olivaceus*	S5B	-	-	-	-	S	-	ü	-	X	-	-	X	X	X	-	X	X	X	X	**153**	**D**	**Probable**
Red-tailed Hawk	*Buteo jamaicensis*	S5	NAR	NAR	-	-	S	-	-	-	-	-	-	-	-	-	-	-	-	-	X	**1**	**S**	**Possible**
Red-winged Blackbird	*Agelaius phoeniceus*	S4	-	-	-	-	S	-	-	-	X	-	-	-	-	-	-	-	X	X	-	**11**	**P**	**Probable**
Ring-billed Gull	*Larus delawarensis*	S5B,SZN	-	-	-	-	S	-	ü	-	X	-	-	-	-	-	-	-	X	-	-	**9**	**X**	**Observed**
Ring-necked Duck	*Aythya collaris*	S5	-	-	-	-	S	-	ü	ü	-	-	-	-	X	-	-	-	-	-	-	**1**	**H**	**Possible**
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	S4B	-	-	-	-	S	-	ü	ü	-	-	-	-	-	-	-	-	X	X	X	**7**	**S**	**Possible**
Ruby-crowned Kinglet	*Regulus calendula*	S4B	-	-	-	-	S	-	ü	ü	X	-	-	-	X	-	X	-	X	X	X	**57**	**P**	**Probable**
Ruby-throated Hummingbird	*Archilochus colubris*	S5B	-	-	-	-	S	-	ü	-	-	-	-	-	X	-	-	X	-	-	-	**4**	**P**	**Probable**
Ruffed Grouse	*Bonasa umbellus*	S4	-	-	-	-	P	-	-	ü	X	X	-	-	X	X	X	X	X	X	X	**18**	**H/S**	**Possible**
Sandhill Crane	*Grus canadensis*	S4B,SZN	NAR	NAR	-	-	S	X	ü	ü	X	-	-	-	X	-	-	-	-	-	-	**8**	**P**	**Probable**
Savannah Sparrow	*Passerculus sandwichensis*	S4B	-	-	-	-	S	X	ü	-	X	-	-	X	-	-	-	X	X	X	-	**52**	**A/D/P**	**Probable**
Scarlet Tanager	*Piranga olivacea*	S4B	-	-	-	-	S	X	ü	-	-	-	-	-	-	-	-	-	-	-	X	**3**	**FY**	**Confirmed**
Sedge Wren	*Cistothorus platensis*	S4B	-	-	-	-	C	-	ü	ü	X	-	-	-	X	-	-	-	X	-	X	**9**	**T**	**Probable**
Sharp-tailed Grouse	*Tympanuchus phasianellus*	S4	-	-	-	-	P	X	-	-	-	-	-	-	-	-	-	-	X	-	-	**4**	**T**	**Probable**
Song Sparrow	*Melospiza melodia*	S5B	-	-	-	-	S	-	ü	ü	X	-	-	-	-	-	-	X	X	X	-	**40**	**FY**	**Confirmed**
Swainson's Thrush	*Catharus ustulatus*	S4B	-	-	-	-	S	-	ü	-	X	-	-	-	X	X	-	X	X	X	X	**37**	**P**	**Probable**
Swamp Sparrow	*Melospiza georgiana*	S5B	-	-	-	-	S	-	ü	ü	X	-	-	-	X	-	X	X	X	X	X	**47**	**A/P**	**Probable**
Tennessee Warbler	*Oreothlypis peregrina*	S5B	-	-	-	-	S	-	ü	ü	X	-	-	-	X	X	X	X	X	X	X	**40**	**S**	**Possible**

Attachment Ia: BBS Table

Common Name	Scientific Name	Srank1	SARO (ESA) Status2	COSEWIC Status 3	SARA Status 4	SARA Schedule 4	Thunder Bay 5	MNR Area Sensitive 6	Protected Under MBCA	BCR-ON12 Priority Species	Alignments											Total Abundance	Highest Breeding Code 7	Highest Breeding Evidence 7
											1	1A	1B-1	1B-2	1C	2A	2B	2C	3A	3B	3C			
Tree Swallow	*Tachycineta bicolor*	S4B	-	-	-	-	S	-	ü	ü	X	-	-	-	-	-	-	-	X	X	-	**23**	**AE**	**Confirmed**
Trumpeter Swan	*Cygnus buccinator*	S2S3	NAR	NAR	-	-	A*	-	ü	-	-	-	-	-	X	-	-	X	X	X	-	**4**	**H**	**Possible**
Veery	*Catharus fuscescens*	S4B	-	-	-	-	S	X	ü	ü	X	-	X	-	X	X	X	X	X	X	X	**64**	**S**	**Possible**
Virginia Rail	*Rallus limicola*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	-	X	-	-	-	-	-	**3**	**H/S**	**Possible**
White-throated Sparrow	*Zonotrichia albicollis*	S5B	-	-	-	-	S	-	ü	ü	X	X	-	X	X	X	X	X	X	X	X	**172**	**FY**	**Confirmed**
White-winged Crossbill	*Loxia leucoptera*	S5B	-	-	-	-	P	-	ü	-	-	-	-	-	-	-	-	-	X	X	-	**8**	**H**	**Possible**
Wilson's Snipe	*Gallinago delicata*	S5B,SZN	-	-	-	-	S	-	ü	ü	X	X	-	-	-	-	-	-	X	X	-	**17**	**T**	**Probable**
Wilson's Warbler	*Cardellina pusilla*	S4B	-	-	-	-	S	-	ü	-	X	-	-	X	-	-	-	-	X	X	X	**8**	**S**	**Possible**
Winter Wren	*Troglodytes hiemalis*	S5B	-	-	-	-	S	X	ü	-	X	-	-	-	X	X	-	X	X	X	X	**34**	**S**	**Possible**
Yellow Warbler	*Setophaga petechia*	S5B	-	-	-	-	S	-	ü	-	X	-	-	X	X	-	-	-	X	-	-	**11**	**S**	**Possible**
Yellow-bellied Flycatcher	*Empidonax flaviventris*	S5B	-	-	-	-	S	-	ü	-	X	X	-	-	X	X	-	-	X	X	X	**22**	**S**	**Possible**
Yellow-bellied Sapsucker	*Sphyrapicus varius*	S5B	-	-	-	-	S	-	ü	ü	-	-	-	-	-	X	-	X	-	X	X	**5**	**H/S**	**Possible**
Yellow-rumped Warbler	*Setophaga coronata*	S5B	-	-	-	-	S	-	ü	-	X	-	-	-	X	X	-	X	X	X	X	**58**	**S**	**Possible**
Total Species Recorded =	**113**	**~**	**9**	**7**	**7**	**7**	**~**	**31**	**93**	**47**	**81**	**15**	**7**	**33**	**59**	**26**	**24**	**46**	**87**	**70**	**55**	**2822**	**-**	**-**

Attachment 6.4-A-10b: BBS Table Legend

WILDLIFE LIST LEGEND

[1]S-Rank (provincial)

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

S1	Critically Imperiled - Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2	Imperiled - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3	Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4	Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5	Secure - Common, widespread, and abundant in the nation or state/province.
S#S#	Range Rank - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
SAN	Non-breeding accidental.
SE	Exotic - not believed to be a native component of Ontario's fauna.
SZN	Non-breeding migrants/vagrants.
SZB	Breeding migrants/vagrants.

[2]SARO (ESA) Status
Provincial status from MECP (status as of November 2022)
https://www.ontario.ca/page/species-risk-ontario

The provincial review process is implemented by the Committee on the Status of Species at Risk in Ontario (COSSARO). COSSARO is an independent advisory panel to the Ontario Ministry of Environment, Conservation and Parks (MECP) that assesses the status of species at risk of extinction.

Attachment 6.4-A-10b: BBS Table Legend

MECP Conservation Status Ranks

EXT Extinct - A species that no longer exists anywhere in the world.

EXP Extirpated - A species that lives somewhere in the world, lived at one time in the wild in Ontario, but no longer lives in the wild in Ontario.

END Endangered - A species that is facing imminent Extinction or extirpation.

THR Threatened - A species that is likely to become Endangered if steps are not taken to address factors threatening to lead to its Extinction or extirpation.

SC Special Concern – A species that may become Threatened or Endangered because of a combination of biological characteristics and identified threats.

[3]COSEWIC (Committee on the Status of Endangered Wildlife in Canada) Status
COSEWIC status from the Government of Canada's Species at Risk Public Registry (status as of Nov 2022)

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is an independent advisory panel to the Minister of Environment and Climate Change Canada that meets twice a year to assess the status of wildlife species at risk of extinction.

https://cosewic.ca/index.php/en-ca

COSEWIC Conservation Status Ranks

EXT Extinct - A species that no longer exists.

EXP Extirpated - A species no longer existing in the wild in Canada, but occurring elsewhere.

END Endangered - A species facing imminent extirpation or Extinction.

THR Threatened - A species likely to become Endangered if limiting factors are not reversed.

SC Special Concern (formerly vulnerable) - A species that may become a Threatened or an Endangered species because of a combination of biological characteristics and identified threats.

NAR Not At Risk - A species that has been evaluated and found to be not at risk of Extinction given the current circumstances.

DD Data Deficient (formerly Indeterminate) - Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of Extinction.

Attachment 6.4-A-10b: BBS Table Legend

[4]SARA (Species at Risk Act) Status and Schedule

Federal status from the Government of Canada's Species at Risk Public Registry (status as of Nov 2022)
https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html

The Act establishes Schedule 1, as the official list of wildlife species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.

EXT	Extinct - A wildlife species that no longer exists.
EXP	Extirpated **-** A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
END	Endangered - A wildlife species that is facing imminent extirpation or Extinction.
THR	Threatened - A wildlife species that is likely to become Endangered if nothing is done to reverse the factors leading to its extirpation or Extinction.
SC	Special Concern - A wildlife species that may become a Threatened or an Endangered species because of a combination of biological characteristics and identified threats.

Schedule 1: is the official list of species that are classified as Extirpated, Endangered, Threatened and Special Concern.

Schedule 2: species listed in Schedule 2 are species that had been designated as Endangered or Threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

Schedule 3: species listed in Schedule 3 are species that had been designated as Special Concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of wildlife species at risk. However, please note that while Schedule 1 lists species that are Extirpated, Endangered, Threatened and Special Concern, the prohibitions do not apply to species of Special Concern.

Species that were designated at risk by COSEWIC prior to October 1999 (Schedule 2 & 3) must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of SARA. After they have been assessed, the Governor in Council may on the recommendation of the Minister, decide on whether or not they should be added to the List of Wildlife Species at Risk.

Attachment 6.4-A-10b: BBS Table Legend

[5] Regional Status
Thunder Bay District
From: Thunder Bay Field Naturalists http://www.tbfn.net/publications

Birds (Current as of December 2010)

S = Summer Resident (usually nests in Thunder Bay District)

W = Winter Resident

P = Permanent Resident (breeds here)

M = Spring and/or Fall Migrant (expected every year)

C = Casual in the District of Thunder Bay (has been reported in 3 to 7 of the past 10 years)

A = Accidental in The District of Thunder Bay (has been reported in 2 of past 10 years)

E = Extinct or Extirpated (not expected to be seen)

* = Species considered “Rare” in Northern Ontario by the Ontario Bird Records Committee

** = Additional species considered “Rare” in the Thunder Bay District

[6] MNR Area Sensitive Species
Area Sensitivity is defined as species requiring large areas of suitable habitat in order to sustain population numbers.

From: Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch, Wildlife Section. Science Development and Transfer Branch, Southcentral Science Section. 151pp. + appendices.

[7] Ontario Breeding Bird Atlas - Breeding Evidence Codes

OBSERVED

X Species observed in its breeding season (no breeding evidence).

POSSIBLE

H Species observed in its breeding season in suitable nesting habitat.

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.

Attachment 6.4-A-10b: BBS Table Legend

PROBABLE

P	Pair observed in suitable nesting habitat in nesting season.
T	Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more apart, at the same place.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult.
B	Brood Patch on adult female or cloacal protuberance on adult male.
N	Nest-building or excavation of nest hole.

CONFIRMED

DD	Distraction display or injury feigning.
NU	Used nest or eggshells found (occupied or laid within the period of the survey).
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight.
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest.
FS	Adult carrying fecal sac.
CF	Adult carrying food for young.
NE	Nest containing eggs.
NY	Nest with young seen or heard.

ATTACHMENT 6.4-A-11

Candidate Bird Habitat

WAASIGAN
TRANSMISSION LINE

hydro one

Environmental Assessment Report for the Waasigan Transmission Line - Attachment J: Birds Baseline Mapping Criteria

April 2023

Table of Contents

Tables

1.1 American White Pelican

Candidate habitat for American white pelican nesting habitat in the LSA was mapped as the following:

- Unvegetated islands (greater than 1 ha in size) that are greater than 1.5 km from the nearest shoreline of lakes that are greater than 1000 hectares in size.
  - Based on the habitat criteria for this species, there was no habitat identified within the LSA.

1.2 Least Bittern

Known breeding habitat for least bittern in the LSA was mapped based on the following:

- Comparing background data from NHIC with observations and cross-referencing the species known wetland habitats.
  - Based on NHIC data, there is no known element occurrences of the species within the LSA.

1.3 Bald Eagle

Candidate habitat for bald eagle nesting habitat in the LSA was mapped as the following:

- Deciduous, coniferous, and mixed forest within 0.5 km of waterbodies (i.e., greater than 100 ha), and watercourses >50 m wide; and
- Ecological Land Classification ecosites listed in Table 1, below, within 0.5 km of major waterbodies (i.e., greater than 100 ha), and watercourses >50 m wide.

Known habitat for bald eagles in the LSA was mapped as the following:

- Observations made by WSP Golder in 2022 of individuals, were mapped and afforded a 0-150 m habitat extent, along with a 500 m buffer for all habitat within deciduous, coniferous, and mixed forest within 0.5 km of waterbodies (i.e., greater than 100 ha), and watercourses >50 m wide per the ecosites outlined in Table 1.

Table 1: Ecological Land Classification Ecosites Identified as Moderate to High Suitability for Breeding Bald Eagle in the Local Study Area

Ecosite	Description
B011	Very Shallow, Dry to Fresh: Red Pine - White Pine Conifer
B012	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer
B013	Very Shallow, Dry to Fresh: Cedar - Hemlock Conifer
B014	Very Shallow. Dry to Fresh: Conifer

Ecosite	Description
B015	Very Shallow, Dry to Fresh: Red Pine - White Pine Mixedwood
B016	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood
B017	Very Shallow, Dry to Fresh: Oak Hardwood
B018	Very Shallow, Dry to Fresh: Maple Hardwood
B019	Very Shallow, Dry to Fresh: Mixedwood
B023	Very Shallow, Humid: Red Pine - White Pine Conifer
B024	Very Shallow, Humid: Black Spruce - Pine Conifer
B025	Very Shallow, Humid: Cedar - Hemlock Conifer
B026	Very Shallow, Humid: Conifer
B027	Very Shallow, Humid: Red Pine - White Pine Mixedwood
B028	Very Shallow, Humid: Mixedwood
B033	Dry, Sandy: Red Pine- White Pine Conifer
B034	Dry, Sandy: Jack Pine - Black Spruce Dominated
B035	Dry, Sandy: Pine - Black Spruce Conifer
B036	Dry, Sandy: Cedar - Hemlock Conifer
B037	Dry, Sandy: Spruce - Fir Conifer
B038	Dry, Sandy: Conifer
B039	Dry. Sandy: Red Pine - White Pine Mixedwood
B040	Dry, Sandy. Aspen - Birch Hardwood
B041	Dry, Sandy: Oak Hardwood
B042	Dry, Sandy: Maple Hardwood
B043	Dry, Sandy: Mixedwood
B048	Dry to Fresh, Coarse: Red Pine - White Pine Conifer
B049	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated
B050	Dry to Fresh, Coarse: Pine - Black Spruce Conifer
B051	Dry to Fresh, Coarse: Cedar - Hemlock Conifer
B052	Dry to Fresh, Coarse: Spruce - Fir Conifer
B053	Dry to Fresh, Coarse: Conifer
B054	Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood
B055	Dry to Fresh, Coarse: Aspen - Birch Hardwood
B056	Dry to Fresh, Coarse: Elm - Ash Hardwood
B057	Dry to Fresh, Coarse: Oak Hardwood
B058	Dry to Fresh, Coarse: Maple Hardwood
B059	Dry to Fresh, Coarse: Mixedwood
B064	Moist, Coarse: Red Pine - White Pine Conifer
B065	Moist, Coarse: Pine - Black Spruce Conifer
B066	Moist, Coarse: Hemlock - Cedar Conifer
B067	Moist, Coarse: Spruce - Fir Conifer

Ecosite	Description
B068	Moist, Coarse: Conifer
B069	Moist, Coarse: Red Pine - White Pine Mixedwood
B070	Moist, Coarse: Aspen - Birch Hardwood
B071	Moist, Coarse: Elm - Ash Hardwood
B072	Moist, Coarse: Oak Hardwood
B073	Moist, Coarse: Sugar Maple Hardwood
B074	Moist, Coarse: Red Maple Hardwood
B075	Moist, Coarse: Maple Hardwood
B076	Moist, Coarse: Mixedwood
B081	Fresh, Clayey: Red Pine - White Pine Conifer
B082	Fresh, Clayey: Jack Pine - Black Spruce Dominated
B083	Fresh, Clayey: Pine - Black Spruce Conifer
B084	Fresh, Clayey: Hemlock - Cedar Conifer
B085	Fresh, Clayey: Spruce - Fir Conifer
B086	Fresh, Clayey: Conifer
B087	Fresh, Clayey: Red Pine - White Pine Mixedwood
B088	Fresh, Clayey: Aspen - Birch Hardwood
B089	Fresh, Clayey: Elm - Ash Hardwood
B090	Fresh, Clayey: Oak Hardwood
B091	Fresh, Clayey: Maple Hardwood
B092	Fresh, Clayey: Mixedwood
B097	Fresh, Silty to Fine Loamy: Red Pine - White Pine Conifer
B098	Fresh, Silty to Fine Loamy: Jack Pine - Black Spruce Dominated
B099	Fresh, Silty to Fine Loamy: Pine - Black Spruce Conifer
B100	Fresh, Silty to Fine Loamy: Hemlock - Cedar Conifer
B101	Fresh, Silty to Fine Loamy: Spruce - Fir Conifer
B102	Fresh, Silty to Fine Loamy: Conifer
B103	Fresh, Silty to Fine Loamy: Red Pine - White Pine Mixedwood
B104	Fresh, Silty to Fine Loamy: Aspen - Birch Hardwood
B105	Fresh, Silty to Fine Loamy: Elm - Ash Hardwood
B106	Fresh, Silty to Fine Loamy: Oak Hardwood
B107	Fresh, Silty to Fine Loamy: Maple Hardwood
B108	Fresh, Silty to Fine Loamy: Mixedwood
B113	Moist, Fine: White Pine Conifer
B114	Moist, Fine: Pine - Black Spruce Conifer
B115	Moist, Fine: Hemlock - Cedar Conifer
B116	Moist Fine: Spruce - Fir Conifer

Ecosite	Description
B117	Moist, Fine: Conifer
B118	Moist, Fine: White Pine Mixedwood
B119	Moist, Fine: Aspen - Birch Hardwood
B120	Moist Fine: Elm - Ash Hardwood
B121	Moist, Fine: Oak Hardwood
B122	Moist Fine: Sugar Maple Hardwood
B123	Moist. Fine: Red Maple Hardwood
B124	Moist. Fine: Maple Hardwood
B125	Moist. Fine: Mixedwood
B222	Mineral Poor Conifer Swamp
B223	Mineral Intermediate Conifer Swamp
B224	Mineral Rich Conifer Swamp

1.4 Bank Swallow

Candidate bank swallow breeding habitat was mapped in the LSA as the following:

- All aggregate pits within the LSA and an associated 1 km buffer around each location.

Known bank swallow habitat was mapped in the LSA following the provincial habitat guidance and included the following:

- Category 1: the bank swallow breeding colony, including the congregation of burrows and the substrate between and around them.
- Category 2: the area within 50 m in front of the breeding colony bank face to allow bank swallows to enter and exit burrows.
- Category 3: the area of suitable habitat within 500 m of the outer edge of the breeding colony.

1.5 Barn Swallow

Barn swallow nesting habitat in the LSA was mapped as the following:

- All bridges within the LSA for breeding.

1.6 Bobolink

Bobolink breeding habitat in the LSA was mapped as the following:

- Ecological Land Classification data were used to determine suitable bobolink habitat and the ecosites are outlined in Table 2, below.

Table 2: Ecological Land Classification Ecosites Identified as Moderate to High Suitability for Breeding Bobolink in the Local Study Area.

Ecosite	Description
B008	Very Shallow, Dry to Fresh: Meadow
B020	Very Shallow, Humid: Meadow
B029	Dry, Sandy. Field
B030	Dry, Sandy. Meadow
B044	Dry to Fresh, Coarse: Field
B045	Dry to Fresh, Coarse: Meadow
B060	Moist, Coarse: Field
B061	Moist, Coarse: Meadow
B077	Fresh, Clayey: Field
B078	Fresh, Clayey: Meadow
B093	Fresh, Silty to Fine Loamy: Field
B094	Fresh, Silty to Fine Loamy: Meadow
B109	Moist, Fine: Field
B110	Moist, Fine: Meadow

1.7 Canada Warbler

Candidate Canada warbler breeding habitat in the LSA was mapped as the following:

- Ecological Land Classification data were used to determine candidate and known Canada warbler habitat and the ecosites are outlined in Table 3.

Known habitat for Canada warbler in the LSA was mapped as the following:

- Observations made by WSP Golder in 2022 of individuals, were mapped and afforded a 0-150 m habitat extent, along with a 500 m buffer for all habitat per the ecosites outlined in Table 3.

hydro one

Table 3: Ecological Land Classification Ecosites Identified as Moderate to High Suitability for Breeding Canada Warbler in the Local Study Area

Ecosite	Description
B009	Very Shallow, Dry to Fresh: Sparse Shrub
B010	Very Shallow, Dry to Fresh: Shrub
B016	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood
B017	Very Shallow, Dry to Fresh: Oak Hardwood
B018	Very Shallow, Dry to Fresh: Maple Hardwood
B019	Very Shallow, Dry to Fresh: Mixedwood
B021	Very Shallow, Humid: Sparse Shrub
B022	Very Shallow, Humid: Shrub
B023	Very Shallow, Humid: Red Pine - White Pine Conifer
B024	Very Shallow, Humid: Black Spruce - Pine Conifer
B025	Very Shallow, Humid: Cedar - Hemlock Conifer
B026	Very Shallow, Humid: Conifer
B027	Very Shallow, Humid: Red Pine - White Pine Mixedwood
B028	Very Shallow, Humid: Mixedwood
B031	Dry, Sandy: Sparse Shrub
B032	Dry, Sandy: Shrub
B040	Dry, Sandy. Aspen - Birch Hardwood
B041	Dry, Sandy: Oak Hardwood
B042	Dry, Sandy: Maple Hardwood
B043	Dry, Sandy: Mixedwood
B046	Dry to Fresh, Coarse: Sparse Shrub
B047	Dry to Fresh, Coarse: Shrub
B055	Dry to Fresh, Coarse: Aspen - Birch Hardwood
B056	Dry to Fresh, Coarse: Elm - Ash Hardwood
B057	Dry to Fresh, Coarse: Oak Hardwood
B058	Dry to Fresh, Coarse: Maple Hardwood
B059	Dry to Fresh, Coarse: Mixedwood
B062	Moist, Coarse: Sparse Shrub
B063	Moist, Coarse: Shrub
B070	Moist, Coarse: Aspen - Birch Hardwood
B071	Moist, Coarse: Elm - Ash Hardwood
B072	Moist, Coarse: Oak Hardwood
B073	Moist, Coarse: Sugar Maple Hardwood
B074	Moist, Coarse: Red Maple Hardwood
B075	Moist, Coarse: Maple Hardwood
B076	Moist, Coarse: Mixedwood
B079	Fresh, Clayey: Sparse Shrub

Ecosite	Description
B080	Fresh, Clayey: Shrub
B088	Fresh, Clayey: Aspen - Birch Hardwood
B089	Fresh, Clayey: Elm - Ash Hardwood
B090	Fresh, Clayey: Oak Hardwood
B091	Fresh, Clayey: Maple Hardwood
B092	Fresh, Clayey: Mixedwood
B095	Fresh, Silty to Fine Loamy: Sparse Shrub
B096	Fresh, Silty to Fine Loamy: Shrub
B104	Fresh, Silty to Fine Loamy: Aspen - Birch Hardwood
B105	Fresh, Silty to Fine Loamy: Elm - Ash Hardwood
B106	Fresh, Silty to Fine Loamy: Oak Hardwood
B107	Fresh, Silty to Fine Loamy: Maple Hardwood
B108	Fresh, Silty to Fine Loamy: Mixedwood
B111	Moist, Fine: Sparse Shrub
B112	Moist. Fine: Shrub
B118	Moist, Fine: White Pine Mixedwood
B119	Moist, Fine: Aspen - Birch Hardwood
B120	Moist Fine: Elm - Ash Hardwood
B121	Moist, Fine: Oak Hardwood
B122	Moist Fine: Sugar Maple Hardwood
B123	Moist. Fine: Red Maple Hardwood
B124	Moist. Fine: Maple Hardwood
B125	Moist. Fine: Mixedwood
B127	Poor Conifer Swamp
B128	Intermediate Conifer Swamp
B129	Rich Conifer Swamp
B130	Intolerant Hardwood Swamp
B131	Maple Hardwood Swamp
B132	Oak Hardwood Swamp
B133	Hardwood Swamp
B134	Mineral Thicket Swamp
B135	Organic Thicket Swamp

1.8 Chimney Swift

Chimney swift breeding habitat in the LSA was mapped as the following:

- Urban settlements within the LSA, where suitable nesting sites have the potential to be present.

1.9 Common Nighthawk

Candidate common nighthawk breeding habitat in the LSA was mapped as the following:

- Ecological Land Classification data were used to determine suitable common nighthawk habitat and the ecosites are outlined in Table 4.

Known habitat for common nighthawk in the LSA was mapped as the following:

- Observations made by WSP Golder in 2022 of individuals, were mapped and afforded a 0-150 m habitat extent, along with a 500 m buffer for all habitat per the ecosites outlined in Table 4.

Table 4: Ecological Land Classification Ecosites Identified as Moderate to High Suitability for Breeding Common Nighthawk in the Local Study Area

Ecosite	Description
B006	Active Sand Dune
B007	Active Mineral Barren
B008	Very Shallow, Dry to Fresh: Meadow
B030	Dry, Sandy. Meadow
B044	Dry to Fresh, Coarse: Field
B045	Dry to Fresh, Coarse: Meadow
B060	Moist, Coarse: Field
B061	Moist, Coarse: Meadow
B077	Fresh, Clayey: Field
B078	Fresh, Clayey: Meadow
B093	Fresh, Silty to Fine Loamy: Field
B094	Fresh, Silty to Fine Loamy: Meadow
B109	Moist, Fine: Field
B110	Moist, Fine: Meadow
B163	Active Rock Barren
B164	Rock Barren
B165	Open Rock Barren
B166	Active Talus or Historic/Raised Beach
B167	Talus or Historic/Raised Beach
B168	Open Talus or Historic/Raised Beach
B179	Calcareous Active Rock Barren
B180	Calcareous Rock Barren
B181	Calcareous Open Rock Barren
B215	Coastal Mineral Barren

1.10 Eastern Whip-poor-will

Suitable Eastern whip-poor-will habitat was mapped using the following Ecological Land Classification ecosites, outlined under Table 5, below, that met one of the following two criteria's:

- Stands, aged 10-40 years with dense forest cover (but sparse to moderate understory), within 30 m of open areas (where spare to moderate forest cover is <75%).
- Stands, aged 10-30 years with sparse to moderate forest cover (and sparse to moderate understory) (where sparse to moderate understory is <50%).

Suitable Eastern whip-poor-will habitat was also mapped using open areas with FRI data, including the following aggregates:

- Developed Agricultural Land (DAL);
- Grass and Meadow (GRS);
- Small Island (ISL);
- Unclassified (UCL);
- Brush and Alder (BHS);
- Open Wetland (OMS); and
- Rock (RCK).

Eastern whip-poor-will observations (either from background data sources or WSP Golder observations) were afforded a 1 km buffer around each observation point, where suitable habitat was present.

Table 5: Ecological Land Classification Ecosites Identified as Moderate to High Suitability for Breeding Eastern Whip-poor-will in the Local Study Area

Ecosite	Habitat Description
B011	Very Shallow, Dry to Fresh: Red Pine - White Pine Conifer
B012	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer
B013	Very Shallow, Dry to Fresh: Cedar - Hemlock Conifer
B014	Very Shallow. Dry to Fresh: Conifer
B015	Very Shallow, Dry to Fresh: Red Pine - White Pine Mixedwood
B016	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood
B017	Very Shallow, Dry to Fresh: Oak Hardwood
B018	Very Shallow, Dry to Fresh: Maple Hardwood
B019	Very Shallow, Dry to Fresh: Mixedwood

Ecosite	Habitat Description
B033	Dry, Sandy: Red Pine- White Pine Conifer
B034	Dry, Sandy: Jack Pine - Black Spruce Dominated
B035	Dry, Sandy: Pine - Black Spruce Conifer
B036	Dry, Sandy: Cedar - Hemlock Conifer
B037	Dry, Sandy: Spruce - Fir Conifer
B038	Dry, Sandy: Conifer
B039	Dry. Sandy: Red Pine - White Pine Mixedwood
B040	Dry, Sandy. Aspen - Birch Hardwood
B041	Dry, Sandy: Oak Hardwood
B042	Dry, Sandy: Maple Hardwood
B043	Dry, Sandy: Mixedwood
B048	Dry to Fresh, Coarse: Red Pine - White Pine Conifer
B049	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated
B050	Dry to Fresh, Coarse: Pine - Black Spruce Conifer
B051	Dry to Fresh, Coarse: Cedar - Hemlock Conifer
B052	Dry to Fresh, Coarse: Spruce - Fir Conifer
B053	Dry to Fresh, Coarse: Conifer
B054	Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood
B055	Dry to Fresh, Coarse: Aspen - Birch Hardwood
B056	Dry to Fresh, Coarse: Elm - Ash Hardwood
B057	Dry to Fresh, Coarse: Oak Hardwood
B058	Dry to Fresh, Coarse: Maple Hardwood
B059	Dry to Fresh, Coarse: Mixedwood

1.11 Eastern Wood-Pewee

Candidate Eastern wood-pewee breeding habitat in the LSA was mapped as the following:

- Ecological Land Classification data were used to determine suitable Eastern wood-pewee habitat and the ecosites are outlined in Table 6.

Known habitat for Eastern wood-pewee in the LSA was mapped as the following:

- Observations made by WSP Golder in 2022 of individuals, were mapped and afforded a 0-150 m habitat extent, along with a 500 m buffer for all habitat per the ecosites outlined in Table 6.

Table 6: Ecological Land Classification Ecosites Identified as Moderate to High Suitability for Breeding Eastern Wood-Pewee in the Local Study Area

Ecosite	Description
B016	Very Shallow, Dry to Fresh: Aspen - Birch Hardwood
B017	Very Shallow, Dry to Fresh: Oak Hardwood
B018	Very Shallow, Dry to Fresh: Maple Hardwood
B019	Very Shallow, Dry to Fresh: Mixedwood
B023	Very Shallow, Humid: Red Pine - White Pine Conifer
B024	Very Shallow, Humid: Black Spruce - Pine Conifer
B025	Very Shallow, Humid: Cedar - Hemlock Conifer
B026	Very Shallow, Humid: Conifer
B027	Very Shallow, Humid: Red Pine - White Pine Mixedwood
B028	Very Shallow, Humid: Mixedwood
B040	Dry, Sandy. Aspen - Birch Hardwood
B041	Dry, Sandy: Oak Hardwood
B042	Dry, Sandy: Maple Hardwood
B043	Dry, Sandy: Mixedwood
B055	Dry to Fresh, Coarse: Aspen - Birch Hardwood
B056	Dry to Fresh, Coarse: Elm - Ash Hardwood
B057	Dry to Fresh, Coarse: Oak Hardwood
B058	Dry to Fresh, Coarse: Maple Hardwood
B059	Dry to Fresh, Coarse: Mixedwood
B070	Moist, Coarse: Aspen - Birch Hardwood
B071	Moist, Coarse: Elm - Ash Hardwood
B072	Moist, Coarse: Oak Hardwood
B073	Moist, Coarse: Sugar Maple Hardwood
B074	Moist, Coarse: Red Maple Hardwood
B075	Moist, Coarse: Maple Hardwood
B076	Moist, Coarse: Mixedwood
B088	Fresh, Clayey: Aspen - Birch Hardwood
B089	Fresh, Clayey: Elm - Ash Hardwood
B090	Fresh, Clayey: Oak Hardwood
B091	Fresh, Clayey: Maple Hardwood
B092	Fresh, Clayey: Mixedwood
B104	Fresh, Silty to Fine Loamy: Aspen - Birch Hardwood
B105	Fresh, Silty to Fine Loamy: Elm - Ash Hardwood
B106	Fresh, Silty to Fine Loamy: Oak Hardwood
B107	Fresh, Silty to Fine Loamy: Maple Hardwood
B108	Fresh, Silty to Fine Loamy: Mixedwood

Ecosite	Description
B118	Moist, Fine: White Pine Mixedwood
B119	Moist, Fine: Aspen - Birch Hardwood
B120	Moist Fine: Elm - Ash Hardwood
B121	Moist, Fine: Oak Hardwood
B122	Moist Fine: Sugar Maple Hardwood
B123	Moist. Fine: Red Maple Hardwood
B124	Moist. Fine: Maple Hardwood
B125	Moist. Fine: Mixedwood
B130	Intolerant Hardwood Swamp
B131	Maple Hardwood Swamp
B132	Oak Hardwood Swamp
B133	Hardwood Swamp
B134	Mineral Thicket Swamp
B135	Organic Thicket Swamp

1.12 Olive-sided Flycatcher

Candidate olive-sided flycatcher breeding habitat in the LSA was mapped as the following:

- Ecological Land Classification data were used to determine suitable olive-sided flycatcher habitat and the ecosites are outlined in Table 7.

Known habitat for olive-sided in the LSA was mapped as the following:

- Observations made by WSP Golder in 2022 of individuals, were mapped and afforded a 0-150 m habitat extent, along with a 500 m buffer for all habitat per the ecosites outlined in Table 7.

Table 7: Ecological Land Classification Ecosites Identified as Moderate to High Suitability for Breeding Olive-sided Flycatcher in the Local Study Area

Ecosite	Description
B011	Very Shallow, Dry to Fresh: Red Pine - White Pine Conifer
B012	Very Shallow, Dry to Fresh: Pine - Black Spruce Conifer
B013	Very Shallow, Dry to Fresh: Cedar - Hemlock Conifer
B014	Very Shallow. Dry to Fresh: Conifer
B015	Very Shallow, Dry to Fresh: Red Pine - White Pine Mixedwood
B019	Very Shallow, Dry to Fresh: Mixedwood
B023	Very Shallow, Humid: Red Pine - White Pine Conifer
B024	Very Shallow, Humid: Black Spruce - Pine Conifer
B025	Very Shallow, Humid: Cedar - Hemlock Conifer
B026	Very Shallow, Humid: Conifer

Ecosite	Description
B027	Very Shallow, Humid: Red Pine - White Pine Mixedwood
B028	Very Shallow, Humid: Mixedwood
B033	Dry, Sandy: Red Pine- White Pine Conifer
B034	Dry, Sandy: Jack Pine - Black Spruce Dominated
B035	Dry, Sandy: Pine - Black Spruce Conifer
B036	Dry, Sandy: Cedar - Hemlock Conifer
B037	Dry, Sandy: Spruce - Fir Conifer
B038	Dry, Sandy: Conifer
B039	Dry. Sandy: Red Pine - White Pine Mixedwood
B043	Dry, Sandy: Mixedwood
B048	Dry to Fresh, Coarse: Red Pine - White Pine Conifer
B049	Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated
B050	Dry to Fresh, Coarse: Pine - Black Spruce Conifer
B051	Dry to Fresh, Coarse: Cedar - Hemlock Conifer
B052	Dry to Fresh, Coarse: Spruce - Fir Conifer
B053	Dry to Fresh, Coarse: Conifer
B054	Dry to Fresh, Coarse: Red Pine - White Pine Mixedwood
B059	Dry to Fresh, Coarse: Mixedwood
B064	Moist, Coarse: Red Pine - White Pine Conifer
B065	Moist, Coarse: Pine - Black Spruce Conifer
B066	Moist, Coarse: Hemlock - Cedar Conifer
B067	Moist, Coarse: Spruce - Fir Conifer
B068	Moist, Coarse: Conifer
B069	Moist, Coarse: Red Pine - White Pine Mixedwood
B076	Moist, Coarse: Mixedwood
B081	Fresh, Clayey: Red Pine - White Pine Conifer
B082	Fresh, Clayey: Jack Pine - Black Spruce Dominated
B083	Fresh, Clayey: Pine - Black Spruce Conifer
B084	Fresh, Clayey: Hemlock - Cedar Conifer
B085	Fresh, Clayey: Spruce - Fir Conifer
B086	Fresh, Clayey: Conifer
B087	Fresh, Clayey: Red Pine - White Pine Mixedwood
B092	Fresh, Clayey: Mixedwood
B097	Fresh, Silty to Fine Loamy: Red Pine - White Pine Conifer
B098	Fresh, Silty to Fine Loamy: Jack Pine - Black Spruce Dominated
B099	Fresh, Silty to Fine Loamy: Pine - Black Spruce Conifer
B100	Fresh, Silty to Fine Loamy: Hemlock - Cedar Conifer
B101	Fresh, Silty to Fine Loamy: Spruce - Fir Conifer
B102	Fresh, Silty to Fine Loamy: Conifer

Ecosite	Description
B103	Fresh, Silty to Fine Loamy: Red Pine - White Pine Mixedwood
B108	Fresh, Silty to Fine Loamy: Mixedwood
B113	Moist, Fine: White Pine Conifer
B114	Moist, Fine: Pine - Black Spruce Conifer
B115	Moist, Fine: Hemlock - Cedar Conifer
B116	Moist Fine: Spruce - Fir Conifer
B117	Moist, Fine: Conifer
B118	Moist, Fine: White Pine Mixedwood
B125	Moist. Fine: Mixedwood
B126	Treed Bog
B127	Poor Conifer Swamp
B128	Intermediate Conifer Swamp
B129	Rich Conifer Swamp
B134	Mineral Thicket Swamp
B135	Organic Thicket Swamp
B136	Sparse Treed Fen
B137	Sparse Treed Bog
B138	Open Bog
B139	Poor Fen
B140	Open Moderately Rich Fen
B141	Open Extremely Rich Fen
B146	Open Shore Fen
B222	Mineral Poor Conifer Swamp
B223	Mineral Intermediate Conifer Swamp
B224	Mineral Rich Conifer Swamp

hydroone.com