



**NORTHLAND
POWER**

Empire Solar Project

Natural Heritage Records Review Report

October 18, 2012



Northland Power Inc.
on behalf of
Northland Power Solar
Empire L.P.
Toronto, Ontario

Natural Heritage Records Review Report

Empire Solar Project

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October 18, 2012

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Project Report

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**Northland Power Inc.
Empire Solar Project**

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1. Introduction

1.1 Project Description

Northland Power Solar Empire L.P. (hereinafter referred to as “Northland”) is proposing to develop a Class 3 10-megawatt (MW) ground mounted solar photovoltaic (Solar PV) facility in the Town of Cochrane. This Project, known as the Empire Solar Project, is hereafter referred to as “Empire” or the “Project.”

The Project location is comprised of two primary components. The first part of the Project is the location of the solar panels, including access roads, inverters, transformers, fencing, etc, and is hereafter referred to as the “solar panel Project location” The solar panel Project location approximately 122 hectares (ha) in size and located on Lots 17 and 18, Concession 7 of the Town of Cochrane. The solar panel Project location is situated on Glackmeyer Concession Road 7 (shown in Figure 1.1).

The second part of the Project is the approximately 20 km transmission line from the solar panel Project location to the connection point west of the Project location near Hunta, ON, as well as associated transition structure and switching station. This portion of the project is referred to as the transmission line Project location, with locations shown in Figures 1.2 and 1.3.

1.2 REA Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – Renewable Energy Approvals Under Part V.0.1 of the Act, (herein referred to as the REA Regulation) made under the Environmental Protection Act identifies the Renewable Energy Approval (REA) requirements for renewable energy projects in Ontario. Per Section 4 of the REA Regulation, ground mounted solar facilities with a name plate capacity greater than 10 kilowatts (kW) are classified as Class 3 solar facilities and require a REA.

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to undertake a natural heritage records review to identify whether the Project is

- i. in a provincial park or conservation reserve or within 120 m of a provincial park or conservation reserve
- ii. in a natural feature
- iii. within 50 m of an area of natural and scientific interest (earth science), or
- iv. within 120 m of a natural feature that is not an area of natural and scientific interest (earth science).

Natural Features are defined in Section 1.1 of the REA Regulation to be all or part of

- a) an area of natural and scientific interest (ANSI) (earth science)
- b) an ANSI (life science)
- c) a coastal wetland
- d) a northern wetland

- e) a southern wetland
- f) a valleyland
- g) a wildlife habitat, or
- h) a woodland.

In respect of valleylands and woodlands, Section 1.1 of the REA Regulation identifies that these features are only found south and east of the Canadian Shield. As the Project location is north of the Canadian Shield, it is not possible for valleylands or woodlands to be located on or within 120 m of the Project location.

Subsection 3 of Section 25 of the REA Regulation requires the proponent to prepare a report “setting out a summary of the records searched and the results of the analysis” (O. Reg. 359/09). This Natural Heritage Records Review Report has been prepared to meet these requirements.

2. Methodology

This Records Review Report is based on a review of published and non-published information on natural heritage features and provincial parks/conservation reserves identified on or within 120 m of the Project location (both solar panel and transmission line).

Records were searched within a minimum distance of 1 km from the Project location (both solar panel and transmission line). Results are discussed below in relation to the distances specified between the Project location (both solar panel and transmission line) and natural features and provincial parks/conservation reserves as defined in Section 25 of the REA Regulation (see Section 1.2).

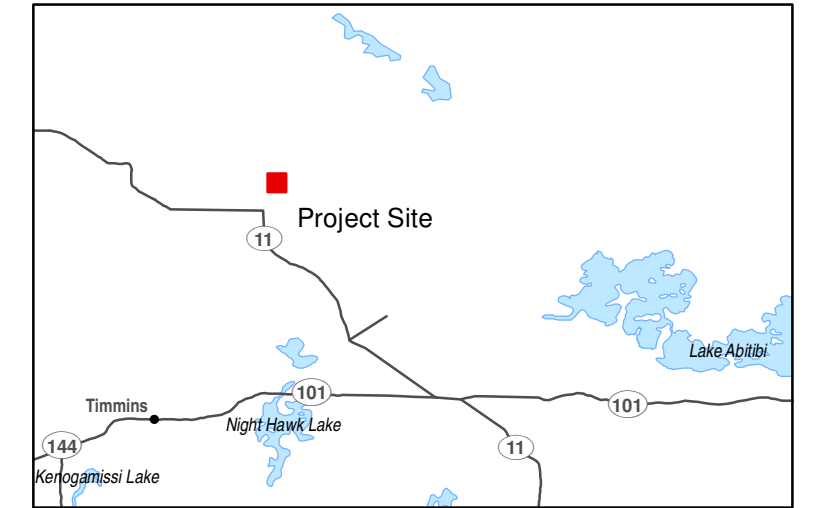
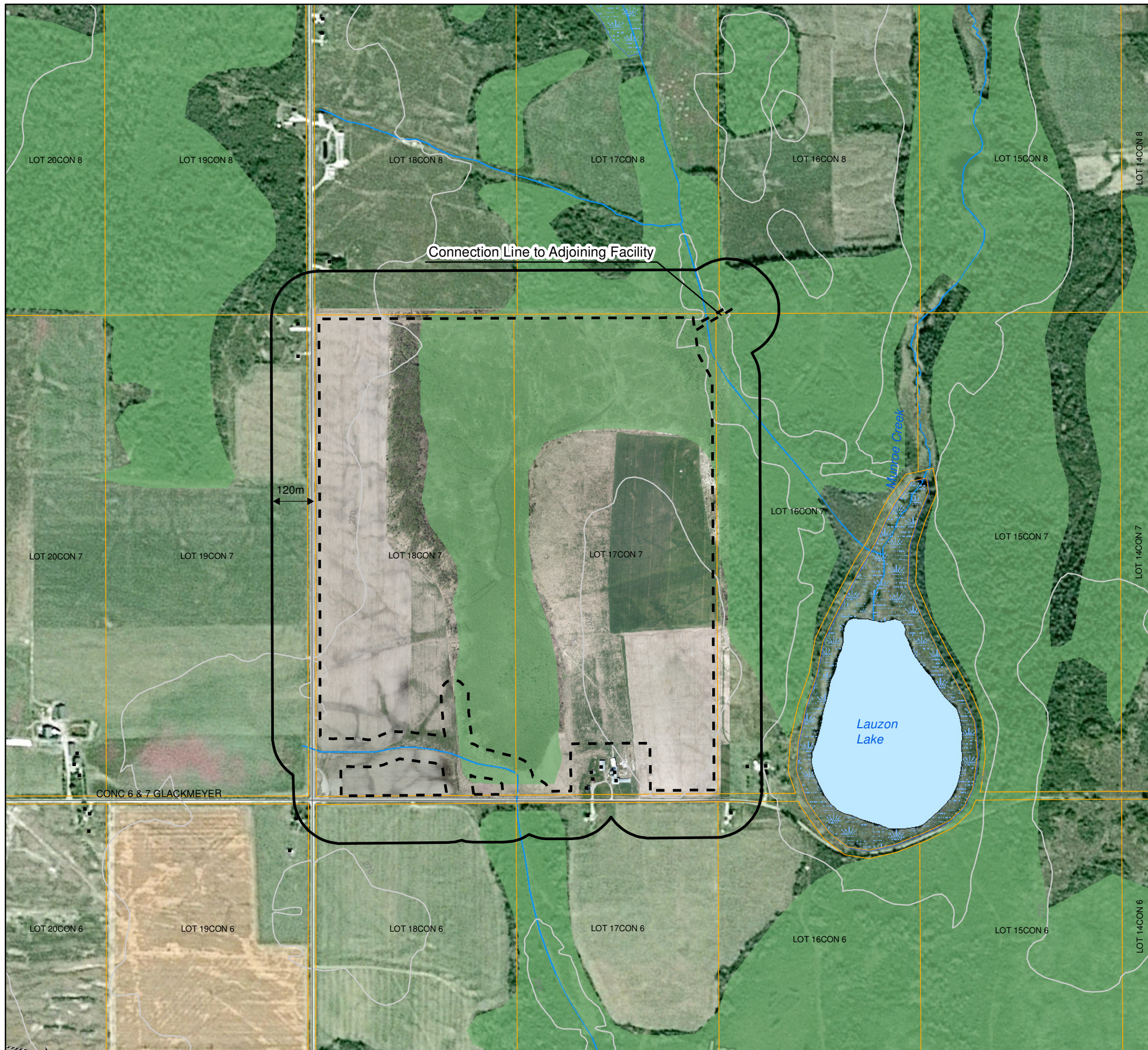
The following sections document the records that were searched for, and what was obtained, with the focus on identifying whether or not the Project was located on or within 120 m of any of the features listed in Section 1.2. The sections are organized as identified in Column 1 of the table in Section 25 of the REA Regulation.

There are no conservation authorities within the jurisdiction of the Project location (both solar panel and transmission line). Also, the Project location (both solar panel and transmission line) is not located within the Niagara Escarpment Commission Plan Area, the Greenbelt Plan area or the Oak Ridges Moraine Conservation Plan Area. Similarly there are no local roads boards and local service boards present with jurisdiction over these areas. Therefore, records review for these bodies was not conducted.

2.1 Ministry of Natural Resources Records

The following Ministry of Natural Resources (MNR) on-line records were reviewed:

- Ontario Base Maps and natural feature layers from Land Information Ontario (LIO) (<http://www.geographynetwork.ca/website/obm/viewer.htm>). Data layers were requested on March 11 and 12, 2010, with results received on March 12, 2010. Layers requested from the Natural Resources Values Information System are described below:



Legend

- Building
- Road
- Topographic Contour (5m interval)
- Watercourse
- ▭ Parcel
- ▭ Project Location
- ▭ 120 m from Project Location
- ▭ Waterbody
- ▭ Wetland Area
- ▭ Wooded Area

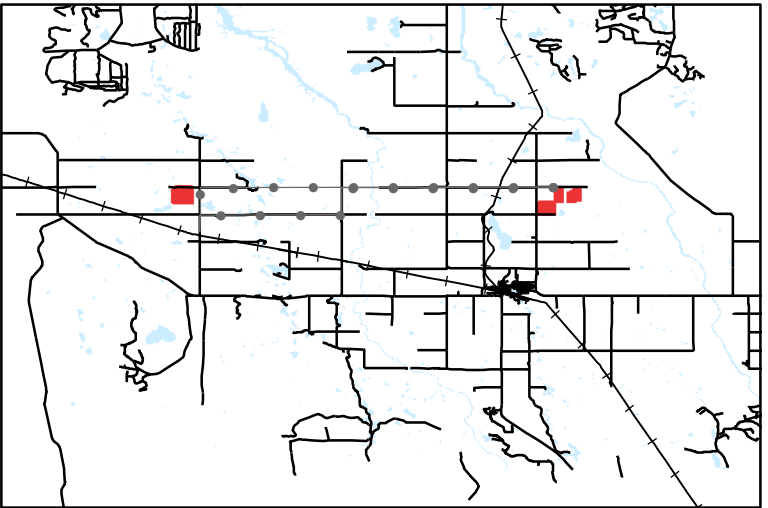
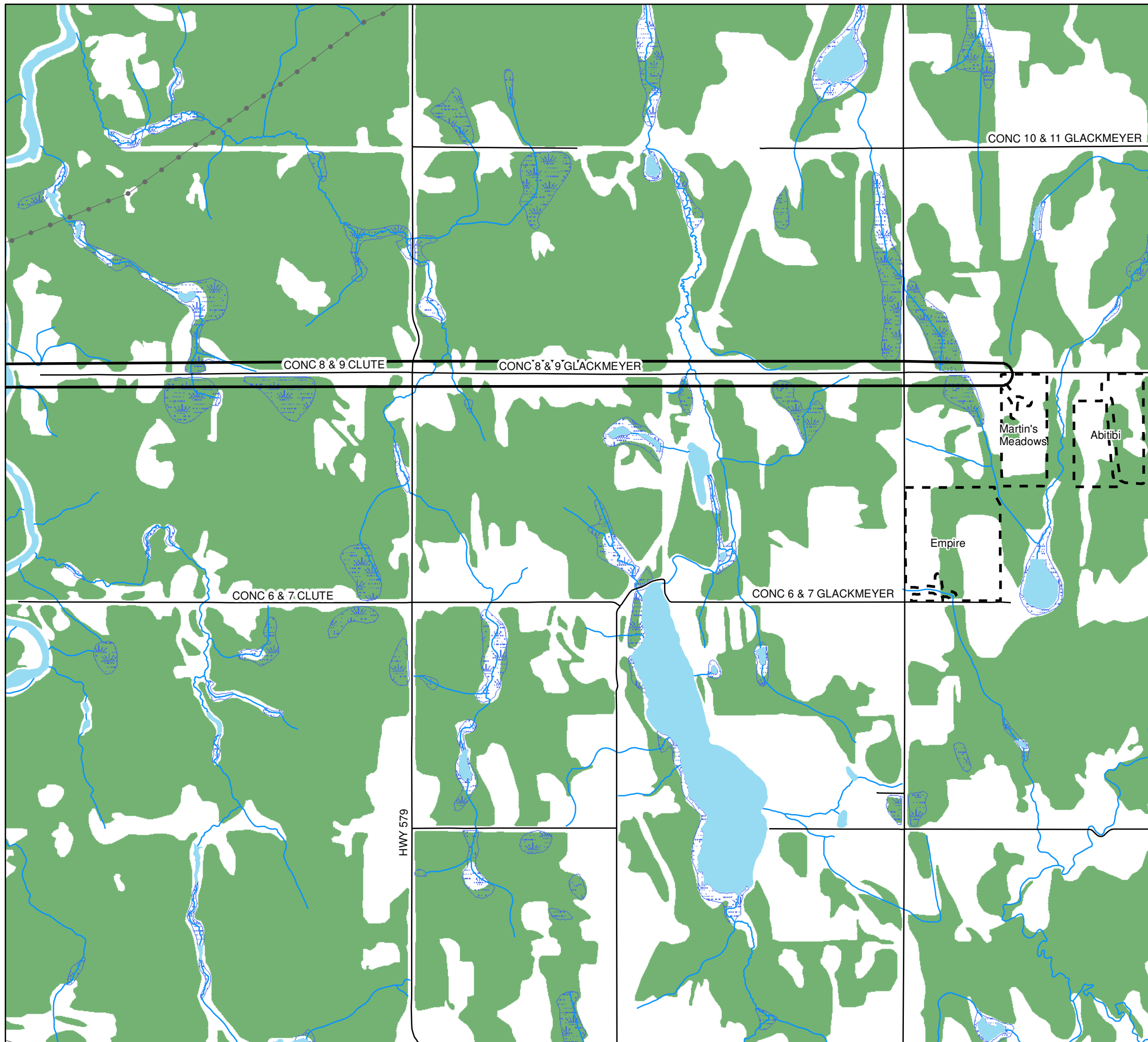
Notes:
 1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
 2. Spatial referencing UTM NAD 83.



1:10,000

Figure 1.1
 Northland Power Inc.
 Empire Solar Project
Natural Heritage Features Solar Panel Project Location

Blank back



Legend

- Connection Point
- Road
- Utility Line
- Watercourse
- - - Northland Power Project Locations
- ▭ 120 m from Transmission Line
- Waterbody
- ▨ Wetland Area
- Wooded Area

Notes:
 1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
 2. Spatial referencing UTM NAD 83.
 3. Satellite Imagery from google Earth Pro, captured 2003 through 2004.

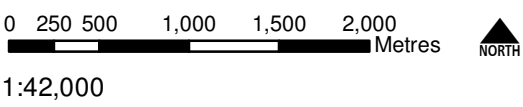
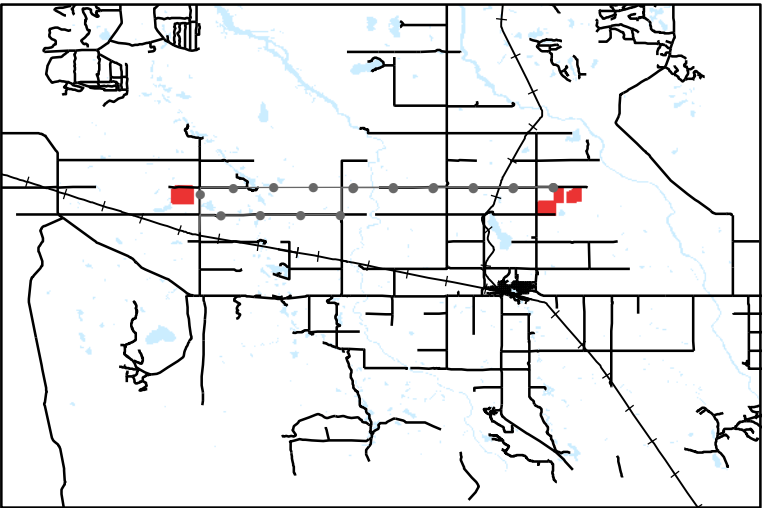
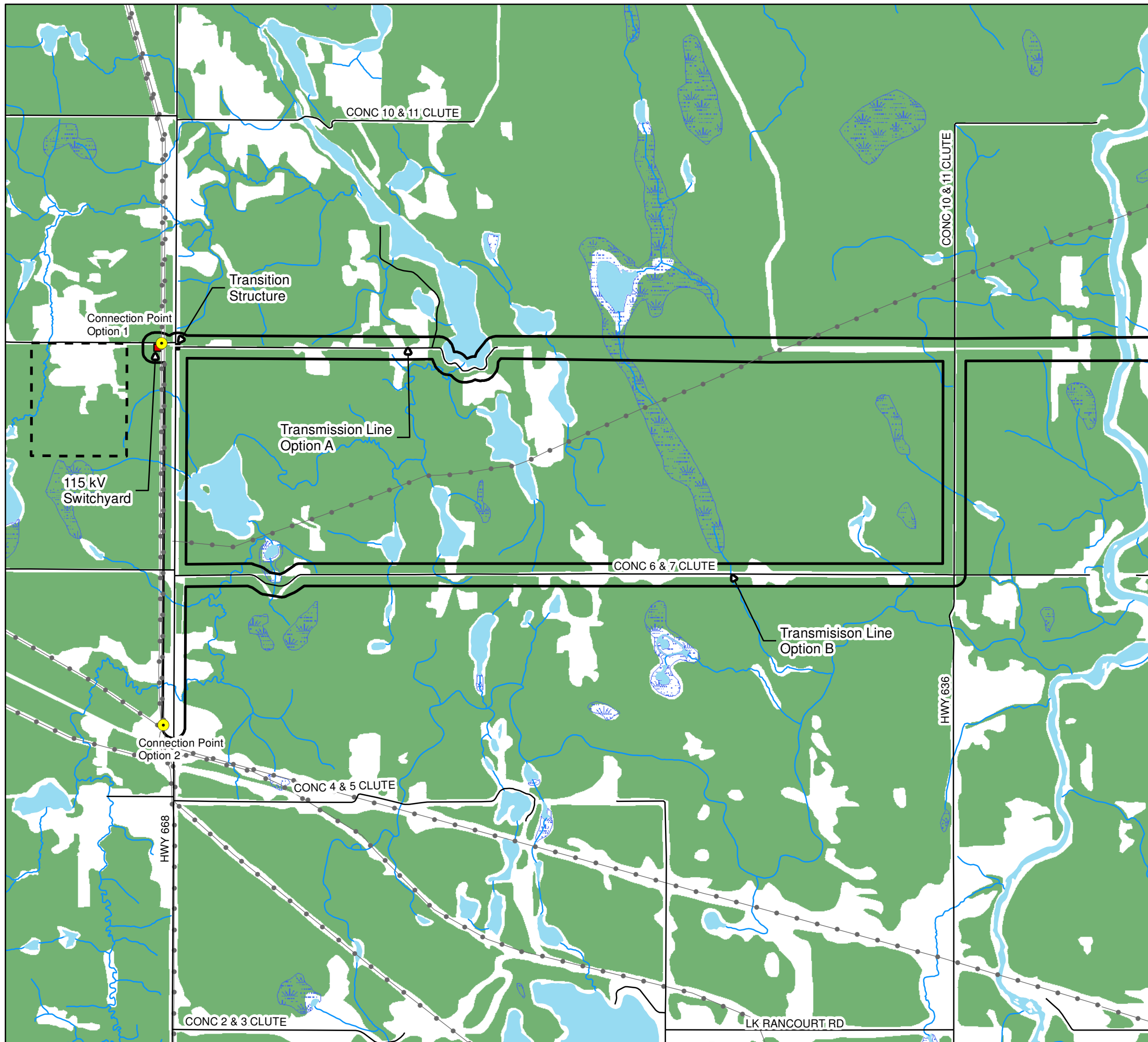


Figure 1.2
 Northland Power Inc.
Transmission Line Project Location (Eastern Half) - Natural Heritage Features

[back](#)



Legend

- Connection Point
- Switchyard
- Transition Structure
- Road
- Utility Line
- Watercourse
- ⌈ Northland Power Project Locations
- ▭ 120 m from Transmission Line
- Waterbody
- Wetland Area
- Wooded Area

Notes:
 1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
 2. Spatial referencing UTM NAD 83.
 3. Satellite Imagery from google Earth Pro, captured 2003 through 2004.

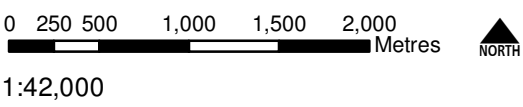


Figure 1.3
 Northland Power Inc.
Transmission Line Project Location (Western Half) - Natural Heritage Features

[Back](#)

- ◆ Layers with data:
 - Provincial Park Regulated
 - Conservation Reserve, Regulated
 - Significant Ecological Area
 - Wooded Area
 - Beaver Dam
 - Wild Rice Stand
 - Wintering Area
 - Aquatic Feeding Area
 - Nesting Site
 - Staging Area, Wildlife
- ◆ Layers without data:
 - National Park
 - National Wildlife Area
 - NGO Nature Reserve
 - Conservation Area
 - ANSI
 - Environmentally Sensitive Area
 - Natural Heritage Values Area
 - Wetland Unit
 - Mast Producing Area
 - Breeding Area
 - Calving Fawning Site
 - Breeding Zone
 - Den Site
 - Nursery Area, Wildlife
 - Feeding Area, Wildlife
- Travel Corridor, Wildlife.

- Ontario Wind Resource Atlas (<http://www.ontariowindatlas.ca/>). Mapping of Important Bird Areas was reviewed to determine whether any such features are identified on or within 120 m of the Project location (both solar panel and transmission line).
- NHIC Biodiversity Explorer (<http://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/main.jsp>). Element occurrences of species of conservation concern (species listed as S1-S3 species, species listed as threatened or endangered by COSEWIC) were reviewed to determine those that may be found on or within 120 m of the Project location (both solar panel and transmission line). An area of approximately 6 km² was queried using the 1 x 1 km query tool.
- NHIC Ontario Herpetofaunal Summary Atlas (<http://nhic.mnr.gov.on.ca/MNR/nhic/herps/ohs.html>). Range maps of herpetofaunal species were reviewed to determine those species that may occur on or within 120 m of the Project location (both solar panel and transmission line).

In addition to on-line records, the MNR, Cochrane District, was contacted on May 18, 2011 to obtain records relating to natural features. Specific records that were requested from MNR Cochrane District included records relating to

- Forest Resource Inventory mapping of the forests on or within 120 m of the Project location (both solar panel and transmission line).
- records of ANSIs on or within 120 m of the Project location (both solar panel and transmission line).
- wetland mapping or evaluations for wetland communities on or within 120 m of the Project location (both solar panel and transmission line).
- wildlife habitats on or within 120 m of the Project location (both solar panel and transmission line), with a specific focus on
 - ◆ season concentration areas, including
 - winter deer yards
 - moose late winter habitat
 - waterfowl stopover, staging, or nesting areas
 - Turkey Vulture summer roosting areas
 - reptile hibernacula
 - bat hibernacula
 - bullfrog concentration areas
 - ◆ rare vegetation communities or specialized habitats for wildlife
 - rare forest types
 - habitat for area-sensitive species, including open country bird breeding habitat
 - old-growth or mature forest stands

- foraging areas with abundant mast
- amphibian woodland breeding ponds
- turtle nesting habitat
- raptor nesting habitat
- moose calving areas
- moose aquatic feeding areas
- mineral licks
- mink, otter, marten and fisher denning sites
- seeps and springs
- ◆ habitat for species of conservation concern
- ◆ animal movement corridors.

In addition to the above records, additional guidance with respect to identification of natural features was provided through:

- Ontario Wetland Evaluation System – Northern Manual (MNR, 1993)
- Significant Wildlife Habitat Technical Guide (MNR, 2000a)
- A Field Guide to Forest Ecosystems of Northeastern Ontario (MNR, 2000b)

2.2 Federal Government Records

Natural Resources Canada's Amphibians and Reptiles of Ontario Climate Domain Maps were reviewed in order to identify herpetofaunal species that may be found on or within 120 m of the Project location (both solar panel and transmission line).

The websites of the Canadian Wildlife Service (www.cws-scf.ec.gc.ca) and Environment Canada (www.ec.gc.ca) were also reviewed to determine if any studies of natural heritage features have been undertaken by the bodies on or within 120 m of the Project location (both solar panel and transmission line).

2.3 Town of Cochrane

The Project location is located within Town of Cochrane, a single tier municipality. The Town of Cochrane Official Plan (TOC, 2008) and Zoning By-Law (TOC, 2010) do not identify any specific natural features on or within 120 m of the Project location (both solar panel and transmission line).

Information on natural heritage features was also requested from Town of Cochrane by e-mail on July 7, 2011.

2.4 Cochrane Suburban Planning Board

The Project location (both solar panel and transmission line) is within the jurisdiction of the Cochrane Suburban Planning Board. Information on natural heritage features was requested from Cochrane Suburban Planning Board by e-mail on July 7, 2011.

2.5 Other Records

In addition to the information sources previously discussed, the following documents were also reviewed:

- Ontario Breeding Bird Atlas (Bird Studies Canada et al., 2006). The Ontario Breeding Bird Atlas was reviewed in order to determine what bird species have been or are likely to be found on or within 120 m of the Project location (both solar panel and transmission line).
- Atlas of the Mammals of Ontario (Dobbyn, 1994). Range maps of mammal species were reviewed to determine those species that may occur on or within 120 m of the Project location (both solar panel and transmission line).
- Important Bird Areas of Canada website (<http://www.ibacanada.ca/mapviewer.jsp?lang=en>). The website was reviewed to determine if there are any important bird areas present on or within 120 m of the Project location (both solar panel and transmission line).

Table 2.1 Summary of Records Review Methodology

Feature	Records Requested	Contact Information	Records Received
Provincial Park or Conservation Reserve	Boundaries of Provincial Park or Conservation Reserves within 1 km of the Project location (both solar panel and transmission line).	Land Information Ontario	Datalayer of provincial parks and conservation reserves. No provincial parks or conservation reserves were identified on or within 120 m of the Project location (both solar panel and transmission line).
ANSIs	Boundaries of ANSIs within 1 km of the Project location (both solar panel and transmission line).	Land Information Ontario	Datalayer of ANSIs.
	Records relating to ANSIs on or within 1 km of the Project location (both solar panel and transmission line).	Jennifer Telford, District Planner, MNR Cochrane	Cochrane District MNR Records relating to ANSIs
Wetlands	Boundaries of wetlands within 1 km of the Project location (both solar panel and transmission line).	Land Information Ontario	Datalayer of wetlands.
	Records relating to wetlands on or within 1 km of the Project location (both solar panel and transmission line).	Jennifer Telford, District Planner, MNR Cochrane	Natural Resource Values Information System (NRVIS) data
Wildlife Habitat	Wildlife habitat features on or within 1 km of the Project location (both solar panel	Land Information Ontario	Datalayers that were requested are outlined in Section 2.1. Those for which

Feature	Records Requested	Contact Information	Records Received
	and transmission line) (see Section 2.1 for complete list).		data was received included: Provincial Park Regulated Conservation Reserve, Regulated Significant Ecological Area, Wooded Area, Beaver Dam, Wild Rice Stand, Wintering Area, Aquatic Feeding Area, Nesting Site, Staging Area, Wildlife.
	Records relating to wildlife habitats on or within 1 km of the Project location (both solar panel and transmission line) (see Section 2.1 for complete list).	Jennifer Telford, District Planner, MNR Cochrane	Natural Resource Values Information System (NRVIS) data
	Records relating to Important Bird Areas of Canada on or within 1 km of the Project location (both solar panel and transmission line).	Ontario Wind Resource Atlas Important Bird Area of Canada website	On-line mapping through both sources was reviewed on January 5, 2011. No Important Bird Areas were identified on or within 120 m of the Project location (both solar panel and transmission line).
	Records relating to presence of species of conservation concern on or within 120 m of the Project location (both solar panel and transmission line).	NHIC Biodiversity Explorer	The NHIC Biodiversity Explorer, Species Search was reviewed on January 5, 2011. No records of species of conservation concern were identified.
	Range maps of herpetofauna.	NHIC Ontario Herpetofaunal Summary Atlas NRCan Amphibian and Reptile Climate Domain Maps	Range maps of herpetofaunal species were reviewed from both sources on January 6, 2011.
	Range maps of mammals.	Atlas of the Mammals of Ontario	Range maps of mammal species were reviewed. The Atlas of the Mammals of Ontario was published in 1994.
	Breeding bird occurrences.	Ontario Breeding Bird Atlas survey website.	Results of Ontario Breeding Bird Atlas surveys for square 17NQ04, 17MQ94 and 17MQ84 (i.e., in Region 42) were obtained from the website on January 6, 2011 and July 11, 2011.
General Natural Features	Records relating to any natural features.	Richard Vallee, Building and Planning, Town of	Town of Cochrane and Cochrane Suburban Planning Boards Records

Feature	Records Requested	Contact Information	Records Received
		Cochrane and Secretary Treasure, Cochrane Suburban Planning Board	

3. Results

3.1 Provincial Parks and Conservation Reserves

No provincial parks or conservation reserves were identified on or within 120 m of the Project location.

3.2 ANSIs

No ANSIs were identified on or within 120 m of the Project location (both solar panel location and transmission line).

3.3 Wetlands

A single wetland community was identified within 120 m west of the solar panel Project location. It is possible that additional wetland communities may be found on or within 120 m of the solar panel Project location; this will be confirmed during the site investigation. There are no wetland evaluations available for these wetland communities.

There are several wetland communities both on and within 120 m of the transmission line Project location. There are no wetland evaluations available for these communities.

3.4 Wildlife Habitat

The majority of data layers for which data was received from Land Information Ontario did not contain information relevant to the area on or within 120 m of the solar panel or transmission line Project location (see Figure 1.1). No known specific wildlife habitat features have been identified within the records on or within 120 m of the Project location (both solar panel and transmission line) as a result of the records review.

Several species of reptiles and amphibians were identified whose ranges may overlap with the solar panel or transmission line Project location (Table 3.1). None of these species are considered to be species of conservation concern. The Atlas of the Mammals of Ontario (Dobbyn, 1994) identified several species of mammals whose ranges may overlap with the Project location (both solar panel and transmission line). The list of these species is provided in Table 3.2. None of these species are identified as species of conservation concern.

Records of breeding birds within map squares 17NQ04, 17MQ94 and 17MQ84,, which overlap or are near to the Project location (solar panel and/or transmission line), were obtained. Of the species that were recorded, eight species of conservation concern were identified: Red-necked Grebe (*Podiceps grisegena*), Black Tern (*Chlidonias niger*), Short-eared Owl (*Asio flammeus*), Common Nighthawk (*Chordeiles minor*), Canada Warbler (*Wilsonia canadensis*), Rusty Blackbird (*Euphagus*

carolinus), Bald Eagles (*Haliaeetus leucocephalus*), Olive-sided Flycatcher (*Contopus cooperi*). These species are discussed further in Section 3.4.1.

In addition to those species identified through existing survey information within the area, Appendix G of the Significant Wildlife Habitat Technical Guide was referenced to identify species of conservation concern that may occur in the area. Several species were identified and are addressed within Section 3.4.1.

3.4.1 Species of Conservation Concern

If habitat for any of these species discussed below are present, this would represent candidate significant habitat for species of conservation concern.

3.4.1.1 Reptiles and Amphibians

No species of conservation concern identified.

3.4.1.2 Mammals

Northern Long-eared Bat are described as an S3 species within the province. They hibernate during winter in mines or caves. Maternity roosts are found in hollow trees or under loose bark. These features may be found on or within 120 m of the Project location.

Rock Vole are identified as an S3 species within the province. They are associated with rocky areas such as moss-covered rock outcrops or talus slopes near streams in cool damp coniferous or mixed forests. Such habitat may be found on or within 120 m of the Project location.

3.4.1.3 Birds

- Red-necked Grebe (*Podiceps grisegena*), which are identified as an S3 breeding species within the province. Red-necked Grebe are found in permanent freshwater lakes with a fringe of aquatic emergent vegetation, protected marshy areas or bays in larger lakes, or marshes impoundments or sewage lagoons with more than 4 ha of open water (MNR, 2000). Pairs of Red-necked Grebes were recorded within suitable breeding habitat during the 1981 to 1985 Breeding Bird Atlas, but not during the 2001 to 2005 atlas (MapSquare 17MQ94). Such habitat may be found within some of the wetlands on or within 120 m of the transmission line Project location.
- Black Tern (*Chlidonias niger*), which are identified as being of Special Concern on the SARO list. Black Tern are found in wetlands, typically large cattail marshes, marshy edges of waterbodies, wet open fens or meadows. Requires marshes greater than 20 ha in size and must have shallow water 0.5 to 1 m deep (MNR, 2000). Such habitat may be found within some of the wetlands on or within 120 m of the transmission line Project location.
- Short-eared Owl (*Asio flammeus*), which are identified as being of Special Concern on the SARO list. Short-eared Owls are typically found in grassy areas, marshes, or bogs. Requires 75-100 ha of contiguous open habitat (MNR, 2000). A permanent territory and a pair of Short-eared Owl were recorded within suitable breeding habitat during the 1981 to 1985 Breeding Bird Atlas, but not during the 2001 to 2005 atlas (MapSquare 17MQ94). Suitable habitat may be found within the open areas on or within 120 m of the Project location (both solar panel and transmission line)

- Common Nighthawk (*Chordeiles minor*), which are identified as being of Special Concern on the SARO list. Common Nighthawk nest on open ground, such as ploughed fields, gravel beaches, clearings in dense forests or open woodlands (MNR, 2000). Such habitat may be found on or within 120 m of the Project location (both solar panel and transmission line).
- Canada Warbler (*Wilsonia canadensis*), which are identified as being of Special Concern on the Species at Risk in Ontario (SARO) list. Canada Warbler are described as an interior forest species which nests in dense, wet mixedwood forests, and can be found in areas with shrubby undergrowth or within riparian habitat. Forest communities usually must be at least 30 ha in size (MNR, 2000). A Canada Warbler was observed carrying food for young during the 1981 to 1985 atlas (MapSquare 17MQ83), while singing males were present in suitable breeding habitat in the breeding season during the 2001 to 2005 atlas (MapSquare 17NQ04). Such habitat may be found within the woodlands on or within 120 m of the Project location (both solar panel and transmission line).
- Bald Eagles (*Haliaeetus leucocephalu*) require large continuous areas of deciduous or mixed woods surrounding large lakes or rivers and prefer open woodland with 30 to 50% canopy cover (MNR, 200). Suitable habitat may be found around Lauzon Lake. Though these areas are more than 120 m from the Project location, habitat supporting the nesting location should one be present around the lakes may extend onto or within 120 m of the Project location.
- Olive-sided Flycatcher (*Contopus cooperi*) occur along semi-open woodland and forest edges with dead trees and snags for perching. They tend to prefer coniferous forests especially near ponds, rivers and treed wetlands (MNR, 2000). Such habitat may be found within the woodlands on or within 120 m of the Project location and will need to be confirmed during the site investigation.

3.4.1.4 Vegetation

Vegetation species of conservation concern are identified within Table 3.1.

Table 3.1 Vegetation Species of Conservation Concern

Scientific Name	Common Name	SRank	Habitat	Potential for suitable habitat on Project location
<i>Moehringia macrophylla</i>	Large-leaved Sandwort	S2	rocky ledges, open rocky woodlands and talus slopes	Yes
<i>Carex haydenii</i>	Long-scaled Tussock Sedge	S2	open and shaded wet habitats	Yes
<i>Carex loliacea</i>	Sedge	S2	bogs, muskegs and black spruce forests	Yes
<i>Carex tetanica</i>	Common Stiff Sedge	S3	moist grassland, sandy shores and ditches, prairies, seepages	Yes
<i>Carex wiegandii</i>	Wiegand's Sedge	S1	black spruce bogs and alder swamps	Yes
<i>Scirpus clintonii</i>	Clinton's Bulrush	S2	prairie and open woods in south; shorelines, rock	Yes

Scientific Name	Common Name	SRank	Habitat	Potential for suitable habitat on Project location
			crevices in north	
<i>Scirpus heterochaetus</i>	Slender Bulrush	S3	marshes and shores	Yes
<i>Gymnocarpium robertianum</i>	Limestone Oak Fern	S2	ledges and slopes in calcareous rock; occasionally in sphagnum mats in cedar swamps	Yes
<i>Woodsia alpina</i>	Northern Woodsia	S2	moist, cool, often shaded crevices in calcareous cliffs	Yes
<i>Woodsia glabella</i>	Smooth Woodsia	S1?	shaded, calcareous rock crevices	Yes
<i>Vaccinium membranaceum</i>	Mountain Bilberry	S1	moist, mature white birch, balsam fir, white cedar forests on shallow, acid soils	Yes
<i>Vaccinium ovalifolium</i>	Blue Bilberry	S3	mixed woods	Yes
<i>Oxytropis viscida</i> var. <i>hudsonica</i>	Locoweed	S3	beach ridges and floodplains	Yes
<i>Diphysastrum sabinifolium</i>	Ground-fir	S3	sandy woods and meadows	Yes
<i>Listera auriculata</i>	Auricled Twayblade	S3	moist, shaded sandy soil	Yes
<i>Malaxis paludosa</i>	Bog Adder's-mouth	S1	sphagnum bogs and muskegs	Yes
<i>Panicum leibergii</i> var. <i>baldwinii</i>	Baldwin's Panic Grass	S1S2	dry to mesic prairies, sandy fields and sandy or rocky openings in oak forest; open, rocky riverbanks in northern Ontario	Yes

Table 3.2 Reptiles and Amphibians Potentially Occurring on or within 120 m of the Project Location (both Solar Panel and Transmission Line) and their Conservation Status¹

Species		Conservation Rank ²			At Risk Status		
		Global GRANK	Canada NRANK ³	Ontario SRANK ⁴	COSEWIC	SARO/ESA	SARA
Common Name	Scientific Name						
Frogs and Toads							
American Toad	<i>Bufo americanus</i>	G5	N5	S5	-	-	-
Spring Peeper	<i>Pseudacris crucifer</i>	G5	N5	S5	-	-	-
Gray Treefrog	<i>Hyla versicolor</i>	G5	N5	S5	-	-	-
American Bullfrog	<i>Rana castebiana</i>	G5	N5	S4	-	-	-
Green Frog	<i>Rana clamitans</i>	G5	N5	S5	-	-	-
Mink Frog	<i>Rana septentrionalis</i>	G5	N5	S5	-	-	-
Northern Leopard Frog	<i>Rana pipiens</i>	G5	N5	S5	NAR	NAR	-
Wood Frog	<i>Rana sylvatica</i>	G5	N5	S5	-	-	-
Snakes							
Eastern Gartersnake	<i>Thamnophis sirtalis sirtalis</i>	G5T5	N5	S5	-	-	-

¹ As determined from potential climatic domain maps in McKenney et al (2007) and range maps provided in Oldham and Weller (2000).

² Accessed from NHIC, 2008b.

³ NRANK = National Status (NatureServe (www.natureserve.org), in conjunction with Conservation Data Centres, such as NHIC); N = National Rank (Canada), 2 = Imperilled, 3 = Vulnerable, 4 = Apparently Secure, 5 = Secure, E = Exotic.

⁴ SRANK = Provincial Status (NHIC 2008b); S = Sub-national Rank (Ontario), 2 = Imperilled, 3 = Vulnerable, 4 = Apparently Secure, 5 = Secure, E = Exotic, U = Unknown.

Table 3.3 Mammals Potentially Occurring on or within 120 m of the Project Location (both Solar Panel and Transmission Line) and their Conservation Status¹

Species		Conservation Rank ²			At Risk Status		
		Global GRANK	Canada NRANK ³	Ontario SRANK ⁴	COSEWIC	SARO	SARA
Common Name	Scientific Name						
Shrews and Moles							
Common Shrew	<i>Sorex cinereus</i>	G5	N5	S5	-	-	-
Smoky Shrew	<i>Sorex fumeus</i>	G5	N5	S5	-	-	-
Northern Short-tailed Shrew	<i>Blarina brevicauda</i>	G5	N5	S5	-	-	-
Star-nosed Mole	<i>Condylura cristata</i>	G5	N5	S5	-	-	-
Pygmy Shrew	<i>Sorex hoyi</i>	G5	N5	S4	-	-	-
Rabbits and Hares							
Eastern Cottontail	<i>Sylvilagus floridanus</i>	G5	N5	S5	-	-	-
Snowshoe Hare	<i>Lepus americanus</i>	G5	N5	S5	-	-	-
Rodents							
Least Chipmunk	<i>Neotamias minimus</i>	G5	N5	S5	-	-	-
Southern Red-backed Vole	<i>Clethrionomys gapperi</i>	G5	N5	S5	-	-	-
Woodland Jumping Mouse	<i>Napaeozapus insignis</i>	G5	N5	S5	-	-	-
Eastern Chipmunk	<i>Tamias striatus</i>	G5	N5	S5	-	-	-
Woodchuck	<i>Marmota monax</i>	G5	N5	S5	-	-	-
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	G5	N5	S5	-	-	-
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	G5	N5	S5	-	-	-
Beaver	<i>Castor canadensis</i>	G5	N5	S5	-	-	-
Deer Mouse	<i>Peromyscus maniculatus</i>	G5	N5	S5	-	-	-
Meadow Vole	<i>Microtus pennsylvanicus</i>	G5	N5	S5	-	-	-
Muskrat	<i>Ondatra zibethicus</i>	G5	N5	S5	-	-	-
House Mouse	<i>Mus musculus</i>	G5	NE	SE	-	-	-
Meadow Jumping Mouse	<i>Zapus hudsonius</i>	G5	N5	S5	-	-	-
Porcupine	<i>Erethizon dorsatum</i>	G5	N5	S5	-	-	-
Bats							
Little Brown Bat	<i>Myotis lucifugus</i>	G5	N5	S5	-	-	-
Eastern Red Bat	<i>Lasiurus borealis</i>	G5	N5	S4	-	-	-
Hoary Bat	<i>Lasiurus cinereus</i>	G5	N5	S4	-	-	-
Carnivores							
Coyote	<i>Canis latrans</i>	G5	N5	S5	-	-	-
Gray Wolf	<i>Canis lupus occidentalis</i>	G4TNR	N4	S4	-	-	-
Black Bear	<i>Ursus americanus</i>	G5	N5	S5	-	-	-

Species		Conservation Rank ²			At Risk Status		
		Global GRANK	Canada NRANK ³	Ontario SRANK ⁴	COSEWIC	SARO	SARA
Common Name	Scientific Name						
Fisher	<i>Martes pennanti</i>	G5	N5	S5	-	-	-
River Otter	<i>Lontra canadensis</i>	G5	N5	S5	-	-	-
Canada Lynx	<i>Lynx canadensis</i>	G5	N5	S5	-	-	-
Marten	<i>Martes americana</i>	G5	N5	S5	-	-	-
Red Fox	<i>Vulpes vulpes</i>	G5	N5	S5	-	-	-
Raccoon	<i>Procyon lotor</i>	G5	N5	S5	-	-	-
Ermine	<i>Mustela erminea</i>	G5	N5	S5	-	-	-
Mink	<i>Mustela vison</i>	G5	N5	S4	-	-	-
Striped Skunk	<i>Mephitis mephitis</i>	G5	N5	S5	-	-	-
Ungulates							
Moose	<i>Alces americanus</i>	G5	N5	S5	-	-	-
White-tailed Deer	<i>Odocoileus virginianus</i>	G5	N5	S5	-	-	-

¹ As determined from potential climatic domain maps in McKenney et al (2007) and range maps provided in Oldham and Weller (2000).

² Accessed from NHIC, 2008b.

³ NRANK = National Status (NatureServe (www.natureserve.org), in conjunction with Conservation Data Centres, such as NHIC); N = National Rank (Canada), 2 = Imperilled, 3 = Vulnerable, 4 = Apparently Secure, 5 = Secure, E = Exotic.

⁴ SRANK = Provincial Status (NHIC 2008b); S = Sub-national Rank (Ontario), 2 = Imperilled, 3 = Vulnerable, 4 = Apparently Secure, 5 = Secure, E = Exotic, U = Unknown.

4. Summary of Results

Table 4.1 summarizes the results of the records review according to the features identified in Section 1.2.

Table 4.1 Summary of Records Review Determinations

Determination to be Made	Yes/No	Description
Is the Project in or within 120 m of a provincial park or conservation reserve?	No	The nearest such features are located more than 120 m away from the Project location (both solar panel and transmission line).
Is the Project in a natural feature?	Yes	There are wetland communities identified along the transmission line Project location. Though no confirmed wildlife habitats exist on the Project location (both solar panel and transmission line) within the records, there exists potential for habitat of species of conservation concern on the Project location (both solar panel and transmission line).

Determination to be Made	Yes/No	Description
Is the Project within 50 m of an ANSI (earth science)?	No	The nearest earth science ANSI is located several kilometres from the Project location (both solar panel and transmission line).
Is the Project within 120 m of a natural feature that is not an ANSI (earth science)?	Yes	There are wetlands located within 120 m of the transmission line Project location. Though no confirmed wildlife habitats exist within 120 m of the Project location (both solar panel and transmission line) within the records, there exists potential for habitat of species of conservation concern on the Project location (both solar panel and transmission line).

As per Section 26 of the REA Regulation, a site investigation will be required to confirm the features identified during this records review. The site investigation will (i) identify if any corrections to the information presented herein are required, (ii) determine whether any additional natural features exist on or adjacent to the Project location, (iii) confirm the boundaries of the natural features within 120 m of the Project, and (iv) determine the distance from the Project to the natural feature boundary.

5. References

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Appendix A

Ontario Breeding Bird Atlas Results



Square Summary (17NQ04)

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
6	0	1	7	38	0	0	38	0	1	0	21

Region summary (#42: Cochrane)

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
662	203	243	147	170	1409	331

Target number of point counts in this square: 21 road side, 4 off road (1 in treed wetlands, 3 in coniferous forest). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	Code		%		SPECIES	Code		%		SPECIES	Code		%	
	1st	2nd	1st	2nd		1st	2nd	1st	2nd		1st	2nd	1st	2nd
Canada Goose			11	8	Red-tailed Hawk			11	11	Downy Woodpecker		S	6	17
Wood Duck ‡			<1	3	American Kestrel			23	33	Hairy Woodpecker		H	16	25
Gadwall ‡			<1	0	Merlin			3	7	Three-toed Woodpecker			2	1
American Wigeon			5	4	Sora			1	2	Black-backed Woodpecker			10	7
American Black Duck			30	11	Sandhill Crane			10	13	Northern Flicker		S	36	44
Mallard			22	15	Killdeer			22	11	Pileated Woodpecker			9	18
Blue-winged Teal			8	4	Rock Dove			3	1	Olive-sided Flycatcher			11	16
Northern Shoveler ‡			<1	2	Spotted Sandpiper			41	22	Eastern Wood-Pewee ‡			<1	1
Green-winged Teal			0	7	Solitary Sandpiper			10	8	Yellow-bellied Flycatcher		H	2	36
Ring-necked Duck			15	12	Greater Yellowlegs			1	12	Alder Flycatcher			16	40
Lesser Scaup			2	3	Common Snipe	S	H	15	25	Least Flycatcher	S	S	21	35
Bufflehead †			<1	1	American Woodcock			4	9	Eastern Kingbird			12	8
Common Goldeneye			35	28	Bonaparte's Gull			14	14	Blue-headed Vireo		H	4	26
Hooded Merganser			6	11	Herring Gull §			23	12	Warbling Vireo ‡			<1	<1
Common Merganser			29	12	Black Tern † §			1	2	Philadelphia Vireo			8	18
Red-breast Merganser			3	1	Common Tern §			7	2	Red-eyed Vireo		S	29	54
Ruffed Grouse		S	16	23	Mourning Dove			4	5	Gray Jay		H	23	33
Spruce Grouse			8	11	Black/Yell-billed Cuckoo ‡			0	<1	Blue Jay		S	5	14
Sharp-tailed Grouse †			5	8	Black-billed Cuckoo ‡			<1	<1	American Crow			20	35
Common Loon	FY		33	29	Great Horned Owl			3	6	Common Raven		H	39	42
Red-necked Grebe †			1	2	Northern Hawk Owl ‡			<1	10	Tree Swallow			37	24
American Bittern			7	7	Barred Owl ‡			<1	0	North Rgh-wing Swallow ‡			<1	0
Great Blue Heron §			26	10	Great Gray Owl †			2	10	Bank Swallow §			11	2
Osprey			27	9	Short-eared Owl †			<1	2	Cliff Swallow §			10	8
Bald Eagle †			3	5	North Saw-whet Owl ‡			<1	3	Barn Swallow			17	9
Northern Harrier			10	21	Common Nighthawk			18	10	Black-capped Chickadee			24	31
Sharp-shinned Hawk			6	6	Ruby-thr Hummingbird			3	5	Boreal Chickadee			9	17
Northern Goshawk			2	1	Belted Kingfisher			24	16	Red-breast Nuthatch		S	15	31
Broad-winged Hawk			17	13	Yellow-bellied Sapsucker		S	12	28	Brown Creeper			4	13

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Ontario Breeding Bird Atlas - Summary Sheet for Square 17NQ04 (page 2 of 2)

SPECIES	Code		%		SPECIES	Code		%		SPECIES	Code		%	
	1st	2nd	1st	2nd		1st	2nd	1st	2nd		1st	2nd	1st	2nd
House Wren ‡			<1	2	Black-white Warbler		S	19	41	White-winged Crossbill			10	27
Winter Wren		S	28	50	American Redstart		S	25	43	Pine Siskin			12	24
Golden-crown Kinglet		S	12	42	Ovenbird	S	S	31	39	<u>American Goldfinch</u>	S		12	19
Ruby-crown Kinglet		S	25	47	North Waterthrush			21	23	Evening Grosbeak			15	7
Eastern Bluebird			3	4	Connecticut Warbler			2	4	House Sparrow			3	3
Veery		S	2	19	Mourning Warbler			17	38					
Swainson's Thrush	S	S	33	49	Common Yellowthroat		S	20	41					
Hermit Thrush		S	10	41	Wilson's Warbler			8	18					
Wood Thrush ‡			<1	<1	Canada Warbler		S	13	21					
American Robin	S	H	44	58	Chipping Sparrow			15	41					
Northern Mockingbird ‡			<1	0	Savannah Sparrow			11	14					
European Starling			13	16	Fox Sparrow ‡			<1	4					
Cedar Waxwing			33	38	Song Sparrow			22	25					
Tennessee Warbler		S	24	37	Lincoln's Sparrow			10	31					
Orange-crowned Warbler			2	2	Swamp Sparrow			14	32					
Nashville Warbler		S	11	54	White-throat Sparrow		S	45	61					
Northern Parula			2	8	Dark-eyed Junco		H	16	30					
Yellow Warbler		S	15	14	Scarlet Tanager ‡			<1	1					
Chestn-sided Warbler		H	15	36	Rose-breast Grosbeak			4	4					
Magnolia Warbler		S	23	49	Indigo Bunting ‡			<1	1					
Cape May Warbler			7	11	Bobolink			5	1					
Black-thr Blue Warbler			3	7	Red-wing Blackbird			22	15					
Yellow-rumped Warbler		H	34	48	Rusty Blackbird			16	6					
Black-thr Green Warbler		S	13	17	Common Grackle			18	28					
Blackburnian Warbler		H	10	18	Brown-head Cowbird			10	1					
Pine Warbler ‡		S	0	<1	Pine Grosbeak			4	3					
Palm Warbler ‡			<1	16	Purple Finch			20	25					
Bay-breasted Warbler		H	15	34	House Finch			0	0					
Blackpoll Warbler			1	<1	Red Crossbill ‡			<1	1					

This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #42 (Cochrane). Underlined species are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 17NQ04 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st atlas (this gives an idea of the expected chance of finding that species in region #42). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), or † (provincially rare). Current as of 22/11/2010. An up-to-date version of this sheet is available from <http://www.birdsontario.org/atlas/summaryform.jsp?squareID=17NQ04>

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