



**NORTHLAND
POWER**

Abitibi Solar Project

Draft Water Body Records Review Report

April 27, 2012



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

DRAFT Water Body
Records Review Report

Abitibi Solar Project

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Project Report

April 27, 2012

**Northland Power Inc.
Abitibi Solar Project**

DRAFT Water Body Records Review Report

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1. Introduction

1.1 Project Description

Northland Power Solar Abitibi 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 District of Cochrane. This Project, known as the Abitibi Solar Project, is hereafter referred to as “Abitibi” 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 is approximately 98 hectares (ha) in size and located on Lots 14 and 15, Concession 8 of the Town of Cochrane. The solar panel Project location is situated on Glackmeyer Concession Road 9 (shown in Figure 1.1).

The second part of the Project is the approximately 20 km distribution line from the solar panel Project location to the connection point immediately west of the Project location. This portion of the project is referred to as the distribution line Project location, with locations shown in Figures 1.2 and 1.3.

1.2 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), came into force on September 24, 2009 and identifies the Renewable Energy Approval (REA) requirements for renewable energy generation facilities in Ontario. The REA Regulation has since been amended by O. Reg. 521/10, which came in effect as of January 1, 2011.

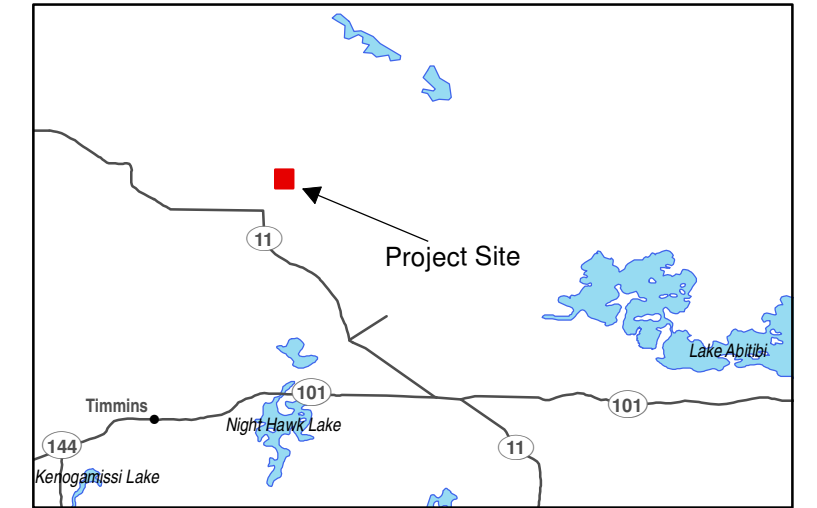
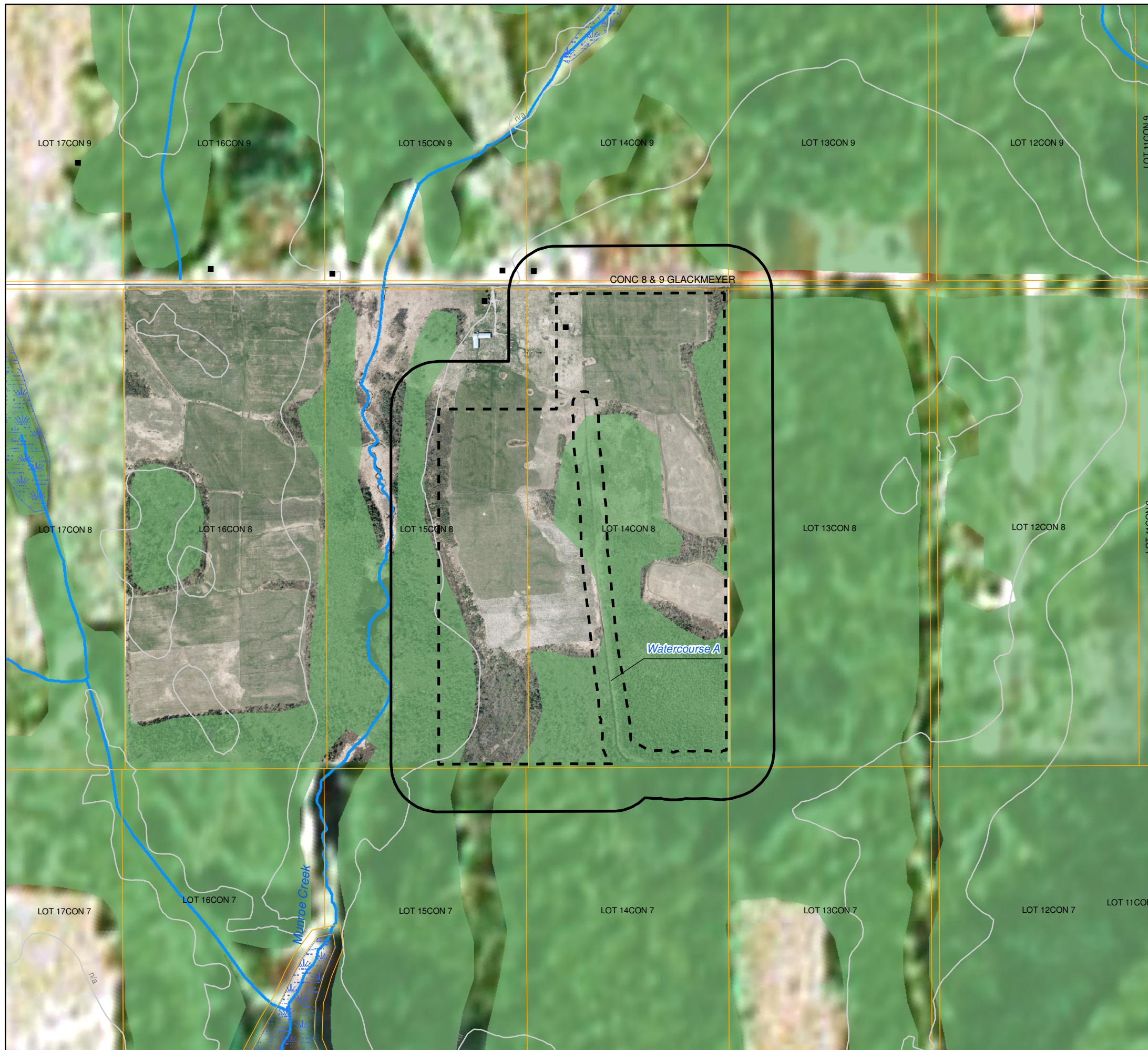
As per the REA Regulation (Part II, Section 4), ground-mounted solar facilities with a nameplate capacity greater than (>) 12 kilowatts (kW) are classified as Class 3 solar facilities and require an REA.

Section 30 of the REA Regulation requires proponents of Class 3 solar projects to undertake a water body records review to identify “*whether the project is:*”

1. *in a water body*
2. *within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity*
3. *within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity*
4. *within 120 m of the average annual high water mark of a permanent or intermittent stream, or*
5. *within 120 m of a seepage are” (O. Reg. 359/09, s. 30, Table).*

Subsection 2 of Section 30 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 Water Body Records Review Report has been prepared to meet these requirements.

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Legend

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

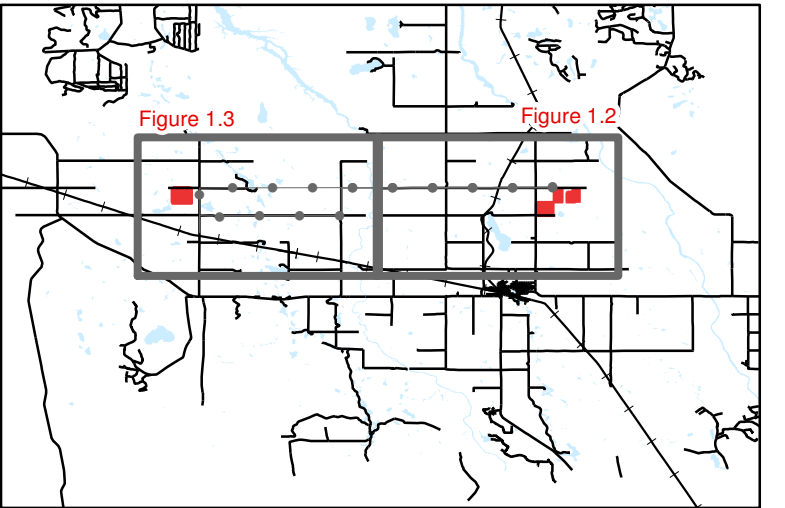
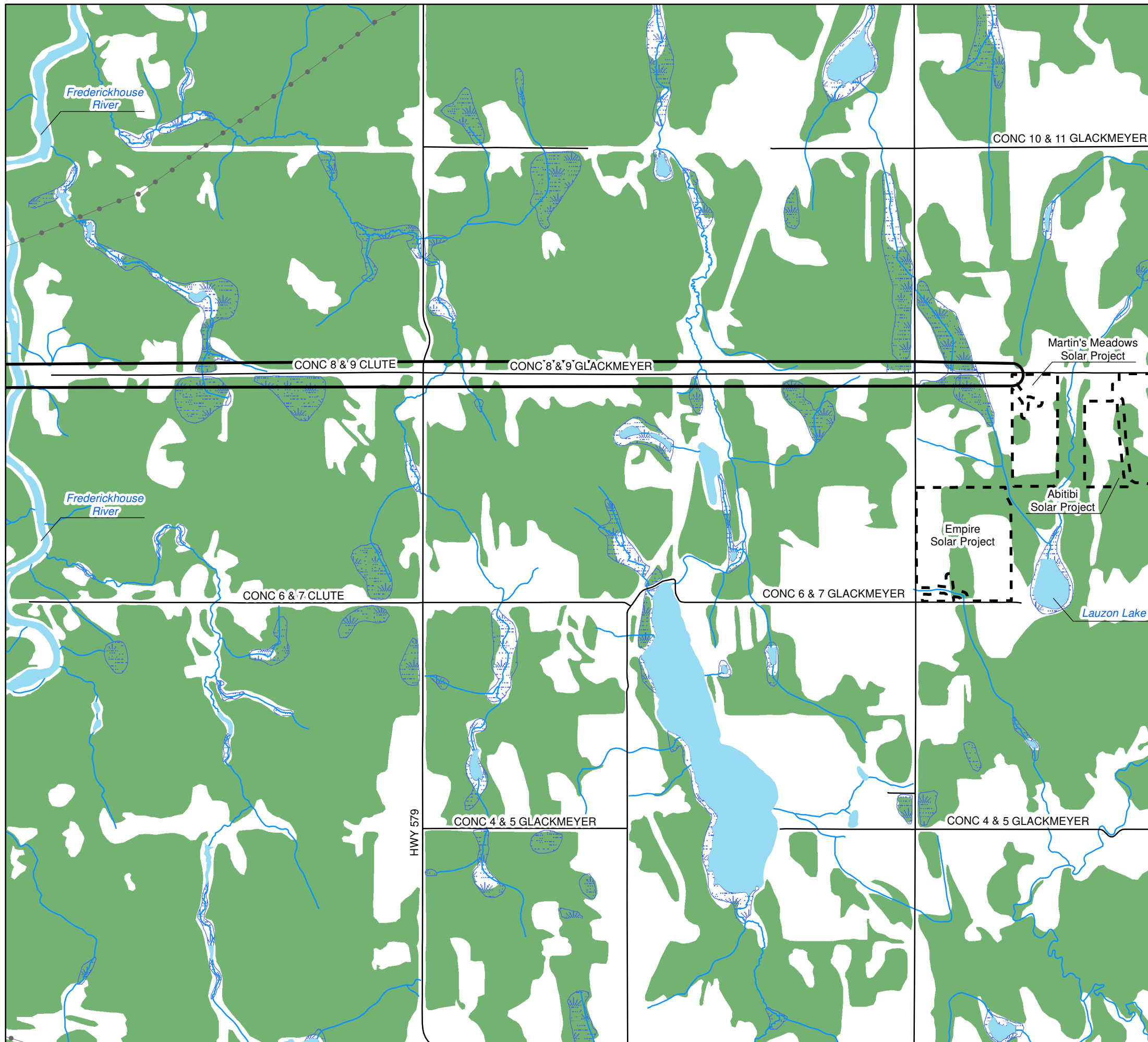
Notes:
 1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
 2. Spatial referencing UTM NAD 83.



1:10,000

Figure 1.1
 Northland Power Inc.
 Abitibi Solar Project
Water Body Features

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Legend

- Connection Point
- Road
- Utility Line
- - - Northland Power Project Location
- ▭ 120 m from Distribution Line
- Wetland Area
- Wooded Area
- Waterbody Feature**
- Watercourse
- Waterbody

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.

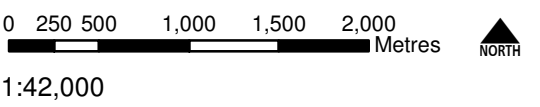
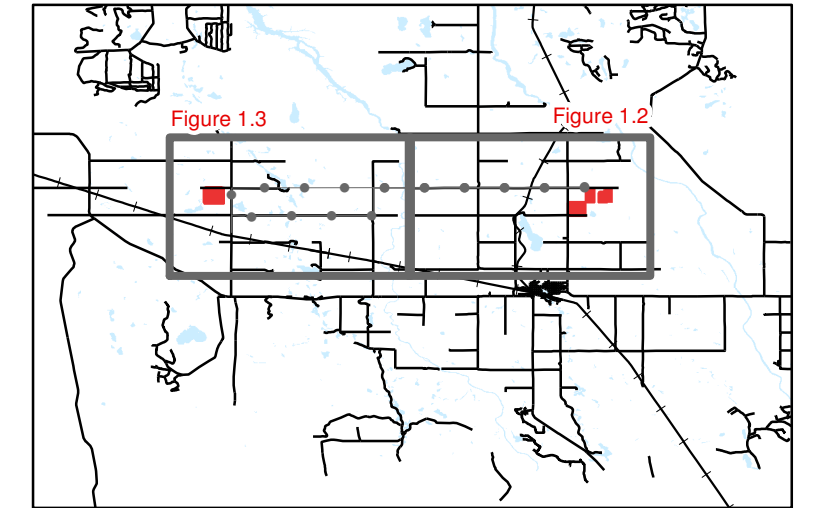
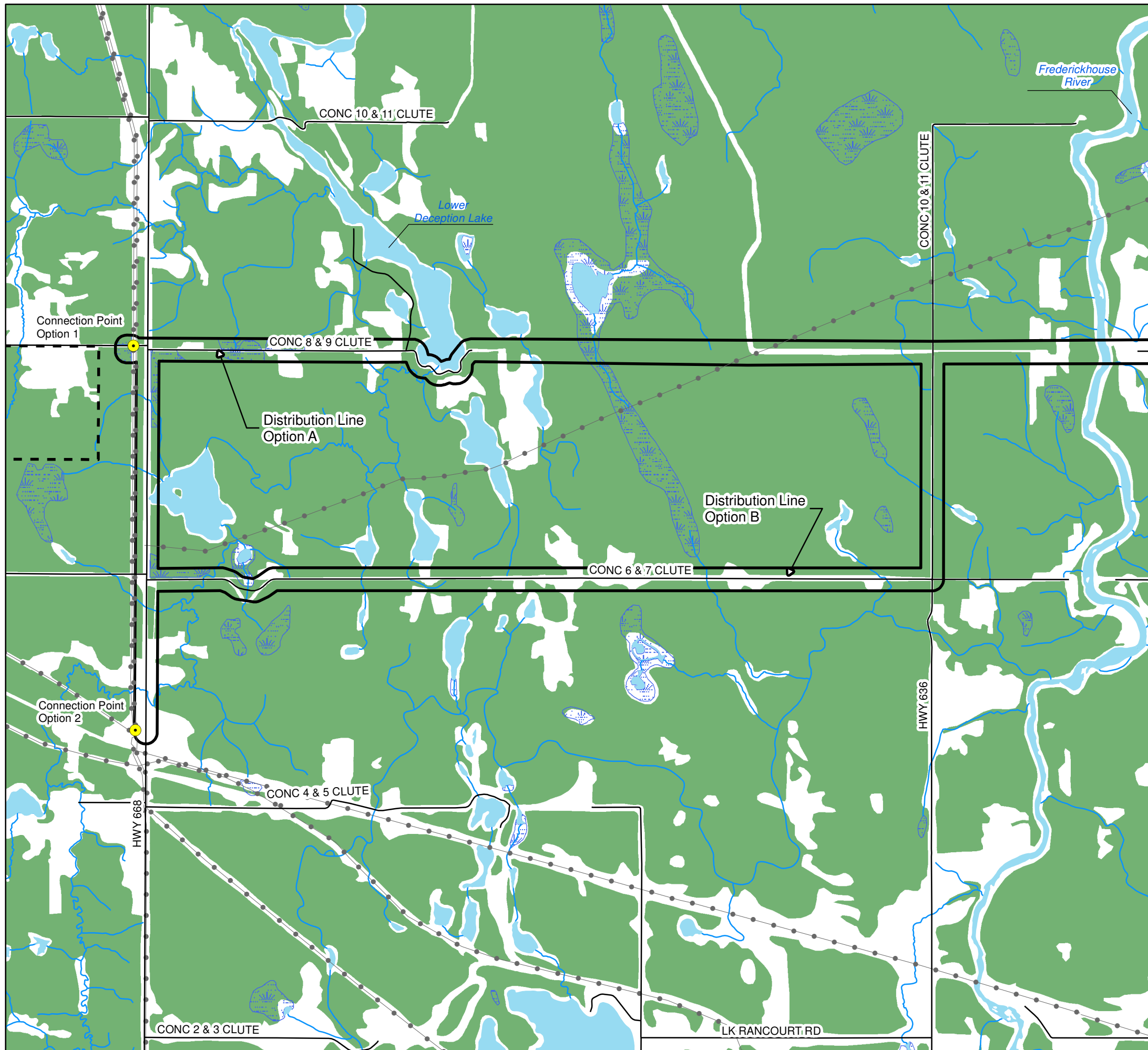


Figure 1.2
 Northland Power Inc.
Distribution Line Project Location (Eastern Half) - Waterbodies

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Legend

- Connection Point
- Road
- Utility Line
- - - Northland Power Project Location
- ▭ 120 m from Distribution Line
- Wetland Area
- Wooded Area
- Waterbody Feature**
- Watercourse (LIO Mapping)
- Waterbody

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.

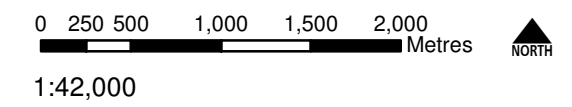


Figure 1.3
 Northland Power Inc.
Distribution Line Project Location (Western Half) - Waterbodies

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2. Methodology and Results

The following sections document the records that were reviewed and assessed. The focus of the assessment was to identify whether or not the Project Location is situated on or adjacent to any water body features. The definition of a water body is stated in Subsection 1(1) of the REA regulation:

“water body’ includes a lake, a permanent stream, an intermittent stream and a seepage area but does not include,

- (a) grassed waterways*
- (b) temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through*
- (c) rock chutes and spillways*
- (d) roadside ditches that do not contain a permanent or intermittent stream*
- (e) temporarily ponded areas that are normally farmed*
- (f) dugout ponds, or*
- (g) artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and sites and outdoor confinement areas.”*

The following sections of this report were organized with respect to the governing bodies identified in Column 1 of the Table in section 30 of the REA Regulation.

The results are discussed below in relation to the distances specified between the Project and water features as defined in Section 30 of the REA Regulation (see Section 1.2).

There are no conservation authorities within the jurisdiction of the Project location (both solar panel and distribution line). Also, the Project location (both solar panel and distribution 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

2.1.1 Methodology

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

- Ontario Base Maps and natural feature layers from Land Information Ontario (LIO) (www.geographynetwork.ca)
- Natural Heritage Information Centre (NHIC) biodiversity explorer (<https://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/mainSubmit.do>).

MNR also provided mapping of waterbodies in the study area from their NRVIS system.

2.1.2 Results

The MNR natural features layer from the LIO dataset indicates that a portion Munroe Creek passes within 120 m of the western boundary of the solar Panel Project location (Figure 1.1). Munroe Creek flows in a south-north direction, and originates approximately 900 m southwest of the Project Location at Lauzon Lake. The MNR mapping shows that Munroe Creek discharges into the Abitibi River, which is located several kilometers north of the Project Location.

LIO mapping shows a total of 24 waterbodies crossing the proposed distribution line options, including a crossing of the Frederickhouse River, which is a tributary of the Albany River in the Moose River Basin (Figures 1.2 and 1.3). There are 10 other waterbodies shown in the figures that do not cross the proposed distribution line routes, but are located within 120 m of the distribution line corridor, including Lower Deception Lake.

The MNR biodiversity explorer interactive map did not identify any new watercourses in the vicinity of the proposed Project Location.

2.2 Ontario Ministry of Agriculture, Food and Rural Affairs Records

2.2.1 Methodology

The following Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) on-line records were reviewed:

- rural drainage mapping (http://www.lio.ontario.ca/imf-ows/imf.jsp?site=ads_en).

2.2.2 Results

Rural drainage mapping identified Munroe Creek, as well as Lauzon Lake and Abitibi River. The drainage mapping did not indicate what type of drainage was present on the Project Location, nor did it identify any constructed drains.

2.3 Federal Government Records

2.3.1 Methodology

The following federal government websites were reviewed to determine if any records regarding water body features on or adjacent to the property were available:

- Fisheries and Oceans Canada (DFO) website (<http://www.dfo-mpo.gc.ca/index-eng.htm>)
- Natural Resource Canada (NRCan) (http://ess.nrcan.gc.ca/mapcar/index_e.php).

2.3.2 Results

A review of the DFO website did not reveal any site-specific information regarding waterbodies in the vicinity of the Project Location.

The NRCan mapping review did not identify any watercourses on the Project Location.

2.4 Municipal Records

2.4.1 *Methodology, 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 water body features on or within 120 m of the Project location (both solar panel and distribution line) not shown on other data sources. Information on water body features was also requested from Town of Cochrane by e-mail on July 7, 2011.

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

2.4.2 *Results, Town of Cochrane*

The Official Plan mapping did show Munroe Creek and Lauzon Lake, although both were unnamed. Waterbodies were also shown along the proposed distribution line routes, although none that were not shown in other data sources (i.e., LIO mapping) were observed. No other information on water body features on or within 120 m of the Project location was available.

The Zoning By-law identified that the Project Location is zoned as agriculture.

2.5 Aerial Photography

2.5.1 *Methodology*

High resolution aerial photograph obtained for use in this Project, as well as imagery from Google Earth was reviewed to determine if any water body features were evident on or within 120 m of the solar panel Project location.

2.5.2 *Results*

Aerial photograph appears to show a linear, surface water drainage field running through the centre of the property on which the solar panel Project location is located. It is unclear if this feature meets the definition of a water body under the REA Regulation and this will have to be confirmed during the Site Investigation stage.

3. Summary of Results and Next Steps

3.1 Summary of Results

Table 3.1 summarizes the results of the records review according to the features identified in Section 1.2. A map depicting the identified water features on and in proximity to the site is provided in Figure 1.1.

Table 3.1 Summary of Records Review Determinations

Determination to be Made	Yes/No	Description
Is the Project in a water body?	No	No water body features were identified on the Project Location.
Is the Project within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity?	Yes	No lakes were identified within 120 m of the solar panel Project location. The proposed distribution line will come within 120 m of the average annual high water mark of Lower Deception Lake.
Is the Project within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity?	No	No lake trout lakes were identified within 300 m of the solar panel or distribution line Project locations.
Is the Project within 120 m of the average annual high water mark of a permanent or intermittent stream?	Yes	The average annual high water mark of Munroe Creek is located within 120 m of the solar Panel Project location. A surface water drainage feature visible on aerial photography may also be a permanent or intermittent stream, and would be within 120 m of the solar Panel Project location. There are 34 watercourses located within 120 m of the distribution line Project location.
Is the Project within 120 m of a seepage area?	No	No seepage areas were identified on or within 120 m of the Project Location.

Therefore, depending on the layout of the proposed Project, some components of the solar panel Project location could be located within 120 m of the average annual high water mark of Munroe Creek. An unnamed surface drainage feature is visible on aerial photography of the solar panel Project location, and this may also be a permanent or intermittent stream that would be located within 120 m of the solar panel Project location. The proposed distribution line may cross a total of 24 waterbodies (depending on the route selected) and may be located within 120 m of 10 additional waterbodies, including Lower Deception Lake.

4. Next Steps

A site investigation, as required in Section 31 of the REA Regulation, will be completed to (i) confirm the water body features identified during this records review, (ii) identify if any corrections to the information presented herein are required, (iii) determine whether any additional waterbodies exist in the Project location, (iv) confirm the boundaries of any water body feature within 120 m of the Project and (v) determine the distance from the Project to any confirmed water body boundaries.

5. References

Fisheries and Oceans Canada (DFO). Available on-line at <http://www.dfo-mpo.gc.ca/index-eng.htm>
Accessed December 2, 2010.

Government of Ontario. 2009. Ontario Regulation 359/09 made under the Environmental Protection Act 2007, Renewable Energy Approvals under Part V.0.1. of the Act. September 8, 2009 version. Printed in the Ontario Gazette: October 10, 2009. Available on-line at: http://www.e-laws.gov.on.ca/html/source/regs/english/2009/elaws_src_regs_r09359e.htm.
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Rural Drainage Mapping. Available on-line at http://www.lio.ontario.ca/imf-ows/imf.jsp?site=ads_en
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Accessed December 2, 2010.

TOC. 2010. By-law No. 710-2010 Zoning By-law for the Town of Cochrane. Available on-line at <http://www.town.cochrane.on.ca/siteengine/activepage.asp?PageID=267>.
Accessed December 2, 2010.