



**NORTHLAND
POWER**

Martin's Meadows Solar Project

Water Body Records Review Report

October 18, 2012



Northland Power Inc.
on behalf of
Northland Power Solar
Martin's Meadows L.P.
Toronto, Ontario

Water Body
Records Review Report

Martin's Meadows Solar Project

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October 18, 2012

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Project Report

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**Northland Power Inc.
Martin's Meadows Solar Project**

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1. Introduction

1.1 Project Description

Northland Power Solar Martin's Meadows 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 Martin's Meadows Solar Project, is hereafter referred to as "Martin's Meadows" 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 82 hectares (ha) in size and located on Lot 16, 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 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 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.

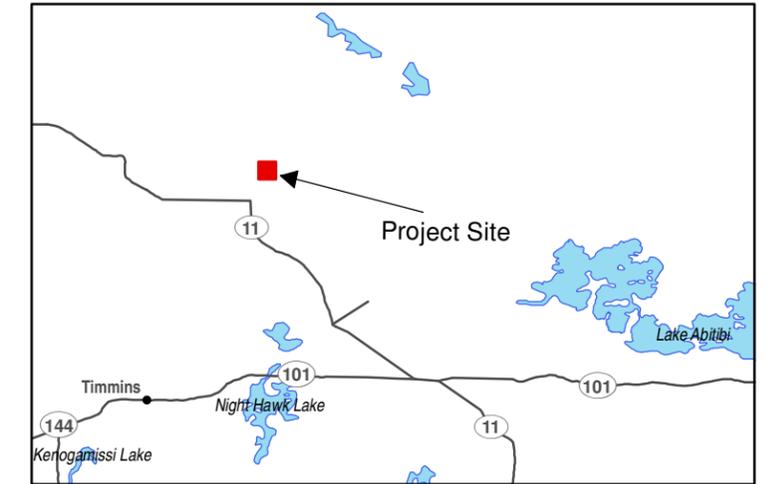
As per the REA Regulation (Part II, Section 4), ground-mounted solar facilities with a nameplate capacity greater than (>) 12 kilowatts (kW) are classified as Class 3 solar facilities and require an REA.

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 area" (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)
- - - Unknown Drainage Channel
- Watercourse
- ▭ Parcel
- - - Project Location
- ▭ 120 m from Project Location
- Water Body
- 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 obtained from Google Earth Pro, captured 2003.
 4. Airphotos obtained from Northland Power Inc., flown May 2011.

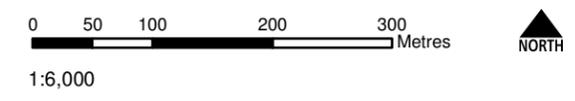
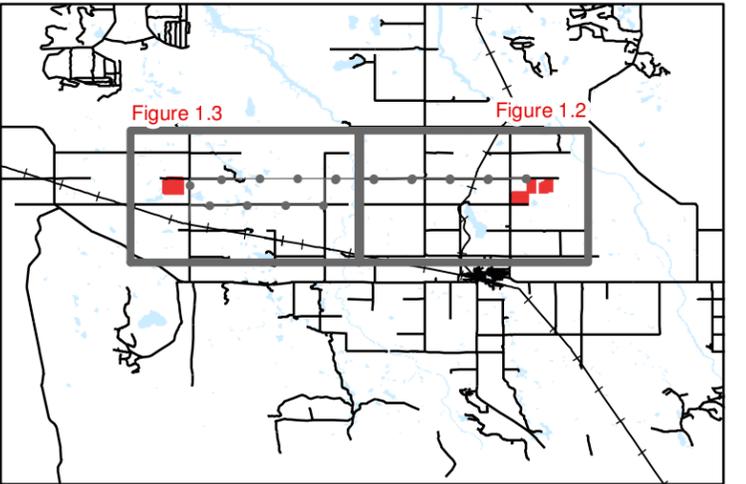
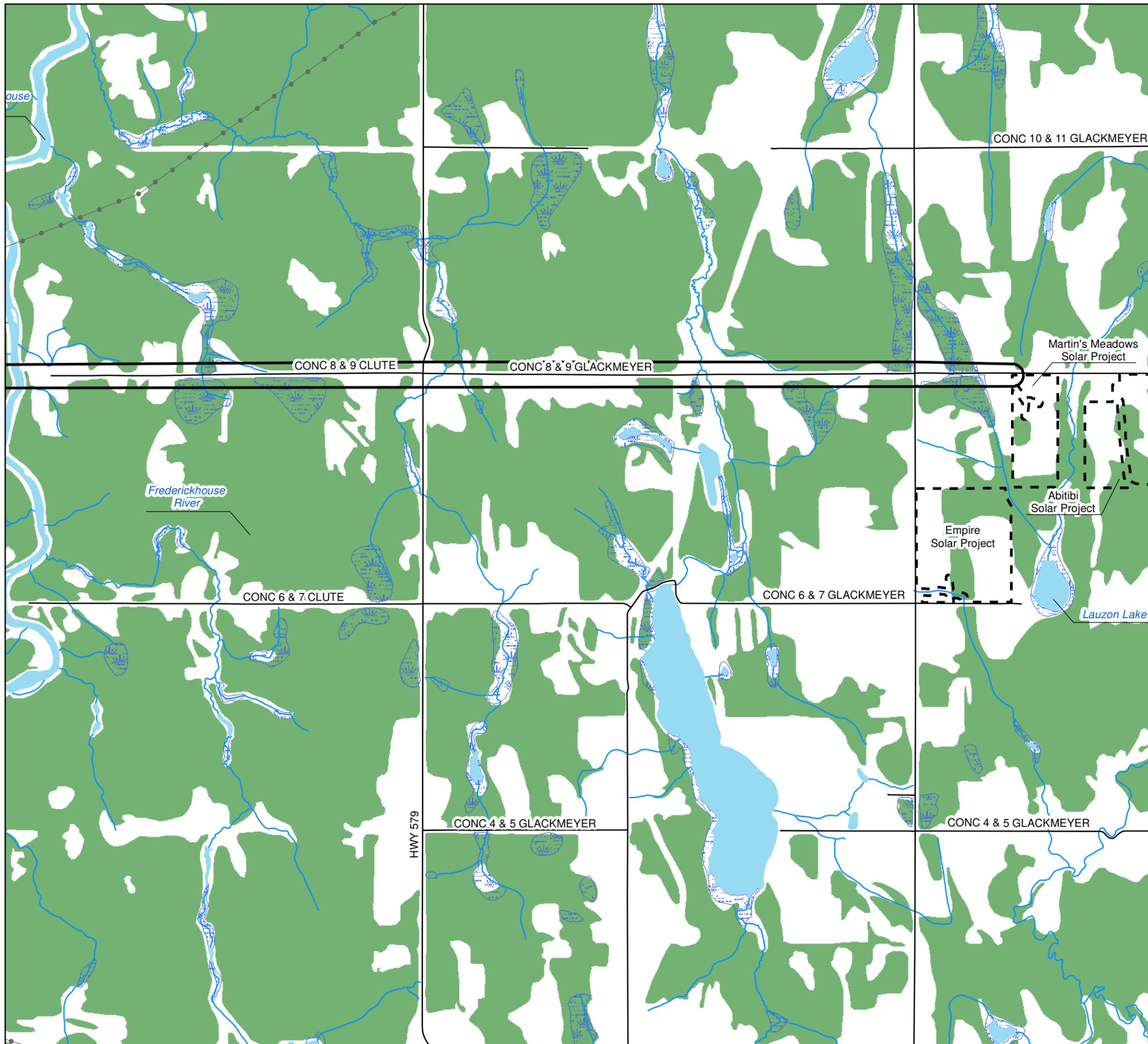


Figure 1.1
 Northland Power Inc.
 Martin's Meadow Solar Project
Water Body Features

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Legend

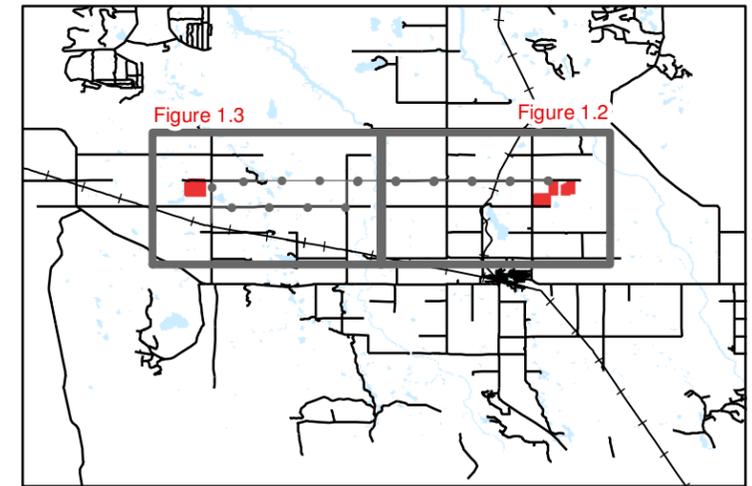
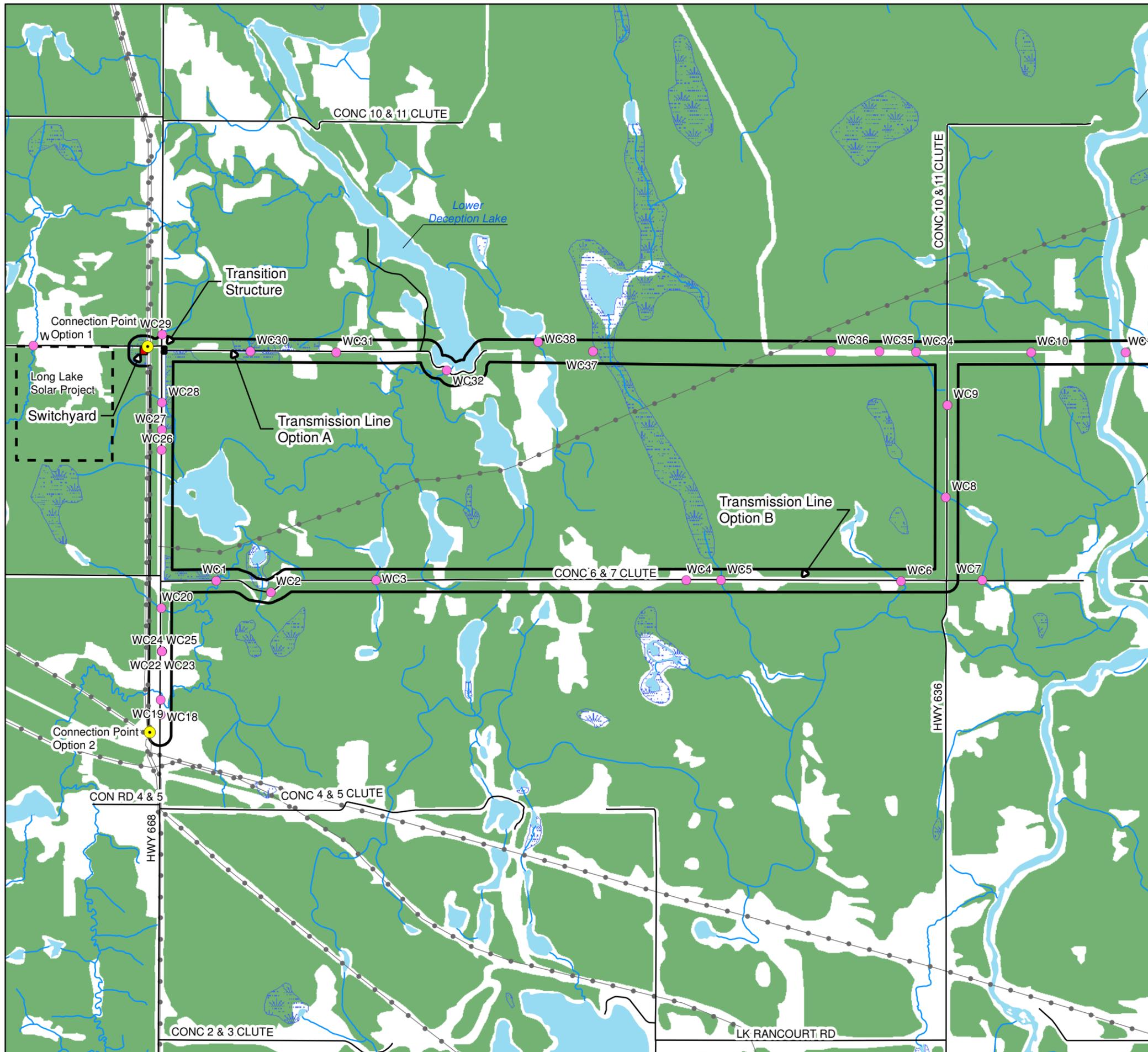
- Connection Point
 - Switchyard
 - Transition Structure
 - Road
 - Utility Line
 - - - Northland Power Project Location
 - ▭ 120 m from Distribution Line
 - Wetland Area
 - Wooded Area
- Waterbody Feature**
- Watercourse (LIO Mapping)
 - Waterbody

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

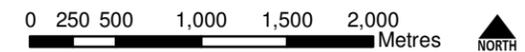
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Legend

- Connection Point
 - Switchyard
 - Transition Structure
 - Road
 - Utility Line
 - ▭ Northland Power Project Location
 - ▭ 120 m from Distribution Line
 - ▨ Wetland Area
 - Wooded Area
- Waterbody Feature**
- Watercrossing (Hatch)
 - 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.



1:42,000

Figure 1.3
 Northland Power Inc.
**Transmission Line Project Location
 (Western Half) - Waterbody
 Site Investigation Results**



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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 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

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 indicates the presence of Munroe Creek within 120 m to the east of the solar panel Project Location (Figure 1.1). A tributary of Munroe Creek occurs within 120 m to the west and southwest of the solar panel Project Location. Munroe Creek flows from Lauzon Lake which is located approximately 900 m south of the Project Location. Munroe Creek is a tributary of the Abitibi River which is located several kilometers to the northeast of the Project Location. Munroe Creek would be crossed by the access road and connection line to the adjoining facility (Figure 1.1).

The MNR biodiversity explorer interactive map did not identify any new watercourses within the proposed solar panel Project Location.

LIO mapping shows a total of 24 waterbodies crossing the proposed transmission 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 transmission line routes, but are located within 120 m of the transmission line corridor, including Lower Deception Lake.

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 the Abitibi River. The drainage mapping did not indicate what type of drainage was present on the solar panel 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 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

The review of the DFO website resulted in no site-specific information regarding waterbodies on the Project site.

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 (both solar panel and transmission line) is within the 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 water body features was also requested from Town of Cochrane by e-mail on July 7, 2011.

The Project location (both solar panel and transmission 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 not identify any significant natural features in proximity to the Project site. The map did show Lauzon Lake and Munroe Creek. No other information on water body features in proximity to 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 Project location.

2.5.2 Results

There appears to be three different surface water drainage features on the Project location, as shown in Figure 1.1. It is unclear if these features meet 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?	Yes	The proposed access road to the adjoining facility will cross Munroe Creek.
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 Project location. The proposed transmission line will come within 120 m 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 Project location.
Is the Project within 120 m of the average annual high water mark of a permanent or intermittent stream?	Yes	Two watercourses were identified within 120 m of the Project Location: Munroe Creek to the east and a tributary of Munroe Creek to the west. There are several other drainage features visible on aerial photography of the Project location, but it is unknown if these meet the definition of a water body per the REA Regulation. There are 34 watercourses located within 120 m of the transmission 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 potentially be located within 120 m of the average annual high water mark of Munroe Creek and/or its tributary. An access road and connection line to the adjoining solar facility will cross Munroe Creek. The proposed transmission 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, depending on the route selected.

3.2 Next Steps

A site investigation, as required in Section 31 of the REA Regulation will be completed to (i) confirm the 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 feature within 120 m of the Project and (v) determine the distance from the Project Location to any identified water body boundaries.

4. 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_r09359\)e.htm](http://www.e-laws.gov.on.ca/html/source/regs/english/2009/elaws_src_regs_r09359)e.htm).
Accessed December 2, 2010.

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Accessed December 2, 2010.

Rural Drainage Mapping. Available on-line at http://www.lio.ontario.ca/imf-ows/imf.jsp?site=ads_en
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Town of Cochrane (TOC). 2008. Official Plan for the Town of Cochrane and Suburban Planning Area. Available on-line at <http://www.town.cochrane.on.ca/siteengine/activepage.asp?PageID=153>.
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Accessed December 2, 2010.

