



**NORTHLAND
POWER**

Crosby Solar Project Baseline Well Water Monitoring Program and Construction Response Plan

April 5, 2011



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

Baseline Well Water
Monitoring Program and
Construction Response Plan

Crosby Solar Project

H334844-0000-07-124-0269

Rev. 0

April 5, 2011

Disclaimer

This report has been prepared solely for the use of Northland Power Inc., who is submitting this document to the Ministry of the Environment as part of the Renewable Energy Approval process. The content of this document is not intended for the use of, nor is it intended to be relied upon by any person, firm or corporation.

Project Report

April 5, 2011

**Northland Power Inc.
Crosby Solar Project**

**Baseline Well Water Monitoring Program
and Construction Response Plan**

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1. Introduction

Northland Power Inc. (Northland) is proposing to construct three 10-MW solar projects within the Township of Rideau Lakes. These include

- Crosby Solar Project
- McCann Solar Project
- Rideau Lakes Solar Project.

Through discussions with the Ontario Ministry of the Environment (MOE), Northland has identified a need to conduct baseline well water monitoring at wells in proximity of each Project location. The intent of this monitoring program would be to establish baseline conditions of wells in the area for comparison during construction should a neighbouring well owner identify a concern that their well has been impacted by construction of the Project.

The baseline well water monitoring program, as well as a construction response plan, are outlined below.

2. Baseline Well Water Monitoring Program

All water wells within 500 m of the Project location will be initially identified through the MOE Water Well Records database information. The list of water wells will then be updated with information provided by nearby residents and observations from the area of locations of other wells that may not be within the Water Well Records database.

Once identified, owners of the wells will be identified and contacted by mail. The mailing will include information of the proposed Project, the proposed well water monitoring program, and a survey relating to well conditions.

If the well owner wishes to participate in the well water monitoring program, they will be requested to complete the survey, to the best of their knowledge, within 1 month and return it to Northland. The survey will request information relating to

- well construction (i.e., dug/drilled, soil/bedrock, steel casing/concrete; date of construction)
- groundwater quality (i.e., hardness, pH; submission of previous test results is preferred where available)
- groundwater quantity (i.e., has well ever run dry)
- well locations (i.e., number of users, location of septic system).

Once the completed survey is received, Northland will contact the well owner to discuss their survey responses and to arrange a time where a Northland representative can visit their well to obtain a sample.

At the time of the site visit, the Northland representative will

- measure water level in the well, if accessible
- collect two raw water well samples without treatment (after running water for approximately 5 minutes to clear water distribution pipes or storage tank)
- the first sample will be tested on-site for field measurement of pH, temperature, conductivity.

The second water sample will be sent to a certified laboratory for general potable water quality tests including alkalinity, ammonia, bacteria, calcium, chloride, colour, conductivity, DOC, hardness, iron, magnesium, manganese, nitrite, nitrate, pH, potassium, sodium, sulphate, TDS, TSS and turbidity. If an exceedance of the Provincial Water Quality Objectives (PWQO) is noted for any of these test parameters, a repeat sample will be obtained and submitted to the laboratory in order to confirm the exceedance.

The well owner will be provided with the results of the laboratory test once received. Northland will maintain a copy of the test results on file as a reference point for the well, and will prepare a summary report of the survey results for the MOE.

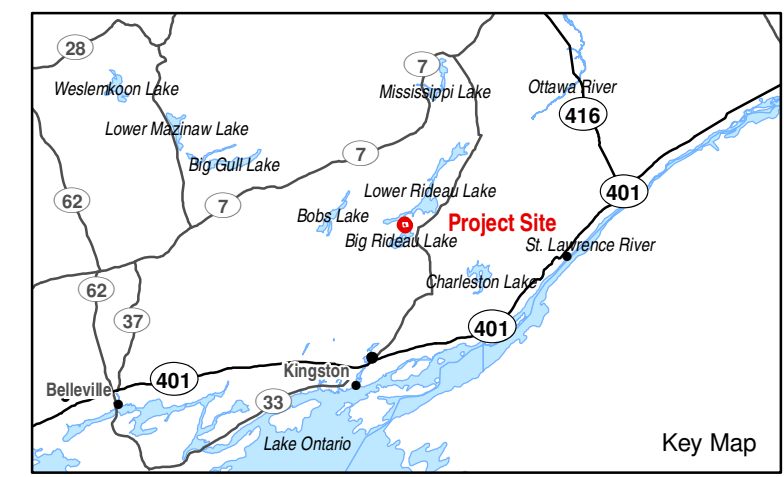
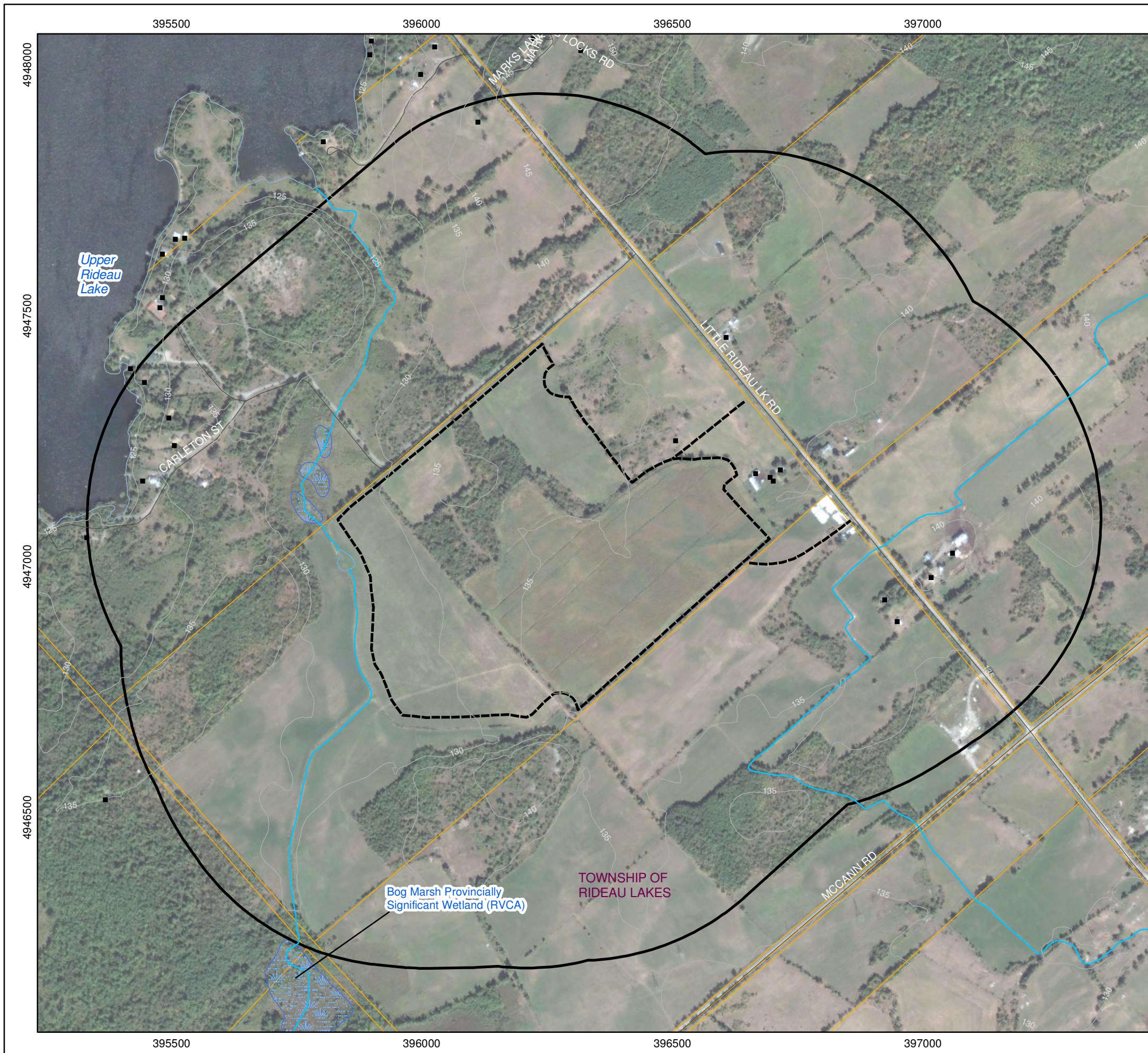
3. Construction Response Plan

Prior to construction, all well owners within a 500-m radius of the Project location will be provided with contact information for Northland, and instructions that should the well owner identify a concern that their well is being impacted by construction activities, although Northland does not anticipate any impacts on nearby wells, they should contact Northland.

Upon receipt of this call, Northland will dispatch a representative to re-sample the well in accordance with the methodologies outlined in Section 2. The sample will be submitted to the laboratory as “high priority”. Northland will also notify the MOE of the call and the results of the test.

If a problem is confirmed as related to the construction activities at the solar project, then Northland will immediately provide a temporary supply of bottled water. Northland will continue providing bottled water and periodically testing the well until such time as no exceedance of PWQO or a return to baseline conditions (in instances where PWQO exceedances were confirmed) are noted within the samples.

In the remote event that a long-term impact to the well is noted and remediation measures, such as flushing the well and water distribution system, fail to remove exceedances of PWQO, Northland will work with the well owner to remedy the situation.



Legend

- Building
- Roads
- Topographic Contour (5m interval)
- Watercourse
- ▭ Project Location
- ▭ 500 m from Project Location
- ▭ Parcels
- ▭ Waterbody
- ▭ Wetland Area



Notes:
 1. OBM and NRVIS data downloaded from LIO, with permission.
 2. Spatial referencing UTM NAD 83, June 2010.
 3. Satellite imagery obtained from Google Earth Pro, imagery dated 2005.

