



McCann Solar Project

Executive Summary

April 11, 2011

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**Northland Power Inc.
McCann Solar Project**

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Table of Contents

1. Introduction	3
1.1 Project Location	4
1.2 Project Proponent	5
1.3 Project Benefits	5
Green Energy Act and Feed-in-Tariff Program	5
Advantages of Solar Energy	6
1.4 Project Description	6
2. REA Process.....	6
2.1 Brief Summary of the McCann Solar Project REA Reports.....	7
3. Next Steps.....	8
Figure 1 Site Layout	10
Figure 2 Report Name and Purpose	11
Figure 3 Appendixes of Project Report Summaries.....	12

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. This document is in DRAFT form and subject to further revision. 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.

1. Introduction

The McCann Solar Project (hereinafter referred to as the “Project”) is a proposed 10-megawatt (MW) solar farm in the Rideau Lakes Township. The Project is being developed by Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”). As required, Northland is commencing with the Renewable Energy Approval (REA) described in Ontario Regulation 359/09 under the *Environmental Protection Act*.

Northland is the proponent of the Project. The contact information is as follows:

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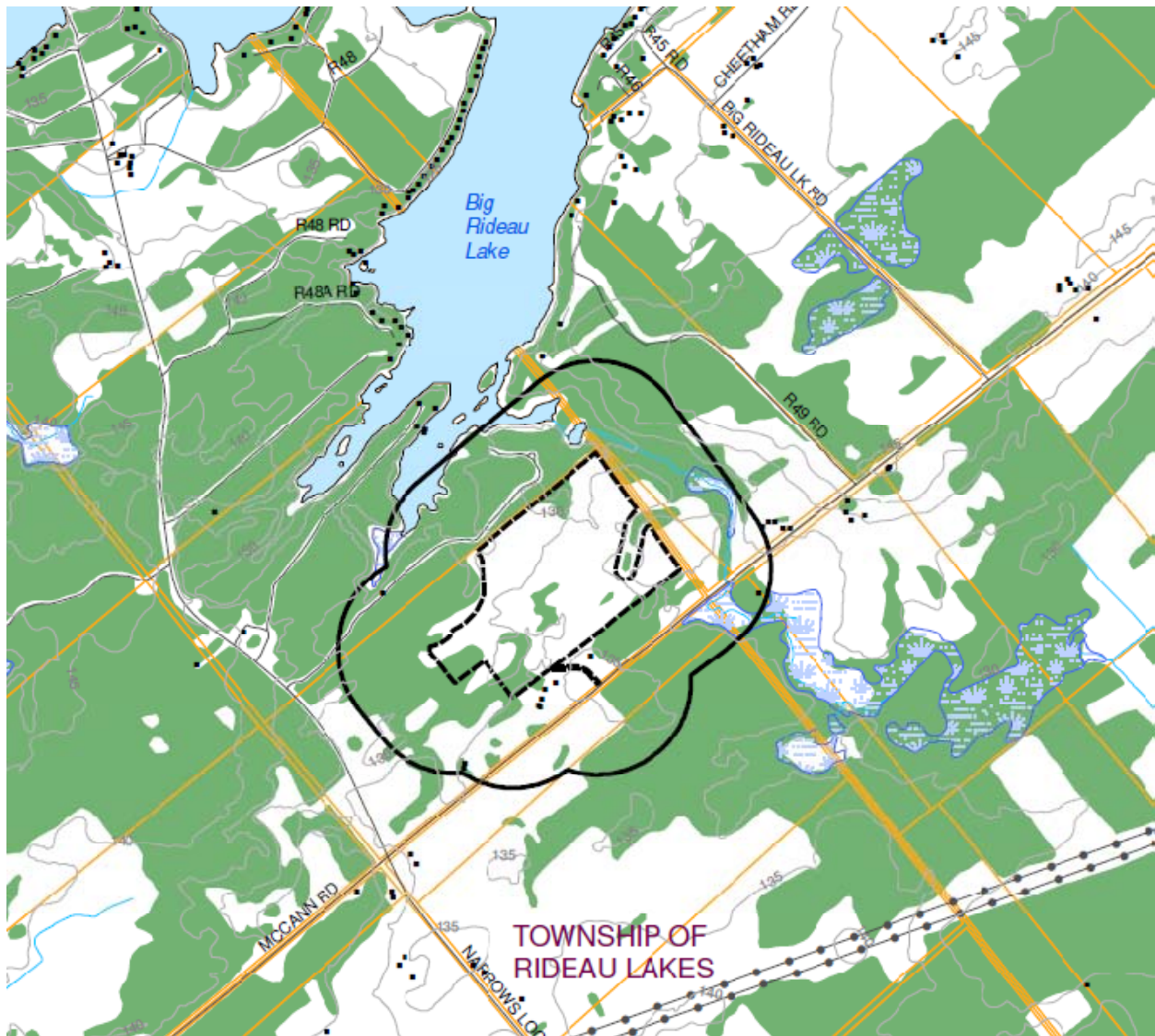
Northland has retained Hatch Ltd. (Hatch) to assist Northland in meeting the REA requirements. Contact information for Hatch is as follows:

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REA Coordinator
Hatch Ltd.
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1.1 Project Location

The Project is located to northeast of the town of Newboro and is proposed to be constructed on a parcel of land that is approximately 40 hectares (ha) in size, northeast of the intersection of Narrows Lock Road and McCann Road.



1.2 Project Proponent

Northland Power develops and operates clean and green power generation projects, mainly in the provinces of Ontario and Quebec, with Saskatchewan being added to that list shortly. Our facilities produce about 900 MW of electricity. Northland has been in business since 1987, and has been publicly traded on the Toronto Stock Exchange since 1997.

Sustainability is a core value at Northland Power. All of their development efforts and operational practices focus on ensuring the ability to provide long-term benefits to their customers, investors, employees, communities and partners.

Sustainability has many dimensions for Northland Power.

- **Environmental:** Northland Power was founded on the belief that clean and green energy sources are vital to the future of our planet. Northland Power produces nothing else. Their construction and operational practices are engineered to meet the highest environmental standards, even in jurisdictions where lower standards are legislated.
- **Health and Safety:** Northland Power ensures that their staff has the knowledge, tools and time to work safely. This is Northland's first priority. Their culture of safety, respect and independence helps to ensure they attract and retain the people that they need to perform.
- **Operational:** Northland Power maintains and reinvests constantly in their operating assets to achieve maximum efficiency and economic life.
- **Community:** Northland Power takes an active interest in its host communities, to ensure they remain vibrant, healthy places to live.
- **Financial:** Northland Power consistently chooses long-term success over short-term gain. Northland Power only pursues projects that meet strict return thresholds and have creditworthy customers. As a result, they have paid stable monthly dividends since 1997.

Northland's business model is to develop, finance, construct, own and operate its facilities for the duration of the project's useful life. As such, Northland considers itself to be members of the local community in which it operates and has a track record of being a good neighbour.

1.3 Project Benefits

Green Energy Act and Feed-in-Tariff Program

The Ontario Government passed the "Green Energy and Green Economy Act" into law on May 14, 2009. The Act is expected to boost investment in renewable energy projects and increase conservation, creating green jobs and economic growth.

The Ontario Government lists the following objectives for the Ontario Green Energy Act:

- Spark growth in clean and renewable sources of energy such as solar, wind, hydro, biomass and biogas in Ontario.
- Create the potential for savings and better managed household energy expenditures through a series of conservation measures.
- Create 50,000 jobs for Ontarians in its first 3 years.

The Feed-in-Tariff (FIT) program was launched on October 1, 2009 to encourage use of renewable energy sources, and promote growth within the environmental industry. The Green Energy and Green Economy Act (2009) enabled the creation of the FIT program. Taken from the Program's website, the FIT program will create new jobs, boost economic activity and further the development of renewable energy technology and expertise in Ontario, while helping to phase out coal-fired electricity generation by 2014.

The Ontario Power Authority awarded 184 FIT contracts to renewable power developers in Ontario on April 8, 2010. Northland Power was awarded a total of 13 ground mount solar contracts for proposed development throughout the province. These projects are currently proceeding through the REA process.

Advantages of Solar Energy

Solar power has a multitude of advantages compared to fossil fuel powered energy plants. Most simplistically, the fuel is free. As many fossil fuels are expected to increase in price, having solar energy on the grid at a set price will give greater stability to future energy prices. Another key benefit is the lack of polluting emissions. With solar PV there are no emissions; this ensures that the surrounding local community will not have to live with poor air quality, disruptive sounds or noxious odours. Also, since solar PV is modular, it is well suited to distributed generation, meaning the power can be produced close to where it will be consumed. In addition, the solar PV systems are comprised of safe, common materials that will not affect the lands on which they are located, allowing for easy remediation upon decommissioning, unlike the vast majority of power plants.

As a source of electricity, solar PV has even more advantages when compared to other types of electricity generation. Peak power production with solar PV coincides with peak demand, during the middle of the day, reducing the need for gas fired peaking power plants.

Solar PV does not require any moving parts or water, unlike most other generation technologies, which greatly reduces its impact on the environment, its maintenance costs and its noise levels.

1.4 Project Description

Northland proposes to install ground mounted stationary photovoltaic panels which, when exposed to sunlight, will generate direct current (DC) electricity. The DC electricity will be conveyed through underground cabling to an inverter which converts the DC electricity to alternating current (AC) electricity. The electricity will then be conveyed to a single substation which will increase the voltage to 44 kV and a short transmission line will transfer the electricity to a connection tie-in point with the local distribution grid. The tie-in point is located on McCann Road at the south end of the Project. The construction period is estimated to be approximately 6 months in duration, with Project commissioning anticipated in October 2012.

2. REA Process

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. The Project is considered to be a Class 3 facility, as it is ground mounted and has a name plate capacity greater than 10 kW, and therefore requires a REA.

The REA Regulation details the required activities and reports to be completed and submitted in order to obtain the REA. The activities include Aboriginal, public, municipal and agency consultation in order to provide information on the Project to these groups and obtain feedback. Upon completion of these activities, they will be documented in the Consultation Report and submitted to the Ontario Ministry of the Environment (MOE) as part of the REA application.

The REA Regulation requires the preparation of reports, including

- Project Description Report
- Construction Plan Report
- Design and Operations Report
- Decommissioning Plan Report
- Noise Report
- Natural Heritage Records Review, Site Investigations, Evaluation of Significance and Environmental Impact Study Reports
- Water Body Records Review, Site Investigation and Environmental Impact Study Reports
- Stage 1 and 2 Archaeological Assessment Reports.

As per sections 16 and 17 of the REA Regulation, these draft documents are to be made available to the Aboriginal communities greater than 60 days from the second Public Meeting and to the public at least 60 days from the second Public Meeting. In addition, a summary of each document is to be prepared and sent to the Aboriginal communities.

In addition, a Letter of Confirmation is to be obtained from the Ontario Ministry of Natural Resources (MNR) based on their review of the Natural Heritage Reports and is to be provided to the same groups aforementioned, at the same time as the draft documents. Similarly, a Letter of Confirmation is to be obtained from the Ontario Ministry of Tourism and Culture based on their review of the Stage 1 and 2 Archaeological Assessment Report and provided to the same groups and at the same time as the draft documents.

Also, as per Section 20 of the REA Regulation, a determination is to be made as to whether or not a heritage resource is located on the project site and whether an assessment is required.

Therefore, this package has been prepared to meet these requirements and the reports as listed above are contained within. For clarity and ease of understanding, the Natural Heritage and Water Body Reports should be read in the order in which they appear below.

2.1 Brief Summary of the McCann Solar Project REA Reports

A brief summary of some of the McCann Solar REA Reports is provided below. A description of the purpose of each of the REA Reports is provided in Figure 2, while Figure 3 provides the location of the complete summary of each REA report, along with the required confirmation letters and report on heritage considerations.

The Natural Heritage and Waterbody reports have been prepared to identify potential negative environmental effects the Project may have on existing significant natural features or waterbodies, respectively.

Environmental Impact Studies have been prepared to identify potential negative environmental effects that all phases of the Project may have on the significant natural features and waterbodies. Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency in the event that they do occur to an acceptable level.

A Confirmation Letter from the Ontario MNR is included in Appendix O that confirms that the Natural Heritage reports satisfy the REA Regulation criteria.

An archaeological assessment has been conducted on the McCann project location which included a Stage 1 background study of past archaeological investigations and known archaeological sites within a 2 km radius of the McCann Solar Project location. It also included a systematic 5-m interval Stage 2 archaeological survey of all of the Leased Lands in the property.

The office of the Ministry of Tourism and Culture has reviewed the Archaeological Assessment Report in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18, and accepted its findings.

Research and agency consultation undertaken has not identified the need for a heritage impact assessment under Section 23 of the REA Regulation. A noise study has also been undertaken and identifies mitigation measures the project will incorporate in order to meet MOE requirements.

Consultation with the MOE, Kingston District Office and with the public has identified the need for a monitoring of water wells within the vicinity of the Project location. The Baseline Water Well Monitoring Program and Construction Response Plan has been prepared to meet this need.

3. Next Steps

A second Public Meeting will be held for the Project at the Portland Community Hall at 24 Water St. in Portland, ON, on June 22, 2011 from 6:00 p.m. to 8:00 p.m. Everyone is welcome to attend this meeting and they are also welcome to ask questions about the Project during this 60-day comment period. Questions or concerns related to these reports should be sent to

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Once the comments have been received, a Consultation Report will be prepared to show how those comments have been addressed and included in the design of the Project.

After the second Public Meeting, all the Reports and a REA Application Form will be sent to MOE for review and processing. The MOE has 6 months to review and make a decision on the Project. The MOE's decision will be posted for a 15-day review period on the Environmental Registry. Provided no appeal requests have been submitted, the Project will commence, pending receipt of all other required permits and approvals.

Figure 1 Site Layout

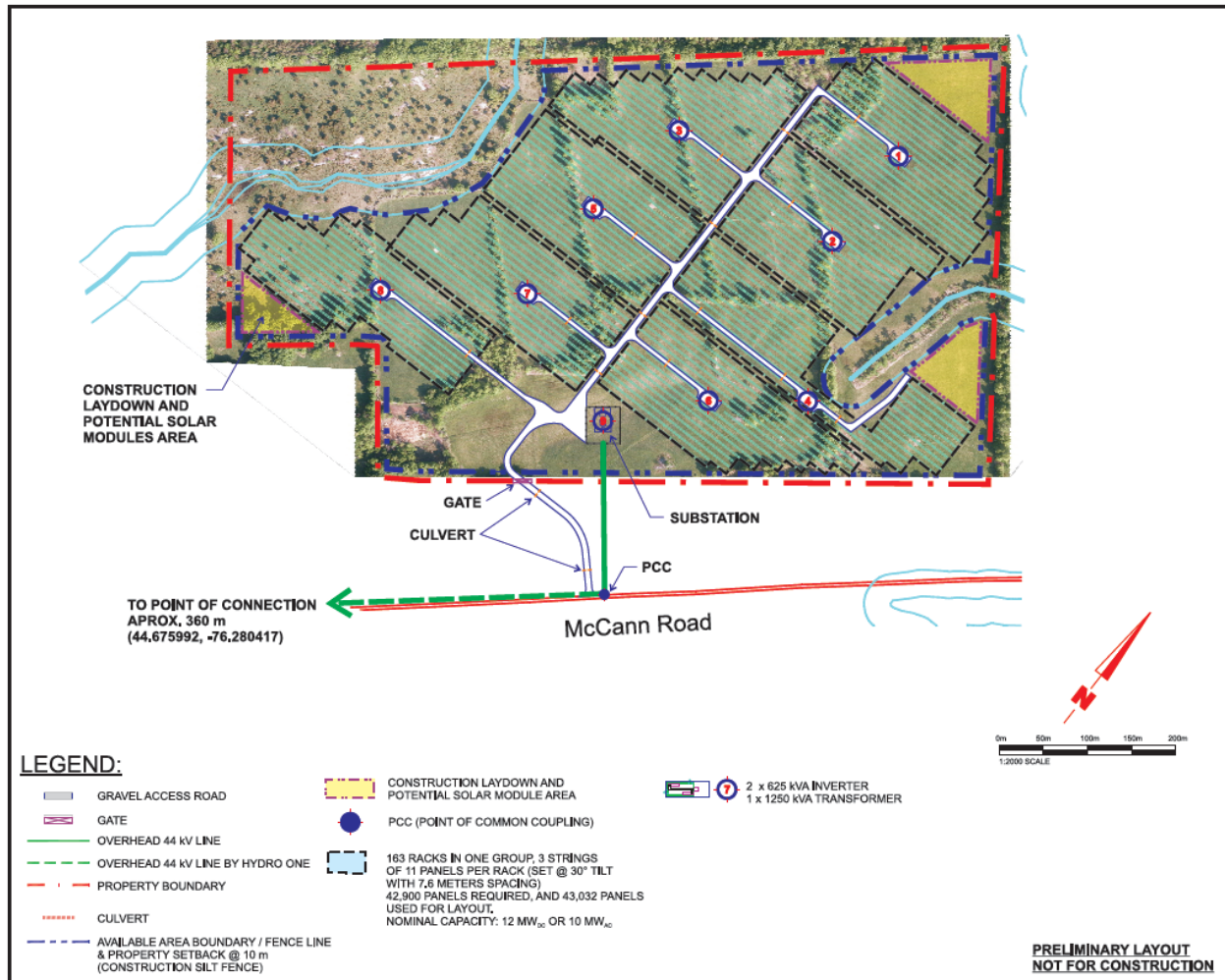


Figure 2 Report Name and Purpose

Report Name	Purpose
Project Description Report	Summarizes Project location, construction and operational activities, potential environmental effects and mitigation, and social and environmental benefits.
Construction Plan Report	Provides details on the construction activities, timelines, materials, temporary uses of land and waste materials generated and environmental effects, mitigation and monitoring during construction.
Design and Operations Report	Provides the site layout plan, Project components, operations and maintenance activities, communications and emergency response plan, and environmental effects monitoring plan.
Decommissioning Plan Report	Provides the activities to be undertaken during decommissioning and restoring the Project site.
Natural Heritage Records Review Report	Provides information from existing documentation on natural heritage features including woodlots, valleylands, wetlands, Areas of Natural and Scientific Interest and wildlife habitat.
Natural Heritage Site Investigations Report	Documents the results of the site investigations to identify and confirm natural heritage features on and within 120 m of the Project.
Natural Heritage Evaluation of Significance Report	Evaluates the significance of any natural heritage features located within 120 m of the Project.
Natural Heritage Environmental Impact Study	Identifies potential adverse environmental effects on significant natural heritage features, proposes mitigation measures to prevent or minimize adverse effects and provides monitoring program.
Water Body Records Review Report	Provides information from existing documentation on waterbodies including lakes, permanent and intermittent streams and groundwater seepage areas.
Water Body Site Investigation Report	Documents the results of the site investigations to identify and confirm water body features on and within 120 m of the Project.
Water Body Environmental Impact Study	Identifies potential adverse environmental effects on waterbodies, proposes mitigation measures to prevent or minimize adverse effects and provides monitoring program.
Stage 1 & 2 Archaeological Assessment Report	Documents the results of the Stage 1 assessment which is a desktop study identifying any archaeological potential and the Stage 2 assessment which is a site investigation confirming the archaeological potential.
Heritage Resources	Documents the results of the assessment of potential effects on protected properties and heritage resources.
Noise Study Report	Documents the results of noise modeling to identify noise emissions levels at nearby sensitive receptors and mitigation requirements to meet MOE noise emissions guidelines.

Figure 3 Appendixes of Project Report Summaries

Contained as appendixes to this Executive Summary are the following:

- Appendix A Project Description Report Summary
- Appendix B Construction Plan Summary
- Appendix C Design and Operations Report Summary
- Appendix D Decommissioning Plan Summary
- Appendix E Natural Heritage Records Review Report Summary
- Appendix F Natural Heritage Site Investigation Report Summary
- Appendix G Natural Heritage Evaluation of Significance Report Summary
- Appendix H Natural Heritage Environmental Impact Study Summary
- Appendix I Water Body Records Review Report Summary
- Appendix J Water Body Site Investigation Report Summary
- Appendix K Water Body Environmental Impact Study Summary
- Appendix L Stage 1 and 2 Archaeological Assessment Report Summary
- Appendix M Noise Assessment Report Summary
- Appendix N Protected Properties and Heritage Resource Information
- Appendix O Letter of Confirmation – Ontario Ministry of Natural Resources
- Appendix P Letter of Confirmation – Ontario Ministry of Tourism and Culture
- Appendix Q Baseline Well Water Monitoring Program and Construction Response Plan

Appendix A
Project Description
Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Project Description Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Project Description Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project in the Township of Rideau Lakes, titled the McCann Solar Project (hereinafter referred to as the “Project”). The Project will be located on approximately 40 hectares (ha) of land, just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Table 1 of the REA Regulation requires proponents of Class 3 solar projects to prepare a Project Description Report (PDR). The PDR is prepared as one of the first Project documents once the REA process commences and is made available for public review prior to the first public meeting. The purpose of the PDR is to provide preliminary information regarding the Project to members of the public, Aboriginal groups, municipalities and other government agencies. The contents of the PDR are summarized in the following sections.

2. Summary of Project

The proposed Project consists of a 10-MW Class 3 solar facility, constructed on privately owned land in the Township of Rideau Lakes. Northland Power has entered into a lease agreement with the private landowner for the length of the Project. Northland Power has obtained a contract from the Ontario Power Authority (OPA) to buy the power produced by the proposed facility under the Feed-In-Tariff (FIT) program for a period of 20 years. Following the expected lifespan of the Project, decommissioning of the facility will occur to remove all of the Projects components and re-grade the Project site back to original conditions, to the extent possible.

It is anticipated that the time for construction is 4 to 8 months, depending on time of year and various other factors. This time frame includes site preparation, access road construction, installation of solar panels (including footings, support structures and panels), installation of inverters and transformer and all electrical cabling and site rehabilitation following construction.

The facility would operate 365 d/yr, generating electricity when sufficient solar irradiation conditions exist. The Project will typically be scheduled for maintenance every 2 to 3 months. Typically, maintenance includes checking the structures, and interconnections. The proposed facility would not consume any fuels nor produce any waste as a result of generation activities.

3. Potential Environmental Effects

The PDR summarized the existing environmental features on the Project site. The site primarily consists of agricultural land with a portion of forested land and a tributary of Big Rideau Lake within 300 m of the Project site.

The PDR also identified preliminary potential environmental effects of the Project including

- potential erosion and sedimentation due to construction activities
- temporary loss of agricultural lands due to facility installation and operation
- removal of tree species in the hedgerows
- noise emissions from the invertors and transformer.

Mitigation measures were identified to prevent or eliminate those effects. Potential effects and mitigation measures were assessed in more detail in other Project reports.

Appendix B
Construction Plan
Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Construction Plan Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Ontario Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Construction Plan Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project titled McCann Solar Project (hereinafter referred to as the “Project”). The Project location will be located on approximately 40 hectares (ha) of land, located on McCann Road in the Township of Rideau Lakes.

The proposed Project will use solar photovoltaic technology to generate electricity. The solar modules will be mounted on fixed steel supports and arranged in the form of 8 arrays, each of 1.25 MW. Electricity generated by solar photovoltaic modules from each array will be converted from direct current (DC) to alternating current (AC) by an inverter, and subsequently stepped up from a medium voltage to 44 kV in order to connect to the nearby distribution line. The interconnection point will be on McCann Road, south of the Project location. The Project will connect to a distribution line that Hydro One will extend approximately 800 m from its current location.

2. Construction

The construction process of the Project consists of four phases:

- Phase 1 – Site Preparation
- Phase 2 – Construction and Installation of Plant
- Phase 3 – Testing and Commissioning
- Phase 4 – Site Restoration.

The site work is scheduled to start in the spring of 2012 and have an estimated 6 to 8 month construction period.

2.1 Phase 1 – Site Preparation

Site preparation refers to all necessary activities prior to the construction of foundations, substation, and installation of the PV modules. It includes surveying/staking, site clearing and grubbing, construction of access roads and drainage systems, installation of security gate and fencing, and construction of a staging area.

The site preparation work will take place in May 2012.

2.2 Phase 2 – Construction and Installation of Plant

Construction and installation of the facility consists of building foundations, trenches for cabling, structural support and finally installation of the panels on the structural support. The substation and associated electrical equipment will also be installed. This includes the underground and aboveground cabling on the Project site. In addition, an overhead distribution line to transmit power from the Project substation to the local distribution network will be installed.

The construction and installation of the plant will take place from June 2012 to October 2012.

2.3 Phase 3 – Testing and Commissioning

Testing and commissioning will be performed on the installation prior to start-up and connection to the power grid. Solar modules, inverters, collection system, and substation will be checked for system continuity, reliability, and performance standards. If problems or issues are identified, modifications will be made prior to start-up.

The testing and commissioning will take place in November 2012.

2.4 Phase 4 – Site Restoration

Site restoration will be applicable for the entire Project location. The main objective will be to re-instate the area to the original pre-construction condition, such as the ecosystem, vegetation, and drainage. All construction material, equipment, temporary facilities, and waste will be removed from the site. Topsoil will be backfilled where required, including landscaping to achieve proper drainage. Revegetation will include planting of native plants and hydroseeding where required.

The revegetation where possible will take place in October 2012.

3. Environmental Effects

Environmental effects and proposed mitigation measures are summarized in the table below.

Environmental Feature	Anticipated Impact	Proposed Mitigation
Soils	Negative effects on soil quality, loss of soils due to erosion and soil compaction.	Erosion and sedimentation control measures will be implemented and soil loosening measures could be applied, if necessary.
Groundwater	Pumping of groundwater could lower water table locally.	Limited impacts due to the duration of pumping (e.g., only during excavations). Any pumped water will be treated.
Surface Water Quality	Surface water quality could be impacted by erosion/ sedimentation of excavated or exposed soils, erosion caused by increased runoff from impervious or less pervious areas, or deposition of fugitive dust.	Erosion and sedimentation control measures, spill prevention and response plan, air quality measures will all mitigate impacts
Aquatic Habitat and Biota	Limited impacts, as a 30 m setback from all watercourses.	N/A

Environmental Feature	Anticipated Impact	Proposed Mitigation
Vegetation	Minor removal of vegetation and trees from a wooded area to occur. Dust deposition and spills could also impact vegetation.	In order to minimize potential losses from surrounding vegetation communities, areas where clearing is required will be well marked, and workers will be instructed not to enter areas of natural vegetation.
Wildlife	Impacts to wildlife could occur as a result of loss of habitat, disturbance from construction activities, or incidental mortality as a result of collision with construction vehicles.	In order to minimize the potential for habitat loss, work areas will be demarcated in order to ensure that the contractor does not work beyond those bounds. In order to minimize potential for disturbance or incidental take of wildlife, construction activities will be timed outside of the breeding bird period (generally May through July), wherever possible. Daily visual searches of the Project location will be undertaken. Vegetation ground cover to be used on the Project location will be selected in consideration of promotion of wildlife features.
Air Quality and Noise	<p>Dust may become airborne from vehicular traffic, heavy machinery use, and soil moving activities. Dust in the air can have a range of effects including, but not limited to: impacts on human health as a result of irritation to lungs, eyes, etc, which could impact construction workers or nearby residents, impacts on surface water quality and aquatic habitat if the dust is deposited into waterbodies, impacts on vegetation if heavy dust loads build up on photosynthetic surfaces, thereby resulting in mortality of the plants.</p> <p>Construction and installation activities have the potential to result in increased noise levels on and within the vicinity of the Project location.</p>	<p>These mitigation measures are to include, as required, use of dust suppression (i.e., water) on exposed areas including access roads, stockpiles and work/laydown areas as necessary, hard surfacing (addition of coarse rock) of access roads or other high-traffic work areas, phased construction, where possible, to limit the amount of time soils are exposed, avoid earth-moving works during excessively windy weather. Stockpiles to be worked (e.g., loaded/unloaded) from the downwind side to minimize wind erosion, stockpiles and other disturbed areas to be stabilized as necessary (e.g., taped, mulched, graded, revegetated or watered to create a hard surface crust) to reduce/prevent erosion and escape of fugitive dust, and dust curtain to be used on loaded dump trucks delivering materials from off site.</p> <p>Construction and installation activities that produce a large amount of noise will be limited to daylight hours. Vehicles will also be regularly checked for properly working mufflers or other noise reducing equipment, and all construction equipment will meet MOE emission standards.</p>

Environmental Feature	Anticipated Impact	Proposed Mitigation
Traffic	Increased traffic volumes and equipment delivery to the Project location and temporary disruption along routes utilized by construction vehicles may result in occasional delays to local community traffic flow during the construction period.	Mitigation measures include: designated transportation routes will be utilized; a police or security escort will be utilized to guide or accompany major equipment deliveries to the Project location if necessary; flagmen will be utilized as required to facilitate traffic flow and control if necessary; construction vehicles will be driven in a proper manner with respect for all traffic laws, signage providing any detour directions will be prominently displayed, vehicle imprints or erosion gullies will be repaired or regraded as necessary.
Municipal Roadways	The use of municipal roadways by construction vehicle traffic may result in some minor damage to roadways during the construction of the Project, given their proximity to the Project location.	Mitigation measures include: designated and appropriate transportation routes will be utilized; construction vehicles will be driven in a proper manner with respect for all traffic laws; roadways will be photographed prior to construction and damage to municipal roadways, above and beyond normal wear and tear, will be repaired as necessary.
Public and Construction Site Safety	Construction of the proposed development poses potential public and construction site safety concerns in the vicinity of the Project location.	Mitigation measures include: public access to the construction area will be prevented through the use of fences, gates, and security procedures; signage will be posted to notify the public of construction in the area; workers will be required to adhere to prescribed safety procedures; proper procedures for construction traffic will be developed, where required.
Waste Management	Construction activities will likely result in the generation of recyclable material, as well as construction and sanitary waste.	Mitigation measures include, construction waste will be properly stored on site prior to disposal off site at local, registered disposal facilities, all sanitary waste is to be contained and hauled off site by a designated hauler throughout the construction period, hazardous wastes will be properly stored in secure containers inside impervious berms or other containment areas until disposal off site at a registered facility, reuse and recycling will be practiced wherever possible.
Land Use	Lands within the Project location will be removed from agricultural production upon Project construction.	Land use could be retained upon completion of the Project.
Protected Properties	No protected properties, as defined in Section 19(1) of O. Reg. 359/09, exist in the vicinity of the Project location.	N/A

Environmental Feature	Anticipated Impact	Proposed Mitigation
Built Heritage and Cultural Heritage Landscapes	No negative effects to built heritage and cultural heritage landscapes are anticipated as no potential impacts to the resources were identified.	N/A
Archaeological Resources	A Stage 1 and 2 Archaeological Assessment was conducted for the Project location. One potentially significant findspot was identified.	Setbacks of 20 m will be in place for the one potentially significant findspot in order to prevent impacts
Spills	Spills of petroleum hydrocarbon materials from vehicles/ equipment operating on site, such as fuel or hydraulic oils, or spills of concrete materials from concrete trucks, could occur during the construction process.	Best management practices shall be implemented, including but not limited to: all refuelling and equipment maintenance activities will be conducted at specified locations; equipment is to be monitored to ensure it is well maintained and free of leaks; spill containment and clean-up supplies are to be maintained on site at all times; spills will be cleaned up immediately and reported accordingly.

4. Conclusion

Weekly inspections will ensure conformance with environmental mitigation measures. Overall, no adverse impact to the environment is anticipated when the mitigation measures are implemented.

Appendix C
Design and Operations
Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Design and Operation Plan Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Ontario Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Design and Operation Plan Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project titled McCann Solar Project (hereinafter referred to as the “Project”). The Project will be located on approximately 40 hectares (ha) of land, on McCann Road in the Township of Rideau Lakes.

The proposed Project will use solar photovoltaic technology to generate electricity. The solar modules will be mounted on fixed steel supports and arranged in the form of 8 arrays, each of 1.25 MW. Electricity generated by solar photovoltaic modules from each array will be converted from direct current (DC) to alternating current (AC) by an inverter, and subsequently stepped up from a medium voltage to 44 kV in order to connect to the nearby distribution line. The interconnection point will be on McCann Road, south of the Project location. The Project will connect to a distribution line that Hydro One will extend approximately 800 m from its current location.

2. Facility Components

Facility components consist of security gate, fencing and lighting, access roads, drainage systems, foundations, trenches for cabling and instrumentation control, structural support and temporary construction staging area. The Project is designed to generate 10 MW (AC) by using eight arrays of photovoltaic modules. Each array has a nominal capacity of 1.25 MW and is comprised of two sub-arrays, each with one inverter with a nominal capacity of 630 kW. The modules, inverters, intermediate transformers, AC switch, main step-up transformer, and the equipment control and monitoring system are the main electrical components of a solar facility.

3. Facility Operation Plan

The Project does not require any permanent on-site operator as it will be operated remotely. For general monitoring and maintenance purposes, two part-time or full-time local personnel may be hired and will be dispatched from a central operations office as needed. Any damage or faults with the PV modules and electrical systems will be alerted to staff remotely and repaired (or replaced) by facility staff or qualified professionals. Access to the site will be limited to Project personnel.

3.1 Maintenance

The weather conditions, such as the quantity and frequency of rain and snow at the Project location will determine the frequency of cleaning. At the very most, it is expected that the modules will require cleaning quarterly, but it is possible cleaning the modules will not be necessary at all. If required, water trucks will bring water to the site to supply the water required. No chemicals would be used for cleaning.

The transformers will be visually inspected on a monthly basis and their status recorded. Any leaks will be repaired immediately. Spill response equipment will be left on site or in the maintenance trucks should leaks be observed.

3.2 Environmental Effects Monitoring Plan

The Project Environmental Effects Monitoring Plan will be implemented through all phases of the Project. The purpose of the plan is to ensure that performance objectives and mitigation measures are working as designed to mitigate negative impacts. As well, it provides additional measures, if primary measures are not functioning. Table 5.2 in the Design and Operations Report provides the details of the proposed monitoring plan to monitor the impacts to the natural and social environments.

3.3 Emergency Response Plan

The Project Emergency Response Plan will be implemented through all phases of the Project. The purpose of the plan is to establish and maintain emergency procedures required for effectively responding to accidents and other emergency situations, and for minimizing associated losses. The Plan provides the emergency response and communications procedures to be used in response to these three potential emergency scenarios (i.e., fire, personal injury and spills).

All Project personnel will be trained in emergency response and communications procedures.

Appendix D
Decommissioning Plan
Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Decommissioning Plan Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Ontario Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Decommissioning Plan Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project titled McCann Solar Project (hereinafter referred to as the “Project”). The Project will be located on approximately 40 hectares (ha) of land, on McCann Road in the Township of Rideau Lakes.

The proposed Project will use solar photovoltaic technology to generate electricity. The solar modules will be mounted on fixed steel supports and arranged in the form of 8 arrays, each of 1.25 MW. Electricity generated by solar photovoltaic modules from each array will be converted from direct current (DC) to alternating current (AC) by an inverter, and subsequently stepped up from a medium voltage to 44 kV in order to connect to the nearby distribution line. The interconnection point will be on McCann Road, south of the Project location. The Project will connect to a distribution line that Hydro One will extend approximately 800 m from its current location.

As required, two scenarios were taken into consideration for the Decommissioning Plan which includes decommissioning after ceasing operation and decommissioning during construction should the Project be cancelled/abandoned during construction. The following provides the activities to be completed for the former scenario. For the latter scenario, the decommissioning activities depend on when the construction has ceased; however, the following provides a complete list of potential decommissioning activities under the latter scenario.

It is anticipated that the Project will have a useful lifetime of at least 20 years, which can be extended with proper maintenance, component replacement and repowering. It is assumed that the Project will be decommissioned after the 20-yr power purchase agreement with the Ontario Power Authority concludes.

2. Decommissioning Activities**2.1 Equipment Dismantling and Removal**

All decommissioning of electrical devices, equipment, and wiring/cabling will be in accordance with local, municipal, provincial and federal agencies standards and guidelines. Any electrical decommissioning will include obtaining the required permits and following lockout/tag out

procedures before de-energizing, isolating, and disconnecting electrical devices, equipment and wiring/cabling.

2.2 Site Restoration

The proposed Project area will be restored to its pre-development state, subject to environmental requirements and the wishes of the landowner. The following will be undertaken:

- any trenches/drains excavated will be filled with suitable materials and leveled
- any roads or embankments will be removed completely, filled with suitable sub-grade material and leveled
- any compacted ground will be tilled, mixed with suitable sub-grade materials and leveled
- any damage to any existing tile drainage system caused by the Project will be repaired/restored
- prepared soil, with all the nutrients required by the crop to grow, will be spread wherever necessary.

2.3 Management of Waste and Excess Materials

All waste and excess materials will be disposed of in accordance with municipal, provincial and federal regulations. Waste that requires disposal will be disposed of in a provincially licensed facility by a provincially licensed hauler. Although hazardous waste is not anticipated on site (with the exception of the aforementioned transformer oil), any hazardous waste will be removed from site and disposed of in accordance with federal, provincial and municipal requirements.

2.4 Emergency Response

The Project Emergency Response Plan will be implemented through all phases of the Project. The purpose of the plan is to establish and maintain emergency procedures required for effectively responding to accidents and other emergency situations, and for minimizing associated losses. The Plan provides the emergency response and communications procedures to be used in response to these three potential emergency scenarios (i.e., fire, personal injury and spills).

All Project personnel will be trained in the emergency response and communications procedures.

3. Restoration of Land Negatively Affected by the Project

Following decommissioning of the Project, if any lands or water features are negatively affected by the Project, Northland is committed to restoring the site as close to its pre-construction state as feasible. This would be subject to environmental requirements and wishes of the landowner.

Appendix E
Natural Heritage
Records Review Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Natural Heritage Records Review Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Records Review Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic Project, titled the McCann Solar Project (hereinafter referred to as the “Project”). The Project location will be on approximately 40 hectares (ha) of land, located south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Natural Heritage Records Review. Records were searched within a minimum distance of 1 km from the Project location and lands within 120 m from Ministry of Natural Resources (MNR), federal government, Rideau Valley Conservation Authority (RVCA), Township of Rideau Lakes, United Counties of Leeds and Grenville and other relevant sources.

2. Results

Key natural features and points of interest identified during the records review include

- Big Rideau Lake is located within 1 km north of the Project location
- five wooded areas are identified as being located on the Project location
- a wooded area is located adjacent to the southern boundary of the Project location
- an unevaluated wetland is located within 120 m southeast of the Project location
- a small fragment of a small, unevaluated wetland is present within 120 m north of the Project location
- there are no nesting sites identified on or within 1 km of the Project location
- there are no wintering areas identified on or within 1 km of the Project location
- there are no ANSIs on or within 1 km of the Project location
- records from the Natural Heritage Information Centre (NHIC) identified an occurrence for Prairie Warbler (*Dendroica discolor*) within 1 km of the Project location

- Kemptville District MNR identified three unevaluated wetland pockets within 120 m of the Project location as well as several woodlands within 120 m of the Project location
- RVCA did not identify any natural heritage features on the Project location. Though several small wetlands within 120 m of the Project location were identified and they identified Big Rideau Lake within 300 m of the Project location
- the Ontario Herpetofaunal Summary Atlas identified several species of reptile and amphibian whose ranges may include with the Project location of which several are species of conservation concern, including: Northern Map (*Graptemys geographica*), Western Chorus Frog (*Pseudacris triseriata*), Milksnake (*Lampropeltis triangulum*), Eastern Ribbonsnake (*Thamnophis sauritus septentrionalis*) and Snapping Turtle (*Chelydra serpentina*)
- in the Ontario Breeding Bird Atlas, several species of conservation concern were identified within the vicinity of the Project location: Cerulean Warbler (*Dendroica cerulean*), Canada Warbler (*Wilsonia canadensis*), Golden-winged Warbler (*Vermivora chrysoptera*), Black Tern (*Chlidonias niger*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), American Kestrel (*Falco sparverius*), Black-billed Cuckoo (*Coccyzus erythrophthalmus*), Belted Kingfisher (*Ceryle alcyon*), Northern Flicker (*Colaptes auratus*), Eastern Wood-Pewee (*Contopus virens*), Eastern Kingbird (*Tyrannus tyrannus*), Bank Swallow (*Riparia riparia*), Brown Thrasher (*Toxostoma rufum*), Eastern Towhee (*Pipilo erythrophthalmus*), Field Sparrow (*Spizella pusilla*), Vesper Sparrow (*Pooecetes gramineus*), Savannah Sparrow (*Passerculus sandwichensis*), Eastern Meadowlark (*Sturnella magna*), Baltimore Oriole (*Icterus galbula*).

3. Conclusions

Table 3.1 summarizes the results of the records review.

Table 3.1 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.
Is the Project in a natural feature?	Yes	There are woodlands identified on the Project location
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.
Is the Project within 120 m of a natural feature that is not an ANSI (earth science)?	Yes	The Project location is located within 120 m of unevaluated wetlands and woodlands.

Therefore, depending on the layout of the proposed Project, some components could potentially be located within 120 m of a natural feature. 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.

Appendix F
Natural Heritage
Site Investigation Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Natural Heritage Site Investigations Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Site Investigations Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project in the Township of Rideau Lakes, titled McCann Solar Project (hereinafter referred to as the “Project”). The Project location will be on approximately 40 hectares (ha) of land, located just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Section 26 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Natural Heritage Site Investigation for the purpose of determining if the information provided in the Natural Heritage Records Review Report is correct and identifies any knowledge gaps, if any additional natural heritage features are present within 120 m of the Project, and if the borders and distance of the natural heritage features from the Project location are correct. To obtain this information a site visit was completed.

2. Results

The Project location is composed predominantly of agricultural lands, predominated by grasses used for cow pasture.

There is a large wooded area north of the Project location, which intrudes into the Project location near the northeast corner. Two other woodlands are found within 120 m south of the Project location. Both of the woodlands to the north and south were determined to be forests providing a high diversity of habitats. There are wetlands identified on and within 120 m of the Project location. A candidate significant seasonal concentration habitat, namely raptor winter roosting and foraging areas is present on or within 120 m of the Project location. As well, candidate significant specialized habitat for the Red-breasted Nuthatch and Black-and-white Warbler is present on or within 120 m of the Project location. Animal movement corridors are found to be present within the woodlands, hedgerows and the Tributary of Big Rideau Lake. The Project location has candidate significant wildlife habitat for Milksnake, Western Chorus Frog, Eastern Ribbon Snake, Northern Map Turtle, Snapping Turtle and Cerulean Warbler, all species of conservation concern which will be considered during the evaluation of significance.

3. Conclusions

There are natural features present within the vicinity of the Project location that will require an Evaluation of Significance in order to determine whether Environmental Impact Studies (EIS) are required. These are

- wildlife habitat of the Project area, specifically
 - ◆ raptor winter roosting and feeding areas
 - ◆ forest providing a high diversity of habitats
 - ◆ habitat for area-sensitive species (Red-breasted Nuthatch, Black-and-white Warbler)
 - ◆ habitat for species of conservation concern (including Milksnake, Eastern Ribbonsnake, Northern Map Turtle, Snapping Turtle, Cerulean Warbler and Western Chorus Frog)
 - ◆ woodlands, hedgerows and watercourses on and within 120 m of the Project location as animal movement corridors
- woodlands on and within 120 m of the Project location
- wetlands on and within 120 m of the Project location.

Therefore, some components will be located within 120 m of a natural feature. As per Section 27 of the REA Regulation, an Evaluation of Significance is required for wildlife habitat, woodlands and wetlands found on or within 120 m of the Project location.

Appendix G
Natural Heritage
Evaluation of Significance
Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Natural Heritage Evaluation of Significance****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Evaluation of Significance for the McCann Solar Project

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project in the Township of Rideau Lakes, titled McCann Solar Project (hereinafter referred to as the “Project”). The Project will be located on approximately 40 hectares (ha) of land, just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Section 24 of the REA Regulation requires proponents of Class 3 solar projects to undertake an Evaluation of Significance for each natural heritage feature identified in the records review and site investigations reports within 120 m of the Project. These reports identified the need to complete an Evaluation of Significance for

- wildlife habitat of the Project area, specifically
 - ◆ raptor winter roosting and feeding areas
 - ◆ forest providing a high diversity of habitats
 - ◆ habitat for area-sensitive species (Red-breasted Nuthatch, Black-and-white Warbler)
 - ◆ habitat for species of conservation concern (including Milksnake, Eastern Ribbonsnake, Northern Map Turtle, Snapping Turtle, Cerulean Warbler and Western Chorus Frog)
 - ◆ woodlands, hedgerows and watercourses on and within 120 m of the Project location as animal movement corridors
- woodlands on and within 120 m of the Project location
- wetlands on and within 120 m of the Project location

2. Results**2.1 Wildlife Habitat**

Five types of candidate significant wildlife habitats were identified during the site investigation:

- raptor winter roosting and feeding areas
- forest providing a high diversity of habitats
- habitat for area-sensitive species (Red-breasted Nuthatch, Black-and-white Warbler)
- habitat for species of conservation concern (including Milksnake, Eastern Ribbonsnake, Northern Map Turtle, Snapping Turtle, Cerulean Warbler and Western Chorus Frog)
- woodlands, hedgerows and watercourses on and within 120 m of the Project location as animal movement corridors.

Raptor Winter Roosting and Feeding Areas

Based on the low relative importance of this site, the abundance of this habitat type within the region, these areas are not considered to be a significant raptor winter feeding and roosting area.

Forest Providing a High Diversity of Habitats

As several of the criteria have been met, such as the forests being large (greater than 100 ha) and the presence of waterbodies and wetlands, this habitat type within both woodland communities is considered to be significant.

Habitat for Red-breasted Nuthatch/Black-and-White Warbler, Area-Sensitive Species

As several of the criteria are met including an amount of interior forest and having a low degree of disturbance, this habitat type within both woodlands is considered significant wildlife habitat.

Habitat for Milksnake, a Species of Conservation Concern

Given that Milksnake are habitat generalists, the entire Project location was considered to be suitable habitat for Milksnake. Milksnake are identified as a species of Special Concern on the ESA, and therefore though use is unconfirmed, the area is treated as significant wildlife habitat.

Habitat for Eastern Ribbonsnake/Northern Map Turtle/Snapping Turtle/Western Chorus Frog, Species of Conservation Concern

Potential habitat was identified within the Tributary of Big Rideau (except Western Chorus Frog) and on-line wetland communities within 120 m east of the Project location. While use of the area was unconfirmed and the size of the population is uncertain, the wetland areas and the Tributary of Big Rideau Lakes are identified as significant wildlife habitat.

Animal Movement Corridor

Significant animal movement corridors include the woodland located to the north of the Project location, woodland located to the south of the Project location and the Tributary of Big Rideau Lake. While the hedgerow was not considered a significant animal movement corridor.

2.2 Woodlands

The woodland located adjacent to the northern boundary of the Project location is significant as it met the criteria for forest interior and linkage.

The woodland located within 120 m of the southern boundary of the Project location opposite McCann Road was identified as significant by MNR (2010b), and it is considered significant as it meets the requirements for proximity to watercourse, woodland size, linkage, and interior forest habitat.

The Red Pine Plantation is not considered significant.

2.3 Wetland

Natural Resources Solutions Inc. (NRSI) completed the wetland evaluations on the unevaluated wetlands on and within 120 m of the Project location. The majority of wetland communities within 120 m of the Project location are treated as a Provincially Significant Wetland, and an Environmental Impact Study will be required. Some smaller wetland pockets were identified that were determined to not be provincially significant.

3. Conclusions

Table 3.1 summarizes the results of the Evaluation of Significance Report.

Table 3.1 Significant Natural Features on and within 120 m of the Project Location

Natural Feature		Project Location	Adjacent Lands (within 120 m)
SIGNIFICANT	Valleylands	No	No
	Woodlands	Yes	Yes
	Wildlife Habitat	Yes	Yes
PROVINCIALY SIGNIFICANT	Wetland	No	Treated as Provincially Significant
	Earth Science ANSI	No	No
	Life Science ANSI	No	No

Therefore, of the natural heritage features evaluated, woodlands, wetlands and the significant wildlife habitat features will require an Environmental Impact Study as per Section 38 of the REA Regulation.

Appendix H
Natural Heritage
Environmental Impact
Study Summary

**Northland Power Inc.
McCann Solar Project**

Summary

Natural Heritage Environmental Impact Study

1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Environmental Impact Study for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project in the Township of Rideau Lakes, titled McCann Solar Project (hereinafter referred to as the “Project”). The Project will be located on approximately 40 hectares (ha) of land, just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Section 38 of the REA Regulation requires proponents of Class 3 solar projects to complete an Environmental Impact Study (EIS) for all significant natural heritage features determined to be within a specified setback in order to obtain a REA. The EIS is required in order to determine (i) any potential negative environmental effects on the natural features (ii) identify mitigation measures (iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects and (iv) describe how the Construction Plan Report addresses any negative environmental effects. Woodlands, wetlands and wildlife habitat on and within 120 m of the Project location were identified as significant and therefore an EIS was completed. It has been determined that there are no significant environmental effects to these features as a result of the Project.

2. Results

The results of the EIS on the significant natural features are summarized in Table 2.1.

Table 2.1 Summary of Potential Negative Environmental Effects and Proposed Mitigation

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
Vegetation Communities/Wildlife Habitat		
Construction	Removal of vegetation due to direct encroachment on the natural feature, in the northern woodland and Milksnake general use habitat.	The amount of vegetation removed (less than 1 ha) will represent less than 1% of the total woodland area, based on the size of the cleared area and the overall woodland size. Woody debris associated with clearing activities will be placed around the perimeter

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
		<p>of the existing forest, outside of the fence to provide wildlife feeding habitat, as well as cover for wildlife species, such as snakes.</p> <p>Opposite the northwestern corner of the Project location, a wildlife habitat enhancement program will be undertaken within the 4.5 ha of land present in this area. This will include planting of hedgerows of poplar, red oak, and white ash along the edge of the area, with a light scattering of plantings of ash and oak throughout the area. This will enhance the raptor winter feeding and roosting potential of this area, along with overall wildlife functions.</p> <p>Similar to the above, a hedgerow of poplar, red oak, and white ash will be planted along the Northern edge of the site to recreate raptor perch habitats in this area.</p> <p>The loss of the Milksnake habitat will be temporary (only during construction).</p>
Construction/ Decommissioning	Heavy dust may impact photosynthesis due to fugitive dust generation.	Use of dust suppressant, phased construction and decommissioning, stockpiles to be stabilized and/or covered, avoid earthworks during windy days.
Construction	Increase in surface water runoff rate and alter surface water pattern and therefore effect vegetation due to land grading and ditching, soil compaction, and vegetation removal.	Minor grading will occur and take into consideration current land grade to replicate present storm water flow pattern. Discing or other soil loosening methods will be used on compacted areas. Long-term ground cover will be planted.
Operations	Placement of solar panels on Milksnake habitat.	Presence of Project components on Milksnake habitat is not expected to impact Milksnake as they are a habitat generalist and are commonly found around man-made structures.
Operations	Alterations to surface water runoff and therefore vegetation communities due to changes in grading and ditching, impervious or less pervious surfaces and changes in vegetation.	Minor grading will occur and take into consideration current land grade to replicate present stormwater flow pattern. Long-term ground cover will be planted. Impervious and less pervious soils drain into ditches or localized areas; therefore no appreciable impact to local drainage patterns.
Decommissioning	Alterations to surface water runoff due to changes in grading and changes in vegetation.	All infrastructure will be removed, including access roads and drainage ditches, thereby bringing the site back to pre-construction conditions.

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
Wildlife Communities		
Construction/ Decommissioning	Auditory and visual disturbance of local wildlife populations may result in a short-term reduction of resident populations.	Due to existing disturbances, it is not anticipated that wildlife disturbance will be significant; therefore, no mitigation required.

Table 5.1 in the EIS summarizes the proposed monitoring plan.

As discussed in the Design and Operations Report, environmental effects monitoring is proposed with respect to any negative environmental effects that may result from engaging in the Project. The monitoring plan in the Design and Operations Report identifies: performance objectives with respect to the negative environmental effects; mitigation measures to assist in achieving the performance objectives; and, a program for monitoring negative environmental effects for the duration of the time the Project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.

In addition, the Construction Plan Report details the construction and installation activities, location and timing of construction and installation activities, any negative environmental effects that result from construction activities within 300 m of the Project and mitigation measures for the identified negative environmental effects.

3. Conclusions

The EIS has been prepared to identify potential negative environmental effects that all phases of the Project may have on the woodlands, wetlands and wildlife habitat. Potential negative effects are associated with

- alterations to vegetation communities/wildlife habitat as a result of
 - ◆ direct encroachment on the features
 - ◆ fugitive dust generation
 - ◆ changes to surface water runoff
- disturbance of wildlife communities as a result of Project activities.

Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency in the event that they do occur to an acceptable level.

Appendix I
Water Body
Records Review Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Water Body Records Review Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Records Review Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project in the Township of Rideau Lakes, titled the McCann Solar Project (hereinafter referred to as the “Project”). The Project site will be located on approximately 40 hectares (ha) of land, just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Section 30 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Water Body Records Review. The focus of the assessment was on identifying whether or not the Project was located within or adjacent to any of the specified water features (e.g., within 120 m of the average annual high water mark of a permanent or intermittent stream). Records were searched from the Ministry of Natural Resources (MNR), Ontario Ministry of Agriculture, Food and Rural Affairs, federal government, Rideau Valley Conservation Authority (RVCA), Township of Rideau Lakes, United Counties of Leeds and Grenville and other relevant sources.

2. Results

Key water body features and points of interest identified during the records review include the following:

- One unnamed watercourse, which is a tributary of Big Rideau Lake. The unnamed watercourse enters the area adjacent to the Project site in the east and drains into a small pond that is to the north of the Project site
- A small pond is located within 120 m of the Project site
- MNR indicated that there are a number of small watercourses in proximity to the site, although no mapping was provided to identify the location of these watercourses.
- Big Rideau Lake is within 300 m of the Project site is identified as a designated Lake Trout Lake by the MNR.
- Species at Risk Distribution Map does show the Project site and the identified watercourse as having Species of Special Concern.

- Mapping from the RVCA identified the unnamed tributary of Big Rideau Lake running adjacent to the Project area as a permanent stream.

3. Conclusions

Table 3.1 summarizes the results of the records review.

Table 3.1 Summary of Records Review Determinations

Determination to be Made	Yes/No	Description
Is the Project in a water body?	No	The Project will not be in a water body.
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?	No	There are no lakes within 120 m of the Project site.
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?	Yes	Big Rideau Lake is located < 300 m from the Project site.
Is the Project within 120 m of the average annual high water mark of a permanent or intermittent stream?	Yes	There is one water course within 120 m of the Project site.
Is the Project within 120 m of a seepage area?	No	No seepage areas are present within the Project area.

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 area, (iv) confirm the boundaries of any water feature within 120 m of the Project and (v) determine the distance from the Project to the water boundary.

Appendix J

Water Body Site Investigation Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Water Body Site Investigations Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Site Investigations Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project in the Township of Rideau Lakes, titled the McCann Solar Project (hereinafter referred to as the “Project”). The Project site will be located on approximately 40 hectares (ha) of land, located just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Section 31 of the REA Regulation requires proponents of Class 3 solar projects to undertake a water site investigation for the purpose of determining if the information provided in the Water Body Records Review Report is correct and identifies any knowledge gaps, if any additional waterbodies are present on or within 120 m of the Project site, and if the borders and distance of the waterbodies from the Project site are correct. A site visit was completed to obtain this information.

2. Results

Four waterbodies were identified on and within 120 m of the Project site.

Unnamed Tributary of Big Rideau Lake

- Originates southeast of the Project site.
- Enters a swampy woodland, which it flows through past the Project site (outside the Project area but within 120 m of the boundary).
- Flows into Hudson’s Bay on Big Rideau Lake, approximately 400 m downstream from the Project site.
- Adjacent to the southwestern corner of the Project site, the watercourse flows through wide, low-lying marshy wetland.
- The tributary crosses through a culvert beneath McCann Road.
- Enters a narrow naturally vegetated corridor that flows between two open agricultural fields adjacent to the Project site.
- Environmental Impact Study (EIS) is required to assess the potential for adverse effects of the Project and mitigation measures necessary to prevent or minimize these effects.

Watercourse A

- Drainage tributary originating on the Project site and flowing for approximately 500 m before draining into the tributary of Big Rideau Lake.
- Runs on the Project site for approximately 200 m.
- Flows through a narrow naturally vegetated corridor, surrounding by grassed fields used as cow pastures.
- May provide seasonal aquatic habitat for fish residing within the tributary of Big Rideau Lake, although it appears to be intermittent and would not provide direct habitat on a year-round basis.
- Site investigation confirmed that Watercourse A is an intermittent watercourse, therefore, an EIS will be required to assess potential adverse effects and required mitigation and monitoring measures to protect this water body.

Watercourse B

- Arises in the scrublands located approximately 300 m west of the Project boundary.
- Flows in a northeasterly direction for approximately 1.1 km before draining into Big Rideau Lake approximately 200 m north of the Project site.
- Watercourse runs through the Project site for approximately 400 m.
- Site investigation has confirmed that Watercourse B appears to be an intermittent watercourse, therefore, an EIS will be required to assess potential adverse effects and required mitigation and monitoring measures to protect this water body.

On-line Pond

- Pond is approximately 50 m long and 20 m wide and consists of relatively stagnant water with abundant algae.
- Outflow from the pond enters the Project site in a poorly defined channel that flows through a low lying meadow area.
- Pond connects to Watercourse B.

3. Conclusions

Based on the results of the site investigation discussed above, the Water Body Records Review would be changed to indicate that the presence of two additional watercourses on the Project site (Watercourses A and B) were not identified during the Water Body Records Review (Hatch Ltd., 2010).

Based on the results of the site investigation and the proposed Project components and boundaries, an EIS will be required.

Appendix K
Water Body
Environmental Impact Study
Summary

**Northland Power Inc.
McCann Solar Project****Summary****Waterbodies Environmental Impact Study****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Waterbodies Environmental Impact Study for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project in the Township of Rideau Lakes, titled the McCann Solar Project (hereinafter referred to as the “Project”). The Project site will be located on approximately 40 hectares (ha) of land, just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Sections 39 and 40 of the REA Regulation require proponents of Class 3 solar projects to complete an Environmental Impact Study (EIS) for all waterbodies determined to be within a specified setback in order to obtain a REA. The EIS is required in order to determine (i) any potential negative environmental effects on the natural features (ii) identify mitigation measures, (iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects, and (iv) describe how the Construction Plan Report addresses any negative environmental effects.

This EIS was completed on the unnamed tributary of Big Rideau Lake, Watercourse A and Watercourse B which are waterbodies located on and within 120 m of the Project site. It has been determined that there are no significant environmental effects the watercourses on or within 120 m of the Project site.

2. Results

The results of the EIS on the waterbodies are summarized in Table 2.1.

Table 2.1 Summary of Potential Negative Environmental Effects and Proposed Mitigation

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
Surface Water Runoff		
Construction	Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving waterbodies due to land grading and ditching, soil compaction, and vegetation removal.	Install flow dissipation measures near the 30 m setback from the waterbodies. Ditches will be vegetated with appropriate grass species to aid in flow dissipation and water uptake. Enhanced vegetation swales will be used in roadside ditches to promote ponding in order to decrease turbidity and increase water retention. Vegetated filter strips will be used where runoff enters agricultural lands or where the ditches discharge in close proximity to watercourses. Discing or other soil loosening methods will be used on compacted areas. Long-term ground cover will be planted.
Operations	Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving waterbodies due to land grading and ditching, impervious and less pervious soils, and changes in vegetation.	Minor grading will occur and take into consideration current land grade to replicate present storm water flow patterns. Long-term ground cover will be planted. Impervious and less pervious soils will allow runoff into ditches or localize points and discharge into vegetation to allow flow dissipation; therefore no appreciable impact to local drainage patterns.
Decommissioning	Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving waterbodies if land grading and ditching are left in place after decommissioning.	All infrastructure will be removed, including access roads and drainage ditches, thereby bringing the site back to pre-construction conditions.
Surface Water Quality		
Construction	Increase soil erosion and sedimentation may cause an increased in turbidity in the receiving waterbodies due to land grading and ditching, soil compaction, and vegetation removal.	Erosion and Sediment Control plan to be created and implemented. Examples of key components of the plan are: minimize size of cleared and disturbed areas, phase construction to minimize time of exposed soils, adequate supply of erosion and sediment control, divert runoff through vegetated areas, install flow velocity control measures in drainage ditches, revegetate and stabilize exposed soils, grade stockpiles to stable angle, stockpiles placed in suitable areas away from the receiving water body.
Construction	Increase in soil erosion and sedimentation due to construction of access road and water crossing.	Construction will be in accordance with the <i>Environmental Guidelines for Access Roads and Water Crossings</i> (MNR, 1990) and sediment and erosion controls will be installed per the guidance in the <i>Erosion & Sediment Control Guideline for Urban Construction</i> (GGHACA, 2006). Sediment

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
		and erosion controls to be in place prior, during and following construction. Culvert installation will occur in dry conditions behind instream cofferdams. Access roads will be aligned 90 degrees to watercourse. Culvert installation during low flow periods. Limited heavy machinery use on the streambed. Stabilize and revegetate exposed areas as soon as possible. Riprap should be placed on the upstream and downstream fill slope around the culvert inlet to prevent erosion of fill.
Construction/ Decommissioning	Heavy dust may impact surface water quality.	Use of dust suppressant, phased construction and decommissioning, stockpiles to be stabilized and/or covered, hard surfaces for access roads, and avoid earthworks during windy days.
Construction/ Operations/ Decommissioning	Accidental spills contaminating surface water.	Fuelling stations and hazardous materials storage to be located outside of the 1:100-yr flooding hazard. Emergency spill kit on site at all times and the spill kit will have adequate materials/equipment for spill response. Machinery arriving on site to be clean and free of leaks. Contractor to have spill response procedure and all workers will be properly trained on the procedure. No cement products to be placed into any watercourse. Concrete truck rinsing station at least 120 m away from any known watercourse. Cement storage to be raised and placed in a waterproof shelter.
Operations	Increase soil erosion and sedimentation may cause an increased in turbidity in the receiving waterbodies due to land grading and ditching, and changes in vegetation.	Stormwater flow patterns will be replicated. Long-term ground cover will be planted. Impervious and less pervious soils will allow runoff into ditches or localize points and discharge into vegetation to allow flow dissipation; therefore no appreciable impact to local drainage patterns.
Decommissioning	Increase soil erosion and sedimentation may cause an increased in turbidity in the receiving waterbodies due to land grading and ditching, and changes in vegetation.	All infrastructure will be removed, including access roads and drainage ditches, thereby bringing the site back to pre-construction conditions. It is assumed that a re-instatement of row crops will occur.
Aquatic Biota and Habitat		
Construction	Impacts to aquatic biota and habitat due to installation of overhead transmission line (if required).	Install overhead line when the water body is frozen if possible. Install overhead lines perpendicular to the water body to minimize length of disruption. Prevent or minimize vegetation removal. No fording. No machinery will operate on the banks of the annual high water mark. Sediment and erosion controls will be in place prior to

Project Phase	Potential Negative Environmental Effect	Proposed Mitigation Measure
		work commencing. Revegetate disturbed areas as soon as possible.
Construction	Impacts to aquatic biota and habitat due upgrading of existing water crossing requiring in-water work.	Water crossing upgrading will occur outside the warm water timing restriction (March 15 and June 30). Prior to dewatering (if necessary) fish will be electrofished and moved. Pump will be shrouded. Disturbed banks of the creek will be revegetated and protected with erosion control matting.
Construction/ Operation/ Decommissioning	Indirect effects to aquatic biota and habitat due to changes in surface water quality, surface water runoff rate and groundwater.	Proposed mitigation for surface water quality, surface water runoff and groundwater, as above, is anticipated to be sufficient.
Groundwater		
Construction	Recharge or seepage areas may be impacted by altered surface water runoff or excavations.	The amount and duration of dewatering for excavations will be minimized to the extent possible.
Construction/ Operations/ Decommissioning	Groundwater contamination due to accidental spills.	See mitigation measures above for accidental spills contaminating surface water.

Table 5.1 in the EIS summarizes the proposed monitoring plan.

As discussed in the Design and Operations Report, environmental effects monitoring is proposed in respect of any negative environmental effects that may result from engaging in the Project. The monitoring plan in the Design and Operations Report identifies: performance objectives in respect of the negative environmental effects; mitigation measures to assist in achieving the performance objectives; and, a program for monitoring negative environmental effects for the duration of the time the Project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.

In addition, the Construction Plan Report for the Project details the construction and installation activities, location and timing of construction and installation activities, any negative environmental effects that result from construction activities within 300 m of the Project and mitigation measures for the identified negative environmental effects.

3. Conclusions

The EIS has been prepared to identify potential negative environmental effects that all phases of the Project may have on waterbodies. Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency in the event that they do occur. The primary mitigation measure that will prevent adverse effects on the waterbodies is adherence to the 30-m setback requirement. Certain construction activities may have short-term minor impacts, but these would be temporary in nature. Operational activities are not anticipated to impact the waterbodies as the Project will be operated remotely and maintenance is only expected to occur periodically throughout the year. Decommissioning activities will be similar to construction activities and as such they may cause short-term minor impacts yet once the Project site has been restored to its previous condition no long-term impacts are anticipated.

Overall, while the Project will result in some changes to the natural environment, no negative effects on the waterbodies are anticipated to occur following implementation of the mitigation and monitoring measures proposed.

Appendix L
Stage 1 and 2
Archaeological Assessment Report
Summary

**Northland Power Inc.
McCann Solar Project****Summary****Stage 1 and 2 Archaeological Assessment Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Archaeological Assessment Report, prepared by Archaeological Research Associates Ltd for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project in the Township of Rideau Lakes, titled the McCann Solar Project (hereinafter referred to as the “Project”). The Project site will be located on approximately 40 hectares (ha) of land, located just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

Section 22 of the REA Regulation requires proponents of Class 3 solar projects to undertake an Archaeological Assessment where there is a concern that an undertaking could impact archaeological resources. The Ministry of Tourism and Culture must review and accept the Archaeological Assessment Report and provide an acceptance letter that will become part of the application for a REA. The purpose of the present assessment was to confirm the presence or absence of significant archaeological resources that could represent potential constraints for the proposed McCann Solar Generation Facility. The assessment included a Stage 1 background study of past archaeological investigations and known archaeological sites within a 2 km radius of the McCann Solar Project site. It also included a systematic 5-m interval Stage 2 archaeological survey of all of the Leased Lands in the property.

2. Results

The background study determined that no previous archaeological fieldwork or discoveries had been documented within the McCann Solar Project site or in close proximity to it and no archaeological sites had been registered or otherwise recorded within a 2 km radius of the property. Research indicated a high potential for the presence of both pre-Contact and Historic-era sites in the study area. The survey resulted in the discovery of four findspots (two pre-Contact and two Historic-era). Of the four findspots, only one is considered potentially significant archaeological resources.

3. Conclusions

The office of the Ministry of Tourism and Culture has reviewed the Archaeological Assessment Report in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18, and accepted its findings. One findspot is considered potentially provincially significant and does warrant protection, accomplished through buffering and avoidance.

Appendix M

Noise Assessment Report Summary

**Northland Power Inc.
McCann Solar Project****Summary****Noise Assessment Report****1. Introduction**

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Noise Assessment Report for the McCann Solar Project.

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project titled McCann Solar Project (hereinafter referred to as the “Project”). The Project will be located on approximately 40 hectares (ha) of land, on McCann Road in the Township of Rideau Lakes. Northland has retained Hatch Ltd. (Hatch) to prepare a Noise Assessment Study for the Project.

This Noise Assessment Report has been prepared based on the document entitled “Basic Comprehensive Certificates of Approval (Air) – User Guide” by the Ontario Ministry of the Environment (MOE). The sound pressure levels at the points of reception (POR) have been estimated using ISO 9613-2, implemented in the CADNA-A computer code. The performance limits used for verification of compliance correspond to the values for rural areas (45 dBA for day time, 40 dBA for night time). The results presented in this report are based on the best available information at this time. It is the intention that, in the detailed engineering phase of the project, certified noise data based on final plans and designs will confirm the conclusions of this noise study.

2. Results

- The main sources of noise from the Project will be the step-up transformer, located at the substation, and eight inverter clusters which also include medium-voltage transformers.
- Presently inverters for the Project consist of the Sunny Central SC1250MV unit which comprises two 630HE inverters (630 kW), contained in an e-house or enclosure. The main sources of noise are the cooling/ventilation fans for the inverters, the electrical components on the inverters and the medium-voltage transformer.
- The Points of Reception (POR) used in this study have been taken from the Ontario Base Map for the surrounding area. Some additional receptors (residential buildings) were added based on satellite imagery from Google Earth Pro (2002). The total number of POR within a 1-km radius from the substation is 29.
- The sound pressure levels at the POR were predicted using procedures from ISO 9613-2, which is a widely used standard for evaluation of noise impact in environmental assessments. The

sound power levels were estimated from the National Electrical Manufacturers Association standards (NEMA) for the substation transformer.

3. Conclusion

Based on the results obtained in this study, we believe that the sound pressure levels at POR will not exceed MOE requirements for rural areas. Any noise issues that might arise during commissioning will be manageable and can be resolved by implementing typical remediation measures as described in this report. It is our intention to verify by field measurements taken on completion of installation and during commissioning that the noise levels at the POR are within the limits set by the MOE.

Appendix N

Protected Properties and Heritage Resource Information

Project Report

April 11, 2011

**Northland Power Inc.
McCann Solar Project**

Protected Properties and Heritage Resources

Table of Contents

1. Introduction 3

 1.1 Project Description 3

 1.2 REA Legislative Requirements 3

2. Protected Properties 3

3. Heritage Assessment 3

4. Conclusion 3

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1. Introduction

1.1 Project Description

Northland Power Solar McCann L.P. (hereinafter referred to as “Northland”) is proposing to develop a 10-megawatt (MW) solar photovoltaic project titled McCann Solar Project (hereinafter referred to as the “Project”). The Project site will be located on approximately 40 hectares (ha) of land, just south of Big Rideau Lake in the Township of Rideau Lakes, within the United Counties of Leeds and Grenville.

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. As 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 do require an REA.

Section 19 of the REA Regulation requires proponents of Class 3 solar projects to determine whether the project location is on a property described in Column 1 of the Table to Section 19. Table 1.1 has been prepared to meet this requirement.

Section 23 of the REA requires that proponents of Class 3 solar projects, as a result of the consideration mentioned in Subsection 20, determine whether engaging in the renewable energy project may have an impact on a heritage resource described in Subsection 20 (1). Table 1.2: *The Ministry of Culture – Check Sheet for Environmental Assessments: Screening for Impacts to Built Heritage and Cultural Heritage Landscapes* has been completed to address the requirements described in Section 23.

2. Protected Properties

As discussed in Section 1.2, Table 1.1 has been prepared to address Section 19 of the REA Regulation.

3. Heritage Assessment

As discussed in Section 1.2, Table 1.2 has been prepared to address Section 23 of the REA Regulation.

4. Conclusion

Based on the information presented in Table 1.1 the proposed Project is not located on a Protected Property as described in Column 1 of the Table to section 19. In addition, research and agency consultation undertaken as described within Table 1.2 has not identified the need for a heritage impact assessment under Section 23 of the REA Regulation.

**Table 1.1: Protected Properties Table
Under the Renewable Energy Approval: O. Reg. 359/09 Section 19**

19. (1) A person who proposes to engage in a renewable energy project shall determine whether the project location is on a property described in Column 1 of the Table to this Section.

Property: Northland Power Solar McCann

Address: Longitude and Latitude Coordinates: 44.684724, -76.273037

Township and County: Township of Rideau Lakes within the United Counties of Leeds and Grenville

Item	Description of Property	Reference
1	A property that is subject of an agreement, covenant or easement entered into under clause 10(1)(b) of the <i>Ontario Heritage Act</i> .	See MCL Check Sheet Step 2, Item 4. The property is not designated under clause 10(1)(b) of the <i>Ontario Heritage Act</i> .
2	A property in respect of which a notice of intention to designate the property to be of cultural heritage value or interest has been given in accordance with section 29 of the <i>Ontario Heritage Act</i> .	Consultation with the municipality, as per MCL Check Sheet Step 2, Item 8 has not determined that a notice of intention to designate has been given. In addition, The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
3	A property designated by a municipal by-law made under section 29 of the <i>Ontario Heritage Act</i> as a property of cultural heritage value or interest.	Consultation with the municipality, as per MCL Check Sheet Step 2, Item 8 has not determined that the Project is located on a property designated by a municipal by-law. In addition, The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
4	A property designated by order of the Minister of Culture made under section 34.5 of the <i>Ontario Heritage Act</i> as a property of cultural heritage value or interest of provincial significance.	The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
5	A property in respect of which a notice of intention to designate the property as property of cultural heritage value or interest of provincial significance has been given in accordance with section 34.6 of the <i>Ontario Heritage Act</i> .	The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
6	A property that is subject of an easement or a covenant entered into under section 37 of the <i>Ontario Heritage Act</i> .	The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.

Item	Description of Property	Reference
7	A property that is part of an area designated by a municipal by-law made under section 41 of the <i>Ontario Heritage Act</i> as a heritage conservation district.	The MCL Ontario Heritage Properties Database includes properties designated under Part V of the <i>Ontario Heritage Act</i> . The Project is not proposed to be located on or adjacent to such a property.
8	A property designated as a historic site under Regulation 880 of the Revised Regulations of Ontario, 1990 (Historic Sites) made under the <i>Ontario Heritage Act</i> .	The property is not designated a historic site under Regulation 880.

**Table 1.2: Ministry of Tourism and Culture – Check Sheet for Environmental Assessments
Screening for Impacts to Built Heritage and Cultural Heritage Landscapes**

This checklist will help identify potential cultural heritage resources, determine how important they are and indicate whether a cultural heritage impact assessment is needed.

Property: Northland Power Solar McCann

Address: Longitude and Latitude Coordinates: 44.684724, -76.273037

Township and County: Township of Rideau Lakes within the United Counties of Leeds and Grenville

Step 1 – Screening Potential Resources			
		Built Heritage Resources	Reference
Yes	No	Does the property contain any built structures, such as:	The following resources were assessed using Google Earth 5.1.3535.3218 on May 26, 2010. There are no buildings on the site, but there are several buildings just south of the site. The site for this project appears to be on land cultivated for agricultural use.
	√	Residential structures (e.g. house, apartment building, trap line shelter)	
	√	Agriculture (e.g. barns, outbuildings, silos, windmills)	
	√	Industrial (e.g. factories, complexes)	
	√	Engineering works (e.g. bridges, roads, water/sewer systems)	
Cultural Heritage Landscapes			
Yes	No	Does the property contain landscapes such as:	
	√	Burial sites and/or cemeteries	
	√	Parks	
	√	Quarries or mining operations	
	√	Canals	
√		Other human-made alterations to the natural landscape	Land appears to be cultivated for agricultural use in the past.

Step 2 – Screening Potential Significance			
Yes	No	A property's heritage significance may be identified through the following:	Reference
	√	1. Is it designated or adjacent to a property designated under the Ontario Heritage Act?	According to the Ontario Heritage Properties Database, there are no properties designated under the Ontario Heritage act on or adjacent to the site. The Rideau Lakes Township contains 25 heritage sites, but none are located in the vicinity of the site. (Website search: 26May10)
	√	2. Is it listed on the municipal heritage register or provincial register (e.g. Ontario Heritage Bridge List)?	As above.
	√	3. Is it within or adjacent to a Heritage Conservation District?	None of Ontario's Heritage Conservation Districts are located within the Municipality according to the MCL's current list. (Research completed 26May10 http://www.culture.gov.on.ca/english/heritage/conservation/conservation_list.htm)
	√	4. Does it have an Ontario Heritage Trust easement or is it adjacent to such a property?	According to the Ontario Heritage Trust website (www.heritagefdn.on.ca) no easement properties are located in the vicinity of the property. In addition, the Ontario Heritage Properties Database did not reveal any easement properties. (Research completed 26May10)
	√	5. Is there a provincial or federal plaque?	There are no provincial plaques located in the vicinity of the Project location (Research completed 26May10 http://www.ontarioplaques.com/index.html). Federal plaques appear at National Historical Sites of Canada, none of which exist within the vicinity of the Project (See Item 6 below).
	√	6. Is it a National Historic Site?	National Historic Sites are included within the Ontario Heritage Properties Database (Research completed 26 May10) In addition, no sites within the vicinity of the Project are listed on the Canadian Register of Historic Places (Research completed 26May10 www.historicplaces.ca).
	√	7. Does documentation exist to suggest built heritage or cultural heritage landscape potential? (e.g. research studies, heritage impact assessment reports, etc.)	No such documentation was uncovered.
√		8. Was the municipality contacted regarding potential cultural heritage value?	Doug Bond Chair of the Rideau Lakes Township MHAC was contacted on May 26, 2010. As of May 31 st , 2010 there are no heritage structures on the site or within the 300m perimeter of the site.
		Were any concerns expressed?	N/A
	√	9. What are the dates of construction?	N/A
	√	Are the buildings and/or structures over 40 years old?	There are no buildings or structures on the property.
√		Is it within a Canadian Heritage River watershed?	The site is located within the watershed of the Rideau Waterway which is considered a Canadian Heritage River. Consultation with Parks Canada has determined that the Project will not have an impact on the Rideau Waterway. The location was confirmed to be within the boundary of the Rideau Valley conservation authority.

	√	10. Is a renowned architect or builder associated with the property?	N/A
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Note: If you answer “yes” to any of the questions in Step 2, a heritage impact assessment is required.

Step 3 – Screening for Potential Impacts			
Yes	No		Reference
	✓	Destruction of any, or part of any, significant heritage attribute or feature.	
	✓	Alteration that is not sympathetic, or is incompatible, with the historic fabric or appearance.	
	✓	Shadows created that alter the appearance of a heritage attribute or change the visibility of a natural feature or plantings, such as a garden.	
	✓	Isolation of a heritage attribute from its surrounding environment, context or a significant relationship.	
	✓	Direct or indirect obstruction of significant views or vistas from, within, or to a built and natural feature.	
	✓	A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces.	
	✓	Land disturbances such as a change in grade that alters soils and drainage patterns that adversely affect an archaeological resource.	

Contents of a Heritage Impact Assessment

As a minimum, the following should be included in a heritage impact assessment:

1. Historical research, site analysis and evaluation
2. Identification of the significance and heritage attributes of the property
3. Description of the proposed development/ site alteration
4. Measurement of impacts
5. Consideration of alternatives, mitigation and conservation methods
6. Implementation and monitoring schedules
7. Summary statement and conservation recommendations

For more information, refer to Ministry of *Culture Info Sheet#5: Heritage Impact Assessments and Conservation Plans* as part of the Ontario Heritage Tool Kit, which is available on the Ministry's website www.culture.gov.on.ca.

Appendix O

**Letter of Confirmation –
Ontario Ministry of Natural Resources**

**Ministry of Natural
Resources**

Kemptville District

10 Campus Drive
Postal Bag 2002
Kemptville, ON K0G 1J0
Tel: 613-258-8204
Fax: 613-258-3920

**Ministère des Richesses
naturelles**

District de Kemptville

10 Dr. Campus
Sac Postal, 2002
Kemptville, ON K0G 1J0
Tél.: 613-258-8204
Télééc.: 613-258-3920



April 1, 2011

Sean Male
Hatch
Environmental Assessment & Management
Niagara Falls, Ontario

To Mr. Male,

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment and environmental impact study for McCann Solar Project in Township of Rideau Lakes submitted by Northland Power.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the natural heritage assessment:

1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR (if required).
4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
5. The MNR confirms that the environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any


changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

If you wish to discuss any part of this confirmation or additional comments provided, please contact Heather Zurbrigg at heather.zurbrigg@ontario.ca or at (613)-258-8366.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Durst', written over a horizontal line.

Ken Durst
District Manager
Kemptonville District MNR

cc. Jim Beal, Renewable Energy Provincial Field Program Coordinator, Regional
Operations Division, MNR
Narren Santos, Environmental Assessment and Approvals Branch, MOE

Appendix P

**Letter of Confirmation –
Ontario Ministry of Tourism and Culture**

Ministry of Tourism and Culture

Culture Programs Unit
Programs and Services Branch
401 Bay Street, Suite 1700
Toronto, ON M7A 0A7
Telephone: (416)-314-7691
Facsimile: (416)-314-7175
Email : Ian.Hember@ontario.ca

Ministère du Tourisme et de la Culture

Unité des programmes culturels
Direction des programmes et des services
401 Rue Bay, Suite 1700
Toronto, ON M7A 0A7
Téléphone: (416)-314-7691
Télécopieur: 416- 314-7175
Email : Ian.Hember@ontario.ca



January 11, 2011

Tom Hockin
Northland Power Inc.
30 St. Clair Avenue West
17th Floor
Toronto, Ontario,
Canada
M4V 3A1

RE: McCann Solar Generation Facility, Lot 1, Concession 1, Geographic Township of North Crosby, Township of Rideau Lakes, United Counties of Leeds and Grenville, Ontario, FIT-F2EE8ZF, MTC File no. HD00514, PIF No. P007-254-2010.

Dear Proponent:

This letter constitutes the Ministry of Tourism and Culture's written comments as required by s. 22(3)(a) of O. Reg. 359/09 under the *Environmental Protection Act* regarding archaeological assessments undertaken for the above project.

Based on the information contained in the report(s) you have submitted for this project, the Ministry believes the archaeological assessment complies with the *Ontario Heritage Act's* licensing requirements, including the licence terms and conditions and the Ministry's 1993 Archaeological Assessment Technical Guidelines. Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the Report(s).*

The report(s) recommends the following:

In sum, Findspot 1 has the potential to be archaeologically significant. However, this site lies well away from lands to be impacted by project activities. Accordingly, and in consultation with the proponent and MTC, it was agreed that the findspot could be protected by a combination of avoidance and a project buffer of 20 m (see Appendix A). As a result, it is recommended that the project be allowed to proceed without further heritage concerns.

This report is filed with the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report will be reviewed to ensure that the licenced consultant archaeologist has met the terms and conditions of their archaeological licence, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a

licenced consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act. This condition provides for the potential for deeply buried or enigmatic local site areas not typically identified in evaluations of potential.

Stage 1-2 Archaeological Assessment, Glendale Solar Project (FIT – FAH1BFV), South Glengarry Township, Ontario.

The Cemeteries Act requires that any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Small Business and Consumer Services. All work in the vicinity of the discovery will be suspended immediately. Other government staff may be contacted as appropriate; however, media contact should not be made in regard to the discovery.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the Ontario Heritage Act, and may not be altered, or have artifacts removed, except by a person holding an archaeological licence.

The Ministry is satisfied with these recommendations.

This letter does not waive any requirements which you may have under the Ontario *Heritage Act*. A separate letter addressing archaeological licensing obligations under the Act will be sent to the archaeologist who completed the assessment and will be copied to you.

This letter does not constitute approval of the renewable energy project. Approvals of the project may be required under other statutes and regulations. It is your responsibility to obtain any necessary approvals or licences.

Please feel free to contact me if you have questions or require additional information.

Sincerely,

Ian Hember
Archaeology Review Officer

c. Paul Racher, Archaeological Research Associates

*In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

Appendix Q

Baseline Well Water Monitoring Program and Construction Response Plan

Project Report

April 11, 2011

**Northland Power Inc.
McCann Solar Project**

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

Table of Contents

1. Introduction 3

2. Baseline Well Water Monitoring Program 3

3. Construction Response Plan 4

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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.

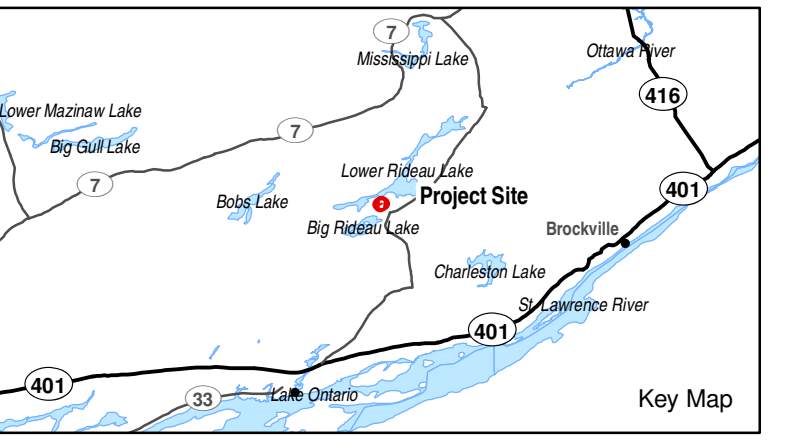
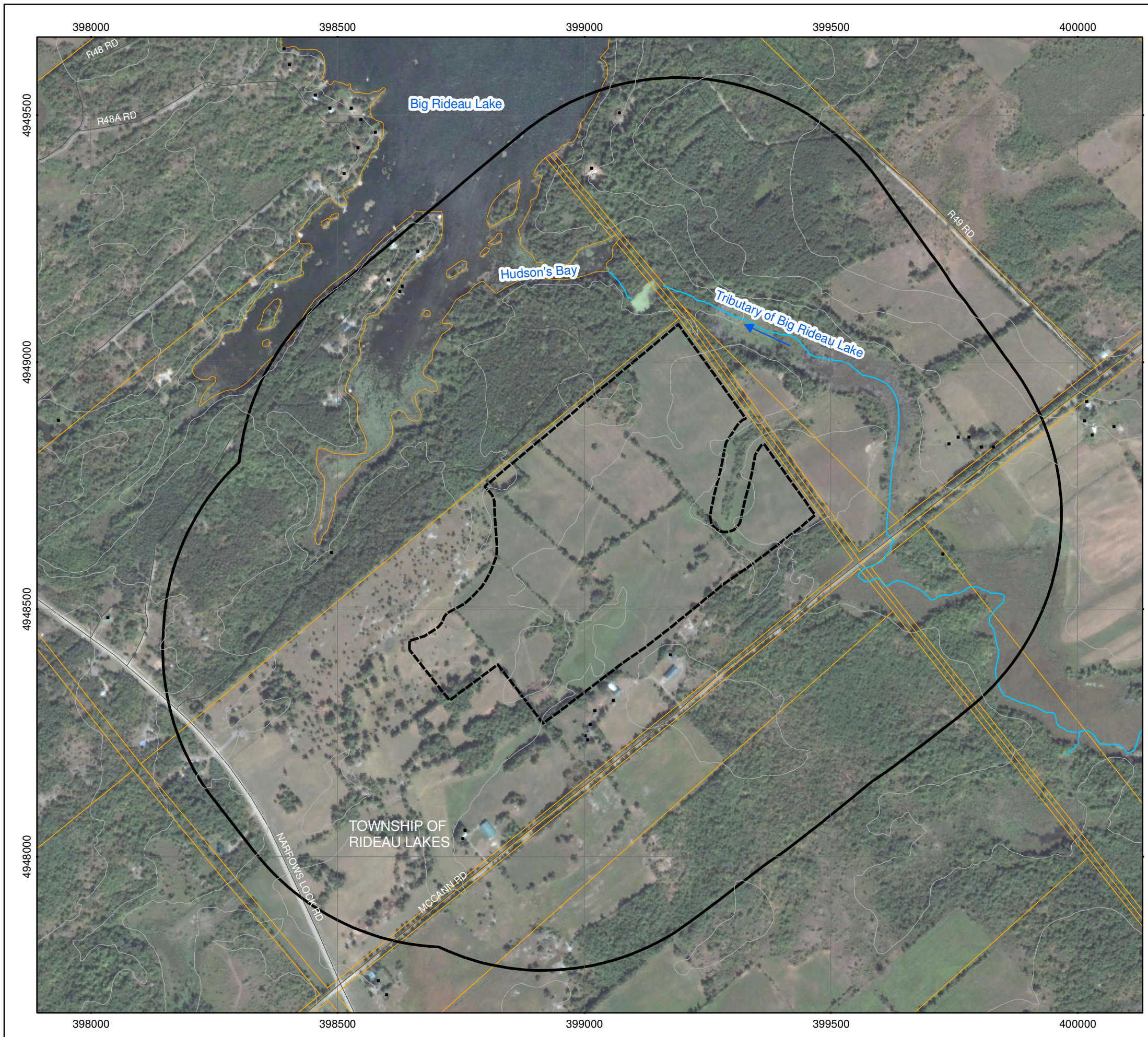
3. Construction Response Plan

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
 - Road
 - Topographic Contour (5m interval)
 - Watercourse
 - ▭ Project Location
 - ▭ 500 m from Project Location
 - ▭ Parcels



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